

# 1. PHYTOLACCA Linnaeus, Sp. Pl. 1: 441. 1753.

商陆属 shang lu shu

Herbs or shrubs, rarely trees, erect, rarely scandent. Root usually thick, fleshy. Stems and branches terete, sulcate or angular, glabrous or young shoot and inflorescence pubescent. Leaves petiolate, rarely sessile; leaf blade ovate, elliptic, or lanceolate, apex acute or obtuse. Flowers pedicellate or sessile, in racemes, cymose panicles, or spikes, terminal or leaf-opposed. Tepals 5, persistent, spreading or reflexed, oblong to ovate, herbaceous or membranous, apex obtuse. Stamens 6–33, inserted at base of tepals; filaments subulate or linear, free or connate at base, included or exerted. Ovary subglobose, carpels 5–16, free or connate. Styles subulate. Fruit a fleshy berry, oblate. Seeds black, shiny, reniform, compressed; testa hard and fragile, smooth; tegument membranous.

About 25 species: nearly cosmopolitan, mostly native to South America, a few species in Africa and Asia; four species (one endemic, one introduced) in China.

- 1a. Inflorescence arching or pendulous; flowers loosely spaced; infructescence pendent ..... 4. *P. americana*
- 1b. Inflorescence erect; flowers densely spaced; infructescence erect.
  - 2a. Seeds with slender concentric striations; carpels 6–10, connate ..... 3. *P. japonica*
  - 2b. Seeds smooth; carpels usually 8, distinct or connate.
    - 3a. Carpels distinct; stamens 8–10; carpels usually green or white ..... 1. *P. acinosa*
    - 3b. Carpels connate; stamens 12–16; carpels usually pink ..... 2. *P. polyandra*

**1. *Phytolacca acinosa*** Roxburgh, Fl. Ind., ed. 1832, 2: 458. 1832.

商陆 shang lu

*Phytolacca esculenta* Van Houtte; *P. pekinensis* Hance.

Herbs perennial, glabrous, 0.5–1.5 m tall. Roots obconic, thick, fleshy. Stems erect, green or reddish purple, terete, longitudinally grooved, fleshy, branched. Petiole 1.5–3 cm; leaf blade elliptic or lanceolate-elliptic, 10–30 × 4.5–15 cm, papery, base cuneate, apex acuminate or sharply pointed. Racemes erect, terete, usually shorter than leaves, densely flowered; peduncle 1–4 cm. Pedicel 6–10(–13) mm. Flowers bisexual, ca. 8 mm in diam. Tepals 5, white or yellowish green, elliptic, ovate, or oblong, 3–4 × ca. 2 mm, equal, after anthesis reflexed. Stamens 8–10, ca. as long as tepals; filaments persistent, white, subulate, base broad; anthers pink, elliptic. Carpels usually 8, distinct. Styles erect, short, apex curved. Infructescence erect. Berry purplish black when mature, oblate, ca. 7 mm in diam. Seeds reniform, ca. 3 mm, 3-angulate, smooth. Fl. May–Aug, fr. Jun–Oct. 2n = 18, 36\*, 72.

Valleys, hillsides, forest understories, forest margins, roadsides, cultivated beside houses, moist fertile lands, or a weed; 500–3400 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Jiangsu, Liaoning, Shaanxi, Shandong, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Bhutan, India, Japan, Korea, Myanmar, Sikkim, Vietnam].

This species is used medicinally.

**2. *Phytolacca polyandra*** Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 13: 99. 1893.

多药商陆 duo yao shang lu

*Phytolacca clavigera* W. W. Smith.

Herbs (0.5–)1–1.5 m tall. Petiole 1–2 cm; leaf blade elliptic-lanceolate or elliptic, 9–27 × 5–10.5 cm, glabrous, base cuneate, attenuate, apex acute or acuminate, with glandular sharp point. Racemes erect, terete, 5–32 × 1.8–4.5 cm; peduncle 1.5–6 cm. Pedicel 1–1.8 cm. Tepals 5, pink, oblong, 4–6 × ca. 2.5 mm. Stamens 12–16, bicyclic; filaments broadened at base;

anthers white. Carpels (6–)8(or 9), connate. Styles erect or apex slightly curved, ca. 2.5 × as long as ovary. Berry ca. 7 mm in diam., becoming membranous, appressed to seeds. Fl. May–Aug, fr. Jun–Sep.

• Hillsides, forest understories, gullies, riversides, roadsides; 1100–3000 m. Gansu, Guangxi, Guizhou, Sichuan, Yunnan.

**3. *Phytolacca japonica*** Makino, Bot. Mag. (Tokyo) 6: 49. 1892.

日本商陆 ri ben shang lu

*Phytolacca hunanensis* Handel-Mazzetti; *P. zhejiangensis* W. T. Fan.

Herbs perennial, ca. 1 m tall. Leaf blade oblong to ovate-oblong, 15–32 × 5–10 cm, base cuneate, apex acuminate or acute. Racemes erect. Tepals reddish. Stamens ca. 10. Carpels 6–10, connate. Infructescence 4.5–11 × 2–3.5 cm. Berry oblate,

ca. 8 mm in diam. Seeds reniform-orbicular, ca. 3 mm in diam., with slender concentric striations. Fl. and fr. Jun–Aug.  $2n = 72$ .

Valleys, forest understories, riversides; 300–1100 m. Anhui, Fujian, Guangdong, Hunan, Jiangxi, Shandong, Taiwan, Zhejiang [Japan].

**4. *Phytolacca americana*** Linnaeus, Sp. Pl. 1: 441. 1753.

垂序商陆 chui xu shang lu

*Phytolacca decandra* Linnaeus.

Herbs perennial, 1–2 m tall. Root obconic, thick. Stems erect, sometimes reddish purple, terete. Petiole 1–4 cm; leaf blade elliptic-ovate or ovate-lanceolate, 9–18 × 5–10 cm, base cuneate, apex acute. Racemes terminal or lateral, 5–20 cm. Pedicel 6–8 mm. Flowers ca. 6 mm in diam. Tepals 5, white, slightly red. Stamens, carpels, and styles 10; carpels connate. Inflorescence pendent. Berry purple-black when mature, oblate. Seeds reniform-auricular, ca. 3 mm. Fl. Jun–Aug, fr. Aug–Oct.  $2n = 18^*$ ,  $36^*$ .

Cultivated. Anhui, Fujian, Guangdong, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [native to North America; widely naturalized in Asia and Europe].

This species is used medicinally.

