

10. LEPISANTHES Blume, Bijdr. 237. 1825.

鳞花木属 lin hua mu shu

Aphania Blume; *Erioglossum* Blume; *Howethoa* Rauschert; *Otophora* Blume; *Sapindopsis* F. C. How & C. N. Ho (1955), not Fontaine (1889) [fossil].

Trees or shrubs, monoecious. Leaves usually paripinnate, alternate, estipulate, usually petiolate; leaflets 2 to several pairs, opposite or alternate, usually entire. Thyrses axillary, above axils or on old branches, solitary or several in fascicles. Flowers unisexual, actinomorphic or zygomorphic. Sepals 5, leathery, concave, imbricate, outer 2 smaller, orbicular, inner ones usually broadly ovate or elliptic. Petals 4 or 5, often spoon-shaped, longer than sepals, base clawed, apex with adaxial scale. Disk acetabuliform or semilunar, entire or lobed. Stamens (male flowers) 8, rarely more or fewer, with disk, longer than petals; filaments flat, usually hairy; anthers ellipsoid. Ovary (female flowers) 2- or 3-loculed, usually with grooves between locules; ovules 1 per locule; style short, apex inflated, entire or 2- or 3-lobed. Fruit ellipsoid or subglobose, 2- or 3-loculed; pericarp leathery or slightly fleshy, both sides or only abaxially hairy, rarely glabrous on both sides. Seeds ellipsoid, bilaterally slightly flat, without pseudotesta; testa brown, thinly leathery or crustaceous, often glabrous; embryo small, arched, cotyledons thick, radicles small, papillate.

Leenhouts (Blumea 18: 429–430. 1969; and in Adema et al., Fl. Males., ser. 1, 11(3): 627–653. 1994) revised the genus, combining several genera previously recognized in FRPS (including *Aphania*, *Erioglossum*, and *Otophora*) into *Lepisanthes*.

About 24 species: tropical Africa, S and SE Asia, NW Australia, Madagascar; eight species (four endemic) in China.

- 1a. First pair leaflets stipulelike, much smaller than other leaflets 8. *L. unilocularis*
- 1b. First pair leaflets not stipulelike, as large as other leaflets.
 - 2a. Leaflet blades cordate at base.
 - 3a. Leaves with petiole to 75 cm or longer, leaflets usually 5 or 6 pairs 6. *L. basicardia*
 - 3b. Leaves with petiole 25–40 cm, leaflets usually 4 pairs 7. *L. cauliflora*
 - 2b. Leaflet blades not cordate at base.
 - 4a. Leaflet blades abaxially densely tomentose, adaxially hairy only on midvein and lateral veins, base broadly cuneate to rounded 1. *L. rubiginosa*
 - 4b. Leaflet blades glabrous.
 - 5a. Petals linear to linear-spoon-shaped, scales without cristate appendage; disk acetabuliform 4. *L. browniana*
 - 5b. Petals broadly spoon-shaped or suborbicular above claw, scales with cristate appendage; disk semilunar, 3-lobed 5. *L. hainanensis*
 - 6a. Petals purplish red; fertile schizocarp ellipsoid, ca. 1.6 × 0.8 cm; leaflets 3–6 pairs 2. *L. senegalensis*
 - 6b. Petals greenish white; fertile schizocarp subglobose or broadly obovoid, 1.2–1.4 × 1–1.2 cm; leaflets 1 or 2 pairs 3. *L. oligophylla*

1. *Lepisanthes rubiginosa* (Roxburgh) Leenhouts, Blumea 17: 82. 1969.

赤才 chi cai

Sapindus rubiginosus Roxburgh, Pl. Coromandel 1: 44. 1795 [*“rubiginosa”*]; *Erioglossum rubiginosum* (Roxburgh) Blume.

Shrubs or small trees, evergreen, usually 2–3 m tall, sometimes to 7 m tall. Bark dark brown, irregularly longitudinally fissured; young branches, inflorescences, and leaf axis densely ferruginous tomentose. Leaves with petiole 15–50 cm; leaflets 2–8 pairs; petiolules short, less than 5 mm, stout; blades abaxially becoming brown when dry, adaxially deep green, slightly shiny, first pair (near base) ovate, evidently smaller, gradually larger toward leaf apex, elliptic-ovate to narrowly elliptic, 3–20 cm, leathery, abaxially densely tomentose, adaxially hairy only on midvein and lateral veins, lateral veins ca. 10 pairs, tips not reaching margin, base broadly cuneate to rounded, margin entire, apex obtuse or rounded, rarely acute. Inflorescences compound racemose, only branched once, densely flowered on upper part of branches; bracts subulate. Flowers fragrant, ca. 5 mm in diam. Sepals suborbicular, 2–2.5 mm. Petals 4, obovate, ca. 5 mm. Filaments villous. Fertile schizocarps red, 1.2–1.4 cm

× 5–7 mm. Fl. spring, fr. summer.

Sparse forests, thickets, very common. Guangdong, Guangxi, Hainan; cultivated in Yunnan (Xishuangbanna) [India, Indochinese peninsula, Indonesia, Malaysia, New Guinea, Philippines; NW Australia].

This species is used medicinally and for timber.

2. *Lepisanthes senegalensis* (Poiret) Leenhouts, Blumea 17: 85. 1969.

滇赤才 dian chi cai

Sapindus senegalensis Poiret in Lamarck, Encycl. 6: 666. 1804; *Aphania rubra* (Roxburgh) Radlkofer; *S. ruber* (Roxburgh) Kurz; *Scytalia rubra* Roxburgh [*“rubia”*].

Trees or shrubs, evergreen, 4–6 m tall or more. Branches terete, glabrous. Leaves with petiole to 60 cm, axis strong, stout, grooved; leaflets 3–6 pairs; petiolule ca. 1 cm, stout; blades olive-green when dry, ovate or ovate-lanceolate, 15–40 × 4–14 cm, subleathery, glabrous, base rounded or sometimes nearly cuneate, margin entire, apex acuminate or shortly acuminate. Inflorescences axillary, usually shorter than leaves. Pedicels 1–2 mm. Smaller sepals broadly ovate, 1.2–2 mm; larger ones suborbicular, 2.5–3 mm in diam. Petals 5 or sometimes 4, purplish red, broadly ovate, 4–5 × 3–3.5 mm, apex

rounded or subtruncate; scales ciliate. Stamens 8 or sometimes 7; filaments ca. 1.5 mm, middle part slightly inflated, villous; anthers oblong, connectives slightly prominent. Ovary obcordiform, usually 2-lobed, 2-loculed; style short, stout; stigma shallowly 2-lobed. Fruit purplish red; fertile schizocarp ellipsoid, ca. 1.6 × 0.8 cm. Fl. Feb–Mar, fr. May.

Wet valleys. Guangxi, S Yunnan [Bangladesh, Bhutan, India, Indochinese peninsula, Indonesia, Malaysia, Myanmar, Nepal, New Guinea, Philippines, Sri Lanka; Africa, Madagascar].

3. *Lepisanthes oligophylla* (Merrill & Chun) N. H. Xia & Gadek, **comb. nov.**

赛木患 sai mu huan

Basionym: *Sapindus oligophyllus* Merrill & Chun, Sunyatsenia 2: 271. 1935; *Aphania oligophylla* (Merrill & Chun) H. S. Lo; *Howethoa oligophylla* (Merrill & Chun) Rauschert; *Sapindopsis oligophylla* (Merrill & Chun) F. C. How & C. N. Ho.

Shrubs or small trees, evergreen, 4–10 m tall. Branches grayish yellow, grooved, subglabrous. Leaves with slightly flat petioles 8–18 cm; leaflets 1 or 2 pairs, sometimes terminal pair only one developed; petiolules 5–8 mm; blades adaxially shiny, oblong-elliptic or narrowly elliptic, 6–14 × 2–4.5 cm, thinly leathery or papery, both surfaces glabrous, lateral veins 12–15 pairs, tips reticulate, base cuneate, margin entire, apex shortly acuminate. Inflorescences terminal or axillary near tips, usually shorter than or ca. as long as leaves, main rachis slightly stout and strong, upper part ferruginous pubescent, branches usually short and slender. Pedicels ca. 2 mm, slender. Sepals suborbicular, larger ones ca. 2 mm in diam., ciliate. Petals greenish white, broadly ovate, nearly as long as sepals, abaxial surface and margin pilose. Disk inconspicuously lobed. Stamens 8; filaments ca. 3 mm. Ovary obovoid, 2-lobed, 2-loculed, sometimes 3-lobed and 3-loculed. Fertile schizocarps subglobose or broadly ovoid, 1.2–1.4 × 1–1.2 cm. Fl. spring, fr. summer.

• Forests. S Hainan.

4. *Lepisanthes browniana* Hiern in J. D. Hooker, Fl. Brit. India 1: 680. 1875.

大叶鳞花木 da ye lin hua mu

Trees, small, ca. 6 m tall. Branches and petioles red when dry, nearly terete, strong, stout, striate or grooved, pilosulose or subglabrous. Leaves with petiole to 70 cm; leaflets 3–5 pairs; petiolules 0.8–15 mm, inflated; blades usually grayish green, lanceolate-oblong or sometimes linear-obovate, 20–40 × 6–14 cm, papery, glabrous, lateral veins 18–20 pairs, prominent on both sides, reticulate veinlets conspicuous, base narrowly cuneate, margin entire, apex acuminate. Thyrses narrow, racemose or with 2–4 racemose branches near base, 5–18 cm, shortly tomentose, usually solitary on stems (or above axils). Pedicels 5–10 mm. Sepals nearly broadly ovate, 3.5–4.3 mm, abaxially ferruginous tomentose. Petals 5, linear to linear-spoon-shaped, ca. 6.2 mm, often erose or nearly entire, abaxial surface of claw and margin of adaxial surface villous; scales connate to claw margin, villous, apex 2-lobed, reflexed. Disk nearly acetabuliform, glabrous. Stamens 8; filaments villous. Ovary ferruginous villous, 3-lobed, 3-loculed; style nearly as long as ovary; stigma capitate. Fl. late autumn.

Wet forests; ca. 200 m. Yunnan (Yingjiang) [Myanmar].

5. *Lepisanthes hainanensis* H. S. Lo, Acta Phytotax. Sin. 17(2): 31. 1979.

鳞花木 lin hua mu

Trees, to 12 m tall. Branches grayish yellow, slightly zigzag, strong, stout, internodes often very short, subglabrous. Leaves paripinnate, slightly dense, axis strong, nearly concolorous with branches, terete, 15–34 cm, striate, glabrous; leaflets 4–6 pairs; petiolules ca. 1 cm, strong, stout, adaxially deeply furrowed; blades abaxially pale brown when dry, adaxially slightly shiny, olive-green, oblong-lanceolate to elliptic-ovate, 6–20 × 2–6 cm, first pair (near base) evidently smaller, leathery, glabrous, midvein, lateral, and reticulate veins prominent on both sides, lateral veins slightly denser, 15–22 pairs, arched and ascending near margin, inconspicuously netted, base broadly cuneate to obtuse, margin entire, apex shortly acuminate or cuspidate. Inflorescences axillary or on leafless old branches, to 30 cm, densely pilose, rachis slightly stout, ridged, branches spreading. Flower buds subglobose, ca. 5 mm. Sepals 5, suborbicular or broadly obovate, concave, margin thin, abaxially tomentose. Petals 5 or sometimes 4, upper part cuneate-orbicular, lower part gradually narrowed, 7–8 × 4–5 mm, abaxially only long white hairy at base, clawed, margin erose; scales connate with petals at margin, apex 2-lobed, white ciliate, with cristate appendage. Disk oblique, usually 3-lobed, abaxially tomentose, adaxially glabrous. Stamens 8 or sometimes 7, slightly exerted; filaments densely hairy. Ovary 3-loculed, tomentose; style stout; stigma capitate. Fruit (not thoroughly mature) with a short, stout stalk, subglobose, to 2 cm in diam., usually 3-loculed; pericarp leathery, abaxially shortly grayish tomentose, adaxially glabrous. Seeds 1 per locule. Fr. Jun–Jul.

• S Hainan.

6. *Lepisanthes basicardia* Radlkofer, Rec. Bot. Surv. India 3: 345. 1907.

心叶鳞花木 xin ye lin hua mu

Trees, small, ca. 6 m tall. Leaves with petiole to 75 cm or longer; petioles strong, stout, to 1.5 cm in diam. at base, axis reddish brown, with 2 evident furrows adaxially, pilose; leaflets often 5 or 6 pairs; petiolules inflated, less than 1 cm, tomentose; blades narrowly lanceolate or sometimes narrowly elliptic, 20–42 × 5–10 cm, thinly leathery, abaxially ferruginous hirsute on midvein, lateral veins, and reticulate veins, adaxially pilosulose on midvein, lateral veins 15–30 pairs, base slightly oblique cordate, apex acute to shortly acuminate. Inflorescences cauliflorous, to 65 cm when fruiting, ferruginous tomentose; rachis strong, ridged. Flower buds subglobose. Sepals 5, pilose abaxially. Petals 4, broadly obovate, clawed, abaxial surface of claw villous, adaxially with 1 reflexed cristate appendage. Disk semi-lunar. Stamens 8; filaments villous. Fruit (not thoroughly mature) subglobose or broadly ellipsoid, 1.5–2 cm, with 3 obtuse angles, densely ferruginous tomentose, 3-loculed, with 1 seed per locule. Seeds ellipsoid; hilum long. Fl. autumn.

Forests; ca. 200 m. W Yunnan (Yingjiang) [Myanmar].

7. *Lepisanthes cauliflora* C. F. Liang & S. L. Mo, Guihaia 2: 66. 1982.

茎花赤才 jing hua chi cai

Shrubs to small trees, 2–6 m tall. Branches few, reddish brown to brown, grayish yellow tomentose, glabrescent, shallowly furrowed. Leaves paripinnate, alternate, 25–40 cm with petioles; axis and petioles grayish yellow tomentose; leaflets usually 4 pairs, opposite; petiolules 3–4 mm, densely tomentose; blades adaxially deep green, oblong or ovate-oblong, 13–30 × 5–11 cm, papery, abaxially sparsely tomentose along midveins and lateral veins, adaxially sparsely tomentose along midveins, or glabrous on both sides, lateral veins 17–22 pairs, prominent on both sides when dry, base slightly cordate, margin entire, apex caudate-acuminate. Inflorescence racemose or thyrsoid, on stems and old branches, 1.5–4 cm, densely grayish yellow to grayish brown pubescent. Flowers polygamous, small; pedicels 2–3 mm, bracteolate. Sepals 5. Petals 5. Stamens 8. Bisexual flowers: sepals elliptic or boat-shaped, 3–4 × 1.5–3 mm, puberulent abaxially; petals oblong or ovate-oblong, 4–5 × 1.5–4 mm, abaxially puberulent, adaxially with hairy scales on middle; scales with a coroniform appendage at apex; stamens 3–4 mm; filaments puberulent; ovary subglobose, 3-locular, ca. 2 mm in diam., densely grayish yellow pubescent; styles ca. 1.5 mm, puberulent; stigma capitate; disk disklike. Male flowers: sepals and petals larger, oblong. Fruit globose to compressed globose, with 3 obtuse angles; pericarp thin, rigid, densely grayish yellow pubescent abaxially. Seeds 1–3, subglobose or semiglobose; testa membranous, reticulate veined, with ca. 1.5 × 0.6–0.7 cm spatulate scars on outer side. Fl. Sep–Oct.

• Forests. Guangxi (Longzhou).

- 1a. Leaflets blades hairy adaxially along midveins and abaxially along midveins and lateral veins 7a. var. *cauliflora*
- 1b. Leaflets glabrous on both surfaces 7b. var. *glabrifolia*

7a. *Lepisanthes cauliflora* var. *cauliflora*

茎花赤才(原变种) jing hua chi cai (yuan bian zhong)

Leaflet blades adaxially deep green, 13–30 × 5–11 cm, abaxially sparsely tomentose along midveins and lateral veins, adaxially sparsely tomentose along midveins, or glabrous on both surfaces.

• Forests. Guangxi (Longzhou).

7b. *Lepisanthes cauliflora* var. *glabrifolia* S. L. Mo & X. X. Lee, Guihaia 2: 67. 1982.

光叶茎花赤才 guang ye jing hua chi cai

Leaflet blades narrower, glabrous on both surfaces.

• Forests. Guangxi (Longzhou).

8. *Lepisanthes unilocularis* Leenhouts, Blumea 17: 73. 1969.

爪耳木 zhao er mu

Otophora unilocularis (Leenhouts) H. S. Lo.

Shrubs, ca. 3 m tall. Branches terete, ca. 5 mm in diam., densely ferruginous tomentose. Leaves imparipinnate, 22–30 cm, axis densely shortly tomentose; leaflets 12–14 pairs; petiolules very short, tomentose; blades papery, first pair stipulelike, ovate, small, ca. 1.5 × 1 cm, others lanceolate, 5–7 × 1–1.5 cm, both surfaces with small, scattered glands, base oblique, side toward leaf base obtuse, that toward leaf apex cuneate, apex acuminate; midvein prominent adaxially, strigose, lateral veins 8–10 per side, netted ca. 2 mm apart from margin. Flowers unknown. Infructescences terminal, lower part of main rachis with some horizontal branches. Fruit ellipsoid, 1–1.2 cm × 8–9 mm, smooth, glabrous. Seeds 1, brown, ca. 8 mm; hilum orbicular.

• Forests. Hainan.

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