

23. SYNDICLIS J. D. Hooker, Hooker's Icon. Pl. 16: ad t. 1515. 1886.

油果樟属 you guo zhang shu

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Evergreen trees. Leaves subopposite or alternate, or clustered at apex of branchlet, pinninerved. Panicle axillary, pedunculate, bracteate or ebracteate; bracts and bracteoles subulate, minute, caducous. Flowers minute, bisexual, pedicellate, 2-merous. Perianth tube obconical; perianth lobes 4(or 5 or 6), broadly ovate-triangular or transversely oblong, small; perianth wholly deciduous. Fertile stamens 4(or 5 or 6), antitepalous, always exerted, hairy and glandular; filaments short; anthers broadly ovate, dilated, 2-celled or fused into 1 cell; cells introrse. Staminodes 4, minute, linear or lanceolate, densely hairy, enveloping ovary in an arc when in bud. Ovary ovoid-conical, glabrous, attenuate at apex into a style; stigma small. Fruit large, turbinate or oblate or globose; peduncle and pedicel indistinctive when in fruit, all thickened after anthesis.

About ten species: Bhutan, China; nine species (all endemic) in China.

Plants of *Syndiclis* have large oily fruits. The oil is edible and is also used in industry.

- 1a. Young current year branchlets, leaves, and petioles all glabrous or glabrate.
 - 2a. Panicle conspicuously with small leaves so whole inflorescence like a floral branchlet of 1.5–4 cm; pedicels short, 1–2 mm 7. *S. sichourensis*
 - 2b. Panicle not with small leaves; pedicels slender, more than 2 mm.
 - 3a. Leaf blade elliptic to ovate-elliptic, 10–13 × 5–7 cm, glaucous abaxially, apex abruptly shortly acuminate with obtuse acumen up to 2 cm, base cuneate to rounded and subequal on both sides, margin revolute and undulate, lateral veins usually ca. 6 pairs; panicle (2.5–)3–6.5 cm, generally solitary but always collaterally 2 or 3; perianth glabrous on both surfaces 8. *S. kwangsiensis*
 - 3b. Leaf blade ovate-elliptic, 6.5–11.5 × 2.7–6.3 cm, not glaucous abaxially, apex shortly acuminate but always obtuse or emarginate, base broadly cuneate, margin revolute but not undulate, lateral veins 3–5 pairs; panicle 2–4 cm, solitary; perianth glabrous outside, yellowish brown puberulent inside 9. *S. pingbienensis*
- 1b. Young current year branchlets, leaves, and petioles all ± rusty pubescent.
 - 4a. Fruits rugose when dry, densely rusty brown scurfy 1. *S. furfuracea*
 - 4b. Fruits smooth when dry, not scurfy.
 - 5a. Leaf blade conspicuously large, midrib, lateral veins, and transverse veins conspicuously elevated abaxially, very impressed adaxially, lateral veins 5–7 pairs 2. *S. marlipoensis*
 - 5b. Leaf blade smaller, midrib and lateral veins elevated abaxially, impressed adaxially, but transverse veins always opaque and inconspicuous adaxially.
 - 6a. Fruit turbinate, contracted into a short stalk at base 3. *S. chinensis*
 - 6b. Fruit globose or suboblate, not contracted into a short stalk at base.
 - 7a. Panicle very short, 0.9–1.2 cm; fruit subglobose, subtruncate at apex; leaf blade not foveolate 4. *S. fooningensis*
 - 7b. Panicle more elongate, 2–3.5(–4) cm; fruit globose, rounded or apiculate at apex; leaf blade foveolate on both surfaces.
 - 8a. Leaf blade glabrous adaxially, sparsely pubescent abaxially; petiole rusty tomentose; lateral veins 4–7 pairs, lateral veins and midrib impressed adaxially, conspicuously elevated abaxially; fruit ca. 4 cm in diam., apiculate, fruit stalk elongate, ca. 4 mm 5. *S. lotungensis*
 - 8b. Both surfaces of leaf blade as well as petiole sparsely yellowish brown puberulent when young but glabrate when mature; lateral veins ca. 5 pairs, lateral veins and midrib elevated on both surfaces; fruit up to 5.5 cm in diam., fruit stalk robust, ca. 1.5 cm 6. *S. anlungensis*

1. *Syndiclis furfuracea* H. W. Li, Acta Phytotax. Sin. 17(2): 71. 1979.

鳞秕油果樟 lin bi you guo zhang

Trees, up to 20 m tall. Old branchlets gray-brown, robust, terete, glabrous, densely lenticellate; young branchlets brown, ± angled, densely rusty pubescent. Leaves alternate; petiole 1.5–2 cm, concave-convex, slightly yellowish brown- to rusty pubescent; leaf blade abaxially greenish and opaque, adaxially green and shiny, elliptic or ovate, 10.5–12 × 4.5–7 cm, papery, abaxially slightly puberulent along veins, adaxially glabrous, lateral

veins 5–7 pairs, oblique and anastomosing within leaf margin, lateral veins and midrib elevated abaxially, impressed adaxially, transverse veins and veinlets reticulate, ± conspicuous abaxially, inconspicuous adaxially, foveolate under lens on both surfaces, base broadly cuneate to subrounded, margin somewhat revolute, apex shortly acuminate. Flowers unknown. Fruit globose, ca. 4.5 cm in diam., rugose when dry, densely rusty brown scurfy; fruit stalk rusty brown, robust, including peduncle 2–4 cm, terete, slightly dilated and 4–6 mm wide at apex. Fr. Oct.

• Dense forests; ca. 1200 m. SE Yunnan (Hekou, Pingbian).

Records of *Syndiclis furfuracea* from Hong Kong are referable to *Sinopora hongkongensis* (see p. 243).

2. *Syndiclis marlipensis* H. W. Li, Acta Phytotax. Sin. 17(2): 72. 1979.

麻栗坡油果樟 ma li po you guo zhang

Shrubs, ca. 2.5 m tall. One-year-old branchlets purple-brown, subterete, striate, densely corky lenticellate, glabrate; current year branchlets ± compressed, very densely rusty pubescent. Terminal buds small, ovoid, ca. 1.5 mm, densely rusty pubescent. Leaves subopposite or alternate; petiole red-brown, 0.8–1.5 cm, plano-convex, densely rusty pubescent; leaf blade purplish brown and opaque abaxially, yellowish brown and shiny adaxially, elliptic to oblong, 13–16.5 × 5.5–8.3 cm, papery, rusty pilose mainly along midrib abaxially, glabrous adaxially, lateral veins 5–7 pairs, arcuate and interconnected by buds, lowest ones always very close to leaf margin, lateral veins, midrib, and transverse veins conspicuously elevated abaxially, very impressed adaxially, veinlets ± visible and finely foveolate abaxially, obscure adaxially, base broadly cuneate, margin slightly revolute, apex shortly acuminate or sometimes obtuse. Panicle axillary, ca. 2.5 cm, few flowered; peduncle ca. 1.3 cm, peduncle and rachis densely rusty pubescent. Pedicels ca. 1.5 mm after anthesis, sparsely pubescent. Perianth ca. 1.5 mm after anthesis, glabrous outside, densely yellowish brown pubescent inside; perianth tube obconical, ca. 1 mm; perianth lobes 4(or 5), broadly ovate. Ovary elongate after anthesis, filiform, up to 5 mm, glabrous. Fr. Nov.

• Evergreen broad-leaved forests; 1300–1600 m. SE Yunnan (Malipo).

3. *Syndiclis chinensis* C. K. Allen, J. Arnold Arbor. 23: 462. 1942.

油果樟 you guo zhang

Potameia chinensis (C. K. Allen) Kostermans.

Trees, up to 20 m tall, to 24 cm d.b.h. Branchlets brownish, striate and lenticellate, rusty tomentulose when young but soon glabrate. Leaves opposite or alternate; petiole brownish, less than 2 cm; leaf blade glaucous abaxially, ovate or elliptic, 6–13.5 × 2.5–8 cm, leathery, finely pubescent abaxially and glabrous adaxially when young, glabrous on both surfaces or glabrate abaxially and glabrous adaxially when mature, midrib brownish, elevated abaxially, impressed adaxially, lateral veins 3–5 pairs, veins and veinlets densely reticulate and finely foveolate on both surfaces, base cuneate but always asymmetrical on sides, apex acuminate, acute, or obtuse. Panicle axillary, up to 4 cm, rusty tomentose, few flowered, shortly pedunculate. Pedicels short, ca. 1.5 mm. Flowers green-yellow, ca. 1.5 mm, rusty tomentose. Perianth lobes 4, ovate. Fertile stamens 4, slightly exerted, subsessile, outer 2 each with 2 glands at base; anthers 2-celled; cells introrse. Staminodes 4, opposite to fertile stamens, villous. Fruit turbinate, contracted into a short stalk at base, 3.5–4 × ca. 3 cm, ca. 1 cm in diam. at base, black-red when dry, glabrous; fruit stalk indistinctive from peduncle, including peduncle ca. 4 × 1 cm, rusty striate, glabrous. Fl. Apr–May, fr. Sep–Oct.

• Valleys, evergreen broad-leaved forests; ca. 500 m. S Hainan.

4. *Syndiclis fooningensis* H. W. Li, Acta Phytotax. Sin. 17(2): 72. 1979.

富宁油果樟 fu ning you guo zhang

Small trees, 3–8 m tall. One-year-old branchlets brown, terete, ca. 2 mm in diam., striate, glabrous, with corky oblong lenticels; current year branchlets red-brown, slender, ± compressed, densely rusty pubescent. Terminal buds small, ovoid, ca. 3 mm; bud scales very densely yellowish brown pubescent outside. Leaves subopposite or alternate; petiole 0.8–1.5 cm, plano-convex, very densely rusty pubescent when young but glabrate when mature; leaf blade yellow-brown adaxially but yellowish brown or brownish when dry, ovate or elliptic, 5.5–10 × 2.5–5 cm, subleathery, rusty pubescent on both surfaces especially along midrib and veins abaxially when young, ± rusty pubescent abaxially and glabrate adaxially when mature, midrib and lateral veins conspicuously elevated abaxially, impressed adaxially, lateral veins 3–6 pairs, arcuate and interconnected at ends, basal lateral veins very close to leaf margin, transverse veins ± conspicuous abaxially, opaque adaxially, connected by inconspicuous veinlets, base broadly cuneate, margin revolute, apex acute to shortly acuminate and always oblique. Panicle axillary on upper part of branchlet, few flowered, 0.9–1.2 cm before anthesis; peduncle 1–5 mm, peduncle and rachis rusty pilose; bracteoles subulate, less than 1 mm, rusty pubescent. Pedicels slender, up to 1.5 mm, densely rusty pubescent. Flowers green, small, less than 1 mm when in bud. Perianth glabrous outside, pubescent inside; perianth tube obconical; perianth lobes 4, broadly triangular, very short. Fertile stamens 4, in 2 whorls, outer 2 each with 2 glands at base; anthers 2-celled; cells introrse. Staminodes 4, linear, densely villous. Ovary ovoid; style attenuate. Fruit subobovate, ca. 3 × 3.3 cm, smooth, glabrous, yellow-brown when dry, subtruncate at apex. Fl. Apr–May.

• Limestone mountains, dense valley forests; 800–1000 m. SE Yunnan (Funing).

5. *Syndiclis lotungensis* S. K. Lee, Acta Phytotax. Sin. 8: 191. 1963.

乐东油果樟 le dong you guo zhang

Potameia lotungensis (S. K. Lee) Dao.

Trees, up to 20 m tall, to 20 cm d.b.h. Bark gray and purplish brown, peeling off in lamellae. Branchlets gray and purplish brown, rugose; young branchlets black-red, slightly compressed, striate and lenticellate, densely rusty tomentose when young. Leaves alternate or subopposite; petiole ca. 2 cm, rusty tomentose; leaf blade slightly glaucous abaxially, green adaxially, broadly ovate or elliptic, 7.5–14 × 4–8 cm, thickly papery, sparsely pubescent abaxially, glabrous adaxially, midrib conspicuously elevated abaxially, impressed adaxially, lateral veins 4–7 pairs, arcuately interconnected at ends, basal lateral veins very close to leaf margin, transverse veins very distinctive abaxially, base broadly cuneate, apex acute. Flowers unknown. Fruit globose, ca. 4 cm in diam., brown when dry, smooth, glabrous, apiculate at apex; fruit stalk robust, including indistinct-

tive peduncle ca. 4 × 1 cm, rugose, slightly curved at apex. Fr. Oct.

• Evergreen forests or tropical rain forests on mountain slopes or in valleys; 400–900 m. SW Hainan (Ledong).

6. *Syndiclis anlungensis* H. W. Li, Acta Phytotax. Sin. 17(2): 72. 1979.

安龙油果樟 an long you guo zhang

Trees, ca. 8 m tall, ca. 30 cm d.b.h. One-year-old branchlets black-brown or brown, terete, up to 5 mm in diam., glabrous, densely lenticellate, lenticels broadly oblong and corky; current year branchlets red-brown, slender, ± compressed, sparsely rusty- or yellowish brown puberulent. Terminal buds small, ovoid, ca. 2 mm; bud scales densely yellowish brown pubescent. Leaves alternate; petiole 1–1.5 cm, concave-convex, sparsely yellowish brown puberulent when young but glabrate when mature; leaf blade brownish and slightly glaucous abaxially and red-brown adaxially when dry, ovate-elliptic to elliptic, 6.5–10.5 × 2.5–5.5 cm, subleathery, sparsely yellowish brown puberulent on both surfaces when young, glabrate on both surfaces when mature, midrib and lateral veins conspicuously elevated on both surfaces, lateral veins ca. 5 pairs, arcuately connected at ends, basal lateral veins close to leaf base, veins and veinlets reticulate and slightly foveolate on both surfaces, base broadly cuneate, margin slightly revolute and undulate, apex acute, acumen obtuse. Panicle axillary on current year branchlet, 2–3.5 cm, few flowered; peduncle 1–1.5 cm, peduncle and rachis sparsely yellowish brown puberulent; bracteoles subulate, less than 1 mm, yellowish brown puberulent. Pedicels 1.5–3 mm, sparsely yellowish brown puberulent. Flowers yellow, small, ca. 1.5 mm, up to 2 mm in diam. Perianth lobes broadly ovate, acute, sparsely puberulent outside. Mature fruit brown, globose, up to 5.5 cm in diam., slightly contracted at base, apex rounded, glabrous; fruit stalk black-brown, robust, ca. 1.5 cm × 5–7 mm (broadest at apex), with corky elliptic lenticels. Fl. Jun.

• Mountain slopes; ca. 1300 m. SW Guizhou (Anlong).

7. *Syndiclis sichourensis* H. W. Li, Acta Phytotax. Sin. 17(2): 72. 1979.

西畴油果樟 xi chou you guo zhang

Trees, 6–10 m tall. Bark gray or black-gray. One-year-old branchlets gray or gray-brown, terete, irregularly striate, densely lenticellate, glabrous; current year branchlets red-brown, ± angled, striate. Terminal buds small, ca. 1.5 mm; bud scales densely rusty pubescent. Leaves alternate; petiole 0.8–1.5 cm, plano-convex, glabrous; leaf blade yellowish brown on both surfaces when dry, elliptic or ovate-elliptic to oblong, 6–11 × 2–5 cm, subleathery, glabrous on both surfaces, midrib and lateral veins elevated abaxially, impressed adaxially, lateral veins 4–6 pairs, arcuate, evanescent near leaf margin, transverse veins conspicuous abaxially, inconspicuous adaxially, connected by reticulate veinlets, base broadly cuneate or subrounded, always unequal on sides, margin revolute and undulate, apex shortly acuminate, always oblique. Panicle axillary, 1.5–4 cm, many flowered, conspicuously with small leaves so whole inflorescence like a floral branchlet; rachis red-brown, ±

compressed, glabrous; bracteoles minute, subulate, ca. 1.5 mm, ciliate, caducous. Pedicels 1–2 mm, glabrous. Flowers green, small, ca. 2 × 2.5 mm. Perianth glabrous outside, pubescent inside and on margin; perianth tube obconical or broadly campanulate, up to 1.5 mm; perianth lobes 4(or 5), broadly triangular, 0.5–1.5 mm, obtuse. Fertile stamens 4(or 5), all exerted, ca. 1.5 mm, in 2 whorls, outer 2 each with 2 orbicular-reniform glands; filaments short, pubescent; anthers almost as long as filament, ovoid-deltoid, 2-celled or sometimes fused into 1 cell; cells all introrse. Staminodes 4, opposite to fertile stamens, linear, densely villous, arched and enveloping ovary when in bud. Ovary ovoid-conical, glabrous; style filiform, ca. 1.2 mm; stigma small. Fruit green when immature but red-brown when dry, globose, up to 5 cm in diam., smooth, glabrous, rounded and conspicuously apiculate at apex. Fl. and fr. Sep–Oct.

• Dense humid forests; 1300–1800 m. SE Yunnan (Xichou).

8. *Syndiclis kwangsiensis* (Kostermans) H. W. Li, Acta Phytotax. Sin. 17(2): 73. 1979.

广西油果樟 guang xi you guo zhang

Beilschmiedia kwangsiensis Kostermans, Reinwardtia 7: 453. 1969; *Potameia kwangsiensis* Kostermans.

Small to large trees, 8–23 m tall, 15–45 cm d.b.h. Bark gray. One-year-old branchlets yellow-brown, terete, striate, densely lenticellate, glabrous; current year branchlets red-brown, ± angled, striate, densely warty, glabrous. Terminal buds small, ovoid; bud scales densely rusty pubescent. Leaves alternate; petiole 1–1.5 cm, plano-convex, glabrous; leaf blade glaucous abaxially and yellow-brown adaxially when dry, elliptic to ovate-elliptic, 10–13 × 5–7 cm, papery when young but subleathery when mature, lateral veins ca. 6 pairs, basal lateral veins oblique, near leaf base and very developed, lateral veins and midrib conspicuously elevated abaxially, impressed adaxially, transverse veins and veinlets reticulate, ± conspicuous and shallowly foveolate on both surfaces when young, obscure abaxially and conspicuous adaxially when mature, base broadly cuneate to subrounded, subequal on sides, margin revolute and undulate, apex abruptly shortly acuminate, acumen obtuse and up to 2 cm. Panicle axillary, (2.5–)3–6.5 cm, usually solitary but always collaterally 2 or 3, few flowered, without floral leaves; peduncle red-brown, (1.5–)2–3 cm, ± compressed, glabrous, branches short, 1–1.5 cm; bracteoles subulate, minute, less than 1 mm, caducous. Pedicels slender, up to 3 mm, glabrous. Flowers yellow, small, ca. 2 × 2 mm. Perianth glabrous outside and inside; perianth tube obconical, ca. 1 mm; perianth lobes 4, broadly triangular-ovate, ca. 1 × 1 mm, obtuse. Fertile stamens 4, slightly exerted; filaments slightly longer than anthers, villous, outer 2 each with 2 glands; anthers broadly triangular, ca. 0.5 mm, acute, 2-celled; cells introrse. Staminodes 4, opposite to fertile stamens, linear, ca. 0.6 mm, glabrous, attenuate at apex. Stigma small, inconspicuous. Mature fruit globose, up to 5 cm in diam., red-brown when dry, smooth, glabrous, rounded and inconspicuously apiculate at apex; pericarp corky. Seed 1, globose. Fl. Apr, fr. Oct.

• Dense valley forests on hilly land; 300–700 m. SW Guangxi (Shiwan Dashan).

When Kostermans described *Beilschmiedia kwangsiensis*, he cited *Tsang 22586* (BO) as the holotype. He later described *Potameia kwangsiensis* (*Adansonia*, sér. 2, 17: 92. 1977), citing *Tsang 22586* (P) as the holotype. The present authors accept *B. kwangsiensis* and *P. kwangsiensis* as separate names because they have different holotypes (different specimens, although from the same gathering). Li, when making the new combination *Syndiclis kwangsiensis*, cited *B. kwangsiensis* as the basionym and treated *P. kwangsiensis* as a synonym.

9. *Syndiclis pingbienensis* H. W. Li, *Acta Phytotax. Sin.* 17(2): 73. 1979.

屏边油果樟 ping bian you guo zhang

Trees, 10–25 m tall. One-year-old branchlets red-brown, terete, ca. 3.5 mm in diam., striate, densely corky-lenticellate, glabrous; current year branchlets ± compressed, glabrous. Ter-

minal buds small, ovoid, ca. 1.5 mm; bud scales tightly clasped, densely rusty pubescent outside. Leaves alternate; petiole red-brown, 1–1.7 cm, plano-convex, glabrous; leaf blade yellowish brown abaxially when dry, yellow-brown adaxially, ovate-elliptic, 6.5–11.5 × 2.7–6.3 cm, leathery, glabrous on both surfaces, midrib and lateral veins conspicuously elevated abaxially, plane adaxially, lateral veins 3–5 pairs, basal lateral veins very close to leaf margin, transverse veins conspicuous abaxially, obscure adaxially, veinlets obscurely visible abaxially, base broadly cuneate, ± unequal on sides, margin revolute but not undulate, apex shortly acuminate, always obtuse and emarginate. Panicle axillary, 2–4 cm, few flowered; peduncle 0.5–2.2 cm, peduncle and rachis red-brown and glabrous. Pedicels slender, 2–5 mm, glabrous. Flowers small, ca. 1.5 mm. Perianth glabrous outside, yellowish brown puberulent inside; perianth tube obconical, ca. 1 mm; perianth lobes 4(or 5), broadly triangular, ca. 0.5 mm, obtuse. Fertile stamens 4, less than 1 mm; filaments pubescent, outer 2 each with 2 orbicular-reniform glands at base; anthers 2-celled; cells introrse. Staminodes 4, yellow-brown, filiform, densely villous. Ovary ovoid; style attenuate; stigma small, inconspicuous. Fruit green when immature but red-brown when dry, globose, ca. 3.5 cm in diam., smooth, glabrous, apex rounded. Fl. and fr. Sep–Oct.

- Dense humid forests; 1500–1800 m. SE Yunnan (Pingbian).

