

## 48. AMYGDALUS Linnaeus, Sp. Pl. 1: 472. 1753.

桃属 tao shu

Lu Lingdi (陆玲娣 Lu Ling-ti); Bruce Bartholomew

*Persica* Miller.

Trees or shrubs, deciduous. Branches unarmed or spiny. Axillary winter buds (2 or)3, lateral ones flower buds, central one a leaf bud; terminal winter buds present. Stipules present. Leaves simple, alternate, sometimes fascicled on short branchlets, conduplicate when young; petiole usually with 2 nectaries or sometimes nectaries at base of leaf blade margin; leaf blade margin often serrate. Inflorescences borne on axillary short branches, 1(or 2)-flowered. Flowers bisexual, regular, opening before or rarely with leaves. Pedicel nearly absent or short, rarely long. Hypanthium caducous in fruit. Sepals 5, imbricate. Petals 5, pink or white, inserted on rim of hypanthium, imbricate. Stamens 15 to many, inserted with petals; filaments filiform, free. Ovary superior, hairy, 1-loculed; ovules 2, collateral, pendulous. Style terminal, elongated. Fruit a drupe, hairy, glabrous in some cultivated *Amygdalus persica*, with a conspicuous longitudinal groove; mesocarp fleshy and not splitting or dry and splitting when ripe; endocarp hard, 2-valved, globose or ellipsoid, usually compressed, surface furrowed, pitted, rugose, or smooth.

About 40 species; C, E, and SW Asia, S Europe; 11 species (four endemic, one introduced) in China.

Many species and cultivars are grown for their edible fruit or as garden ornamentals, and a few species are also grown for their edible seeds.

- 1a. Mesocarp fleshy or rarely dry, not splitting when ripe.
  - 2a. Endocarp smooth, only with shallow furrows, without pits.
    - 3a. Sepals outside pubescent or rarely subglabrous; endocarp subglobose, longitudinally and transversely shallowly furrowed, apex obtuse ..... 10. *A. kansuensis*
    - 3b. Sepals outside glabrous; endocarp compressed ovoid-globose, inconspicuously and longitudinally sparsely shallowly furrowed only on dorsal and ventral sides, apex acute ..... 11. *A. mira*
  - 2b. Endocarp deeply furrowed and pitted.
    - 4a. Leaf blade abaxially glabrous; calyx outside glabrous; mesocarp thin and dry; endocarp usually not laterally compressed, apex obtuse ..... 9. *A. davidiana*
    - 4b. Leaf blade abaxially sparsely pubescent in vein axils, rarely glabrous; calyx outside pubescent; mesocarp thick and succulent; endocarp laterally compressed, apex acuminate.
      - 5a. Endocarp irregularly longitudinally and transversely furrowed and pitted; leaf blade secondary veins anastomosing at margin ..... 7. *A. persica*
      - 5b. Endocarp longitudinally furrowed and very sparsely pitted; leaf blade secondary veins continuing to margin ..... 8. *A. ferganensis*
- 1b. Mesocarp dry, splitting when ripe.
  - 6a. Branchlets spiny.
    - 7a. Branchlets glabrous; leaf blade long elliptic, oblong, or obovate-oblongate, 1.5–4 cm, secondary veins 5–8 on either side of midvein; drupe subglobose to ovoid-globose, 1.5–2 cm in diam. .... 5. *A. tangutica*
    - 7b. Branchlets pubescent; leaf blade broadly elliptic, suborbicular, or obovate, 0.8–1.5 cm, secondary veins ca. 4 on either side of midvein; drupe broadly ovoid-globose, 1–1.2 cm in diam. .... 6. *A. mongolica*
  - 6b. Branchlets unarmed.
    - 8a. Leaf blade lanceolate, elliptic-lanceolate, oblong, or oblong-lanceolate, glabrous or sparsely pubescent when young; pedicel 2–4 mm; hypanthium cylindrical.
      - 9a. Trees or shrubs, (2–)3–6(–8) m tall; petiole 1–2(–3) cm; leaf blade lanceolate to elliptic-lanceolate, slightly pilose when young, glabrescent; drupe obliquely ovoid to oblong-ovoid; endocarp pitted and with or without shallow furrows ..... 1. *A. communis*
      - 9b. Shrubs, 1–1.5 m tall; petiole 0.4–0.7 cm; leaf blade narrowly oblong, oblong-lanceolate, or lanceolate, glabrous; drupe ovoid to ovoid-globose; endocarp not pitted but only with irregular shallow reticulate furrows ..... 2. *A. nana*
    - 8b. Leaf blade suborbicular, broadly elliptic, or obovate, pubescent; pedicel 4–8 mm; hypanthium broadly campanulate.
      - 10a. Shrubs, rarely trees, 2–3 m tall; leaf blade apically 3-lobed, margin coarsely serrate or biserrate; endocarp subglobose, surface reticulate, apex obtuse ..... 3. *A. triloba*
      - 10b. Shrubs, 1–2 m tall; leaf blade apically not lobed, margin irregularly coarsely serrate; endocarp broadly ovoid, surface smooth to slightly rugose, apex mucronulate ..... 4. *A. pedunculata*

1. *Amygdalus communis* Linnaeus, Sp. Pl. 1: 473. 1753.

扁桃 bian tao

*Amygdalus amara* Duhamel; *A. communis* var. *amara* (Duhamel) Candolle; *A. communis* var. *dulcis* (Miller) Candolle; *A. communis* var. *fragilis* (Borkhausen) Seringe; *A. dulcis* Miller; *A. fragilis* Borkhausen; *A. sativa* Miller; *Prunus amygdalus* (Linnaeus) Batsch; *P. amygdalus* var. *amara* (Duhamel) Focke; *P. amygdalus* var. *dulcis* (Miller) Koehne; *P. amygdalus* var. *fragilis* (Borkhausen) Focke; *P. amygdalus* var. *sativa* (Miller) Focke; *P. communis* (Linnaeus) Arcangeli (1882), not Hudson (1762); *P. communis* var. *dulcis* (Miller) Borkhausen; *P. communis* var. *fragilis* (Borkhausen) Focke; *P. communis* var. *sativa* (Miller) Focke; *P. dulcis* (Miller) D. A. Webb; *P. dulcis* var. *amara* (Duhamel) H. L. Moore.

Trees or shrubs, (2-)3-6(-8) m tall. Branches erect or horizontally spreading, unarmed, with many short branchlets, glabrous; previous year's branchlets brownish, grayish brown to grayish black with age. Winter buds brownish, ovoid, 3-5 mm, glabrous. Leaves variable, those on long branchlets usually alternate, those on short branchlets approximate and often fascicled; petiole 1-2(-3) cm, glabrous, with 2 to 4 nectaries at apex or at base of leaf blade; leaf blade lanceolate to elliptic-lanceolate, 3-6(-9) × 1-2.5 cm, slightly pilose when young, glabrescent, base broadly cuneate to rounded, margin shallowly densely serrate, apex acute to shortly acuminate. Flowers solitary, opening before leaves. Pedicel 3-4 mm, 4-10 mm in fruit, glabrous. Hypanthium cylindrical, (5-)6-8 × 3-5 mm, outside glabrous. Sepals broadly oblong to broadly lanceolate, 5-6 mm, outside glabrous, margin pubescent, apex obtuse. Petals white or pinkish, oblong to obovate-oblong, 1.2-2 × 0.7-1.1 cm, base tapering to a narrow claw, apex obtuse to emarginate. Stamens unequal in length. Ovary densely tomentose. Style longer than stamens. Drupe obliquely ovoid to oblong-ovoid, compressed, 3-4.3 × 2-3 cm, densely pubescent, base mostly subtruncate, apex pointed to somewhat obtuse; mesocarp thin, splitting at maturity; endocarp yellowish white to brown, ovoid, broadly ellipsoid, or shortly oblong, asymmetric on both sides, 2.5-3(-4) cm, hard to fragile, ventral suture curved and ± acutely keeled, dorsal suture generally straight, surface smooth and pitted with or without shallow furrows, base obliquely truncate to orbicular-truncate. Seed sweet or bitter. Fl. Mar-Apr, fr. Jul-Aug.

Cultivated in Gansu, Shaanxi, Shandong, and Xinjiang [probably native to SW Asia].

Cultivated varieties of almonds have been named for whether the seeds are sweet or bitter and whether the endocarp is hard or fragile.

## 2. *Amygdalus nana* Linnaeus, Sp. Pl. 1: 473. 1753.

矮扁桃 ai bian tao

*Amygdalus ledebouriana* Schlechtendal; *Prunus nana* (Linnaeus) Stokes (1812), not Du Roi (1772); *P. tenella* Batsch.

Shrubs 1-1.5 m tall. Branches erect-divaricate, with many short branchlets; first year's branchlets grayish white to reddish brown; older branchlets reddish gray or gray, glabrous. Winter buds brown, ovoid, 2-4 mm, glabrous, apex obtuse to acute. Stipules linear to linear-lanceolate, 5-10 × 1.5-3 mm, margin entire or slightly dentate. Leaves on short branchlets sessile and

in clusters, those on long branchlets often solitary and alternate; petiole 4-7 mm, glabrous; leaf blade narrowly oblong, oblong-lanceolate, or lanceolate, 2.5-6 × 0.8-3 cm, both surfaces glabrous, base narrowly cuneate to attenuate, margin minutely and shallowly obtusely serrate, apex acute to ± obtuse. Flowers solitary, opening at same time as leaves, ca. 2 cm in diam. Pedicel 3-6 mm, 5-7 mm in fruit, yellowish pubescent, surrounded by brown bud scales. Hypanthium purplish brown, cylindrical, 5-8 × 2-4 mm, outside glabrous. Sepals ovate to ovate-lanceolate, 3-4 mm, outside glabrous, margin slightly serrate and with ± remote glands. Petals pink, irregularly obovate to oblong, 10-17 × 4-8 mm, base cuneate, apex obtuse to shallowly emarginate. Stamens many, shorter than petals. Ovary densely villous. Style nearly as long as stamens. Drupe ovoid to ovoid-globose, 1-2(-2.5) × 1.2-1.8(-2) cm, densely straw yellow villous; mesocarp dry, splitting when ripe; endocarp ovoid-globose to elongate ovoid-globose, compressed, 0.8-1.8(-2.2) × 1-1.5(-1.7) cm, with thick curved ventral and ± keeled dorsal sutures, surface with irregular shallow reticulate furrows, base somewhat oblique, apex obtuse. Fl. Apr-May, fr. Jun-Jul.

Grasslands, valleys, hollows, dry slopes; below 1200 m. Xinjiang [Russia; SW Asia, Europe].

## 3. *Amygdalus triloba* (Lindley) Ricker, Proc. Biol. Soc. Wash. 30: 18. 1917.

榆叶梅 yu ye mei

*Prunus triloba* Lindley, Gard. Chron. 1857: 268. 1857; *Amygdalus triloba* var. *plena* (Dippel) S. Q. Nie; *A. triloba* var. *truncata* (Komarov) S. Q. Nie; *Cerasus triloba* A. I. Baranov & Liou; *C. triloba* var. *plena* (Dippel) A. I. Baranov & Liou; *C. triloba* var. *truncata* (Komarov) A. I. Baranov & Liou; *Prunus triloba* var. *plena* Dippel; *P. triloba* var. *truncata* Komarov.

Shrubs, rarely trees, 2-3 m tall. Branches spreading, much branched; current year's branchlets gray to grayish black; previous year's branchlets grayish brown, glabrous or slightly pubescent when young, glabrescent. Winter buds brown, 2-3 mm, apex acute; scale margins pubescent. Leaves on short branchlets often fasciculate, those on long branches alternate; petiole 5-10 mm, pubescent; leaf blade broadly elliptic to obovate, 2-6 × 1.5-3(-4) cm, abaxially pubescent, adaxially pilose or glabrous, base broadly cuneate, margin coarsely serrate or biserrate, apex shortly acuminate and usually 3-lobed. Flowers 1 or 2, opening before leaves, 2-3 cm in diam. Pedicel 4-8 mm, 5-10 mm in fruit, glabrous or initially puberulous. Hypanthium broadly campanulate, 3-5 mm, outside glabrous or puberulous. Sepals ovate to ovate-lanceolate, nearly as long as hypanthium, outside glabrous or puberulous, margin sparsely minutely serrate near apex. Petals pink, suborbicular to broadly obovate, 6-10 mm, apex obtuse to emarginate. Stamens 25-30, shorter than petals. Ovary densely pubescent. Style somewhat longer than stamens. Drupe subglobose, 1-1.8 cm in diam., pubescent, apex mucronulate; mesocarp thin, splitting when ripe; endocarp subglobose, ± uncompressed on both sides, 1-1.6 cm in diam., surface irregularly reticulate, apex obtuse. Fl. Apr-May, fr. May-Jul.

Forests, thickets; 600-2500 m. Anhui, Gansu, Hebei, Henan, Hei-

longjiang, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shaanxi, Shandong, Shanxi, Zhejiang [Korea, Russia].

Single- and double-flowered cultivars are cultivated as garden ornamentals.

**4. *Amygdalus pedunculata*** Pallas, Nova Acta Acad. Sci. Imp. Petrop. Hist. Acad. 7: 353. 1789.

长梗扁桃 chang geng bian tao

*Amygdalus pilosa* Turczaninow; *Prunus pedunculata* (Pallas) Maximowicz; *P. pilosa* (Turczaninow) Maximowicz.

Shrubs 1–2 m tall. Branches spreading, with many short branchlets; branchlets brownish to dark grayish brown, pubescent initially, glabrescent. Winter buds often 3, collateral in leaf axil on short branchlets, lateral ones flower buds, central one a leaf bud. Stipules linear, narrow, 2–4 mm. Leaves on short branchlets densely fascicled, those on long branchlets alternate; petiole 2–5(–10) mm, pubescent; leaf blade elliptic, suborbicular, or obovate, 1–4 × 0.7–2 cm, both surfaces pilose, abaxially greenish, adaxially dark green, base broadly cuneate, margin irregularly coarsely serrate, apex acute to ± obtuse; secondary veins 4–6 on either side of midvein. Flowers solitary, opening slightly before leaves, 1–1.5 cm in diam. Pedicel 4–8 mm, not much elongated in fruit, pubescent. Hypanthium broadly campanulate, 4–6 mm, outside glabrous or puberulous. Sepals triangular-ovate, 2–3 mm, outside glabrous or puberulous, margin sometimes shallowly serrate, apex ± obtuse. Petals pink, suborbicular, 7–10 mm in diam., apex occasionally emarginate. Stamens many, unequal in length. Ovary densely pubescent. Style nearly as long as shorter stamens. Drupe dark purplish red, subglobose to ovoid-globose, 1–1.5 cm in diam., densely pubescent, apex mucronulate; mesocarp thin and dry, separating from endocarp and splitting at maturity; endocarp brownish, broadly ovoid, slightly compressed laterally, 0.8–1.2 cm in diam., surface smooth, scabrous, or slightly rugose, base orbicular, apex mucronulate. Seed brownish yellow, broadly ovoid. Fl. May–Jun, fr. Jul–Aug.

Sunny pebbly slopes, steppes. Nei Mongol, Ningxia, Shaanxi [Mongolia, Russia].

**5. *Amygdalus tangutica*** (Batalin) Korshinsky, Izv. Imp. Akad. Nauk. 14: 94. 1901.

西康扁桃 xi kang bian tao

*Amygdalus communis* Linnaeus var. *tangutica* Batalin, Trudy Imp. S.-Peterburgsk Bot. Sada 12: 163. 1892; *Persica tangutica* (Batalin) Kovalev & Kostina; *Prunus dehiscens* Koehne; *P. tangutica* (Batalin) Koehne.

Shrubs 1–2(–4) m tall, dense. Branches spreading, spiny; branchlets grayish brown, glabrous, with many inconspicuous lenticels. Leaves on short branchlets mostly in clusters, those on long branchlets usually alternate; petiole 5–10 mm, glabrous; leaf blade elliptic, oblong, or obovate-oblongate, 1.5–4 × 0.5–1.5 cm, both surfaces glabrous, abaxially greenish, adaxially dark green, base cuneate, margin minutely obtusely dentate, apex obtuse to acute and mucronate; secondary veins 5–8 on either side of midvein. Flowers solitary, 2–2.5 cm in diam.,

sessile or subsessile. Hypanthium outside glabrous. Sepals long elliptic, 3–4 mm, outside glabrous, margin indistinctly minutely serrate. Petals pink, fading almost to white, obovate, 7–10 mm. Stamens 25–30, in 2 whorls. Ovary ovoid, ca. 1 mm, pubescent. Style over 5 mm, hairy. Drupe purplish red, subglobose to ovoid-globose, 1.5–2 cm in diam., densely pubescent; mesocarp thin and dry, splitting at maturity; endocarp subglobose, 1.3–1.8 cm in diam., surface inconspicuously shallowly furrowed but not pitted, ventral suture compressed and broad, base subtruncate, apex ± obtuse to ± acute. Fl. Apr–May, fr. Jun–Jul.

• Sunny slopes, stream sides; 1500–2600 m. S Gansu, NW Sichuan.

**6. *Amygdalus mongolica*** (Maximowicz) Ricker, Proc. Biol. Soc. Wash. 30: 17. 1917.

蒙古扁桃 meng gu bian tao

*Prunus mongolica* Maximowicz, Bull. Soc. Imp. Naturalistes Moscou 54: 16. 1879.

Shrubs 1–2 m tall. Branches spreading, much branched; branchlets reddish brown when young, grayish brown with age, pubescent, often spine-tipped. Leaves on short branchlets mostly fascicled, those on long branchlets usually alternate; petiole 2–5 mm, glabrous; leaf blade broadly elliptic, suborbicular, or obovate, 8–15 × 6–10 mm, both surfaces glabrous, base cuneate, margin shallowly obtusely serrate, apex obtuse and sometimes mucronate; secondary veins ca. 4 on either side of midvein. Flowers solitary, rarely several fascicled on short branchlets. Pedicel very short, not much elongated in fruit, glabrous. Hypanthium campanulate, 3–4 mm, outside glabrous. Sepals oblong, nearly as long as hypanthium, outside glabrous, apex abruptly mucronate. Petals pink, obovate, 5–7 mm. Stamens many, unequal in length. Ovary pubescent. Style slender, ± as long as stamens, pubescent. Drupe broadly ovoid-globose, 1.2–1.5 × 1–1.2 cm, pubescent, apex acute; mesocarp thin, separating from endocarp and splitting at maturity; endocarp ovoid, 0.8–1.3 cm, surface smooth, shallowly furrowed but not pitted, ventral suture flattened, base asymmetric, apex mucronulate. Seed pale brown, broadly compressed ovoid. Fl. May–Jun, fr. Aug–Sep.

Hill lands in desert or desert grasslands, stony slopes, dry river beds; 1000–2400 m. Gansu, Nei Mongol, Ningxia [Mongolia].

**7. *Amygdalus persica*** Linnaeus, Sp. Pl. 1: 472. 1753.

桃 tao

*Amygdalus persica* [unranked] *aganonucipersica* Schübler & Martens; *A. persica* var. *aganonucipersica* (Schübler & Martens) T. T. Yu & L. T. Lu; *A. persica* [unranked] *aganopersica* Reichenbach; *A. persica* var. *compressa* (Loudon) T. T. Yu & L. T. Lu; *A. persica* [unranked] *scleronucipersica* Schübler & Martens; *A. persica* var. *scleronucipersica* (Schübler & Martens) T. T. Yu & L. T. Lu; *A. persica* [unranked] *scleropersica* Reichenbach; *A. persica* var. *scleropersica* (Reichenbach) T. T. Yu & L. T. Lu; *Persica platycarpa* Decaisne; *P. vulgaris* Miller; *P. vulgaris* var. *compressa* Loudon; *Prunus persica* (Linnaeus) Batsch; *P. persica* var. *compressa* (Loudon) Bean; *P. persica* subsp. *platycarpa* (Decaisne) D. Rivera et al.;

*P. persica* var. *platycarpa* (Decaisne) L. H. Bailey.

Trees 3–8 m tall, with a broad and ± horizontally spreading crown. Bark dark reddish brown, scabrous and squamose with age. Branchlets green but reddish on exposed side, slender, glabrous, lustrous, with many small lenticels. Winter buds often 2 or 3 in a fascicle, conical, pubescent, apex obtuse. Petiole robust, 1–2 cm, with or without 1 to several nectaries; leaf blade oblong-lanceolate, elliptic-lanceolate, or obovate-oblong-lanceolate, 7–15 × 2–3.5 cm, abaxially with or without a few hairs in vein axils, adaxially glabrous, base broadly cuneate, margin finely to coarsely serrate, apex acuminate. Flowers solitary, opening before leaves, 2–3.5 cm in diam. Pedicel very short to flower subsessile. Hypanthium green with a red tinge, shortly campanulate, 3–5 mm, outside pubescent or rarely subglabrous. Sepals ovate to oblong, ± as long as hypanthium, outside pubescent to rarely subglabrous, apex obtuse. Petals pink or white, oblong-elliptic to broadly obovate, 1–1.7 × 0.9–1.2 cm. Stamens 20–30; anthers purplish red. Ovary pubescent. Style nearly as long as stamens. Drupe color varies from greenish white to orangish yellow, usually with a red tinge on exposed side, ovoid, broadly ellipsoid, or compressed globose, (3–)5–7(–12) cm in diam. and usually nearly as long, densely pubescent, very rarely glabrous, ventral suture conspicuous; mesocarp white, greenish white, yellow, orangish yellow, or red, succulent, sweet to sour-sweet, fragrant; endocarp large, ellipsoid to suborbicular, compressed on both sides, surface longitudinally and transversely furrowed and pitted, free from mesocarp or compactly adnate to it, apex acuminate. Seed bitter, rarely sweet. Fl. Mar–Apr, fr. Aug–Sep.

• Cultivated throughout China, escaped from cultivation in waste fields or on disturbed slopes; 1500–2200 m. Escaped from cultivation in at least Gansu, Hebei, and Shanxi.

Although native to N China, truly wild peaches no longer exist. Peaches are important, fruit-bearing and ornamental plants cultivated throughout temperate and subtropical zones. Cultivated varieties have been named for whether the fruit are compressed or not, whether the fruit surface is pubescent or glabrous, and whether the endocarp is free or adnate to the mesocarp.

**8. *Amygdalus ferganensis*** (Kostina & Rjabov) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 38: 20. 1986.

新疆桃 xin jiang tao

*Prunus persica* (Linnaeus) Batsch subsp. *ferganensis* Kostina & Rjabov, Trudy Prikl. Bot., Ser. 8, Plodovolnye Yagodnye Kul't 1: 323. 1932; *Persica ferganensis* (Kostina & Rjabov) Kovalev & Kostina.

Trees to 8 m tall. Branchlets smooth, glabrous, lenticellate; current year's branchlets reddish on exposed side, greenish on shady side, shiny; previous year's branchlets reddish brown, squamose, with many lenticels. Winter buds 2 or 3 in leaf axils, pubescent. Petiole robust, 0.5–2 cm, with 2–8 nectaries; leaf blade lanceolate, 7–15 × 2–3 cm, abaxially pilose in vein axils, adaxially glabrous, base broadly cuneate to rounded, margin crenate with gland-tipped teeth, apex acuminate; secondary veins 12–14 on either side of midvein. Flowers solitary, opening before leaves, 3–4 cm in diam. Pedicel very short. Hypan-

thium shortly campanulate, outside green with a reddish tinge. Sepals ovate to ovate-oblong, outside pubescent. Petals pink, suborbicular to oblong, 1.5–1.7 cm in diam. Stamens many, unequal in length, shorter than petals. Ovary pubescent. Style shorter than stamens. Drupe greenish white, rarely golden yellow, sometimes with a reddish tinge, compressed globose, rarely subglobose, 3.5–6 × 4.4–7 cm, pubescent, very rarely glabrous, occasionally slightly glaucous; mesocarp succulent, sour-sweet, fragrant, separating from endocarp, not splitting when ripe; endocarp flattened globose, rarely subglobose to broadly ellipsoid, compressed on both sides, 1.7–3.5 × 1.3–3 cm, surface longitudinally furrowed and very sparsely pitted, base subtruncate, apex long acuminate. Seed bitter to slightly sweet. Fl. Mar–Apr, fr. Jul–Aug.

Cultivated in Xinjiang [cultivated in Kyrgyzstan and Uzbekistan].

This species is cultivated for its fruit, and the original, native distribution is uncertain.

**9. *Amygdalus davidiana*** (Carrière) de Vos ex L. Henry, Rev. Hort. 1902: 290. 1902.

山桃 shan tao

Trees to 10 m tall, crown ± spreading. Bark dark purplish red, smooth. Branchlets brown with age, slender, erect, glabrous when young. Winter buds reddish brown, ovoid, 2–5 mm, glabrous, apex acute. Petiole 1–2 cm, glabrous, usually with nectaries; leaf blade ovate-lanceolate, 5–13 × 1.5–4 cm, both surfaces glabrous, base cuneate to rounded, margin acutely or obtusely serrate, apex acuminate. Flowers solitary, opening before leaves, 2–3 cm in diam. Pedicel very short to flower subsessile. Hypanthium campanulate, outside glabrous. Sepals ovate to ovate-oblong, purplish red, nearly as long as hypanthium, outside glabrous, apex obtuse. Petals pink, obovate to suborbicular, 1–1.5 × 0.8–1.2 cm, apex obtuse or rarely emarginate. Stamens many, nearly as long as petals. Ovary pubescent. Style longer than or ± as long as stamens. Drupe yellowish, globose, subglobose, ellipsoid, or oblong, 2.5–3.5 cm in diam., densely pubescent; mesocarp thin, dry, not splitting when ripe; endocarp globose, subglobose, ellipsoid, or oblong, not compressed on both sides, surface longitudinally and transversely furrowed and pitted, separating from mesocarp, base truncate, apex obtuse. Fl. Mar–Apr, fr. Jul–Aug.

• Forests, thickets, slopes, mountain valleys, waste fields; 800–3200 m. Gansu, Hebei, Heilongjiang, Henan, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan.

- 1a. Leaf blade base cuneate, margin acutely serrate; drupe and endocarp subglobose to globose ..... 9a. var. *davidiana*
- 1b. Leaf blade base broadly cuneate to rounded, margin obtusely serrate; drupe and endocarp ellipsoid to oblong ..... 9b. var. *potaninii*

**9a. *Amygdalus davidiana* var. *davidiana***

山桃(原变种) shan tao (yuan bian zhong)

*Persica davidiana* Carrière, Rev. Hort. 1872: 74. 1872; *Prunus davidiana* (Carrière) Franchet; *P. persica* (Linnaeus) Batsch var. *davidiana* (Carrière) Maximowicz.

Leaf blade base cuneate, margin acutely serrate. Drupe and endocarp subglobose to globose.

• Forests, thickets, slopes, mountain valleys, waste fields; 800–3200 m. Gansu, Hebei, Heilongjiang, Henan, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan.

**9b. *Amygdalus davidiana* var. *potaninii*** (Batalin) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 38: 22. 1986.

陕甘山桃 shan gan shan tao

*Prunus persica* (Linnaeus) Batsch var. *potaninii* Batalin, Trudy Imp. S.-Peterburgsk Bot. Sada 12: 164. 1892; *Amygdalus persica* Linnaeus var. *potaninii* (Batalin) Ricker; *Persica potaninii* (Batalin) Kovalev & Kostina; *Prunus davidiana* (Carrière) Franchet var. *potaninii* (Batalin) Rehder.

Leaf blade base broadly cuneate to rounded, margin obtusely serrate. Drupe and endocarp ellipsoid to oblong.

• Sparse forests, thickets on slopes; 900–2000 m. Gansu, Shaanxi, Shanxi.

**10. *Amygdalus kansuensis*** (Rehder) Skeels, Proc. Biol. Soc. Wash. 38: 87. 1925.

甘肃桃 gan su tao

*Prunus kansuensis* Rehder, J. Arnold Arbor. 3: 21. 1921; *Persica kansuensis* (Rehder) Kovalev & Kostina.

Trees or shrubs, 3–7 m tall. Branchlets greenish brown, later reddish brown on exposed side, slender, glabrous, with indistinct small lenticels. Winter buds ovoid to long ovoid, glabrous, apex ± obtuse. Petiole 5–10 mm, glabrous, usually without nectaries; leaf blade ovate-lanceolate to lanceolate, 5–12 × 1.5–3.5 cm, broadest basally from middle, abaxially pubescent on midvein near base or glabrous, adaxially glabrous, base broadly cuneate, margin sparsely thinly serrate with teeth gland-tipped or not, apex acuminate. Flowers solitary, opening before leaves, 2–3 cm in diam. Pedicel very short to nearly absent, 4–5 mm in fruit. Hypanthium campanulate, outside pubescent or rarely subglabrous. Sepals ovate to ovate-oblong, shorter than hypanthium, outside pubescent or rarely subglabrous, apex obtuse. Petals white or pinkish, suborbicular to broadly obovate, base tapering into claws, margin sometimes undulate or shallowly incised, apex obtuse. Stamens 20–30, unequal in length, shorter than petals. Ovary pubescent. Style longer than stamens. Drupe yellowish, ovoid-globose to subglobose, ca. 2 cm in diam., densely pubescent; mesocarp fleshy, not splitting at maturity; endocarp subglobose, compressed, on both sides, surface longitudinally and transversely shallowly furrowed but not pitted, base subtruncate and symmetric, apex obtuse. Fl. Mar–Apr, fr. Aug–Sep.

• Mountain areas; 1000–2300 m. Gansu, Hubei, Qinghai, Shaanxi, Sichuan.

**11. *Amygdalus mira*** (Koehne) Ricker, Bull. Biol. Soc. Wash. 30: 17. 1917.

光核桃 guang he tao

*Prunus mira* Koehne in Sargent, Pl. Wilson. 1: 272. 1912; *Persica mira* (Koehne) Kovalev & Kostina.

Trees to 10 m tall. Branchlets green when young, grayish brown with age, slender, spreading, glabrous, with purplish brown small lenticels. Winter buds purplish brown, ovoid, 3–6 mm, glabrous, apex acute. Petiole 0.8–1.5 cm, glabrous, often with flattened purplish red nectaries; leaf blade lanceolate to ovate-lanceolate, 5–11 × 1.5–4 cm, abaxially pubescent along midvein, adaxially glabrous, base broadly cuneate to subrounded, margin shallowly crenate but entire near apex and teeth usually gland-tipped, apex acuminate. Flowers solitary, opening before leaves, 2.2–3 cm in diam. Pedicel 1–3 mm, 4–5 mm in fruit, glabrous. Hypanthium campanulate, purplish brown, outside glabrous. Sepals ovate to narrowly ovate, purplish green, outside glabrous or slightly villous along margin, apex obtuse. Petals pink, broadly obovate, 1–1.5 cm, apex emarginate. Stamens many, much shorter than petals. Ovary densely pubescent. Style longer than or ± as long as stamens. Drupe subglobose, ca. 3 cm in diam., densely pubescent; mesocarp fleshy, not splitting when ripe; endocarp compressed ovoid-globose, ca. 2 cm, slightly flattened on both sides, surface smooth and with few longitudinal shallow furrows only on dorsal and ventral sides, base subtruncate and slightly asymmetric, apex acute. Fl. Mar–Apr, fr. Aug–Sep.

Slopes in mixed forests, mountain valleys, ravines; 2000–4000 m. Sichuan, Xizang, Yunnan [Russia].

This species is cultivated for its fruit and seeds. It is often uncertain whether collections are wild, cultivated, or escaped from cultivation.

ROSACEAE