

## 14. TOXICODENDRON Miller, Gard. Dict. Abr., ed. 4. 1754.

### 漆树属 qi shu shu

Deciduous shrubs or trees, rarely a woody climber, with white latex in phloem, turning black upon air exposure, polygamous or dioecious. Leaves imparipinnately compound, 3-foliolate or simple. Inflorescence axillary, paniculate or racemose, often pendulous at fructification; floral subtending bracts deciduous. Flowers functionally unisexual or bisexual, 5-merous. Ovary 1-locular and 1-ovulate; styles 3, often united basally. Drupe subglobose or oblique, glabrous or minutely pubescent to hirsute, never glandular pubescent; exocarp thin, yellow, dehiscent or indehiscent at maturity; mesocarp white waxy, with brown longitudinal resin ducts.

About 20 species: disjunctly distributed in E Asia and North America; 16 species (six endemic) in China.

The hardened resin produced in the phloem of *Toxicodendron succedaneum* (Japanese lacquer tree) and *T. vernicifluum* (varnish tree) is used for decoration of traditional handicrafts. The resinous effluvia are poisonous and may cause severe dermatitis in sensitized persons.

- 1a. Woody climbers; leaf blade 3-foliolate; stamens equal to petals in length ..... 1. *T. radicans*
- 1b. Trees or shrubs; leaf blade imparipinnately compound; stamens exerted.
  - 2a. Branchlets, petiole, and leaf rachis robust; infructescence erect; drupe minutely pubescent, fruit epicarp irregularly dehiscent at maturity.
    - 3a. Leaflets glabrous or minutely pubescent abaxially along midnerve ..... 2. *T. griffithii*
    - 3b. Leaflets ferruginous tomentose.
      - 4a. Petiole, leaf rachis, and inflorescence glabrous ..... 3. *T. hookeri*
      - 4b. Petiole, leaf rachis, and inflorescence ferruginous pubescent.
        - 5a. Leaflets oblong, veinlets slightly impressed adaxially; inflorescence peduncle ca. 20 cm ..... 4. *T. fulvum*
        - 5b. Leaflets ovate to oblong-elliptic, veinlets slightly prominent adaxially; inflorescence peduncle 3–9 cm ..... 5. *T. wallichii*
  - 2b. Branchlets, petiole, and leaf rachis slender; infructescence pendulous; drupe glabrous or rarely bristly, fruit epicarp indehiscent at maturity.
    - 6a. Branchlets, leaf rachis, and petiolules pubescent, hirsute, or tomentose; inflorescence pubescent.
      - 7a. Inflorescence half as long as pinnately compound leaf.
        - 8a. Branchlets, leaf rachis, and inflorescence densely covered with straight hairs; leaflet margin ciliate; drupe bristly, wider than long ..... 6. *T. trichocarpum*
        - 8b. Branchlets, leaf rachis, and inflorescence covered with curved or curled hairs; leaflet margin glabrous; drupe glabrous, longer than wide ..... 7. *T. sylvestre*
      - 7b. Inflorescence equal to or longer than pinnately compound leaf.
        - 9a. Leaflets pubescent abaxially along midrib, margin glabrous, petiolule 4–7 mm; drupe subsymmetrical ..... 8. *T. vernicifluum*
        - 9b. Leaflets hirsute or pubescent on both surfaces, margin ciliate, petiolule sessile to 2 mm; drupe oblique.
          - 10a. Plants covered with erect hairs; leaflets 5–7, with acute apex, leaflet margin entire or rarely serrate toward apex ..... 9. *T. hirtellum*
          - 10b. Plants covered with appressed hairs; leaflets 7–11, with long acuminate to caudate-acuminate apex, leaflet margin crenate ..... 10. *T. yunnanense*
    - 6b. Branchlets, leaf rachis, and petiolules glabrous; inflorescence glabrous or rarely minutely pubescent.
      - 11a. Inflorescence minutely pubescent; drupe symmetrical ..... 11. *T. acuminatum*
      - 11b. Inflorescence glabrous; drupe oblique to symmetrical.
        - 12a. Shrubs less than 1.5 m tall; inflorescence racemose ..... 12. *T. delavayi*
        - 12b. Trees or small trees; inflorescence paniculate.
          - 13a. Inflorescence half as long as pinnately compound leaf; petals not with featherlike venation pattern.
            - 14a. Leaflet ovate to ovate-oblong, apex long acuminate to caudate; drupe oblique, compressed, acute apically ..... 13. *T. succedaneum*
            - 14b. Leaflet oblong-ovate to oblong-lanceolate, apex acuminate; drupe symmetrical to subsymmetrical, not compressed, long beaked ..... 14. *T. rostratum*
          - 13b. Inflorescence equal to pinnately compound leaf in length; petals with featherlike venation pattern.
            - 15a. Leaflet obovate-elliptic to obovate-oblong, apex acute or acuminate, without apiculum; flower 3–4 mm in diam. .... 15. *T. grandiflorum*
            - 15b. Leaflets falcate-lanceolate, apex acuminate, with apiculum; flower less than

2 mm in diam. .... 16. *T. calcicola*

**1. *Toxicodendron radicans* (Linnaeus) Kuntze subsp. *hispidum* (Engler) Gillis, *Rhodora* 73: 213. 1971.**

刺果毒漆藤 ci guo du qi teng

*Rhus toxicodendron* Linnaeus var. *hispida* Engler, Bot. Jahrb. Syst. 29: 433. 1900; *R. intermedia* Hayata.

Woody climbers; branchlets brown, striate, at first ferruginous pubescent. Petiole 5–10 cm, yellow pubescent, channeled above; leaf blade 3-foliolate; lateral leaflets sessile to subsessile, blade oblong to ovate-elliptic, 6–13 × 3–7.5 cm, base oblique, rounded, margin entire, terminal leaflet with pubescent 0.5–2 mm petiolule, blade obovate-elliptic to obovate-oblong, 8–15 × 4–8.5 cm, base attenuate, apex acute or shortly acuminate; leaflet blades glabrous adaxially, pubescent along midrib and lateral veins abaxially, with reddish brown tufts of hair in axils of lateral veins. Inflorescence panicle, ca. 5 cm, with yellowish brown hairs; floral subtending bracts ca. 2 mm, pubescent. Pedicel ca. 2 mm, hairy; flowers yellowish green. Calyx glabrous, lobes ovate, ca. 1 mm. Petals oblong, ca. 3 mm, revolute at anthesis, with inconspicuous brown featherlike venation pattern. Stamens equal to petals in length; filaments linear, ca. 2 mm; anthers oblong, ca. 1 mm. Disk glabrous. Ovary globose, ca. 0.5 mm in diam. Drupe oblique-ovoid, ca. 5 × 6 mm, yellow at maturity, with ca. 1 mm bristles; mesocarp thick, waxy. Fl. May, fr. Jun–Aug.

• Hill forests; (600–)1600–2200 m. Guizhou, Hubei, Hunan, Sichuan, Taiwan, Yunnan.

The name *Rhus orientalis* (Greene) C. K. Schneider (*Toxicodendron orientale* Greene) has been misapplied to this taxon.

The remaining numerous subspecies and varieties of *Toxicodendron radicans* are distributed in North America.

**2. *Toxicodendron griffithii* (J. D. Hooker) Kuntze, Revis. Gen. Pl. 153. 1891.**

裂果漆 lie guo qi

Small trees; branchlets glabrous or subglabrous, lenticellate. Petiole 5.5–9 cm, petiole and rachis glabrous; leaf blade imparipinnately compound; leaflet petiolule 2–3 mm, minutely pubescent to glabrous; leaflets 7–11, opposite; leaflet blade oblong or ovate-oblong, 9–25 × 4–8 cm, coriaceous, adaxially glabrous, turning dark brown when dried, abaxially ferruginous, glabrous to minutely pubescent along veins, sometimes with tufts of hair in axils of veins, base rounded to subcordate, margin entire, lateral veins 15–20 pairs, reticulate venation prominent abaxially. Inflorescence paniculate, 13–22 cm, minutely pubescent; peduncle 5–6 cm, minutely pubescent, striate and lenticellate. Calyx minutely pubescent to subglabrous, lobes broadly ovate. Petals linear-oblong. Disk conspicuous. Ovary globose, densely pubescent. Drupe subglobose, (4–5 or)8–10 mm in diam., light yellow, minutely pubescent; epicarp irregularly dehiscent at maturity; mesocarp thick, waxy, with brown longitudinal resin ducts; endocarp compressed, ca. 3 × 5 mm.

Hill and mountain forests and thickets; 1400–2500 m. SW Gui-

zhou, Yunnan [India (Darjeeling)].

- 1a. Inflorescence 20–22 cm; drupe 4–5 mm in diam. .... 2b. var. *microcarpum*
- 1b. Inflorescence 13–15 cm; drupe 8–10 mm in diam.
  - 2a. Leaflets 7–11, oblong or oblong-ovate, abaxially glabrous or minutely pubescent along veins ..... 2a. var. *griffithii*
  - 2b. Leaflets 7–9, oblong or elliptic-oblong, abaxially with tufts of hair in axils of veins ..... 2c. var. *barbatum*

**2a. *Toxicodendron griffithii* var. *griffithii***

裂果漆(原变种) lie guo qi (yuan bian zhong)

*Rhus griffithii* J. D. Hooker.

Leaflets 7–11, oblong to oblong-ovate, abaxially glabrous or minutely pubescent along veins. Inflorescence 13–15 cm. Drupe 8–10 mm in diam. Fl. May–Jun, fr. Sep–Nov.

Hill and mountain thickets; 1900–2300 m. SW Guizhou (Anlong), Yunnan (Kunming, Shizong) [India (Darjeeling)].

**2b. *Toxicodendron griffithii* var. *microcarpum* C. Y. Wu & T. L. Ming, Fl. Yunnan. 2: 397. 1979.**

小果裂果漆 xiao guo lie guo qi

Inflorescence 20–22 cm. Drupe 4–5 mm in diam. Fl. May–Jun, fr. Sep–Oct.

• Evergreen hill forests; 1400–1800 m. SE Yunnan (Wenshan).

**2c. *Toxicodendron griffithii* var. *barbatum* C. Y. Wu & T. L. Ming, Fl. Yunnan. 2: 397. 1979.**

镇康裂果漆 zhen kang lie guo qi

Leaflets 7–9, oblong to elliptic-oblong, abaxially with tufts of hair in axils of veins. Inflorescence 13–15 cm. Drupe 8–10 mm in diam. Fl. Jun, fr. Oct.

• Hill and mountain forests; 2400–2500 m. SW Yunnan (Zhenkang).

**3. *Toxicodendron hookeri* (Sahni & Bahadur) C. Y. Wu & T. L. Ming var. *microcarpum* (C. C. Huang ex T. L. Ming) C. Y. Wu & T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 110. 1980.**

小果大叶漆 xiao guo da ye qi

*Toxicodendron insigne* (J. D. Hooker) Kuntze var. *microcarpum* C. C. Huang ex T. L. Ming, Fl. Yunnan. 2: 395. 1979.

Trees or small trees, 6–8 m tall; branchlets ferruginous tomentose, later grayish brown, glabrous, lenticellate. Petiole 10–14 cm, glabrous or subglabrous, lenticellate; leaf blade imparipinnately compound; leaflets 7–9, opposite; leaflet petiolule 3–5 mm, ferruginous tomentose; leaflet blade elliptic or oblong, 14–23 × 6–9 cm, coriaceous, adaxially glabrous, abaxially ferruginous tomentose, base rounded or truncate, margin entire,

apex acute or acuminate, lateral veins 20–35 pairs, veinlets prominent abaxially. Inflorescence paniculate, 20–35 cm, glabrous to sparsely pubescent; peduncle 6–10 cm, striate and lenticellate; floral subtending bracts ca. 1 mm, glabrous. Pedicel ca. 1 mm, ferruginous pubescent. Calyx glabrous, lobes broadly ovate, ca. 0.5 mm, with obtuse apex. Petals oblong, ca. 2 mm, glabrous, with brown featherlike venation pattern. Stamens equal to petals in length; filaments subulate, ca. 1 mm; anthers oblong, ca. 0.75 mm. Disk 5-lobed. Ovary globose, ca. 0.5 mm in diam., pubescent. Drupe globose, 4–5 mm in diam., yellow and lucid at maturity, minutely pubescent; epicarp thin, irregularly dehiscent; mesocarp thick, waxy, with brown longitudinal resin ducts; endocarp slightly compressed, 2.5–3 × 3.5–4 mm. Fl. Jul, fr. Aug–Sep.

• Hill and mountain forests; 1200–2600 m. SE Xizang (Médog), NW Yunnan (Gongshan).

*Toxicodendron hookeri* var. *hookeri* is distributed in NE India.

**4. Toxicodendron fulvum** (Craib) C. Y. Wu & T. L. Ming, Fl. Yunnan. 2: 394. 1979.

黄毛漆 huang mao qi

*Rhus fulva* Craib, Kew Bull. 361. 1926.

Trees, ca. 10 m tall; branchlets yellow tomentose. Petiole and rachis ferruginous tomentose; leaf blade imparipinnately compound, 30–70 cm; leaflets 9–13, opposite; leaflet blade oblong, 8–14 × 3.5–4 cm, coriaceous, adaxially minutely pubescent or subglabrous along midrib, abaxially ferruginous tomentose, base oblique, rounded to truncate, margin entire or rarely obscurely serrulate distally, apex acuminate or acute, lateral veins ca. 25 pairs, prominent abaxially, veinlets slightly impressed adaxially and prominent abaxially. Inflorescence paniculate, 20–33 cm; peduncle robust, 8–20 cm, peduncle and rachis ferruginous tomentose; floral subtending bracts to 1.7 mm, caducous. Flowers sessile to subsessile. Calyx lobes oblong to broadly ovate, ca. 0.5 mm, sparsely pubescent or subglabrous. Petals oblong, slightly longer than calyx. Drupe subglobose, 5–6 mm in diam.; epicarp thin, yellow, lucid, minutely pubescent, irregularly dehiscent at maturity; mesocarp thick, waxy, with brown longitudinal resin ducts. Fl. May–Jun, fr. Aug–Oct.

Hill forests on limestone; ca. 1000 m. S Yunnan (Mengla, Menglian) [N Thailand].

**5. Toxicodendron wallichii** (J. D. Hooker) Kuntze, Revis. Gen. Pl. 154. 1891.

绒毛漆 rong mao qi

Trees, 5–7 m tall, rarely more; branchlets ferruginous tomentose, lenticellate. Petiole and rachis ferruginous tomentose; leaf blade imparipinnately compound to 30 cm; leaflets 7–11, opposite; leaflet petiolule 1–3 mm, tomentose; leaflet blade ovate-elliptic to oblong-elliptic, 10–13 × 5–7 cm, coriaceous, adaxially minutely pubescent, sometimes only along midrib, abaxially ferruginous tomentose, base rounded to subcordate, margin entire, apex acuminate, lateral veins 20–25 pairs, veinlets prominent abaxially. Inflorescence paniculate, 12–15 cm, less than half as long as pinnately compound leaf; pedun-

cle and rachis ferruginous tomentose, lenticellate. Flowers light yellow, sessile to subsessile. Calyx lobes ca. 0.7 mm, glabrous. Petals oblong, ca. 2 mm. Stamens equal to petals in length. Disk 5-lobed. Ovary globose, ferruginous pubescent. Infructescence erect; drupe globose, minutely pubescent; epicarp thin, irregularly dehiscent at maturity; mesocarp thick, waxy, with brown longitudinal resin canal.

Lowland, hill, and mountain forests; 700–2400 m. SW Guangxi, S Xizang, SE and W Yunnan [N India, Nepal].

1a. Drupe 8–10 mm in diam. .... 5a. var. *wallichii*  
1b. Drupe small, less than 5 mm in diam.

..... 5b. var. *microcarpum*

**5a. Toxicodendron wallichii** var. *wallichii*

绒毛漆(原变种) rong mao qi (yuan bian zhong)

*Rhus wallichii* J. D. Hooker, Fl. Brit. India 2: 11. 1876, based on *R. juglandifolia* Wallich ex D. Don, Prodr. Fl. Nepal. 248. 1825, not Willdenow ex Schultes (1820); *R. vernicifera* Candolle, p.p.

Drupe 8–10 mm in diam. Fl. Apr, fr. Aug–Oct.

Hill and mountain forests; 1800–2400 m. S Xizang (Gyirong) [N India, Nepal].

**5b. Toxicodendron wallichii** var. *microcarpum* C. C. Huang ex T. L. Ming, Fl. Yunnan. 2: 394. 1979.

小果绒毛漆 xiao guo rong mao qi

Drupe less than 5 mm in diam. Fl. Apr, fr. Jun–Oct.

• Lowland, hill, and mountain forests; 700–2400 m. SW Guangxi, SE Xizang, SE and W Yunnan.

**6. Toxicodendron trichocarpum** (Miquel) Kuntze, Revis. Gen. Pl. 154. 1891.

毛漆树 mao qi shu

*Rhus trichocarpa* Miquel, Ann. Mus. Bot. Lugduno-Batavi 2: 84. 1866; *R. echinocarpa* H. Léveillé, p.p. excluding *Cavalerie* 2003.

Deciduous trees or shrubs; young branchlets yellowish brown pubescent, later gray, brown lenticellate; buds yellow tomentose. Petiole 5–7 cm, yellowish brown pubescent, inflated at base; rachis terete or rarely narrowly winged distally; leaf blade imparipinnately compound, 20–40 cm; leaflets 9–15, sessile or subsessile; leaflet blade ovate or ovate-oblong or elliptic, gradually increasing in size toward apex, 7–10 × 2.5–4.5 cm, papery, adaxially sparsely appressed pubescent or subglabrous to minutely pubescent along midrib, abaxially densely yellow pubescent to sparsely pubescent, base oblique, rounded to truncate, margin entire or rarely undulate-serrate, ciliate, apex acuminate and obtuse, lateral veins prominent abaxially. Inflorescence paniculate, 10–20 cm, densely yellowish brown pubescent, with racemose 1.5–3 cm first order branches; floral subtending bracts ca. 1 mm. Pedicel ca. 1.5 mm, pubescent; flowers yellowish green. Calyx glabrous, lobes narrowly triangular, ca. 0.8 mm, obtuse apically. Petals obovate-oblong, ca. 2 mm, revolute at anthesis. Filaments ca. 1.5 mm; anthers ovoid, ca. 0.8 mm. Disk 5-lobed. Ovary globose, minutely

setaceous. Drupe obovate, 5–6 × 7–8 mm, yellow and lucid, minutely setaceous; epicarp thin, separating; mesocarp thick, waxy, with brown longitudinal resin ducts; endocarp 4–5 × ca. 6 mm. Fl. Jun, fr. Jul–Sep.

Hill and mountain forests, thickets; 900–2000 m. Anhui, Fujian, Guizhou, Hubei, Hunan, Jiangxi, Zhejiang [Japan, Korea].

**7. *Toxicodendron sylvestre*** (Siebold & Zuccarini) Kuntze, Revis. Gen. Pl. 154. 1891 [*“silvestre”*].

木蜡树 mu la shu

*Rhus sylvestris* Siebold & Zuccarini, Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 140. 1845.

Trees or small trees, to 10 m tall; young branchlets and terminal buds yellowish brown tomentose. Petiole 4–8 cm, petiole and rachis densely yellow tomentose; leaf blade imparipinnately compound, 18–30 cm; leaflets 7–15, opposite; leaflet petiolule sessile to short; leaflet blade ovate to ovate-elliptic or oblong, 4–10 × 2–4 cm, papery, adaxially appressed pubescent to minutely pubescent along midrib, abaxially densely pubescent, base oblique, rounded or broadly cuneate, margin entire, apex acuminate or acute, lateral veins 15–25 pairs, prominent on both surfaces, veinlets prominent abaxially. Inflorescence paniculate, 8–15 cm, densely ferruginous tomentose; peduncle 1.5–3 cm. Pedicel ca. 1.5 mm, minutely pubescent; flowers yellow. Calyx glabrous, lobes ovate, ca. 0.8 mm, obtuse apically. Petals oblong, ca. 1.6 mm, with brown featherlike venation pattern. Stamens exserted; filaments linear, ca. 1.5 mm; anthers ovoid, ca. 0.5 mm; stamens shorter in female flowers and with subulate filaments. Disk 5-lobed. Ovary globose, ca. 1 mm in diam., glabrous. Drupe oblique, compressed, ca. 8 × 6–7 mm, apex eccentric, glabrous and lucid; epicarp thin, separating; mesocarp thick, waxy, with brown longitudinal resin canal. Fl. Apr–May, fr. Jun–Oct.

Lowland, hill, and mountain forests; 100–800(–2300) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, NW Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea].

**8. *Toxicodendron vernicifluum*** (Stokes) F. A. Barkley, Amer. Midl. Naturalist 24: 680. 1940.

漆树 qi shu

*Rhus verniciflua* Stokes, Bot. Mat. Med. 2: 164. 1812; *R. succedanea* Linnaeus var. *himalaica* J. D. Hooker; *R. succedanea* var. *silvestrii* Pampanini; *R. vernicifera* Candolle, p.p.; *Toxicodendron verniciferum* (Candolle) F. A. Barkley; *T. vernicifluum* var. *shaanxiense* J. Z. Zhang & Z. Y. Shang.

Deciduous trees to 20 m tall; branchlets yellowish brown pubescent. Petiole 7–14 cm, inflated at base, petiole and rachis minutely pubescent; leaf blade imparipinnately compound, 15–30 cm; leaflets 9–13, opposite; leaflet petiolule 4–7 mm, pubescent; leaflet blade ovate to ovate-elliptic or oblong, 6–13 × 3–6 cm, membranous to papery, adaxially glabrous or minutely pubescent along midrib, abaxially yellow pubescent, base oblique, rounded or broadly cuneate, margin entire, apex acute or acuminate, lateral veins 10–15 pairs, prominent on both surfaces. Inflorescence paniculate, 15–30

cm, grayish yellow minutely pubescent, with slender branches. Pedicel 1–3 mm, shorter and more robust in female flowers. Calyx lobes ovate, ca. 0.8 mm, apically obtuse, glabrous. Petals yellowish green, oblong, ca. 2.5 × 1.2 mm, with brown featherlike venation pattern. Stamens ca. 2.5 mm; filaments equal to anthers in length, shorter in female flower; anthers oblong. Disk 5-lobed. Ovary globose, glabrous; styles 3. Inflorescence pendulous; drupe symmetrical, 5–6 × 7–8 mm, glabrous; epicarp thin, indehiscent; mesocarp thick, waxy, with brown longitudinal resin ducts; endocarp ca. 3 × 5 mm. Fl. May–Jun, fr. Jul–Oct.

Hill and mountain forests; 800–2800 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan, Xizang, Yunnan, Zhejiang [India, Japan, Korea].

This species is a main source of varnish used in the manufacture of lacquer-ware.

**9. *Toxicodendron hirtellum*** C. Y. Wu ex T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 139. 1980.

硬毛漆 ying mao qi

Shrubs, ca. 1.2 m tall; young branchlets pubescent. Petiole and rachis pubescent; leaf blade imparipinnately compound, 6–8 cm; leaflet petiolule to ca. 1 mm; leaflets 5–7, opposite; leaflet blade ovate to ovate-oblong, 1.5–3.5 × 1–1.5 cm, papery, both surfaces sparsely yellow pubescent to densely hairy along midrib, base oblique, rounded or broadly cuneate, margin entire or undulate and serrate distally, ciliate, apex acute. Inflorescence racemose to 7 cm at fructification, densely yellow pubescent. Flowers not seen. Fruit stalk ca. 2 mm; persistent calyx glabrous, lobes ovate-triangular, ca. 0.7 mm; drupe obliquely ovate, asymmetrical, ca. 6 × 7 mm, apex eccentric, glabrous, lucid. Fl. May–Jun, fr. Aug–Oct.

• Hill forests on limestone; ca. 1400 m. S Sichuan (Huili).

**10. *Toxicodendron yunnanense*** C. Y. Wu, Fl. Yunnan. 2: 401. 1979.

云南漆 yun nan qi

Shrubs, ca. 1.5 m tall; young branchlets reddish brown and yellow pubescent, buds densely yellow hairy. Petiole 3–8.5 cm, petiole and rachis yellow pubescent, rachis very narrowly winged distally; leaf blade imparipinnately compound, 8–23 cm; leaflets 7–11(–21), opposite; leaflet petiolule very short to subsessile; leaflet blade ovate-lanceolate, elliptic-lanceolate, or narrowly lanceolate, gradually increasing in size toward apex, 3.5–8.5 × 1.2–3.8 cm, terminal leaflet up to 10.5 cm, papery, both surfaces yellow pubescent to densely hairy along midrib, base oblique, broadly cuneate to rounded, margin undulate-crenate, ciliate, apex long acuminate or caudate-acuminate, lateral veins prominent on both surfaces. Inflorescence racemose, 3–9.5 cm, yellow pubescent; peduncle slender; floral subtending bracts lanceolate, pubescent. Pedicel ca. 2 mm, yellow pubescent; flowers white. Calyx glabrous, lobes ovate, ca. 0.7 mm, obtuse apically. Petals oblong, ca. 2 mm, obtuse apically, glabrous, with brown featherlike venation

pattern. Stamens shorter than petals; filaments ca. 0.5 mm; anthers oblong, ca. 1.2 mm. Disk 5-lobed. Ovary globose, ca. 0.5 mm wide. Young drupe obliquely ovate, compressed, 4–5 × 5–6 mm, glabrous, lucid.

• Hill and mountain forests and thickets; 400–2200 m. SW Sichuan, Yunnan.

- 1a. Leaflets 7–9, leaflet blade ovate-lanceolate to elliptic-lanceolate, margin undulate-crenate; inflorescence 3–9.5 cm ..... 10a. var. *yunnanense*
- 1b. Leaflets (7–)11–21, leaflet blade narrowly lanceolate, margin entire; inflorescence to 21 cm ..... 10b. var. *longipaniculatum*

**10a. Toxicodendron yunnanense var. yunnanense**

云南漆(原变种) yun nan qi (yuan bian zhong)

Leaflets 7–9, leaflet blade ovate-lanceolate to elliptic-lanceolate, margin undulate-crenate. Inflorescence 3–9.5 cm. Fl. May, fr. Jul–Sep.

• Hill and mountain forests; 1600–2200 m. Yunnan (Eshan, Fumin, Shuangbai, Songming).

**10b. Toxicodendron yunnanense var. longipaniculatum** C. Y. Wu & T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 140. 1980.

长序云南漆 chang xu yun nan qi

Leaflets (7–)11–21, leaflet blade narrowly lanceolate, margin entire. Inflorescence to 21 cm. Fl. Apr–May.

• Hill and mountain thickets; 400–2200 m. SW Sichuan (Leibo), Yunnan (Kunming).

**11. Toxicodendron acuminatum** (Candolle) C. Y. Wu & T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 119. 1980.

尖叶漆 jian ye qi

*Rhus acuminata* Candolle, Prodr. 2: 68. 1825; *R. succedanea* Linnaeus var. *acuminata* (Candolle) J. D. Hooker; *Toxicodendron caudatum* C. C. Huang ex T. L. Ming; *T. succedaneum* (Linnaeus) Kuntze var. *acuminatum* (Candolle) C. Y. Wu & T. L. Ming.

Small trees, 4–7.5 m tall; branchlets grayish brown, lenticellate, buds brown, glabrous or subglabrous. Petiole 5–10 cm, petiole and rachis slender; leaf blade imparipinnately compound, 16–28 cm; leaflets 5–9, opposite; leaflet petiolules 3–5 mm; leaflet blade elliptic or oblong, gradually increasing in size toward apex, 5–11 × 2–5 cm, papery, glabrous on both surfaces, glaucous abaxially, base rounded or broadly cuneate, margin entire, apex long caudate, lateral veins 15–25 pairs, subparallel. Inflorescence paniculate to 12 cm; rachis and first order branches slender, minutely pubescent. Pedicel 1.5–2 mm, minutely pubescent; flowers yellowish green. Calyx minutely pubescent, lobes ovate, ca. 1 mm, obtuse apically. Petals oblong, 2.5–3 × ca. 1 mm, revolute at anthesis. Stamens ca. 2 mm; filaments equal to anthers in length. Disk 5-lobed. Ovary ovoid, glabrous. Drupe obovate, symmetrical, 4–5 × 5–6 mm, glabrous, slightly lucid. Fl. May–Jul, fr. Aug–Oct.

Hill and mountain forests; 1600–2600 m. S Xizang, SW Yunnan (Zhenkang) [Bhutan, N India, Kashmir, Nepal].

**12. Toxicodendron delavayi** (Franchet) F. A. Barkley, Amer. Midl. Naturalist 24: 680. 1940.

小漆树 xiao qi shu

Shrubs, 0.5–2 m tall; branchlets purplish red, often glaucous, glabrous; buds glabrous or minutely pubescent. Petiole 3.5–5 cm; leaf blade imparipinnately compound, to 13 cm; leaflets 5–11, opposite; leaflet petiolule 1–2 mm; leaflet blade ovate-lanceolate to linear-lanceolate, 3.5–9 × 0.5–2.5 cm, papery, sparsely pubescent when newly formed to eventually glabrous on both surfaces, base ± oblique, broadly cuneate or rounded, margin entire to sparsely serrate distally, apex acute to acuminate, lateral veins 12–16 pairs, prominent on both surfaces. Inflorescence racemose, 6–8.5 cm, glabrous; peduncle slender, 4–5 cm; floral subtending bracts lanceolate, ca. 1 mm. Pedicel ca. 1 mm; flowers light yellow, ca. 2 mm in diam. Calyx glabrous, lobes triangular, ca. 0.8 mm, obtuse apically. Petals oblong, ca. 2 mm, with brown featherlike venation pattern. Stamens ca. 1.5 mm; filaments linear, equal to anthers in length; anthers oblong. Disk 10-lobed. Ovary ovoid, ca. 1 mm in diam., glabrous. Drupe oblique, slightly compressed, ca. 6 mm in diam., glabrous, lucid.

• Hill and mountain forests, thickets; 1100–2500 m. SW Sichuan, C and N Yunnan.

- 1a. Leaflets 9–11 or more; buds and newly formed leaflets sparsely pubescent ..... 12c. var. *quinquejugum*
- 1b. Leaflets 5–9; buds and leaflets glabrous.
  - 2a. Leaflets ovate-lanceolate to lanceolate, 3.5–5.5 × 1.2–2.5 cm, base slightly oblique ..... 12a. var. *delavayi*
  - 2b. Leaflets narrowly lanceolate to linear-lanceolate, 4–9 × 0.5–1.5 cm, base conspicuously oblique ..... 12b. var. *angustifolium*

**12a. Toxicodendron delavayi var. delavayi**

小漆树(原变种) xiao qi shu (yuan bian zhong)

*Rhus delavayi* Franchet, Bull. Soc. Bot. France 33: 466. 1886.

Buds and leaflets glabrous; leaflets 5–9, ovate-lanceolate to lanceolate, 3.5–5.5 × 1.2–2.5 cm, base slightly oblique. Fl. May–Jun, fr. Sep–Oct.

• Hill and mountain forests, thickets; 1100–2500 m. SW Sichuan, C and NW Yunnan.

**12b. Toxicodendron delavayi var. angustifolium** C. Y. Wu, Fl. Yunnan. 2: 407. 1979.

狭叶小漆树 xia ye xiao qi shu

Buds and leaflets glabrous; leaflets 5–9, narrowly lanceolate to linear-lanceolate, 4–9 × 0.5–1.5 cm, base conspicuously oblique. Fr. Jul.

• Hill and mountain forests, thickets; 1100–2500 m. SW Sichuan (Jinyang), N Yunnan (Yongshan, Wuding).

**12c. *Toxicodendron delavayi* var. *quinquejugum*** (Rehder & E. H. Wilson) C. Y. Wu & T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 124. 1980.

多叶小漆树 *duo ye xiao qi shu*

*Rhus delavayi* var. *quinquejuga* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 2: 184. 1914.

Buds pubescent; leaflets 9–11 or more, pubescent when newly formed, base conspicuously oblique. Fl. May–Jul, fr. Aug–Oct.

• Hill and mountain forests, thickets; 1900–2400 m. SW Sichuan, C and NW Yunnan.

**13. *Toxicodendron succedaneum*** (Linnaeus) Kuntze, Revis. Gen. Pl. 154. 1891.

野漆 *ye qi*

Trees or shrubs, 1–2(–10) m tall; branchlets glabrous to pubescent, terminal buds glabrous to tomentose. Petiole 6–9 cm, glabrous or pubescent; rachis terete or narrowly winged distally, glabrous to pubescent; leaf blade imparipinnately compound, 20–35 cm; leaflets 5–15, opposite or subopposite; leaflet petiolule indistinct or 2–5 mm; leaflet blade oblong-elliptic to ovate-lanceolate, 3–16 × 0.9–5.5 cm, papery or thinly leathery, glabrous to sparsely pubescent on both surfaces, glaucous abaxially, base oblique, rounded or broadly cuneate, margin entire, apex acuminate to caudate-acuminate, lateral veins 15–22 pairs, slightly prominent on both surfaces. Inflorescence paniculate, 7–15 cm, many branched, glabrous. Pedicel ca. 2 mm; flowers yellowish green, ca. 2 mm in diam. Calyx glabrous, lobes broadly ovate, ca. 1 mm, obtuse apically. Petals oblong, ca. 2 mm, obtuse apically, with ± conspicuous featherlike venation pattern, revolute at anthesis. Stamens exserted; filaments linear, ca. 2 mm; anthers ovoid, ca. 1 mm. Disk 5-lobed. Ovary globose, glabrous. Drupe large, asymmetrical, 7–10 mm in diam., compressed, apex eccentric; epicarp thin, yellow, glabrous; mesocarp thick, white, waxy, with brown longitudinal resin ducts.

Lowland and hill forests, lowland thickets on limestone; 100–1500(–2500) m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, SE Xizang, Yunnan, Zhejiang [Cambodia, India, Japan, Korea, Laos, Thailand, Vietnam].

From the fruits of this species a wax is extracted for use in varnishes and polishes.

1a. Shrubs, 1–2 m tall; leaflets 5–7, sessile or subsessile, rachis narrowly winged distally, leaflet blade 3–5 × 0.9–1.9 cm ..... 13c. var. *microphyllum*

1b. Trees; leaflets 9–15, petiolule 2–5 mm, rachis terete, leaflet blade 5–16 × 1–5.5 cm.

2a. Buds glabrous or subglabrous;

leaves glabrous ..... 13a. var. *succedaneum*

2b. Buds yellow tomentose; leaves sparsely pubescent ..... 13b. var. *kiangsiense*

**13a. *Toxicodendron succedaneum* var. *succedaneum***

野漆(原变种) *ye qi (yuan bian zhong)*

*Rhus succedanea* Linnaeus, Mant. Pl. 2: 221. 1771; *Augia sinensis* Loureiro; *R. succedanea* var. *japonica* Engler.

Trees; buds glabrous or subglabrous. Leaf rachis terete; leaflets 9–15; leaflet petiolule 2–5 mm; leaflet blade 5–16 × 1–5.5 cm, glabrous on both surfaces. Fl. May, fr. Jul–Oct.

Lowland and hill forests; (100–)300–1500(–2500) m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, SE Xizang, Yunnan, Zhejiang [Cambodia, India, Japan, Korea, Laos, Thailand, Vietnam].

**13b. *Toxicodendron succedaneum* var. *kiangsiense*** C. Y. Wu ex T. L. Ming in M. Cheng & T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 140. 1980.

江西野漆 *jiang xi ye qi*

Trees or small trees; buds yellow tomentose. Leaf rachis terete; leaflets 9–15; leaflet petiolule 2–5 mm; leaflet blade 5–16 × 1–5.5 cm, sparsely pubescent on both surfaces. Fr. Jun–Sep.

• Lowland and hill forests; 500–600 m. S Jiangxi (Anyuan).

**13c. *Toxicodendron succedaneum* var. *microphyllum*** C. Y. Wu & T. L. Ming, Fl. Reipubl. Popularis Sin. 45(1): 140. 1980.

小叶野漆 *xiao ye ye qi*

Small shrubs, 1–2 m tall. Leaf rachis narrowly winged distally; leaflets 5–7, sessile to subsessile; leaflet blade 3–5 × 0.9–1.9 cm. Fl. May–Jun, fr. Sep.

• Lowland thickets on limestone; 100–200 m. N Guangxi (Lingui).

**14. *Toxicodendron rostratum*** T. L. Ming & Z. F. Chen, Acta Bot. Yunnan. 16: 347. 1994.

喙果漆 *hui guo qi*

Trees, ca. 18 m tall; branchlets glabrous, glaucous, yellow lenticellate; buds pubescent. Petiole 6–12 cm; leaf blade imparipinnately compound, 17–32 cm; leaflets 7–11, opposite; leaflet petiolule 3–6 mm; leaflet blade oblong-ovate to oblong-lanceolate, 6–13.5 × 2.5–5 cm, papery, glabrous on both surfaces, base subrounded, margin entire, apex acuminate, lateral veins 13–18 pairs, prominent on both surfaces. Inflorescence paniculate, 4.5–9 cm, glabrous. Pedicel ca. 2 mm; flowers small, ca. 2 mm in diam. Calyx glabrous, lobes ca. 0.5 mm. Petals lanceolate, ca. 1.5 × 0.5 mm, revolute at anthesis. Stamens ca. 1.7 mm, exserted. Disk shallowly cup-shaped, 5-lobed. Ovary globose, ca. 0.8 mm in diam., glabrous; style 1, 3-lobed. Drupe ovoid, ca. 12 × 6 mm, slightly compressed, with 4–5 mm beak apically. Fl. Apr–May, fr. Aug–Oct.

- Hill forests; ca. 1200 m. S Yunnan (Menglian).

**15. *Toxicodendron grandiflorum*** C. Y. Wu & T. L. Ming, Fl. Yunnan. 2: 404. 1979.

大花漆 da hua qi

Trees or shrubs, 3–8 m tall; branchlets purplish red, glabrous, glaucous; buds purplish brown, glabrous. Petiole 4–6.5 cm, petiole and rachis slender, purplish red, glabrous, often glaucous; leaf blade imparipinnately compound, 20–30 cm; leaflets 7–15, opposite or subopposite; leaflet petiolule 5–15 mm; leaflet blade obovate-elliptic to lanceolate, 5.5–10 × 1.5–

3.5 cm, papery, glabrous on both surfaces, glaucous abaxially, base broadly cuneate to decurrent, margin entire, apex acuminate to acute, lateral veins ca. 20 pairs, prominent on both surfaces. Inflorescence paniculate, 15–25(–30) cm, glabrous. Pedicel 2–3 mm, glabrous; flowers light yellow, ca. 4 mm in diam. Calyx glabrous, lobes broadly ovate, ca. 1 mm, obtuse apically. Petals elliptic, ca. 3 × 1.5 mm, obtuse apically, with brown featherlike venation pattern, revolute at anthesis. Stamen filaments subulate, ca. 1.5 mm; anthers ovate-oblong, ca. 2 mm. Disk 5-lobed. Ovary subglobose, ca. 0.5 mm in diam. Drupe oblique, compressed, 6–7 × 7–8 mm, glabrous, light yellow at maturity, lucid.

- Hill and mountain forests, thickets; 700–2700 m. SW Sichuan, C, NW, and SE Yunnan.

- 1a. Leaflet blade obovate-elliptic to obovate-oblong; leaflet petiolule ca. 5 mm ..... 15a. var. *grandiflorum*  
 1b. Leaflet blade lanceolate; leaflet petiolule 10–15 mm ..... 15b. var. *longipes*

**15a. *Toxicodendron grandiflorum* var. *grandiflorum***

大花漆(原变种) da hua qi (yuan bian zhong)

Leaflet petiolule ca. 5 mm; leaflet blade obovate-elliptic to obovate-oblong. Fl. Apr–Jul, fr. Aug–Oct.

- Hill and mountain forests, thickets; 700–2700 m. SW Sichuan, C, NW, and SE Yunnan.

**15b. *Toxicodendron grandiflorum* var. *longipes*** (Franchet) C. Y. Wu & T. L. Ming, Fl. Yunnan. 2: 405. 1979.

长柄大花漆 chang bing da hua qi

*Rhus succedanea* Linnaeus var. *longipes* Franchet, Pl. Delavay. 2: 148. 1889.

Leaflet petiole 10–15 mm; leaflet blade lanceolate. Fl. May–Jun, fr. Jul–Sep.

- Hill and mountain thickets; 700–2500 m. SW Sichuan (Muli), NW Yunnan (Binchuan, Heqing, Lijiang, Zhongdian).

**16. *Toxicodendron calcicola*** C. Y. Wu, Fl. Yunnan. 2: 405. 1979 [*“calcicolum”*].

石山漆 shi shan qi

Shrubs or small trees, 3–7 m tall; branchlets purplish red, glabrous, glaucous; buds glabrous. Petiole 3.5–8 cm, petiole and rachis slender, glabrous; leaf blade imparipinnately compound, 15–25 cm; leaflets 7–9, opposite, sessile to subsessile; leaflet blade falcate-lanceolate, 4–8.5 × 1–3.5 cm, membranous, glabrous on both surfaces, glaucous-green abaxially, base oblique, rounded or broadly cuneate, margin entire to sparsely serrate distally, apex acuminate, ± curved, with apiculum, lateral veins 12–18 pairs, prominent on both surfaces. Inflorescence paniculate, 12–18 cm, glabrous, many branched; peduncle and rachis slender; floral subtending bracts lanceolate, ca. 2 mm. Pedicel ca. 3 mm. Calyx glabrous, lobes ovate, ca. 0.7 mm, obtuse apically. Petals oblong, with brown featherlike venation pattern, obtuse apically. Anthers ovate-oblong. Disk 5-lobed. Ovary ovoid, glabrous. Drupe not seen. Fl. Apr–May.

- Hill forests on limestone; ca. 1500 m. SE Yunnan (Xichou).

