
厚壳桂属 hou ke gui shu

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Ravensara Sonnerat.

Trees or shrubs, evergreen. Bud scales few, leaflike. Leaves alternate, rarely subopposite, usually pinninerved, rarely triplinerved. Flowers bisexual, small, arranged into a subterminal and usually short panicle. Perianth tube turbinate or ovoid, persistent, contracted on top after caducous. Fertile stamens 9, inserted on throat of perianth tube; filaments of 1st and 2nd whorls glandless, those of 3rd whorl each with 2 glands at base; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl extrorse. Stamnodes of innermost whorl, shortly stalked, glandless. Ovary sessile, enveloped by perianth tube; style sublinear; stigma small, inconspicuous, rarely peltate. Fruit drupelike, globose, ellipsoid, or oblong, wholly enveloped by fleshy or hard and dilated perianth tube but leaving a small mouth on top, smooth or many angled outside.

Between 200 and 250 species: tropical and subtropical regions, absent from C Africa, center of diversity in Malaysia but reaching as far as Australia and Chile; 21 species (15 endemic) in China.

The Chinese species of the genus all belong to Cryptocarya subg. Cryptocarya, characterized by plants with 9 fertile stamens. The species with 3 or 6 stamens previously placed in Cryptocarya are now included in the genus Aspidostemon Rohwer & H. G. Richter.

Cryptocarya austrokweichouensis X. H. Song (J. Nanjing Inst. Forest. 1984(4): 49. 1984) was described from S Guizhou (Libo) but could not be treated here because no material was seen by the present authors.

1a. Leaves triplinerved.

2a. Fruit oblate, 12–18 × 15–25 mm, inconspicuously angled; leaf blade large, narrowly elliptic to elliptic-ovate, 10–15 × 5–8.5 cm; branchlets, petioles, and leaf blade abaxially usually ± rusty tomentose ....................... 1. C. densiflora

2b. Fruit globose or oblate, 7.5–9 × 9–12 mm, 12–15-angulate; leaf blade narrowly elliptic, 7–11 × (2–)3.5–5.5 cm; branchlets, petioles, and leaf blade abaxially usually glabrate ............................................... 2. C. chinensis

1b. Leaves pinninerved.

3a. Leaf venation conspicuously elevated, densely reticulate on both surfaces.

4a. Young branchlets pubescent; leaf blade oblong-elliptic or oblong-lanceolate, 4.5–10.2 × 2–4.5 cm, lateral veins 7–9 pairs .................................................................................................................................................... 3. C. yaanica

4b. Young branchlets glabrous; leaf blade ovate or ovate-elliptic, rarely elliptic, 7–13 × 2.5–6 cm, lateral veins 3–6 pairs.

5a. Leaf blade ovate-elliptic, 9–11 × 4.5–6 cm, lateral veins 5 or 6 pairs ................................................................. 4. C. elliptifolia

5b. Leaf blade ovate, rarely elliptic, 7–13 × 2.5–5.5 cm, lateral veins 3–5 pairs ............................................................... 5. C. lyoniifolia

3b. Leaf venation not densely reticulate on both surfaces.

6a. Fruit corky-spotted ........................................................................................................................................... 6. C. maculata

6b. Fruit not corky-spotted.

7a. Fruit very smooth, not angled.

8a. Fruit ovoid, 1.5–1.8 cm; panicle short, much shorter than leaf blade, few branched; leaf blade oblong or oblong-elliptic, 8–26 × 2.5–7.5 cm, purple-green and whitish abaxially .......... 7. C. brachythyrs a

8b. Fruit ellipsoid or narrowly ellipsoid, 2–2.5 cm; panicle large and several branched; leaf blade elliptic or oblong, 7.5–18 × 5–6.5 cm, gray-brown and opaque abaxially ......................... 8. C. amygdalina

7b. Fruit not smooth, conspicuously or inconspicuously angled.

9a. Fruit globose, subglobose, or oblate.

10a. Fruit oblate, large, ca. 2.1 × 2.3 cm ....................................................................................................................... 9. C. depauperata

10b. Fruit smaller, less than 1.5 cm.

11a. Leaf blade (6.5–)10.5–19 × (3.5–)4.2–8.5 cm, abaxially sparsely yellowish brown pubescent, densely so along midrib and lateral veins, yellow-green, not whitish .......... 10. C. calicola

11b. Leaf blade smaller, 5–12 × 2–4.5 cm, abaxially glabrous except hairy along midrib and lateral veins, always whitish.

12a. Panicle 5–10 cm ................................................................................................................................................ 11. C. maclurei

12b. Panicle short, 2–3 cm ................................................................................................................................. 12. C. kwangtungensis

9b. Fruit narrowly ellipsoid, ellipsoid, or obvoid.

13a. Fruit more than 2.5 cm.

14a. Fruit ovoid, rugose and warty, inconspicuously angled; leaf blade lanceolate to oblong-lanceolate, 9–13 × 2.5–4.5 cm; branchlets and leaves glabrate; panicle spikelike, 3–8 cm, few flowered ........................................ 13. C. hainanensis

14b. Fruit ellipsoid, not rugose and warty, ± conspicuously angled; leaf blade
Trees, 7–20 m tall, 12–40 cm d.b.h. Branchlets brownish or dark brown, angled, striate, sparsely lenticellate, rusty tomentose. Leaves alternate; petiole 1–2 cm, plano-convex, rusty to dark brown, angled, striate, sparsely lenticellate, rusty to less than 1 mm, densely brown pubescent. Flowers white, ca. 3 cm, sometimes many flowered, as long as 1/2 of blade or more, 5.5–12 cm 

13b. Fruit smaller, less than 2.5 cm.
15a. Leaf blade transverse veins conspicuously elevated abaxially ........................................ 20. C. impressinervia
15b. Leaf blade transverse veins not elevated abaxially.

16a. Panicles variable, sometimes few flowered, much shorter than leaf, 2–4 cm, sometimes many flowered, as long as 1/2 of blade or more, 5.5–12 cm .......................................................... 21. C. yunnanensis
16b. Panicle not variable, ± uniform, less than 10 cm.

17a. Leaf blade thickly leathery, very shiny adaxially .............................. 17. C. tsangii
17b. Leaf blade leathery, subtleatherly, or papery, opaque or slightly shiny adaxially.

18a. Panicles ca. 10 cm; leaf blade glabrous on both surfaces ............. 16. C. metcalfiana
18b. Panicles shorter, less than 8 cm; leaf blade sparsely pubescent abaxially or on both surfaces.

19a. Fruit narrowly ellipsoid, 1.5–2 cm; leaf blade usually smaller ............................................. 15. C. concinna
19b. Fruit ellipsoid, 1.2–1 cm; leaf blade usually larger.

20a. Fruit ca. 1.7 × 1 cm; leaf blade leathery, oblong or elliptic-orbicular, very rarely obovate ....................... 18. C. chingii
20b. Fruit ca. 1.2 × 0.7 cm; leaf blade subleathery, lanceolate, lanceolate-elliptic, or elliptic, very rarely obovate ........... 19. C. leiana

1. Cryptocarya densiflora Blume, Bijdr. 556. 1826.

Cryptocarya laevigata Elmer.

Trees, 7–20 m tall, 12–40 cm d.b.h. Branchlets brownish or dark brown, angled, striate, sparsely lenticellate, rusty tomentose. Leaves alternate; petiole 1–2 cm, plano-convex, rusty tomentose or glabrate; leaf blade glaucous and greenish abaxially, shiny and brownish when dry adaxially, narrowly elliptic to elliptic-ovate, 10–15 × 5–8.5 cm, leathery, rusty tomentose initially but soon glabrate abaxially, trilinervined, midrib impressed abaxially, elevated adaxially, basal lateral veins subopposite, arising (2–)5–15 mm above leaf base, arcuate-ascendant, with additional veins outside, other lateral veins 1 or 2 pairs, arising from middle or above lower 1/3 of leaf blade, transverse veins slender, subundulate, rather lax, connected by veinlets, base cuneate, obtuse, or rounded, apex abruptly shortly acuminate. Panicles axillary or terminal, 2.5–8 × 4–5 cm, pedunculate, densely many flowered, brown pubescent. Pedicels short, less than 1 mm, densely brown pubescent. Flowers white, ca. 4 mm. Perianth densely pubescent outside and inside; perianth tube turbinate, short, ca. 2 mm; perianth lobes ovate, ca. 2 mm, acute. Fertile stamens 9; filaments villous, ca. twice as long as anthers, those of 3rd whorl each with 2 claveate glands at base, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl extrorse. Staminal tubes sagittate, long tube turbinate, short, ca. 0.5 mm, yellow tomentulose. Flowers yellowish, ca. 3 mm. Perianth yellow tomentulose outside and inside; perianth tube turbinate, short, 1–1.5 mm; perianth lobes subobovate, ca. 2 mm, acute. Fertile stamens 9, ca. 1.5 mm in 1st and 2nd whorls, ca. 1.7 mm in 3rd whorl; filaments villous, slightly longer than anthers, those of 3rd whorl each with 2 claveate glands, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl lateral-extrorse. Staminal tubes sagittate, villos. Ovary clavate, ca. 2 mm; style filiform; stigma inconspicuous. Fruit globose or oblate, 7.5–9 × 9–12 mm, purple-black when mature, 12–15-angulate. Fl. Apr–

Valleys, evergreen broad-leaved forests; 600–1600 m. Fujian, Guangdong, Guangxi, Hainan, Yunnan [Indonesia, Laos, Malaysia, Philippines, Vietnam].

The wood is finely grained, more or less heavy and durable, and is used for house construction and furniture.


Trees, up to 20 m tall, to 10 cm d.b.h. Bark dark gray, scabrid. Old branchlets robust, ± angled, brownish sparsely lenticellate; young branchlets terete, striate, grayish brown tomentose initially but soon glabrate. Leaves alternate or opposite; petiole ca. 1 cm, concave-convex; leaf blade glaucous abaxially, shiny adaxially, narrowly elliptic, 7–11 × (2–)3.5–5.5 cm, leathery, grayish brown tomentulose when young, gradually glabrate on both surfaces, trilinervined, midrib elevated abaxially, impressed adaxially, basal lateral veins opposite, arising 2–5 mm above leaf base, upper lateral veins 2 or 3 pairs and alternate, transverse veins slender, subundulate, veinlets reticulate, conspicuous on both surfaces, base broadly cuneate, apex long or shortly acuminate. Panicles axillary and terminal, 1.5–4 cm, yellow tomentulose, pedunculate. Pedicels very short, ca. 0.5 mm, yellow tomentulose. Flowers yellowish, ca. 3 mm. Perianth yellow tomentulose outside and inside; perianth tube turbinate, short, 1–1.5 mm; perianth lobes subobovate, ca. 2 mm, acute. Fertile stamens 9, ca. 1.5 mm in 1st and 2nd whorls, ca. 1.7 mm in 3rd whorl; filaments villous, slightly longer than anthers, those of 3rd whorl each with 2 claveate glands, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl lateral-extrorse. Staminal tubes sagittate, villos. Ovary clavate, ca. 2 mm; style filiform; stigma inconspicuous. Fruit globose or oblate, 7.5–9 × 9–12 mm, purple-black when mature, 12–15-angulate. Fl. Apr–
slightly falcate. Inflorescence paniculate or racemose, axillary, veinlets densely reticulate, base cuneate, apex long acuminate, eral veins 7–9 pairs, conspicuous on both surfaces, veins and subsessile. Ovary ovoid, glabrous, ca. 0.6 mm in diam.; style 1–
those of 3rd whorl extrorse. Staminodes 3, sagittate, glabrous, anthers hirsute, 2-celled; cells of 1st and 2nd whorls introrse but 3rd whorl each with 2 reniform glands at base, others glandless; outside and inside. Fertile stamens 9; filaments hirsute; anthers 2-celled. Ovary glabrous. Fruit black densely hirsute on both surfaces, apex obtuse. Fertile stamens 9; ca. 1.5 mm. Perianth lobes 6, elliptic-obovate, ca. 1.5 mm, shortly acuminate. Panicles axillary, 7–8 cm, hirsute. Flowers greenish, ca. 4 mm. Perianth yel-
shortly acuminate. Panicles axillary, short, 2–2.5(–4) cm, densely yel-
gin, transverse veins ± conspicuous on both surfaces, veinlets lax, 3–5 pairs, elevated on both surfaces, veins and veinlets reticulate and foveolate on both surfaces especially abaxially, base cuneate or subrounded, apex long acuminate. Flow-
ers unknown. Infructescence terminal or axillary, 4–8 cm, pu-
becent. Fruit globose, 8–9 mm in diam., glabrous, rugose. Fr. Oct–Dec (or Jan of next year).

3. Cryptocarya yaanica


Trees, ca. 8 m tall. One-year-old branchlets brown-gray, glabrous, lenticillate; current year branchlets gray-green, striate, pubescent. Leaves alternate; petiole 5–10 mm, glabrous, sulcate adaxially; leaf blade gray-green abaxially, shiny and green adaxially, oblong-elliptic or oblong-lanceolate, 4.5–10.2 × 2–4.5 cm, leathery, glabrous on both surfaces, pinninerved, midrib elevated abaxially, slightly conspicuous adaxially, lateral veins 7–9 pairs, conspicuous on both surfaces, veins and veinlets densely reticulate, base cuneate, apex long acuminate, slightly falcate. Infructescence paniculate or racemose, axillary, up to 4 × 1.5 cm, pubescent; peduncle 3–12 mm. Pedicels 1–4 mm, densely pubescent. Flowers greenish. Perianth lobes 6, broadly ovate or suborbicular, 2.2–2.5 × 1.5–2 cm, pubescent outside and inside. Fertile stamens 9; filaments hisrate, those of 3rd whorl each with 2 reniform glands at base, others glandless; anthers hisrate, 2-celled; cells of 1st and 2nd whors intorse but those of 3rd whorl extrorse. Stamnodes 3, sagittate, glabrous, subsessile. Ovary ovoid, glabrous, ca. 0.6 mm in diam.; style 1–1.2 mm; stigma subglobose. Fruit unknown.

4. Cryptocarya elliptifolia


Trees medium-sized. Branchlets brownish black when dry, glabrous. Buds hirsute. Petiole ca. 1 cm, stout, glabrous; leaf blade ovate-elliptic, 9–11 × 4.5–6 cm, leathery, lateral veins 5 or 6 pairs, reticulate veins prominent, base obtuse, apex shortly acuminate. Panicles axillary, 7–8 cm, hirsute. Flowers ca. 1.5 mm. Perianth lobes 6, elliptic-obovate, ca. 1.5 mm, densely hisrate on both surfaces, apex obtuse. Fertile stamens 9; filaments villous; anthers 2-celled. Ovary glabrous. Fruit black when dry, globose, ca. 2 cm in diam., longitudinally ridged. Fl. Apr–May, fr. Jun–Dec.

Coastal forests; below 100 m. Taiwan (Lan Yu) [Philippines].

5. Cryptocarya lyoniifolia


Trees, up to 20 m tall. Branchlets striate, glabrous. Buds brown villous. Petiole ca. 1 cm, glabrous; leaf blade ovate, rarely elliptic, 7–13 × 2.5–5.5 cm, glabrous on both surfaces, pinninerved, midrib elevated abaxially, plane adaxially, lateral veins lax, 3–5 pairs, elevated on both surfaces, veins and veinlets reticulate and foveolate on both surfaces especially abaxially, base cuneate or subrounded, apex long acuminate. Flow-
ers unknown. Infructescence terminal or axillary, 4–8 cm, pu-
becent. Fruit globose, 8–9 mm in diam., glabrous, rugose. Fr. Oct–Dec (or Jan of next year).

6. Cryptocarya maculata


Trees, ca. 10 m tall. Branchlets red-brown, terete, ca. 3 mm in diam., striate, lenticillate, glabrous. Petiole 0.5–1.3 cm, concave-convex, glabrous; leaf blade greenish and opaque abaxially, green and shiny adaxially, oblong, 9.5–18 × 3–5 cm, leathery, glabrous on both surfaces, midrib conspicuously elevated abaxially, impressed adaxially, lateral veins ca. 9 pairs, elevated abaxially, plane or slightly impressed adaxially, transverse veins and veinlets reticulate, inconspicuous on both surfaces, base broadly cuneate, apex obtuse or acute. Flowers unknown. Fruit ellipsoid-ovoid, 3–3.2 × 1.5–1.6 cm, black-brown when dry, corky-spotted, glabrous, somewhat wrinkled, inconspicuously 12-angulate. Fr. Aug.

7. Cryptocarya brachythyrsa


Trees, up to 30 m tall, to 40 cm d.b.h. Branchlets red-brown, robust, terete, ± angled, striate, densely lenticillate, glabrous; young ones slightly compressed, densely yellowish brown puberulent. Petiole 1–1.5 cm, concave-convex, densely yellowish brown puberulent; leaf blade whitish purple-green abaxially, yellow-green and shiny adaxially, oblong or oblong-elliptic, 8–26 × 2.5–7.5 cm, thinly leathery, puberulent along midrib only initially, soon glabrate on whole surface adaxially, midrib and lateral veins elevated abaxially, impressed adaxially, lateral veins 6–9 pairs, ascendant, evanescent within leaf margin, transverse veins ± conspicuous on both surfaces, veinlets reticulate. Panicle axillary, short, 2–2.5(–4) cm, densely yellowish brown puberulent, few flowered, few branched; lowest branches, 0.8–1.5 cm; peduncle 1–1.5 cm; bracts and bracteoles ovate-subulate, small. Pedicels 1–2 mm, densely yellowish brown puberulent. Flowers greenish, ca. 4 mm. Perianth yellowish brown puberulent outside; perianth tube turbinate, ca. 2 mm; perianth lobes ovate, ca. 2 mm, acute. Fertile stamens 9, ca. 1.5 mm in 1st and 2nd whors, ca. 1.4 mm in 3rd whorl; filaments almost as long as anthers, those of 3rd whorl each with 2 stalked reniform glands, others glandless; anthers of 1st and 2nd whorl subcordate, with introrse cells, those of 3rd whorl ovoid, with extrorse cells. Stamnodes narrowly sagittate-triangular, ca. 1 mm, stalked. Ovary clavate, ca. 2.5 mm; style slender, ca. 1 mm; stigma capitulate. Fruit shiny, ovoid, 1.5–1.8 ×
Trees, up to 25 m tall. Branchlets terete; young ones terete, ca. 3 mm in diam., striate, densely and finely rusty tomentulose. Leaves alternate; petiole 0.6–1.2 cm, finely rusty tomentose; leaf blade gray-brown and opaque abaxially, green and shiny adaxially, elliptic or oblong, 7.5–18 × 5–6.5 cm, subleathery, glabrous on both surfaces except puberulent along midrib adaxially, midrib slender, lateral veins 6–10 pairs, straight but abruptly curved near leaf margin, veins and veinlets reticulate, fine and dense, base acute or obtuse, apex shortly acuminate. Inflorescences to 14 cm, tomentose. Pedicels ca. 1 mm. Flowers yellow, 3–5 mm, tomentose outside. Perianth lobes narrowly ovate, 1.5–2 mm, tomentose inside. Fertile stamens 9, 1.5–2 mm, inner whorl longest. Staminal filaments sagittate, ca. 1 mm. Ovary ca. 1 mm, glabrous or sparsely hairy at apex; style ca. 1 mm, glabrous. Infructescences paniculate, large and several branched. Fruit green, ellipsoid or narrowly ellipsoid, 2–2.5 cm, glabrous, very smooth, not angled. Fl. Aug.

Evergreen broad-leaved forests on hilly land; ca. 1100 m. SE Xizang (Mêdog) [Bhutan, India, Nepal].


杏仁厚壳桂 xìng rén hòu ke guì

Trees, up to 20 m tall. Branchlets terete; young ones terete, ca. 2.5 mm in diam., sometimes ± angled, striate, densely yellow brown puberulent, sparsely corky lenticellate on lower part. Leaves alternate; petiole 0.8–1.2 cm, concave-convex, yellow brown puberulent; leaf blade greenish abaxially, green adaxially, oblong or ovate-oblong, 8–19.5 × 3.3–8 cm, thinly leathery, glabrous on both surfaces or sparsely puberulent only along midrib adaxially, midrib and lateral veins very elevated abaxially, impressed adaxially, transverse veins and veinlets reticulate, conspicuous abaxially, inconspicuous adaxially, base broadly cuneate to subrounded and ± unequal on sides, apex obtuse, acute, or shortly acuminate, sometimes incised. Panicles axillary and terminal, 5.5–14 cm, densely yellowish brown puberulent, axillary ones generally few branched and nearly spikelike, terminal or subterminal ones many branched and lax, lower branches up to 4 cm; peduncles 1.5–4.5 cm; bracts and bracteoles linear-subulate, ca. 2 mm, densely yellowish brown puberulent. Pedicels 1–2 mm, densely yellowish brown puberulent. Flowers greenish, ca. 5 mm. Perianth narrowly yellow puberulent outside but sparsely so inside; perianth tube turbinate or subulate, ca. 2.5 mm; perianth lobes oblong-ovate, ca. 2.5 mm, acute. Fertile stamens 9, ca. 2.2 mm; filaments ca. 1.2 mm, villous, those of 3rd whorl each with 2 long-stalked suborbicular glands at base, others glandless; anthers ca. 1 mm, those of 1st and 2nd whorls narrowly sagittate-triangular, with introrse cells, those of 3rd whorl ovoid-oblong, with extrorse cells. Staminodes narrowly sagittate-triangular, ca. 1.3 mm, stalked; stalk ca. 0.7 mm. Ovary clavate, including style ca. 3 mm; style linear; stigma inconspicuous. Fruit shiny, oblate, ca. 2.1 × 2.3 cm, black when mature, nearly smooth, inconspicuously angled. Fl. Apr–May, fr. Jun–Dec.

Evergreen broad-leaved forests, along streams in valleys; 1300–1400 m. SE Yunnan.


岩生厚壳桂 yán shēng hòu ke guì

Trees, up to 15 m tall, to 30 cm d.b.h. Young branchlets slender, terete, ca. 3 mm in diam., striate, sometimes ± angled, densely yellowish brown puberulent. Leaves alternate; petiole 0.5–1 cm, plano-convex, densely yellowish brown puberulent; leaf blade abaxially yellow-green, adaxially green, oblong or elliptic-oblong to ovate, (6.5–)10.5–19 × (3.5–)4.2–8.5 cm, thinly leathery, pinninerved, abaxially sparsely yellowish brown puberulent but densely so along midrib and lateral veins, adaxially yellow brown puberulent along midrib and otherwise glabrous, midrib and lateral veins very elevated abaxially, impressed adaxially, transverse veins and veinlets reticulate, conspicuous abaxially, inconspicuous adaxially, base broadly cuneate to subrounded and ± unequal on sides, apex obtuse, acute, or shortly acuminate, sometimes incised. Panicles axillary and terminal, 5.5–14 cm, densely yellowish brown puberulent, axillary ones generally few branched and nearly spikelike, terminal or subterminal ones many branched and lax, lower branches up to 4 cm; peduncles 1.5–4.5 cm; bracts and bracteoles linear-subulate, ca. 2 mm, densely yellowish brown puberulent. Pedicels 1–2 mm, densely yellowish brown puberulent. Flowers greenish, ca. 5 mm. Perianth narrowly yellow puberulent outside but sparsely so inside; perianth tube turbinate or subulate, ca. 2.5 mm; perianth lobes oblong-ovate, ca. 2.5 mm, acute. Fertile stamens 9, ca. 2.2 mm; filaments ca. 1.2 mm, villous, those of 3rd whorl each with 2 long-stalked suborbicular glands at base, others glandless; anthers ca. 1 mm, those of 1st and 2nd whorls narrowly sagittate-triangular, with introrse cells, those of 3rd whorl ovoid, with extrorse cells. Staminodes narrowly sagittate-triangular, ca. 1 mm, shortly stalked. Ovary clavate, includingFiliform style ca. 3.5 mm; stigma inconspicuous. Fruit purple-black, shiny, subglobose, ca. 1.3 × 1–1.1 cm, glabrous or sparsely puberulent on both ends, ± wrinkled, inconspicuously 12-angulate. Fl. Apr–May, fr. May–Oct.

Evergreen broad-leaved forests, hillsides, streamsides; (500–)700–1000 m. Guangxi, S Guizhou, S and SE Yunnan.


白背厚壳桂 bái bèi hòu ke guì

Trees up to 22 m tall, ca. 15 cm d.b.h. Bark gray-black. Branchlets slender, subterete, ± angled, striate, densely rusty pubescent when young but glabrate and gray-black when mature. Leaves alternate; petiole 1.2–1.5 cm, concave-convex, densely rusty pubescent; leaf blade greenish or whitish and opaque abaxially, olive-green and shiny adaxially, oblong or ob-
long-ovate, 5–12 × 2–4.5 cm, abaxially rusty pubescent along midrib and lateral veins, adaxially rusty pubescent only along midrib, otherwise glabrous on both surfaces, midrib and lateral veins elevated abaxially, impressed adaxially, lateral veins 5–7 pairs, transverse veins slender, connected by reticulate veinlets, base broadly cuneate to subrounded, apex shortly acuminate. Flowers unknown. Fruit globose or oblate, ca. 1.5 cm in diam., black when mature, glabrous, ca. 15-angulate when young. Fr. Aug–Feb of next year.

- Evergreen broad-leaved forests on hilly land, forested valleys; 600–1000 m. Guangdong, Guangxi, Hainan.


广东厚壳桂

Trees, 2–6.5 m tall, 5–13 cm d.b.h. Branchlets brown pubescent when young but glabrous when mature. Leaves alternate; petiole 6–10 mm; leaf blade green and shiny adaxially, narrowly elliptic, 9–11.5 × 3–4 cm, leathery, yellowish brown pubescent when young but soon glabrate and whitish abaxially, lateral veins 6 or 7 pairs, slightly elevated abaxially, inconspicuous adaxially, veins and veinlets reticulate, inconspicuous on both surfaces, base broadly cuneate and asymmetric on sides, apex acute or slightly obtuse. Inflorescence paniculate or racemose, terminal and axillary, 2–3 cm, yellowish brown pubescent. Pedicels very short. Flowers small, ca. 2 mm, pubescent. Perianth lobes slightly longer than perianth tube. Stamens included. Ovary puberulent. Immature fruit globose, inconspicuously angled, villous initially but soon glabrate. Fr. Jul.

- Densely forested valleys. N Guangdong.


海南厚壳桂

Trees, up to 20 m tall. Old branchlets chestnut-colored or blackish, finely striate, lenticellate and glabrous; young branchlets slender, finely striate, pubescent or glabrate on lower part. Leaves alternate; petiole robust, 5–8 mm, plano-convex, puberulent initially but soon glabrate; leaf blade greenish abaxially, olive-green adaxially when dry, lanceolate to oblong-lanceolate, 9–13 × 2.5–4.5 cm, thinly leathery, puberulent along midrib adaxially and glabrous abaxially when young but glabrous on both surfaces when mature, midrib and lateral veins conspicuously elevated abaxially, always impressed adaxially, lateral veins 5 or 6 pairs, arcuate-ascendant, veins and veinlets slender, reticulate, dense and foveolate, base broadly cuneate, apex acuminate. Panicles spikelike, axillary and terminal, 3–8 mm, densely yellowish brown tomentulose, few flowered, branched; branches slender, up to 2.5 cm; peduncles 0.5–2 cm; bracts and bracteoles lanceolate-linear, ca. 1 mm, densely yellowish brown tomentulose. Pedicels less than 1 mm. Flowers ca. 2.5 mm. Perianth tomentulose outside and inside; perianth tube obconical; perianth lobes almost as long as tube, broadly ovate, acute. Fertile stamens 9, less than 1 mm; filaments villous, those of 3rd whorl each with 2 stalked triangular-ovate glands at base, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl extrorse. Stamnodes sagittate-deltoid, stalked. Ovary ovoid, ca. 0.7 mm; style slender, ca. 0.7 mm; stigma capitate. Fruit shiny, ovoid, 2.5–3 × 1.5–2 cm, wrinkled, papillate, black when mature, inconspicuously angled, slightly apiculate at apex, attenuate into a short stalk at base. Fl. Apr, fr. Aug–Jan of next year.

- Evergreen broad-leaved forests, forested valleys; 500–700 m. S Guangxi, Hainan, S Yunnan [Vietnam].


尖叶厚壳桂

Trees, up to 25 m tall, to 30 cm d.b.h. Old branchlets robust, ± angled, striate, densely rusty pubescent or sometimes ± glabrate; young branchlets slender, ca. 4 mm in diam., densely rusty pubescent. Leaves alternate; petiole robust, 1–1.5 cm, plano-convex, very densely rusty pubescent; leaf blade abaxially glaucous green, adaxially yellowish green when dry, opaque or shiny, narrowly elliptic, (9–)15–28 × (2.5–)5.5–14 cm, leathery, abaxially pubescent, adaxially glabrous except rusty pubescent along midrib or sometimes also along lateral veins, midrib and lateral veins conspicuously elevated abaxially, always impressed adaxially, lateral veins (7–)9–11 pairs, transverse veins conspicuous abaxially, ± impressed adaxially, veinlets laxly reticulate, conspicuous abaxially, base broadly cuneate, obtuse to subrounded, apex rounded and abruptly apiculate or sometimes incised but always acute. Panicles axillary and terminal, those arising from upper leaf axils shorter, (5–)7.5–15 cm, terminal ones longer, up to 19 cm, all towerlike, branched, densely rusty pubescent; peduncles (2–)2.5–4.5 cm; bracts and bracteoles ovate, ca. 3 × 2 mm, densely rusty pubescent. Pedicels very short, less than 1 mm, rusty pubescent. Flowers yellowish, ca. 5 mm. Perianth pubescent outside and inside; perianth tube turbinate, ca. 2.5 mm; perianth lobes oblong-ovate, ca. 2.5 mm, acute. Fertile stamens 9, slightly shorter than perianth lobes; filaments villous, those of 3rd whorl each with 2 shortly stalked reniform glands, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl extrorse. Stamnodes narrowly sagittate-triangular, ca. 2 mm, shortly stalked. Ovary clavate, including style ca. 4 mm, attenuate at apex into a style; stigma inconspicuous. Mature fruit black-purple, ellipsoid, up to 3.4 × 2 cm, subglabrous or sparsely pubescent at apex, inconspicuously 12-angulate, obtuse at apex, abruptly contracted into a short stalk at base. Fl. Mar–May, fr. Jun–Dec.

- Evergreen broad-leaved forests on hilly land or in wet places along rivers, dry sparse secondary forests on mountain slopes; 500–700 m. S and SE Yunnan.

15. Cryptocarya concinna Hayata; C. lenticellata Lecomte; C. microcarpa F. N. Wei.

黄果厚壳桂

Trees, up to 18 m tall, to 35 cm d.b.h. Bark brownish.
Branchlets gray-brown, ± angled, finely striate and glabrous; young ones slender, angled, finely striate, densely yellowish brown tomentose. Leaves alternate; petiole gray-brown, 0.4–1 cm, concave-convex, pubescent; leaf blade green-white abaxially, slightly shiny adaxially, elliptic-oblong or oblanceolate, 3–5–10 × (1.5–)2–3 cm, papery, slightly pubescent but soon glabrate abaxially, glabrous adaxially, midrib elevated abaxially, impressed adaxially, lateral veins 4–7 pairs, elevated abaxially, inconspicuous adaxially, transverse veins and veinlets irregularly reticulate, ± conspicuous abaxially, inconspicuous adaxially, base cuneate and unequal on sides, apex obtuse, subacute, or shortly acuminate. Panicles axillary and terminal, (2–)4–8 cm, pubescent, several branched toward top; peduncles pubescent; bracts very small, triangular. Pedicels 1–2 mm, pubescent. Flowers up to 3.5 mm. Perianth pubescent outside and inside; perianth tube subcampanulate, ca. 1 mm, obtuse. Fertile stamens 3, tricarpellate, 2.5 mm, obtuse. Fertile stamens 9; filaments 1.4–1.5 mm, pubescent, several branched toward top; peduncles pubescent; bracts very small, triangular. Pedicels 1–2 mm, pubescent. pubescent, several branched toward top; peduncles pubescent; bracts very small, triangular. Pedicels 1–2 mm, pubescent. pubescent, several branched toward top; peduncles pubescent; bracts very small, triangular. Pedicels 1–2 mm, pubescent. The wood is finely grained, heavy, durable, and is used for furniture.


Trees, ca. 6 m tall, ca. 12 cm d.b.h. Branchlets many lenticellate; floral branchlets angled. Leaves alternate; petiole reddish, 5–13 mm; leaf blade opaque and light rusty when dry abaxially, very shiny adaxially, oblanceolate, elliptic, or ovate, 5.5–12 × 1.5–4.6 cm, thickly leathery, sparsely pubescent abaxially, midrib elevated abaxially, impressed adaxially, always papillate near base, lateral veins 5–7 pairs, slightly elevated abaxially, obscurely visible adaxially, veins and veinlets finely reticulate, inconspicuous adaxially, base obtuse, apex acute or caudate. Flowers unknown. Infructescence axillary or terminal. Fruit black, ellipsoid, 13–15 mm, papillate, inconspicuously 12-angulate. Fr. Aug–Dec.

● Hainan.

Allen (J. Arnold Arbor. 23: 459. 1942) suggested that Cryptocarya tsangii may be a form of C. metcalfiana. It is treated here temporarily as a distinct species because the present authors have not seen flowering specimens. More material is needed to make a definitive decision.


硬壳桂 yang ke gui

Cryptocarya laui Merrill & F. P. Metcalf; C. merrilliana C. K. Allen.

Small trees, up to 12 m tall, to 20 cm d.b.h. Old branchlets gray-brown, glabrous, sparsely oblong-lenticellate, striate; young branchlets densely gray-yellow pubescent. Leaves alternate; petiole 5–10 mm, concave-convex, densely gray-yellow pubescent when young; leaf blade glaucous green and opaque abaxially, olive-green and opaque or shiny adaxially, oblanceolate, elliptic-oblong, very rarely obovate, 6–13 × 2.5–5 cm, leathery, gray-yellow pressed sericeous-pubescent on both surfaces, hairs slightly longer along midrib and lateral veins abaxially, midrib very elevated abaxially, impressed adaxially, lateral veins 5 or 6 pairs, conspicuous abaxially, slightly impressed adaxially, slightly arcuate and evanescent within leaf margin, transverse veins and veinlets reticulate, ± conspicuous abaxially, inconspicuous adaxially, base cuneate, apex abruptly acuminate, sometimes obtuse or emarginate. Panicles axillary and terminal, (3–)3.5–6 cm, ± lax, densely gray-yellow sericeous-pubescent on all parts; peduncles 2–3 mm. Perianth densely sericeous-pubescent outside but sparsely so inside; perianth tube turbinated, ca. 1.5 mm; perianth lobes ovate, ca. 1.5 mm, acute. Fertile stamens 9, less than 1.5 mm; filaments as long as anthers, those of 3rd whorl each with 2 stalked glands at base, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl extrorse. Stamnodes narrowly sagittate-triangular, stalked. Ovary clavate, including filiform style ca. 1.5 mm; stigma inconspicuous. Fruit greenish when young and dirty red when mature, ellipsoid, ca. 17 × 10 mm, glabrous, 12-angulate. Fl. Jun–Oct, fr. Sep–Mar of next year.

Evergreen broad-leaved forests; 300–800 m (but higher in Hainan). Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Zhejiang [N Viet-
The wood is heavy and durable and is used for making furniture. A viscid liquid extracted from wood pieces in water is used to paste hairs together. The leafy branchlets contain essential oil.


鸡卵槁 ji luan gao

Trees, ca. 5 m tall. Young branchlets green-brown, slender, terete, dark yellow pubescent near top. Leaves alternate; petiole brown, 5–10 mm, glabrous, glandular; leaf blade glaucous green abaxially, green adaxially, lanceolate, lanceolate-elliptic, or narrowly elliptic, very rarely obovate, (4–)9–14 × 1.5–4(–5) cm, subleathery, pubescent but soon glabrate on both surfaces, lateral veins ca. 5 pairs, inconspicuous adaxially, veins and veinlets slender, densely reticulate, conspicuous abaxially, base cuneate, apex obtuse or acuminate to obtusely acuminate. Panicles axillary or subterminal, generally shorter than leaf, up to 6.5 cm, finely pubescent, branches slender, ± upright, terminal branchlets 3-flowered. Flowers yellowish, scented, 2–3 mm, dark yellow pubescent, shortly pedicellate or sessile. Perianth lobes ovate, ca. 2 mm, sparsely pubescent inside. Fruit ellipsoid, ca. 12 × 7 mm, purplish brown and glaucous when dry, glabrous, conspicuously angled, slightly contracted on both ends, apiculate at apex; fruit stalk slightly dilated. Fl. Sep, fr. after Sep.

- Thickets on sandy soil near villages. Hainan.


钝叶厚壳桂 dun ye hou ke gui


Trees, up to 28 m tall, to 70 cm d.b.h. Bark gray. Old branchlets subterete, finely striate, yellow-brown when dry, glabrous; young branchlets slender, terete, ca. 3 mm in diam., striate, finely yellowish brown pubescent near top but glabrate on lower part. Leaves alternate; petiole 1.5–2.5 cm, concave-convex, glabrous; leaf blade brownish green abaxially and brown-green adaxially when dry, usually oblong, occasionally ovate or ovate-oblong, 7–19 × 3.2–10 cm, thinly leathery, glabrous and opaque on both surfaces, lateral veins 5–7 pairs, lateral veins and midrib ± conspicuous abaxially, plane adaxially, transverse veins and veinlets reticulate, ± conspicuous on both surfaces, base broadly cuneate to rounded, apex shortly acuminate. Panicles axillary and terminal, sometimes few flowered, much shorter than leaf blade, 2–4 cm, sometimes many flowered, nearly 1/2 as long as leaf blade or more, 5.5–12 cm, in latter case always much branched, branches slender and up to 4 cm; peduncle 1–5.5 cm, peduncle and rachis finely pubescent, always reddish. Pedicels 1–2 mm, densely finely pubescent. Flowers greenish white, ca. 3 mm. Perianth pubescent outside at base, others glandless; anthers 2-celled; cells of 1st and 2nd whorls introrse, those of 3rd whorl extrorse. Stamina narrowly sagittate-triangular, shortly stalked. Ovary clavate, including filiform style ca. 2.5 mm; stigma inconspicuous. Fruit ellipsoid, 10–12 × 6–8 mm, black when dry, 12-angulate. Fl. Jun–Jul, fr. Aug–Jan of next year.

- Evergreen broad-leaved forests in valleys, streamsides, riverbanks; 200–1100 m. Hainan.

The wood is finely grained, heavy, and durable.


云南厚壳桂 yun nan hou ke gui

Trees, up to 28 m tall, to 70 cm d.b.h. Bark gray. Old branchlets subterete, finely striate, yellow-brown when dry, glabrous; young branchlets slender, terete, ca. 3 mm in diam., striate, finely yellowish brown pubescent near top but glabrate on lower part. Leaves alternate; petiole 1.5–2.5 cm, plano-convex, densely rusty pubescent; leaf blade brownish green abaxially and brown-green adaxially when dry, usually oblong, occasionally ovate or ovate-oblong, 7–19 × 4.8–8 cm, thickly leathery, glabrous except rusty pubescent on midrib and lateral veins adaxially, pubescent throughout abaxially, lateral veins 7–9 pairs, lateral veins and midrib conspicuously elevated abaxially, slightly impressed adaxially, transverse veins conspicuous abaxially, ± impressed adaxially, veinlets laxly reticulate, conspicuous abaxially, base broadly cuneate, obtuse to subrounded, apex obtuse, mucronate, or incised, rarely acute. Panicles terminal and axillary, up to 14 cm, densely rusty pubescent, many branched, lower branches 5–6 cm; peduncles up to 6 cm; bracts and bracteoles broadly ovate, up to 3 mm, rusty pubescent on both surfaces. Pedicels less than 1 mm, densely rusty pubescent. Flowers yellowish green, ca. 3 mm. Perianth densely rusty pubescent outside but sparsely so inside; perianth tube turbinate, ca. 1.5 mm; perianth lobes ovate, ca. 1.5 mm, acute. Fertile stamens 9, ca. 1.5 mm; filaments villous, those of 3rd whorl each with 2 stalked suborbicular glands
and inside; perianth tube turbinate, ca. 1.5 mm; perianth lobes oblong-ovate, ca. 1.5 mm. Fertile stamens 9, ca. 1.5 mm; filaments villous, those of 3rd whorl each with 2 long-stalked orbicular-reniform glands at base, others glandless; anthers 2-celled, those of 1st and 2nd whorls oblong, slightly shorter than filaments, with introrse cells, those of 3rd whorl ovate-oblong and with lateral-extrorse cells. Staminodes narrowly sagittate-triangular, shortly stalked. Ovary clavate, including style nearly 3 mm; stigma capitate, inconspicuous. Fruit green when young but black-purple when mature, ovoid, ca. 16 × 12 mm when mature, glabrous, inconspicuously 12-angulate, attenuate at base, apex subrounded. Fl. Mar–Apr, fr. May–Jun.

- Evergreen broad-leaved forests in valleys, sparse secondary forests, mountain slopes, riverbanks; 500–1100 m. S Yunnan.