

6. ARTOCARPUS J. R. Forster & G. Forster, Char. Gen. Pl. 51. 1775, nom. cons.

波罗蜜属 bo luo mi shu

Radermachia Thunberg; *Sitodium* Parkinson, nom. rej.

Trees, evergreen or deciduous, with latex; monoecious. Stipules free, intrapetiolar or lateral, amplexicaul or not. Leaves spirally arranged or distichous; leaf blade simple to pinnatifid, rarely pinnate, leathery, margin entire. Inflorescences sometimes borne on main branches or trunk, unisexual, capitate, many-flowered. Male flowers: free, surrounded by peltate to clavate interfloral bracts; calyx tubular, slightly 2-lobed or 2-4-lobed; lobes imbricate or valvate; stamen 1, straight in bud, slightly to conspicuously exerted from calyx; anthers globose to oblong, 2-loculed; pistillode absent. Female flowers: at least partially adnate to each other and/or to interfloral bracts; calyx tubular, basally thin walled, apically thick walled and either completely fused or not; ovary free; style central or ± lateral; stigmas 1 or 2, equal or unequal. Flowers and bracts fused laterally to form a syncarp. Syncarp fleshy throughout or at least at basal portions of calyx, sometimes very large, flowers and bracts fused at their tips to form an areolate surface or free and forming variously shaped processes on surface. Seed without endosperm; cotyledons fleshy, equal or unequal.

About 50 species: tropical and subtropical Asia, Pacific Islands; 14 species (five endemic, two introduced) in China.

Some species are important for their edible fruit (most notably *Artocarpus communis*, “breadfruit”), and/or timber.

Records of *Artocarpus gomezianus* Wallich ex Trécul from Taiwan (FRPS 23(1): 51. 1998) have not been confirmed, and this species was excluded from Fl. Taiwan. There is also a specimen without flowers or fruit from W Yunnan that may be *A. gomezianus*, which species is recorded from N India, Indonesia, Myanmar, Philippines, Sri Lanka, and Vietnam.

- 1a. Stipules amplexicaul, leaving continuous scar around node; mesophyll with resin cells.
 - 2a. Plant deciduous; bracts many 1. *A. chama*
 - 2b. Plant evergreen; bracts few or absent.
 - 3a. Branchlets mostly pubescent; leaves on mature trees pinnately lobed or pinnatifid; male inflorescences 7-30(-40) cm; fruiting syncarp 8-15 cm in diam. 2. *A. communis*
 - 3b. Branchlets glabrous; leaves on mature trees entire; male inflorescences 2-7 cm; fruiting syncarp 25-50 cm in diam. 3. *A. heterophyllus*
- 1b. Stipules lateral, leaving small ± D-shaped scars; mesophyll without resin cells.
 - 4a. Leaf blade adaxially glabrous.
 - 5a. Leaf blade abaxially pubescent.
 - 6a. Branchlets dark brown; petiole 2-3 cm; leaf blade apex caudate; secondary veins 11-13 on each side of midvein 7. *A. gongshanensis*
 - 6b. Branchlets pale reddish brown; petiole 0.4-1 cm; leaf blade apex mucronate; secondary veins 6-9 on each side of midvein 14. *A. tonkinensis*
 - 5b. Leaf blade abaxially glabrous.
 - 7a. Calyx lobes of male flowers basally connate; fruiting peduncle to 5 mm 10. *A. nitidus*
 - 7b. Calyx of male flowers tubular; fruiting peduncle 6-11 mm 11. *A. xanthocarpus*
 - 4b. Leaf blade adaxially pubescent at least on midvein.
 - 8a. Leaf blade 25-30 × 15-20 cm 13. *A. lakoocha*
 - 8b. Leaf blade 4-24 × 4-11 cm.
 - 9a. Petiole 0.8-1.5 cm.
 - 10a. Leaf blade 4-8 × 2.5-3 cm; branchlets 1-1.5 mm thick; syncarp covered with prominent curved cylindric papillae; fruiting peduncle 1.8-2.5 cm 4. *A. styracifolius*
 - 10b. Leaf blade 9-23 × 4-11 cm; branchlets 3-8 mm thick; syncarp without cylindric papillae; fruiting peduncle 2.5-4 cm.
 - 11a. Branchlets 7-8 mm thick; male inflorescences 1-3.5 cm in diam. 8. *A. nanchuanensis*
 - 11b. Branchlets 3-4 mm thick; male inflorescences 0.4-0.7 cm in diam. 12. *A. petelotii*
 - 9b. Petiole 1.8-4 cm.
 - 12a. Male inflorescences 0.4-0.7 cm in diam.; branchlets 1-2.5 mm thick 5. *A. nigrifolius*
 - 12b. Male inflorescences 1-1.5 cm in diam.; branchlets (1.5-)4-6 mm thick.
 - 13a. Leaf blade with 7-11(-15) lateral veins on each side of midvein; fruiting syncarp green, blackish brown when mature, ca. 12 cm in diam.; peduncle 1-3 cm 6. *A. pithecolobium*
 - 13b. Leaf blade with 6-7 lateral veins on each side of midvein; fruiting syncarp pale to golden yellow, 3-4 cm in diam.; peduncle 3-5 cm 9. *A. hypargyreus*

1. *Artocarpus chama* Buchanan-Hamilton, Mem. Wern. Nat. Hist. Soc. 5: 331. 1826. 野树波罗 ye shu bo luo

Artocarpus chaplasha Roxburgh; *A. melinoxylus* Gagnepain.

Trees to 40 m tall, deciduous. Bark black, gray, or brown, coarse. Branchlets furrowed when dry, 4–8 mm thick, pubescence rust-colored to reddish yellow, hairs long and spreading to bent. Stipules amplexicaul. Leaves spirally arranged; petiole brown, 1.5–4.5 cm, densely pubescent; leaf blade elliptic, oblong, or ovate, 13–37 × 6–21 cm, abaxially densely rust-colored to grayish white pubescent but more densely so along veins, adaxially glabrous or with sparse bent hairs, base broadly cuneate to rounded, margin entire or ± crenate, apex acute to shortly acuminate; secondary veins 9–18 on each side of midvein, apically curved, and joined together near margin, tertiary veins reticulate and with dark brown glandular points. Inflorescences axillary, solitary. Male inflorescences ellipsoid, ovoid, or clavate, 1.2–2.3 × 1–1.8 cm; bracts shield-shaped; pedicel ca. 2 mm, shortly pubescent. Female inflorescences globose to ellipsoid; bracts peltate. Style exerted. Male flowers: calyx lobes 2 or 3, ca. 5 mm, margin ciliate; filaments short; anthers ellipsoid. Fruiting syncarp yellow when young then rust-colored brown, ± globose, 5–6 cm in diam.; peduncle 1.5–4.5 cm, with short brown hairs; persistent calyx separating near top, with several persistent bracts. Drupes ellipsoid, ca. 10 × 6 mm.

Yunnan [Bangladesh, Bhutan, India, Laos, Malaysia, Myanmar, Sikkim, Thailand].

2. *Artocarpus communis* J. R. Forster & G. Forster, Char. Gen. Pl. 51. 1775.

面包树 mian bao shu

Artocarpus atilis (Parkinson) Fosberg; *A. incisus* (Thunberg) Linnaeus f.; *Radermachia incisa* Thunberg; *Sitodidium altile* Parkinson.

Trees 10–15 m tall, evergreen. Bark grayish brown, thick. Branchlets 0.5–1.5 cm thick. Stipules amplexicaul, lanceolate to broadly lanceolate, 10–25 cm, pubescence yellowish green, gray, or brown, hairs bent. Leaves spirally arranged; petiole 8–12 cm; leaf blade ovate to ovate-elliptic, 10–50 cm, thickly leathery, glabrous, abaxially pale green, adaxially dark green and shiny, margin entire, apex acuminate; secondary veins 10 on each side of midvein. Leaves on mature trees pinnately lobed or pinnatifid; lobes or segments 3–8, lanceolate. Inflorescences axillary, solitary. Male inflorescences yellow, narrowly cylindrical, narrowly ellipsoid, or clavate, 7–30(–40) cm. Male flowers: calyx tubular, apically 2-lobed, pubescent, lobes lanceolate; anthers elliptic. Female flowers: calyx tubular; ovary ovoid; style long, apically 2-branched. Fruiting syncarp green to yellow, brown to black when mature, obovoid to ± globose, 15–30 × 8–15 cm, tuberculate; pericarp soft; mesocarp of milky white fleshy calyx. Drupes ellipsoid to conic, ca. 2.5 cm in diam.

Cultivated; low elevations. Hainan, Taiwan [probably native to tropical Asia; now cultivated throughout the tropics].

Plants known as breadfruit produce few or no seeds and are a staple item of the diet in some tropical parts of the world, most notably the Pacific Islands.

3. *Artocarpus heterophyllus* Lamarck, Encycl. 3: 209. 1789.

波罗蜜 bo luo mi

Trees 10–20 m tall, d.b.h. 30–50 cm, evergreen. Mature trees with tubular roots. Bark blackish brown, thick. Branchlets furrowed to smooth, 2–6 mm thick, glabrous. Stipules amplexicaul, ovate, 1.5–8 cm, with or without bent pubescence, caducous, scar annular and conspicuous. Leaves spirally arranged; petiole 1–3 cm; leaf blade elliptic to obovate, 7–15(or more) × 3–7 cm, lobed on new growth of young trees, leathery, abaxially pale green and with scattered globose to ellipsoid resin cells, adaxially dark green, glabrous, and shiny, base cuneate, margin of mature leaves entire, apex blunt to acuminate; midvein abaxially conspicuously prominent, secondary veins 6–8 on each side of midvein; leaves on mature trees entire. Inflorescences on old stems or brachyblasts. Male inflorescences axillary on apical branchlet, sometimes axillary on axillary brachyblasts, cylindrical to conic-ellipsoid, 2–7 cm, many-flowered but some sterile; peduncle 1–5 cm. Female inflorescences with a globose fleshy rachis. Male flowers: calyx tubular, apically 2-lobed, 1–1.5 mm, pubescent; filament straight in bud; anther ellipsoid. Female flowers: calyx tubular, apically lobed; ovary 1-celled. Fruiting syncarp pale yellow when young, yellowish brown when mature, ellipsoid, globose, or irregularly shaped, 30–100 × 25–50 cm, with stiff hexagonal tubercles and thick hairs. Drupes narrowly elliptic, ca. 3 × 1.5–2 cm. Fl. Feb–Mar.

Cultivated; low elevations. Guangdong, Guangxi, Hainan, S Yunnan [native to India; cultivated throughout the tropics].

4. *Artocarpus styracifolius* Pierre, Bull. Soc. Bot. France 52: 492. 1905.

二色波罗蜜 er se bo luo mi

Artocarpus bicolor Merrill & Chun.

Trees to 20 m. Bark dark gray, rough. Young branchlets 1–1.5 mm thick, densely white appressed-puberulent. Stipules subulate, caducous. Leaves distichous; petiole 0.8–1.4 cm, pubescent; leaf blade oblong, obovate-lanceolate, or sometimes elliptic, 4–8 × 2.5–3 cm, lobed or apically shallowly toothed on new leaves of young trees, leathery to papery, abaxially densely covered with white farinaceous hairs especially on veins, adaxially dark green and sparsely pubescent, base cuneate to decurrent on petiole, margin entire, apex acuminate to caudate; secondary veins 4–7 on each side of midvein, tertiary veins reticulate, abaxially ± flat, and adaxially raised when dry. Inflorescences axillary, solitary. Male inflorescences ellipsoid, 6–12 × 4–7 mm, densely covered with grayish white pubescence; peduncle ca. 1.5 cm with glandular hairs; bracts 1(–6), shield-shaped to ± orbicular. Male flowers: filament thin; anther globose. Female flowers: calyx lobes 2 or 3, oblong, pubescent. Fruiting syncarp yellow, reddish brown when dry, globose, ca. 4 cm in diam., pubescent, covered with curved cylindrical papillae; peduncle 1.8–2.5 cm, pubescent. Drupes globose. Fl. early autumn, fr. late autumn to early winter.

Forests; 200–1500 m. Guangdong, Guangxi, Hainan, SW Hunan, SE Yunnan [Laos, Vietnam].

The wood is used for furniture and the fruit for jam.

5. *Artocarpus nigrifolius* C. Y. Wu, Acta Bot. Yunnan. 11: 28. 1989.

牛李 niu li

Trees to 15 m tall, straight, deciduous. Branchlets brownish black, wrinkled, 1–2.5 mm thick. Young buds with short rust-colored pubescence. Petiole blackish, thin, 1.8–2.8 cm, with short rust-colored pubescence when young, glabrate; leaf blade elliptic to narrowly elliptic, 5–11 × 2–4 cm, thinly papery, abaxially greenish brown and with very small white papillae, adaxially nearly black and glabrous, base cuneate to broadly cuneate and ± asymmetric, margin entire, apex acuminate to caudate and with a 0.5–1.5 cm cauda; midvein and secondary veins conspicuous on both surfaces, tertiary veins inconspicuous. Inflorescences axillary, solitary. Male inflorescences 4–7 mm in diam. Female inflorescences white when young, rust-colored-green when dry, obconic, 5–9 mm, basally tuberculate, apex blunt; peduncle 1–1.5 cm, thin. Mature fruiting syncarp unknown.

- Dense moist forests; ca. 1000 m. S Yunnan (Jinping).

6. *Artocarpus pithecogallus* C. Y. Wu, Acta Bot. Yunnan. 11: 26. 1989.

猴子癭袋 hou zi ying dai

Trees 7–18 m tall, evergreen. Young branchlets dark brown, wrinkled, 4–6 mm thick, pubescent, glabrescent, with scattered lenticels. Petiole 1.5–4 cm; leaf blade elliptic to elliptic-ovate, 4–24 × (1.5–)5–10 cm, leathery, abaxially brownish red to pale white and pubescent, adaxially blackish green, shiny, and glabrous but midvein with scattered white pubescence, base broadly cuneate to rounded and ± asymmetric, margin entire, apex caudate; veins abaxially prominent, secondary veins 7–11(–15) on each side of midvein and curved, tertiary veins numerous and parallel. Inflorescences axillary, solitary. Male inflorescences obovoid, ca. 2.5 × 1.4 cm, tuberculate, with short rust-colored pubescence; peduncle 1–1.5 cm, thick. Fruiting syncarp green, blackish brown when dry, ± globose, ca. 12 cm in diam., sparsely tuberculate or smooth, pubescence pale red and short; peduncle 1–3 cm, thick.

- Moist forests; 1400–1700 m. S Yunnan (Xishuangbanna).

7. *Artocarpus gongshanensis* S. K. Wu ex C. Y. Wu & S. S. Chang, Acta Bot. Yunnan. 11: 29. 1989.

贡山波罗蜜 gong shan bo lu mi

Trees to 30 m tall, d.b.h. 30–40 cm, evergreen. Branchlets dark brown, tubercular when young, wrinkled with age, thick, pale red to rust-colored pubescent when young, glabrescent, with scattered lenticels. Petiole 2–3 cm; leaf blade elliptic to oblong-elliptic, ca. 20 × 9–10 cm, leathery, abaxially dark gray, densely pubescent, and tuberculate on midvein and secondary veins, adaxially dark green, shiny, and glabrous, base broadly cuneate to ± cordate, margin entire or shallowly crenate, apex caudate with a 5–10 mm cauda; midvein adaxially slightly impressed, midvein and secondary veins abaxially prominent, secondary veins 11–13 on each side of midvein and curved, tertiary veins numerous, parallel, and with gray pubescence. In-

florescences axillary, solitary. Female inflorescences pale red to reddish yellow, ± globose, 3–3.5 cm in diam., tubercular, densely pubescent; peduncle 2.5–3 cm, thick.

- Evergreen forests; 1300–1400 m. NW Yunnan (Gongshan).

8. *Artocarpus nanchuanensis* S. S. Chang et al., Acta Bot. Yunnan. 11: 29. 1989.

南川木波罗 nan chuan mu bo lu

Trees to 25 m, d.b.h. 60 cm. Bark dark brown, longitudinally furrowed. Branchlets cylindrical, 7–8 mm thick, rust-colored pubescent when young. Winter buds ovate, 2–3 mm in diam., pale brown pubescent when young. Petiole 1.2–1.5 cm, densely hairy with short, coarse, and spreading hairs; leaf blade oblong to elliptic, 12–18 × 7–11 cm, leathery, abaxially grayish green but gray to brown when dry and densely covered with white coarse pubescence, adaxially dark green and sparsely covered with white coarse appressed hairs, base broadly cuneate and decurrent on petiole, margin entire or shallowly crenate, apex acute to acuminate; secondary veins 5–7 on each side of midvein, apically curved toward margin, and abaxially prominent, tertiary veins reticulate and conspicuous on both surfaces when dry. Male inflorescences 1–3.5 cm in diam. Female inflorescences yellowish brown, obovate, ca. 1.5 cm, densely covered with short white pubescence, sparsely papillate; peduncle 1.5–2 cm, densely covered with white coarse hairs; bracts papillate. Fruiting syncarp yellowish orange when mature, globose, 4–6 cm in diam., covered with short coarse hairs; peduncle 2.5–4 cm, densely covered with short coarse hairs. Drupes numerous, ± globose to ovate-elliptic, 1–1.5 cm in diam.; carpodermis thin.

- 500–600 m. Chongqing (Nanchuan).

9. *Artocarpus hypargyreus* Hance in Bentham, Fl. Hongk. 325. 1861.

白桂木 bai gui mu

Trees 10–25 m tall, d.b.h. 40 cm. Bark dark purple, exfoliating. Young branchlets 1.5–2 thick, grayish to whitish appressed puberulent. Stipules linear, caducous. Leaves distichous; petiole 1.5–2 cm, pubescent; leaf blade elliptic to obovate, 8–15 × 4–7 cm, pinnately lobed on young trees, leathery, abaxially green to whitish green and with farinaceous pubescence, adaxially dark green and puberulent on midvein when young, base cuneate, margin entire, apex acuminate to shortly acuminate; veins conspicuous and grayish white when dry, secondary veins 6–7 on each side of midvein, apically curved, abaxially prominent, and adaxially flat. Inflorescences axillary, solitary. Male inflorescences ellipsoid to obovoid, 1.5–2 × 1–1.5 cm; peduncle 2–4.5 cm, pubescent; bracts shield-shaped. Male flowers: calyx lobes 4, spatulate, densely pubescent, adnate to bracts; anther ellipsoid. Fruiting syncarp pale to golden yellow, ± globose, 3–4 cm in diam., brown pubescent, papillate; peduncle 3–5 cm, shortly pubescent. Fl. spring to summer.

- Broad-leaved evergreen forests; 100–1700 m. Fujian, Guangdong, Guangxi, Hainan, S Hunan, Jiangxi, SE Yunnan.

The milky latex is used for making stiff rubber and the wood for

furniture.

10. *Artocarpus nitidus* Trécul, Ann. Sci. Nat., Bot., sér. 3, 8: 119. 1847.

光叶桂木 *guang ye gui mu*

Trees or small trees, to 17 m tall, straight. Bark black to brown, longitudinally fissured. Branchlets cylindric, wrinkled, 2–3 mm thick, appressed puberulent, rapidly glabrescent. Stipules lanceolate, caducous. Petiole 0.5–2 cm; leaf blade oblong to ± orbicular [or ovate], 7–15 × 3–7 cm, leathery to thinly leathery, glabrous, abaxially pale green, adaxially dark green, young leaves with both surfaces black when dry, base cuneate, ± rounded, or blunt, margin entire or irregularly shallowly toothed, apex acute and mucronate to caudate; secondary veins 6–10 on each side of midvein, adaxially prominent. Male inflorescences capitate, obovoid, or oblong [or rodlike] 2.5–12 × 2.7–7 mm. Female inflorescences ± capitate [or ± globose]; peduncle 1.5–8 mm. Male flowers: calyx lobes 2–4, basally connate for 0.5–0.7 mm. Female flowers: calyx tubular; style exerted. Fruiting syncarp red, reddish orange, or yellow, brown when dry, ± globose, ca. (1.5–)5 cm in diam., fleshy, glabrous or sparsely covered with coarse pubescence; peduncle to 5 mm; bracts persistent. Drupes [1–6 or]10–15. Fl. Apr–May.

Mixed forests, forests; 200–300 m. Guangdong, Guangxi, Hainan, S Hunan, S Yunnan [Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam].

Artocarpus nitidus subsp. *nitidus* is restricted to the Philippines.

- 1a. Leaf blade thinly leathery; fruit with coarse pubescence 10a. subsp. *lingnanensis*
- 1b. Leaf blade leathery; fruit glabrous or with sparse reddish brown pubescence 10b. subsp. *griffithii*

10a. *Artocarpus nitidus* subsp. *lingnanensis* (Merrill) F. M. Jarrett, J. Arnold Arbor. 41: 124. 1960.

桂木 *gui mu*

Artocarpus lingnanensis Merrill, Lingnan Sci. J. 7: 302. 1929; *A. parvus* Gagnepain.

Trees to 17 m tall. Petiole 0.5–1.5 cm; leaf blade oblong-elliptic to obovate-elliptic, 7–15 × 3–7 cm, thinly leathery, base cuneate to ± rounded, margin entire or irregularly shallowly toothed, apex mucronate to caudate; secondary veins 6–10 on each side of midvein, adaxially prominent. Male inflorescences capitate, obovoid, or oblong, 2.5–12 × 2.7–7 mm. Peduncle of female inflorescences 1.5–5 mm. Male flowers: calyx lobes 2–4, basally connate for 0.5–0.7 mm. Fruiting syncarp red when mature, brown when dry, ± globose, with coarse pubescence.

• Mixed forests. Guangdong, Guangxi, Hainan, S Hunan, S Yunnan [cultivated in Cambodia, Thailand, and N Vietnam].

The fruit are edible and also used medicinally.

10b. *Artocarpus nitidus* subsp. *griffithii* (King ex J. D. Hooker) F. M. Jarrett, J. Arnold Arbor. 41: 128. 1960.

披针叶桂木 *pi zhen ye gui mu*

Artocarpus gomezianus Wallich ex Trécul subsp. *griffithii* King ex J. D. Hooker, Fl. Brit. Ind. 5: 544. 1888; *A. eberhardtii* Gagnepain; *A. griffithii* (King ex J. D. Hooker) Merrill.

Small trees. Petiole 1.5–2 cm; leaf blade oblong, 8–15 × 3.4–5.4 cm, leathery, base rounded, margin entire, apex mucronate; midvein and secondary veins adaxially conspicuous, secondary veins 6–8 on each side of midvein. Peduncle of female inflorescences 7–8 mm. Fruiting syncarp orange red to yellow, globose, glabrous or with sparse reddish brown pubescence.

Forests; 200–300 m. S Yunnan [Cambodia, Indonesia, Laos, Malaysia, Thailand, Vietnam].

11. *Artocarpus xanthocarpus* Merrill, Publ. Bur. Sci. Gov. Lab. 17: 10. 1904.

黄果波罗蜜 *huang guo bo lu mi*

Trees to 8 m tall. Branchlets pale red to ± blackish when young, cylindric, slightly wrinkled, 1.5–3 mm thick, appressed-puberulent, glabrescent. Petiole 0.5–2 cm; leaf blade green, pale brown, or pale green when dry, obovate-elliptic to elliptic-oblong, 5.5–20 × 2.5–9 cm, glabrous, base cuneate to rounded, margin entire, apex acuminate to caudate with a cauda to 3 cm; midvein abaxially prominent, secondary veins 6–11 on each side of midvein and curved, tertiary veins reticulate. Inflorescences axillary, solitary or paired. Male inflorescences globose to obovoid, 3–6 × 3–4 mm; peduncle 2–3 mm, pubescent; bracts small, petiolate, margin ciliate, apically shield-shaped. Female inflorescences capitate; bracts shield-shaped. Male flowers: calyx tubular, apically 2-lobed; filament apically narrowed; anther ellipsoid. Female flowers: style exerted 0.8–1 mm, papillate. Fruiting syncarp yellow when mature, whitish to reddish brown when dry, ± globose, developing into 2 elongated lobes, smooth, glabrous or sparsely tomentose. Calyx and hypocarp adnate and fleshy and enclosing a few drupes; peduncle 6–11 mm, pubescent; bracts few, persistent. Drupes ellipsoid, ca. 4 mm in diam.

Taiwan (Lan Yu) [Indonesia (Kalimantan), Philippines].

12. *Artocarpus petelotii* Gagnepain, Bull. Soc. Bot. France 73: 89. 1926.

短绢毛波罗蜜 *duan juan mao bo lu mi*

Artocarpus brevisericus C. Y. Wu & W. T. Wang.

Trees to 10 m. Branchlets 3–4 mm thick, sporadically white or reddish brown pubescent. Stipules lanceolate, 7–12 mm, adaxially densely covered with short pubescence, caducous. Petiole 0.8–1.5 cm, gray pubescent; leaf blade elliptic to narrowly elliptic, 9–23 × 4–9 cm, papery, glabrous except midvein abaxially with reddish brown short pubescence, base blunt, rounded, or broadly cuneate, margin entire or apically with a few teeth, apex acuminate to acute; reticulate veins abaxially dense and prominent. Male inflorescences axillary, solitary, obovoid-oblong, 1.8–2.3 × 0.4–0.7 cm, densely covered with

short grayish white pubescence; peduncle 7–10 mm, densely covered with short gray pubescence; bracts shield-shaped. Female inflorescences capitate, irregularly furrowed and papillate. Male flowers: calyx 2-lobed; stamen glabrous; filament flat; anther globose. Female flowers: calyx tubular with 2 or 3 apical lobes; style exserted. Fruiting syncarp red when dry, globose or lobed, 3–5 cm in diam., fleshy, shortly pubescent; peduncle 3.5–4 cm, pubescent. Drupes ellipsoid, 1–1.3 cm in diam. Fl. spring to summer.

Montane forests; ca. 1900 m. SE Yunnan [N Vietnam].

13. *Artocarpus lakoocha* Roxburgh, Fl. Ind., ed. 1832, 3: 524. 1832.

野波罗蜜 ye bo luo mi

Artocarpus ficifolius W. T. Wang; *A. yunnanensis* Hu.

Trees 10–15 m tall. Branchlets 3–6 mm thick, densely covered with stiff pale brown to yellow pubescence, glabrescent. Stipules ovate-lanceolate, 4–5 cm, membranous, densely pubescent. Leaves distichous; petiole 2–3 cm, densely covered with yellow bristles; leaf blade broadly elliptic to elliptic, 25–30 × 15–20 cm, sometimes pinnately lobed, abaxially with yellow bristles, adaxially coarse, base broadly cuneate to obtuse, margin entire or with small teeth, apex obtuse; secondary veins (9–)10–12(–18) on each side of midvein, abaxially prominent, adaxially flat. Male inflorescences ovoid to ellipsoid, 1–3.5(–4) × 1.5–2 cm, pedunculate; bracts shield-shaped, margin ciliate. Male flowers: calyx deeply 2-lobed. Fruiting syncarp reddish brown when dry, ± globose, ca. 7 cm in diam., with bent bristles.

Forests on limestone mountains; 100–1300(–1800) m. S Yunnan [India, Indonesia, Laos, Myanmar, Nepal, Sikkim, Vietnam].

The name is sometimes given as “*Artocarpus lacucha*” Buchanan-Hamilton ex D. Don, but this is not a valid name.

14. *Artocarpus tonkinensis* A. Chevalier ex Gagnepain, Bull. Soc. Bot. France 73: 90. 1926.

胭脂 yan zhi

Trees 14–16 m tall. Bark brown, coarse. Branchlets pale reddish brown, 1.5–2.5 mm thick, curly to appressed puberulent. Stipules pyramidal, often caducous and leaving a scar. Petiole 4–10 mm, sparsely pubescent; leaf blade elliptic, obovate, or narrowly oblong, 8–20(or longer) × 4–10 cm, leathery, abaxially greenish, densely pubescent and sparsely covered with short curly hairs along midvein, adaxially glabrous, base cuneate to rounded, margin entire or sometimes apically with a few shallow teeth, apex mucronate; midvein and secondary veins abaxially conspicuously raised and reddish when dry, secondary veins 6–9 on each side of midvein, tertiary veins pale brown. Inflorescences axillary, solitary. Male inflorescences obovoid to ellipsoid, 1–1.5 × 0.8–1.5 cm; peduncle shorter than inflorescence; bracts petiolate, shield-shaped. Female inflorescences globose; bracts shield-shaped. Male flowers: calyx lobes 2 or 3, margin ciliate; anther ellipsoid. Female flowers: calyx completely connate; style exserted. Fruiting syncarp yellow

when mature, reddish brown when dry, ± globose, ca. 6.5 cm in diam.; peduncle 3–4 cm. Drupes ellipsoid, 1.2–1.5 × 0.9–1.2 cm. Fl. summer to autumn.

Sunny mountain slopes; below ca. 800 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, S Yunnan [Cambodia, N Vietnam].

The wood is very hard and the fruit are edible.

