ARALIACEAE
wu jia ke

Trees or shrubs, sometimes woody vines with aerial roots, rarely perennial herbs, hermaphroditic, andromonoecious or dioecious, often with stellate indumentum or more rarely simple trichomes or bristles, with or without prickles, secretory canals present in most parts. Leaves alternate, rarely opposite (never in Chinese taxa), simple and often palmately lobed, palmately compound, or 1–3-pinnately compound, usually crowded toward apices of branches, base of petiole often broad and sheathing stem, stipules absent or forming a ligule or membranous border of petiole. Inflorescence terminal or pseudo-lateral (by delayed development), umbellate, compound-umbellate, racemose, racemose-umbellate, or racemose-paniculate, ultimate units usually umbels or heads, occasionally racemose or spikes, flowers rarely solitary; bracts usually present, often caducous, rarely foliaceous. Flowers bisexual or unisexual, actinomorphic. Pedicels often jointed below ovary and forming an articulation. Calyx absent or forming a low rim, sometimes racemose or spikes, flowers rarely solitary; bracts usually present, often caducous, rarely foliaceous. Flowers bisexual or unisexual, actinomorphic. Pedicels often jointed below ovary and forming an articulation. Calyx absent or forming a low rim, sometimes undulate or with short teeth. Corolla of (3–)5–(20) petals, free or rarely united, mostly valvate, sometimes imbricate. Stamens usually as many as and alternate with petals, sometimes numerous, distinct, inserted at edge of disk; anthers versatile, introrse, 2–5-celled (or 4-celled in some non-Chinese taxa), longitudinally dehiscent. Disk epigynous, often fleshy, slightly depressed to rounded or conic, sometimes confluent with styles. Ovary inferior (rarely secondarily superior in some non-Chinese taxa), (1 or)2–10(–many)-carpellate; carpels united, with as many locules; ovules pendulous, 2 per locule, 1 abortive; styles as many as carpels, free or partially united, erect or recurved, or fully united to form a column; stigmas terminal or decurrent on inner face of styles, or sessile on disk, circular to elliptic and radiating. Fruit a drupe or berry, terete or sometimes laterally compressed, occasionally vertically compressed, exocarp fleshy; pyrenes cartilaginous or membranous, often laterally compressed. Seeds 1 per pyrene, embryo small, endosperm uniform or ruminate.

About 50 genera and 1350 species: widespread in tropical and subtropical regions of both hemispheres, much less diverse in temperate areas; 23 genera (two endemic, one introduced) and 180 species (82 endemic, seven introduced) in China.

The two endemic genera are Sinopanax and Tetrapanax.

Chinese genera of economic importance include Aralia, Eleutherococcus, Heteropanax, Panax, and Tetrapanax (medicinal), Hedera (ornamental), Fatsia and Schefflera (medicinal and ornamental), and Kalopanax (timber).


Diplopanax Handel-Mazzetti was at one time placed in Araliaceae but is now regarded as a member of Mastixiaceae (see Fl. China 14: 231–232. 2005).


Key emphasizing flower and fruit characters

1a. Petals imbricate in bud.
2a. Herbs; leaves 3–5, verticillate at apex of stem; ovary 2- or 3(–5)-carpellate ...................................................... 23. Panax
2b. Shrubs or trees, rarely herbs; leaves alternate, borne on branches; ovary (4 or)5–6-carpellate.
3a. Inflorescence developing from specialized floral buds, usually surrounded by numerous persistent bracts at base; plants unarmed .................................................................................................. 21. Pentapanax
3b. Inflorescence developing from mixed buds also producing leaves, without persistent bracts at base; plants armed or unarmed ........................................................................................................... 22. Aralia
1b. Petals valvate in bud.
4a. Leaves 1–5-pinnately compound.
5a. Pedicels articulate below ovary; ovary 5–8-carpellate; cultivated plants usually with pungent aromatic odor .... 19. Polyscias
5b. Pedicels not articulate below ovary; ovary 2-carpellate; native plants without pungent aromatic odor ........... 20. Heteropanax
4b. Leaves simple, palmately lobed, or palmately compound.
6a. Leaves palmately compound.
7a. Stamens 25 or more; ovary 20–70-carpellate ........................................................................................................... 1. Tupidanthus
7b. Stamens 10 or fewer; ovary 2–12-carpellate.
8a. Plants with prickles on stems.
9a. Leaves palmately compound or trifoliolate, never simple, leaflets 3–5, petiole shorter than 12 cm, petiolules 0–1 cm; styles distinct or united at base .................................................................................. 18. Eleutherococcus

1 Dendrological Herbarium, Forest Resources and Environment, Nanjing Forestry University, Longpan Road, Nanjing, Jiangsu 210037, People’s Republic of China.
2 Missouri Botanical Garden, P.O. Box 299, Saint Louis, Missouri 63166–0299, U.S.A.; Département Systématique et Evolution, Muséum National d’Histoire Naturelle, C.P. 39, 57 rue Cuvier, 75231 Paris CEDEX 05, France.
9b. Leaves simple (entire or palmately lobed) or palmately compound, leaflets (3 or) 4–9(–11), petiole longer than 12 cm, petiolules usually longer than 1.5 cm; styles united into a column ......................... 12. Brassaiopsis
8b. Plants unarmed.

10a. Pedicels conspicuously articulate below ovary.
11a. Styles free or united to only 2/3 their length; fruit laterally compressed; endosperm uniform .......... 16. Metapanax
11b. Styles united into a column; fruit terete, ribbed when dry; endosperm ruminate or rugose .......... 17. Macropanax
10b. Pedicels not articulate below ovary.

12a. Ovary (4 or)5–11-carpellate; margin of leaflets usually entire, rarely remotely serrate; branches with long shoots only (short shoots absent) .......................................................... 15. Schefflera
12b. Ovary 2–4-carpellate; margin of leaflets usually serrulate; branches with both short and long shoots (the latter not always preserved on specimens).

13a. Inflorescence a large, corymbose panicle of umbels; petals and stamens 5; ovary 2-carpellate, styles united into a column .............................................................................................................. 14. Chengiopanax
13b. Inflorescence small, a simple or compound panicle of umbels; petals and stamens 4(or 5); ovary 2–4(or 5)-carpellate; styles free at least apically ......................................................................................... 13. Gamblea

6b. Leaves simple or palmately lobed, occasionally deeply cleft.
14a. Woody climbers, with aerial roots .................................................................................................. 9. Hedera
14b. Shrubs or trees, erect, without aerial roots.

15a. Plants with prickles on stems.
16a. Ovary 7–12-carpellate; fruit usually 1–2 cm in diam. ................................................................. 2. Trevesia
16b. Ovary 2–5-carpellate; fruit to 1(–1.2) cm in diam.

17a. Fruit red-yellow at maturity; calyx with 2 spinelike lobes; inflorescence with dense, stiff prickles throughout; shrubs ................................................................. 7. Oplopanax
17b. Fruit black or bluish black at maturity; calyx 5-toothed; inflorescence glabrous or with scattered to fairly dense prickles; shrubs or trees.

18a. Deciduous trees, hermaphroditic; styles united at base, with free arms; endosperm smooth; leaves clustered on short shoots and alternate on long shoots ................................................................. 8. Kalopanax
18b. Evergreen shrubs or small trees, andromonoecious or hermaphroditic; styles completely united into a column; endosperm ruminate or uniform; short shoots lacking, leaves borne only on long shoots .......................................................................................................................... 12. Brassaiopsis

15b. Plants without prickles on stems.
19a. Flowers sessile, arranged in small ca. 15-flowered heads ................................................................. 4. Sinopanax
19b. Flowers distinctly pedicellate, arranged in umbels.

20a. Ovary (4 or)5–10-carpellate.
21a. Petiole basally pectinate or fimbriate-lacerate; inflorescence trifid, with a central umbel of sterile bacciform flowers (“pseudo-fruit”) .................................................................................. 5. Osmoxylon
21b. Petiole basally not pectinate or fimbriate-lacerate; inflorescence a panicle of umbels, or a simple or compound umbel.

22a. Leaves 5–9(–11)-lobed, margin regularly toothed; ovary 5- or 10-carpellate ................................. 3. Fatsia
22b. Leaves entire or 2- or 3(–5)-lobed, margin entire or with scattered irregular teeth; ovary (3–)5-carpellate ............................................................................................................. 10. Dendropanax

20b. Ovary 2-carpellate.

23a. Pedicels articulate below ovary ..................................................................................................... 16. Metapanax
23b. Pedicels not articulate below ovary.

24a. Branches stout, with an evident white pith; stipules 2, awl-shaped, 7–8 cm ............................... 6. Tetrapanax
24b. Branches slender, without an evident white pith; stipules obsolete or inconspicuous.

25a. Leaves red or yellow glandular punctate, glabrous, margin entire or with few narrow triangular teeth ......................................................................................................................... 10. Dendropanax
25b. Leaves not glandular punctate, glabrous or stellate pubescent, margin usually serrate.

26a. Inflorescences both terminal and axillary; styles free or united at base; disk inconspicuous ..................................................................................................................... 11. Merrillipanax
26b. Inflorescences either terminal or axillary; styles completely united into a column; disk conspicuous, convex ................................................................................................. 12. Brassaiopsis

Key emphasizing vegetative characters
1a. Plants armed with prickles.
2a. Leaves pinnately or palmately compound.
3a. Leaves 1–3-pinnately compound .................................................................................................. 22. Aralia
3b. Leaves palmately compound.
   4a. Leaflets 3–5, petiole shorter than 12 cm, petiolules 0–1 cm; styles distinct or united at base .......... 18. *Eleutherococcus*
   4b. Leaflets (3 or)4–9(–11), petiole longer than 12 cm, petiolules usually longer than 1.5 cm; styles united into a column ......................................................... 12. *Brassaiopsis*

2b. Leaves simple.
   5a. Ovary 7–12-carpellate; fruit usually 10–18 cm in diam. ................................................................. 2. *Trevesia*
   5b. Ovary 2–5-carpellate; fruit to 10(–14) mm in diam.
      6a. Shrubs, deciduous; fruit red-yellow at maturity; calyx with 2 spinelike lobes; inflorescence with dense, stiff prickles throughout ................................................................. 7. *Oplopanax*
      6b. Shrubs or trees, evergreen; fruit black or blue-black at maturity; calyx 5-lobed; inflorescence glabrous or with scattered to fairly dense prickles.
      7a. Leaves clustered on short shoots and alternate on long shoot; styles united at base, with free arms ............... 8. *Kalopanax*
      7b. Branches without distinctly differentiated short and long shoots; styles completely united into a column ............................................................................................................................................... 12. *Brassaiopsis*

1b. Plants unarmed.
   8a. Leaves simple, entire or palmately lobed.
      9a. Ovary 2-carpellate.
         10a. Leaves red or yellow glandular punctate, glabrous, margin entire or with few narrow triangular teeth ....................................................................................... 10. *Dendropanax*
         10b. Leaves not glandular punctate, glabrous or stellate pubescent, margin usually serrate.
         11a. Flowers sessile, arranged in small ca. 15-flowered heads ......................................................... 4. *Sinopanax*
         11b. Flowers pedicellate, arranged in umbels.
            12a. Branches stout, with evident white chambered pith; inflorescences terminal; stipules 2, awl-shaped, 7–8 cm ................................................................................................................................. 6. *Tetrapanax*
            12b. Branches slender, pith narrow and solid; inflorescences both terminal and axillary; stipules obsolete or inconspicuous ........................................................................................................................................................................... 11. *Merrillioanax*
      9b. Ovary (4 or)5–11-carpellate.
         13a. Leaves entire or 2- or 3-lobed, lobes usually entire or with few narrow triangular teeth.
            14a. Plant creeping or climbing, with aerial roots; leaves not glandular punctate ............................................ 9. *Hedera*
            14b. Erect shrubs or trees without aerial roots; leaves usually red or yellow glandular punctate ............... 10. *Dendropanax*
         13b. Leaves 3–10-lobed, lobes usually dentate or serrate.
            15a. Leaves 3–7-lobed, petiole basally pectinate or fimbriate-lacerate; inflorescence trifid, central axis with an umbel of sterile bacciform flowers (“pseudo-fruit”) ........................................ 5. *Osmoxylon*
            15b. Leaves 5–9(–11)-lobed, stipule indistinct; inflorescence a panicle of umbels ................................................................................................................................. 3. *Fatsia*
      8b. Leaves palmately or pinnately compound.
         16a. Petals valvate in bud.
            18a. Cultivated plants with a pungent aromatic odor, usually glabrous; leaves 1-pinnate (rarely 2- or 3-pinnate, and then leaflets less than 2 cm wide); ovary 5–9-carpellate; fruit terete, ovoid or globose ....... 19. *Polyscias*
            18b. Native plants without a pungent aromatic odor, usually pubescent when young; leaves 2–5-pinnate; ovary 2-carpellate; fruit laterally compressed or compressed-globose ........................................................................ 20. *Heteropanax*
         17a. Petals imbricate in bud.
            19a. Deciduous shrubs or small trees, unarmed; inflorescences developing from specialized floral buds, basally usually surrounded by numerous persistent bracts .................................................... 21. *Pentapanax*
            19b. Perennial herbs, unarmed or prickly; inflorescences developing from mixed buds also producing leaves, basally without persistent bracts ................................................................................................................................. 22. *Aralia*
      16b. Leaves palmately compound.
         20a. Herbs; leaves verticillate at apex of stem ..................................................................................... 23. *Panax*
         20b. Shrubs or trees; leaves alternate along stem.
            21a. Ovary 5- to many carpellate.
               22a. Ovary (4 or)5–11-carpellate; stamens 5–11; petals 5–8, usually distinct and separating at anthesis, thin, papery or leathery ................................................................. 15. *Schefflera*
               22b. Ovary 20–70-carpellate; stamens 25 or more; petals united into a calyptra, thick, leathery, becoming woody when dry ........................................................................ 1. *Tupidanthis*
            21b. Ovary 2–4(–5)-carpellate.
               23a. Pedicels articulate below ovary; leaves abaxially without domatia or secretory structures.
                 24a. Styles free or united to only 2/3 their length; fruit laterally compressed; endosperm uniform .......... 16. *Metapanax*
                 24b. Styles united into a column; fruit terete, ribbed when dry; endosperm ruminate or rugose .............. 17. *Macropanax*
23b. Pedicels not articulate below ovary; leaves abaxially with domatia or secretory structures in axils of secondary veins.

25a. Inflorescence a large, corymbose panicle of umbels; petals and stamens 5; ovary 2-carpellate, styles united into a column ................................................................. 14. Chengkapapax

25b. Inflorescence small, a simple or compound umbel or panicle of umbels; petals and stamens 4(or 5), ovary 2–4(or 5)-carpellate; styles free at least apically .................................................. 13. Gamblea

1. TUPIDANTHUS J. D. Hooker & Thomson, Bot. Mag. 82: t. 4908. 1856.

Small trees or woody vines, evergreen, hermaphroditic, unarmed. Leaves palmately compound; leaflets 7–10, entire; stipules united with petiole. Inflorescence a pseudo-lateral compound umbel or small panicle of umbels. Pedicels stout, not articulate below ovary. Calyx a low rim. Petals indefinite in number, thick, leathery, becoming woody when dry, valvate, united into a calyptra, early deciduous. Stamens 25 or more, in 2 to several series. Ovary 6–16-carpellate; styles united into a column. Petals not articulate below ovary; calyx rim 1–3 cm, leaflets elliptic to obovate or oblong-lanceolate, 12–23 × 4–8.5 cm, lateral veins 20–30 pairs, base acute to attenuate, margins serrate; stipules united into a 2–3 cm, large ovate sheathing leathery bracts at base; umbels 3–7 flowered; pedicels 1.5–2 cm, stout. Flowers 1.5–3 cm in diam. Calyx tube leathery, smooth. Stamens 30–70, densely packed. Fruit depressed-globose, 2–3.5 cm in diam., stigmatic crest usually forming an irregular “Y” or “H”; exocarp fleshy.

Climbing on forest trees; 900–1700 m. Xizang, S Yunnan [Bangladesh, Cambodia, India, Laos, Myanmar, Thailand, Vietnam].

This species is used medicinally and as an ornamental.


Shrubs or trees, evergreen, hermaphroditic, with few to many spines, glabrous or stellate pubescent. Leaves simple, palmately lobed or appearing almost palmately compound, with a fanlike base and lobes constricted to midvein, margin serrate; stipules ligulate, partly or fully united. Inflorescence a terminal or pseudo-lateral raceme or panicle of umbels; bracts small to large, persistent or caducous. Pedicels not articulate below ovary. Calyx margin entire or minutely lobed. Petals 7–12, valvate, often cohering and calyptrate, falling as a single unit or abscissing separately. Stamens as many as petals. Ovary 20–70-carpellate; styles absent; stigmas sessile, as many as carpels. Fruit a drupe, leathery. Seeds many, endosperm uniform.

One species: NE India to S China (Yunnan) and N Indochina.

Recent phylogenetic studies have shown that *Tupidanthus* is part of a well-supported Asian *Schefflera* clade (Plunkett et al., Pl. Syst. Evol. 245: 1–39, 2004; Plunkett et al., Ann. Missouri Bot. Gard. 92: 202–224. 2005) and may therefore not warrant recognition as a distinct genus.


About 10 species: SE Asia, Indochina, India, Nepal; one species in SW China.


Trees, evergreen, to 8 m tall. Trunk to ca. 15 cm d.b.h.; branches prickly, farinose stellate pubescent. Leaves simple; petiole often prickly, 30–70(–90) cm; stipules united into a 2-lobed sheath; blade large, 60–90 cm wide, leathery, both surfaces glabrous or with scattered stellate hairs, lateral veins distinct on both surfaces, deeply 5–9-lobed; lobes narrowly ovate-lanceolate, margin serrate, apex acuminate. Inflorescence a panicle of umbels, ca. 45 cm, densely farinose stellate pubescent when young, glabrescent; peduncles 4–17 cm; umbels 4–5 cm in diam., 25–45-flowered; pedicels 1.5–2 cm. Calyx rim 1–2 mm, farinose stellate pubescent. Stamens 7–12. Ovary 7–12-carpellate. Fruit subglobose to compressed-globose, 1–1.8 cm

Mixed forests on mountain slopes; 600–2000 m. S Guangxi, Guizhou, Yunnan [Bangladesh, Cambodia, India, Laos, Nepal, Thailand, Vietnam].

This species is used medicinally and as an ornamental.

Two varieties (Trevesia palmata var. palmata and var. costata, the latter from S Yunnan) have sometimes been distinguished on the basis of minor differences in fruit shape and the presence or absence of ribs on dry fruit, but they do not appear to be worthy of recognition.


八角金盘属 ba jiao jin pan shu

Diplofatsia Nakai.

Shrubs or small trees, evergreen, andromonoecious, unarmed. Leaves simple, palmately lobed, serrate; stipules united with petiole, sheathing at base. Inflorescence a terminal panicle of umbels; bracts large, membranous, caducous. Pedicels not articulate below ovary. Calyx rim obsolete or 5-toothed. Petals 5, valvate. Stamens 5. Ovary 5- or 10-carpellate; styles 5 or 10, free. Fruit a subglobose drupe. Seed ± compressed laterally, endosperm smooth.

Two or three species: one or two native to Japan, one widely cultivated, one endemic to China (Taiwan).

1a. Leaves 7–9-lobed, glabrous, margins crenate to crenate-serrate, teeth rounded to blunt; ovary 5-carpellate .............. 1.
1b. Leaves 5–7-lobed, brown tomentose when young, margins serrate, teeth sharply pointed; ovary (8–)10(or 11)-carpellate .............................................................................................................................................. 2.

1. *Fatsia japonica* (Thunberg) Decaisne

Aralia japonica Thunberg in Murray, Syst. Veg., ed. 14, 300. 1784.

Shrubs, to ca. 5 m tall. Young branches, leaves, and inflorescences densely woolly tomentose, later glabrescent. Petiole 10–30 cm; leaf blade nearly orbicular, (5–)7–9 cm wide, leathery, with 7–9 deeply cleft, narrowly ovate-elliptic lobes, both surfaces glabrous, base cordate to truncate-cordate, margin crenate to crenate-serrate, teeth rounded to blunt, apex acuminate. Inflorescence a panicle of umbels; primary axis 20–40 cm; peduncles 10–15 cm; umbels 3–4 cm in diam., with numerous flowers; pedicels 1–1.5 cm. Calyx rim indistinctly denticate. Petals ovate, 3–4 mm. Ovary 5-carpellate; styles 5, free, ca. 1.5 mm. Fruit globose, ca. 5 mm in diam. Fl. Oct–Nov, fr. Feb–May. 2n = 24, 48.

Widely cultivated or occasionally naturalized in gardens or secondary vegetation; below 200 m. Anhui, Fujian, Jiangsu, Jiangxi, Zhejiang [native to Japan].

Many cultivars are used as ornamentals.


多室八角金盘 duo shi ba jiao jin pan

Diplofatsia polycarpa (Hayata) Nakai.

Trees, small, to ca. 8 m tall. Young branches, leaves, and inflorescences densely brown tomentose, later glabrescent. Petiole 15–30 cm; leaf blade orbicular, 15–30 cm wide, with 5–7 narrowly ovate-elliptic lobes, tomentose, glabrous when older, base attenuate, margin serrate, teeth sharply pointed, apex caudate. Inflorescence a panicle of umbels; primary axis 30–40 cm; peduncles ca. 1.5 cm; umbels ca. 2.5 cm in diam., ca. 20-flowered; pedicels ca. 1 cm. Calyx rim subentire. Ovary (8–)10(or 11)-carpellate; styles (8–)10(or 11), free, ca. 0.5 mm. Fruit globose, ca. 4 mm in diam. Fl. Dec–Jan, fr. Jan–May.

● Shaded and humid places in broad-leaved forests; 2000–2800 m. Taiwan.

This species is used as an ornamental.


华参属 hua shen shu

Shrubs or small trees, evergreen, hermaphroditic, unarmed, stellate pubescent. Leaves simple, entire or palmately lobed, margin coarsely dentate, otherwise entire; stipules deciduous. Inflorescence a terminal panicle of heads; bracts triangular; bracteoles 3 per flower, central one larger. Pedicels not articulate below ovary. Calyx rim 5-toothed. Petals 5, valvate. Stamens 5. Ovary 2-carpellate; styles 2, free, erect, short, persistent. Fruit a drupe, broadly globose, 1-seeded by abortion. Seeds ovoid, endosperm ruminate.

● One species: China (Taiwan).

Sinopanax strongly resembles *Oreopanax* Decaisne & Planchon from tropical America, and recent phylogenetic studies confirm that they are closely related (e.g., Lowry et al., S. Afr. J. Bot. 70: 382–392. 2004; Plunkett et al., Pl. Syst. Evol. 245: 1–39. 2004).

1. *Sinopanax formosanus* (Hayata) H. L. Li, J. Arnold Arbor. 30: 231. 1949 ["formosanum"].

华参 hua shen


Trees, evergreen, to 12 m tall. Branches, petioles, adaxial
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leaf surfaces, and inflorescences densely minutely stellate pubescent. Leaf blade broadly orbicular, ca. 20 × 23 cm, entire or with 3–5 broad lobes, base broadly cuneate to truncate or cordate, margin irregularly dentate, apex acute to shortly acuminated. Inflorescence a terminal panicle; primary axis 15–20 cm; secondary axes to ca. 15 cm; heads 6–7 mm in diam., 8–12-flowered. Fruit ca. 4 × 5 mm in diam. Fl. Sep, fr. Mar, May–Oct, Dec.

- Open areas in forests; 2300–2600 m. Taiwan.

This species is occasionally cultivated as an ornamental.


兰屿加属 lan yu jia shu

Boerlagiodendron Harms; Eschweileria Zippelius ex Boerlage (1887), not Eschweilera Martius ex Candolle (1828).

Trees or shrubs, evergreen, hermaphroditic, unarmed, glabrous or pubescent. Leaves simple, palmately lobed or compound, margin entire to crenate or serrate, base of petiole expanded with 1 to several spiral or transverse crests or collars, stipules forming a ligule. Inflorescence a terminal compound umbel; secondary axes trifid, each with a central head or umbel of sterile, bacciform flowers (“pseudo-fruit”) and two lateral heads or umbels of bisexual flowers; bracts deciduous. Pedicels not articulate below ovary. Calyx obsolete or denticulate. Petals few to many, valvate, united below into a short tube. Stamens 4–30. Ovary (4 or)5- to many carpellate; styles united, forming a column; stigmas pustular. Fruit a drupe. Seeds triangular, endosperm smooth or wrinkled.

About 50 species: Borneo and the Philippines east to New Guinea, a few species in Micronesia and Melanesia, one species extending north to China (Taiwan).


兰屿加 lan yu jia

Boerlagiodendron pectinatum Merrill, Philipp. J. Sci. 3. 253. 1908; B. kotoense Nakai.

Trees, evergreen, to ca. 8 m tall, hermaphroditic. Branches robust, glabrous. Leaves simple; petiole 15–25 cm, base with bristles 1–2 cm; leaf blade broadly ovate, 20–25 cm wide, leathery, abaxially pubescent on veins, adaxially glabrous, (3–)5–7-lobed, base broadly cuneate, margin coarsely crenate-serrate, apex obtuse to acute or shortly acuminated. Inflorescence a compound umbel; primary axis ca. 1 cm; secondary axes 4–15(–25), 2–3 cm; peduncles 3 per secondary axis, 1–3 cm; pedicels 1.5–4 mm. Calyx rim with 4 or 5 small teeth. Corolla lobes 4(or 5), tubular basally. Stamens 4–5. Ovary 4(or 5) or 6-carpellate. Fruit globose, ca. 5 mm in diam., ribbed when dry. Fl. Apr, Jul, fr. Oct.

Taiwan (Huoshao Dao, Lan Yu) [N Philippines].


通脱木属 tong tuo mu shu


Shrubs to small trees, evergreen, hermaphroditic, unarmed, stellate pubescent. Leaves simple, palmately lobed, margin entire to coarsely serrate; stipules 2, awl-shaped, prominent, 7–8 cm. Inflorescence a terminal panicle of umbels, densely farinose stellate when young, glabrescent. Pedicels not articulate below ovary. Calyx nearly obsolete. Petals 4(or 5), valvate, abaxially tomentose. Stamens 4(or 5). Ovary 2-carpellate; styles 2, free, erect at anthesis, later recurved. Fruit a drupe, globose, slightly compressed laterally. Seeds laterally compressed, endosperm smooth.

- One species: China.


通脱木 tong tuo mu


Shrubs or small trees, to 3.5 m tall, densely ferruginous or pale brown stellate tomentose. Trunk to 9 cm in diam.; pith homogeneous, white, large. Petiole terete, to 50 cm, glabrous; leaf blade ovate-oblong, 50–75 cm wide, papery or subleathery, abaxially densely ferruginous or stellate tomentose, adaxially glabrous, 7–12-lobed, base obtuse to cordate, margin entire to coarsely serrate, apex acuminate. Inflorescence terminal, peduncles 1–1.5 cm; umbels 1–2 cm in diam., many flowered. Flowers yellowish white. Calyx ca. 1 mm, densely stellate tomentose. Corolla petals 4(or 5), ca. 2 mm, densely stellate tomentose. Stamens 4(or 5); filaments ca. 3 mm. Fruit dark purple at maturity, globose, ca. 4 mm in diam. Fl. Oct–Dec, fr. Jan–Feb. 2n = 48*.

- Mixed thickets; 100–2800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, SW Sichuan, Taiwan, NW Yunnan, Zhejiang.

This species is widely cultivated in China for the traditional medicine “tong cao” and as an ornamental elsewhere in the tropics. The stem pith cut into sections is used as a paper (“rice paper”).

Frodin and Govaerts (World Checklist Bibliogr. Araliaceae, 400. 2004 [“2003”]) indicated that Tetrapanax papyrifer is probably native to Taiwan and introduced in S China.

刷参属 **ci shen shu**


Shrubs, annually dying back, hermaphroditic, armed with numerous prickles. Leaves simple, palmately lobed, margins serrate, stipules united with petiole, sheathing at base. Inflorescence a terminal panicule or raceme of umbels. Pedicels not articulate below ovary. Calyx 5-toothed. Petals 5, valvate. Stamens 5. Ovary 2-carpellate; styles 2, free or united below. Fruit a drupe, red-yellow at maturity, to 1.2 mm in diam. Seeds depressed; endosperm uniform.

Three species: E Asia, North America; one species in China.


刷参 **ci shen**


Shrubs, deciduous, to 3 m tall, hermaphroditic. Branches stout, with dense yellow-orange prickles. Petiole 3–10 cm, densely setose; leaf blade suborbicular to oblate, 15–30(–44) cm wide, both surfaces pubescent or setose on veins, 5–7-lobed; lobes triangular or broadly triangular, base cordate, margin irregularly serrate, apex acute to slightly acuminate. Inflorescence terminal, a raceme of umbels, 8–25 cm, densely setose toward base, stiffly pubescent throughout; umbels 0.9–1.3 cm in diam., 6–12-flowered; proximal peduncles ca. 2.5 cm, distal ones short or flowers borne directly on primary axis. Calyx 5-toothed, glabrous. Styles united to middle, slender, apically recurved. Fruit yellow-red at maturity, obvoid, sometimes globose, 0.4–1.2 cm. Fl. Jun–Jul, fr. Sep. 2n = 48.

Mixed forests; 1400–1600 m. E Jilin [Korea, Russia].

This species is used medicinally.


刺楸属 **ci qiu shu**


One species: E Asia.


刺楸 **ci qiu**

*Acer septemlobum* Thunberg in Murray, Syst. Veg., ed. 14, 912. 1784; *Acanthopanax ricinifolius* (Siebold & Zuccarini) Seemann; *A. ricinifolius var. maximowiczii* (Van Houtte) K. Schneider; *A. septemlobus* (Thunberg) Koidzumi ex Rehder; *A. septemlobus var. magnificus* (Zabel) W. C. Cheng; *A. septemlobus var. maximowiczii* (Van Houtte) W. C. Cheng; *Acer pictum* Thunberg; *Aralia maximowiczii* Van Houtte; *Kalopanax pictus* (Thunberg) Nakai; *K. pictus var. magnificus* (Zabel) Nakai; *K. pictus f. maximowiczii* (Van Houtte) H. Hara; *K. pictus var. maximowiczii* (Van Houtte) H. L. Li; *K. ricinifolius* (Siebold & Zuccarini) Miquel; *K. ricinifolius var. chinensis* Nakai; *K. ricinifolius var. magnificus* Zabel; *K. ricinifolius var. maximowiczii* (Van Houtte) Nakai; *K. septemlobus var. magnificus* (Zabel) Handel-Mazzetti; *K. septemlobus f. maximowiczii* (Van Houtte) H. Ohashi; *K. septemlobus var. maximowiczii* (Van Houtte) Handel-Mazzetti; *Panax ricinifolius* Siebold & Zuccarini.

Trees, to 30 m tall. Trunk to ca. 1 m in diam.; branches stout, with numerous prickles. Petiole glabrous, 8–50 cm; leaf blade suborbicular, 9–25(–35) cm wide, papery, abaxially dark green and glabrous or nearly so, adaxially light green and usually slightly pubescent when young, 5–7-lobed; lobes broadly triangular-ovate to oblong-ovate, base cordate or rounded to nearly truncate, margin serrate, apex acuminate. Inflorescence 18–25 × 20–30 cm; peduncle 2–6 cm; umbels 1–2.5 cm in diam.; pedicels 5–10 mm, glabrous or slightly pubescent. Corolla white or yellowish green. Fruit dark blue at maturity, 3–5 mm in diam.; styles 2, united below, apical branches recurved. Fl. Jul–Aug, fr. Sep–Oct. 2n = 48.

Forests; near sea level to 2500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea, Russia].

This species is used for timber, medicinal purposes, and as an ornamental.

Two varieties (*Kalopanax septemlobus* var. *septemlobus* and var. *magnificus*) have sometimes been distinguished on the basis of minor leaf characters, but they were not retained in the most recent authoritative treatment of the genus (Ohashi, J. Jap. Bot. 69: 28–31. 1994).


常春藤属 **chang chun teng shu**

Woody vines, evergreen, hermaphroditic or andromonoecious, creeping or climbing by aerial roots, unarmed. Leaves simple,
entire or coarsely lobed, those of fertile shoots differentiated; stipules absent. Inflorescence a terminal, compact raceme of umbels, or occasionally umbels solitary. Pedicels not articulate below ovary. Calyx subentire or 5-toothed. Petals 5, valvate. Stamens 5. Ovary 5-carpellate; styles united into a short column. Fruit a drupe, globose. Seeds ovoid; endosperm ruminate.

About 15 species: N Africa, tropical and subtropical Asia, Europe; two species in China.


Hedera hypoglauca Hance is the basionym of Ampelopsis hypoglauca (Hance) C. L. Li in the Vitaceae (see Fl. China 12).

1a. Young branches and inflorescences with ferruginous scales; calyx subentire, ca. 2 mm; petals 3–3.5 mm; fruit red or yellow at maturity ................................................................. 1. Hedera nepalensis
1b. Young branches and inflorescences stellate pubescent; calyx 5-lobed, ca. 1 mm; petals 2–2.5 mm; fruit black at maturity ................................................................. 2. Hedera rhombea


Hedera himalaica (Hibbert) Carrière var. sinensis Toblner, Hedera 79. 1912; H. potaninii Pojarjova; H. robusta Pojarjkova; H. shensiensis Pojarjkova; H. sinensis (Toblner) Handel-Mazzetti.

Shrubs scandent. Young branches with ferruginous scales. Petiole 2–9 cm, slender; leaves dimorphic, those on sterile branches entire or 3-lobed, usually triangular-ovate or triangular-oblong, rarely triangular or sagittate; those on fertile branches elliptic-ovate or elliptic-lanceolate, rarely ovate or lanceolate, blade glabrous or with sparse scales abaxially, venation distinct on both surfaces, base broadly cuneate, margin entire, apex acuminate. Inflorescence a terminal umbel or a small raceme, with ferruginous scales; primary axis 1–3.5 cm. Calyx rim ca. 2 mm, subentire. Petals 5, 3–3.5 mm. Ovary 5-carpellate. Fruit red or yellow at maturity, globose, 7–13 mm. Fl. Sep–Nov, fr. Mar–May.

Forests, roadsides, rocky slopes, usually climbing on trees or rocks; from near sea level to 3500 m. Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, S Xizang, Yunnan, Zhejiang [Laos, Vietnam].

This taxon is used medicinally and as an ornamental.

Hedera nepalensis var. nepalensis is native to Nepal and Thailand.


Hedera formosana Nakai, J. Arnold Arbor. 5: 25. 1924.

Shrubs scandent. Young branches sparsely stellate pubescent. Petiole to ca. 5 cm, stout. Leaves dimorphic, those on sterile branches usually 3–5-lobed, those on fertile branches ovate or ovate-lanceolate, blade stellate pubescent, venation raised axially, impressed axially in dry material, base cuneate, margin entire, apex acute to acuminate. Inflorescence a terminal umbel or corymb, stellate pubescent; primary axis to ca. 5 cm. Calyx ca. 1 mm, minutely 5-lobed. Petals 5, 2–2.5 mm. Ovary 5-carpellate. Fruit black at maturity, globose, 8–10 mm in diam. Fl. Sep–Nov, fr. Nov–May.

- Forests in valleys; 800–2500 m. Taiwan.

This taxon is used medicinally and as an ornamental.

Hedera rhombea var. rhombea is native to Japan and Korea.


Gilibertia Ruiz & Pavón (1794), not J. F. Gmelin (1791), nor Giliberta Cothenius (1790); Textoria Miquel.

Trees or shrubs, evergreen, hermaphroditic or andromonoecious, unarmed, glabrous. Leaves simple or palmately 2- or 3–5-lobed, often with yellow or red glandular punctae (glands sometimes evident only under transmitted light), margins entire or with few irregular teeth; stipules small and united or absent. Inflorescence a terminal simple umbel, a small raceme of umbels, or a compound umbel. Pedicels not articulate below ovary. Calyx entire or 5-toothed. Petals 5, valvate. Stamens 5. Ovary (2–)5-carpellate; styles distinct or united basally or through into a column. Fruit a drupe. Seeds laterally compressed; endosperm uniform.

About 80 species: tropical America, E Asia; 14 species (seven endemic) in China.

1a. Styles united throughout their length into a single column, not divided apically in fruit, stigmas sessile.

2a. Secondary and tertiary veins on leaves prominently raised on both surfaces, leaves all unlobed ........................ 11. D. caloneurus
2b. Secondary and tertiary veins on leaves weakly raised or obscure, leaves often dimorphic, some unlobed and some deeply 2- or 3-cleft.

3a. Trees to 18 m tall; inflorescence a panicle of (2 or) 3–5 umbels, with an evident primary axis 1–4(–5.5) cm ................................................................. 12. D. hainanensis
3b. Shrubs or small trees to ca. 3 m tall; inflorescence of 1(or 2) or 3–5 umbels usually borne from a single point.
4a. Plants andromonoecious, inflorescence often with 1 umbel of bisexual flowers and (2 or)3 or 4 umbels of later-blooming male flowers; peduncles of bisexual umbels 3–6 cm; leaves usually glandular punctate .......................................................... 13. D. trifidus

4b. Plants hermaphrodite, inflorescence of 1–3(–5) umbels of bisexual flowers; peduncles 0.5–2.5 cm; leaves usually not glandular punctate .......................................................... 14. D. proteus

1b. Styles partially or entirely divided, with evident (sometimes small) free arms apically.

5a. Ovary 2–4-carpellate, style arms 2–4; fruit not ribbed when dry.

6a. Ovary (3 or)4-carpellate, styles (3 or)4; calyx with 5 persistent triangular teeth 0.5–0.8 mm high ....... 7. D. oligodontus

6b. Ovary 2- or 3-carpellate, styles 2 or 3; calyx entire or minutely 5-toothed.

7a. Styles appressed into a column at anthesis, then divided only apically in fruit ...................... 8. D. kwangsiensis

7b. Styles free for at least 1/2 their length, divergent apically in flower and fruit.

8a. Leaves ovate-oblong, 7–18(–22) × 2–5(–7) cm, with 6–12 pairs of lateral veins ................. 9. D. stellatus

8b. Leaves obovate-oblong to elliptic, 5–11 × 1.5 –4.5 cm, with 6–8 pairs of lateral veins .......... 10. D. bilocularis

5b. Ovary 5-carpellate, style arms 5; fruit usually ribbed when dry.

9a. Fruit (7.5–)8–12 mm high; styles divided to base (even in flower), without an evident column above 

conically disk; largest leaf blades (9–)14–19 cm ................................................................................... 1. D. chevalieri

9b. Fruit less than 8 mm high; styles united at least basally (sometimes obscurely so), forming an 

evident column above disk; largest leaf blade usually no more than 12 cm.

10a. Glandular punctae prominent, usually visible to naked eye ................................................. 2. D. pellucidopunctatus

10b. Glandular punctae minute, visible only with a hand lens.

11a. Secondary and tertiary venation of leaves evident on both surfaces.

12a. At least some leaf blades obovate-elliptic, broadest above middle, tertiary veins 

usually impressed adaxially in dry material ........................................................................... 3. D. burmanicus

12b. Leaf blades ovate-elliptic or obovate-lanceolate to elliptic, broadest at or below middle; 

tertiary veins usually prominently raised adaxially in dry material .................................. 4. D. dentiger

11b. Secondary and tertiary venation of leaves obscure, especially abaxially.

13a. Fruit obovate-ovoid; styles 1.5–1.8 mm in fruit .......................................................... 5. D. productus

13b. Fruit globose; styles ca. 1 mm in fruit ............................................................................. 6. D. confertus


大果树参 da guo shu shen

Glibertia chevalieri R. Viguier in Lecomte, Fl. Indo-Chine 2: 1181. 1923; Dendropanax hoi C. B. Shang; D. macrocarpus C. N. Ho (1952), not Cuatrecasas (1946).

Trees, to ca. 14 m tall, hermaphroditic. Petiole 3–10 cm; leaf blade oblong-elliptic to obovate-elliptic, (7–)12–19 × (3–)5–9 cm, subleathery to papery, with distinct glandular punctae, 3(–5)-veined at base, secondary veins 3–5 pairs, secondary and tertiary venation distinct on both surfaces, base broadly cuneate to rounded, margin entire, sometimes minutely revolute, apex acuminate to shortly acuminate. Inflorescence terminal, a simple umbel, or with 2–4 umbels, 1.5–2.5 cm in diam. in flower, 10–20-flowered; pedicels 4–8 mm in flower, 6–20 mm in fruit; peduncle 1.5–3 cm. Calyx rim entire. Ovary (5 or)6-carpellate; styles 5( or)6), free, ca. 0.5 mm in flower. Fruit globose to broadly ellipsoid, 8–12 mm in diam., ribbed when dry; styles recurved, 1–1.5 mm, persistent. Fl. Jun, Aug–Sep, fr. Sep–Dec.

Evergreen broad-leaved forests; 1600–2000 m. Guangxi (Napo), SE Yunnan (Pingbian, Xichou) [E India, C and N Vietnam].


台湾树参 tai wan shu shen

Glibertia pellucidopunctata Hayata, Icon. Pl. Formosan.

● Broad-leaved forests; 800–2500 m. Taiwan.

3. Dendropanax burmanicus Merrill, Brittonia 4: 129. 1941.

缅甸树参 mian dian shu shen

Dendropanax burmanicus C. J. Tseng & G. Hoo.

Shrubs or small trees, to 5 m tall, hermaphroditic. Petiole 1–6 cm; leaf blade at least some obovate-elliptic, others oblong to oblong-elliptic, 7–14 × 2.5–7 cm, papery or subleathery, glandular punctate, 3-veined at base, secondary veins 3 or 4 pairs, secondary and tertiary venation distinct on both surfaces, base obtuse to rarely rounded, margin entire, revolute, apex acu-
minate, curved downward, often becoming falcate and folded in pressed material. Inflorescence terminal; umbels solitary (or 2–4), ca. 2 cm in diam., 12–15-flowered; peduncle 1–3 cm; pedicels 4–7 mm in flower, expanding slightly in fruit. Calyx rim entire, sometimes undulate. Ovary 5-carpellate; styles 5, free nearly to base. Fruit subglobose, 3.5–4 mm in diam., ribbed when dry; styles recurved. Fl. Aug–Sep, fr. Oct–Nov.

Forests; 1300–1800 m. NW and SW Yunnan [N Myanmar, N Vietnam].

4. Dendropanax dentiger (Harms) Merrill, Brittonia 4: 132. 1941 ["dentigerus"].

树参 shu shen


Shrubs or small trees, to ca. 10 m tall, hermaphroditic. Petiole (0.5–)1–9 cm; leaf blade sometimes dimorphic, glan-
dular punctate or not; unlobed blades ovate-elliptic or elliptic, less often oblong-elliptic to elliptic (or lanceolate especially in young plants), (4–)7–13(–27) × 1.5–6(–8) cm, 3-veined, secondary veins 2–6 pairs; lobed blades (when present) palmately 2- or 3-lobed, lobes narrowly triangular-ovate or ovate-lanceolate; tertiary veins raised on both surfaces, leathery (less often papery), base broadly cuneate to rounded, margin entire, often with irregularly scattered narrowly triangular teeth to ca. 1.5 mm, sometimes minutely revolute, apex acute to acuminate (rarely caudate). Inflorescence terminal; umbels solitary or 2 or 3(–5); 2–5 cm in diam., 10–25(–50)-flowered; peduncle 1–5 cm, stout; pedicels 0.2–1.5 cm in flower, to 3 cm in fruit. Calyx rim entire to minutely 5-toothed. Ovary 5-carpellate; styles 5, united 1/2–2/3 their length. Fruit globose, 6–7 mm in diam., ribbed when dry; styles persistent, ca. 1 mm, free arms divergent apically. Fl. Aug–Sep, fr. Sep, Nov–Dec.

Evergreen broad-leaved forests or scrub, from near sea level to 1800 m. S Anhui, Fujian, Guangdong, Guangxi, Guizhou, W Hubei, Hunan, Jiangxi, Sichuan, NE and SE Yunnan, Zhejiang [Cambodia, Laos, Thailand, Vietnam].

5. Dendropanax productus H. L. Li, Sargentia 2: 44. 1942.

长萼果树参 chang e shu shen

Shrubs or small trees, to 5 m tall, hermaphroditic. Petiole 0.5–7 cm; leaf blade elliptic, oblong-elliptic, or ovate-elliptic, 10–15.5 × 3.5–5.5 cm, papery, glandular punctate, 3-veined at base, secondary veins 6–10 pairs, visible, weakly raised on both surfaces, tertiary veins obscure, base cuneate, margin sparsely serrulate apically, apex long acuminate. Inflorescence terminal, umbel solitary, 1.5–2 cm in diam., 10–15-flowered; peduncle 0.8–2.5 cm, slender to stout; pedicels ca. 5 mm in flower, to 8 mm in fruit. Calyx a low rim, obscurely 5-toothed. Ovary 5-carpellate; styles 5, united 4/5 of their length. Fruit oblongo-void, ca. 7 × 3.5 mm, ribbed when dry; styles persistent, 1.5–1.8 mm, free arms spreading.

- Forests in valleys; 300–900 m. Guangdong (Liannan, Shixing, Xinfeng).

This species is used as an ornamental.


挤果树参 ji guo shu shen

Trees, to ca. 20 m tall, hermaphroditic. Petiole 0.5–6 cm; leaf blade ovate-elliptic (rarely 2- or 3-lobed), 6–14 × 2–6 cm, papery, glandular punctate, 3-veined at base, secondary veins 6–16 pairs, visible, weakly raised on both surfaces, tertiary veins obscure, rarely visible and impressed adaxially in dry material, base broadly cuneate to nearly rounded, margin entire or with irregularly scattered narrowly triangular teeth to 1 mm, apex long acuminate. Inflorescence terminal; umbels solitary, 2–3 cm in diam., 15–25-flowered; peduncle 5–10 mm, stout; pedicels 3–5 mm in flower, 3–10 mm in fruit. Ovary 5-carpellate; styles 5, united 1/2–2/3 their length. Fruit globose, 6–7 mm in diam., ribbed when dry; styles persistent, ca. 1 mm, free arms divergent apically. Fl. Aug–Sep, fr. Sep, Nov–Dec.

- Forests on mountain slopes. Guangdong, Guangxi, Hunan, Jiangxi.


保亭果树 baoding shu shen

Shrubs, to 3 m tall, hermaphroditic. Petiole 1–10 cm, stout. Leaf blade dimorphic, glandular punctate; unlobed blades elliptic to oblong or elliptic-lanceolate, rarely oblanceolate, 9–17(–23) × 3–6 cm, 3-veined at base, secondary veins 8–10 pairs, distinct; lobed blades (when present) obtrangular to lanceolate, deeply 2- or 3-cleft, papery, base cuneate to rounded, margin entire, minutely revolute, apex abruptly acute to acuminate. Inflorescence terminal; umbels solitary or 2–4, 2–3 cm in diam. in flower, to 4 cm in fruit, ca. 25-flowered; peduncle 1–1.5 cm; pedicels 3–4 mm in flower, to 1.2 cm in fruit. Calyx a low rim, with 5 persistent triangular teeth 0.5–0.8 mm. Ovary (3 or)4-carpellate; styles (3 or)4, ca. 1 mm in flower, united for ca. 4/5 their length. Fruit globose, 4–6 mm in diam., without ribs; styles persistent, ca. 2 mm, free arms spreading. Fl. Aug–Sep, fr. Dec.

- Dense forests in valleys or on mountain slopes; ca. 800 m. Hainan (Baoting).


广西果树 guangxi shu shen

Dendropanax crassifolius Y. F. Deng & H. Peng; D. parvifloroides C. N. Ho.

Shrubs, to 3 m tall, hermaphroditic. Petiole 1–6 cm; leaf blade dimorphic; unlobed blades ovate-elliptic to ovate-lanceolate, 5–14 × (2.5–)3–5 cm, glandular punctate, 3-veined at
base; secondary veins 6–9 pairs, weakly visible on both surfaces; lobed blades (when present) obtriangular, deeply 2- or 3-cleft, lobes narrowly triangular; papery, base cuneate, margin entire, often with few narrowly triangular teeth to ca. 1 mm, minutely revolute, apex acuminately. Inflorescence terminal; umbels 1–3, 10–20-flowered; peduncle 0.5–1.5 cm; pedicels 0.5–1.5 cm in flower, 0.5–2 cm in fruit. Calyx minutely 5-toothed. Ovary 2- or 3-carpellate; styles 2 or 3, united for ca. 4/5 their length. Fruit globose, 5–6 mm in diam.; styles persistent, 0.7–1.5 mm, free arms divergent. Fl. Sep, fr. Sep, Nov.

Shaded places in forests. Guangdong, Guangxi, SE Yunnan [Vietnam].


星柱树参 xing zhu shu shen

Shrubs, 1–3 m tall, hermaphroditic. Petiole 0.5–5 cm; leaf blade ovate-oblong, 7–18 × 2–5 cm, papery, glandular punctate, 3-veined at base, secondary veins 6–12 pairs, distinct on both surfaces, base broadly cuneate to obtuse or nearly rounded, margin entire, apex short acuminate. Inflorescence terminal; umbels solitary, 15–50-flowered; peduncle ca. 1.5 cm in fruit, pedicels ca. 8 mm in fruit. Ovary 3-carpellate; styles 3, united at base. Fruit globose, ca. 3.5 mm in diam.; styles persistent, ca. 1.5 mm, united at base, free arms diverging. Fl. and fr. times unknown.

● Evergreen broad-leaved forests or stream banks; 200–900 m. Guangdong, Guangxi, SE Yunnan.


双室树参 shuang shi shu shen

Shrubs, to ca. 2 m tall, hermaphroditic. Petiole 0.4–3 cm; leaf blade ovate-oblong to elliptic or narrowly obovate, 5–13 × 1.5–4.5 cm, papery, glandular punctate, 3-veined at base, secondary veins 6–8 pairs, visible on both surfaces, base cuneate, margin entire, rarely with few minute teeth, apex acuminately. Inflorescence terminal; umbels solitary, 15–50-flowered; peduncle 6–8 mm; pedicels 3–10 mm in flower and fruit. Calyx nearly entire or with 5 blunt teeth. Ovary 2(3)-carpellate; styles ca. 1 mm, divided nearly to base. Fruit globose, ca. 5 mm in diam., without ribs; styles persistent, ca. 1.5 mm, free arms reflexed. Fl. Aug–Sep, fr. Nov.

● Evergreen broad-leaved forests or stream banks; 200–900 m. Guangdong, Guangxi, SE Yunnan.


榕叶树参 rong ye shu shen


Shrubs or small trees, to 5 m tall. Petiole 1–3 cm, stout, 1.5–2 mm in diam.; leaf blade elliptic-oblong, 8–13 × 2.5–4 cm, leathery, not glandular punctate, 3-veined at base, secondary veins 8–12 pairs, prominently raised on both surfaces, tertiary veins distinct, base narrowly cuneate to attenuate, margin entire, minutely revolute, apex acuminate. Inflorescence terminal, umbel solitary, ca. 10-flowered; peduncle ca. 2.5 cm; pedicels 4–6 mm in flower and fruit. Calyx entire, slightly undulate. Ovary 5-carpellate; styles 5, completely united into a column. Fruit globose, ca. 5 mm in diam., slightly ribbed when dry; stylar column persistent, ca. 1 mm; stigmas sessile. Fl. unknown, fr. Dec.

Forests or scrub on mountain slopes; 1000–1500 m. SE Yunnan (Maguan) [N Vietnam].

This species is used medicinally.


海南树参 hai nan shu shen


Trees, to 18 m tall, apparently andromonoecious. Petiole 1–9(–12) cm, slender, to 1 mm in diam. Leaf blade elliptic, oblong-elliptic or less often ovate-elliptic, sometimes elliptic-lanceolate, (4–)6–11 × 2–5 cm, papery, not glandular punctate, secondary veins ca. 8 pairs, almost obscure, tertiary veins obscure, base cuneate (rarely nearly rounded), margin entire, apex long acuminate to curred, curved downward, sometimes becoming falcate and folded in pressed material. Inflorescence terminal, a panicle of (2 or)3–5 umbels, mostly with bisexual flowers, usually some lateral umbels with male flowers; primary axis 1–4(–5.5) cm; peduncle 1.5–2 cm; pedicels (2–)3–6 mm in flour, 4–12 mm in fruit. Calyx nearly entire. Ovary 5-carpellate; styles completely united into a column. Fruit globose, 7–9 mm in diam., ribbed when dry; stylar column persistent, 1–1.5 mm; stigmas sessile. Fl. Jun-Jul, fr. Oct.

Forests in valleys or on mountain slopes; 700–1500 m. Guizhou, Guangdong, Guangxi, Hainan, S Hunan, SE Yunnan [N Vietnam].


三裂树参 san lie shu shen

Acer trifidum Thunberg in Murray, Syst. Veg., ed. 14, 912. 1784; Dendropanax japonicus (Junghun) Seemann; Gilibertia japonica (Junghun) Harms; G. trifida (Thunberg) Makino; Hedera japonica Junghun; Textoria japonica (Junghun) Miquel; T. trifida (Thunberg) Nakai ex Honda.

Trees, small, hermaphroditic or usually andromonoecious. Petiole (1.5–)3–13 cm; leaf blade often dimorphic, glandular punctate; unlobed blades ovate or elliptic to broadly ovate or suborbiculate, (4.5–)7–12 × (2–)3.5–12(–17) cm, 3-veined at base, secondary veins raised on both surfaces; lobed blades (when present) shallowly 2- or 3-lobed on mature plants (more deeply 3–5-lobed on juveniles); leathery, base obtuse or broadly cuneate, margin entire, sometimes minutely revolute, apex acute to acuminate. Inflorescence terminal; umbels solitary or more often (2 or)3–5, usually 1 with bisexual flowers and others with later blooming male flowers; umbels 1.5–2 cm in diam., 10–20–
flowered; peduncle 3–6 cm; pedicels 0.6–1.5 cm in flower and fruit. Calyx with 5 small teeth. Ovary 5-carpellate; styles 5, completely united, 0.75–1 mm. Fruit broadly ellipsoid to sub-globose or slightly obloid, 4–8 × 3.5–7 mm, ribbed when dry; stylar column persistent, 1–1.5 mm; stigmas sessile.

Forests and thickets. Taiwan (Lan Yu) [Japan].


Shrubs or trees, evergreen, probably hermaphrodite, unarmed. Leaves simple, margin entire to serrate or dentate; stipule united with petiole, obsolete. Inflorescence a panicle of umbels, terminal and axillary; pedicels not jointed below ovary. Calyx rim minutely crenate when young, later glabrescent; primary axis 5–15 cm; pedicels 0.5–2 cm, stout; pedicels 0.5–2 cm in flower and fruit. Calyx entire or minutely 4- or 5-toothed. Ovary 4- or 5-carpellate; styles 4 or 5, completely united, ca. 1 mm. Fruit ovoid to globose, 4–8 mm, without ribs when dry; stylar column 1–1.5 mm, stigmas sessile. Fl. Jul–Sep, fr. Sep–Dec.

- Forests in valleys, along streams and on mountain slopes. Fujian, Guangdong, Guangxi, S Hainan, Hunan, S Jiangxi, SE Yunnan.


1. Merrilliopanax membranifolius (W. W. Smith) C. B. Shang

Trees, to 10 m tall. Branches slender, glabrous or sparsely brown stellate pubescent. Petiole 3–15 cm, slender; leaf blade oblong-elliptic or lanceolate-elliptic, 8–20(–30) × 3–8(–10) cm, membranous or leathery, glabrous, 4-veined from base, secondary veins 3–6 pairs, base acute to broadly cuneate or rounded, margin serrulate-dentate, apex caudate-acuminate. Inflorescence terminal and sometimes lateral, sparsely stellate pubescent when young, later glabrescent; primary axis 5–15 cm; pedicels 0.6–1.3 cm. Fruit ellipsoid-globose, 4–5 mm in diam. Fl. Jun–Jul, fr. Aug–Oct.

Mixed forests on mountain slopes; 1600–3300 m. NW and W Yunnan [NE India, N Myanmar].

This species is used medicinally and as an ornamental.

**西藏常春木**


Trees, small. Branches, leaves, and inflorescences densely yellowish or ferruginous stellate, later glabrescent. Petiole 4–20 cm; leaf blade broadly ovate, suborbicular, or cordiform, 10–22 × 8–23 cm, membranous to papery, entire or 3-lobed, with 5–7 distinct, palmate veins, base cordate, margin irregularly serrate, spinulate apically, apex acuminate, rarely ciliate. Inflorescence terminal, densely yellowish or ferruginous stellate, later glabrescent; pedicels 3–7 mm. Fruit globose, 3–4 mm in diam. Fl. Jul.–Aug.

**Mixed forests; 1500–3100 m. S Xizang [Blutan, NE India, Nepal].**

This species is used medicinally and as an ornamental.

### 12. **BRASSAIOPSIS**


**羅伞属**

*Pseudobrassaiopsis* R. N. Banerjee.

Trees or shrubs, hermaphroditic or andromonoecious, armed or occasionally unarmed. Leaves simple and unlobed, palmately lobed, or palmately compound, margins entire or more often serrate; stipules united with petiole at base. Inflorescence a terminal panicle or raceme of umbels; bracts small or absent, often caducous. Pedicels not articulate below ovary. Calyx 5-toothed. Petals 5, valvate. Ovary 2–5-carpellate; styles as many as carpels, united into a persistent column. Fruit a drupe, globose to ellipsoid or oblong, sometimes slightly compressed laterally. Seeds 1 (by abortion) or 2–5, endosperm ruminate or uniform.

About 45 species: S and SE Asia; 24 species (ten endemic) in S and SW China.

*“Euaraliopsis”* (Hutchinson, Gen. Fl. Pl. 2: 80. 1967) belongs here but was not validly published because the apparent replaced synonym, “Araliopsis” (Kurz, Rep. Veg. Andaman Isl. 39. 1870, not *Araliopsis* Engler, 1896), was itself not validly published because Kurz merely cited “Ardiopsis andamanica Kurz” in the synonymy of *Brassaiopsis palmata* (Roxburgh) Kurz. Consequently the following species names, which belong with the corresponding *Brassaiopsis* names below, are not validly published either: “E. ciliata,” “E. dumicola,” “E. fassioides” (together with “E. palmipes”), “E. ferruginea” (together with “E. emeiensis”), “E. ficifolia,” “E. hainla,” “E. hispida,” and “E. moumingensis.”

1a. Leaves palmately compound.

2a. Inflorescence with 2–5 umbels, primary axis less than 15 cm.

3a. Leaflets abaxially glaucous; ovary 3- or 4-carpellate

3b. Leaflets abaxially not glaucous; ovary 2-carpellate.

4a. Leaflets (3–)5–9; inflorescence axillary.

5a. Leaflets narrowly lanceolate, 13–24 × 1.5–2.5 cm, sessile or subsessile (petiolules to 0.5 cm), adaxially glabrous, secondary veins 12–21 pairs

5b. Leaflets ovate or elliptic-lanceolate, 8–20 × 3–8 cm, petiolules 0.5–3.5 cm, adaxially sparsely shortly setose, secondary veins 6–8 pairs

6b. Inflorescence with more than 10 umbels, primary axis at least 30 cm.

6a. Petiolules stout, 2.5–5 mm in diam., leaflets densely brown to ferruginous stellate pubescent; inflorescence with short bristles

6b. Petiolules slender, 1–1.5 mm in diam.; leaflets and inflorescence ferruginous tomentose or glabrescent.

7a. Ovary (3 or)4- or 5-carpellate; inflorescence with persistent spiny bracts

7b. Ovary 2-carpellate; inflorescence lacking spiny bracts.

8a. Petiolules very short, to 1 cm; leaflets narrowly elliptic to linear

8b. Petiolules (1.5–)2–10 cm; leaflets oblong to ovate-lanceolate or broadly linear.

9a. Leaflets 15–35 × 6–15 cm, margin entire or sparsely serrulate; fruit didymo-globose or globose

9b. Leaflets 10–15 × 3.5–4.5 cm, margin sharply serrate; fruit ellipsoid-globose

10a. Umbels generally 2–5(or 6) per inflorescence; branches generally without prickles; shrubs.

11a. Inflorescence axillary; leaves deeply 3- or 4-lobed, lobes elliptic

11b. Inflorescence terminal (rarely also lateral); leaves entire or 2- or 3(–5)-lobed.

12a. Leaves entire or 2- or 3(–5)-lobed, blade and lobes ovate-lanceolate to narrowly lanceolate; inflorescence ferruginous pubescent (eventually glabrescent)

12b. Leaves 3(–5)-lobed, inflorescence glabrous or bristly, lacking ferruginous pubescence.

13a. Leaf base deeply cordate, margin weakly serrate, teeth triangular, 4–11 mm apart; inflorescence glabrous

13b. Leaf base narrowly cordate or cuneate at base; inflorescence densely ferruginous pubescent.
13b. Leaf base truncate to very shallowly cordate, margin ciliate-serrulate, teeth linear, curved, spine-tipped, 2–4 mm apart; inflorescence bristly ................................................................. 13. B. triloba

10b. Umbels (5 or)6 to many per inflorescence; branches prickly; trees or shrubs.

14a. Inflorescence unarmed.

15a. Leaves not divided or lobed, oblong-elliptic or elliptic ................................................................. 7. B. simplicifolia

15b. Leaves divided, 3–11-lobed.

16a. Leaves 3–7-lobed, bases of lobes only slightly narrowed if at all.

17a. Ovary 5-carpellate, leaves (5–7)-lobed; mature fruit 10.5–14 mm high ............... 10. B. grushvitzkyi

17b. Ovary 2-carpellate, leaves 3–5-lobed; mature fruit 7–9 mm high ......................... 11. B. stellata

16b. Leaves 7–11-lobed, bases of lobes distinctly narrowed (sometimes forming a pseudo-petiolule).

18a. Pedicels slender, (8–)10–30 mm, bracts subtending flowers 1–2 mm, caducous; inflorescence terminal or pseudo-lateral ................................................................. 8. B. fatsioides

18b. Pedicels stout, 5–8(–12) mm, bracts subtending flowers 4–10 mm, stiff, persistent; inflorescence pseudo-lateral, borne on woody stems below leaves ......................... 9. B. dumincola

14b. Inflorescence prickly (sometimes sparsely so).

19a. Lobes of leaves divided less than 1/2 way to base, broadly ovate-triangular to nearly rounded, at most 1.5 × as long as distance between sinuses ......................................................... 1. B. hainla

19b. Lobes divided at least 1/2 way to base, elliptic to ovate or obovate (often narrowly so), 2–3 × as long as distance between sinuses.

20a. Inflorescence lateral, borne above leaves.

21a. Leaves 3–5-lobed, margins irregularly serrate, larger teeth 2–2.5 mm; primary axis of inflorescence not more than 35 cm ................................................................. 5. B. tibetana

21b. Leaves (5–)7–9(–11)-lobed, margins ciliate-serrulate, teeth 1–1.5 mm; primary axis of inflorescence (20–)30–150 cm ................................................................. 6. B. ciliata

20b. Inflorescence terminal, borne below leaves.

22a. Leaves 5–7-lobed ................................................................................................... 2. B. pseudoficifolia

22b. Leaves (5–)7–11-lobed.

23a. Petiole sparsely prickly or unarmed; leaves papery to membranous, margins serrulate-ciliate, with 4–6 teeth per cm ................................................................. 3. B. bodinieri

23b. Petiole densely prickly, leaves subleathery, margins spinose-serrulate, with 2–3 teeth per cm ................................................................. 4. B. hispida


浅裂罗伞 qian lie luo san


Trees, to 15 m tall, hermaphroditic. Branches with conic prickles. Leaves simple, 5–7-lobed; petiole 15–25 cm, tomentose at first, glabrescent; stipules small or absent, ovate to ovate-deltoid; blade 17–35 cm wide, papery, lobes divided less than 1/2 way to base, broadly ovate-triangular to nearly rounded, abaxially stellate pubescent, glabrescent, adaxially tomentose, veins conspicuous on both surfaces, base broadly convex, margin sharply dentate, apex acuminate. Inflorescence terminal, apparently erect to ascending, densely tomentose, glabrescent after anthesis, with scattered prickles; primary axis to ca. 30 cm; secondary axes to 10(–13) cm; peduncles 1.5–2 cm; umbels 2.5–3.5 cm in diam.; pedicels 0.8–1 cm. Ovary 2-carpellate. Fruit subglobose, ca. 8 mm in diam.; styles persistent, ca. 2.5 mm. Fl. Dec–Mar, fr. Jun–Aug. 2n = 48.

Forests in valleys; 1300–2100 m. Yunnan [Bhutan, NE India, Myanmar, Nepal, Thailand].


假榕叶罗伞 jia rong ye luo san

Trees, to 15(–25) m tall, apparently hermaphroditic. Branches prickly. Leaves simple, 5–7-lobed; petiole (11–)15–45 cm, unarmured (rarely with few small prickles just below blade); blade nearly orbicular, 14–26 × 18–37 cm, papery; lobes divided 2/3–3/4 way to base, elliptic to ovate, both surfaces glabrous, veins visible on both surfaces, slightly raised, base cordeate, often deeply so, margin serrate, apex acute to acuminate. Inflorescence terminal, erect, ferruginous to light brown stellate pubescent, with few small prickles; primary axis ca. 15 cm, slender; peduncles 7–9, 3.5–6 cm; umbels 2.5–4 cm in diam.; pedicels 5–6 mm just before flowering, expanding in fruit to 1.1–1.5 cm. Ovary 2-carpellate. Fruit globose, 8–10 mm in diam.; styles persistent, 2–3 mm.

- Moist shaded forests; 1700–2500 m. SW Yunnan.


直序罗伞 zhi xu luo san


Shrubs to small trees, to 5 m tall, andromonoecious or her-
maphroditic. Branches prickly. Leaves simple, (7–)9–11-lobed; petiole (18–)25–40 cm wide, with small scattered prickles; blade (18–)25–40 cm wide, papery to membranous; lobes elliptic to narrowly obovate, (7–)9–22 cm, adaxially glabrous or with sparse short setae, base truncate to cordate, margin serrulate, teeth narrowly triangular, apex acuminate. Inflorescence terminal, erect, with dense prickles to 6 mm and setose trichomes to 2.5 mm; primary axis 10–25 cm; secondary axes (5–)8–25 cm, with a terminal umbel of bisexual flowers and usually 1–3(0 or 4) umbels of male flowers; peduncles if male umbels 1–2 cm; umbels 0.8–1 cm in diam.; pedicels (8–)10–18 mm (shorter in male flowers), finely brown to ferruginous stellate, glabrescent. Ovary 2-carpellate. Fruit ellipsoid, 9–12 × 5–8 mm; styles persistent, 1.5–2.5 mm. Fl. Oct–Dec, fr. Jan–Feb.


粗毛罗伞 cu mao luo san

_Pseudobrassaiopsis hispida_ (Seemann) R. N. Banerjee.

Shrubs, to 5 m tall, andromonoecious. Branches with dense, compressed prickles 3–6 mm, ferrugineous stellate. Leaves simple, 9–11-lobed; petiole 20–40 cm, densely prickly; blade broadly orbicular, 20–36 cm wide, leathery, lobes divided 3/4–4/5 way to base, oblong-lanceolate to narrowly ovate, base deeply cordate, margin spinose-serrulate, teeth ca. 2 mm, with a stiff, sharp tip, apex acuminate. Inflorescence terminal, probably erect, with dense prickles and brown stellate indumentum; primary axis ca. 30 cm; secondary axes 15–20 cm, with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; peduncles 5–7 cm; umbels 3–5 cm in diam.; pedicels 1–1.5 cm, densely ferrugineous stellate. Ovary 2-carpellate. Fruit globose to obloid, slightly compressed, 6–7 × 8–9 mm; styles persistent, ca. 2 mm; pedicels in fruit ca. 7 cm. Fl. Jun–Dec, fr. Jan–Feb.

Dense forests in valleys; 1400–2300 m. Xizang, Yunnan [Bhutan, India (Darjeeling), Sikkim], Myanmar, Vietnam.


西藏罗伞 xi zang luo san

_Brassaiopsis zhangmuensis_ Y. R. Li.

Trees, to ca. 10 m tall, hermaphroditic. Branches with conic prickles 2–3 mm, densely ferrugineous tomentose when young. Leaves simple, deeply 3–5-lobed; petiole 35–45 cm, unarmmed, tomentose at first, later glabrescent; blade broadly orbicular, 15–26 × 18–30 cm, papery; lobes divided to 4/5 way to base, basal lobes oblique-oblong, sometimes slightly shallow, median and terminal lobes obovate-oblong to obovate-lanceolate, both surfaces densely yellowish gray stellate pubescent when young, later glabrescent, abaxially sparsely stellate pubescent on veins, adaxially glabrous, base slightly narrowed, margin sparsely irregularly serrate, apex acuminate. Inflorescence lateral, apparently ascending (perhaps pendent in fruit), sparsely stellate, with scattered prickles; primary axis to 35 cm; secondary axes to 8 cm; peduncles 1–2.5 cm; umbels 0.8–1.6 cm in diam.; pedicels 2–5 mm. Ovary 2-carpellate. Fruit globose, ca. 3 mm in diam.; styles persistent, ca. 2 mm; pedicels in fruit 4–6 mm, pubescent. Fr. Oct.

● Forests; ca. 2200 m. S Xizang (Nyalam).


纤齿罗伞 xian chi luo san

Shrubs, to ca. 4 m tall, hermaphroditic. Branches densely tomentose, with scattered compressed prickles. Leaves simple, (5–)7–9(–11)-lobed; petiole 20–35 cm, unarmmed or rarely with few prickles distally; blade ca. 30 cm wide, papery to membranous; lobes divided to 4/5 way to base, lobes elliptic to oblong, 15–20 cm, both surfaces sparsely bristly on veins, base densely cordate, margin ciliate-serrulate, teeth not sharply tipped, apex acuminate. Inflorescence lateral, pendant, with sparse to dense, short prickles; primary axis (20–)30–150 cm; secondary axes to ca. 18 cm; peduncles 2–5 cm; umbels 3–5 cm in diam.; pedicels 1–1.5 cm, densely ferrugineous stellate. Ovary 2-carpellate. Fruit black, ovoid-globose, sometimes slightly compressed, 7–8 mm in diam.; styles persistent, ca. 1.5 mm; pedicels in fruit to 3 cm. Fl. Aug–Nov, fr. Feb–Mar.

Forests in valleys, sunny mountain slopes; 300–2200 m. SW Guizhou, Sichuan, SE Yunnan [N Vietnam].


单叶罗伞 dan ye luo san

Trees, to ca. 10 m tall, andromonoecious. Branches with conic prickles and densely ferrugineous tomentose at first, later glabrescent. Leaves simple, unlobed; petiole 2.5–8 cm; stipules united at base of petiole, apically free, slightly prominent; blade oblong-elliptic to elliptic or narrowly ovate, 9–30 × 4.5–10 cm, papery, abaxially sparsely pubescent on veins, adaxially at first densely ferrugineous tomentose, later glabrous, veins slightly raised on both surfaces, base broadly cuneate to nearly rounded, margin sharply serrate, apex acute to acuminate. Inflorescence terminal, erect, prickly, at first densely ferrugineous tomentose, then subglabrous; primary axis 15–30 cm; secondary axes to 13 cm, with a terminal umbel of bisexual flowers and 1 or 2(0 or 3) lateral umbels of male flowers; peduncles 2–7 cm; umbels ca. 4 cm in diam.; pedicels 1.2–2 cm. Ovary 2-carpellate. Fruit (immature) subglobose, ca. 4 mm in diam.

Evergreen broad-leaved forests or coniferous broad-leaved mixed forests; 800–3000 m. S Xizang [India].


盘叶罗伞 pan ye luo san

_Brassaiopsis palmpes_ Forrest ex W. W. Smith; _B. trevesioides_ W. W. Smith.

Trees, to ca. 10 m tall, andromonoecious. Branches prickly. Leaves simple, 7–11-lobed; petiole 10–40 cm, subglabrous or sparsely puberulous near apex, unarmmed; blade orbicular, to
ca. 30 cm wide; membranous or papery; lobes oblong-obovate, oblong-lanceolate, or obovate-oblong, divided 2/3–3/4 way to base, distinctly narrowed basally, sometimes forming winged pseudo-petiolules, abaxially slightly ferruginous tomentose or glabrous, adaxially sparsely bristly or subglabrous, base cordate, often deeply so, margin serrulate, apex shortly acuminata. Inflorescence probably terminal, erect, unarmored, stellate pubescent, glabrescent; primary axis to 30 cm; secondary axes to 15 cm, with a terminal umbel of bisexual flowers and usually 1–3 umbels of male flowers; peduncles 2–3 cm; umbels ca. 4 cm in diam.; pedicels (8–)10–30 mm (shorter in male flowers), slender, glabrous or slightly puberulous, subtended by caducous bracteoles 1–2 mm. Ovary 2-carpellate. Fruit blue-black, globose, 5–6 mm in diam.; styles persistent, ca. 2 mm; pedicels in fruit ca. 1.5 cm. Fl. Apr–Jul, fr. Jan–Feb, Jun–Sep. 2n = 48*.

- Forests in valleys or on mountain slopes; 500–2700 m. Guizhou, Sichuan, Zizang, Yunnan.


翅叶罗伞  
*Brassaiopsis dumicola* N. S. Bui.

Shrubs or trees, to 9 m tall, hermaphroditic. Leaves simple, deeply ca. 9-lobed; petiole 15–26 cm, ferruginous tomentose; stipules united with petiole, apices free, elongate, ca. 1 cm; blade orbicular, ca. 30 cm wide, papery; lobes narrowly oblong, distinctly narrowed basally, sometimes forming winged pseudo-petiolules, 15–26 cm, divided 3/4–4/5 way to base, at first white or ferruginous stellate pubescent, later glabrescent, veins prominent adaxially, base deeply cordate, margin spinose-serrulate, apex long acuminata. Inflorescence lateral, pendent, unarmed, tomentose or subglabrous; primary axis 35(–40) cm; secondary axes to 15 cm; pedicels 5–12 mm, stout, subtended by stiff persistent bracteoles 4–10 mm. Ovary 2- or 3-carpellate. Fruit not seen. Fl. June–Sep.

- Forests in valleys. SW Yunnan [Vietnam].


南星毛罗伞  

Trees, small, 5–10 m tall, probably hermaphroditic. Leaves simple, (5–)7-lobed; petiole 25–50 cm, densely stellate pubescent; stipules united with petiole, apices free, ca. 1 cm; blade orbicular, 30–40 cm wide, thickly papery to subleathery; lobes ovate, 10–20 × 5–9.5 cm, divided ca. 3/4 way to base, both surfaces densely stellate-pubescent, veins prominent on both surfaces, base strongly cordate, margin entire, apex acuminate. Inflorescence terminal, descending to pendent, unarmed, densely stellate pubescent; primary axis 25–35 cm; secondary axes 8–10 cm; umbels 4–6 cm in diam.; pedicels 1.5–2.5 cm, subtended by bracteoles 1.2–1.4 cm. Ovary 5-carpellate. Fruit ovoid to nearly globose, 10.5–14 × 7.5–8.5(–9) mm; styles persistent, ca. 2 mm. Fl. Oct–Dec.

- Forests on limestone. SW Yunnan [N Vietnam].


星毛罗伞  

树木  

Trees, to 7 m tall. Branches scattered shortly prickly, densely yellowish gray stellate tomentose. Leaves simple, deeply 3–5-lobed; petiole 10–40 cm, densely stellate tomentose; blade 19–25 × 16–26 cm, papery; lobes ovate, abaxially densely yellowish gray stellate tomentose, adaxially sparsely stellate pubescent, base cordate, margin entire or slightly undulate, apex acuminate. Inflorescence terminal, erect, 27–40 cm, densely yellowish gray stellate tomentose; peduncles ca. 4 cm; umbels 3–3.5 cm in diam. Ovary 2-carpellate. Fruit globose, 7–9 mm in diam., stellate pubescent when young, then glabrescent; styles persistent, 1–2 mm; pedicels in fruit 1–2 cm, densely stellate pubescent. Fl. Sep–Oct, fr. Nov.

- Mixed forests and roadsides; 600–1500 m. S Guangxi, Yunnan [Vietnam].


榕叶罗伞  
*Brassaiopsis ficifolia* Dunn, J. Linn. Soc., Bot. 35: 500. 1903.

Trees or climbers, to 10 m tall, hermaphroditic. Branches with scattered prickles. Leaves simple, (2 or)3-lobed; petiole 10–17 cm, unarmed or with few prickles; blade 14–35(–40) × 17–25 cm, papery; lobes ovate, usually narrowed basally, divided 1/2–3/4 to base, abaxially sparsely stellate pubescent or glabrous, adaxially glabrous, base deeply cordate, margin serrate, teeth blunt, triangular, 4–11 mm apart, apex acuminate. Inflorescence terminal, erect, sparsely stellate, unarmed; primary axis to 8 cm; peduncles 2–4.5 cm; umbels (1 or)2–4(or 5), 2.5–3.5 cm in diam.; pedicels 5–12 mm. Ovary 2-carpellate. Fruit globose, slightly compressed, 4–8 mm in diam.; styles persistent, ca. 2 mm. Fl. Aug–Oct, fr. Oct–Jan, Apr.

- Forests or scrub on mountain slopes; 600–2500 m. Yunnan [Vietnam].


三裂罗伞  

 Shrubs, to ca. 1.5 m tall, hermaphroditic. Branches unarmed. Leaves simple, 3(–5)-lobed; petiole 6–15 cm, glabrous or with few bristles apically; blade broadly ovate, 12–18 × 14–18 cm, papery; lobes obovate-oblong, narrowly basally, divided ca. 3/4 way to base, abaxially glabrous or with scattered bristles, adaxially glabrous, base truncate to very shallowly cordate, margin ciliate-serrulate, teeth linear, curved, spine-tipped, 2–4 mm apart, apex abruptly acuminate. Inflorescence terminal, erect, with small bristles; primary axis ca. 6 cm; peduncles to ca. 4 cm; umbels 2–4, 3–4 cm in diam.; pedicels 9–12 mm, to ca. 1.5 cm in fruit, slender. Ovary 2-carpellate. Flowers yellowish white. Fruit ovoid-globose, ca. 7 mm in diam.; styles persistent, ca. 3 mm. Fr. Dec.

- Forest margins or roadsides; ca. 600 m. Guangxi (Baise, Lingluo), SE Yunnan (Funing) [N Vietnam].

锈毛罗伞 xiu mao luo san

*Brassaiopsis ferruginea* H. L. Li, Sargentia 2: 47. 1942.

Shrubs, to ca. 2 m tall, hermaphroditic. Branches slender, unarmed, ferruginous stellate tomentose when young, glabrescent. Leaves simple, entire or 2- or 3-lobed; petiole 4–13 cm, slender; blade papery, those of unlobed leaves lanceolate to oblong-lanceolate or ovate-lanceolate, 7–20 × 1.5–5 cm; lobed leaves rhombic to obdeltate, 15–27 × 10–15 cm, lobes narrowly lanceolate to narrowly elliptic, only slightly narrowed basally, divided nearly to base, both surfaces densely ferruginous stellate pubescent when young, later abaxially scattered stellate pubescent, and adaxially later glabrous, base broadly cuneate to nearly rounded, margin serrulate, apex acuminate. Inflorescence terminal, reflexed (pendent in fruit), unarmed, ferruginous stellate pubescent when young, later glabrescent; primary axis 3–5–8 cm; peduncles 2–7 cm; umbels 2–4 cm, ca. 2 cm in diam. at anthesis, to 4 cm in fruit. Ovary 2 or 3-carpellate. Fruit black, globose, 6–8 mm in diam. Fl. Sep–Oct, Mar, fr. (immature) May.

- Forests on mountain slopes; 1700–2400 m. SW Yunnan.


茂名罗伞 mao ming luo san

Shrubs, to ca. 1 m tall, hermaphroditic. Branches unarmed or with few prickles. Leaves simple, 3- or 4-lobed; petiole 6–10 cm, ferruginous stellate when young; blade 10–16 × 10–20 cm, papery; lobes elliptic or oblong-elliptic, 8–13 cm, deeply divided, abaxially ferruginous stellate pubescent, base broadly cuneate or slightly cordate, margin serrate, apex acuminate. Inflorescence axillary, erect, unarmed; primary axis 10–30 cm; pedicels 2–3 cm; umbels 2–4, ca. 2 cm in diam. at anthesis, to 4 cm in fruit. Ovary 2 (or 3)-carpellate. Fruit black, globose, 6–8 mm in diam. Fl. Mar–Aug, Nov, fr. May–Aug.

- Forests on mountain slopes; 1200–1700 m. Fujian, Guangdong, Guangxi, Guizhou, Sichuan, Yunnan.


尖苞罗伞 jian bao luo san

*Heptapleurum productum* Dunn, J. Linn. Soc., Bot. 35: 499. 1903; *Brassaiopsis acuminata* H. L. Li var. *multiflora* G. Hoo; *B. lepidota* K. M. Feng & Y. R. Li; *B. pentalocula* G. Hoo; *B. spinibacteatae* G. Hoo; *Schefflera producta* (Dunn) R. Viguier.

Trees, to ca. 8 m tall, hermaphroditic. Branches with short, conic prickles. Leaves palmately compound, with (3 or) 4–7 (or 8) leaflets; petiole 10–35 cm; petiolules 1–3 cm, slender, 1–1.5 mm in diam.; leaflets oblong, rarely ovate-lanceolate, 10–16 × 3.5–8 cm, leathery, both surfaces glabrous, abaxially densely yellowish scaly when young, then with scattered scales, base cuneate or rounded, margin sharply serrate on apical 1/3–1/2, rarely entire, minutely revolute, apex acuminate or long acuminate. Inflorescence terminal, pendent, unarmed, densely ferruginous or yellowish tomentose when young, soon glabrescent; primary axis (17–)20–33 cm; bracts persistent, deltoid-ovate, 5–7 mm, spinescent; peduncles numerous, 1–3 cm, umbels ca. 2 cm in diam.; pedicels 3–7 mm, expanding to 1 cm in fruit, ferruginous or yellowish tomentose. Ovary 3–5-carpellate. Fruit globose, 7–8 mm in diam., slightly ribbed in dry specimens; styles persistent, ca. 2 mm. Fl. Aug–Nov, Feb, fr. Feb–Mar.

- Scrub or dense forests on limestone mountains; below 1600 m. Guangxi, Guizhou, Yunnan [N Vietnam].


镇康罗伞 zhen kang luo san

Trees, to ca. 15 m tall, hermaphroditic. Branches prickly. Leaves palmately compound; petiole 30–60 cm, stout; petiolules 1.5–4.5–15 cm, 2.5–5 mm in diam., both surfaces densely ferruginous hispid when young; leaflets 5–7, ovate-oblong or oblong-lanceolate, 15–30(–50) × 6–17(–28) cm, leathery, both surfaces densely ferruginous stellate tomentose or bristly when young, later abaxially sparsely stellate pubescent, densely so on veins, later adaxially subglabrous, secondary veins 10–18 pairs, distinct on both surfaces, base broadly cuneate to truncate or rounded, margin entire or sparsely aristate-serrulate, apex acuminate or long acuminate. Inflorescence terminal, pendent, densely ferruginous bristly; primary axis to 70 cm, very stout; peduncles numerous, 1–6 cm at anthesis, to 9 cm in fruit; umbels 3.5–5 cm in diam. in fruit; pedicels 1–2.5 cm. Ovary 2(–4)-carpellate. Fruit not seen. Fl. Sep–Oct, Mar, fr. (immature) May.

- Forests on mountain slopes; 1000–2000 m. SW Yunnan.


瑞丽罗伞 rui li luo san

*Brassaiopsis karmalaica* Philipson; *B. suberipetala* K. M. Feng & Y. R. Li.

Trees, to ca. 8 m tall, hermaphroditic. Branches stout, prickly. Leaves palmately compound, with 6 or 7 leaflets; petiole (6–)10–20 cm; petiolules very short, less than 1 cm, slender, 1–1.5 mm in diam.; both surfaces ferruginous tomentose, soon glabrescent; leaflets oblong to slightly obovate, 10–24 × 2–8 cm, leathery, ferruginous tomentose when young, soon glabrescent, secondary veins 12–15 pairs, distinct abaxially, base narrowly cuneate to attenuate, margin apically serrate, apex acuminate. Inflorescence lateral, probably ascending, unarmed, ferruginous tomentose or glabrous; primary axis to 30–30 cm, stout; peduncles 2.5–6 cm; umbels 2.5–4.5 cm in diam.; pedicels 1–2 cm; bracts cymbiform, ca. 1.5 cm, persistent. Ovary 2-carpellate. Fruit globose, ca. 7 mm in diam.; styles persistent, ca. 2 mm. Fl. Jun–Jul, Dec, fr. Dec. 2n = 48*.

Trees, to ca. 20 m tall, hermaphroditic. Branches prickly, ferruginous red tomentose when young. Leaves palmately compound, with 5–9 leaflets; petiole 30–50 cm, slender; petiolules 2–9 cm, slender, 1–1.5 mm in diam.; leaflets oblong, ovate-elliptic, or broadly lanceolate, 15–35 × 6–15 cm, papery or subpapery, ferruginous stellate tomentose when young, soon glabrescent, secondary veins 7–10 (–12) pairs, base cuneate or broadly cuneate to rounded, margin entire or sparsely serrate, apex acuminate. Inflorescence terminal, pendent, unarmed, ferruginous-red tomentose when young; primary axis more than 30 cm; peduncles 2–5 cm; umbels 2–3 cm in diam.; pedicels 0.8–1.5 cm at anthesis, 1–3.5 cm in fruit. Ovary 2-carpellate. Fruit globose or compressed-globose to didymo-globose, 7–10 × 0.8–1.5 cm at anthesis, 1–3.5 cm in fruit. Ovary 2-carpellate.


Shrubs, to ca. 4 m tall. Branches prickly. Leaves palmately compound, with 5–7 leaflets; petiole 9–20 cm; petiolules 1.5–3 cm; leaflets oblong, 10–15 × 3.5–4.5 cm, subleathery, both surfaces glabrous, secondary veins 8–12 pairs, base rounded, margin sharply serrate, apex long acuminate. Inflorescence terminal, paniculate, unarmed, ferruginous tomentose, glabrescent; primary axis ca. 35 cm; peduncles ca. 15, 2–6 cm; pedicels to 6–8 mm in fruit. Ovary 2-carpellate. Fruit ellipsoid-globose, ca. 9 × 4 mm (immature); styles persistent, ca. 2 mm.


Shrubs, to ca. 3 m tall. Branches prickly, glabrous. Leaves palmately compound, with 6–8 leaflets; petiole 8–32 cm; petiolules 1.5–6.5 cm; leaflets oblong-lanceolate, 12–20 × 3–6 cm, lateral ones smaller, asymmetric, papery, both surfaces glabrous, abaxially glaucous, secondary veins 10–15 pairs, base rounded to broadly cuneate, margin entire to sparsely serrate apically, apex long acuminate. Inflorescence terminal, axes white stellate tomentose; primary axis ca. 7 cm, of 4 or 5 umbels; peduncles 1–2 cm; umbels 1.5–2.5 cm in diam.; pedicels 3–4 mm. Ovary 3- or 4-carpellate. Fruit oblong-globose (immature), ca. 3.5 mm in diam.; styles persistent, ca. 2 mm. Fl. Dec, fr. Jun.


Shrubs, to 2 m tall, hermaphroditic. Branches with short conic prickles. Leaves palmately compound, with 3(–5) leaflets; petiole 8–13 cm; leaflets very short or leaflets subsessile; leaflets obovate-oblong, 10–18 × 4–8 cm, lateral ones asymmetric, papery, both surfaces glabrous, base attenuate to cuneate, margin setose-serrulate, apex acute or acuminate. Inflorescence terminal, erect, unarmed, bristly and ferruginous tomentose; primary axis ca. 7 cm, of 4 or 5 umbels; peduncles 1–4 cm; umbels 1.5–2.5 cm in diam. at anthesis; pedicels 1–1.5 cm, slender. Ovary 2-carpellate; styles columnar, ca. 2 mm. Fruit not seen. Fl. Oct.


Shrubs, to ca. 2 m tall. Branches prickly, densely ferruginous tomentose when young, glabrescent. Leaves palmately compound, with (4 or) 5 leaflets; petiole 9–25 cm, slender, ferruginous tomentose when young; leaflets sessile or petiolules less than 1 cm; leaflets narrowly lanceolate, 13–24 × 1.5–2.5 cm, lateral ones usually slightly asymmetric, papery, abaxially sparsely ferruginous stellate tomentose, adaxially glabrous, secondary veins 12–21 pairs, base cuneate, margin serrulate, apex long acuminate. Inflorescence pseudo-lateral, a raceme of 3 or 4 umbels, ferruginous tomentose and sparsely prickly; primary axis ca. 8 cm; peduncles 1.5–2 cm; umbels ca. 2 cm in diam.; pedicels ca. 7 mm, ferruginous tomentose when young. Ovary 2-carpellate. Fruit unknown. Fl. Nov.

- Forest margins on mountain slopes; below 1000 m. Guangdong, Guangxi, Yunnan, Vietnam.


Shrubs, to 4 m tall, hermaphroditic. Branches prickly, glabrous. Leaves palmately compound, with 5–9 leaflets; petiole
6–16 cm, slender; petiolules 0.1–1.5 cm, sparsely pubescent; leaflets ovate to elliptic-lanceolate, 8–20 × 3–8 cm, membranous, abaxially glabrous or sparsely pubescent, adaxially with scattered short bristles, secondary veins 6–8 pairs, base narrowly cuneate to nearly acuminate, margin serrulate, apex long acuminated, rarely acute. Inflorescence axillary, unbranched, densely furfuraceous tomentose; primary axis to 10 cm, with 4 or 5(–10) umbels; peduncles 2–4(–5) cm; umbels 1.5–2.5 cm in diam.; pedicels filiform, 5–9 mm, expanding in fruit to 1.5 cm. Ovary 2-carpellate. Fruit subglobose, ca. 5 mm in diam.; styles persistent, ca. 2.5 mm. Fl. Aug.–Oct, fr. Oct.–Dec.

Evergreen forests or scrub; 1000–1600 m. Guangxi, Guizhou, Yunnan [N. Vietnam].


萸叶五加属  yu ye wu jia shu

Acanthopanax sect. Evodiopanax Harms; Evodiopanax (Harms) Nakai.

Trees or shrubs, evergreen, hermaphroditic or andromonoecious, unarmed. Leaves palmately compound, borne on long and short shoots; leaflets (1–)3–5, sessile or subseeise, margin entire to serrulate, usually with ciliate-hispid teeth, abaxially with domatia in axils of secondary veins; stipules obsolete. Inflorescence terminal on short shoots, a simple or compound umbel, or a panicle of umbels, solitary or several together. Pedicels not articulate below ovary. Calyx rim entire or 4 or 5-toothed. Petals 4(–5), valvate. Stamen 4(–5). Ovary 2–4(–5)-carpellate; styles 2–4(–5), free or united for most of length. Fruit a drupe, ellipsoid to globose or slightly oblanceolate, sometimes compressed laterally. Seeds 2–4(–5); endosperm smooth.

Four species: Bhutan, S. China, India, Indonesia (Sumatra), Japan, Laos, Malaysia, N. Myanmar, Nepal, N Vietnam; two species in China.

1a. Fruit 4–5.5(–6) × 4.5–6(–6.5) mm, calyx teeth caducous (occasionally minute and persistent); leaflets broadly elliptic to ovate, (1.8–)2–3 × as long as wide (occasionally narrowly elliptic), margins entire to minutely serrulate, often with distinct ciliate-hispid teeth ................................................................. 1. G. ciliata

1b. Fruit 7–9 × 7–11 mm; calyx teeth 4 or 5, triangular, usually persistent; leaflets narrowly elliptic to slightly ovate, 3–4.5 × as long as wide, margins distinctly serrulate, with a small ciliate-hispid appendage

0.2–0.5 mm ...................................................................................................................................................... 2. G. pseudoevodifolia


萸叶五加  yu ye wu jia

Shrubs or trees, to 12 m tall. Petiole 5–10 cm; leaflets (1–)3–5, elliptic to ovate, occasionally narrowly elliptic, 6–18(–21) × (2.5–)3–7(–8) cm, (1.8–)2–3 × as long as wide, papyry to subleathery, secondary veins 5–14 pairs, distinctly raised abaxially, domatia obscure abaxially, base cuneate, margin subentire or minutely serrulate, often with distinct ciliate-hispid teeth to 1.5(–)2 mm, apex acuminated to acuminate. Inflorescence a compound umbel or panicle of umbels; primary axis (4–)5–18 cm; pedicels 0.8–1.5 cm. Calyx a narrow rim, sometimes with 4 or 5 minute teeth. Ovary 2–5-carpellate; styles 2–5, united 1/4–3/4 of length, recurved apically. Fruit globose or oblong-globose, occasionally slightly compressed laterally, 4–5.5(–6) cm × 4.5–6(–6.5) mm, often somewhat ribbed when dry; styles persistent, ca. 2 mm. Fl. May–Sep, fr. Jun–Aug.

Forests in humid valleys or on slopes; (800–)1400–3700 m. Anhui, Fujian, Guangdong, Guoxi, Guizhou, Hubei, Hunan, Jiangxi, S. Shaanxi, Sichuan, Zixang, Yunnan, Zhejiang [Bhutan, India, Myanmar, Nepal, N Vietnam].

This species is used medicinally and for timber.

1a. Flowers and fruit with (2 or)3 or 4(–5) style branches; largest leaflets (8–)10–20 cm, with 6–8 pairs of secondary veins; fruit with a disk (1–)1.5–3 mm in diam. ...... 1a. var. ciliata

1b. Flowers and fruit with (2 or 3) style branches; largest leaflets 5–9(–14) cm, with 5–8 pairs of secondary veins; fruit with a disk (0.8–1) 1.5–1.7 mm in diam.

a. Gamblea ciliata var. ciliata

W茱萸五加  wu zhu yu ye jia


Largest leaflets (8–)10–20 cm, with 6–8–14 pairs of secondary veins. Flowers and fruit with 2(–3) or 4(–5) style branches. Fruit with a disk (1–)1.5–3 mm in diam. 2n = 48.

Forests in humid valleys or on slopes; 1400–3500 m. Sichuan, Zizang, Yunnan [Bhutan, India, Myanmar, Nepal].

b. Gamblea ciliata var. evodiifolia (Franchet) C. B. Shang et al., Adansonia, sér. 3, 22: 51. 2000 ["evodiaefolia"].

吴茱萸五加  wu zhu yu ye jia

Acanthopanax evodiifolius Franchet, J. Bot. (Morot) 10: 306. 1896; A. ehongensis Z. T. Zhu; Evodiopanax evodiifolius (Franchet) Nakai.

Largest leaflets 5–9(–14) cm, with 5–8 pairs of secondary veins. Flowers and fruit with 2(–3) style branches. Fruit with a disk (0.8–1) 1.5–1.7 mm in diam.
Feng, H. Ohashi; (3 or)4 or 5, narrowly elliptic to slightly so, 11–17.5 × 3–5 cm, *evodiifolius* or *folius* 大果萸叶五加


While the Asian species will have to be transferred to one or more other genera.

Several recent phylogenetic studies have shown that *Schefflera* is clearly polyphyletic (Lowry et al., S. Afr. J. Bot. 70: 382–392. 2004; Plunkett et al., Pl. Syst. Evol. 245: 1–39. 2004; Plunkett et al., Ann. Missouri Bot. Gard. 92: 202–224. 2005) and that the Asian species belong to a single, well-supported, morphologically coherent clade. The name *Schefflera* will ultimately have to be restricted to a small group of species from the SW Pacific while the Asian species will have to be transferred to one or more other genera.


人参木属 ren shen mu shu


Trees, deciduous, hermaphroditic, unarmed. Leaves palmately compound, borne on both long and short shoots (latter not always preserved on specimens); leaflets 3–7–(9), margin minutely serrulate, abaxially with small, pubescent secretory structures in axils of secondary veins; stipules small, united within petiole. Inflorescence a terminal corymbose panicle of umbels; primary axis short; bracts caducous. Pedicels not articulate below ovary. Calyx of 4 or 5 persistent, triangular teeth. Ovary 2-carpellate; styles 2, free nearly to base or united to 1/4 of length, recurved apically. Fruit broadly ellipsoid to globose or slightly obloid, occasionally slightly compressed laterally, 7–9 cm × 7–10 mm; styles persistent, ca. 1 mm, Fr. Jul.–Oct.

Mixed forests on mountain slopes; 1400–1800 m. SW Guangxi, SE Yunnan [Lao, N Vietnam].

Two species: China, Japan; one species (endemic) in China.


人参木 ren shen mu

*Heptapleurum fargesii* Franchet, J. Bot. (Morot) 10: 306. 1896; *Acanthopanax fargesii* (Franchet) C. B. Shang; *A. sinensis* G. Hoo; *Eleutherococcus fargesii* (Franchet) H. Ohashi.

Trees deciduous, to ca. 25 m tall. Trunk to 60 cm d.b.h.; branches, leaves, and inflorescences densely shortly ferruginous stellate tomentose when young, glabrescent. Petiole 13–50 cm; leaves palmately compound; petiolules to 1.5 cm; leaflets 5–7(–9), elliptic to oblong or lanceolate, 4.5–13 × 1.6–6 cm, papery or subleathery, both surfaces glabrous, except shortly pubescent below axils of secondary veins (secretory structures), base broadly cuneate, margin minutely serrulate, apex acute to acuminate. Inflorescence terminal, a corymbose panicle, 20–30 cm wide, main axis to ca. 4 cm (sometimes very short), secondary axes 10–20 cm; bracts caducous; peduncles 1–2 cm; umbels 8–20-flowered, 7–10 mm in diam.; pedicels 3–6 mm. Calyx rim 5-toothed. Ovary 2-loculed; styles 2, united into a column. Fruit 4–6 mm in diam.; persistent styles 1.5–2 mm. Fl. Sep, fr. Nov.–Dec.

- Mixed forests on mountain slopes; 1000–2000 m. Chongqing (Wanxian), SW Hunan (Xinning).

This species is used for timber.


鹤掌柴属 e zhang chai shu

Agalma Miquel; *Heptapleurum* Gaertnert, *Sciadophyllum* P. Browne.

Shrubs or trees, sometimes climbers or epiphytes, evergreen, hermaphroditic or andromonoecious, unarmed. Leaves palmately compound, rarely unifoliolate (not in China), margins entire to serrate; stipules united within petiole. Inflorescence a terminal or pseudo-lateral panicle or compound raceme; flowers arranged in umbels, heads, or racemes; bracts pubescent, deciduous or persistent. Pedicels not articulate below ovary. Calyx rim entire or 5-toothed. Petals 5–11, valvate. Stamens 5–11. Ovary (4 or)5–11-carpellate; styles partly or completely united into a column or stigmas sessile. Fruit a drupe, globose or ovoid. Seeds (4 or)5–11, laterally compressed; endosperm uniform or slightly ruminate.

Nearly 1100 species: widely distributed in tropics and subtropics of both hemispheres; 35 species (14 endemic) in SW and SE China.

Several recent phylogenetic studies have shown that *Schefflera* is clearly polyphyletic (Lowry et al., S. Afr. J. Bot. 70: 382–392. 2004; Plunkett et al., Pl. Syst. Evol. 245: 1–39. 2004; Plunkett et al., Ann. Missouri Bot. Gard. 92: 202–224. 2005) and that the Asian species belong to a single, well-supported, morphologically coherent clade. The name *Schefflera* will ultimately have to be restricted to a small group of species from the SW Pacific while the Asian species will have to be transferred to one or more other genera.
1a. Inflorescence a panicle of racemes or spikes; styles united into a column.
2a. Flowers borne in spikes, sessile; leaflets abaxially densely stellate tomentose, tertiary veins indistinct .......................... 1. *S. delavayi*
2b. Flowers borne in racemes, with a distinct pedicel, abaxially glabrous or sparsely stellate pubescent, tertiary veins distinct.

3a. Leaflets 12–16, rarely 7–9.
4a. Leaflets abaxially stellate pubescent (sometimes very sparsely so on veins), some smaller than others, but never bractlike; lateral veins 8–15 pairs ................................................................................................................. 2. *S. chapana*
4b. Leaflets abaxially glabrous, some highly reduced and bractlike, lateral veins 5–8 pairs.
5a. Leaves adaxially with tertiary veins impressed in dry material ................................................................. 3. *S. metcalfiana*
5b. Leaves adaxially with tertiary veins raised in dry material .............................................................................. 4. *S. hainanensis*

3b. Leaflets 3–9.
6a. Leaflets abaxially moderately to densely stellate pubescent, margin sparsely serrate, tertiary venation adaxially impressed in dry material, abaxially raised ........................................................................... 5. *S. wardii*
6b. Leaflets abaxially glabrous, margin entire, tertiary venation adaxially not impressed in dry material.

7a. Petiolules to 1 (–1.3) cm .............................................................................................................................. 6. *S. shweliensis*
7b. Petiolules longer than 1.5 cm.

8a. Leaflets adaxially shiny, lateral veins 16–22 pairs, diverging from midvein at more than 45° angle .... 7. *S. multinervia*
8b. Leaflets adaxially not shiny, lateral veins 8–12 (–16) pairs, diverging from midvein at less than 45° angle.
9a. Petals and stamens 5; ovary 5-carpellate ........................................................................................................ 8. *S. hoi*
9b. Petals and stamens 6; ovary 6-carpellate ...................................................................................................... 9. *S. taiwaniana*

1b. Inflorescence a panicle of umbels or heads; styles distinct or none.

10a. Styles none, stigmas sessile.

11a. Inflorescence with stalked, branched trichomes; largest leaflet more than 11.5 cm wide (rarely only ca. 8 cm wide) ........................................................................................................................................ 10. *S. petelotii*
11b. Inflorescence with stellate trichomes but lacking stalked, branched trichomes; largest leaflet no more than 9 cm wide (rarely to 16 cm in *S. elliptica*).

12a. Flowers in heads, sessile or subsessile ........................................................................................................ 11. *S. pauciflora*
12b. Flowers and fruit distinctly pedicellate.

13a. Fruit red-brown glandular punctate; disk rounded to flat.
14a. Ovary 5-carpellate, stigmas 5; calyx obscure, reduced to a line; disk rounded to nearly flat; leaflets subleathery ............................................................................................................................................. 12. *S. leucantha*
14b. Ovary (7 or)8–9-carpellate, stigmas 7–9; calyx evident, forming a distinct rim; disk flat to slightly depressed; leaflets membranous to papery ........................................................................................................... 13. *S. zhuana*

13b. Fruit not glandular punctate; disk usually broadly conic to pyramidal.
15a. Ovary 5-loculed ......................................................................................................................................... 14. *S. elliptica*
15b. Ovary 6–9 (or 10)-loculed.
16a. Leaflets 7–9, blade of largest less than 12 cm, secondary veins 4–6 pairs; ovary 6-loculed ............... 15. *S. arboricola*
16b. Leaflets 5–7, blade of largest 17–35 cm, secondary veins 12–16 pairs; ovary 6–9 (or 10)-loculed; inflorescence pseudo-lateral, borne below leaves ................................................................. 16. *S. khasiana*

10b. Styles distinct, or united into a column.

17a. Styles free at least apically, free arms radiating to recurved (appressed at anthesis, but not fused).
18a. Flowers long pedicellate, arranged in umbels ...................................................................................... 17. *S. hypoleucoides*
18b. Flowers sessile or subsessile (pedicel to 3 mm, but usually obscure), arranged in compact heads.
19a. Leaflets elliptic to slightly ovate, 8–23 × 4–12 cm, base broadly cuneate or rounded; calyx margin entire or subentire .............................................................................................. 18. *S. chinensis*
19b. Leaflets lanceolate to elliptic-lanceolate, 12–26 × 3–6 cm, base cuneate; calyx margin with 5 sharp teeth ........................................................................................................................................... 19. *S. guizhouensis*

17b. Styles completely united into a column.

20a. Inflorescence pseudo-lateral, borne below leaves (at least in fruit).
21a. Leaflets 7–9 (–12), leathery, petiole 7–10 mm in diam. at base, with a prominent ligule 15–20 mm; ovary 6-carpellate .................................................................................................... 34. *S. lociana*
21b. Leaflets 5–7, membranous, petiole 2–4 mm in diam. at base, with a small ligule 2–5 mm; ovary 6–10-carpellate ........................................................................................................ 35. *S. brevipedicellata*

20b. Inflorescence terminal.

22a. Leaflets abaxially stellate pubescent, at least when young (sometimes minute and scattered).
23a. Petals stellate pubescent; terminal leaflet often more than 8 cm wide (sometimes narrower in *S. hypoleuca*).

24a. Leaf apically acute; inflorescence stellate pubescent or glabrous, inflorescence with primary axis 15–30(–40) cm .......................................................... 20. *S. hypoleuca*

24b. Leaf apically acuminate; inflorescence densely ferruginous-brown stellate pubescent (glabrescent), primary axis to ca. 75 cm ........................................... 21. *S. macrophylla*

23b. Petals glabrous; terminal leaflets less than 8 cm wide.

25a. Secondary and tertiary veins adaxially impressed in dry material.

26a. Leaflets oblong or elliptic to slightly obovate, abaxially densely yellow-brown stellate pubescent; inflorescence rounded, primary axis to 15(–25) cm ................................................... 22. *S. fengii*

26b. Leaflets narrowly obovate to oblanceolate, abaxially gray stellate pubescent or sparsely pubescent; inflorescence tall, primary axis 25–40 cm ................................................... 23. *S. rhodosendrifolia*

25b. Secondary and tertiary veins adaxially not impressed in dry material.

27a. Styles stout, shorter than 1.5 mm in fruit; ovary 5–9(or 10)-carpellate; inflorescence axes light to rusty brown pubescent ............................................. 24. *S. heptaphylla*

27b. Styles slender, longer than 1.5 mm in fruit; ovary 5(or 6)-carpellate; inflorescence axes not light to rusty brown pubescent.

28a. Inflorescence compact, primary axis 5–15(–17) cm, gray or brown tomentose; margins of leaflets often sparsely to moderately serrulate ........................................... 25. *S. bodinieri*

28b. Inflorescence elongate, primary axis at least 25 cm, densely yellow-brown or ferruginous pubescent; margins of leaflets usually entire, sometimes sparsely serrulate.

29a. Leaflets 7, elliptic, abaxially ferruginous stellate pubescent .............................................. 26. *S. marlipoensis*

29b. Leaflets (5–)9–13, ovate to ovate-lanceolate or oblong-lanceolate, abaxially minutely stellate pubescent ..................................................... 27. *S. minutistellata*

30a. Leaflets less than 2 cm wide, linear-oblong, abaxially ferruginous pubescent .................. 28. *S. parvifoliolata*

30b. Leaflets more than 2.5 cm wide.

31a. Leaflets obovate-oblong, broadest in distal half.

32a. Leaves with secondary and tertiary veins adaxially impressed in dry material .......... 29. *S. glabrescens*

32b. Leaves with secondary and tertiary veins adaxially not impressed in dry material ........ 30. *S. napoensis*

31b. Leaflets ovate-lanceolate or elliptic, broadest at middle or in basal half.

33a. Leaflets leathery, elliptic, secondary and tertiary veins adaxially impressed in dry material; inflorescence a corymbose panicle, glabrous ....................................................... 31. *S. pes-avis*

33b. Leaflets papery to subleathery, secondary and tertiary veins adaxially not impressed in dry material; inflorescence paniculate, ± pubescent.

34a. Ovary 5–9(or 10)-carpellate, styles shorter than 1.5 mm ..................................................... 24. *S. heptaphylla*

34b. Ovary 5-carpellate, styles (1–)1.5–3.5 mm.

35a. Inflorescence compact, primary axis 5–15(–17) cm, gray or brown tomentose ............. 25. *S. bodinieri*

35b. Inflorescence elongate, primary axis at least 20(–)30 cm.

36a. Petals stellate pubescent .................................................. 20. *S. hypoleuca*

36b. Petals glabrous.

37a. Leaflets oblong-lanceolate, 20–25 × 5.5–6.5 cm, apex acuminate .................................. 32. *S. elata*

37b. Leaflets oblong-elliptic or elliptic, 11–15 × 5–9 cm, apex abruptly acute ...................... 33. *S. insignis*


穗序鹅掌柴 sui xu e zhang chai

*Heptaleumur delavayi* Franchet, J. Bot. (Morot) 10: 307. 1896; *Agalma delavayi* (Franchet) Hutchinson; *A. discolor* (Merrill) Hutchinson; *H. dumianum* H. Léveillé; *Schefflera delavayi* var. ochrascens Handel-Mazzetti; *S. discolor* Merrill; *S. megaloboitya* Harms.

Trees, to 8 m tall, hermaphroditic. Petiole (10–)15–60 cm; petiolules 1–15 cm; leaflets (4 or)5, elliptic to ovate-oblong or ovate-lanceolate, 8–30(–35) × 3–12 cm, papery to leathery, abaxially densely gray-white or yellow-brown stellate tomentose, adaxially glabrous, secondary veins 7–13 pairs, tertiary veins indistinct, base acute to obtuse or rounded, margin entire to sparsely and irregularly dentate (incised or usually pinnately lobed in young plants), apex abruptly acute to acuminate. Inflorescence terminal, a panicle of spikes, gray-white tomentose; primary axis 25–80 cm; secondary axes to ca. 30 cm. Flowers sessile. Calyx tomentose, distinctly 5-toothed. Ovary 5-carpellate; styles united into a column. Fruit globose, 3.5–4 mm in diam., 5-ribbed when dry; styles ca. 2 mm; pedicels to ca. 1 mm. Fl. Oct–Nov, fr. Jan. 2n = 48.

Evergreen broad-leaved forests, wet forest margins, and as scattered trees in valleys or on stream banks; 600–3000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan [Vietnam].

This species is used medicinally.

多叶鹅掌柴 *yi ye e zhang chai*

*Agalma diversifoliolata* (H. L. Li) Hutchinson; *Schefflera diversifoliolata* H. L. Li; *S. pingpienensis* C. J. Tseng & G. Hoo.

Trees, to 10 m tall, hermaphroditic. Petiole 20–50 cm; petiolules 0.5–7(–11) cm; leaflets (7–)12–14, elliptic to ovate-lanceolate, 8–18(–21) × 1.8–8.5 cm (lateral leaflets sometimes smaller), papery, abaxially glabrous or sparsely stellate pubescent, adaxially glabrous, secondary veins 8–15 pairs, raised abaxially, tertiary veins distinct, base acute to rounded, margin entire, apex acuminate. Inflorescence a terminal panicle of racemes, sparsely stellate pubescent or subglabrous; primary axis to ca. 40 cm; secondary axes to ca. 30 cm, racemes borne in apical half or nearly to base; pedicels 1.5–3 mm. Calyx sparsely stellate pubescent, 5-toothed. Ovary 5-carpellate; styles united into a column. Fruit globose, ca. 4 mm in diam., 5-ribbed when dry; styles to ca. 1.5 mm. Fl. Sep–Dec, fr. Nov–Dec, May.

Forests in valleys; 1600–2200 m. SE Yunnan [Vietnam].


多叶鹅掌柴 *duo ye e zhang chai*

Shrubs or trees, to 6 m tall, probably hermaphroditic. Petiole 13–22 cm; petiolules 1–4.5 cm; leaflets 12–16, ovate to ovate-elliptic or oblong-elliptic, 3–9 × 1.5–4.5 cm, papery or subleathery, both surfaces glabrous, secondary veins 5–8 pairs, more conspicuous abaxially, tertiary veins impressed adaxially in dry material, base cuneate to broadly cuneate, margin entire or with 2–4 sparse serrations, apex acuminate. Inflorescence a terminal panicle of racemes, yellowish gray stellate pubescent; primary axis to ca. 50 cm; secondary axes to ca. 60 cm; pedicels 4–6 mm. Calyx pubescent, 5-toothed. Ovary 5-carpellate; styles united into a column. Fl. Oct–Nov, fr. Dec.

Scattered in forests, mountain slopes; ca. 1400 m. SW Guangxi [Vietnam].


海南鹅掌柴 *hai nan e zhang chai*

*Agalma hainanense* (Merrill & Chun) Hutchinson.

Trees, to 10 m tall, hermaphroditic. Petiole 10–20(–30) cm; petiolules 1.5–7 cm; leaflets 12–16, ovate to elliptic-ovate, 5–12 × 2–6 cm, some much smaller and resembling bracts, papery, glabrous, slightly glaucous abaxially, secondary veins 7–10 pairs, distinct on both surfaces, tertiary veins more distinct abaxially, slightly distinct adaxially, not impressed in dry material, base broadly cuneate, margin entire, slightly revolute, apex acuminate. Inflorescence a terminal panicle of racemes, densely stellate tomentose, glabrescent; primary axis to 40 cm; secondary axes to ca. 15 cm; pedicels 2–2.5 mm. Calyx glabrous or stellate pubescent, 5-toothed. Ovary 5-carpellate; styles united into a column. Fruit globose, 2.5–4 mm in diam., slightly 5-ribbed when dry; styles 1–2 mm; pedicels ca. 3 mm. Fl. Sep–Oct, fr. Oct–Nov.

Evergreen broad-leaved forests; 1300–1600 m. Hainan [Vietnam].


西藏鹅掌柴 *xi zang e zhang chai*

*Agalma wardii* (Marquand & Airy Shaw) Hutchinson.

Shrubs or small trees, to 8 m tall, hermaphroditic. Petiole (10–)20–50 cm; petiolules 3–17 cm; leaflets 3–5, broadly ovate to nearly oblong, (12–)20–35 × 10–18 cm, leathery, abaxially densely yellowish or light brown stellate pubescent, adaxially glabrous, secondary veins 9–14 pairs, tertiary veins raised abaxially, distinctly impressed adaxially in dry material, base rounded, margin remotely to moderately serrate, especially toward apex, apex acute. Inflorescence a terminal panicle of racemes, yellow-white tomentose, sometimes glabrescent; primary axis 15–65 cm; secondary axes to ca. 25 cm; pedicels ca. 3 mm, to ca. 5 mm in fruit, densely stellate pubescent. Calyx densely stellate pubescent, 5-toothed. Ovary 5-carpellate; styles united into a column. Fruit globose, 3.5–4 mm in diam.; pedicels to ca. 5 mm. Fl. Dec.

● Dense forests; 2000–2500 m. SE Xizang, NW Yunnan.


瑞丽鹅掌柴 *ru li e zhang chai*

*Agalma shweliense* (W. W. Smith) Hutchinson.

Trees, to 20 m tall, probably andromonoecious. Petiole (8–)12–24 cm; petiolules to (1–)1.5 cm; leaflets 5–9(–11), narrowly obovate to oblanceolate, 6–15 × 1.5–3.5(–4) cm, leathery, both surfaces glabrous, secondary veins 7–9 pairs, nearly obscure to conspicuous on both surfaces, tertiary veins indistinct, base narrowly acute, margin entire, apex long acuminate. Inflorescence a terminal panicle of racemes, gray-white stellate pubescent, glabrescent; primary axis 15–40 cm; secondary axes often present only in basal portion of primary axis, to 13 cm; pedicels 2–4 mm. Calyx glabrous to sparsely stellate pubescent, 5-toothed. Ovary 5(or 6)-carpellate; styles united into a column. Fruit blue-black when mature, globose, 4–5 mm in diam., 5-ribbed when dry; style 1.5–2.5 mm. Fl. Aug–Nov, fr. Oct–Jan. $2n = 48^*$. 

● Evergreen broad-leaved forests, forest margins, dry mountain slopes; 1900–2800 m. W Yunnan.

This species is used for timber.


多脉鹅掌柴 *duo mai e zhang chai*

*Agalma multinervia* (H. L. Li) Hutchinson.

Trees, to 8 m tall, probably andromonoecious. Petiole 8–22 cm; petiolules 2–5 cm; leaflets 5, narrowly obovate to narrowly elliptic, 15–30 × 2–5 cm, papery to subleathery, both surfaces glabrous, secondary veins 16–30 pairs, conspicuous on both surfaces, base cuneate to acute, margin entire, apex acuminate. Inflorescence a terminal panicle of racemes, ferruginous or sparsely stellate pubescent, sometimes glabrescent; primary axis to 25 cm or more; secondary axes ca. 20 cm, ferruginous.
Calyx sparsely stellate to glabrous, inconspicuously 5-toothed. Ovary 5-carpellate; styles united into a column. Fruit unknown. Fl. Sep.

- Forests; ca. 3200 m. Yunnan.

This species closely resembles Schefflera hoi and may prove to be the same taxon.


台湾鹅掌柴 tai wan e zhang chai

Acalma taiwanianum Nakai, J. Arnold Arbor. 5: 19. 1924.

Trees, to 2–4 m tall, andromonoecious. Petiole 10–25 cm; petiolules 1–5 cm; leaflets (3–)5–9, narrowly obovate to oblong, 5–22(–30) × 1.5–5(–10) cm, papery to subleathery, both surfaces glabrous, secondary veins 8–22 pairs, conspicuous on both surfaces, base rounded to acute, margin entire, apex acuminate, rarely acute. Inflorescence a terminal panicle of racemes, ferruginous or sparsely stellate pubescent, sometimes glabrescent; primary axis 15–50 cm; secondary axes 10(–15) cm; pedicels 2.5–7 mm. Calyx rim 1.5–2.5 mm, sometimes scarious, sparsely stellate to glabrous, inconspicuously 5-toothed. Ovary 5-carpellate; styles united into a column. Fruit globose, 4–5 mm in diam., slightly 5-ribbed when dry; styles persistent, ca. 1.5 mm. Fl. Aug–Sep, fr. Aug–Nov.

Dense forests in valleys; 1400–3300 m. SW Sichuan, SE Xizang, Yunnan [Vietnam].


白花鹅掌柴 bai hua e zhang chai

Schefflera chinpingensis C. J. Tseng & G. Hoo.

Shrubs, to 5 m tall, probably hermaphroditic. Petiole to 40 cm; petiolules 1.5–7 cm; leaflets 5 or 6, ovate or ovate-oblong, 11.5–35 × 8–15(–20) cm, leathery, axially sparsely stellate pubescent, axially glabrous, secondary veins 10–13 pairs, tertiary veins raised on both surfaces, base rounded, margin entire, minutely revolute, apex shortly caudate-acuminate, rarely obtuse. Inflorescence a terminal panicle of umbels, with dense, scattered, branched trichomes; primary axis 4–10 cm; secondary axes to 15 cm; pedicels 1.5–4 cm. Calyx glabrous to sparsely stellate pubescent, inconspicuously toothed. Ovary 5-carpellate; styles united into a very short column; disk slightly convex. Fruit unknown. Fl. Apr.

Forests or roadsides on mountain slopes; 300–500 m. SE Yunnan [Vietnam].


球序鹅掌柴 qiu xu e zhang chai

Schefflera glomerulata H. L. Li.

Trees to ca. 9 m tall, sometimes scendent shrubs to 15 m tall, hermaphroditic. Petiole 10–20 cm; petiolules 2–5 cm; leaflets (3–)5–7, ovate to elliptic or obovate, 8–20 × 3–9 cm, leathery, both surfaces glabrous, secondary veins ca. 8 pairs, tertiary veins prominent, raised on both surfaces, base cuneate, margin entire, apex shortly acuminate. Inflorescence a terminal panicle of heads, sharply stellate tomentose, globose; primary axis 5–35 cm; secondary axes to (15–)20 cm; flowers sessile or sub-sessile, 5–8 per head. Calyx ca. 1 mm, subentire. Ovary 5-carpellate; stigmae 5, sessile, inconspicuous. Fruit ovoid to subglobose or obovoid, 3–5 mm in diam., 5-ribbed when dry; disk conic-pentagonal. Fl. May, Jun, Sep, fr. Jun, Jul, Sep–Dec.

Evergreen broad-leaved forests in valleys or on mountain slopes; 200–1700 m. Guangdong, Guangxi, Guizhou, SE Yunnan [India, Laos, Vietnam].

This species is used medicinally.


Shrubs, to 5 m tall, probably hermaphroditic. Petiole to 40 cm; petiolules 1.5–7 cm; leaflets 5 or 6, ovate or ovate-oblong, 11.5–35 × 8–15(–20) cm, leathery, axially sparsely stellate pubescent, axially glabrous, secondary veins 10–13 pairs, tertiary veins raised on both surfaces, base rounded, margin entire, minutely revolute, apex shortly caudate-acuminate, rarely obtuse. Inflorescence a terminal panicle of umbels, with dense, scattered, branched trichomes; primary axis 4–10 cm; secondary axes 10(–15) cm; pedicels 2.5–7 mm. Calyx obscure. Ovary 5-carpellate; stigmas 5, sessile. Fruit globose to ovoid, rarely obovoid, 4–5 mm in diam., 5-ribbed when dry, generally conspicuously orange-red glandular punctate; disk slightly rounded to nearly flat. Fl. Jan–Feb, fr. Mar–Aug.
Evergreen broad-leaved forests in valleys; 1200–1700 m. SW Guangxi, NW Yunnan [Thailand, N Vietnam].


光华鹅掌柴  guang hua e zhang chai

Trees, to ca. 20 m tall, hermaphroditic. Petiole 3.5–18.5 cm; petiolules (0.5–)1.5–8 cm, slender; leaflets (4 or)5, elliptic to slightly ovate, 5.5–20.5 × 2.6–7.5 cm, both surfaces glabrous, secondary veins 6–8 pairs, tertiary veins raised on both surfaces, prominent, base rounded to broadly acute, margin entire, revolute, minutely thickened, apex acuminate. Inflorescence a terminal (rarely lateral) panicle of umbels, densely light gray stellate tomentose; primary axis 1–6 cm; secondary axes 5.5–8 cm; pedicels 1–2 mm. Calyx a narrow rim. Ovary (7 or)8 or 9-carpellate; primary axis 1–6 cm; secondary axes 5.5–8 cm; pedicels less than 1.5–3 mm. Calyx subentire. Ovary 5- or 6-carpellate; stigmas sessile, 5 or 6. Fruit oblong-ovoid, ca. 5 mm, 5- or 6-ribbed when dry; pedicels 3–6 mm. Fl. Jul–Oct, fr. Aug–Dec. 2n = 24*.

- Along stream banks, wet forests, sometimes epiphytic; below 900 m. Hainan, Taiwan.

This species is used medicinally and as an ornamental.


扁盘鹅掌柴 bian pan e zhang chai


Trees, to ca. 10 m tall, hermaphroditic. Petiole 15–34 cm; petiolules 2.5–6 cm; leaflets 5–(7–9), oblong to elliptic, ovate or obovate, often narrowly so, 11–22 × 4–8 cm, leathery, both surfaces glabrous, secondary veins 12–16 pairs, inconspicuous abaxially, raised adaxially, base obtuse to rounded, margin entire, minutely thickened, revolute, apex shortly acuminate, often abruptly so. Inflorescence a pseudo-lateral panicle of umbels, gray white stellate pubescent, glabrescent; primary axis ca. 10 cm; secondary axes to ca. 30 cm; peduncles 0.5–1 cm; pedicels ca. 2.5 mm. Calyx subentire. Ovary 6–9(or 10)-carpellate; stigmas broadly concic, sessile. Fruit globose, ca. 4 mm in diam., slightly ribbed when dry. Fl. Apr–May, Nov, fr. May–Jul.

Evergreen forests; 800–1700 m. SE Xizang (Mêdog), SW Yunnan [India, N Vietnam].


离柱鹅掌柴 li zhu e zhang chai

Schefflera hypoleucoides var. tomentosa Grushvitzky & Skvortsova; S. hypoleucoides var. trunciata C. B. Shang; S. trevesioides Harms; S. trevesioides var. tomentosa (Grushvitzky & Skvortsova) Frodin.

Trees, to 15 m tall, andromonoecious. Petiole 35–45 cm; petiolules 3–9 cm; leaflets oblong to elliptic or slightly ovate, (7–)11–26 × 5–13 cm, leathery, abaxially ferruginous or brownish stellate pubescent, later subglabrous, adaxially glabrous, secondary veins 10–16 pairs, raised abaxially, tertiary veins raised abaxially, base obtuse or subrounded, margin entire or with few sparse teeth apically, apex acuminate. Inflorescence a terminal panicle of umbels, densely ferruginous to light brown stellate, glabrescent; primary axis 15–35 cm; secondary axes to 20 cm, shorter apically, with a terminal umbel of bisexual flowers and several to many lateral umbels of male flowers; peduncles of male flowers to 2 cm; pedicels 7–15 mm (shorter in male flowers). Calyx subentire. Ovary 5-carpellate; styles 5, united only
at base, erect in flower. Fruit globose, ca. 7 mm in diam.; styles persistent, recurved. Fl. Dec–Jan, Mar, fr. Apr.

Dense forests; 1300–2400 m. NW Guangxi, SE Yunnan [Thailand, Vietnam].


Trees, to 10 m tall, probably andromonoecious. Petiole (10–)15–45 cm; petiolules 1–7 cm; leaflets 5–7, oblong-elliptic or elliptic to slightly ovate or obovate, (6–)10–24 × 3–12 cm, leathery, abaxially sparsely stellate pubescent or subglabrous, adaxially glabrous and sometimes shiny, secondary veins 8–12 pairs, raised, tertiary veins conspicuous abaxially, impressed adaxially in dry material, base broadly cuneate to nearly rounded, margin entire, sometimes serrate with 3–8 teeth apically, apices rounded to obtuse to acuminate. Inflorescence a terminal panicle of heads, densely woolly stellate pubescent, glabrescent; primary axis 20–35 cm; secondary axes to 15 cm, shorter apically, with a terminal head of bisexual flowers and 1 to few lateral heads of male flowers (caducous but leaving scars); flowers sessile or subsessile, heads globose. Calyx densely stellate pubescent, glabrescent. Ovary 5-carpellate; styles 5, ca. 1 mm, united at base, free apically. Fruit globose to obovoid or obloid, ca. 5 × 4.5–6 mm, 5-ribbed when dry; styles persistent, united for 1–1.5 mm, free arms recurved; pedicels to 1.5(–2) mm. Fl. Oct–Nov, fr. Feb–Mar.

- Evergreen broad-leaved forests, wet places in valleys, stream banks; 1500–2700 m. Jiangxi, SW Yunnan.


Trees, probably andromonoecious. Petiole ca. 35 cm; petiolules 0.8–3 cm; leaflets 7 or 8, lanceolate or elliptic-lanceolate, 12–26 × 3–6 cm, papery, abaxially gray-yellow stellate pubescent, adaxially glabrous, secondary veins 12–14 pairs, raised abaxially, base acute, margin entire, minutely revolute, apex acuminate. Inflorescence a terminal panicle of heads, densely white woolly stellate pubescent; primary axis ca. 50 cm, glabrescent; secondary axis to ca. 15 cm, shorter apically, with a terminal head of bisexual flowers and 1 to few lateral heads of apparently male flowers, flowers sessile, heads globose. Calyx densely white stellate. Ovary 5-carpellate; styles 5, united at base, free apically. Fruit unknown. Fl. Sep, fr. Nov–Dec.

- Dense forests, Guizhou.


Trees, to 10 m tall, andromonoecious. Petiole 30–50 cm; petiolules (1–)2–10 cm; leaflets usually 7, often also with 1 much smaller leaflet, ovate to elliptic or oblong, 10–23 × 4–12 cm, papery to leathery, abaxially sparsely stellate tomentose (occasionally glabrous), adaxially glaucous and glabrous, secondary veins 8–12 pairs, conspicuous adaxially, base cuneate to rounded, margin entire, rarely serrate or lobed, apex acute. Inflorescence a terminal panicle of umbels, stellate pubescent or glabrous; primary axis 15–30(–40) cm; secondary axes to 23 cm, with a terminal umbel of bisexual flowers and usually 1–4 umbels of male flowers; pedicels 8–14 mm. Calyx sparsely stellate pubescent. Ovary 5-carpellate; styles united into a column; stigmas minutely capitate. Fruit subglobose to ovoid, 3–5 mm in diam.; styles persistent, ca. 3 mm. Fl. Jan–Feb, fr. Apr.

Dense forests; ca. 1300 m. Xizang (Médog), S Yunnan [India, Myanmar, Vietnam].


Trees, to ca. 20 m tall, apparently hermaphroditic. Petiole 45–100 cm; petiolules 4–15 cm; leaflets 5–7, ovate-elliptic, 20–55 × 8–22 cm, leathery, abaxially densely white to light brown-orange tomentose, epidermis obscured, adaxially glabrous, secondary veins 8–12 pairs, raised adaxially, base rounded to subcordate, margin entire or inconspicuously serrate apically, minutely thickened, sometimes revolute, apex acuminate. Inflorescence a terminal panicle of umbels, densely ferruginous-brown stellate pubescent, glabrescent; primary axis to ca. 75 cm; secondary axes to ca. 40 cm; pedicels 3–10 mm. Calyx lobes ferruginous stellate pubescent, entire or inconspicuously 5-toothed. Ovary 5-carpellate; styles united into a column ca. 1.5 mm. Fruit globose, ca. 5 mm in diam., 5-angled when dry; persistent calyx lobes ferruginous; styles persistent, ca. 2 mm. Fl. Sep, fr. Nov–Dec.

- Forests in valleys; 1900–2600 m. Yunnan [N Vietnam].


Trees, to 15 m tall, probably andromonoecious. Petiole 6–30 cm; petiolules 1–6 cm; leaflets 5–7, oblong or elliptic to slightly obovate, 10–21(–27) × 3–9(–16) cm, leathery, abaxially densely yellow-brown stellate tomentose, epidermis obscured, adaxially sparsely stellate pubescent on veins or glabrous, secondary veins 8–12 pairs, tertiary veins slightly raised abaxially, distinctly impressed adaxially in dry material, base acute to nearly rounded, margin entire or with 1–4 small teeth apically, apex acuminate. Inflorescence a terminal panicle of umbels, densely light brown to ferruginous stellate pubescent, then sparsely so and grayish; primary axis to 15–25 cm; secondary axes to ca. 20 cm; pedicels 2–3 mm at anthesis, expanding to 8 mm in fruit. Calyx inconspicuously 5-toothed, sparsely stellate pubescent. Ovary (4 or)5-carpellate; styles united into a column. Fruit globose, 3–4 mm in diam., 5-ribbed when dry,
sparsely stellate pubescent to glabrous; styles persistent, 1.5–2 mm. Fl. Aug, fr. Oct–Nov.

- Mixed forests on dry mountain slopes; 1800–2500 m. C and SE Yunnan.

23. **Schefflera rhododendrifolia** (Griffith) Frodin in Frodin & Govaerts, World Checklist Bibliogr. Araliaceae, 317. 2004 [*“2003”*].

**鵝掌柴** ao mài e zhāng chái

*Panax rhododendrifolius* Griffith, Init. Pl. Khayasyah Mts. 487. 1848; *Agalma glaucum* Seemann; *A. tomentosum* (Buchan-Hamilton) Seemann; *Heder a tomentosa* Buchanan-Hamilton; *Heptapleurum glaucum* (Seemann) C. B. Clarke (1879), not Kurz (1877); *H. impressum* C. B. Clarke; *Schefflera impressa* (C. B. Clarke) Harms.

Trees, to 20 m tall, andromonoecious. Petiole to 30 cm; petiolules 1–2.5 cm, stout; leaflets (5 or)6 or 7–9, narrowly obovate or oblong-lanceolate to nearly elliptic, 12–20 × 3–5 cm, leathery, abaxially densely gray-white stellate pubescent when young, later glabrescent and glaucous, adaxially glabrous and rugose, secondary veins 8–12 pairs, tertiary veins distinctly impressed adaxially in dry material, base cuneate, margin entire, revolute, sometimes with serrate or pinnate lobes on young plants, apex acuminate. Inflorescence a terminal panicle of umbels, densely stellate tomentose, glabrescent; primary axis to 20 cm; secondary axes to 18 cm; pedicels 5–10 mm. Calyx ca. 4 mm, glabrous, adaxially sparsely pubescent; primary axis ca. 27 cm, secondary axes 25(–35) cm, with a terminal umbel of bisexual flowers and sometimes 1(or 2) lateral umbels of male flowers; pedicels 4–7 mm at anthesis. Fruit unknown. Fl. Feb.

Evergreen broad-leaved forests; 2500–3200 m. SE Xizang [Bhutan, India, Nepal].


**鹅掌柴** e zhāng chái

*Vitis heptaphylla* Linnaeus, Mant. Pl. 2: 212. 1771; *Aralia octophylla* Loureiro; *Heptapleurum octophyllum* (Loureiro) Bentham ex Hance; *Paraprapia cantoniensis* Hooker & Arnott; *Schefflera atrifoliata* R. H. Miao; *S. octophylla* (Loureiro) Seemann; *Aralia octophylla* Loureiro; *Eleutherococcus bodinieri* H. Léveillé; *Schefflera compacta* Frodin ex Lauener.

Shrubs or small trees, to 12 m tall, andromonoecious. Petiole 3.5–5.5 cm; petiolules 0.4–5 (–6) cm; leaflets 5–9(–11), ovate-lanceolate to oblong-lanceolate or linear-lanceolate, rarely ovate to elliptic, 8–12(–18) × 1–4.5(–5.5) mm, membranous or papery, abaxially glabrous or sparsely minutely stellate pubescent, adaxially glabrous, secondary veins ca. 10 pairs, inconspicuous to slightly raised on both surfaces, base cuneate or broadly cuneate to rounded, margin entire or usually sparsely to moderately serrulate, apex acuminate to caudate-acuminate, sometimes falicate. Inflorescence a terminal panicle of umbels, gray or brown pubescent; primary axis 4–16(–20) cm, secondary axes 1.5–7 cm, with a terminal umbel of bisexual flowers and sometimes 1(or 2) lateral umbels of male flowers; pedicels 4–7 mm at anthesis, to 8 mm in fruit. Calyx sparsely gray-white stellate pubescent. Ovary 5-carpellate; styles united into a column, ca. 1 mm. Fruit subglobose to ellipsoid or ovoid, 4–7 × 4–6 mm; styles persistent, minutely capitulate, to 1.5–3.5 mm. Fl. Oct–Nov, fr. Feb, Apr.

Evergreen broad-leaved forests or in valleys; 400–1000 m. Guangxi, Guizhou, W Hubei, Sichuan, Yunnan [Vietnam].


**短序鹅掌柴** duan xu e zhāng chái


Shrubs or small trees, to 10 m tall, andromonoecious. Petiole 3.5–5 cm; petiolules 0.4–5 cm; leaflets 5–9(–11), ovate-lanceolate to oblong-lanceolate or linear-lanceolate, rarely ovate to elliptic, 8–12(–18) × 1–4.5(–5.5) mm, membranous or papery, abaxially glabrous or sparsely minutely stellate pubescent, adaxially glabrous, secondary veins ca. 10 pairs, inconspicuous to slightly raised on both surfaces, base cuneate or broadly cuneate to rounded, margin entire or usually sparsely to moderately serrulate, apex acuminate to caudate-acuminate, sometimes falicate. Inflorescence a terminal panicle of umbels, gray or brown pubescent; primary axis 4–16(–20) cm, secondary axes 1.5–7 cm, with a terminal umbel of bisexual flowers and sometimes 1(or 2) lateral umbels of male flowers; pedicels 4–7 mm at anthesis, to 8 mm in fruit. Calyx sparsely gray-white stellate pubescent. Ovary 5-carpellate; styles united into a column, ca. 1 mm. Fruit subglobose to ellipsoid or ovoid, 4–7 × 4–6 mm; styles persistent, minutely capitulate, to 1.5–3.5 mm. Fl. Oct–Nov, fr. Feb, Apr.

- Forests; ca. 1000 m. SE Yunnan.


**麻粟柄鹅掌柴** ma li po e zhāng chái

Trees, to ca. 8 m tall, probably hermaphrodite. Petiole 14–26 cm; petiolules unequal, 0.5–8 cm; leaflets 6 or 7, oblong or oblong-elliptic, 12–24 × 4–10.5 cm, papery, abaxially minutely ferruginous stellate, adaxially sparsely ferruginous to glabrous, secondary veins 8–11 pairs, raised abaxially, tertiary veins inconspicuous, base broadly cuneate, margin entire, minutely revolute, apex shortly acuminate. Inflorescence a terminal panicle of umbels, ferruginous pubescent; primary axis ca. 27 cm, secondary axes to 15 cm; pedicels 5–6 mm. Calyx ca. 4 mm, glabrous. Ovary 5- or 6-carpellate; styles united into a column, ca. 1.5 mm at anthesis. Fruit unknown. Fl. Feb.

- Forests; ca. 1000 m. SE Yunnan.

27. **Schefflera minutistellata** Merrill ex H. L. Li, Sargentia 2: 24. 1942.

**星毛鹅掌柴** xing mao e zhāng chái
**Schefflera angustifoliolata** C. N. Ho.

Shrubs or small trees, to 8 m tall, andromonoecious. Petiole 12–45(–90) cm; petiolules unequal, 1–7(–12) cm; leaflets 7–15, elliptic to ovate-lanceolate or oblong-lanceolate, rarely ovate, 7–20 × 4–7.5(–11) cm, papery or subleathery, abaxially densely to sparsely minutely stellate pubescent, later glabrescent to glabrous, adaxially glabrous, secondary veins 6–10 pairs, slightly raised abaxially, tertiary veins rarely impressed adaxially in dry material, base acute to obtuse, 0.7–2.5 mm. Fl. Sep–Oct, fr. Sep–Nov.


Trees, to ca. 10 m tall, andromonoecious. Petiole 3–10 cm; petiolules 3–5 or 7 mm, narrowly obovate, 7–9 × 3–5.5 cm, leathery, both surfaces glabrous, secondary veins 6–10 pairs, thick, densely stellate pubescent, usually several lateral umbels of male flowers; pedicels 10–15 mm, orange to yellow, ovary 5-carpellate, styles united into a column, 1.5–4 mm. Fl. Sep–Oct, fr. Sep–Nov.

Evergreen broad-leaved forests; 2500–3200 m. SE Xizang, NW Yunnan [N Myanmar].


*那坡鹅掌柴* na po e zhang chai


Trees, to ca. 5 m tall, ?hermaphroditic. Petiole ca. 18 cm; petiolules 0.4–2 cm; leaflets 5–7, oblong or obovate-oblong, 4–10 × 2–5 cm, leathery, both surfaces glabrous, secondary veins 12–16 pairs, conspicuous, tertiary veins slightly impressed adaxially in dry material, base broadly cuneate to rounded, margin entire or remotely serrate apically, apex abruptly acute. Inflorescence a terminal panicle of umbels, yellow-brown pubescent, then glabrescent; primary axis ca. 25 cm, secondary axes to ca. 10 cm; pedicels 2–5 mm. Ovary 4- or 5-carpellate; styles united into a column. Fruit (immature) globose, ca. 7 mm in diam.; styles persistent, ca. 2 mm. Fl. May.


*樟叶鹅掌柴* zhang ye e zhang chai

**Schefflera cinnamomifoliolata** C. B. Shang.

Trees, to ca. 8 m tall, andromonoecious. Petiole 3–10 cm, slender; leaflets (3–)5(–7), elliptic, rarely obovate-elliptic, 4–10 × 1.5–4 cm, leathery, both surfaces glabrous, secondary veins 5–8 pairs, tertiary veins weakly impressed adaxially in dry material, base attenuate to cuneate or slightly rounded, margin entire, minutely revolute, rarely serrulate apically, apex acute to acuminate. Inflorescence a terminal panicle of umbels, glabrous; primary axis to 17 cm, secondary axes 2–12 cm, tertiary axes 1.5–5 cm, with a terminal umbel of hemaphrodite flowers and several lateral umbels of male flowers; pedicels 7–16 mm (those of male flowers ca. 5 mm). Calyx at anthesis, 5-ribbed when dry, densely ferruginous, secondary veins 5–8 pairs, tertiary veins slightly impressed adaxially in dry material, base broadly cuneate to rounded, margin entire or remotely serrate apically, apex abruptly acute. Inflorescence a terminal panicle of umbels, yellow-brown pubescent, then glabrescent; primary axis ca. 25 cm, secondary axes to ca. 10 cm; pedicels 2–5 mm. Ovary 4- or 5-carpellate, styles united into a column. Fruit (immature) globose, ca. 7 mm in diam.; styles persistent, ca. 2 mm. Fl. May.
Trees, to ca. 13 m tall, andromonoecious. Petiole to 35 cm; petiolules 1.5–5 cm; leaflets 4–7, oblong-lanceolate to ovate-lanceolate, 10–23 × 4–6.5 cm, papery, both surfaces glabrous or abaxially sparsely stellate pubescent on midvein, secondary veins 8–15 pairs, conspicuous abaxially, base obtuse, margin entire, slightly revolute, apex acute, often falcate. Inflorescence a terminal panicle of umbels, sparsely stellate pubescent, nearly glabrescent; primary axis to 35 cm, secondary axes to 17 cm, with a terminal umbel of bisexual flowers and usually 1–4 lateral umbels of male flowers; pedicels 8–14 mm. Calyx glabrous. Ovary 5-carpellate; styles united into a column, ca. 1.5 mm. Fruit globose, 4–5 mm in diam., 5-angled when dry; styles persistent, ca. 2 mm. Fl. Jul.

Forests. NW and SE Yunnan [Bhutan, India, Nepal, Vietnam].


粉背鹅掌柴 fen bei e zhang chai

Shrubs, probably hermaphroditic. Petiole 20–40 cm; petiolules 4–8 cm; leaflets 6–9, oblong-elliptic or elliptic to weakly ovate, 11–15 × 5–9 cm, subleathery, both surfaces glabrous, secondary veins 7–9 pairs, adaxially conspicuous, base obtuse to subrounded, margin entire, minutely revolute, apex abruptly acute. Inflorescence a terminal panicle of umbels, sparsely stellate pubescent or glabrous; primary axis to 30 cm, secondary axes to 11 cm; pedicels 5–8 mm. Calyx ca. 2 mm, sparsely stellate pubescent. Ovary 5-carpellate; styles united into a column, ca. 2 mm; stigmas 5, distinct, capitulate. Fl. Oct.–Nov.

Stream banks in forests. Guangdong (Yangchun).


谅山鹅掌柴 liang shan e zhang chai

Schefflera lociana var. megaphylla C. B. Shang.

Trees, to 4 m tall, palmlike in habit, rarely branched, hermaphroditic. Petiole 24–65 cm, 7–10 mm in diam. at base; ligule prominent, 1.5–2.5 cm; petiolules 2–5 cm; leaflets 8–10(–12), oblong-elliptic or obovate-oblong, 14–34 × 4.5–9 cm, leathery, abaxially glabrous or sparsely stellate pubescent on veins, secondary veins 14–22 pairs, adaxially impressed to weakly raised in dry material, base rounded to subcordate, margin entire, revolute, apex abruptly acute or rounded. Inflorescence a pseudo-lateral panicle of umbels, borne below leaves; primary axis 1–1.5 cm, secondary axes 5–7 cm; umbels arranged in racemes, 1.5–2 cm in diam. Calyx gray white pubescent, entire. Ovary 6-carpellate; styles united into a column. Fruit ovoid, 5–6 × 3–4 mm; styles persistent, ca. 2 mm; pedicels 3–4 mm, brown pubescent. Fl. Aug.–Sep.

Dense forests on rocky mountain slopes. SW Guangxi (Longzhou) [N Vietnam].

This species is used as an ornamental.


多核鹅掌柴 duo he e zhang chai


Shrubs or small trees, to 10 m tall, hermaphroditic. Petiole 19–30 cm, 2–4 mm in diam. at base; ligule 2–5 mm; petiolules 1–6 cm; leaflets 5–7(–9), oblong or oblong-elliptic, 10–22 × 4.5–11 cm, papery, both surfaces glabrous, secondary veins 8–11 pairs, slightly raised abaxially, tertiary veins inconspicuous, base obtuse to rounded, margin entire, apex acute to shortly acuminate. Inflorescence a pseudo-lateral panicle of umbels, borne below leaves, with brown bark; primary axis to 15 cm, secondary axes to 12 cm; pedicels 1–3 mm. Calyx ca. 3 mm, margin slightly sinuous. Ovary 7–11(–13)-carpellate; styles united into a column, ca. 1.5 mm. Fruit globose, 4–5 mm in diam., 7–11(–13)-ribbed when dry; styles persistent; pedicels 3–8 mm, stout. Fl. Sep.–Oct, fr. Nov.–Dec, Mar.

Disturbed lands, forests in wet valleys; 800–1300 m. W Guangxi (Jingxi), S Yunnan [Vietnam].


梁王茶属 liang wang cha shu

Trees, small, or shrubs, evergreen, hermaphroditic (?or functionally andromonoecious), unarmed, glabrous. Leaves simple, palmately lobed or palmately compound, margins serrate; stipules absent. Inflorescence a terminal panicle of umbels, secondary axes with a terminal umbel of bisexual flowers, often also with 1 or 2( or 3) lateral umbels of smaller, later-blooming ?functionally male flowers. Pedicels articulate below ovary. Calyx rim entire or 5-toothed. Petals 5, valvate. Stamens 5. Ovary 2(–4)-carpellate; styles united into a column, 2(–4), free to base or united up to 2/3 of their length. Fruit a drupe, laterally compressed. Seeds laterally compressed; endosperm smooth.

Two species: C and W China, N Vietnam; two species in China.

The first author recently included Metapanax in Macropanax (Shang and Ji, J. Nanjing Forest. Univ. 30(6): 41–43. 2006), casting doubt on the value of the morphological features used by Wen and Frodin (Brittonia 53: 116–121. 2001) to distinguish the two genera, an interpretation that is not favored by the second author.

1a. Leaves simple, entire or 3-lobed, rarely palmately compound with 3 sessile leaflets usually more than 2.5 cm wide ................................................................. 1. M. davidii

1b. Leaves usually palmately compound (rarely simple); leaflets 2–5, 1–2.5(–4) cm wide, subsessile or with distinct petiolules to 10 mm ............................................................... 2. M. delavayi

异叶梁王茶  yi ye liang wang cha

Panax davidii Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 8: 248. 1886; Acanthopanax bockii (Harms) R. Viguier; A. davidii (Franchet) R. Viguier; A. diversifolius Hemsley; Aralia bodinieri H. Léveillé; Macropanax davidii (Franchet) C. B. Shang & C. F. Ji; Nothopanax bockii Harms; N. bodinieri (H. Léveillé) S. Y. Hu; N. davidii (Franchet) Harms; N. davidii var. gongshanensis C. B. Shang; N. diversifolius (Hemsley) Harms; N. latifolius Handel-Mazzetti; Pseudopanax davidii (Franchet) Philipson.

Trees, small, to ca. 12 m tall. Petiole 3–20 cm, slender to stout; leaves simple, entire or 3-lobed, rarely palmately compound; blade oblong-ovate to oblong-lanceolate, 6–20 × (2.5–)3.5–6.5 cm, leathery, 3-veined from base, secondary veins 6–8 pairs, not prominently conspicuous, base acute to broadly cuneate, occasionally rounded, margin sparsely serrate, apex acuminate. Inflorescence terminal, a panicle of umbels; primary axis to 10(–15) cm, secondary axes 1–1.5 cm; umbels 1.5–2 cm in diam.; pedicels 6–8 mm at anthesis, 7–10 mm in fruit. Fruit laterally compressed, circular, 5–6 mm in diam.; styles united 1/2–2/3 their length, rarely free to base. Fl. Jun–Aug, fr. Sep–Oct.

Common in scrub, stream banks, forest margins, roadsides; 800–3000 m. Guizhou, Hunan, Shaanxi, Sichuan, Yunnan [N Vietnam].

Two varieties (Nothopanax davidii var. davidii and var. gongshanensis) have sometimes been distinguished on the basis of minor differences in the petiole and inflorescence, but they were not retained by Wen and Frodin when those authors described Metapanax.


梁王茶 liang wang cha

Panax delavayi Franchet, J. Bot. (Morot) 10: 305. 1896; Acanthopanax delavayi (Franchet) R. Viguier; Macropanax delavayi (Franchet) C. B. Shang & C. F. Ji; Metapanax delavayi var. longicaudatus (K. M. Feng) R. Li & H. Li; Nothopanax delavayi (Franchet) Harms; N. delavayi var. longicaudatus K. M. Feng; Pseudopanax delavayi (Franchet) Philipson.

Shrubs, to 5 m tall. Petiole 4–15 cm, slender; leaves palmately compound, rarely simple; leaflets subsessile or petiolules to 1 cm; leaflets 2–5, oblong-lanceolate to narrowly ovate or obovate, 5–13 × 1.2–5(–4) cm, leathery, base acute, margin serrulate, apex acuminate. Inflorescence terminal, a panicle of umbels; primary axis to 10(–15) cm, secondary axes 1–1.5 cm; umbels 1.5–2 cm in diam.; pedicels 3–5 mm. Fruit laterally compressed, circular to slightly oblate, 4–5 mm in diam.; styles 1.5–2 mm, united up to 1/2 of length, forked or divided nearly to base, free, or recurved. Fl. Sep–Oct, fr. Dec–Jan.

Mixed forests, scrub in valleys; 1500–3000 m. Guizhou, Sichuan, Yunnan [N Vietnam].

This species is used medicinally.

Two varieties (Nothopanax delavayi var. delavayi and var. longicaudatus) have sometimes been distinguished on the basis of minor differences in leaf size and the shape of the apex, but they were not retained by Wen and Frodin when those authors described Metapanax.

17. MACROPANAX Miquel, Bonplandia (Hannover) 4: 139. 1856.

大参属 da shen shu

Trees or shrubs, evergreen, hermaphroditic (?or functionally andromonoecious), unarmed. Leaves simple, palmately lobed, or palmately compound and leaflets 3–7, margin entire or serrate; stipules absent or connate into a short lamina within petiole or absent. Inflorescence a terminal panicle of umbels; secondary axes with a terminal umbel of bisexual flowers, sometimes also with lateral umbels of smaller, later flowering (?functionally male) flowers; bracts small, caducous. Pedicels articulate below ovary, often minutely bracteolate. Calyx entire or 5-toothed. Petals 5, valvate. Stamens 5. Ovary 2(or 3)-carpellate; styles united into a column or palmately compound and leaflets 3–7, margin entire or serrate; stipules absent or connate into a short lamina within petiole or absent.

About 20 species: S and SE Asia; seven species (five endemic) in China.

1a. Styles united to ca. 3/4 their length, branches free apically ........................................................................................................ 1. M. rosthornii
1b. Styles united throughout, forming an unbranched column, stigmas sessile.

2a. Inflorescence glabrous throughout (occasionally pubescent in M. undulatus when young, but then leaflets with entire margins).
3a. Mature fruit 8–9 mm in diam.; calyx teeth and stamens 7–10 ................................................................. 6. M. decandrus
3b. Mature fruit 5–6 mm in diam.; calyx teeth and stamens 5(or 6) ........................................................................ 7. M. undulatus
2b. Inflorescence densely shortly pubescent throughout.
4a. Stems and calyx glabrous; leaflets with 4–6 pairs of secondary veins .................................................. 5. M. paucinervis
4b. Stems and calyx glabrous; leaflets with 6–10 pairs of secondary veins.
5a. Terminal leaflet elliptic, ca. 2 × as long as wide, base rounded to broadly cuneate; petiole 3–7 cm .......... 2. M. chienii
5b. Terminal leaflet narrowly elliptic or oblanceolate to slightly oblate, 2.4–4 × as long as wide, base narrowly acute to cuneate; petiole (8–)10–17 cm.
6a. Leaflets (3–)5(–7); fruit ellipsoid to oblong, height greater than diam. ........................................... 3. M. dispermus
6b. Leaflets 3 or 4; fruit broadly ovate, height not greater than diam. .................................................. 4. M. serratifolius

短梗大参 duan geng da shen


Trees, to ca. 8 m tall. Petiole 4–20 cm, slender; petiolules 3–12 mm or leaflets sessile; leaflets 3–7, oblongate to narrowly obovate, 5–15(–17) × 1–3(–4.5) cm, papery, secondary veins 8–10 pairs, distinct on both surfaces, base narrowly acute to attenuate, margin serrulate, minutely thickened, apex shortly acuminated to caudate, acumens usually curved. Inflorescence paniculate, glabrous throughout; primary axis ca. 30 cm, secondary axes ca. 20 cm; pedicels 1–3 cm; pedicels 3–8 mm. Calyx rim inconspicuous. Fruit ovoid to globose, 4–5 mm in diam.; styles persistent, 1.5–2 mm, divided apically.

- Shaded places in forests, scrub, roadsides; below 1500 m. Fujian, S Gansu, N Guangdong, N Guangxi, S Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

This species is used medicinally.


显脉大参 xian mai da shen


Trees, to ca. 5 m tall, probably andromonoecious. Petiole 3–7 cm; petiolules 0.3–3 cm; leaflets 3 or 4, oblong-elliptic or oblong, 7–16.5 × 4–9 cm, papery, both surfaces glabrous, secondary veins 6–8 pairs, tertiary veins distinct, raised on both surfaces, base rounded, margin sparsely crenulate, apex shortly acuminate. Inflorescence paniculate, densely brown pubescent; primary axis 23–30 cm; secondary axes to 14 cm, with a terminal umbel of bisexual flowers and a pair of closely spaced lateral scars (presumably of umbels with male flowers); pedicels 1–1.3 cm in fruit. Calyx inconspicuous, minutely 5-toothed. Fruit broadly ovoid to subglobose, 4–6 mm in diam.; styles persistent, undivided. Fr. Nov–Apr.

- Mixed forests in valleys or scrub on mountain slopes; 300–2300 m. Guangxi, Yunnan.


大参 da shen

*Aralia disperma* Blume, Bijdr. 872. 1826; *Brassaiopsis floribunda* (Miquel) Seemann; *Hedera disperma* (Blume) Candel; *H. serrata* Wallich; *Macropanax dispermus* (Blume) Kunzte var. integer C. B. Shang; *M. floribundus* Miquel; *M. oreophilus* Miquel.

Trees, to ca. 12 m tall. Petiole 7–20 cm; petiolules 0.5–5 cm; leaflets (3–)5(–7), elliptic or oblong-lanceolate, 7–20 × 2–8 cm, papery or subleathery, both surfaces glabrous, secondary veins 6–10 pairs, distinct, tertiary veins more distinct adaxially, base broadly cuneate or rounded, margin glandular serrulate, apex shortly acuminate. Inflorescence paniculate, densely short-ly ferruginous stellate pubescent; primary axis 20–55 cm; pedicels 3–8 mm, to 1 cm in fruit. Calyx inconspicuous, glabrous, 5-toothed. Fruit ellipsoid to oblong, ca. 5 × 4 mm, slightly ribbed when dry; styles persistent, 2–3 mm. Fl. Aug–Sep, fr. Jan–Feb.

Mixed forests in valleys, scrub on mountain slopes; 300–2300 m. Yunnan [Bhutan, India, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam].


粗齿大参 cu chi da shen

Trees, 10–12 m tall, probably andromonoecious. Petiole 10–20 cm; petiolules 1–4.5 cm; leaflets 3 or 4, narrowly elliptic to slightly ovate or obovate, 9–20 × 3–7 cm, subleathery, both surfaces glabrous, secondary veins 7–10 pairs, tertiary veins distinct, raised on both surfaces, base acute to cuneate, margin sparsely to moderately serrate, apex acuminated. Inflorescence paniculate, densely short white pubescent; primary axis 23–30 cm; secondary axes to 14 cm, with a terminal umbel of bisexual flowers and a pair of closely spaced lateral scars (presumably of umbels with male flowers); pedicels 1–1.3 cm in fruit. Calyx inconspicuous, minutely 5-toothed. Fruit broadly ovoid to subglobose, 4–6 mm in diam.; styles persistent, undivided. Fr. Nov–Apr.

- Mixed forests in valleys; 800–900 m. SW Guangxi (Longzhou).


疏脉大参 shu mai da shen

Trees, to ca. 15 m tall. Petiole ca. 16 cm; petiolules 0.3–3.5 cm; leaflets 4–6, oblong or obovate-oblong, 6–14 × 3–7 cm, papery, glabrous, minutely scaly abaxially, secondary veins 4–6 pairs, base rounded or broadly cuneate, margin sparsely serrulate toward apical 2/3 or subentire, apex acute. Inflorescence paniculate, shortly gray-brown pubescent throughout, glabrescent; primary axis ca. 30 cm, secondary axes ca. 20 cm; pedicels 0.4–1.5 cm, to 0.8–2 cm in fruit. Calyx pubescent, teeth inconspicuous. Fruit globose, ca. 8 mm in diam.; style persistent, divided apically. Fl. May–Jun, fr. Nov–Dec.

- Forests in valleys; 500–800 m. SW Guangxi (Longzhou).


十蕊大参 shi rui da shen

Trees, to 7 m tall. Trunk 18–30 cm d.b.h. Petiole 2.5–14 cm; petiolules 1–5 cm; leaflets 3–5, oblong-elliptic or oblong, 7.5–18 × 3–9 cm, papery, glabrous, secondary veins 4–6 pairs, base cuneate or broadly cuneate, margin entire, minutely thickened, revolute, apex abruptly shortly acuminate. Inflorescence paniculate, glabrous throughout; primary axis 5–12 cm, secondary axes 2–5.5 cm; pedicels 4–5 mm at anthesis, to 1.8 cm in fruit. Calyx glabrous, 7–10-toothed, sometimes obscurely so. Stamens 7–10. Fruit ovoid-globose, 1.1–1.3 cm × 8–9 mm; styles persistent, ca. 2 mm, undivided. Fl. Sep, fr. Apr–Jun.

- Dense forests in valleys, forest margins on mountain slopes; 700–1200 m. Hainan.


波缘大参 bo yuan da shen
**Hedera undulata** Wallich ex G. Don, Gen. Hist. 3: 394. 1834; **Macropanax parviflorus** H. Hoo; **M. undulatus** var. *simplex* H. L. Li.

Trees, to ca. 15 m tall. Petiole 4–15 cm, glabrous; peti- lules 0.5–1.5 cm; leaflets 3–5, elliptic to slightly obovate, 5–16 × 2–6 cm, subleathery, glabrous, secondary veins 4–7, base broadly cuneate or rounded, margin entire, minutely thick- ened, sometimes denticulate apically, apex shortly acuminate. Inflorescence paniculate, glabrous throughout; primary axis 15– 30 cm, secondary axes 4–15 (–25) cm; peduncle 0.5–2 cm; pedi- cels 3–5 mm, to 8 mm in fruit. Calyx inconspicuous, 5-toothed. Fruit ovoid to ellipsoid, 5–8 × 4–6 mm, ribbed when dry.

Mixed forests; 400–2200 m. Guangxi, Guizhou, Yunnan [Bhutan, India, Kashmir, Myanmar, Nepal, Thailand, Vietnam].

Two varieties (**Macropanax undulatus** var. undulatus and var. *simplex*) have sometimes been distinguished on the basis of minor differences in inflorescence structure, but they do not appear to be worthy of recognition.

### 18. ELEUTHEROCOCCUS

Maximowicz, Mém. Acad. Imp. Sci. St.-Pétersbourg Divers

五加属 *wu jia shu*

*Acanthopanax* (Decaisne & Planchon) Miqel; *Panax* subg. *Acanthopanax* Decaisne & Planchon.

Shrubs, erect or scandent, rarely small trees, hermaphrodite or andromonoecious, glabrous or pubescent, usually prickly, occasionally unarmed. Leaves palmately compound or trifoliolate; stipules absent or very weakly developed. Inflorescence a terminal (rarely axillary) panicle of umbels or a solitary umbel, secondary axes with a terminal umbel of bisexual flowers and 1 to many lateral umbels of later flowering bisexual or functionally male flowers. Pedicels not articulate or only slightly articulate below ovary. Calyx margin entire or with 5 minute teeth. Petals 5, valvate. Stamens 5. Ovary 2–5-carpellate; styles 2–5, free to base, or partially to fully united. Fruit a drupe, laterally compressed or subglobose. Seeds laterally compressed; endosperm smooth.

Nearly 40 species: E Asia, Himalayan region; 18 species (14 endemic) in China.

1a. Umbels 1(–3), borne in axis of leaves on short shoots.

2a. Ovary (4 or)5-carpellate, styles united, forming a column; branches with dense bristles along with prickles
at base of petiole ..................................................................................................................................................... 1. *E. setulosus*

2b. Ovary 2(or 3)-carpellate, styles free nearly to base; branches with few reflexed prickles or rarely unarmed ... 2. *E. nodiflorus*

1b. Umbels 1 to many, terminal on leafy shoots.

3a. Styles united throughout their entire length, forming a column, stigmas sometimes forming a peltate to slightly recurved disk.

4a. Flowers sessile, arranged in heads .................................................................................................................. 3. *E. sessiliflorus*

4b. Flowers distinctly pedicellate, arranged in umbels.

5a. Leaves near ends of branches sessile or very shortly petiolate, leaflets obovate-oblong to rhombic, 3–6 × 1–2.5 cm, margin entire, apex rounded to obtuse ........................................................................................................... 4. *E. brachypus*

5b. Leaves with a distinct petiole at least 3–7 cm, leaflets variable in shape and size, margin serrate or biserate, apex variable.

6a. Prickles stout, compressed in cross-section, oriented downward (sometimes lacking on specimens) ........................................................................................................................................................ 5. *E. henryi*

6b. Prickles slender, terete in cross-section, oriented in various directions.

7a. Flowers purple-yellow; branches with slender bristlelike prickles, often present between nodes; petiolute of central leaflet (0.6–)1.2–2 cm ........................................................................................................... 6. *E. senticosus*

7b. Flowers yellow-green; branches with few prickles, generally present only at nodes, sometimes lacking; petiolute of central leaflet 0.3–1 cm.

8a. Leaflets 6–14 × 2.5–6 cm; ovary glabrous ........................................................................................................... 7. *E. leucorrhizus*

8b. Leaflets 4–7 × 1–2.5 cm; ovary pubescent at base when very young ......................................................... 8. *E. baostinensis*

3b. Styles free at least apically, with distinct arms.

9a. Inflorescence verticillate, primary axis with a terminal umbel and almost always 1 to several verticils of flowers, and also often with several flowers borne individually at base .................................................................................... 9. *E. verticillatus*

9b. Inflorescence a solitary umbel or panicle of umbels, flowers never arranged in verticils.

10a. Styles free to base or nearly so.

11a. Branches usually pubescent when young and with prickles; peduncles and pedicels pubescent ........................................................................................................................................ 10. *E. cissifolius*

11b. Branches glabrous and unarmed; peduncles and pedicels glabrous ......................................................... 11. *E. eleutherostylus*

10b. Styles united at least at base.

12a. Ovary (3–)5-carpellate, styles (3–)5; leaflets (3–)5.

13a. Branches with dense bristlelike prickles ........................................................................................................ 12. *E. giraldii*

13b. Branches with slender prickles scattered or only on nodes.

14a. Young branches purple-red; styles united only at base ............................................................................ 13. *E. wilsonii*

14b. Young branches brownish; styles united to middle ..................................................................................... 14. *E. rehderianus*

**細刺五加**  xi ci wu jia


Shrubs, to 5 m tall. Branches slender, forming both long and short shoots, with sparse to dense red-brown or dark brown bristles or sparsely so, rarely a single prickle at nodes. Petiole 3–10 cm, slender, with prickles at base; petiolules very short; leaflets 5, obovate or oblong-obovate, 2–5 × 0.8–2 cm, papery, abaxially subglabrous, adaxially with scattered bristles on mid-vein and veins, secondary veins 3 or 4 pairs, conspicuous, base cuneate, margin serrulate above middle, apex acute. Inflorescence borne in axils of leaves on short shoots, a simple umbel or sometimes 2 or 3 umbels together; peduncles 2–3 cm, densely bristly, then glabrous; pedicels 5–10 mm, slender, glabrous. Calyx with 5 teeth, glabrous. Ovary (4 or)5-carpellate; styles free nearly to base, to 2 mm, slender. Fruit black at maturity, subglobose, ca. 6 mm in diam.; styles persistent, reflexed, 2–3 mm. Fl. Apr–Jul, fr. Jun–Oct.

- Forest margins, scrub fields, roadsides; below 2000 m in E and 2000 m in W part of range. S Anhui, Gansu, Sichuan, W Zhejiang.

This species is used medicinally.


**細柱五加**  xi zhu wu jia

*Acanthopanax nodiflorus* Dunn, J. Bot. 47: 199. 1909; *A. gracilistylus* W. W. Smith; *A. gracilistylus* var. major G. Hoo; *A. gracilistylus* var. nodiflorus (Dunn) H. L. Li; *A. gracilistylus* var. pubescens (Pampanini) H. L. Li; *A. gracilistylus* var. trifoliolatus C. B. Shang; *A. gracilistylus* var. villosulus (Harms) H. L. Li; *A. hondae* Matsuda; *A. spinosus* (Linnaeus f.) Miquel var. pubescens Pampanini; *A. villosulus* Harms; *Aralia palmata* Loureiro (1790), not Lamack (1783); *A. scandens* Poiret; *Eleutherococcus gracilistylus* (W. W. Smith) S. Y. Hu; *E. gracilistylus* var. major (G. Hoo) H. Ohashi; *E. gracilistylus* var. nodiflorus (Dunn) H. Ohashi; *E. gracilistylus* var. pubescens (Pampanini) S. Y. Hu; *E. gracilistylus* var. trifoliolatus (C. B. Shang) H. Ohashi; *E. gracilistylus* var. villosulus (Harms) Q. S. Wang; *E. nodiflorus* (Dunn) S. Y. Hu; *E. pubescens* (Pampanini) C. H. Kim & B. Y. Sun; *E. villosulus* (Harms) S. Y. Hu; *Hedera scandens* (Poiret) Candolle.

Shrubs, to 3 m tall, sometimes climbers. Branches slender, forming both long and short shoots, slightly pendulous, glabrous, with few, scattered, reflexed, short prickles at nodes, rarely unarmed. Petiole 3–8 cm, glabrous, with small scattered prickles; petiolules very short; leaflets (3–)5, obovate or oblong-obovate, 3–8 × 1–3.5 cm, submembranous to papery, both surfaces glabrous or sparsely setulose, abaxially sometimes pubescent or with brown or ferruginous tufted hairs in axils of veins, secondary veins 4 or 5 pairs, subconspicuous, base cuneate, margin crenate-serrulate, apex acute or shortly acuminate. Inflorescence borne in axils of leaves on short shoots, a solitary umbel or sometimes 2 or 3 umbels together; peduncles 1–4 cm; pedicels 6–10 mm, slender, glabrous. Calyx subentire or with 5 minute teeth. Corolla yellowish green. Ovary 2(or)3-carpellate; styles free nearly to base, to 2 mm, slender. Fruit black at maturity, subglobose, ca. 6 mm in diam.; styles persistent, reflexed, 2–3 mm. Fl. Apr–Jul, fr. Sep–Nov.

- Scrub fields, roadsides, stream banks; below 1000 m in E and 3000 m in W part of range. S Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Heilongjiang, Jilin, Liaoning, Shanxi [Korea].

This species is used medicinally.


**无梗五加**  wu geng wu jia


Trees, small, to 5 m tall. Branches unarmed or with scattered, erect or recurved prickles. Petiole 3–12 cm, unarmed or with small prickles; petiolules 2–10 mm; leaflets 3–5, obovate, oblong-obovate, or oblong-lanceolate, 8–18 × 3–7 cm, papery, secondary veins 5–7 pairs, distinct, adaxially glabrous or slightly scabrous, base cuneate, margin irregularly serrate, apex acuminate. Inflorescence terminal, a raceme of umbels, borne on leafy shoots, with 3–6 capitulate umbels; peduncles 0.5–3 cm, densely pubescent; pedicels absent (flowers sessile). Calyx with 5 teeth, white pubescent. Corolla dull purplish. Ovary 2-carpellate; styles united basally into a column, free apically. Fruit obvoid-globose, 1–1.5 cm; styles persistent, ca. 3 mm. Fl. Aug–Sep, fr. Sep–Nov.

- Scrub fields and forests on mountain slopes; 200–1000 m. Hebei, Heilongjiang, Jilin, Liaoning, Shanxi [Korea].

This species is used medicinally.

Two varieties (Eleutherococcus sessiliflorus var. sessiliflorus and var. parviceps) have sometimes been distinguished on the basis of minor differences in leaf shape and fruit size, but they do not appear to be worthy of recognition.

5. Eleutherococcus henryi Oliver, Hooker’s Icon. Pl. 18: t. 1711. 1887.

7. **Eleutherococcus leucorrhizus** Oliver, Hooker's Icon. Pl. 18: t. 1711. 1887.

藤五加 腾五加 (原变种) teng wu jia

Shrubs, to 4 m tall, sometimes climbers. Branches glabrous, with few, slender, terete prickles generally at nodes. Petiole 3–10 cm; petiolule of central leaflet 3–6 mm; leaflets (3–)5, oblong, obovate, or lanceolate, rarely obovate, 6–14 × 2.5–6 cm, papery, both surfaces glabrous (rarely abaxially pubescent when young, glabrescent), secondary veins 6–10 pairs, base cuneate, margin sharply biserrate, apex acuminate or long acuminate. Inflorescence terminal, a corymbose panicle of umbels or a solitary umbel, borne on leafy shoots; peduncles 1–2 cm, glabrous. Calyx with 5 teeth, glabrous. Corolla yellowish green. Ovary 5-carpellate, styles united into a column. Fruit ovoid-globose, 5–7 mm in diam.; styles persistent, 1–1.2 cm. Fl. Jun–Aug, fr. Aug–Nov.

- Scrub fields, forests, forest margins in valleys; 100–3200 m. Anhui, Gansu, Guangdong, Guizhou, Henan, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang. [Bhutan].

This species is used medicinally.

1a. Leaflets (3–)5, both surfaces glabrous, abaxially glaucous or glaucescent ...

1b. Leaflets (3–)5, adaxially scabrous, abaxially pubescent, not glaucous.

2a. Leaflets abaxially pubescent when young, both surfaces soon glabrous ......................... 7a. var. leucorrhizus

2b. Leaflets abaxially yellow pubescent on veins, adaxially scabrous or scabridulous.

3a. Petiolule and midvein of blade with fine prickles ....... 7b. var. scaberulus

3b. Petiolule and midvein of blade densely yellow pubescent, without fine prickles ............ 7c. var. fulvescens

7a. **Eleutherococcus leucorrhizus** var. **leucorrhizus**

藤五加 (原变种) teng wu jia (yuan bian zhong)

**Acanthopanax cuspidatus** G. Hoo; **A. leucorrhizus** (Oliver) Harms; **A. leucorrhizus** f. angustifolius G. Hoo; **A. leucorrhizus** var. axillaritomentosus G. Hoo; **Eleutherococcus cuspidatus** (G. Hoo) H. Ohashi; **E. leucorrhizus** var. axillaritomentosus (G. Hoo) H. Ohashi; **E. leucorrhizus** var. brevipedunculatus Y. R. Ling.

Leaflets (3–)5, abaxially pubescent when young, both surfaces soon glabrous.

- Scrub fields, forest margins in valleys; 100–3200 m. Anhui, Gansu, Guangdong, Guizhou, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang.


狭叶藤五加 xia ye teng wu jia


Leaflets (3–)5, adaxially scabrous, abaxially yellow pubescent on veins; petiolule and midvein of blade with fine prickles.

- Scrub fields on mountain slopes; 1000–3000 m. Anhui, N Guangdong, Guizhou, W Henan, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.


糙叶藤五加 cao ye teng wu jia


Leaflets (3–)5, adaxially ± scabridulous, petiolule and midvein of blade densely yellow pubescent, without fine prickles.

- Forests, scrub fields; 1000–3100 m. N Guangdong, Guizhou, W Henan, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

7d. **Eleutherococcus leucorrhizus** var. **setchuenensis** (Harms) C. B. Shang & J. Y. Huang, comb. nov.

蜀五加 shu wu jia


Leaflets usually 3, rarely 4 or 5, both surfaces glabrous, abaxially glaucous or glaucescent, margin entire or sparsely and irregularly serrate.

- Scrub fields; 1000–3200 m. Gansu, Guizhou, W Henan, Hubei, Shaanxi, Sichuan.


宝兴五加 bao xing wu jia


Shrubs, to 2 m tall. Branches glabrous or sometimes brown hirsute when young, with sparse, slender, terete, needle-like prickles at nodes. Petiole 3–10 cm; petiolules 1–5 mm, brown pubescent or setose; leaflets (3–)5, narrowly oblong or lanceolate, 4–7 × 1–2.5 cm, membranous, both surfaces brown pubescent or setose, secondary veins 6–10 pairs, abaxially conspicuous, base rounded or acute, margin setose-serrate or setose-biserrate, apex acuminate or abruptly so. Inflorescence terminal, a small panicle of umbels, borne on leafy shoots, glabrous; peduncles 1.5–7 cm; pedicels 4–10 mm, slender. Calyx of 5 teeth, glabrous. Corolla yellow-green. Ovary (4 or)5-carpellate, sparsely pubescent at base when young; styles united into a column, 0.5–1 mm. Fruit ovoid-globose; styles persistent, 1–1.5 mm. Fl. Jul–Aug, fr. Sep–Oct.

- Shaded slopes in dense forests; ca. 2200 m. Sichuan (Baoxing).

轮伞五加 lun san wu jia


Shrubs. Branches purple, with recurved prickles 1.5–3 mm, base decurrent. Petiole 3–12 cm, with small prickles, glabrous; petiolules 1–10 mm; leaflets 3–5, obovate or broadly elliptic, 7–11.5 × 3.5–5 cm, secondary veins 6–8 pairs, distinct, base cuneate or broadly so, margin irregularly biserrate, teeth awned, apex acute, shortly acuminate, or caudate. Inflorescence terminal, a raceme of umbels, borne on leafy shoots, with a terminal umbel and almost always 1 to several verticils of flowers, and also often with several flowers borne individually at base; pedicels 1–1.5 cm, pubescent. Calyx with 5 teeth. Ovary (3–)5-carpellate; styles free. Fruit globose, ca. 5 mm in diam.; styles persistent, free portions recurved. Fl. Jul, fr. Aug.

- Shaded and wet forests; 2900–3200 m. SE Xizang.

This species is used medicinally.


乌蔹莓五加 wu lian mei wu jia


Shrubs, to ca. 3 m tall. Branches usually pubescent when young, unarmed or with scattered short prickles. Petiole 4–12 cm, sometimes prickly, pubescent when young; petiolules 2–5 mm; leaflets 3–5, oblong-elliptic, lateral ones rhombic-elliptic, 3–8 × 1.5–3 cm, papery, both surfaces glabrous, secondary veins 6–8 pairs, distinct, tertiary veins raised abaxially, impressed adaxially, base rounded or narrowly cuneate, margin serrate or biserulate, apex acuminate or caudate. Inflorescence terminal, a solitary umbel, borne on leafy shoots, glabrous; pedicels 2.5–4 cm, glabrous; pedicels 8–12 mm, glabrous. Calyx of 5 teeth. Corolla not seen. Ovary 5-carpellate; styles free nearly to base. Fruit ovoid-globose, 7–8 mm; styles persistent, reflexed. Fl. Jul.

- Scrub fields on mountain slopes. Gansu, Shaanxi (Hu Shan).


红毛五加 hong mao wu jia


Shrubs, to ca. 3 m tall. Branches brownish, with dense bristlelike spreading or reflexed prickles, rarely unarmed. Petiole 3–7 cm, glabrous, rarely prickly; petiolules short; leaflets (3–)5, obovate-oblong, rarely ovate, 2.5–8 × 1.5–3 cm, abaxially pubescent, adaxially glabrous or scattered hispid, secondary veins ca. 5 pairs, inconspicuous, base cuneate, margin irregularly biserate, apex acute or shortly acuminate. Inflorescence terminal, a solitary umbel, borne on leafy shoots; pedicels 0.5–1(–2) cm, stout; peticels 0.5–1.5 cm, glabrous or pubescent when young. Calyx subentire, glabrous. Corolla white. Ovary 5-carpellate; styles united for 1/5–1/2 their length. Fruit black at maturity, globose, ca. 8 mm. Fl. Jun–Jul, fr. Sep–Oct.

- Scrub fields on mountain slopes; 1300–3500 m. Gansu, Henan, Hubei, Ningxia, Sichuan, Shaanxi, Yunnan.

Deng (Novon 13: 305–306. 2003) separated Eleutherococcus humillimus from E. giraldii on account of the former being a subshrub, only 5–15 cm tall (vs. 1–3 m), with 3 or 4(or 5) carpels and styles (vs. 5), and styles connate for ca. 1/5 their length (vs. 1/4–1/2 their length). Deng recorded E. humillimus from high elevations (2700–3000) in S Gansu and N Sichuan and noted that it might be an alpine vicariant of E. giraldii.


狭叶五加 xia ye wu jia

Shrubs, to 5 m tall. Branches purple-red, glabrous or slightly pubescent, with slender recurved prickles on nodes. Petiole 0.5–6 cm, glabrous; petiolules very short; leaflets 3–5, oblong-lanceolate or oblancheolate, 4–5.5 × 0.5–1.6 cm, papery, abaxially glabrous or pilose, adaxially glabrous or with sparse fine bristles, secondary veins 4–8 pairs, inconspicuous, base attenuate, margin crenate-serrate, or serrulate or biserulate,
apex acute or shortly acuminate. Inflorescence terminal, a solitary umbel, borne on leafy shoots; peduncles 1.5–5 cm; pedicels 1–1.7 cm, glabrous. Calyx subentire or with 5 teeth, glabrous. Corolla yellowish green. Ovary (3–)5-carpellate; styles united at base. Fruit subglobose, 6–7 mm; styles persistent, ca. 1.5 cm. Fl. Jun–Jul, fr. Sep–Oct.

- Scrub fields, forests; 2400–3600 m. Gansu, W Hubei, Qinghai, S Shaanxi, Sichuan, Xizang, Yunnan.

1a. Leaflet margin crenate-serrulate, abaxially glabrous ............................................. 13a. var. wilsonii
1b. Leaflet margin serrulate or biserrulate, abaxially sparsely or densely pilose ....... 13b. var. pilosulus

13a. Eleutherococcus wilsonii var. wilsonii
狭叶五加 (原变种) xia ye wu jia (yuan bian zhong)


叶lets glabrous abaxially, margin crenate-serrulate.

- Scrub fields, forests; 2500–3600 m. S Gansu, W Hubei, S Shaanxi, Sichuan, Xizang, Yunnan.


毛狭叶五加 mao xia ye wu jia

**Acanthopanax giralldii** Harms var. pilosulus Rehder, J. Arnold Arbor. 9: 99. 1928; *A. wilsonii* var. pilosulus (Rehder) X. P. Fang & C. K. Hsieh; *Eleutherococcus giralldii* var. pilosulus (Rehder) S. Y. Hu; *E. pilosulus* (Rehder) C. H. Kim & B. Y. Sun; *E. wilsonii* var. pilosulus (Rehder) P. S. Hsu & S. L. Pan.

Leaflets sparsely or densely pilose abaxially, margin serrulate.

- Scrub fields; 2400–2900 m. Gansu, Qinghai.


匙叶五加 chi ye wu jia


Trees, small, or shrubs, to 10 m tall. Branches glabrous, unarmed or with scattered recurved prickles, slightly flattened at base. Petiole 2–5 cm, glabrous; petiololes very short; leaflets 3, ovate, oblong-ovate, or obovate-oblong, 3–6 × 1.5–4 cm, papery, secondary veins 5 or 6 pairs, slightly conspicuous, base cuneate or broadly so, oblique on lateral leaflets, margin entire or apically serrate, apex acute or shortly acuminate. Inflorescence terminal, a solitary umbel or a small panicle of umbels, borne on leafy shoots, with 1 to several umbels; peduncles 0.5–2 cm; pedicels 5–10 mm, peduncles and pedicels white or ferruginous tomentose, soon glabrescent. Calyx with 5 teeth, white tomentose when young, glabrescent. Ovary 2-carpellate; styles united at base, free portions recurved. Fruit globose, slightly compressed laterally, 7–9 mm; styles persistent, ca. 1.5 mm, reflexed apically. Fl. Jul–Sep, fr. Sep–Nov.

- Scrub fields, forests, roadsides; 2000–3400 m. Sichuan, SE Xizang, NW Yunnan.

This species is used medicinally.


康定五加 kang ding wu jia

**Acanthopanax lasiogyne** Harms in Sargent, Pl. Wilson. 2: 563. 1916; *A. lasiogyne* var. ferrugineus Y. R. Li; *A. rehderianus* Rehder; *A. wardii* W. W. Smith; *Eleutherococcus lasiogyne* var. ferrugineus (Y. R. Li) H. Ohashi; *E. wardii* (W. W. Smith) S. Y. Hu.

Trees, small, or shrubs, to 10 m tall. Branches glabrous, unarmed or with scattered recurved prickles, slightly flattened at base. Petiole 2–5 cm, glabrous; petiololes very short; leaflets 3, ovate, oblong-ovate, or obovate-oblanceolate, 3.5–5 cm, membranous, both surfaces scattered setose, secondary veins 4–6 pairs, distinct, base broadly cuneate, margin setose-serrulate, apex acute or acuminate. Umbels terminal, solitary or 2 or 3 together in a small panicle, borne on leafy shoots, with 1 to several umbels; peduncles 0.5–2 cm; pedicels 5–10 mm, peduncules and pedicels white or ferruginous tomentose, soon glabrescent. Calyx with 5 teeth, slightly compressed, ca. 8 mm in diam. Seeds reniform, white. Fl. Jun–Jul, fr. Aug–Oct.

- Scrub fields, among scattered trees, along streams, roadsides; below 800 m. Anhui, N Fujian, Jiangxi, Zhejiang.


白簕 bai le


Shrubs, scandent. Branches unarmed, glabrous. Petiole 2–5 cm, glabrous; leaflets 3, sessile, ovate or ovate-elliptic, 5–7 × 3.5–5 cm, membranous, both surfaces scattered setose, secondary veins 4–6 pairs, distinct, base broadly cuneate, margin setose-serrate, apex acute or acuminate. Umbels terminal, solitary or 2 or 3 together in a small panicle; peduncles 1–2 cm; pedicels ca. 8 mm, glabrous. Calyx 5-toothed, glabrous. Ovary 2-carpellate; styles 2, united to middle. Fruit black, globose, slightly compressed, ca. 8 mm in diam. Seeds reniform, white. Fl. Jun–Jul, fr. Sep–Oct.

- Scrub fields, among scattered trees, along streams, roadsides; below 800 m. Anhui, N Fujian, Jiangxi, Zhejiang.


白簕 bai le

**Zanthoxylum trifoliatum** Linnaeus, Sp. Pl. 1: 270. 1753;
Acanthopanax aculeatus (Aiton) Witte; A. septum Seemann; A. trifoliatus (Linnaeus) Merrill; Panax aculeatus Aiton.

Shrubs, scatent or climbers, to 7 m tall. Branches with scattered, recurved prickles. Petiole 2–6 cm, glabrous, prickly; petiolules 2–8 mm; leaflets 3–5, ovate, elliptic-ovate, or oblong, 4–10 × 2–4.5 cm, papery, adaxially glabrous or slightly setose on midvein and veins, secondary veins 5 or 6 pairs, base cuneate, margin serrulate, apex acute or acuminate. Inflorescence a terminal raceme of umbels or a compound umbel, borne on leafy shoots, with 3–10 umbels; peduncles 2–7 cm; pedicells 1–2 cm. Calyx with 5 teeth, glabrous. Ovary 2-carpellate; styles united to middle. Fruit globose, laterally compressed, 3–4 mm; style bifid, ca. 1.5 mm. Fl. Aug–Nov, fr. Sep–Dec.

Scrub fields, forest margins, in valleys or on mountain slopes; below 1000 m in E and 3200 m in W part of range. S Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hunan, Hubei, S Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [India, Japan, Philippines, Thailand, Vietnam].

This species is used medicinally.

Material from Guangxi with 3-foliate leaves, generally entire leaflet margins, and more rounded leaflet bases may represent a new infraspecific taxon.


Nothopanax Miquel.

Shrubs or treelets, evergreen, hermaphrodite, andromonoecious or dioecious, unarmed, often glabrous, some with sharply aromatic herbage. Leaves 1–5-pinnately compound, margins entire to crenate or serrate; stipules sometimes intrapetiolar and adnate to inside of petiole or absent. Inflorescence a terminal panicle of umbels, heads or spikes, sometimes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers. Pedicel articulate below ovary. Calyx undulate or with 4 or 5 (–8 or more) small lobes. Petals 4 or 5 (–8 or more), valvate. Stamens as many as petals. Ovary 4 or 5 (–8 or more) carpellate; styles free or rarely connate at base. Fruit a drupe, terete or laterally flattened. Seeds compressed, endosperm smooth.

About 150 species: paleotropical; five species (all introduced and cultivated) in S China.

1a. Leaves 3–5-pinnately compound .............................................................. 2. P. fruticosa
1b. Leaves 1–2-pinnately compound.
   2a. Flowers in heads, sessile; petiole with a short sheathing base, not clasping or alate ........................................ 4. P. nodosa
   2b. Flowers in umbels, distinctly pedicellate; petiole with an evident sheathing, adaxial base.
      3a. Leaflets 1–5, blades broadly elliptic to oblate or reniform, apex rounded, base shallowly cordate to convex (rarely rounded-truncate) ........................................ 5. P. scutellaria
      3b. Leaflets 5–15, blades elliptic to oblong, base and apex obtuse to acute or acuminate.
         4a. Margins of leaflets entire to coarsely crenate ........................................ 1. P. cumingiana
         4b. Margins of leaflets sharply serrulate .................................................. 3. P. guilfoylei


线叶南洋参 xian ye nan yang shen


Shrubs or treelets, 1.5–4 m tall, andromonoecious. Leaves 1–2-pinnate; petiole 8–20 cm, clasping at base, alate for 3–4.5 cm with membranous wings; petiolules 0.5–3 cm; leaflets 4–15, often variegated, elliptic to lanceolate or ovate, often narrowly so, 10–35 × 2–10 cm, papery, base obtuse to attenuate, margin entire to coarsely crenate, often with minute teeth, apex acuminate or acute to obtuse. Inflorescence terminal, pendant, a panicle of umbels; primary axis 15–30 cm; secondary axes 5–7, usually in verticils, 20–80(–140) cm; tertiary axes 10–25 per secondary axis, mostly grouped in 2–4 (or 5) verticils, with a terminal umbellule of bisexual flowers and 2–6 lateral umbellules of staminate flowers, or further divided into fourth order axes; pedicels 4–8 mm (shorter in staminate flowers). Ovary (2 or) 3–5-carpellate; styles free nearly to base, 1–1.4 mm at anthe-

Shrubs or treelets, to 5 m tall, andromonoecious. Leaves 1-2-pinnate; petiole ca. 30 cm, with a short sheathing base, not clasping or alate; petiolules absent or very short (leaflets sessile to subsessile); leaflets 21–33, ovate-oblong, 15–20 × 4–5 cm, papery, base rounded to truncate, margin shallowly crenate, apex apiculate. Inflorescence terminal, erect, a panicle of umbels; primary axis 30–100 cm; secondary axes 5–15, scattered or subverticillate, 7–25(–30) cm; tertiary axes 5–15 per secondary axis, mostly grouped in 2–4 verticils, with a terminal umbellule of bisexual flowers and 2–6 lateral umbellules of staminate flowers; pedicels 0.2–5 cm, papery, base narrowly cuneate to attenuate, margin spinulose-serrate, teeth (1–)1.5–5 mm, apex obtuse to broadly acute or acuminate. Inflorescence terminal, pendant, a pani
cle of umbels; primary axis 3–6 cm; secondary axes 5–10, scattered toward base, upper ones forming a terminal umbel, 20–60 cm; tertiary axes 8–12 per secondary axis, grouped in 1–3 verticils, (1.5–)3–12 cm; peduncles 1–2 cm, with a terminal umbel of bisexual flowers and often 1(or 2) lateral umbels of staminate flowers; pedicels 4–10 mm. Ovary 3- or 4(or 5)-carpellate; styles free nearly to base, recurving in fruit. Fruit rarely seen, subglobose, 4–5 mm high.

Cultivated in gardens, yards, and as hedges. Fujian (Xiamen), Guangdong (Guangzhou), Hainan [native to SW Pacific islands].


Trees, to 25 m tall, dioecious. Leaves 1- or 2-pinnate; petiole ca. 30 cm, with a short sheathing base, not clasping or alate; petiolules absent or very short (leaflets sessile to subsessile); leaflets 21–33, ovate-oblong, 15–20 × 4–5 cm, papery, base rounded to truncate, margin shallowly crenate, apex apiculate. Inflorescence terminal, erect, a panicle of heads; primary axis 50–150 cm, secondary axes 15–40 cm, peduncles 6–15 mm, with heads of hermaphroditic flowers. Ovary 5-carpellate; styles free, spreading. Fruit subglobose, ca. 4 mm high.

Widely cultivated in Fujian (Fuzhou) and Guangdong (Guangzhou) [native to Malesia and the Solomon Islands].

This species is used as an ornamental.


Crassula scutellaria N. L. Burman, Fl. Indica, 78. 1768;

Aralia balfouriana André; Polyscias balfouriana (André) L. H. Bailey.

Treelets or small trees, 2–6(–7) m tall, andromonoecious. Leaves 1- or 2-pinnate; petiole 35–30 cm, enlarged and clasping at base, alate for 1–6 cm with membranous wings; petiolules 1–5 cm; leaflets 1 (leaves unifoliolate), 3, or 5 (rarely 2 or 4), broadly elliptic to obovate or oblanceolate, occasionally ovate or obovate, 5–20–(–24) × 5–20–(–26) cm, papery to subleathery, base shallowly cordate or convex, margin subentire to coarsely crenulate or shallowly serrate, teeth short, apex rounded. Inflorescence terminal, erect, a panicle of umbels; primary axis 30–100 cm; secondary axes 15–30, in 2–4 verticils, 15–50 cm; tertiary axes 7–30 per secondary axis, in irregular verticils, 2–18 mm, with a terminal umbel bisexual and lateral umbels of staminate flowers; pedicels 1.5–7 mm. Ovary 2- or 3(or 4)-carpellate; styles free nearly to base, 0.8–1.2 mm at anthesis, recurving, expanding in fruit to 1.5 mm. Fruit laterally compressed or trigonous (rarely quadrangular), orbicular to ovate-obilong, 4 × 5.5–6 mm, base rounded (sometimes shallowly subcordate). Fl. Aug–Sep.

Widely cultivated in Fujian (Fuzhou) and Guangdong (Guangzhou) [native to Malesia and the Solomon Islands].

This species is used as an ornamental.

20. HETEROPANAX Seemann, Fl. Vit. 114. 1866.

幌伞枫属 huang san feng shu

Shrubs or trees, evergreen, andromonoecious, unarmed, stellate pubescent. Leaves 2–5-pinnately compound, margins entire;
stipules inconspicuous. Inflorescence a terminal panicle of umbels, peduncles with a terminal umbel of bisexual flowers and usually 1 to several lateral umbels of male flowers; bracts and bracteoles persistent. Pedicels not articulate below ovary. Calyx rim minutely dentate. Petals 5, valvate. Stamens 5. Ovary 2-carpellate; styles 2, free or united to middle. Fruit a drupe, laterally compressed. Seed compressed, endosperm ruminate.

About eight species: S and SE Asia; six species (two endemic) in China.

1a. Fruit subglobose to weakly compressed laterally, 2–4 mm thick at maturity; leaves 3–5-pinnately compound.

2a. Styles connate to above middle, free arms divergent in fruit; leaflets narrowly elliptic, apex long acuminate to caudate ...................................................... 1. H. hainanensis

2b. Styles divided to base, free arms strongly recurved in fruit; leaflets elliptic (rarely narrowly elliptic), apex acute to shortly acuminate .............................................................................................................. 2. H. fragrans

1b. Fruit strongly compressed laterally, 1–1.5 mm thick at maturity; leaves 2–5-pinnately compound.

3a. Pedicels 1.5–3.5(–4) mm in fruit.

4a. Leaves 2-pinnately compound, leaflets orbicular to ovate, base rounded ................................................................................ 3. H. yunnanensis

4b. Leaves 3–5-pinnately compound, leaflets elliptic to narrowly elliptic, base narrowly acute to acuminate ......................................................... 4. H. brevipedicellatus

3b. Pedicels 4–10 mm in fruit.

5a. Leaves 2-pinnately compound, leaflets leathery, 8–11 × 3–6 cm ......................................................................................... 5. H. nitentifolius

5b. Leaves 3–5-pinnately compound, leaflets papery, 2–6 × 0.8–2 cm ......................................................................................... 6. H. chinensis


海南幌伞枫 hai nan huang san fen

Trees, to ca. 7 m tall. Leaves 3- or 4-pinnately compound; petiole and rachis glabrous; petiolules 4–10 mm; leaflets narrowly elliptic, 4.5–11 × 1.2–4.2 cm, papery, both surfaces glabrous, lateral veins 5 or 6 pairs, slightly distinct, base narrowly cuneate, margin entire, minutely revolute, apex acuminate to slightly caudate. Inflorescence brown-red stellate pubescent; primary axis more than 35 cm; secondary axes to 20 cm; peduncles 1.5–2.5 cm; umbels in fruit 2–3 cm in diam., terminal ones often larger; pedicels 5–10 mm. Fruit brown-red at maturity when dry, weakly compressed laterally, circular to oblate, 4–6 × 5–8 mm; styles 2, persistent, 2–3 mm, united below middle, free arms recurved. Fr. Dec.

- Forest margins, near villages; below 800 m. Hainan (Chengmai).


幌伞枫 huang san fen

Panax fragrans Roxburgh ex Candolle, Prodr. 4: 254. 1830; Heteropanax fragrans var. attenuatus C. B. Clarke; H. fragrans var. ferrugineus Y. F. Deng; H. fragrans var. subcoronatus C. B. Clarke.

Trees, to 30 m tall. Leaves 3–5-pinnately compound, 50–100 cm; petiole 15–45 cm, glabrous; leaflets opposite, sub-sessile or with petiolules to ca. 1 cm, elliptic to elliptic-ovate, (3–)5.5–13 × (1.5–)3.5–6 cm, papery, both surfaces glabrous, lateral veins 6–10 pairs, distinct on both surfaces, base cuneate to rounded, margin entire, minutely revolute, apex shortly acuminate. Inflorescence densely ferruginous stellate tomentose, glabrescent; primary axis to 30 cm or more; secondary axis to 40 cm; peduncles to 9 cm; umbels of bisexual flowers 2–2.5 cm in diam., umbels of male flowers 1–1.5 cm in diam.; pedicels 4–8 mm, elongating in fruit. Fruit ovoid-globose to oblate or slightly didymous, weakly compressed laterally, 5–7 × 3–5 mm at maturity, 2–3 mm thick; styles persistent, ca. 2 mm; pedicels ca. 8 mm. Fl. Oct–Dec, fr. Feb–Apr.

- Hills, forests in valleys, or cultivated in gardens, near sea level to 1000 m. S Fujian, Guangdong, Guangxi, Hainan, SE Yunnan [Bhutan, India, Indonesia, Myanmar, Nepal, Thailand, Vietnam].

This species is used medicinally and for timber.


云南幌伞枫 yun nan huang san fen

Trees, evergreen, to ca. 10 m tall. Leaves 2-pinnately compound; petiole 6–22 cm, glabrous; petiolules 2–12 mm, terminal one to 2.2 cm; leaflets orbicular to ovate or elliptic; 4.5–6 × 2.5–4.5 cm, papery, both surfaces glabrous, lateral veins 4 or 5 pairs, slightly conspicuous on both surfaces, base rounded to broadly cuneate, margin entire, apex abruptly acute or shortly abruptly acuminate. Inflorescence densely ferruginous pubescent, glabrescent; primary axis ca. 15 cm; secondary axes 25–30 cm; peduncles 1.8–3.2 cm. Fruit compressed laterally, circular to slightly oblate, 6–8 mm in diam., ca. 1.5 mm thick; styles recurved, free to base, ca. 2 mm; pedicels 2–3 mm. Fl. Nov, fr. Apr–May.

- Forests in valleys; 100–1500 m. SW Yunnan (Jinggu, Lancang).

This species is used medicinally.


短梗幌伞枫 duan geng huang san fen

Trees, to 7 m tall. Leaves 4- or 5-pinnately compound; petiole 10–45 cm, stout; leaflets sub-sessile or with petiolule to 1 cm (often somewhat winged), dark green or more commonly gray-green adaxially when dry, lighter or more brown abaxially, elliptic or narrowly elliptic, occasionally slightly ovate, (2–)4–8.5 × 0.8–3.5 cm, papery, both surfaces glabrous, lateral veins 5 or 6 pairs, nearly obscure, base attenuate, margin entire, rarely sparsely and irregularly serrulate, minutely revolute, apex acu-
minate. Inflorescence densely dark ferruginous throughout, indumentum persistent; primary axis 30–70 cm; secondary axes 20–30 cm; peduncles 1–2 cm; umbels (0.5–)1–1.5 cm in diam.; pedicels 1.5–4 mm. Fruit strongly compressed laterally, circular to slightly oblate, 5–6 × 7–8 mm, ca. 1 mm thick; pedicels (3.5–)4 mm, ferruginous pubescent. Fl. Oct–Dec, fr. Nov, Jan–Feb.

Forests, forest margins, roadsides, often in shaded places; below 600 m. C Fujian, Guangdong, Guangxi, S and E Jiangxi [N Vietnam].

This species is used medicinally and as an ornamental.


亮叶幌伞枫 liang ye huang san feng

Trees, evergreen, to 10 m tall. Leaves 2-pinnately compound; petiole ca. 10 cm, glabrous; petiolules 0.3–2 cm; leaflets shiny adaxially, oblong or elliptic, 8–12 × 3–6 cm, leathery, both surfaces glabrous, secondary veins ca. 8 pairs, prominent abaxially, slightly impressed adaxially, base broadly cuneate, attenuate, margin entire, apex shortly acuminate. Inflorescence densely ferruginous tomentose; primary axis to 170 cm; secondary axes to ca. 20 cm; peduncles 1–2 cm; pedicels 5–11 mm. Fruit strongly compressed laterally, broadly ovate to oblate, 5–6 × 7–8 mm, ca. 1 mm thick; styles 3–4 mm. Fl. Sep–Nov, fr. Oct–Dec.


华幌伞枫 hua huang san feng

Heteropanax fragrans (Roxburgh ex Candolle) Seemann var. chinensis Dunn, J. Linn. Soc., Bot. 38: 360. 1908.

Shrubs, to 3 m tall. Leaves 3–5-pinnately compound, 50–60 cm; petiole 15–35(–45) cm; leaflets shiny dark green to khaki green adaxially, sometimes slightly glaucous abaxially, narrowly elliptic, 2.5–6(–7.5) × 0.8–2(–3) cm, both surfaces glabrous, lateral veins ca. 6 pairs, obscure, base narrowly cuneate, margin entire, occasionally revolute, apex acuminate to caudate. Inflorescence densely ferruginous tomentose; primary axis to 70 cm; secondary axes to 20 cm; peduncles 1–3 cm; umbels ca. 2.5 cm in diam.; pedicels in flower ca. 4 mm, densely ferruginous tomentose. Fruit strongly compressed laterally, 8–9 mm in diam., less than 2 mm thick; styles recurved, 2–3 mm; pedicels 6–8 mm. Fl. Oct–Nov, fr. Jan–Feb.

Forests or scrub on mountain slopes; below 800 m. Guangxi (Nanning, Shangsi), S Yunnan (Simao) [N Vietnam].

This species is used medicinally.


羽叶人参 yu ye shen shu

Aralia sect. Parapentapanax (Seemann) J. Wen; Humaniopanax C. J. Qi & T. R. Cao; Parapentapanax Hutchinson.

Trees or shrubs, evergreen or deciduous, sometimes epiphytic, hermaphroditic or andromonoecious, unarmed. Leaves pinnately compound, rarely simple; leaflets entire to serrate; stipules absent. Inflorescence a terminal panicle of umbels, heads, or racemules, glabrous or pubescent, developing from specialized floral buds, usually surrounded by numerous persistent bracts at base. Pedicels articulate below ovary. Calyx minutely 5-dentate. Petals 5(–7), imbricate. Stamens 5(–7). Ovary (3–)5(–7)-carpellate; styles united into a column or divided, as many as carpels. Fruit a drupe, globose to ellipsoid or ovoid. Seeds as many as carpels; endosperm uniform.

Between 18 and 22 species: restricted to Asia, especially the Sino-Himalayan region; 16 species (nine endemic) in China.

The first author finds it hard to accept Wen’s point of view (see following paragraph), in which Pentapanax was treated as a section within Aralia, and instead recognizes Pentapanax as distinct from Aralia on the basis of three main morphological differences: (1) inflorescences developing from specialized floral buds, usually surrounded by numerous persistent bracts at base. Pedicels articulate below ovary. Calyx minutely 5-dentate. Petals 5(–7), imbricate. Stamens 5(–7). Ovary (3–)5(–7)-carpellate; styles united into a column or divided, as many as carpels. Fruit a drupe, globose to ellipsoid or ovoid. Seeds as many as carpels; endosperm uniform.

Several phylogenetic studies have shown, however, that Pentapanax forms a group that is clearly nested within Aralia (Wen, Brittonia 45: 47–55. 1993; Wen, Edinburgh J. Bot. 58: 183–200. 2001; Wen et al., Acta Bot. Yunnan. 24: 557–568. 2002). The most recent revision (Wen, Cathaya 13–14: 1–116. 2002) treated the members of this group as a section within Aralia, an interpretation favored by the second author.

1a. Evergreen trees; ultimate inflorescence units racemose.

2a. Inflorescence glabrous; pedicels 2–3 mm; styles mostly united into a column

2b. Inflorescence ± pilose; pedicels 0.5–1.5 mm; styles free to united to middle

1b. Deciduous shrubs, small trees, or herbs; ultimate inflorescence units umbellate or capitulate.

3a. Leaflets entire or finely serrulate at margin.

4a. Leaves simple, abaxially glaucous

4b. Leaves pinnately compound, leaflets 3–5.

5a. Ovary 3(–5)-carpellate; styles free at apex only

5b. Ovary 5-carpellate; styles united into a column.

6a. Inflorescence a terminal umbel or small panicle of umbels with distinct peduncles

6b. Inflorescence with 1–3 verticils of flowers along primary axis

Forest margins, roadsides; 100–800 m. SE Yunnan (Hekou) [N Vietnam].

This species is used medicinally.
3b. Leaflets serrate at margin (except in 13b. P. fragrans var. forrestii).

7a. Leaves 2- or 3-pinnately compound.
  8a. Leaves 2- or 3-pinnately compound, often with accessory pinnae, leaflets often abaxially densely white tomentose ................................................................. 15. P. plumosus
  8b. Leaves mostly 2-pinnately compound, without accessory pinnae, leaflets abaxially glabrous.
    9a. Leaflets ovate or suborbicular, 3–6 × 4–6.5 cm, apex acute; peduncle 2–4 cm ....................... 12. P. caesius
    9b. Leaflets ovate-oblong or ovate-lanceolate, 1.5–3 × 0.5–3.5 cm, apex acuminate; peduncle 3–6 cm ................................................................. 16. P. wilsonii

7b. Leaves 1-pinnately compound or trifoliate.

10a. Inflorescence without a distinct primary axis, or primary axis less than 2 cm.
    11a. Secondary axes of inflorescence with a terminal umbel and 2–6 lateral verticillately arranged umbels ........................................................................................................................................ 13. P. fragrans

10b. Inflorescence with a distinct primary axis 5–50 cm.

12a. Styles free or united basally, free, reflexed apically.
    13a. Inflorescence and leaflets pubescent; leaflets (3–)5; styles connate at base, free apically ........................................................................................................ 11. P. tomentellus
    13b. Inflorescence and leaflets glabrous; leaflets 5–7; styles free, reflexed.
      14a. Leaflets ovate to suborbicular, subleathery, apex acute, margin serrulate ....................... 12. P. caesius
      14b. Leaflets ovate-elliptic, membranous, apex acuminate, margin irregularly serrate ................................. 7. P. yunnanensis

12b. Styles united into a column, sometimes divided at their apices.

15a. Inflorescence and leaflets glabrous.
    16a. Leaflets (3–)5, margins serrate .................................................................................. 7. P. yunnanensis
    16b. Leaflets 3, margins ciliate .............................................................................................. 8. P. longipes
    15b. Inflorescence densely pubescent; secondary veins more than 8 pairs.
      17a. Leaflets 3–5, 7–20 × 4–11 cm ........................................................................ 9. P. henryi
      17b. Leaflets 3–5, 6–9 × 2.5–4 cm ............................................................................. 10. P. castanopsidica

1. Pentapanax subcordatus (Wallich ex G. Don) Seemann, J. Bot. 2: 295. 1864 ["subcordatum"].

 心叶羽叶参 xin ye yu ye shen

 Hedera subcordata Wallich ex G. Don, Gen. Hist. 3: 394. 1834; Aralia subcordata (Wallich ex G. Don) J. Wen; Para-pentapanax subcordatus (G. Don) Hutchinson.

Trees, evergreen, small, sometimes epiphytic or semi-epiphytic, probably hermaphroditic. Leaves 1-pinnately compound; petiole 10–16 cm; petiolules 1.5–3 cm; leaflets 3–5, ovate, 7.5–15 × 4.5–9 cm, thickly papery to subleathery, glabrous, secondary veins ca. 8 pairs, tertiary veins distinct on both surfaces, base subcordate to truncate, margin entire or crenate-serrulate, apex acuminate. Inflorescence a terminal panicle of racemes; primary axis 2–10 cm; secondary axes 6–12, each 20–35 cm; tertiary axes 7–20, each 3–8 cm; pedicels 2–3 mm, glabrous. Ovary 5-carpellate; styles almost entirely united into a column. Fruit globose, 3–4 mm in diam.; styles persistent, arms erect to slightly recurved.

Evergreen forests; ca. 2000 m. W Yunnan (Tengchong) [India].

2. Pentapanax racemosus Seemann, J. Bot. 2: 295. 1864 ["racemosum"].

总序羽叶参 zong xu yu ye shen

Aralia gigantea J. Wen; A. lihengiana J. Wen et al.; Para-pentapanax racemosum (Seemann) Hutchinson.

Trees, evergreen, or epiphytic shrubs, to 10 m tall, probably hermaphroditic. Leaves 1-pinnately compound; petiole 9–17 cm; petiolules 0.2–2 cm, those of terminal leaflets 3.5–7 cm; leaflets (3–)5–7, ovate, 7–21 × 3.5–13 cm, membranous or papery, glabrous, secondary veins 8–10 pairs, distinct, tertiary veins indistinct, base rounded to subcordate, rarely cordate or acute, margin subentire or sparsely serrate, apex acute to acuminate. Inflorescence a terminal panicle of racemes, pilose; primary axis 6–15 cm; secondary axes 6–16, each to 45 cm; tertiary axes 15–40, each 4–9 cm; pedicels 0.5–1.5 mm, pilose. Ovary 3–5-carpellate; styles free or united at base to middle. Fruit globose to ovoid-globose, 3–4 × 2.2–4 mm; styles persistent, recurved. Fl. May–Jul, fr. Jun–Aug.

Evergreen to warm-temperate forests; 1500–3200 m. SE Xizang (Cona), S, SW, and W Yunnan [Bhutan, E India, Nepal].

Wen (Cathaya 13–14: 89–92. 2002) recognized Aralia lihengiana as distinct from Pentapanax racemosus (for which the correct name is A. gigantea when treated in Aralia) on the basis of differences in the size and shape of inflorescence bracts, the number of carpels, the degree of style fusion, and fruit shape.


粉背羽叶参 fen bei yu ye shen


Shrubs, epiphytic, 0.5–1 m tall, apparently andromonoecious. Leaves simple; petiole 1–5 cm; blade elliptic to ovate, 7–11 × 5–7 cm, thickly papery, glabrous, abaxially glaucous,
secondary veins 7 or 8 pairs, base truncate, rarely broadly cuneate, margin entire, apex acute. Inflorescence a terminal panicle, umbels few, often 2 at base, 1 terminal, often with some flowers verticillate on main axis, pubescent; peduncle 1.2–1.5 cm; pedicels 7–13 mm, pubescent. Calyx 0.65–0.8 mm, 5-denticulate. Ovary 5-carpellate; styles almost entirely united into a column. Fruit ovoid-globose, 3.5–4 mm high, slightly less in diam.; styles persistent, slightly divided at apex. Fl. Sep, fr. Sep–Oct.

- Dense, humid forests; 700–1400 m. Guangxi, SW Hunan (Chengbu).


光羽叶参 guang yu ye shen

Aralia glabrifoliolata (C. B. Shang) J. Wen.

Trees, small, or shrubs, 3–6 m tall, andromonoecious. Leaves 1-pinnately compound; petiole 8–10 cm; petiolules 0.3–1.1 cm; leaflets 5, oblong-ovate to broadly ovate, 10–19 × 6–9 cm, subleathery, glabrous, secondary veins 6–9 pairs, tertiary veins distinct on both surfaces, base subcordate to rounded, margin entire or serrulate, apex acute. Inflorescence a terminal panicle of umbels, pubescent; secondary axes 8–15, each 10–25 cm; tertiary axes 20–30, each 1–1.5 cm, with a terminal umbel of bisexual flowers and usually 1–3 lateral umbels of male flowers; pedicels 3–76 mm. Ovary 3(–5)-carpellate; styles 1–1.5 mm, divided at apex only. Fruit subglobose, ca. 5 mm high, 3.5–4 mm in diam.; styles persistent.

- Thickets, forests; 1800–2500 m. SE Yunnan (Jinping, Malipo, Wenshan).

5. Pentapanax parasiticus (D. Don) Seemann, J. Bot. 2: 296. 1864 [“parasiticum”].

寄生羽叶参 ji sheng yu ye shen

Shrubs, scandent, to 3 m tall, hermaphroditic. Leaves 1-pinnately compound; petiole 2.5–10 cm; petiolules 3–5 mm; leaflets (2 or)3–5, ovate to elliptic, 2.5–7 × 1.5–3 cm, membranous to thickly papery, glabrous, abaxially glaucous, secondary veins 6–9 pairs, tertiary veins distinct on both surfaces, base rounded or cuneate, margin entire, apex acute or acuminate. Inflorescence a terminal umbel or occasionally a small panicle of 2–5(–8) umbels, pubescent; peduncle 1–5 cm; pedicels 0.8–1.5 cm, glabrous or pubescent. Ovary 5-carpellate; styles united below, divided at apex. Fruit globose to ovoid, 4.4–5.5 mm high, 3.5–4 mm in diam.; styles persistent. Fl. Aug–Nov, fr. Nov–Dec.

Evergreen and deciduous forests, often epiphytic, sometimes parasitic; 2100–2500 m. Sichuan, C and NW Yunnan [Bhutan, India, Nepal, Thailand].

The two varieties recognized here were not retained by Wen (Cathaya 13–14: 59–64. 2002), who indicated that the characters on which they are based appear to vary randomly and do not show any geographic correlation.

1a. Inflorescence usually with 2–8 umbels on main rachis, peduncle and pedicels glabrous ................................. 5a. var. parasiticus

1b. Inflorescence usually a solitary umbel, peduncle and pedicels ferrugineous pubescent ........................................ 5b. var. khasianus

5a. Pentapanax parasiticus var. parasiticus

寄生羽叶参(原变种) ji sheng yu ye shen (yuan bian zhong)

Hedera parasitica D. Don, Prodr. Fl. Nepal. 188. 1825; Aralia parasitica (D. Don) J. Wen (1993), not Buchanan-Hamilton ex D. Don (1825).

Inflorescence usually with 2–8 umbels on main rachis; peduncle and pedicels glabrous.

Evergreen and deciduous forests; ca. 2500 m. Sichuan (Ebian, Emei Shan), NW Yunnan [Bhutan, India, Nepal, Thailand].


毛梗寄生羽叶参 mao geng ji sheng yu ye shen

Inflorescence usually a solitary umbel; peduncle and pedicels ferrugineous pubescent.

Forests; 2100–2400 m. C Yunnan (Songming) [India].

6. Pentapanax verticillatus Dunn, J. Linn. Soc., Bot. 35: 498. 1903 [“verticillatum”].

轮伞羽叶参 lun san yu ye shen

Aralia verticillata (Dunn) J. Wen.

Shrubs, to 5 m tall, hermaphroditic or possibly andromonoecious. Leaves 3-foliolate; petiole 3–9 cm; petiolules to ca. 5 mm; leaflets ovate to elliptic, 5.5–9 × 3–5 cm, subleathery, glabrous, abaxially glaucous, secondary veins 6–9 pairs, distinct on both surfaces, tertiary veins indistinct, base cuneate to rounded, margin entire, revolute, apex acute. Inflorescence a terminal, narrow panicle with 1–8 umbels on lower parts of primary axis and 1–3 verticils of flowers, pilose; peduncle 1.5–2.5 cm; pedicels 6–10 mm, pilose. Ovary 5-carpellate; styles united into a column, slightly divided at apex. Fruit ovoid-globose, ca. 4.5 mm high, 3.5–4 mm in diam.; styles persistent. Fl. Nov, fr. Dec–Feb.

Mixed forests, shrublands, commonly on limestone; 1200–2000 m. W Guangxi, E Yunnan [N Vietnam].


云南羽叶参 yun nan yu ye shen

Aralia yunnanensis Franch., J. Bot. 35: 498. 1903.

Shrubs, 2–8 m tall, probably andromonoecious. Leaves 1-pinnately compound; petiole 4–12 cm; petiolules to 4 cm, shorter on lateral leaflets; leaflets (3–)5, ovate to ovate-elliptic or broadly ovate, 4–9.5 × 2.5–6.2 cm, papery to membranous, glabrous, secondary veins 5–9 pairs, tertiary veins distinct on both surfaces, base broadly acute to rounded or subcordate, margin serrate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, pilose or glabrous; primary axis to ca. 30 cm; secondary axes 10–20, each to ca. 8–15 cm, with a terminal
umbel of bisexual flowers and 1 or 2 lateral umbels of male flowers; peduncle 1.5–4 cm (shorter in male umbels); pedicels 5–13 cm (shorter in male flowers), glabrous. Ovary 5-carpellate; styles united into a column, rarely divided to middle or base. Fruit globose, ca. 4 mm in diam.; styles persistent. Fl. May–Jun, fr. Jul–Aug.

- Montane evergreen forests, shrublands in valleys, roadsides, dry areas; 1200–2500 m. SW Sichuan, Yunnan.

Wen (Cathaya 13–14: 46–48. 2002) recognized Aralia shangiana as distinct from Pentapanax yunnanensis (for which the correct name is A. delavayi when treated in Aralia) on the basis of differences in several features, including leaflet shape and texture and inflorescence indument.

8. Pentapanax longipes (Merrill) C. B. Shang & C. F. Ji, comb. nov.

锈毛羽叶参 du long yu ye shen


Shrubs, to ca. 6 m tall, sometimes epiphytes, probably andromonoecious. Leaves trifoliolate; petiole 6–8 cm; central petiolule ca. 5 cm, lateral ones 1.5–2.5 cm; leaflets ovate, 8–17 × 4–10 cm, papery, glabrous, secondary veins 8–10 pairs, distinct, tertiary veins inconspicuous, base rounded to broadly acute, margin ciliate, apex acuminate. Inflorescence a terminal compound umbel of umbels, glabrous; primary axis 5–15 cm; secondary axes 11–12, each 11–17 cm, with several terminal umbels of bisexual flowers and a few lateral umbels of apparently male flowers; peduncle 2–4 cm; pedicels 1–2 cm. Ovary 5-carpellate; styles united basally into a column, free arms recurved. Fruit globose, 5–6 mm in diam.; styles persistent. Fl. Dec–Mar, fr. Mar–May.

Deciduous and mixed evergreen forests; 1200–2000 m. Xizang, NW Yunnan (Gongshan) [Bhutan, NE India, N Myanmar].

The oldest name for this species is Gamblea longipes, for which Aralia kingdon-wardii is a nomen novum recently proposed because the combination A. longipes Truffaut had already been made for another species. In Pentapanax, however, the specific epithet “longipes” is available and is accordingly combined here.


锈毛羽叶参 xiu mao yu ye shen

Aralia franchetii J. Wen; Pentapanax henryi var. fangii G. Hoo; P. henryi var. tomentosus G. Hoo; P. henryi var. wangshansensis W. C. Cheng; P. lanceolatus G. Hoo; P. tomentellus (Franchet) C. B. Shang var. tomentosus (G. Hoo) Y. F. Deng.

Shrubs or small trees to 8 m tall, andromonoecious. Leaves 1-pinnately compound; petiole 4–13 cm; petiolar of terminal leaflet to 2.5 cm, those of lateral leaflets very short; leaflets 5–7, elliptic to narrowly ovate, 6–9 × 2.5–4 cm, papery, glabrous, secondary veins 9–10 pairs, distinct on both surfaces, base obtuse to rounded, margin serrulate, apex acuminate. Inflorescence a terminal panicle of umbels, pilose; primary axis ca. 25 cm; secondary axes 18–35, each 3.5–7 cm, with a terminal umbel of bisexual flowers and sometimes 1–5 smaller (probably male) lateral umbels; pedicels 7.5–10 mm, pilose. Ovary 5-carpellate; styles united into a column, free at apex. Fruit globose, 3–4 mm in diam.; styles persistent. Fl. Oct–Dec, fr. Jan.

Evergreen forests, usually epiphytic on trunks of Castanopsis; 1800–2300 m. Taiwan.

10. Pentapanax castanopsidicola Hayata, Icon. Pl. Formosan. 5: 74. 1915 [“castanopsidicola”].

台湾羽叶参 tai wan yu ye shen

Aralia castanopsidicola (Hayata) J. Wen.

Shrubs or small trees, hermaphroditic or andromonoecious. Leaves 1-pinnately compound; petiole 6–13 cm; petiolule of terminal leaflet to 2.5 cm, those of lateral leaflets very short; leaflets 5–7, elliptic to narrowly ovate, 6–9 × 2.5–4 cm, papery, glabrous, secondary veins 9–10 pairs, distinct on both surfaces, base obtuse to rounded, margin serrulate, apex acuminate. Inflorescence a terminal panicle of umbels, pilose; primary axis ca. 25 cm; secondary axes 18–35, each 3.5–7 cm, with a terminal umbel of bisexual flowers and sometimes 1–5 smaller (probably male) lateral umbels; pedicels 7.5–10 mm, pilose. Ovary 5-carpellate; styles united into a column, free at apex. Fruit globose, 3–4 mm in diam.; styles persistent. Fl. Oct–Dec, fr. Jan.

- Evergreen forests, usually epiphytic on trunks of Castanopsis; 1800–2300 m. Taiwan.


马肠子树 ma chang zi shu

Shrubs or small trees, 2–7 m tall, apparently andromonoecious. Leaves 1-pinnately compound; petiole 6–14 cm; petiolules 1–6 mm; leaflets (3–)5–7, ovate to ovate-elliptic, 6–15 × 3–8 cm, papery, both surfaces sparsely pubescent or abaxially with tufts of pubescence in axils of veins, secondary veins 6–9 pairs, indistinct or slightly impressed adaxially, base rounded or broadly acute to subcordate, margin serrate, apex acute. Inflorescence a terminal panicle of umbels, densely brownish pubescent; primary axis to 50 cm; secondary axes 30–40, each 3–11 cm, with a terminal umbel of bisexual flowers and several lateral umbels of apparently male flowers; peduncle 1.5–2.5 cm; pedicels 5–10 mm (shorter in male flowers), densely pubescent. Ovary 5-carpellate; styles free nearly to base or united to middle. Fruit globose, 4–4.5 mm in diam.; styles persistent, reflexed. Fl. Sep–Oct, fr. Oct–Nov.

- Forests in valleys, shaded thickets, along streams, rocky areas, often on limestone; 1200–3200 m. SW Sichuan, Xizang, Yunnan.

This species is used medicinally.

The two varieties recognized here were not retained by Wen (Cathaya 13–14: 52–55. 2002), who indicated that the characters on which
**ARALIACEAE**

_**Pentapanax tomentellus** var. *distinctus* was based can be observed on the type specimen of *Aralia tomentella*.

1a. Leaflets abaxially subglabrous; inflorescence ca. 30 cm; styles united to middle ........................................ 11a. var. *tomentellus*

1b. Leaflets abaxially densely tomentose; inflorescence to 40 cm; styles free nearly to base ................................ 11b. var. *distinctus*

11a. **Pentapanax tomentellus** var. *tomentellus*

马肠子树 (原变种) ma chang zi shu (yuan bian zhong)


Leaflets abaxially subglabrous. Inflorescence ca. 30 cm. Styles united to middle.

- Shaded thickets, along streams, rocky areas, often on limestone; 1200–2600 m. SW Sichuan, Yunnan.

11b. **Pentapanax tomentellus** var. *distinctus*


离柱马肠子树 li zhu ma chang zi shu

Leaflets abaxially densely tomentose. Inflorescence to 40 cm. Styles free nearly to base.

- Forests in valleys. S and SW Yunnan.


圆叶羽叶参 yuan ye yu ye shen


Shrubs, to 6 m tall, andromonoecious. Leaves 1- or 2-pinnately compound; petiole 2.5–9 cm; petiolules 0.2–9 cm; leaflets (3–)5–7, ovate or suborbicular, 3–6 × 4.5–6.5 cm, papery or subleathery, glabrous, secondary veins 4–6 pairs, tertiary veins distinct on both surfaces, base round, sometimes obtuse or subcordate, margin sparsely serrulate, apex acute. Inflorescence a terminal panicle of umbels, glabrous; primary axis 0.5–3.5 cm; secondary axes 7–13, each 7–17 cm, with a terminal umbel of bisexual flowers and 2–6 lateral, verticillate umbels of male flowers, peduncle 2–4.5 cm; pedicels 5–15 mm, glabrous or pilose. Ovary 5-carpellate; styles united into a column. Fruit ovoid-globose, 4–5.5 mm in diam.; styles persistent. Fl. Jun–Aug, fr. Aug–Oct.

- Moist forests, forests in valleys, forest margins, ravines, mountain slopes; 2000–3600 m. SW Sichuan, S Xizang, Yunnan [Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, N Thailand, N Vietnam].

This species is used medicinally.

Material of this species was referred by Wen (Cathaya 13–14: 75–82, 2002) to *Aralia leschenaultii*, which is the correct name when treated in that genus. Frodin and Govaerts (World Checklist Bibliogr. Araliaceae, 68. 2004 ["2003"]) incorrectly referred to this species as *A. fragrans* (D. Don) Jebb & J. Wen, which is illegitimate because it is a later homonym. The two varieties recognized here were not retained by Wen (loc. cit.).

1a. Leaflets (3–)5, papery or subleathery, margin ciliate to serrate ......................... 13a. var. *fragrans*

1b. Leaflets usually 3, membranous or papery, margin entire ......................... 13b. var. *forrestii*

13. **Pentapanax fragrans** var. *fragrans*

羽叶参 (原变种) yu ye shen (yuan bian zhong)

*Hedera fragrans* D. Don, Prodr. Fl. Nepal. 187. 1825; *Aralia fragrans* (D. Don) Jebb & J. Wen (2001), not G. Don ex Loudon (1830); *A. leschenaultii* (Candolle) J. Wen; *H. leschenaultii* (Candolle) Wright & Arnott; *H. trifoliata* Wight & Arnott; *Panax bipinans* Wallich ex G. Don; *P. leschenaultii* Candolle; *Pentapanax leschenaultii* (Candolle) Seemann; *P. leschenaultii* var. *simplex* K. M. Feng; *P. leschenaultii* var. *villosa* Y. R. Li; *P. trinervia* Handel-Mazzetti.

Leaflets (3–)5, papery or subleathery, margin ciliate to serrate.

- Moist forests, forest margins, ravines, mountain slopes; 2000–3600 m. SW Sichuan, S Xizang, Yunnan [Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, N Thailand, N Vietnam].


全缘羽叶参 quan yuan yu ye shen


Leaflets usually 3, membranous or papery, margin entire.

- Forests in valleys; 2300–3400 m. SE Xizang, NW Yunnan.

**Liang geng yu ye shen**


Shrubs, presumably hermaphroditic. Leaves 1-pinnately compound; petiole 8–13 cm; terminal petioloile to 3 cm, lateral ones ca. 5 mm; leaflets 5–7, elliptic or ovate-lanceolate, 6–15 × 3–5.5 cm, papery or subleathery, secondary veins ca. 7 pairs, tertiary veins distinct, base rounded to obtuse, margin serrulate, apex acuminate. Inflorescence a terminal corymb of umbels, glabrous to pilose; primary axis very short, secondary axes 4–10 cm, each with a single terminal umbel of bisexual flowers; pedicels 1–1.5 cm. Ovary 5-carpellate; styles united into a column.

Dense forests; 1700–2300 m. SE Yunnan [Thailand, N Vietnam].

Wen (Cathaya 13–14: 75. 2002) did not recognize this taxon as distinct from *Pentapanax fragrans* (for which the correct name when treated in the genus *Aralia* is *A. leschenaultii*).


**Chang geng yu ye shen**


Shrubs, 0.5–5 m tall, andromonoecious or hermaphroditic. Leaves 2- or 3-pinnately compound; petiole 5–15 cm; petioloiles very short to 1.5 cm; leaflets 3–5 per pinna, basal pair each with an accessory pinna of 3–5 leaflets; leaflets ovate, 1–4 × 0.4–2 cm, papery, abaxially glabrous to densely white tomentose, adaxially glabrous to strigose or tomentose, scabrous, secondary veins 4 or 5 pairs, distinct on both surfaces, base acute to rounded or subcordate, margin irregularly serrulate or biserrulate, apex acuminate. Inflorescence a terminal panicle of umbels, glabrous to slightly pilose; primary axis 10–25 cm; secondary axes 10–15, each to ca. 15 cm, with a terminal umbel of bisexual flowers and 1–5 lateral umbels of bisexual or male flowers; peduncle 2–9 cm; pedicels 0.7–2 cm, glabrous. Ovary 5(or 6)-carpellate; styles united to middle. Fruit globose, ca. 4 mm in diam. Fl. Jun–Jul, fr. Aug–Oct.

- Forests, rocky slopes; 2300–3000 m. SW Sichuan (Jiulong, Mianning, Muli).


**Xi nan yu ye shen**


Shrubs, to 3 m tall, andromonoecious. Leaves (1 or)2- or 3-pinnately compound; petiole 5–15 cm; leaflets 3–5(or 7) per pinna, ovate, 1.5–3 × 0.5–3 cm, papery, abaxially glabrous, adaxially glabrous or slightly pubescent, secondary veins 4–6 pairs, tertiary veins distinct on both surfaces, base broadly cuneate or rounded to subcordate, margin sharply and irregularly serrulate or biserrulate, apex acuminate. Inflorescence a terminal panicle of umbels, glabrous, sometimes slightly pilose when young; primary axis ca. 30 cm; secondary axes 7–20, each ca. 20 cm, with a terminal umbel of bisexual flowers and several lateral, sometimes verticillate umbels of male flowers; peduncle 3–6 cm; pedicels 0.7–2 cm (shorter in male flowers). Ovary 5(or 6)-carpellate; styles free or united basally. Fruit globose, ca. 5 mm in diam.; styles persistent. Fl. May–Jul, fr. Jun–Sep.

- Evergreen forests, rocks, open shrublands; 1700–2700 m. SW Sichuan, NW Yunnan.

"*Aralia caesia var. pubescens*" (K. M. Feng & D. D. Tao, Vasc. Pl. Hengduan Mountains 1: 1273. 1993) belongs here but was not validly published because no Latin description was provided and no type was indicated (Vienna Code, Art. 36.1 and 37.1).


**Cong mu shu**

*Dimorphanthus* Miquel (1840–1841), not *Dimorphanthes* Cassini (1818).

Trees, small, or shrubs, prickly, or unarmed, rhizomatous herbs, andromonoecious or hermaphroditic. Leaves 1–3-pinnately compound, rachis articulate; leaflets 3–20, entire to serrate, serrulate, crenate, or undulate; stipules connate with petioles at base. Inflorescence terminal or axillary, paniculate, corymbose or umbellate, usually consisting of umbels, capitula, or racemes, occasionally umbels solitary. Pedicels articulate below ovary. Calyx rim 5-dentate. Petals 5, imbricate. Stamens 5. Ovary 5(or 6)-carpellate, occasionally aborted to 3; styles 5, distinct or connate at base. Fruit a berry, ± globose, sometimes 3–5-angular. Seeds laterally compressed; endosperm uniform.

About 40 species: mainly in SE Asia and China, a few in the Americas; 29 species (17 endemic) in China.

The first author circumscribes *Aralia* to exclude the species treated here in *Pentapanax*. Wen, however, has provided evidence showing that this group is clearly nested within *Aralia* and must be included therein in order to avoid rendering *Aralia* paraphyletic. Wen’s interpretation is favored by the second author. For further details and references see the discussion under *Pentapanax*.

A thorough revision of *Aralia* sect. *Dimorphanthus* was recently published by Wen (Cathaya 15–16: 1–187. 2004), treating material assigned to the first 19 species presented below. Wen adopted circumscriptions of several species that differ significantly from those used by the first author in the present treatment (most notably *A. armata*, *A. dasypilla*, and *A. elata*).

Several species are used medicinally and as a vegetable (young stems and leaves).
1a. Prickly trees or shrubs (A. sect. Dimorphanthus (Miquel) Miquel).
2a. Ultimate inflorescence units heads; flowers sessile or subsessile .............................................................. 1. A. dasyphylla
2b. Ultimate inflorescence units umbels; flowers with a distinct pedicel.
3a. Leaflet margins crenate (sometimes sparsely so).
   4a. Leaflets glabrous ............................................................................................................................... 2. A. bipinnata
   4b. Leaflets densely pubescent .................................................................................................................. 3. A. decaisneana
3b. Leaflet margins serrate, biserrate, or serrulate.
   5a. Leaflets densely hirsute, leathery; inflorescence bracts and bracteoles abaxially densely hirsute; pedicels densely setose .............................................................. 4. A. searelliana
   5b. Leaflets pubescent to rarely hirsute, appressed pubescent or glabrous, thinly papery to papery; if pedicels setose, leaflets less than 10 cm (A. spinifolia).
6a. Leaflets mostly 15–25 cm, strigose; inflorescence hirsute ......................................................................... 5. A. vietnamensis
6b. Leaflets usually less than 15 cm, not strigose; inflorescence not hirsute.
7a. Leaves usually 3-pinnately compound (occasionally 2- or 4-pinnately compound).
   8a. Umbels 20–50-flowered; pedicels 8–25 mm; inflorescence bracts sometimes caducous at fruiting stage; fruit 4.5–5.5 mm in diam. ................................................................. 8. A. armata
   8b. Umbels 7–15-flowered; pedicels 5–13 mm; inflorescence bracts persistent; fruit 3–3.5 mm in diam. ..... 7. A. foliulosa
7b. Leaves 2-pinnately compound (occasionally 3-pinnately compound).
   9a. Leaves and inflorescence setose and prickly; prickles of two types (straight and slender; recurved and conic); pedicels setose and furfuraceous ................................................................. 9. A. spinifolia
   9b. Leaves and inflorescence not setose; pedicels not setose and furfuraceous.
10a. Leaflets abaxially green or yellowish green, pubescent, pilose, villous, or hirsute, cuticle striate.
   11a. Inflorescence glabrous or pilose.
      12a. Umbels 20–50-flowered; leaflets 2.5–7.5 × 1–3.5 cm ............................................................. 10. A. finlaysoniana
      12b. Umbels 10–15-flowered; leaflets 6–14.5 × 2.5–6.5 cm ............................................................. 8. A. armata
   11b. Inflorescence densely pubescent to tomentose.
      13a. Umbels 20–50-flowered; pedicels 8–17 mm; leaflets basally subcordate to rounded .............. 6. A. chinensis
      13b. Umbels 8–25-flowered; pedicels 2–11 mm; leaflets basally rounded to obtuse .................. 12. A. thomsonii
   10b. Leaflets abaxially glaucous or whitish green, often glabrous, sometimes pubescent; cuticle coronulate.
      14a. Leaves tomentose to canescent, at least pilose on veins or sometimes adaxially scabrous.
      15a. Leaves adaxially scabrous on veins, elsewhere glabrous ..................................................... 13. A. scaberula
      15b. Leaves at least abaxially on veins tomentose to pilose.
         16a. Inflorescence with a primary axis 15–25 cm, longer than secondary axes; bracts 10–20 mm ................................................................. 14. A. gintungensis
         16b. Inflorescence with a primary axis 2–5 cm, shorter than secondary axes; bracts 2–5 mm ........ 11. A. elata
   14b. Leaves glabrous.
      17a. Stems with prickles needlelike and straight, or stralplike and recurved.
         18a. Prickles needlelike and straight ......................................................................................... 16. A. echinocaulis
         18b. Prickles stralplike and recurved ....................................................................................... 16. A. officinalis
      17b. Stems with prickles conic and grayish.
         19a. Inflorescence with a primary axis 5–20(–30) cm; leaflet margins undulate .................. 17. A. undulata
         19b. Inflorescence with a primary axis longer than 35 cm; leaflet margin serrate.
            20a. Small shrubs, 1–2 m tall; leaflets membranous, 3–6 × 1.2–3 cm; styles free ................ 18. A. debilis
            20b. Shrubs or small trees, 2–10 m tall; leaflets papery to subleathery, 5–12 × 2.5–8 cm;
                 styles united basally ............................................................... 19. A. stipulata
21a. Inflorescences corymbose, primary axis to ca. 5 cm.
   22a. Leaflets 1–3.5 × 1–2 cm; margin deeply incised ........................................................................ 20. A. apioides
   22b. Leaflets usually at least 3 × 2 cm, margin not incised.
      23a. Lateral petiolules 5–25 mm; leaflets sparsely setose-scabrous ............................................ 21. A. atropurpurea
      23b. Lateral petiolules 0–12 mm; leaflets strigose, villous or scabrous, not setose.
         24a. Both surfaces of leaflets white strigose on veins, abaxially gray; umbels 10–30-flowered .... 22. A. yunnanensis
         24b. Both surfaces of leaflets sparsely scabrous or villous, abaxially green; umbels 3–20-flowered.
      25a. Both surfaces of leaflets villous on veins, apex caudate, margin crenate ............................ 23. A. henryi
      25b. Both surfaces of leaflets sparsely scabrous, abaxially pubescent on veins, apex acuminate, margin serrate ............................................................... 24. A. fargesii
   21b. Inflorescences paniculate, primary axis longer than 10 cm.
26a. Leaflets broadly ovate, 2–4 × 2–4.5 cm, both surfaces sparsely white setose on veins, apex long acuminate; panicle sparsely branched, always with an axillary umbel at base ........................................ 25. *A. melanocarpa*

26b. Leaflets obovate, elliptic-ovobvate, oblong-ovate, or ovate; panicle well branched.

27a. Leaflets homomorphic (lateral and terminal leaflets similar in shape).

28a. Leaflets 3–5 × 1–2.5 cm, both surfaces setose, densely so on veins, apex long acuminate; panicle compact, umbels corymbose arranged .......................................................... 26. *A. kansuensis*

28b. Leaflets 4–15 × 3–9 cm, abaxially sparsely pubescent on veins, adaxially glabrous, apex acute; panicle sparsely branched, umbels racemose arranged .......................................................... 27. *A. cordata*

27b. Leaves heteromorphic (lateral and terminal leaflets of noticeably different shapes).

29a. Terminal leaflets obovate to elliptic-ovobvate; lateral leaflets oblong or elliptic to ovate, both surfaces gray pubescent; pedicels 5–6(–10) mm .................................................. 28. *A. continentalis*

29b. Terminal leaflets oblong-ovate; lateral leaflets rhombic-obleng or cordate, both surfaces sparsely pubescent; pedicels 8–10 mm, slender .......................................................... 29. *A. tibetana*


头序 potrà ตูซุ่คอน มู


Shrubs or small trees, 1.5–10 m tall, andromonoecious. Branches with short, straight prickles less than 6 mm. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole longer than 30 cm, densely yellow-brown tomentose, prickly or unarmed; petiololes 0–5 mm; leaflets 7–9 per pinna, ovate to broadly oblong, 5.5–15.5 × 3–10 cm, subleathery, abaxially densely tomentose, adaxially densely pubescent, secondary veins 7–14 pairs, prominent abaxially, subconspicuous adaxially, tertiary veins conspicuous, base rounded to subcordate, margin mucronate-serrulate, apex acute to acuminate. Inflorescence a terminal panicle of heads or dense umbels, unarmad; primary axis to ca. 60 cm; secondary axes 40–65 cm, densely yellow-brown tomentose; ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts persistent, oblong, ca. 3 mm; umbels 7–12-flowered; pedicels 0.5–2 cm or flowers sessile in heads; Ovary 5-carpellate; styles 5, free; Fruit globose to subglobose, 3–4 mm in diam.; styles persistent, radiating. Fl. Aug–Oct, fr. Oct–Dec.

Forests, forest margins, along streams, roadides and rocky slopes on hillsides and mountains; 100–1300(–1900) m. S Anhui (Qimen), C and SW Hubei (Dangyang, Jianshi), Hunan, Jiangxi, Sichuan, especially on mountains of the mainland in her substantially revised material from both Taiwan (where the type was collected) and several provinces in E and S China. By contrast, Wen (Cathaya 15–16: 79–82. 2004) recognized as a distinct species, *A. dasyphylloides*, based on a suite of distinguishing features including leaflet color, shape, and cuticle features, the indument and bracts of the inflorescence, and fruit shape.

2. *Aralia bipinnata* Blanco, Fl. Filip. 222. 1837.

台灣毛 ไทวาน มะวอ คอน มู

*Aralia hypoleuca* C. Presl.

Shrubs or trellets, 2.7–7 m tall, andromonoecious. Branches with straight, conic prickles 4–8 mm. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole to ca. 40 cm, prickly; petiololes 2–12 mm; leaflets 5–11 per pinna, ovate to lanceolate, 3.5–15 × 1.5–6.5 cm, papery to leathery, both surfaces glabrous, abaxially glaucous, secondary veins 6–8 pairs, distinct on both surfaces, tertiary veins indistinct, base rounded to subcordate, margin crenate, apex acuminate to cuneate. Inflorescence a terminal panicle of umbels, furfuraceous, unarmed; primary axis 10–40 cm; secondary axes 15–65 cm; ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts persistent, lanceolate to triangular, to ca. 4 mm; umbels 10–25-flowered; pedicels 4.5–10 mm, furfuraceous. Ovary 5-carpellate; styles 5, free. Fruit globose, ca. 3 mm in diam.; styles persistent, radiating. Fl. and fr. all year.

Dry places; (500–)1000–2100 m. Taiwan (Ali Shan) [Indonesia (Irian Jaya), Japan, Papua New Guinea, Philippines].


台灣毛受理 ไทวาน มาวอ คอน มู

Shrubs, to 3 m tall, andromonoecious. Branches with needlelike prickles. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiololes 20–40 cm, pubescent, with sparse prickles; petiololes 0.5–3(–8) mm; leaflets 7–13 per pinna, ovate to broadly ovate or oblong-ovate, 6–15 × 3–10 cm, leathery, abaxially yellow-brown tomentose, especially on veins, adaxially pubescent or strigose, secondary veins 6–8 pairs, base rounded, rarely subcordate, margin crenate to serrulate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, densely fulvous-tomentose, unarmed; primary axis 0.5 cm; secondary axes 30–50(–60) cm; ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts persistent, linear, 0.8–1.5 cm, densely tomentose; umbels 30–50-flowered; pedicels 4.5–7 mm, tomentose. Ovary 5-carpellate; styles 5, free. Fruit globose, 3–4 mm in diam.; styles persistent, recurved. Fl. Oct–Jan, fr. Dec–Feb.

- Sparse forests or scrub fields on slopes; below 1300 m. Anhui (Huang Shan), Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi (Longnan, Xunwu), Taiwan, S and SE Yunnan (Simao, Xichou).

The first author circumscribes this species broadly to include material from both Taiwan (where the type was collected) and several provinces in E and S China. By contrast, Wen (Cathaya 15–16: 90–93. 2004) treated *Aralia decaisneana* as endemic to Taiwan, placing all populations on the mainland in her substantially revised *A. chinensis*. 

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粗毛楤木 cu mao cong mu

Trees, small, to unbranched treelets, 3–10 m tall, andromonoecious. Branches densely fulvous hispid and with short, stout prickles. Leaves 2-pinnately compound, with a pair of accessory leaflets or pinnae at each division of rachis; petiole to 100 cm, stout, densely fulvous hirsute, with short prickles; petiolules (0–)0.5–3 mm; leaflets 5–9 per pinna, ovate, 10–22 × 5–11 cm, leathery, abaxially densely fulvous hirsute, especially on veins, adaxially rugose and ± hirsute, secondary veins 8–10 pairs, abaxially conspicuous, tertiary veins inconspicuous, base subacute to rounded, margin serrulate, apex acuminate. Inflorescence a terminal panicule of umbels, densely fulvous hirsute-tomentose, with short, straight, conic prickles; primary axis to ca. 200 cm; secondary axes 10–60 cm; ultimate axes with a terminal umbel of bisexual flowers and several lateral umbels of male flowers; bracts caducous, lanceolate, to 2 cm; umbels 20–40-flowered; pedicels 1–8 mm, densely fulvous hispid. Ovary 5-carpellate; styles 5, free. Fruit globose to ovoid-globose, 3.5–4 × 3–3.5 mm; styles persistent, recurved. Fl. Oct, fr. Jan–Feb.

Forests, open areas, roadsides, riversides; 500–2400 m. C and SE Yunnan (Hekou, Jingdong, Pingbian) [Myanmar, Vietnam].


偃毛楤木 yan mao cong mu

Aralia strigosa C. Y. Wu ex C. B. Shang.

Shrubs or small trees, 2–12 m tall, andromonoecious. Branches with conic prickles. Leaves 2(or 3)-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole to 70 cm, fulvous strigose, with straight, conic prickles; petiolules 3–10 mm; leaflets 5–13 per pinna, ovate or to broadly ovate, 8–26 × 4–17 cm, papery to leathery, abaxially densely fulvous strigose, adaxially sparsely fulvous strigose, more densely so on veins, secondary veins 8–10 pairs, prominent abaxially, impressed adaxially, base cordate to subacute, margin serrulate, apex acute, sometimes acuminate. Inflorescence a terminal panicule of umbels, densely strigose, adaxially fulvous strigose, abaxially sparsely fulvous strigose, with short, straight, conic prickles; primary axis to ca. 200 cm; secondary axes 10–60 cm; ultimate axes with a terminal umbel of bisexual flowers and several lateral umbels of male flowers; bracts caducous, lanceolate, to 2 cm; umbels 20–40-flowered; pedicels 2–12 mm, densely strigose. Ovary 5-carpellate; styles 5, united basally, free apically. Fruit globose to ovoid-globose, 3–4 cm in diam.; styles persistent, recurved. Fl. Sep–Dec, fr. Nov–Jan.

● Stream banks in forests, scrub fields on slopes. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Jiangxi.


小叶楤木 xiao ye cong mu

Aralia lantsangensis C. Y. Wu.

Shrubs or treelets, 1.5–10 m tall, andromonoecious. Branches with short prickles. Leaves (2 or)3-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole glabrous, with recurved prickles; petiolules (0–)0.5–3 mm; leaflets 5–11 per pinna, ovate to elliptic, 3.5–11 × 2.5–5 cm, papery to leathery, both surfaces glabrous, secondary veins 6–9 pairs, abaxially conspicuous, reticulate veins inconspicuous on both sides, slightly impressed adaxially, base rounded to subacute, margin serrulate, apex acuminate. Inflorescence a large, terminal panicule of umbels, glabrous, with short prickles; primary axis to ca. 100 cm; secondary axes 30–40 cm; ultimate axes with a terminal umbel of bisexual flowers and several lateral umbels of male flowers; bracts persistent, narrowly oblong, to 4.5 cm; umbels 7–15-flowered; pedicels 5–13 mm, glabrous. Ovary 5-carpellate; styles 5, united basally, free apically. Fruit globose to ovoid-globose, 3–3.5 mm in diam.; styles persistent, recurved. Fl. Sep–Mar.

Secondary forests, stream banks in forests, hillsides, roadsides; 700–1800 m. S and SW Yunnan [Bangladesh, Bhutan, India, Myanmar, Thailand, Vietnam].


野楤头 ye cong tou


Shrubs, to 4 m tall, andromonoecious. Branches with conic, often recurved prickles shorter than 4 mm. Leaves 2- or 3-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole to 100 cm, armed; leaflets 5–9 per pinna, ovate-oblong, 4–11 × 2–5 cm, papery, both surfaces pilose, especially on veins, secondary veins 6 pairs, conspicuous on both surfaces, reticulate veins inconspicuous, cuticle striate
or not, base rounded to cordate, margin serrate, apex acuminate. Inflorescence a terminal panicle of umbels, glabrous or pubescent, with recurved prickles; primary axis to ca. 40 cm; ultimate axes with a terminal umbel of bisexual flowers and several lateral umbels of male flowers; bracts caducous, linear, 1.2–2.5 mm; umbels 20–50-flowered; pedicels 1–1.5 cm, with thin prickles and stout trichomes. Ovary 5-carpellate; styles 5, free. Fruit globose, ca. 4 mm in diam., styles persistent, radiating to recurved. Fl. Aug–Oct, fr. Sep–Dec.

Forests, Pinus forests, forests in valleys, forest margins; below 1600 m. Guangdong, Guangxi, Hainan, Jiangxi (Wugong Shan), S and W Yunnan [India, Malaysia, N Myanmar, Thailand, Vietnam].

Wen (Cathaya 15–16: 115–117. 2004) treated Aralia armata to exclude material from S China (Guangdong, Guangxi, Guizhou, Hainan, and Jiangxi) and Vietnam, all of which she referred to A. finlaysoniana (see below).


长刺楤木 chang ci cong mu

Aralia nantouensis S. S. Ying.

Shrubs, to 3 m tall, andromonoecious. Branches with dense, flat prickles 1–10 mm and slender setae 2–4 mm. Leaves 2(or 3)-pinnately compound, with a pair of accessory leaflets at each division of racis, petioles, rachis, secondary rachis, and leaflets with scattered, slender and nearly straight prickles, recurved, conic prickles, and numerous slender, spreading setae; petiole to ca. 50 cm; petioloile (0–0.5)–3 mm; leaflets 5–9 per pinna, ovate to narrowly ovate, rarely lanceolate, 5–17 × 2.5–9 cm, papery to submembranous, secondary veins 5–8 pairs, conspicuous on both surfaces, reticulate veins conspicuous abaxially, inconspicuous adaxially, base rounded to slightly subcordate, margin serrate or biserate (teeth ciliate), apex acuminate. Inflorescence a terminal panicle of umbels, setose, with prickles and bristles, lax; ultimate axis with a terminal umbel of bisexual flowers and 1 or 2 lateral umbels of male flowers; bracts persistent or caducous, oblong, 3–6 mm; umbels 20–50-flowered; pedicels 1.2–1.6 cm (shorter in male flowers), densely setose and furfuraceous. Ovary 5-carpellate; styles 5, united basally, free apically. Fruit globose, 5–5.5 mm in diam.; styles persistent, radiating. Fl. Aug–Oct, fr. Oct–Dec.

● Mountain slopes, open woods, forest margins, ravines, roadsides; 200–800 m. Fujian, Guangdong, Guangxi (Jinxiu, Wuzhou, Yuandao Shan), Hunan (Qianyang, Tongdao), Jiangxi (Rutin, Xingguo, Xunwu), Taiwan, Zhejiang.

This species is used for washing boils.

10. Aralia finlaysoniana (Wallich ex G. Don) Seemann, J. Bot. 6: 134. 1868.

虎刺楤木 hu ci cong mu

Panax finlaysoni anus Wallich ex G. Don, Gen. Hist. 3: 386. 1834.

Shrubs, slender, sometimes vinelike, 1.5–4 m tall, andromonoecious. Branches prickly. Leaves 3- or 4-pinnately compound, with a pair of accessory leaflets or pinnae at each division of rachis; petiole 25–55 cm, glabrous or setaceous, with dense prickles; petioloiles absent or ca. 15 mm; leaflets 3–5 per pinna, ovate, narrowly ovate, or lanceolate, 2.5–7.5 × 1–3.5 cm, papery to thinly papery, abaxially pale green, pubescent or pilose, rarely glabrescent, adaxially green, sparsely strigose, secondary veins 5–7 pairs, base rounded to obtuse, margin serrulate to serrate or doubly serrate, ± ciliate, apex acuminate to long acuminate. Inflorescence a terminal or axillary panicle of umbels, with short, recurved prickles; primary axis to 80 cm; ultimate axes with a terminal umbel of bisexual flowers and several lateral umbels of male flowers; bracts caducous, narrowly triangular to lanceolate; umbels 20–50-flowered; pedicels 10–25 mm, bristly, sometimes pilose or glabrescent. Ovary 5–7-carpellate; styles 5(–7), united basally, free apically. Fruit globose to ovoid-globose, 5–6 mm in diam.; styles persistent, recurved. Fl. Jan–Dec, fr. Jan–Dec.

Dense forests, forest margins, thickets, open thickets, streamsides, roadsides; 100–1300 m. Guangxi, Guizhou, Hainan, Yunnan [N Thailand, Vietnam].


楤木 cong mu

Shrubs or small trees, 2–5(–8) m tall, andromonoecious. Branches armed with sparse prickles. Leaves 2(or 3)-pinnately compound, with a pair of accessory leaflets at each division of racis; petiole to ca. 50 cm, glabrous or pubescent, prickly; petioloiles 3–5 mm; leaflets 5–11(–13) per pinna, broadly ovate to elliptic-ovate or narrowly ovate, 5–12(–19) × 2.5–8 cm, membranous, papery, or subleathery, abaxially glabrous or light yellow or gray pubescent, sometimes more densely pubescent on veins, or sometimes glabrescent, adaxially sparsely strigose, secondary veins 6–10 pairs, raised abaxially, conspicuously adaxially, base cordate to subcordate or rounded, margin serrulate, apex acuminate. Inflorescence a terminal panicle of umbels, densely yellow-brown or gray pubescent, unarmed; primary axis 1–5 cm; secondary axes 20–35 cm;ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts persistent, lanceolate to subulate, 2–5 mm, sometimes ciliate; umbels 6–15-flowered; pedicels 1–10 mm, densely pubescent. Ovary 5-carpellate; styles 5, free or united to middle. Fruit globose, ca. 3–4 mm in diam.; styles persistent. Fl. Jul–Sep, fr. Sep–Dec, n = 24*.

Forests, forest margins, scrub fields, roadsides; near sea level to 2700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, N Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea, E Russia].

1a. Leaflets papery or subleathery, abaxially pubescent or sometimes glabrescent; pedicels 1–6 mm ........................................... 11a. var. elata

1b. Leaflets membranous or papery, abaxially glabrous or sparsely pubescent and echinulate on veins; pedicels 5–10 mm ........................................... 11b. var. glabrescens

11a. Aralia elata var. elata

楤木(原变种) cong mu (yuan bian zhong)

Dimorphanthus elatus Miquel, Comm. Phytogr. 95. 1840;

Leaflets papery or subleathery, abaxially pubescent or sometimes glabrescent. Pedicels 1–6 mm.

- Forests, forest margins, scrub fields, roadsides; near sea level to 2700 m. Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, Hebei (Fuping, Xiaowutai Shan), Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi (Qin Ling), Shanxi (Yangcheng, Yuanqu), Sichuan, Yunnan, Zhejiang.

This variety is circumscribed by the first author to include material from throughout most of China, including collections from Gansu, Hebei, Shaanxi, and Sichuan that Wen (Cathaya 15–16: 48–52. 2004) placed in Aralia stipulata (including the types of K. M. Feng, Fl. Yunnan. 2: 498. 1979).


辽东楤木 liaodong congmu


Leaflets membranous or papery, abaxially glabrous or sparsely pubescent and echinulate on veins. Pedicels 5–10 mm.

- Forests, scrub fields; below 1000 m. NE Hebei, Heilongjiang, Jilin (Antu, Jiaobe, Manjiang), Liaoning (Jiguanshan), N Shandong [Japan, Korea, E Russia].

The first author treats this variety to include material from Japan (including the type of Aralia spinosa var. glabrescens) and S Korea that Wen (Cathaya 15–16: 71–75. 2004) included in her concept of A. elata var. elata.

This variety is used medicinally and as a vegetable.


云南楤木 yunnan congmu

Shrubs or treelets, 1.5–10 m tall, andromonoecious. Branches softly fulvous villous, with short conic prickles 3–4 mm. Leaves 2(or 3)-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole 20–50 cm, pubescent, prickly; petiolules 0–12 mm; leaflets 3–15 per pinna, lanceolate to ovate, 8–20 × 3–10.5 cm, papery, both surfaces densely and softly fulvous villous, secondary veins 8–10 pairs, prominent abaxially, subconspicuous adaxially, tertiary veins subconspicuous abaxially, obscure adaxially, cuticle striate, base rounded to obtuse, margin serrulate, apex acuminate, occasionally acute. Inflorescence a terminal panicle of umbels, densely pubescent, unarmed; primary axis 1.5–5 cm; secondary axes 15–25 cm; ultimate axes with a terminal umbel of bisexual flowers and numerous lateral umbels of male flowers; bracts persistent, narrowly triangular to lanceolate, to 3.5 cm; umbels 8–25-flowered; pedicels 2–11 mm, densely pubescent. Ovary 5-carpellate; styles 5, free. Fruit globose to ovoid-globose, 3.5–5 mm in diam.; styles persistent, radiating. Fl. (May–)Jun–Aug, fr. Oct–Nov.

Forests and forest margins on slopes or in valleys, along streams; 200–2700 m. Guangxi, Yunnan [India, Malaysia, Myanmar, Thailand, Vietnam].

The first author recognizes the following two varieties based on differences in indument and pedicel length, but they were not retained by Wen (Cathaya 15–16: 128. 2004), who indicated that pedicel length does not appear to exhibit any geographic structuring and can vary even within a single population.

1a. Pedicels 8–11 mm ........................................ 12a. var. thomsonii
1b. Pedicels 2–6 mm ...................................... 12b. var. brevipedicellata

12a. Aralia thomsonii var. thomsonii

云南楤木(原变种) yunnan congmu (yuan bian zhong)

All parts of plants densely fulvous villous; pedicels 8–11 mm.

Forests and forest margins on slopes or in valleys; 200–2700 m. Guangxi (Lingyun), Yunnan (Fengqing, Xichou, Xishuangbanna) [India, Malaysia, Myanmar, Thailand, Vietnam].


短柄云南楤木 duan bing yunnan congmu

Pedicels 2–6 mm.

- Forests, usually in valleys; 600–1100 m. S Yunnan (Xishuangbanna).


糙叶楤木 caoyecongmu

Shrubs, 1.5–2.5 m tall, andromonoecious. Branches with scattered lenticels and straight, conic prickles 4–5 mm. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole 15–20 cm, glabrous, with sparse prickles; petiolules 0–5 mm; leaflets 3–5 per pinna; oblong-ovate, ovate, or rarely lanceolate, 6–12 × 3–4.5 cm, papery or subleathery, abaxially scabrous on veins and glaucous, adaxially glabrous, secondary veins 5 or 6 pairs, tertiary veins prominent, conspicuous on both surfaces, base broadly cuneate to rounded, margin serrate, apex acuminate. Inflorescence a terminal panicle of umbels, pilose, unarmed; primary axis 1.5–5 cm; secondary axes 15–25 cm; ultimate axes with a terminal umbel of bisexual flowers and numerous lateral umbels of male flowers; bracts persistent, lanceolate, 3–5 cm; umbels 15–20-flowered; pedicels 2–3 mm, pilose. Ovary 5-carpellate; styles free. Fruit globose to ellipsoid, ca. 5 × 4 mm; styles persistent, radiating. Fl. Jul–Aug, fr. Aug–Sep.

- Forests on mountain slopes; 1100–1500 m. Fujian (Chong’an), Jiangxi.


景东楤木 jingdong congmu
Shrubs or treelets, 1.5–12 m tall, andromonoecious. Branches densely yellow-brown tomentose, with sparse slender prickles 4–8 mm. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole 10–27 cm, pubescent, unarmed or sparsely armed; petiololes 1–6 mm; leaflets 5–7 per pinna, elliptic to ovate, 2–12 × 1–5 cm, papery to subleathery, abaxially densely yellow-brown or gray tomentose, especially on veins, adaxially hirsute on veins, secondary veins 5–13 pairs, base obtuse to rounded, margin serrate to coarsely serrate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, densely yellow-brown tomentose, unarmed to sparsely armed at base; primary axis 15–25 cm; secondary axes to ca. 10 cm, with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts serrate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, unarmed; primary axis to ca. 50 cm; ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts lanceolate to narrowly ovate, 12–14 mm; umbels 17–45-flowered; pedicels 6–8 mm, pubescent. Ovary 5-carpellate; styles 5, basally united, apically free. Fruit globose to subglobose, 3.5–4 mm in diam.; styles persistent, free arms recurved. Fl. Aug–Sep, fr. Sep–Oct.


波缘楤木  bo yuan cong mu


Shrubs or trees, 1–10 m tall, hermaphroditic (?or andromonoecious). Branches with sparse, short, conic prickles. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole 20–35 cm, glabrous, sparsely short prickly; petiololes (1–)3–10 mm; leaflets 5–15 per pinna, ovate or ovate-lanceolate to broadly ovate, 7–14 × 3–7 cm, papery to nearly membranous, both surfaces glabrous, abaxially glaucous, secondary veins 7–10 pairs, tertiary veins 6–9 pairs, prominent on both surfaces, tertiary veins subconspicuous abaxially, slightly impressed adaxially, base rounded to obtuse, margin serrate, apex acute. Inflorescence a terminal panicle of umbels, sparsely lenticellate, unarmed; primary axis 5–20(–30) cm; secondary axes 25–55 cm; bracts persistent or sometimes caducous, lanceolate to narrowly triangular, 3–10 mm, ciliate; umbels 10–25-flowered; pedicels 3–9 mm, slightly furfuraceous. Ovary 5-carpellate; style 5, free. Fruit globose, 3.5–4 mm in diam.; styles persistent, radiating. Fl. Jun–Aug, fr. Oct.

- Dense forests, sparse woods; 500–2500 m. Chongqing (Wuxi), Guangdong, Guangxi (Jiuan Dashan, Longsheng), Hunan (Chengbu, Xinjiang), Jiangxi, Sichuan (Huili, Leibo), Yunnan [N Vietnam].


秀丽楤木  xiu li cong mu


Shrubs, 1–2 m tall, andromonoecious. Branches with sparse, slender, conic prickles. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole 10–15 cm, glabrous, prickly, sometimes sparsely so; petiololes 5–10 mm; leaflets 2–8 mm, papery to lanceolate, 3–6 × 1.2–3 cm, membranous, both surfaces glabrous, abaxially glaucous, secondary veins 4–7 pairs, conspicuous on both surfaces, tertiary veins inconspicuous, base rounded, margin coarsely serrate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, glabrous, unarmed; primary axes longer than 35 cm; secondary axes 25–55 cm; tertiary axes 10–20(–30) cm; ultimate axes with a terminal umbel of bisexual flowers and several lateral umbels of male flowers; bracts lanceolate to narrowly ovate, 12–14 mm; umbels 17–45-flowered; pedicels 6–8 mm, pubescent. Ovary 5-carpellate; styles 5, basally united, apically free. Fruit globose to subglobose, 4–5 mm in diam.; styles persistent, free arms recurved. Fl. Aug–Sep, fr. Sep–Oct.

- Forests, roadsides, thickets, rocky cliffs; 200–1600 m. Anhui (Jingdong, Longling), Zhejiang, Fujian, Guangdong (Lechang, Lianshan, Yingde), Guangxi, Guizhou (Fanjing Shan), Hubei (Badong), Hunan, Jiangxi, Sichuan, Yunnan [N Vietnam].


棘茎楤木 ji jing cong mu

Trees, small, or shrubs, 2–10 m tall, andromonoecious. Branches with dense, brownish, slender needlelike prickles 5–20 mm. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole 30–44 cm, usually unarmed; petiololes 3(–10) mm; leaflets 5–9 per pinna, oblong-ovate to lanceolate, 6–14.5 × 2.5–8 cm, membranous to papery, both surfaces glabrous, abaxially glaucous, secondary veins 6–9 pairs, prominent on both surfaces, tertiary veins subconspicuous abaxially, slightly impressed adaxially, base rounded to obtuse, margin serrate, apex acuminate. Inflorescence a terminal panicle of umbels, glabrous, unarmed; primary axis to ca. 40 cm; secondary axes 10–20 cm; ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts apically free, margin coarsely serrate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, sparsely lenticellate, unarmed; primary axis 5–20(–30) cm; secondary axes 25–55 cm; bracts persistent or sometimes caducous, lanceolate to narrowly triangular, 3–10 mm, ciliate; umbels 10–25-flowered; pedicels 1–2 cm, furfuraceous. Ovary 5-carpellate; style 5, free. Fruit globose, 3.5–4 mm in diam.; styles persistent, radiating. Fl. Jun–Aug, fr. Oct.

- Forests, roadsides, thickets, rocky cliffs; 200–1600 m. Anhui (Huang Shan), Fujian, Guangdong (Lechang, Lianjiang, Yingde), Guangxi, Guizhou (Fanjing Shan), Hubei (Badong), Hunan, Jiangxi, Sichuan, Yunnan (Jingdong, Zhejiang), Zhejiang (Changhua, Tianmu Shan).


陕鄂楤木 shan e cong mu

Trees 3–10 m tall, andromonoecious. Branches with dense, flat, recurved prickles. Leaves 2- or 3-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole ca. 35 cm, glabrous, somewhat prickly; petiololes 5–10 mm; leaflets 5–17 per pinna, ovate to narrowly ovate, 8–11 × 4–6 cm, papery to subleathery, abaxially glaucous, adaxially green, both surfaces glabrous, secondary veins 11–12 pairs, base subcordate, slightly oblique, margin mucronate, apex long acuminate. Inflorescence a terminal panicle of umbels, armed; primary axis to 50 cm; ultimate axes with a terminal umbel of bisexual flowers and 1 to several lateral umbels of male flowers; bracts lanceolate to narrowly ovate, 12–14 mm; umbels 17–45-flowered; pedicels 6–8 mm, pubescent. Ovary 5-carpellate; styles 5, basally united, apically free. Fruit globose, 4–5 mm in diam.; styles persistent, free arms recurved. Fl. Aug–Sep, fr. Sep–Oct.

披针叶楤木 pi zhe nong mu

Eleutherococcus maiirei H. Lévéillé.

Shrubs or small trees, 2–10 m tall, andromonoecious. Branches nearly unarmed, with swollen, conic prickles at base. Leaves 2-pinnately compound, with a pair of accessory leaflets at each division of rachis; petiole to ca. 15 cm, glabrous, unarmed; petiolules to 4 mm; leaflets 3–11 per pinna, ovate to narrowly ovate, 5–12 × 2.5–8 cm, papery to subleathery, both surfaces glabrous, abaxially rarely pilose on veins, secondary veins 6 or 7 pairs, base rounded, margin serrate, apex acute to acuminate. Inflorescence a terminal panicle of umbels, unarmed; primary axis to 45 cm; secondary axes 30–45 cm; ultimate axes to subcordate, margin serrate, apex aciculate. Fruit globose to ovoid-globose, ca. 3 mm in diam.; styles persistent, recurved. Fl. Jun–Jul.

● Valleys, thickets, 800–1000 m. Guangdong, Guanxi.


芹叶龙眼独活 qin ye long yan du huo

Herbs, perennial, 1–1.5 m tall, with stout, elongate rhizome. Leaves 2- or 3-pinnately compound (upper leaves often simple); petiole 2–15 cm; petiolules 1–5 mm; leaflets 3–9 per pinna, broadly ovate, 1.3–4.5 cm, papery, sparsely white strigose on veins, both surfaces glabrous; abaxially slightly pilose to glabrescent on veins, adaxially glabrous to slightly pilose-scabrous, secondary veins 4 or 5 pairs, subconspicuous, tertiary veins subconspicuous abaxially, base cordate to obtuse, margin deeply incised and biserate (teeth setose, acuminate), apex of terminal leaflets long acuminate, lateral leaflets often obtuse. Inflorescence a terminal or axillary corimb of umbels, sparsely pilose to glabrescent; primary axis to 5 cm; bracts linear-lanceolate, 3–7 mm; umbels 10–30-flowered; pedicels 4–8 mm. Ovary 5-carpellate; styles 5, free. Fruit globose, ca. 3 mm in diam.; styles persistent, recurved. Fl. Jun–Aug.

● Forests; ca. 3000 m. Yunnan (Eryuan, Jingdong, Weixi).

Wen (Cathaya 15–16: 48–52. 2004) circumscribed this species more broadly to encompass material from Gansu, Hubei, Shaanxi, and Sichuan (including the types of Aralia gaoshania and A. taibaiensis; see A. elata var. elata in the present treatment).


Herbs, perennial, 1–1.5 m tall, with elongate rhizome. Leaves 1- or 2-pinnately compound; petiole 1.5–4 cm; petiolules 5–25 mm (terminal one to 4 cm); leaflets 3–7 per pinna, ovate, 3–8 × 2–3 cm, membranous, both surfaces sparsely setose-scabrous, secondary veins 5–7 pairs, subconspicuous, tertiary veins inconspicuous, base broadly cuneate, margin biserate, apex long acuminate. Inflorescence a terminal corimb of umbels, glabrous to slightly scabrid; primary axis to 5 cm; secondary axes to 18 cm; bracts linear, 5–10 mm; umbels 7–10-flowered; pedicels 5–10 mm, scabrid. Ovary 5-carpellate; styles 5, free. Fruit globose, ca. 3.5 mm in diam.; styles persistent, recurved. Fl. Jun–Jul, fr. Aug–Sep.

● Among scattered trees, grasslands on slopes or roadsides; 2700–3300 m. Sichuan, Xizang (Bomi); Yunnan (Dêqên).


云南龙眼独活 yun nan long yan du huo

Aralia fargesii Franchet var. yunnanensis H. L. Li.

Herbs, perennial, to ca. 1 m tall, with stout, elongate rhizome. Leaves 2-pinnately compound; petiole 3–15 cm; petiolules 9–12 mm (terminal one to 3 cm), glabrous to slightly pilose; leaflets 3–5 per pinna, ovate to narrowly ovate, (2–)3–8 × 1.3–4.5 cm, papery, sparsely white strigose on veins, truncate to subcordate, margin serrate, apex acuminate. Inflorescences terminal or axillary corimb of umbels, pilose; primary axis to 5 cm, bracts linear-lanceolate, 3–7 mm; umbels 10–30-flowered; pedicels 4–8 mm. Ovary 5-carpellate; styles 5, free. Fruit globose, ca. 3 mm in diam.; styles persistent, radiating. Fl. Jun–Aug, fr. Aug–Oct.

● Forests or scrub fields on slopes; 1900–2800 m. SW Sichuan (Muli), C and NW Yunnan (Dêqên, Heqing, Songming).


柔毛龙眼独活 rou mao long yan du huo

Aralia fargesii Handel-Mazzetti var. henryi (Franchet) Handel-Mazzetti.

Herbs, perennial, 40–100 cm tall, with short rhizome. Leaves 2-ternately to 2-pinnately compound; petiole 3–10 cm, puberulous to glabrous; petiolules 3–5 mm (terminal one to 2 cm); leaflets 3 per rachis, oblong-ovate, 3.5–10 × 2–6 cm, membranous, both surfaces villous on veins, secondary veins 6–8 pairs, subconspicuous, tertiary veins inconspicuous, base subcordate, margin crenate, apex caudate. Inflorescence a terminal corimb of umbels, villous; primary axis to 5 cm; bracts, linear, 2–7 mm; umbels 3–10-flowered; pedicels 2–3 mm, fimbriate. Ovary (3–)5-carpellate; styles (3–)5, free. Fruit subglobose, ca. 3 mm. Fl. Jul–Aug, fr. Sep–Nov.

● Forests; 1500–2300 m. Anhui (Huang Shan), Chongqing (Jinfo Shan), Hubei (Xingshan), Shaanxi (Yangxian), Sichuan (Leibo).


龙眼独活 long yan du huo

Herbs, perennial, to ca. 1 m tall, with stout, elongate rhizome. Leaves 1–3-pinnately compound (upper ones 1- or 2-pin-
Araliaceae


- Forests, stream banks; 1800–2700 m. Shaanxi (Taibai Shan), Sichuan, Yunnan (Heqing, Kunming, Songming).

- This species is used medicinally.


- Forest margins, scrub fields; ca. 2600 m. Guizhou (Weining), Sichuan (Hongxi, Maowen), NE Yunnan.


- Grasslands or scrub fields on slopes; ca. 3100 m. S Gansu (Xihe).


- Herbs, perennial, 0.5–3 m tall. Stem stout, with elongate, cylindric rhizome. Leaves 2- or 3-pinnately compound; petiole 15–30 cm, glabrous or sparsely pubescent; petiolules to 2.5 cm (terminal one to 5 cm); leaflets 3–5 per pinna, narrowly ovate to oblong-ovate, 4–15 × 3–9 cm, membranous to subleathery, abaxially sparsely pubescent on veins, adaxially glaborous, secondary veins 6–8 pairs, tertiary veins distinct abaxially, inconspicuous adaxially, base rounded to cordate, margin coarsely serrate, apex acute. Inflorescence a lax terminal or axillary few branched panicle of umbels; primary axis longer than 10 cm; bracts linear, 3–5 mm; umbels racemose arranged, few- to many flowered; pedicels 1–1.2 cm, filiform, pubescent. Ovary 5-carpellate; styles 5, free. Fruit globose, ca. 3 mm in diam.; styles persistent, ca. 2 mm. 2n = 24*, 48*.

- Shaded places in forests, grasslands on slopes; 1300–1600 m. Anhui (Huang Shan), Fujian (Chong’an), Guangxi (Longsheng, Ziyuan), Hubei (Enshi, Xuan’en), Jiangxi, Taiwan, Zhejiang.

- This species is used medicinally and as a vegetable.


- Herbs, perennial. Leaves 2- or 3-pinnately compound; petiole 4–12 cm, sparsely pubescent; petiolules 0–10 mm (terminal one to 15–17 mm), densely villous; leaflets 3–9 per pinna, ovate, 2–4 × 2–4.5 cm, membranous, sparsely white setose on veins, secondary veins 5–7 pairs, conspicuous on both surfaces, tertiary veins inconspicuous, base cordate, margin biserate, apex long acuminate. Inflorescence a few branched terminal or axillary corylm of umbels, glabrous or sparsely pilose; bracts lanceolate, 2–3 mm; umbels racemose arranged, 10–20-flowered; pedicels 2–5 mm, glabrous or slightly scabrid. Ovary 5-carpellate; styles 5, basally united, apically free. Fruit subglobose, ca. 5 mm in diam.; styles persistent, free arms radiating. Fl. Jul–Aug, fr. Oct–Nov.

- Forests, stream banks; 1800–2700 m. Shaanxi (Taibai Shan), Sichuan, Yunnan (Heqing, Kunming, Songming).

This species is used medicinally.

- This species is used medicinally and as a vegetable.
Herbs, perennial, with stout rootstock, hermaphroditic or perhaps andromonoecious, unarmed. Stem simple, with scales at base. Leaves palmately compound, in whorls of 3–5; leaflets entire to serrate or pinnately lobed. Inflorescence a solitary, terminal umbel. Pendicles articulate below bisexual flowers, inarticulate below male flowers. Calyx shortly 5-toothed. Petals 5, imbricate. Stamens 5. Ovary 2- or (3-)5-carpellate; styles distinct or basally united, as many as carpels. Fruit a drupe, globose, sometimes slightly compressed or triangular. Seeds laterally compressed, as many as carpels; endosperm smooth.

About eight species: E Asia, Himalayan region, Indochina, North America; seven species (one introduced) in China.

We were unable to treat Panax wangi S. C. Sun (Icon. Pl. Omei. 2(1): 194. 1946 ["wangianum"]; P. pseudoginseng Wallich var. wangi (S. C. Sun) G Hoo & C. J. Tseng), described from Sichuan, because we were unable to consult the type material.

1a. Rootstock usually horizontal, flagellate or moniliform; seeds ovoid, 3–5 × 2–4 mm ................................................ 1. Panax japonicus

1b. Rootstock fusiform or tuberous; seeds globose-nephroid or compressed-globose, 5–8 mm in diam.

2a. Leaflets 2-pinnatifid, adaxially setose on veins; styles 2, usually united into a column; seeds subglobose ........................................................................................................................................................ 2. Panax japonicus var. japonicus

2b. Leaflets not 2-pinnatifid; styles 2 (or 3), divided at least apically.

3a. Rootstock tuberous, resembling that of species of Zingiber; leaflets sessile or subsessile; seeds triangular-subglobose ........................................................................................................................................ 3. Panax japonicus var. japonicus

3b. Rootstock fusiform; leaflets usually petiolulate; seeds ovoid-globose or laterally compressed.

4a. Seeds ovoid-globose, slightly 3-ridged, not laterally compressed, thickness 5–6 mm; leaflets obvolute or obvolute-oblong; umbels 80–100 (or more)-flowered; styles united at least to middle .... 4. Panax notoginseng

4b. Seeds laterally compressed, thickness 2–2.5 mm; leaflets elliptic or oblong, or if obvolute then apically acuminate; umbels 20–50-flowered; styles 2, free to base.

5a. Leaflets 1.5–2 mm, adaxially setose on veins, apically long caudate-acuminate; bases of petioles and of petiololes with numerous lanceolate, stipulelike appendages; pedicels longer, glabrous; rootstock fleshy, 2–5-fascicled ...................................................................... 5. Panax pseudoginseng

5b. Leaflets ca. 1 mm, glabrous or adaxially sparsely setose, apically short acuminate; margin serrate; bases of petiole and petiololes without stipulelike appendages or with only hair-like appendages; pedicels rough; rootstock usually 1- or 2-fascicled.

6a. Peduncle longer than petiole; leaflets sparsely minutely setose on veins, margin densely serrulate ............................................................. 6. Panax ginseng

6b. Peduncle not exceeding petiole; leaflets sparsely setose on veins or glabrous, margin coarsely serrate or dentate ............................................................. 7. Panax quinquefolius


竹节参 zhu jie shen

Herbs, 50–80 (–100) cm tall. Rootstock horizontal, flagellate or moniliform. Stem straight, glabrous. Leaves 3–5, verticillate at apex of stem, palmately compound; petiole base without stipule or stipule-like appendages; leaflets 5, obovate-elliptic to narrowly elliptic, 5–18 × 2–6.5 cm, membranous, both surfaces sparsely setose on veins, base broadly cuneate to subrounded, margin serrulate or biserrate, apex acuminate or long acuminate. Inflorescence a solitary, terminal umbel 50–80 (or more)-flowered; peduncle 12–21 cm, glabrous or slightly pubescent; pedicels 7–12 mm. Filaments shorter than petals. Ovary 2–5-carpellate; styles 2–5, united to middle. Fruit red, subglobose, 3–5 mm in diam.; seeds 2–5, white, triangular-ovoid, 3–5 × 2–4 mm. Fl. May–Jun, fr. Jul–Sep.


人参属 ren shen shu

Herbs, perennial, with stout rootstock, hermaphroditic or perhaps andromonoecious, unarmed. Stem simple, with scales at base. Leaves palmately compound, in whorls of 3–5; leaflets entire to serrate or pinnately lobed. Inflorescence a solitary, terminal umbel. Pendicles articulate below bisexual flowers, inarticulate below male flowers. Calyx shortly 5-toothed. Petals 5, imbricate. Stamens 5. Ovary 2- or (3-)5-carpellate; styles distinct or basally united, as many as carpels. Fruit a drupe, globose, sometimes slightly compressed or triangular. Seeds laterally compressed, as many as carpels; endosperm smooth.

About eight species: E Asia, Himalayan region, Indochina, North America; seven species (one introduced) in China.

We were unable to treat Panax wangianus S. C. Sun (Icon. Pl. Omei. 2(1): 194. 1946 ["wangianum"]; P. pseudoginseng Wallich var. wangi (S. C. Sun) G Hoo & C. J. Tseng), described from Sichuan, because we were unable to consult the type material.

1a. Rootstock flagellate, resembling rhizome of bamboo.

2a. Leaflets obovate-elliptic to oblong, 2.5–3 × as long as wide, apex long acuminate .................................................. 1a. var. japonicus

2b. Leaflets narrowly lanceolate, ca. 5 × as long as wide, apex long acuminate .......................................................... 1b. var. angustifolius

1b. Rootstock moniliform or moniliform-mounded.

3a. Rootstock moniliform; leaflets

Forests, forests in valleys; 1200–3600 m. S Anhui, N Fujian, Gansu, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Shanxi, Sichuan, Xizang, Yunnan, Zhejiang [Bhutan, N India, Japan, Korea, Myanmar, Nepal, NE Thailand, Vietnam].

All four varieties are used medicinally.
obovate-elliptic to elliptic, not pinnatifid ..............................................  1c. var. major

3b. Rootstock moniliform-mounded, rarely like knot of bamboo; leaflets 2-pinnatifid .............. 1d. var. bipinnatifidus

1a. Panax japonicus var. japonicus
竹节参(原变种) zhu jie shen (yuan bian zhong)


Forests; 1200–3600 m. S Anhui, N Fujian, Gansu, Guangxi, Guizhou, Henan, Hunan, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, NE India, Nepal, NE Thailand].

“Panax quinquefolia var. japonicus” (Siebold, Verh. Batav. Genootsch. Kunsten 12: 45. 1830) belongs here but is a nomen nudum.

狭叶竹节参 xia ye zhu jie shen


Rootstock flagellate. Leaflets not 2-pinnatifid, narrowly lanceolate, ca. 5 × as long as wide, apex long caudate-acuminate.

Forests; 1600–3600 m. Guizhou, Sichuan, Yunnan [Bhutan, NE India, Nepal, NE Thailand].

珠子参 zhu zi shen


Rootstock moniliform. Leaflets not 2-pinnatifid, obovate-elliptic to elliptic, apex acuminate, rarely long acuminate.


疙瘩七 ge da qi

Panax bipinnatifidus Seemann, J. Bot. 6: 54. 1868; Aralia bipinnatifida (Seemann) C. B. Clarke; A. quinquefolia var. elegantior Burkull; P. pseudoginseng var. bipinnatifidus (Seemann) H. L. Li; P. pseudoginseng var. elegantior (Burkull) G. Hoo & C. J. Tseng.

Rootstock moniliform-mounded, rarely like knot of bamboo. Leaflets 2-pinnatifid.

Forests in valleys; 1800–3400 m. Gansu, Hubei, Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, N India, Myanmar, Nepal].

屏边三七 ping bian san qi

Herbs, perennial, 45–55 cm tall. Rootstock fusiform. Leaves 3, verticillate at apex of stem, palmately compound; petiole base without stipule or stipulelike appendages; leaflets 5(–7), 2-pinnatifid, 6–12 × 2.5–6 cm, membranous, adaxially setose on veins, base broadly cuneate or subrounded, margin serrate, setose, apex caudate-acuminate. Inflorescence a solitary, terminal umbel 50–80-flowered; peduncle 8–10 cm, globose. Filaments ca. as long as petals or slightly longer. Ovary 2-carpellate; styles 2, usually united into a column. Fruit red, subglobose or globose-nephroid, ca. 8 mm in diam.; seeds 2, subglobose. Fl. May–Jun, fr. Jul–Aug.

Forests in valleys; 1100–1700 m. SE Yunnan [N Vietnam].

This species is used medicinally.

姜状三七 jiang zhuang san qi

Herbs, perennial, 20–60 cm tall. Rootstock fleshy, horizontal, resembling that of species of Zingiber. Leaves 3–7, verticillate at apex of stem, palmately compound; petiole base without stipule or stipulelike appendages; leaflets 3–5, sessile or subsessile, elliptic to obovate-oblong, 6–18 × 3–6 cm, membranous, both surfaces setose on veins, base cuneate, margin serrate or slightly biserrate, setose, apex acuminate to long acuminate. Inflorescence a solitary, terminal umbel; peduncle 24–26 cm, pubescent. Filaments longer than petals. Ovary 2-carpellate; styles 2, united to middle. Fruit red, globose-nephroid; seeds 2, triangular-subglobose. Fl. Jul–Aug, fr. Aug–Oct.

Broad-leaved evergreen forests. SE Yunnan [N Vietnam].

This species is used medicinally.

三七 san qi


Herbs, perennial, 20–60 cm tall. Rootstock fleshy, roots 1 to numerous, fusiform. Leaves 3–6, verticillate at apex of stem, palmately compound; petiole base without stipule or stipulelike appendages; leaflets obovate or obovate-oblong, 3.5–13 × 1.5–7 cm, membranous, both surfaces sparsely setose on veins, base oblique, margin biserrate, setose, apex acuminate or long acuminate. Inflorescence a solitary, terminal umbel 80–100(or
more)-flowered; peduncle 7–25 cm, glabrous or sparsely pubescent; pedicels 1–2 cm, slender, slightly pubescent. Filaments ca. as long as petals. Ovary 2-carpellate; styles 2, united at least to middle, divergent in fruit. Fruit red, compressed globose-nephroid, ca. 1 cm in diam.; seeds 2, triangular-ovoid, slightly 3-ridged, thickness 5–6 mm. Fl. Jul–Aug, fr. Aug–Oct. 2n = 24.

Forests; 1200–1800 m. SE Yunnan; cultivated in Fujian, SW Guangxi, Jiangxi, Zhejiang [N Vietnam].

This species is used medicinally.


假人参 jia ren shen

Aralia pseudoginseng (Wallich) Bentham ex C. B. Clarke; A. quinquefolia (Linnaeus) Decaisne & Planchon var. pseudoginseng (Wallich) Burkill.

Herbs, perennial, ca. 50 cm tall. Rootstock short, with 2–5 fleshy roots, fusiform, 2–4 cm, ca. 1 cm in diam. Leaves usually 4, verticillate at apex of stem, palmately compound; bases of petiole and petiolules with numerous lanceolate, stipulelike appendages; leaflets 3 or 4, ovate-elliptic to ovate-oblong, 9–10 × 3.5–4 cm (lateral ones smaller), membranous, abaxially glabrous, adaxially setose on veins (trichomes 1.5–2 mm), base attenuate, margin biserrate, apex long caudate-acuminate. Inflorescence a solitary, terminal umbel 20–50-flowered; peduncle ca. 12 cm; pedicels ca. 1 cm, glabrous. Ovary 2-carpellate; styles 2 divided, reflexed.

Forests; 2400–4200 m. S Xizang [?Bhutan, ?N India, Nepal].

This species is used medicinally.


人参 ren shen


Herbs, perennial, 30–60 cm tall. Rootstock usually with 1- or 2-fascicled roots, fusiform or cylindric. Leaves 3–6, verticillate at apex of stem, palmately compound; petiole base without stipule or stipulelike appendages; leaflets 3–5, membranous, abaxially glabrous, adaxially sparsely setose (trichomes ca. 1 mm), base broadly cuneate, margin densely serrulate, apex long acuminate; central leaflet elliptic to oblong-elliptic, 8–12 × 3–5 cm; lateral leaflets ovate to rhombic-ovate, 2–4 × 1.5–3 cm. Inflorescence a solitary, terminal umbel 30–50-flowered; peduncle 15–30 cm, usually longer than petiole; pedicels 0.8–1.5 cm. Ovary 2-carpellate; styles 2, distinct. Fruit red, compressed-globose, 4–5 × 6–7 mm; seeds nephroid, white. 2n = 48*.

Mixed forests, deciduous broad-leaved forests. E Heilongjiang, E Jilin, E Liaoning; recently cultivated in Hebei and Shanxi [Korea, E Russia].

This species is used medicinally.


西洋参 xi yang shen

Aralia quinquefolia (Linnaeus) Decaisne & Planchon.

Herbs, perennial, 20–50 cm tall. Rootstock spindle-shaped. Leaves palmately compound; bases of petiole and petiolules with numerous lanceolate, stipulelike appendages; leaflets oblong-obovate, 8–14 × (2–)2.5–8 cm, membranous, sparsely setose on veins or glabrous adaxially, margin coarsely serrate or dentate, apex abruptly or boldly acuminate. Inflorescence a solitary, terminal umbel 6–20-flowered; peduncle not exceeding petiole. Ovary 2-carpellate; styles 2. Fruit bright red, ca. 1.2 cm in diam. 2n = 48*.

Recently widely cultivated. Guizhou, Heilongjiang, Jiangsu, Jiangxi, Jilin, Liaoning [native to Canada and the United States].

This species is used medicinally.