

### 3. LITSEA Lamarck, Encycl. 3: 574. 1792, nom. cons.

木姜子属 *mu jiang zi shu*

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*Hexanthus* Loureiro; *Iozoste* Nees; *Malapoëna* Adanson; *Pseudolitsea* Yen C. Yang; *Tetranthera* Jacquin.

Trees or shrubs, evergreen or deciduous, dioecious. Leaves alternate, rarely opposite or verticillate, pinninerved. Umbels, or umbellate cymes or panicles, solitary or clustered in leaf axils; involucre bracts 4–6, decussate, persistent at flowering. Perianth tube long or short, segments usually 6, in 2 whorls of 3 each, equal or unequal, rarely lacking or 8. Flowers unisexual. Male flowers: fertile stamens 9 or 12, rarely more, in 3 or 4 whorls of 3 each; filaments of 1st and 2nd whorls usually eglandular, of 3rd and 4th 2-glandular at base; anthers all introrse, 4-celled, cells opening by lids; rudimentary pistil present or lacking. Female flowers: staminodes as many as stamens of male flowers; ovary superior; style conspicuous. Fruit seated on perianth tube; perianth tube ± enlarged, shallowly discoid or deeply cup-shaped or unaltered at fruit.

About 200 species: mainly in tropical and subtropical Asia, a few species in Australia and from North America to subtropical South America; 74 species (47 endemic) in China.

*Litsea mishmiensis* J. D. Hooker (Fl. Brit. India 5: 161. 1886; see FRPS 31: 336. 1982) was described from the border region between NE India and SE Xizang.

*Tetranthera floribunda* Champion ex Benth (Hooker's J. Bot. Kew Gard. Misc. 5: 199. 1853) was described from Hong Kong but could not be treated here because no material was seen by the present authors.

*Litsea chaffanjonii* H. Léveillé (Repert. Spec. Nov. Regni Veg. 12: 182. 1913) is a synonym of *Symplocos stellaris* Brand in the Symplocaceae (see Fl. China 15: 250. 1996), according to Lauener (Notes Roy. Bot. Gard. Edinburgh 35: 279. 1977).

*Litsea mairei* H. Léveillé and *L. myricopsis* H. Léveillé (Cat. Pl. Yun-Nan, 150. 1916) are synonyms of *Myrica nana* A. Chevalier and *M. esculenta* Buchanan-Hamilton ex D. Don, respectively, in the Myricaceae (see Fl. China 4: 275–276. 1999), according to Lauener (Notes Roy. Bot. Gard. Edinburgh 40: 505. 1983).

- 1a. Leaf blade papery or membranous and deciduous.
- 2a. Petiole 2–8 cm; leaf blade orbicular or orbicular-elliptic to broadly ovate.
  - 3a. Leaf blade more than 9.5 cm, auriculate at base; fruit ovoid, 1.3–1.7 × 1.1–1.3 cm, perianth tube cup-shaped ..... 1. *L. auriculata*
  - 3b. Leaf blade less than 8 cm, base orbicular or cuneate; fruit globose, 0.5–0.6 cm in diam., perianth tube shallowly discoid ..... 2. *L. populifolia*
- 2b. Petiole less than 2 cm; leaf blade not as above.
  - 4a. Branchlets glabrous.
    - 5a. Leaf blade glabrous abaxially.
      - 6a. Leaf blade elliptic or lanceolate-elliptic; flowers 10–12 per umbel; filaments glabrous; pedicels hairy ..... 5. *L. rubescens*
      - 6b. Leaf blade lanceolate or oblong; flowers 4–6 per umbel; filaments glabrous or with hairs below middle; pedicels glabrous.
        - 7a. Terminal bud ± hairy; leaf blade ± hairy abaxially when young or in bud ..... 3. *L. cubeba*
        - 7b. Terminal bud glabrous; leaf blade glabrous on both surfaces even when young or in bud ..... 4. *L. kingii*
    - 5b. Leaf blade hairy abaxially or at least in axils of veins.
      - 8a. Young leaves gray-white tomentose abaxially; leaf blade obovate or obovate-elliptic, often larger, 7–11 × 3–5 cm ..... 8. *L. tsinlingensis*
      - 8b. Young leaves hairy only in axils of veins or on each side of midrib; leaf blade often smaller, 2–5 × 1–3 cm.
        - 9a. Leaf blade usually obovate or rotund, sometimes glandular-domed in axils of veins; lateral veins 4–6 pairs ..... 6. *L. ichangensis*
        - 9b. Leaf blade elliptic, elliptic-lanceolate, or elliptic-obovate, not glandular-domed in axils of veins; lateral veins 5–8 pairs ..... 7. *L. chunii*
  - 4b. Branchlets covered with hairs.
    - 10a. Branchlets and leaf blade abaxially covered with pubescence or tomentum, indumentum of young branchlets scarcely deciduous, persistent in 2-year-old branchlets.
      - 11a. Leaf blade sericeous-pubescent or with white pubescence abaxially; flowers 4–6 per umbel ..... 11. *L. mollis*
      - 11b. Leaf blade densely gray-yellow tomentose abaxially; flowers 8–14 per umbel.
        - 12a. Leaf blade ovate, rhombic-ovate, or oblong, 4–15 × 1.5–7 cm; umbel solitary ..... 9. *L. moupinensis*
        - 12b. Leaf blade elliptic or oblong, 1–13.5 × 3.2–4.5 cm; umbels in pairs seated on common peduncle .... 10. *L. taronensis*
    - 10b. Branchlets and leaf blade abaxially sericeous, indumentum of young branchlets soon deciduous, mostly glabrous in 2-year-old flowering and fruiting branchlets.

- 13a. Young branchlets and leaf blade abaxially shortly gray sericeous; leaf blade lanceolate or obovate-lanceolate ..... 12. *L. pungens*
- 13b. Young branchlets and leaf blade long yellow or brown sericeous; leaf blade oblong-lanceolate, obovate-oblong, or obovate.
- 14a. Leaf blade oblong-lanceolate, apex acuminate; peduncles glabrous ..... 13. *L. sericea*
- 14b. Leaf blade obovate or obovate-oblong, acute or obtuse at apex; peduncles hairy ..... 14. *L. veitchiana*
- 1b. Leaf blade leathery or thinly leathery and evergreen.
- 15a. Perianth segments imperfect, lacking, or 3 or 4.
- 16a. Perianth segments imperfect or lacking; fertile stamens usually 15 or more; fruit globose; leaf blade gray-yellow tomentose or subglabrous abaxially ..... 15. *L. glutinosa*
- 16b. Perianth segments 3 or 4; fertile stamens 9; fruit ellipsoid; leaf blade along veins shortly hirsute abaxially ..... 16. *L. morrisonensis*
- 15b. Perianth segments 6–8.
- 17a. Perianth tube not or slightly enlarged at fruit; fruiting tube complanate or shallowly discoid.
- 18a. Leaves verticillate, usually 3–6 per whorl.
- 19a. Young branchlets and petioles densely ferruginous tomentose; leaf blade leathery, obovate-lanceolate, 3.5–6.8 × 0.9–2.8 cm; umbels lateral in leaf axils ..... 17. *L. verticillifolia*
- 19b. Young branchlets and petioles densely yellow or ferruginous hirsute; leaf blade subleathery, lanceolate or oblanceolate-oblong, 7–25 × 2–6 cm; umbels usually clustered at apex of branchlet ..... 18. *L. verticillata*
- 18b. Leaves opposite or alternate.
- 20a. Leaves opposite or subopposite (rarely alternate on same tree).
- 21a. Leaf blade glabrous or subglabrous abaxially; leaves and buds usually tinged with red after autumn ..... 19. *L. variabilis*
- 21b. Leaf blade yellow-brown or ferruginous tomentose abaxially; leaves and buds not tinged with red after autumn ..... 20. *L. lancifolia*
- 20b. Leaves alternate.
- 22a. Peduncles and pedicels absent ..... 21. *L. rotundifolia*
- 22b. Peduncles and pedicels present, if peduncles absent, pedicels still present.
- 23a. Perianth segments deciduous at fruit; fruit long ellipsoid or long ovoid to globose.
- 24a. Flowers 2 or 3 per umbel.
- 25a. Leaf blade smaller, 4–11 × 1.5–3.5 cm, yellow-brown pubescent abaxially ..... 29. *L. balansae*
- 25b. Leaf blade larger, 9–16.5 × 3–6.5 cm, glabrous abaxially ..... 30. *L. biflora*
- 24b. Flowers 4–6 or more per umbel.
- 26a. Leaf blade long caudate at apex, foveolate on both surfaces; fruit globose ..... 31. *L. beilschmiedifolia*
- 26b. Leaf blade acuminate, acute, obtuse, or rounded at apex, not foveolate on both surfaces; fruit long ellipsoid or long ovoid.
- 27a. Branchlets and petioles glabrous; leaf blade yellow-brown puberulent abaxially ..... 32. *L. salicifolia*
- 27b. Branchlets and petioles hairy; leaf blade ferruginous pubescent, pubescent along veins, or glabrous abaxially.
- 28a. Branchlets and petioles ferruginous pubescent; leaf blade abaxially ferruginous pubescent, apex obtuse or rounded ..... 33. *L. monopetala*
- 28b. Branchlets and petioles gray appressed pubescent; leaf blade glaucous, glabrous, or pubescent along veins abaxially, apex acuminate ..... 34. *L. albescens*
- 23b. Perianth segments persistent at fruit; fruit globose or subglobose.
- 29a. Peduncles absent; fruiting pedicels stout; persistent perianth segments 6, regular, usually erect.
- 30a. Young branchlets and young leaf blade abaxially glabrous or densely gray-yellow villous; leaf blade obovate-elliptic, obovate-lanceolate, oblong, or lanceolate, 4.5–9.5 × 1.4–4 cm ..... 22. *L. coreana*
- 30b. Young branchlets gray pubescent and young leaf blade abaxially glaucous and gray-white villous along midrib; leaf blade narrowly lanceolate or lanceolate to elliptic, 10–13 × 2–3.5 cm ..... 23. *L. hupehana*
- 29b. Peduncles present; fruiting pedicels usually slender; persistent perianth segments 2–4, irregular, reflexed.
- 31a. Branchlets, petioles, and filaments glabrous; fruit larger, 2–3 cm in diam.
- 32a. Leaf blade not foveolate on both surfaces and adaxially glabrous but ± hairy abaxially along veins; fruit globose, fruiting pedicel somewhat thickened at apex, as peduncle ± hairy and not verrucose ..... 24. *L. honghoensis*
- 32b. Leaf blade foveolate and glabrous on both surfaces; fruit ovoid, fruiting pedicel shallowly cup-shaped at apex, as peduncle glabrous and verrucose ..... 25. *L. cangyuanensis*
- 31b. Branchlets, petioles, and filaments hairy; fruit smaller, less than 1 cm in diam.

- 33a. Leaf blade abaxially, petioles, and peduncles densely ferruginous tomentose ..... 28. *L. umbellata*  
 33b. Leaf blade abaxially, petioles, and peduncles covered with brown pubescence or long gray-yellow pubescence.  
 34a. Leaf blade greenish abaxially; umbels 2 in leaf axils at tips of branchlets; fruiting pedicels shorter, less than 2 mm ..... 26. *L. foveola*  
 34b. Leaf blade blue-green abaxially; several umbels axillary on shortened branchlets; fruiting pedicels longer, more than 6 mm ..... 27. *L. coelestis*
- 17b. Perianth tube very enlarged at fruit; fruit ± surrounded by discoid or cup-shaped fruiting tube.  
 35a. Some umbels inserted on long or slightly long peduncles in panicles, racemes, or near corymbs.  
 36a. Young branchlets and leaf blade abaxially glabrous.  
 37a. Leaf blade larger, 21–50 × 11–14.5 cm, lateral veins 15–22 pairs ..... 35. *L. dilleniifolia*  
 37b. Leaf blade smaller, 10–21 × 3–8 cm, lateral veins 7–12 pairs.  
 38a. Leaf blade midrib prominent adaxially, lateral veins 10–12 pairs; fertile stamens 26–32 ..... 36. *L. liyuyingii*  
 38b. Leaf blade midrib impressed adaxially, lateral veins 7–9 pairs; fertile stamens 9 ..... 37. *L. szemaiois*
- 36b. Young branchlets and leaf blade abaxially hairy (only in *L. panamanja* glabrous abaxially).  
 39a. Leaf blade abaxially and petiole glabrous; fruit compressed globose ..... 38. *L. panamanja*  
 39b. Leaf blade abaxially and petiole yellow-brown or ferruginous pubescent (at least young leaves so); fruit oblong or compressed globose.  
 40a. Petiole more than 2 cm; perianth segments 8; fertile stamens 12–14; fruit compressed globose ..... 39. *L. semecarpifolia*  
 40b. Petiole less than 2 cm; perianth segments 6; fertile stamens 9; fruit oblong.  
 41a. Leaf blade obovate to obovate-oblong, rounded, mucronate at apex ..... 42. *L. longistaminata*  
 41b. Leaf blade elliptic or elliptic-lanceolate, acuminate, long acuminate, or falcate-acuminate at apex.  
 42a. Leaf blade lateral veins 6–8 pairs; fruiting tube deeply cup-shaped ..... 40. *L. martabanica*  
 42b. Leaf blade lateral veins 8–12 pairs; fruiting tube shallowly discoid ..... 41. *L. tibetana*
- 35b. Umbels solitary or fascicled.  
 43a. Leaves clustered toward apex of branchlet, subverticillate ..... 74. *L. machiloides*  
 43b. Leaves alternate.  
 44a. Young branchlets glabrous or subglabrous; petiole usually glabrous when young.  
 45a. Leaf blade smaller, mostly less than 9 cm.  
 46a. Young branchlets glabrous or densely pubescent; leaf blade midrib prominent adaxially; peduncles slender ..... 43. *L. pedunculata*  
 46b. Young branchlets glabrous; leaf blade midrib plane or impressed adaxially; peduncles stouter and shorter.  
 47a. Leaf blade oblong or narrowly oblong, usually 4 × as long as wide, slightly acute or obtuse at apex ..... 46. *L. kwangtungensis*  
 47b. Leaf blade elliptic, obovate, obovate-lanceolate, or lanceolate, ca. 2–3 × as long as wide, rounded-obtuse or shortly acute or acuminate at apex.  
 48a. Leaf blade elliptic or rarely obovate, 2 × as long as wide, rounded-obtuse at both ends or base cuneate; fruiting tube cup-shaped ..... 44. *L. pittosporifolia*  
 48b. Leaf blade obovate-lanceolate or lanceolate, 3 × as long as wide, shortly acute or acuminate at apex, cuneate or acute at base; fruiting tube discoid ..... 45. *L. hunanensis*
- 45b. Leaf blade larger, mostly more than 10 cm.  
 49a. Branchlets with corky cortices or spots.  
 50a. Branchlets with corky cortices; leaf blade oblanceolate or narrowly long elliptic; fertile stamens 9; filaments villous ..... 47. *L. suberosa*  
 50b. Branchlets with corky spots; leaf blade elliptic; fertile stamens 12(–14); filaments pubescent ..... 48. *L. chengshuzhii*
- 49b. Branchlets without corky cortices or spots.  
 51a. Fruit compressed globose, 2–2.2 × ca. 3 cm.  
 52a. Leaf blade lateral veins 6–10 pairs ..... 49. *L. depressa*  
 52b. Leaf blade lateral veins 16–20 pairs ..... 50. *L. garciae*
- 51b. Fruit ellipsoid or oblong, 1–2.5 × 0.3–1.4 cm.  
 53a. Leaf blade midrib conspicuously prominent on both surfaces; fruit oblong, larger, 1.5–2.5 × 1–1.4 cm; fruiting tube discoid ..... 51. *L. lancilimba*  
 53b. Leaf blade midrib impressed adaxially; fruit ellipsoid, smaller, ca. 1.5 × 0.8 cm; fruiting tube cup-shaped ..... 52. *L. subcoriacea*
- 44b. Young branchlets and petioles hairy (petioles glabrous in *L. baviensis* and *L. chinpingensis*).

- 54a. Young branchlets and petioles puberulent or pubescent, soon deciduous, 2-year-old flowering and fruiting branchlets mostly glabrous.
- 55a. Terminal bud scaly; fruit smaller, less than  $1.5 \times 1$  cm.
- 56a. Leaf blade glabrous abaxially ..... 53. *L. greenmaniana*
- 56b. Leaf blade gray-yellow pubescent or along veins pilose abaxially.
- 57a. Young branchlets pubescent; leaf blade pubescent abaxially; lateral veins 5–7 pairs ..... 54. *L. hypophaea*
- 57b. Young branchlets puberulent or subglabrous; leaf blade puberulent abaxially; lateral veins 8–10 pairs.
- 58a. Leaf blade lanceolate, oblanceolate, or oblong, usually narrower; rudimentary pistil present ..... 55. *L. gongshanensis*
- 58b. Leaf blade elliptic, usually broader; rudimentary pistil absent ..... 56. *L. viridis*
- 55b. Terminal bud naked; fruit larger, more than  $2 \times 1.3$  cm.
- 59a. Fruiting peduncles and pedicels 2–3 mm.
- 60a. Leaf blade lateral veins 7 or 8 pairs; fruiting tube thickly woody, larger, warty outside ..... 60. *L. baviensis*
- 60b. Leaf blade lateral veins 10–12 pairs; fruiting tube leathery, smaller, not warty outside ..... 61. *L. litseifolia*
- 59b. Fruiting peduncles more than 5 mm; fruiting pedicels more than 10 mm.
- 61a. Leaf blade gray puberulent or along veins pubescent abaxially; fruiting tube cup-shaped ..... 57. *L. yunnanensis*
- 61b. Leaf blade glabrous abaxially; fruiting tube discoid or cup-shaped.
- 62a. Leaf blade lanceolate or narrowly elliptic, usually narrower, less than 4 cm in diam.; lateral veins 7–11 pairs; fruiting tube discoid, not dehiscent ..... 58. *L. chinpingensis*
- 62b. Leaf blade elliptic, usually broader, more than 4 cm in diam.; lateral veins 5–7 pairs; fruiting tube cup-shaped, with many lenticels ..... 59. *L. vang*
- 54b. Young branchlets and petioles covered with tomentum or pubescence, indumentum late deciduous, 2-year-old branchlets still covered with more hairs.
- 63a. Leaf blade broadly linear; fruit long ovoid ..... 62. *L. pseudoelongata*
- 63b. Leaf blade not broadly linear; fruit not long ovoid.
- 64a. Petiole less than 8 mm.
- 65a. Leaf blade lateral veins 4 or 5 pairs, impressed abaxially; perianth segments persistent at fruit ..... 63. *L. oligophlebia*
- 65b. Leaf blade lateral veins 8–12 pairs, slightly prominent or prominent adaxially; perianth segments deciduous at fruit ..... 64. *L. yaoshanensis*
- 64b. Petiole mostly more than 10 mm.
- 66a. Leaf blade glabrous or only along veins hairy abaxially.
- 67a. Leaf blade obovate or oblong-obovate, along veins pubescent abaxially, lateral veins 5–8 pairs ..... 65. *L. akoensis*
- 67b. Leaf blade lanceolate or oblong-oblanceolate, glabrous abaxially, lateral veins 8–12 pairs ..... 66. *L. kwangsiensis*
- 66b. Leaf blade hairy abaxially.
- 68a. Flowers ca. 20 per umbel ..... 67. *L. liboshengii*
- 68b. Flowers 3–6 per umbel.
- 69a. Fruit globose or subglobose; leaf buds axillary ..... 68. *L. sinoglobosa*
- 69b. Fruit ellipsoid; leaf buds mostly inserted at apex of branchlet.
- 70a. Leaf blade obovate or broadly oblong, broader, mostly more than 5 cm in diam.
- 71a. Young branchlets, leaf blade abaxially, petioles, and inflorescences covered with gray-white tomentum; fruit ca. 1.3 cm ..... 69. *L. wilsonii*
- 71b. Young branchlets, leaf blade abaxially, petioles, and inflorescences gray-brown pubescent; fruit ca. 0.8 cm ..... 70. *L. hayatae*
- 70b. Leaf blade lanceolate, narrowly lanceolate, oblong-lanceolate to oblanceolate, or oblong to lanceolate-elliptic, usually narrower, mostly less than 4 cm in diam.
- 72a. Young branchlets densely brown tomentose; leaf blade lateral veins 10–20 pairs; umbels mostly solitary ..... 73. *L. elongata*
- 72b. Young branchlets densely gray-yellow or yellow-brown villous; leaf blade lateral veins 5–10 pairs; umbels mostly clustered.
- 73a. Leaf blade lanceolate-elliptic, narrower, less than 2.5 cm in diam., midrib slightly prominent abaxially, transverse veinlets inconspicuous abaxially ..... 71. *L. kobuskiana*
- 73b. Leaf blade lanceolate, oblanceolate, or oblong-lanceolate, broader, mostly more than 2.5 cm in diam., midrib impressed adaxially, transverse veinlets conspicuously prominent ..... 72. *L. acutivena*

**1. *Litsea auriculata*** S. S. Chien & W. C. Cheng, Contr. Biol. Lab. Sci. Soc. China, Bot. Ser. 6: 59. 1931.

天目木姜子 *tian mu mu jiang zi*

Deciduous trees, 10–20 m tall, 40–60 cm d.b.h. Branchlets glabrous. Leaves alternate; petiole 3–8 cm, glabrous; leaf blade elliptic, rounded-elliptic, subcordate, or obovate, 9.5–23 × 5.5–13.5 cm, glaucous, pubescent abaxially, pinninerved, lateral veins 7 or 8 pairs, base auriculate, apex obtuse, obtuse-acute, or rounded. Umbels shortly pedunculate or sessile, 6–8-flowered, flowering before leaves or at same time. Pedicel 1.3–1.6 cm, sericeous-pubescent. Perianth segments 6 (or 8), yellow, obovate. Male flowers: fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 stipitate glands at base; rudimentary pistil ovoid, glabrous. Fruit ovoid, 13–17 × 11–13 mm, seated on cup-shaped perianth tube, black at maturity; fruiting pedicel 12–16 mm. Fl. Mar–Apr, fr. Jul–Aug.

- Mixed forests; 500–1000 m. S Anhui, Zhejiang.

The wood is yellow, heavy, and dense, and is used for making furniture, etc. The root bark, leaves, and fruits are used medicinally.

**2. *Litsea populifolia*** (Hemsley) Gamble in Sargent, Pl. Wilson. 2: 77. 1914.

杨叶木姜子 *yang ye mu jiang zi*

*Lindera populifolia* Hemsley, J. Linn. Soc., Bot. 26: 390. 1891; *Benzoin obovatum* (Franchet) Rehder; *L. obovata* Franchet; *Litsea longipetiolata* Lecomte.

Deciduous small trees, 3–5 m tall, glabrous except for hairy inflorescence. Leaves alternate, usually clustered at apex of branchlet; petiole 2–3 cm; leaf blade orbicular to broadly obovate, 6–8 × 5–7 cm, glaucous abaxially, pinninerved, lateral veins 5 or 6 pairs, base rounded or cuneate, apex rounded. Umbels clustered at apex of branchlet, 9–11-flowered, flowering with leaves; peduncle 3–4 mm. Pedicel slender, 1–1.5 cm. Perianth segments 6, yellow, ovate or broadly ovate. Male flowers: fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 stipitate large glands at base; rudimentary pistil glabrous. Fruit globose, 5–6 mm in diam., seated on shallowly discoid perianth tube; fruiting pedicel 1–1.5 cm, slightly thickened at apex. Fl. Apr–May, fr. Aug–Sep.

- Sunny slopes on mountains, along banks in river valleys, thickets on shady slopes, arid and barren secondary forests, sometimes in pure stands; 700–2000 m. Sichuan, Xizang, NE Yunnan.

The leaves and fruit may be processed for their aromatic oil and used in cosmetics and soap. The fresh leaves contain ca. 0.5% of aromatic oil. The seeds contain ca. 36% oil and are used in industry.

**3. *Litsea cubeba*** (Loureiro) Persoon, Syn. Pl. 2: 4. 1807.

山鸡椒 *shan ji jiao*

Deciduous shrubs or small trees, 8–10 m tall. Branchlets glabrous or sericeous-pubescent. Leaves alternate; petiole 6–20 mm, glabrous; leaf blade lanceolate, oblong, or elliptic, 4–11 × 1.1–2.4 cm, glabrous on both surfaces or sericeous-pubescent abaxially, glaucous and sericeous-pubescent when young abaxially, lateral veins 6–16 pairs, base cuneate, apex acuminate or

acute. Umbels solitary or clustered, 4–6-flowered, flowering before leaves or with leaves; peduncle 2–10 mm, reflexed or straight, glabrous or sericeous-pubescent. Male flowers: perianth segments 6, broadly ovate; fertile stamens 9; filaments hairy below middle, of 3rd whorls each with 2 shortly stipitate glands at base; rudimentary pistil glabrous. Fruit subglobose, ca. 5 mm in diam., black at maturity; fruiting pedicel 2–4 mm. Fl. Feb–Mar, fr. Jul–Aug.

Sunny slopes, thickets, sparse forests, roadsides, watersides; 300–3200 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [S and SE Asia].

- 1a. Branchlets, buds, both surfaces of leaf blade, and umbels glabrous ..... 3a. var. *cubeba*
- 1b. Branchlets, buds, leaf blade abaxially, and umbels sericeous-pubescent ..... 3b. var. *formosana*

**3a. *Litsea cubeba* var. *cubeba***

山鸡椒(原变种) *shan ji jiao* (yuan bian zhong)

*Laurus cubeba* Loureiro, Fl. Cochinch. 1: 252. 1790; *Benzoin cubeba* (Loureiro) Hatusima; *Lindera dielsii* H. Léveillé; *Litsea cubeba* f. *obtusifolia* Yen C. Yang & P. H. Huang; *L. dielsii* (H. Léveillé) H. Léveillé; *L. mollifolia* Chun var. *glabrata* (Diels) Chun; *L. mollis* Hemsley var. *glabrata* Diels.

Branchlets, buds, both surfaces of leaf blade, and umbels glabrous.

Sunny slopes, thickets, sparse forests, roadsides, watersides; 300–1800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [S and SE Asia].

The wood is used for general furniture-making and construction. The flowers, leaves, and fruit walls are processed for citral and are used for their fragrance and medicinal properties. The fruit core contains ca. 62% oil and is used in industry. The roots, branchlets, leaves, and fruits are all used medicinally for treating internal health problems, such as swelling and pain. In Kunming, Shanghai, and Sichuan, the fruits are used as a medicine known as “bi cheng qie” (毕澄茄).

**3b. *Litsea cubeba* var. *formosana*** (Nakai) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 46. 1978.

毛山鸡椒 *mao shan ji jiao*

*Aperula formosana* Nakai, J. Jap. Bot. 14: 195. 1938.

Branchlets, buds, leaf blade abaxially, and umbels sericeous-pubescent.

- Fujian, N Guangdong, Jiangxi, Taiwan, S Zhejiang.

**4. *Litsea kingii*** J. D. Hooker, Fl. Brit. India 5: 156. 1886.

秃净木姜子 *tu jing mu jiang zi*

Deciduous shrubs or small trees, 8–15 m tall. Terminal buds quite glabrous. Branchlets stout, glabrous, smooth, black when dry. Leaves alternate; petiole 9–12 mm, glabrous; leaf blade elliptic to ovate-lanceolate, 4–11 × 1.1–2.4 cm, abaxially glaucous, adaxially green and shining, glabrous on both surfaces even when young, lateral veins 11–16 pairs, base acute or

cuneate, apex acute. Umbels 5- or fewer flowered, solitary or few corymbosely arranged; peduncle 6–10 mm, strongly reflexed. Male flowers: perianth segments 6, oblong; fertile stamens 6, 2-glandular; filaments glabrous. Female flowers in smaller fewer-flowered umbels; perianth more irregular; stigma discoid. Fruit globose, ca. 5 mm in diam., black at maturity; fruiting pedicel 2–4 mm. Fl. Feb–Mar, fr. Jul–Aug.

Sunny slopes, thickets, sparse forests, roadsides, watersides; 1000–3200 m. Fujian, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Xizang, Yunnan [Bhutan, India, N Myanmar, Nepal].

**5. *Litsea rubescens*** Lecomte, *Nouv. Arch. Mus. Hist. Nat.*, sér. 5, 5: 86. 1913.

紅葉木姜子 *hong ye mu jiang zi*

Deciduous shrubs or small trees, 4–10 m tall. Young branchlets red, glabrous. Leaves alternate; petiole 12–16 mm, red when young, glabrous; leaf blade elliptic, lanceolate-elliptic, or rounded-elliptic, 4–6 × 1.7–3.5 cm, glabrous on both surfaces, pinninerved, lateral veins 5–7 pairs, prominent on both surfaces and red when young, base and apex attenuate or apex rounded-obtuse. Umbels axillary, male umbel 10–12-flowered; peduncle 5–10 mm, glabrous. Male flowers: pedicel 3–4 mm, with gray-yellow pubescence; perianth segments 6, yellow, broadly elliptic; fertile stamens 9; filaments short, glabrous, of 3rd whorls each with 2 small yellow glands at base; rudimentary pistil small. Fruit globose, ca. 8 mm in diam.; fruiting pedicel ca. 8 mm, pilose. Fl. Mar–Apr, fr. Sep–Oct.

• Forests, forest margins, gaps of evergreen broad-leaved forests in valleys, thickets on mountain slopes; 700–3800 m. Chongqing, Guizhou, Hubei, Hunan, S Shaanxi, Sichuan, Xizang, Yunnan.

- 1a. Leaf blade elliptic or lanceolate-elliptic; male umbel 10–12-flowered ..... 5a. var. *rubescens*
- 1b. Leaf blade rounded-elliptic; male umbel 15–18-flowered ..... 5b. var. *yunnanensis*

**5a. *Litsea rubescens* var. *rubescens***

紅葉木姜子(原变种) *hong ye mu jiang zi* (*yuan bian zhong*)

*Litsea forrestii* Diels; *L. rubescens* f. *nanchuanensis* Yen C. Yang.

Leaf blade elliptic or lanceolate-elliptic. Male umbel 10–12-flowered.

• Forest margins, gaps of evergreen broad-leaved forests in valleys; 700–3800 m. Chongqing, Guizhou, Hubei, Hunan, S Shaanxi, Sichuan, Xizang, Yunnan.

*Litsea forrestii* was treated in FRPS (31: 332. 1982) as an insufficiently known species. Its short original description shows the branchlets and flowers to be quite similar to those of *L. rubescens* (except for the slightly longer peduncles), and so the two entities are here treated as conspecific.

**5b. *Litsea rubescens* var. *yunnanensis*** Lecomte, *Nouv. Arch. Mus. Hist. Nat.*, sér. 5, 5: 86. 1913.

滇木姜子 *dian mu jiang zi*

Leaf blade rounded-elliptic. Male umbel 15–18-flowered.

• Forests, thickets on mountain slopes; 2300–3400 m. Guizhou, N Yunnan.

**6. *Litsea ichangensis*** Gamble in Sargent, *Pl. Wilson*. 2: 77. 1914.

宜昌木姜子 *yi chang mu jiang zi*

Deciduous shrubs or small trees, up to 8 m tall. Branchlets glabrous. Leaves alternate; petiole 5–15 mm, glabrous; leaf blade obovate or rotund, 2–5 × 2–3 cm, glaucous, barbate in axils of veins, and becoming glabrous abaxially, glabrous adaxially, sometimes glandular-domed in axils of veins abaxially, pinninerved, lateral veins 4–6 pairs, base cuneate, apex acute or rounded-obtuse. Umbels solitary or 2-fascicled, male umbel 9-flowered; peduncle ca. 5 mm, glabrous. Pedicel ca. 5 mm, sericeous-pubescent. Perianth segments 6, yellow, obovate or rotund, 4-nerved outside. Male flowers: fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 yellow small glands at base; rudimentary pistil small, glabrous. Fruit subglobose, ca. 5 mm in diam., black at maturity; fruiting pedicel 1–1.5 cm, glabrous, slightly thickened at apex. Fl. Apr–May, fr. Jul–Aug.

• Thickets, dense forests on mountain slopes; 300–2200 m. SW and W Hubei, W Hunan, E and NE Sichuan.

**7. *Litsea chunii*** W. C. Cheng, *Contr. Biol. Lab. Sci. Soc. China, Bot. Ser.* 9: 196. 1934.

高山木姜子 *gao shan mu jiang zi*

Deciduous shrubs, up to 5 m tall. Young branchlets glabrous. Leaves alternate; petiole flat, 5–10 cm; leaf blade elliptic, elliptic-lanceolate, or elliptic-obovate, 2–9 × 1–4 cm, glabrous or subglabrous, except barbate in vein axils or midrib and vein axils with yellow pubescence, pinninerved, lateral veins 5–8 pairs, fine, base cuneate or rounded, apex acute or obtuse-rounded. Umbels solitary, male umbel 8–12-flowered; peduncle 4–6 mm, glabrous. Male flowers: pedicel 5–10 mm, with yellow pubescence; perianth segments 6, ovate, ovate-oblong, or oblong; fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 yellow sessile small glands at base. Fruit ovoid, 6–8 × 4–6 mm; fruiting pedicel 5–10 mm, thickened at apex, pubescent. Fl. Mar–Apr, fr. Jul–Aug.

• Margins of *Abies-Picea* secondary forests, sunny mountain slopes, streamsides, thickets; 1500–3400 m. S Gansu, W Sichuan, NW Yunnan.

- 1a. Leaf blade inconspicuously reticulate-veined, not scabrous adaxially, glabrous or subglabrous abaxially when young, except for barbate vein axils; petiole pubescent adaxially, glabrous abaxially when young ..... 7a. var. *chunii*
- 1b. Leaf blade conspicuously reticulate-veined, scabrous adaxially, midrib and vein axils with yellow pubescence abaxially; petiole completely pubescent ..... 7b. var. *likiangensis*

**7a. *Litsea chunii* var. *chunii***

高山木姜子(原变种) *gao shan mu jiang zi* (*yuan bian zhong*)

*Litsea chunii* f. *latifolia* Yen C. Yang; *L. chunii* var. *latifolia* (Yen C. Yang) H. S. Kung; *L. chunii* var. *longipedicellata* Yen C. Yang.

Petiole glabrous abaxially when young, pubescent adaxially; leaf blade not scabrous adaxially, glabrous or subglabrous abaxially when young, except for barbate vein axils, inconspicuously reticulate-veined.

- Margins of *Abies-Picea* secondary forests, sunny mountain slopes, streamsides, thickets; 1500–3400 m. S Gansu (Huanxian, Zhugu), W Sichuan, NW Yunnan.

The leaves and fruits are used for their aromatic oil.

**7b. *Litsea chunii* var. *likiangensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 46. 1978.

丽江木姜子 *li jiang mu jiang zi*

Petiole completely pubescent; leaf blade scabrous adaxially, midrib and vein axils with yellow pubescence abaxially, conspicuously reticulate-veined.

- NW Yunnan.

**8. *Litsea tsinlingensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 47. 1978.

秦岭木姜子 *qin ling mu jiang zi*

Deciduous shrubs or small trees, up to 6 m tall. Branchlets glabrous. Leaves alternate; petiole ca. 1 cm, white tomentose when young; leaf blade obovate or obovate-elliptic, 7–11 × 3–5 cm, white tomentose on both surfaces when young, pinninerved, lateral veins 6–8 pairs, base attenuate, apex shortly acuminate or obtuse-rounded. Umbel solitary at apex of branchlet, 10- or 11-flowered, flowering before leaves or with leaves; peduncle 3–4 mm, pubescent. Pedicel 8–12 mm, pubescent. Perianth segments 6, broadly elliptic, 3-nerved and glandular-punctate. Male flowers: fertile stamens 9; filaments short, glabrous, of 3rd whorls each with 2 yellow rounded glands at base; rudimentary pistil lacking. Fruit globose, 5–6 mm in diam., black at maturity; fruiting pedicel 1.5–2 cm, gray-yellow pubescent when young. Fl. Mar–Apr, fr. Jul–Aug.

- Mountain slopes, thickets; 1000–2400 m. SE Gansu, Henan, SW Shaanxi, SW Shanxi (Yongji).

The leaves and fruits are processed for their aromatic oil and are used in food and cosmetics. The seeds contain ca. 54% of oil, which is used for making soap and lauric acid.

**9. *Litsea moupinensis*** Lecomte, Bull. Soc. Bot. France 60: 84. 1913.

宝兴木姜子 *bao xing mu jiang zi*

Deciduous trees, 15–20 m tall. Young branchlets densely or sparsely yellow-brown tomentose. Leaves alternate; petiole 3–13 mm, densely yellow tomentose; leaf blade ovate, rhombic-ovate, oblong, elliptic, or obovate, rarely rotund, 4–15 × 1.5–7 cm, glabrous or sparsely or densely yellow-brown tomentose abaxially, glabrous adaxially, lateral veins 5–7 pairs, base acuminate or cuneate, apex acuminate, shortly acuminate, ob-

tuse, or abruptly acute. Umbel solitary at apex of 1-year-old branchlets, flowering before leaves, male umbel 8–10-flowered; peduncle 2–10 mm, tomentose. Male flowers: pedicel 5–8 mm, tomentose; perianth segments 6, rotund, yellow; fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 stipitate yellow glands at base; rudimentary pistil glabrous. Fruit globose, 3–4 mm in diam., black at maturity; fruiting pedicel 5–10 mm, pubescent. Fl. Mar–Apr, fr. Jul–Aug.

- Roadsides, streamsides, sparse forests, weed-tree forests; 500–2300 m. Sichuan.

- 1a. Leaf blade ovate, rhombic-ovate, or oblong, rarely obovate, acuminate at both ends; fruiting peduncle less than 3 mm ..... 9a. var. *moupinensis*
- 1b. Leaf blade elliptic or obovate, rarely rotund, apex shortly acuminate, obtuse, or abruptly acute, base cuneate; fruiting peduncle more than 3 mm ..... 9b. var. *szechuanica*

**9a. *Litsea moupinensis* var. *moupinensis***

宝兴木姜子(原变种) *bao xing mu jiang zi (yuan bian zhong)*

*Benzoin puberulum* (Franchet) Rehder; *Lindera puberula* Franchet; *Litsea microcarpa* Yen C. Yang; *L. moupinensis* var. *glabrescens* H. S. Kung.

Leaf blade ovate, rhombic-ovate, or oblong, rarely obovate, acuminate at both ends. Fruiting peduncle less than 3 mm.

- Roadsides, weed-tree forests; 700–2300 m. Sichuan.

*Litsea moupinensis* var. *glabrescens* was established only on the basis of having sparse hairs on the branchlets and leaves. The present authors do not consider these differences to justify formal taxonomic recognition.

The leaves may be processed for their aromatic oil.

**9b. *Litsea moupinensis* var. *szechuanica*** (C. K. Allen) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 47. 1978.

四川木姜子 *si chuan mu jiang zi*

*Litsea szechuanica* C. K. Allen, J. Arnold Arbor. 22: 18. 1941.

Leaf blade elliptic or obovate, rarely rotund, apex shortly acuminate, obtuse, or abruptly acute, base cuneate. Fruiting peduncle more than 3 mm.

- Streamsides, sparse forests in mountain valleys; 500–2100 m. Sichuan.

The fruit is used medicinally.

**10. *Litsea taronensis*** H. W. Li, Acta Phytotax. Sin. 16(4): 47. 1978.

独龙木姜子 *du long mu jiang zi*

Deciduous trees, ca. 15 m tall. Branchlets gray-yellow pubescent. Leaves alternate; petiole 1.2–1.5 cm, gray-yellow pubescent when young; leaf blade elliptic or oblong, 11–13.5 × 3.2–4.5 cm, densely shortly tomentose and along veins sparsely

pubescent abaxially, puberulent adaxially when young, pinninerved, lateral veins 5 or 6 pairs, transverse veins connected, base and apex attenuate. Umbels in pairs seated on short branchlets ca. 3 mm, male umbel 12–14-flowered; peduncle 5–6 mm, sericeous-pubescent. Pedicel 3–4 mm, densely sericeous-pubescent. Perianth segments 6, ovate or ovate-rounded. Male flowers: fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 subsessile rounded-cordate glands at base; rudimentary pistil lacking. Fl. Nov.

• Broad-leaved forests on mountain slopes; ca. 2200 m. NW Yunnan.

**11. *Litsea mollis*** Hemsley, J. Linn. Soc., Bot. 26: 383. 1891.

毛叶木姜子 mao ye mu jiang zi

*Litsea euosma* W. W. Smith; *L. mollifolia* Chun, nom. illeg. superfl.

Deciduous shrubs or small trees, up to 4 m tall. Young branchlets covered with pubescence. Leaves alternate or clustered at apex of branchlet; petiole 1–1.5 cm, covered with white pubescence; leaf blade oblong or elliptic, 4–12 × 2–4.8 cm, glaucous and with dense white pubescence abaxially, glabrous adaxially, pinninerved, lateral veins 6–9 pairs, base cuneate, apex abruptly acute. Umbels axillary, often 2- or 3-fascicled on short branchlets, male umbel 4–6-flowered, flowering before leaves or with leaves; peduncle ca. 6 mm, white pubescent. Male flowers: perianth segments 6, yellow, broadly obovate; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 yellow peltate-cordate glands at base; rudimentary pistil absent. Fruit globose, ca. 5 mm in diam., blue-black at maturity; fruiting pedicel 5–6 mm, sparsely pubescent. Fl. Mar–Apr, fr. Sep–Oct.

Thickets or broad-leaved forests on mountain slopes; 600–2800 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, E Xizang, Yunnan [N Thailand].

The fruit is processed for its aromatic oil (3%–5%). The seeds contain ca. 25% oil and are used as a main ingredient in soaps. The roots and fruit are also used medicinally.

**12. *Litsea pungens*** Hemsley, J. Linn. Soc., Bot. 26: 384. 1891.

木姜子 mu jiang zi

*Litsea kangdingensis* H. S. Kung.

Deciduous small trees, 3–10 m tall. Young branchlets pubescent. Leaves alternate, often clustered at apex of branchlet; petiole 1–2 cm, pubescent when young; leaf blade lanceolate or obovate-lanceolate, 4–15 × 2–5.5 cm, sericeous-pubescent abaxially when young and becoming glabrous or pilose along midrib, pinninerved, lateral veins 5–7 pairs, base cuneate, apex shortly acute. Umbel axillary, 8–12-flowered, flowering before leaves; peduncle 5–8 mm, glabrous. Pedicel 5–6 mm, sericeous-pubescent. Perianth segments 6, yellow, obovate. Male flowers: fertile stamens 9; filaments pubescent at base, of 3rd whorls each with 2 yellow rounded glands at base; rudimentary pistil small, glabrous. Fruit globose, 7–10 mm in diam., blue-black at maturity; fruiting pedicel 1–2.5 cm, slightly thickened

at apex. Fl. Mar–May, fr. Jul–Sep.

• Streamsides, weed-tree forests or forest margins on sunny slopes; 800–2300 m. Gansu, N Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Shaanxi, S Shanxi, Sichuan, Xizang, Yunnan, S Zhejiang.

The fruit contains aromatic oil (dry fruit 2%–6%, fresh fruit 3%–4%); its main ingredients are citral (60%–90%) and geraniol (5%–19%). The fruit is used in food and cosmetics and is also widely used as a component of high-grade spices, vitamin A, and ionone. The seeds contain ca. 48% of oil, which may be used in industry and for making soap.

**13. *Litsea sericea*** (Wallich ex Nees) J. D. Hooker, Fl. Brit. India 5: 156. 1886.

绢毛木姜子 juan mao mu jiang zi

*Tetranthera sericea* Wallich ex Nees in Wallich, Pl. Asiat. Rar. 2: 67. 1831; *Lindera esquirolii* H. Léveillé; *L. griffithii* Meisner; *L. hookeri* Meisner; *Litsea oreophila* J. D. Hooker.

Deciduous shrubs or small trees, up to 6 m tall. Young branchlets covered with dense ferruginous or yellow-white sericeous long hairs. Leaves alternate; petiole 1–1.2 cm, densely hairy like young branchlets; leaf blade oblong-lanceolate, 8–12 × 2–4 cm, densely yellow-white or ferruginous long sericeous on both surfaces when young, pinninerved, lateral veins 7 or 8 pairs, base cuneate, apex acuminate. Umbels solitary at apex of 1-year-old branchlets, 8–20-flowered, flowering before leaves or with leaves; peduncle 6–7 mm, glabrous. Pedicel 5–7 mm, pubescent. Perianth segments 6, elliptic, 3-nerved. Male flowers: fertile stamens 9, sometimes 6 or 12; filaments short, glabrous, of 3rd whorls each with 2 yellow glands at base; rudimentary pistil ovoid. Fruit subglobose, ca. 5 mm in diam., apiculate at apex; fruiting pedicel 1.5–2 cm. Fl. Apr–May, fr. Aug–Sep.

Roadsides, thickets, mixed forests of coniferous and broad-leaved trees; 400–3400 m. Guizhou, W Sichuan, SE Xizang, NW Yunnan [India, Nepal].

**14. *Litsea veitchiana*** Gamble in Sargent, Pl. Wilson. 2: 76. 1914.

钝叶木姜子 dun ye mu jiang zi

Deciduous shrubs or small trees, up to 4 m tall. Young branchlets yellow-white long sericeous and becoming glabrous. Leaves alternate; petiole 1–1.2 cm, densely hairy like young branchlets and becoming glabrous; leaf blade obovate or obovate-oblong, 4–15 × 2.5–5.5 cm, densely hairy like young branchlets on both surfaces when young, becoming sparsely long sericeous abaxially, glabrous or only midrib hairy adaxially, pinninerved, lateral veins 6–9 pairs, base cuneate or broadly cuneate, apex acute or obtuse. Umbels solitary at apex of 1-year-old branchlets, 10–13-flowered, flowering before leaves or with leaves. Male flowers: pedicel 5–7 mm; perianth segments 6, elliptic or rotund, 3-nerved and glandular; fertile stamens 9; filaments pubescent at base, of 3rd whorls each with 2 large glands at base; rudimentary pistil ovoid. Fruit globose, ca. 5 mm in diam., young fruit glabrous or appressed puberulent, black at maturity; fruiting pedicel 1.5–2 cm, sparsely long

hairy. Fl. Apr–May, fr. Aug–Sep.

• Roadsides or thickets on mountain slopes; 400–3800 m. Guizhou, Hubei, Sichuan, NW Yunnan.

1a. Young fruit glabrous; leaf blade smaller, mostly less than 10 cm ..... 14a. var. *veitchiana*

1b. Young fruit appressed puberulent; leaf blade larger, mostly more than 10 cm ..... 14b. var. *trichocarpa*

**14a. *Litsea veitchiana* var. *veitchiana***

钝叶木姜子(原变种) *dun ye mu jiang zi* (yuan bian zhong)

*Litsea chenii* H. Liu.

Leaf blade smaller, mostly less than 10 cm. Young fruit glabrous.

• Roadsides or thickets on mountain slopes; 400–3800 m. Guizhou, Hubei, Sichuan, NW Yunnan.

**14b. *Litsea veitchiana* var. *trichocarpa*** (Yen C. Yang) H. S. Kung ex Yen C. Yang et al., *Acta Phytotax. Sin.* 16(4): 48. 1978.

毛果木姜子 *mao guo mu jiang zi*

*Litsea sericea* (Wallich ex Nees) J. D. Hooker var. *trichocarpa* Yen C. Yang, *J. W. China Border Res. Soc.*, Ser. B, 15: 79. 1945.

Leaf blade larger, mostly more than 10 cm. Young fruit appressed puberulent.

• Thickets; 2200–2500 m. Sichuan.

**15. *Litsea glutinosa*** (Loureiro) C. B. Robinson, *Philipp. J. Sci.*, C, 6: 321. 1911.

潺槁木姜子 *chan gao mu jiang zi*

Evergreen or deciduous trees, 3–15 m tall. Young branchlets gray-yellow tomentose. Leaves alternate; petiole 1–2.6 cm, gray-yellow tomentose; leaf blade obovate, obovate-oblong, or elliptic-lanceolate, 3.5–10(–26) × 1.5–11 cm, tomentose on both surfaces when young, tomentose or subglabrous abaxially and only midrib slightly tomentose adaxially when old, pinninerved, lateral veins 5–12 pairs, base cuneate, obtuse, or rotund, apex obtuse or rounded. Umbels solitary or several on short branchlets, few flowered; short branchlets 2–4 cm or more; peduncle 1–1.5 cm. Male flowers: pedicel tomentose; perianth segments imperfect or lacking; fertile stamens often 15 or more; filaments pubescent, of 3rd each with 2 long stipitate glands at base; rudimentary pistil glabrous. Fruit globose, 5–7 mm in diam.; fruiting pedicel 3–6 mm, slightly thickened at apex. Fl. May–Jun, fr. Sep–Oct.

Forest margins, streamsides, sparse forests or thickets; 500–1900 m. Fujian, Guangdong, Guangxi, Hainan, S Yunnan [Bhutan, India, Myanmar, Nepal, Philippines, Thailand, Vietnam].

1a. Leaf blade larger, 6.5–26 × 5–11 cm; lateral veins 8–12 pairs; fruit ca. 7 mm in diam., pedicel more than 5 mm ..... 15a. var. *glutinosa*

1b. Leaves smaller, 3.5–6.5 × 1.5–3.3 cm; lateral veins 5–8 pairs; fruit ca. 5 mm in diam., pedicel ca. 3 mm ..... 15b. var. *brideliifolia*

**15a. *Litsea glutinosa* var. *glutinosa***

潺槁木姜子(原变种) *chan gao mu jiang zi* (yuan bian zhong)

*Sebifera glutinosa* Loureiro, *Fl. Cochinch.* 2: 638. 1790; *Litsea sebifera* Persoon.

Leaf blade larger, 6.5–26 × 5–11 cm, lateral veins 8–12 pairs. Fruit ca. 7 mm in diam.; fruiting pedicel 5–6 mm.

Forest margins, streamsides, sparse forests or thickets on mountains; 500–1900 m. Fujian, Guangdong, Guangxi, S Yunnan [Bhutan, India, Nepal, Philippines, Vietnam].

The wood is yellow-brown, slightly hard, and used for making furniture. The bark and wood contain gluten and may be used as binders. The seed core contains ca. 50% of oil, which is used to make soap. The root bark and leaves are used medicinally to reduce fever, reduce swelling, and treat diarrhea; they also may be used for treating furunculosis.

**15b. *Litsea glutinosa* var. *brideliifolia*** (Hayata) Merrill, *Lingnaam Agric. Rev.* 1: 84. 1923.

白野槁树 *bai ye gao shu*

*Litsea brideliifolia* Hayata, *Icon. Pl. Formosan.* 5: 166. 1915; *L. glutinosa* var. *brachyphylla* (Handel-Mazzetti) L. C. Wang; *L. sebifera* var. *brachyphylla* Handel-Mazzetti.

Leaf blade smaller, 3.5–6.5 × 1.5–3.3 cm, lateral veins 5–8 pairs. Fruit ca. 5 mm in diam.; fruiting pedicel ca. 3 mm.

Sparse forests or thickets; 500–1400 m. Guangdong, Guangxi, Hainan [Myanmar, Thailand].

**16. *Litsea morrisonensis*** Hayata, *J. Coll. Sci. Imp. Univ. Tokyo* 30(1): 350. 1911.

玉山木姜子 *yu shan mu jiang zi*

*Actinodaphne morrisonensis* (Hayata) Hayata; *Fiwa morrisonensis* (Hayata) Nakai.

Small trees. Branchlets slender, glabrous. Leaves alternate; petiole ca. 1 cm, glabrous; leaf blade oblanceolate, 9–15 × 2.5–3 cm, shortly hirsute along veins abaxially, glabrous adaxially, pinninerved, lateral veins ca. 12 pairs, prominent abaxially, obscure adaxially, base cuneate or obtuse, apex obtusely acuminate. Umbels axillary, pedunculate; involucre bracts ca. 4, decussate. Pedicel short, densely pubescent. Perianth tube short; perianth segments 3 or 4, oblong, ca. 2.5 cm, villous outside. Male flowers: fertile stamens 9, ca. 4.5 mm, exserted; filaments pubescent, of 3rd whorls each with 2 stipitate glands at base; anthers of 1st and 2nd whorls all introrse and 4-celled, of 3rd whorls upper 2 cells introrse, lower 2 cells lateral; rudimentary pistil lacking. Fruit ellipsoid, seated on shallowly cup-shaped perianth tube. Fl. Jun–Sep.

• Evergreen broad-leaved forests; 1000–2800 m. Taiwan.

This species was treated in FRPS (31: 257. 1982) as *Actinodaphne morrisonensis*. However, its four decussate involucre bracts are characteristic of *Litsea*, and so it should be included in that genus.

**17. *Litsea verticillifolia*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 48. 1978.

琼南木姜子 qiong nan mu jiang zi

Evergreen shrubs, ca. 3 m tall. Branchlets densely ferruginous tomentose. Leaves 3–6-verticillate; petiole ca. 5 mm, densely hairy like branchlets; leaf blade obovate-lanceolate, 3.5–6.8 × 0.9–2.8 cm, glabrous except for midrib on both surfaces and glaucous abaxially, pinninerved, lateral veins 9–11 pairs, base cuneate, apex obtuse or obtuse-acute. Umbels lateral, usually 3- or 4-clustered, male umbel 5-flowered; peduncle almost absent; involucre bracts 5, broadly ovate. Pedicel short, densely ferruginous sericeous-pubescent. Perianth segments 6, ovate. Male flowers: fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 rounded small glands at base. Fruit not seen.

• Dense forests. S Hainan.

**18. *Litsea verticillata*** Hance, J. Bot. 21: 356. 1883.

轮叶木姜子 lun ye mu jiang zi

*Litsea brevipetiolata* Lecomte; *L. multiumbellata* Lecomte; *L. multiumbellata* f. *annamensis* H. Liu; *L. verticillata* f. *annamensis* (H. Liu) C. K. Allen; *L. verticillata* var. *brevipes* Merrill & F. P. Metcalf; *L. verticillata* var. *brevipetiolata* (Lecomte) C. K. Allen.

Evergreen shrubs or small trees, 2–5 m tall. Young branchlets densely yellow hirsute and becoming glabrous. Leaves 4–6-verticillate; petiole 2–6 mm, densely yellow villous; leaf blade long lanceolate or long elliptic-oblong, 7–25 × 2–6 cm, pubescent abaxially, pinninerved, lateral veins 12–14 pairs, base acute, obtuse, or rotund, apex acuminate. Umbels in cluster of 2–10 at apex of branchlet, 5–8-flowered, pale yellow, subsessile. Perianth segments (4–)6, lanceolate. Male flowers: fertile stamens 9; filaments exerted, villous, of 3rd whorls each with 2 peltate-cordate glands at base; rudimentary pistil lacking. Fruit ovoid or ellipsoid, 10–15 × 5–6 mm, seated on discoid perianth tube; fruiting pedicel short. Fl. Apr–Nov, fr. Nov–Jun of next year.

Valleys, streamsides, thickets, weed-tree forests; below 1300 m. Guangdong, Guangxi, Hainan, S Yunnan [Cambodia, NE Thailand, Vietnam].

This species has a strong capacity for sprouting. The wood is relatively hard and is used for fuel. The roots and leaves are used medicinally for treating rheumatism and relieving menstrual cramping and soreness; the leaves are also applied to fractured bones and snake bites.

**19. *Litsea variabilis*** Hemsley, J. Linn. Soc., Bot. 26: 386. 1891.

黄椿木姜子 huang chun mu jiang zi

Evergreen shrubs or trees, up to 15 m tall. Branchlets puberulent, subglabrous, or appressed pubescent. Leaves opposite or subopposite, rarely alternate on same tree; petiole 8–10 mm, hairy like branchlets; leaf blade usually elliptic, oblong, or obovate, 5–14 × 2–4.5 cm, glabrous or subglabrous on both surfaces or densely gray-yellow pubescent abaxially, lateral veins 5 or 6 pairs, base cuneate or broadly cuneate, often red in a

dried state, apex acuminate, obtuse, or slightly rounded. Umbels often in cluster of 3–8, axillary, 3-flowered; peduncle short, pubescent. Male flowers: pedicel very short; perianth segments 6, spatulate; fertile stamens 9; filaments pilose, of 3rd whorls each with 2 yellow subsessile rounded small glands at base. Fruit globose, 7–8 mm in diam., seated on discoid perianth tube, black at maturity; fruiting pedicel extremely stout and short. Fl. May–Nov, fr. Sep–May of next year.

Broad-leaved forests, streamsides, dense forests on mountain slopes; 300–1700 m. Guangdong, S and W Guangxi, Hainan, SE Yunnan [Laos, N Thailand, Vietnam].

- 1a. Branchlets, petioles, and leaf blade abaxially puberulent, subglabrous, or glabrous; leaf blade conspicuously reticulate-veined abaxially ..... 19a. var. *variabilis*
- 1b. Branchlets, petioles, and leaf blade abaxially densely gray-yellow appressed pubescent; leaf blade inconspicuously reticulate-veined abaxially ..... 19b. var. *oblonga*

**19a. *Litsea variabilis* var. *variabilis***

黄椿木姜子(原变种) huang chun mu jiang zi (yuan bian zhong)

*Litsea iteodaphne* (Nees) J. D. Hooker f. *chinensis* C. K. Allen; *L. variabilis* f. *chinensis* (C. K. Allen) Yen C. Yang & P. H. Huang.

Branchlets and petioles puberulent or subglabrous. Leaf blade glabrous or subglabrous on both surfaces, conspicuously reticulate-veined abaxially.

Broad-leaved forests, streamsides; 300–1700 m. Guangdong, S Guangxi, Hainan, SE Yunnan [Laos, Vietnam].

The wood is heavy, slightly hard, not fissile, resistant to water and borer insects, and is used for furniture and construction.

**19b. *Litsea variabilis* var. *oblonga*** Lecomte, Nouv. Arch. Mus. Hist. Nat., sér. 5, 5: 90. 1913.

毛黄椿木姜子 mao huang chun mu jiang zi

*Litsea variabilis* var. *tonkinensis* Lecomte.

Branchlets and petioles densely gray-yellow appressed pubescent. Leaf blade abaxially densely gray-yellow appressed pubescent, inconspicuously reticulate-veined abaxially.

Dense forests on mountain slopes; 600–900 m. W Guangxi, SE Yunnan [Vietnam].

**20. *Litsea lancifolia*** (Roxburgh ex Nees) Benth & J. D. Hooker ex Fernández-Villar in Blanco, Fl. Filip., ed. 3, 4(Nov. App.): 181. 1880.

剑叶木姜子 jian ye mu jiang zi

Evergreen shrubs, ca. 3 m tall. Branchlets ferruginous tomentose or gray-yellow appressed pubescent. Leaves opposite or alternate on same tree; petiole 3–10 mm, hairy like branchlets; leaf blade elliptic, oblong, lanceolate, oblong-lanceolate, or elliptic-lanceolate, 5–10 × 2.4–4.5 cm, yellow-brown or ferruginous tomentose or gray-yellow appressed

pubescent abaxially, lateral veins 5–8 pairs, base cuneate or rotund, apex acute or acuminate. Umbel axillary, solitary or clustered, male umbel 3-flowered; peduncle nearly absent or 5–7 mm. Male flowers: pedicel ca. 1 mm; perianth segments 6, lanceolate or oblong; fertile stamens 9, sometimes 6; filaments pubescent, of 3rd whorls each with 2 sessile small rounded glands at base; rudimentary pistil small. Fruit globose or ellipsoid, seated on shallowly discoid perianth tube; fruiting pedicel ca. 3 mm. Fl. May–Jun, fr. Jul–Aug.

Thickets, streamsides, forests; 100–2000 m. SW Guangxi, Hainan, S and SW Yunnan [Bhutan, India, Philippines, Thailand, Vietnam].

- 1a. Branchlets, petioles, and leaf blade abaxially gray-yellow appressed pubescent; petiole more than 5 mm; peduncle 5–7 mm ..... 20c. var. *pedicellata*
- 1b. Branchlets, petioles, and leaf blade abaxially yellow-brown or ferruginous tomentose; petiole ca. 3 mm; peduncle short or nearly absent.
  - 2a. Fruit globose, ca. 10 mm in diam.; leaf blade elliptic, oblong, or elliptic-lanceolate ..... 20a. var. *lancifolia*
  - 2b. Fruit ellipsoid, ca. 15 × 7 mm; leaf blade lanceolate or oblong-lanceolate ..... 20b. var. *ellipsoidea*

**20a. *Litsea lancifolia* var. *lancifolia***

剑叶木姜子(原变种) jian ye mu jiang zi (yuan bian zhong)

*Tetranthera lancifolia* Roxburgh ex Nees in Wallich, Pl. Asiat. Rar. 2: 65. 1831.

Branchlets ferruginous tomentose. Petiole ca. 3 mm, densely ferruginous tomentose; leaf blade elliptic, oblong, or elliptic-lanceolate, yellow-brown or ferruginous tomentose abaxially. Peduncle nearly absent. Fruit globose, ca. 1 cm in diam.

Streamsides, mixed forests in valleys; below 1000 m. SW Guangxi, Hainan, S Yunnan [Bhutan, India, Philippines, Vietnam].

**20b. *Litsea lancifolia* var. *ellipsoidea*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 49. 1978.

椭圆果木姜子 tuo yuan guo mu jiang zi

Branchlets ferruginous tomentose. Petiole ca. 3 mm, densely ferruginous tomentose; leaf blade lanceolate or oblong-lanceolate, ferruginous tomentose abaxially. Fruit ellipsoid, ca. 15 × 7 mm.

- Forests in valleys; 1200–2000 m. SW Yunnan.

**20c. *Litsea lancifolia* var. *pedicellata*** J. D. Hooker, Fl. Brit. India 5: 159. 1886.

有梗木姜子 you geng mu jiang zi

Branchlets gray-yellow appressed pubescent. Petiole 5–10 mm, hairy like branchlets; leaf blade oblong or lanceolate, gray-yellow appressed pubescent abaxially. Peduncle 5–7 mm. Fruit

globose, ca. 1 cm in diam.

Thickets, streamsides, and mixed forests on mountain slopes; 100–1700 m. S Yunnan [India].

**21. *Litsea rotundifolia*** Hemsley, J. Linn. Soc., Bot. 26: 385. 1891.

圆叶豺皮樟 yuan ye chai pi zhang

Evergreen shrubs or small trees, up to 3 m tall. Branchlets glabrous or subglabrous. Leaves scattered; petiole 3–10 mm, pubescent when young and becoming glabrous; leaf blade broadly ovate-rounded, rotund, ovate, or ovate-oblong, glabrous on both surfaces and glaucous abaxially, pinninerved, lateral veins 3 or 4 pairs, base rotund, rounded, obtuse, or cuneate, apex obtuse-rounded, acuminate, or shortly acuminate. Umbels often in cluster of 3, axillary, almost sessile, 3- or 4-flowered. Male flowers subsessile; perianth segments 6, obovate-rounded, unequal in size; filaments pilose, of 3rd whorls each with 2 rounded small glands at base; rudimentary pistil glabrous. Fruit globose, ca. 6 mm in diam., subsessile, gray-blue-black at maturity. Fl. Aug–Sep, fr. Sep–Nov.

Sparse forests, thickets on lower areas of mountains, roadsides on mountains, riversides; below 800 m. Fujian, Guangdong, Guangxi, Hainan, Hunan, Jiangxi, Taiwan, Zhejiang [Vietnam].

- 1a. Leaf blade broadly ovate-rounded to rotund, base rotund ..... 21a. var. *rotundifolia*
- 1b. Leaf blade ovate or ovate-oblong, base rounded, cuneate, or obtuse.
  - 2a. Leaf blade ovate, base rounded; petiole more than 6 mm ..... 21b. var. *ovatifolia*
  - 2b. Leaf blade ovate-oblong, base cuneate or obtuse; petiole less than 5 mm ..... 21c. var. *oblongifolia*

**21a. *Litsea rotundifolia* var. *rotundifolia***

圆叶豺皮樟(原变种) yuan ye chai pi zhang (yuan bian zhong)

*Actinodaphne chinensis* Nees var. *rotundifolia* (Nees) Nees; *A. rotundifolia* (Nees) Merrill; *Iozoste chinensis* Blume var. *rotundifolia* (Nees) Blume; *I. rotundifolia* Nees.

Petiole stout and short, 3–5 mm; leaf blade broadly ovate-rounded to rotund, 2.2–4.5 × 1.5–4 cm, base rotund, apex obtuse-rounded or shortly acuminate, inconspicuously reticulate-veined on both surfaces.

- Sparse forests, thickets on lower areas of mountains; low elevations. Guangdong, Guangxi.

**21b. *Litsea rotundifolia* var. *ovatifolia*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 49. 1978.

卵叶豺皮樟 luan ye chai pi zhang

Petiole longer, 6–10 mm; leaf blade ovate, 4–7 × 1.5–2.7 cm, base rounded, apex acuminate or shortly acuminate, conspicuously reticulate-veined on both surfaces.

- Riversides. Guangdong.

**21c. *Litsea rotundifolia* var. *oblongifolia*** (Nees) C. K. Allen,

Ann. Missouri Bot. Gard. 25: 386. 1938.

豹皮樟 *chai pi zhang*

*Actinodaphne chinensis* var. *oblongifolia* Nees, Syst. Laur. 600. 1836, based on *Litsea chinensis* Blume, Bijdr. 565. 1826, not Lamarck (1792); *A. chinensis* Nees, nom. illeg. superfl.; *A. hypoleucophylla* Hayata; *Fiwa hypoleucophylla* (Hayata) Nakai; *Iozoste chinensis* Blume; *I. rotundifolia* var. *oblongifolia* Nees ex Hooker & Arnott; *L. hypoleucophylla* (Hayata) T. S. Liu & J. C. Liao.

Petiole 3–5 mm; leaf blade ovate-oblong, 2.5–5.5 × 1–2.2 cm, base cuneate or obtuse, apex obtuse or shortly acuminate, inconspicuously reticulate-veined on both surfaces.

Sparse forests, thickets on lower areas of mountains, roadsides on mountains; below 800 m. Fujian, Guangdong, Guangxi, Hainan, Hunan, Jiangxi, Taiwan, Zhejiang [Vietnam].

The seeds contain ca. 64% oil and may be used in industry. The leaves and fruit are used for their aromatic oil. The roots and leaves are used as medicine.

**22. *Litsea coreana*** H. Léveillé, Repert. Spec. Nov. Regni Veg. 10: 370. 1912.

朝鲜木姜子 *chao xian mu jiang zi*

Evergreen trees, 8–15 m tall, 30–40 cm d.b.h. Bark gray, scaly peeled off, with collated spots exposed. Branchlets glabrous or densely gray-yellow villous. Leaves alternate; petiole 6–22 mm, glabrous or hairy; leaf blade obovate-elliptic, obovate-lanceolate, oblong, or lanceolate, 4.5–9.5 × 1.4–4 cm, glabrous or villous on both surfaces, lateral veins 7–10 pairs, base cuneate, apex obtuse-acuminate or acute. Umbels axillary, 3- or 4-flowered; peduncle very short or absent. Male flowers: pedicel stout and short, densely villous; perianth segments 6, ovate or elliptic; fertile stamens 9; filaments villous, of 3rd whorls each with 2 stipitate sagittate glands at base; rudimentary pistil lacking. Fruit subglobose, 7–8 mm in diam., seated on flat perianth tube; perianth segments persistent; fruiting pedicel ca. 5 mm. Fl. Aug–Sep, fr. summer of next year.

Evergreen broad-leaved forests, weed-tree forests; 300–2300 m. Anhui, Fujian, N Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Korea, Japan].

One of the four syntypes of *Litsea coreana*, *Taquet 1356* (E), belongs to *Machilus thumbergii* according to Lauener (Notes Roy. Bot. Gard. Edinburgh 40: 353. 1982).

- 1a. Branchlets, leaf blade abaxially, and petioles densely gray-yellow villous ..... 22c. var. *lanuginosa*
- 1b. Branchlets glabrous; leaf blade glabrous abaxially or on both surfaces; petiole glabrous or pubescent adaxially and glabrous abaxially.
  - 2a. Leaf blade obovate-elliptic or obovate-lanceolate, apex obtuse-acuminate; petiole glabrous ..... 22a. var. *coreana*
  - 2b. Leaf blade oblong or lanceolate, apex acute; petiole pubescent adaxially and glabrous abaxially .... 22b. var. *sinensis*

**22a. *Litsea coreana* var. *coreana***

朝鲜木姜子(原变种) *chao xian mu jiang zi* (yuan bian zhong)

*Actinodaphne lancifolia* (Siebold & Zuccarini) Meisner; *Daphnidium lancifolium* Siebold & Zuccarini; *Iozoste lancifolia* (Siebold & Zuccarini) Blume; *Litsea orientalis* C. E. Chang; *L. zuccarinii* Kostermans.

Branchlets glabrous. Petiole 6–16 mm, glabrous; leaf blade obovate-elliptic or obovate-lanceolate, glabrous on both surfaces and glaucous abaxially, apex obtuse-acuminate.

Evergreen broad-leaved forests. C Taiwan [Korea, Japan].

This species was long known as *Actinodaphne lancifolia*. However, the species is characterized by scattered leaves, sessile umbels, and persistent bracts, and so does not belong in *Actinodaphne*.

The wood is used for construction, tools, musical instruments, etc.

**22b. *Litsea coreana* var. *sinensis*** (C. K. Allen) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 49. 1978.

豹皮樟 *bao pi zhang*

*Actinodaphne lancifolia* var. *sinensis* C. K. Allen, Ann. Missouri Bot. Gard. 25: 406. 1938; *Iozoste hirtipes* Migo.

Branchlets glabrous. Petiole 6–16 mm, glabrous abaxially, pubescent adaxially; leaf blade oblong or lanceolate, glabrous abaxially, along midrib pubescent at base adaxially when young, apex acute.

• Weed-tree forests on mountains; below 900 m. Anhui, Fujian, Henan, Hubei, Jiangsu, Jiangxi, Zhejiang.

This variety has often been confused with *Litsea rotundifolia* var. *oblongifolia* by some authors, but it differs in having scaly fissured bark, a stout and flat fruiting pedicel, black mature fruit, and persistent perianth segments.

The roots are used medicinally for curing stomach pain.

**22c. *Litsea coreana* var. *lanuginosa*** (Migo) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 50. 1978.

毛豹皮樟 *mao bao pi zhang*

*Iozoste hirtipes* var. *lanuginosa* Migo, Bull. Shanghai Sci. Inst. 14: 300. 1944.

Branchlets densely gray-yellow villous. Petiole 10–22 mm, gray-yellow villous; young leaf blade gray-yellow villous on both surfaces, more densely so abaxially.

• Weed-tree forests in valleys; 300–2300 m. Anhui, Fujian, N Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang.

**23. *Litsea hupehana*** Hemsley, J. Linn. Soc., Bot. 26: 382. 1891.

湖北木姜子 *hu bei mu jiang zi*

Evergreen trees or small trees, up to 10 m tall, ca. 20 cm d.b.h. Young branchlets gray pubescent and becoming glabrous. Leaves alternate; petiole 10–18 mm; leaf blade narrowly lanceolate or lanceolate to elliptic, 10–13 × 2–3.5 cm, glaucous and along midrib gray-white villous abaxially, midrib near base

pubescent adaxially, pinninerved, lateral veins 10–19 pairs, prominent on both surfaces, base rotund or cuneate, apex acuminate or acute. Umbels solitary or in cluster of 2, axillary, male umbel 4- or 5-flowered; peduncle ca. 2 mm, sericeous-pubescent. Pedicel 3–4 mm, gray sericeous-pubescent. Perianth segments 6, ovate. Male flowers: fertile stamens 9; filaments gray villous, of 3rd whorls each with 2 sessile peltate glands at base. Fruit subglobose, 7–8 mm in diam., seated on flat perianth tube; perianth segments persistent, straight and regular; fruiting pedicel 3–4 mm, stout. Fl. Aug–Sep, fr. May–Jun.

• Broad-leaved forests on mountain slopes; 800–1400 m. W Hubei, E Sichuan.

**24. *Litsea honghoensis*** H. Liu, Bull. Soc. Bot. France 80: 567. 1933.

红河木姜子 hong he mu jiang zi

*Litsea wenshanensis* Hu.

Evergreen trees up to 10 m tall, ca. 30 cm d.b.h. Branchlets glabrous. Leaves alternate or clustered at apex of branchlet; petiole 1–1.5 cm, glabrous; leaf blade long elliptic to obovate-lanceolate, 10–19 × 2–6 cm, glaucous and glabrous or along veins hairy abaxially, glabrous adaxially, pinninerved, lateral veins 7–10 pairs, base cuneate, apex acuminate to acute. Umbels solitary or clustered, axillary, male umbel 3–5-flowered; peduncle 8–12 mm, glabrous. Pedicel ca. 2 mm, pubescent. Perianth segments 6, rounded. Male flowers: fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 sessile large long ellipsoid glands at base; rudimentary pistil glabrous. Fruit globose, 2–3 cm in diam.; fruiting pedicel ca. 3 mm, slightly stout, somewhat thickened at apex; perianth segments persistent; infructescence peduncles ± hairy. Fl. Feb–Mar, fr. Aug–Sep.

• Forests in valleys; 1300–2200 m. S and SE Yunnan.

**25. *Litsea cangyuanensis*** J. Li & H. W. Li, Acta Bot. Yunnan. 28: 104. 2006.

沧源木姜子 cang yuan mu jiang zi

Trees, up to 28 m tall, 30–50 cm d.b.h. Branchlets yellow-brown when dry, slender, 2–3 mm in diam., glabrous. Leaves alternate; petiole 1–1.5 cm, concave-convex, glabrous; leaf blade abaxially glaucous-green, adaxially yellow-green, oblong, 11.5–18 × 4.5–7.5 cm, glabrous and conspicuously foveolate on both surfaces, pinninerved, midrib elevated on both surfaces, lateral veins 7–10 pairs, obliquely patent, anastomosing near margin, base broadly cuneate to subrotund, apex mucronate. Pseudumbels 1 or 2, inserted on axillary short shoot 1–3 cm with a vegetable-terminal bud, ca. 5-flowered, flowers subsessile when in bud; peduncles 1.5–3 mm, glabrous; involucre bracts 4, orbicular. Fruits ovoid, 2.5–3 cm in diam., ca. 3.5 cm; fruiting pedicel 7–10 mm in fruit, glabrous, verrucose, shallowly cup-shaped at apex; cupules undulate-lobed on margin; infructescence peduncles ca. 1 cm, glabrous, verrucose. Fl. Oct, fr. Jun of next year.

• Dense forests in humid valleys, evergreen broad-leaved forests; 1000–1300 m. SW Yunnan (Cangyuan).

**26. *Litsea foveola*** Kostermans, Reinwardtia 10: 466. 1988.

蜂窝木姜子 feng wo mu jiang zi

*Litsea foveolata* Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 50. 1978, not (Merrill) Kostermans (1970).

Evergreen shrubs or small trees, 3–5 m tall. Young branchlets gray-yellow villous. Leaves alternate or clustered at apex of branchlet; petiole 4–7(–20) mm, densely gray-yellow villous; leaf blade elliptic or oblong, 5–22 × 2.2–7 cm, along veins pubescent abaxially, conspicuously foveolate adaxially, pinninerved, lateral veins 10–16 pairs, base cuneate, apex abruptly acute or shortly acuminate. Umbels axillary, often 2-clustered at apex of branchlet, 4- or 5-flowered; peduncle 2–3 mm, pubescent. Male flowers: pedicel ca. 1 mm, gray pubescent; perianth segments 6, ovate or obovate; fertile stamens 9–12; filaments exerted, gray-yellow villous, of 3rd whorls each with 2 shortly stipitate peltate or obconic glands at base; rudimentary pistil small, ca. 1.5 mm. Fruit globose, ca. 10 mm in diam.; perianth segments persistent; fruiting pedicel very short, 1–2 mm, thickened at apex. Fl. Jul, fr. Dec.

• Sparse or dense forests on calcareous mountain slopes; 300–700 m. SW Guangxi.

**27. *Litsea coelestis*** H. P. Tsui, Acta Bot. Yunnan. 16: 34. 1994.

蓝叶木姜子 lan ye mu jiang zi

Evergreen trees, ca. 10 m tall. Branchlets brown tomentose when young, gradually becoming sparsely so. Leaves alternate; petiole 1–2 cm, with dense black-brown pubescence; leaf blade blue-green abaxially, long elliptic, long ovate, or obovate-lanceolate, 12–25 × 4–9 cm, brown pubescent abaxially, more densely so along veins, sparsely brown pubescent adaxially, pinninerved, lateral veins 7–13 pairs, base cuneate or rotund, apex acuminate. Umbels few on axillary short branchlets, with dense brown pubescence, male umbel 4- or 5-flowered, female 12-flowered. Male flowers: perianth segments 6; stamens 9; filaments pilose, of 3rd whorls each with 2 stipitate glands at base. Female flowers: staminodes 9; ovary ellipsoid, glabrous. Fruit globose, ca. 7 mm in diam., black at maturity, seated on discoid perianth tube; fruiting pedicel 6–9 mm, with sparse brown pubescence.

• Evergreen broad-leaved forests; 800–2100 m. SE Xizang.

**28. *Litsea umbellata*** (Loureiro) Merrill, Philipp. J. Sci. 14: 242. 1919.

伞花木姜子 san hua mu jiang zi

*Hexanthus umbellatus* Loureiro, Fl. Cochinch. 1: 196. 1790; *Litsea amara* Blume; *L. hexantha* Jussieu; *Tetranthera amara* (Blume) Nees.

Evergreen shrubs or small trees, 3–9 m tall, ca. 20 cm d.b.h. Branchlets ferruginous tomentose. Leaves alternate; petiole 6–8 mm, ferruginous tomentose; leaf blade elliptic or oblong-ovate, 6–12 × 3–4.2 cm, ferruginous tomentose abaxially, glabrous adaxially, pinninerved, lateral veins 8–15 pairs, vertically spreading, base obtuse, apex acuminate. Umbels often in cluster of 3–6 at short branchlets, 4-flowered; short branchlets 2–3 mm, stout, ferruginous tomentose; peduncle 2–3 mm, ferruginous tomentose. Male flowers: pedicel 1–1.5 mm, ferrugi-

nous villous; perianth segments 6, lanceolate or ovate, unequal in size; fertile stamens 9; filaments villous, of 3rd whorls each with 2 sessile reniform glands at base; rudimentary pistil lacking. Fruit globose, ca. 6 mm in diam., apiculate at apex, seated on shallowly discoid perianth tube; perianth segments often persistent; fruiting pedicel ca. 3 mm, thickened at apex, ferruginous tomentose. Fl. Apr–May, fr. Aug–Sep.

Thickets or sparse forests in valleys or on hills; 300–1000 m. SW Guangxi, S Yunnan [Cambodia, Indonesia, Laos, Malaysia, Thailand, Vietnam].

**29. *Litsea balansae*** Lecomte, Fl. Indo-Chine 5: 135. 1914.

假辣子 jia la zi

Evergreen shrubs or small trees, 2–7 m tall, ca. 10 cm d.b.h. Young branchlets yellow-brown pubescent and becoming glabrous. Leaves alternate; petiole 3–6 mm, hairy like young branchlets; leaf blade lanceolate or oblong, 4–11 × 1.5–3.5 cm, yellow-brown pubescent abaxially, more densely so along veins, glabrous adaxially, pinninerved, lateral veins 6 or 7 pairs, transverse veinlets conspicuous, base cuneate, apex acuminate. Umbels solitary or in cluster of 3 or 4, male umbel 3-flowered; peduncle 2–4 mm, pubescent or subglabrous. Male flowers: pedicel 1–2 mm, pilose; perianth segments 6, sometimes 4 or 5, ovate; fertile stamens 9; filaments villous, of 3rd whorls each with 2 subsessile small glands at base. Fruit long ellipsoid, ca. 8 × 3 mm, apiculate at apex; fruiting pedicel ca. 2 mm, thickened at apex. Fl. Apr–May, fr. Jun–Jul.

Mixed forests; 200–1200 m. S Yunnan [Vietnam].

**30. *Litsea biflora*** H. P. Tsui, Acta Bot. Yunnan. 16: 32. 1994.

少花木姜子 shao hua mu jiang zi

Evergreen trees, ca. 8 m tall, glabrous. Leaves alternate; petiole 0.8–1.4 cm; leaf blade long elliptic or long ovate, 9–16.5 × 3–6.5 cm, glaucous abaxially, pinninerved, lateral veins 6–9 pairs, conspicuously reticulate-veined on both surfaces, base broadly cuneate or rounded, apex acuminate. Umbels axillary, 2- or 3-flowered; peduncle slender, 1–1.5 cm. Male flowers: pedicel ca. 2 mm; perianth segments 6, subequal, long ovate; stamens 12, of 1st and 2nd whorls each with 2 stipitate glands, of 3rd and 4th whorls each with 1 stipitate gland; anthers 4-celled, all introrse; rudimentary pistil ca. 3 mm. Female flowers: ovary long ellipsoid; stigma 3-lobed. Young fruit long ellipsoid, ca. 9 × 5 mm; perianth tube ca. 5 mm in diam.; fruiting pedicel ca. 1.5 cm.

• Evergreen broad-leaved forests; 1900–2300 m. SE Xizang.

**31. *Litsea beilschmiedifolia*** H. W. Li, Acta Phytotax. Sin. 16(4): 50. 1978.

琼楠叶木姜子 qiong nan ye mu jiang zi

Evergreen trees, 15–25 m tall, ca. 20 cm d.b.h. Young branchlets yellow-brown sericeous-pubescent. Leaves alternate; petiole ca. 2 cm, gray-yellow puberulent when young and becoming glabrous; leaf blade elliptic, 10.5–14 × 3.5–5 cm, glabrous, conspicuously foveolate on both surfaces and glaucous abaxially, pinninerved, lateral veins 6–8 pairs, prominent on

both surfaces, base falcate-curved, apex long caudate-acute. Umbels 2–4-clustered on short branch, 5- or 6-flowered; short branch ca. 5 mm; peduncle 6–10 mm, puberulent. Male flowers: perianth segments 6, ovate-rounded; fertile stamens 9; filaments gray-yellow pubescent, of 3rd whorls each with 2 sessile rounded glands at base; rudimentary pistil lacking. Fruit globose, ca. 1.5 cm in diam., black at maturity; fruiting pedicel ca. 1 cm, gray-yellow puberulent when young and becoming glabrous, gradually thickened toward apex. Fl. Apr–May, fr. Sep–Oct.

• Moist areas of sparse forests on mountains; 1700–1900 m. SE Yunnan.

**32. *Litsea salicifolia*** (Roxburgh ex Nees) J. D. Hooker, Fl. Brit. India 5: 167. 1886.

黑木姜子 hei mu jiang zi

*Tetranthera salicifolia* Roxburgh ex Nees in Wallich, Pl. Asiat. Rar. 2: 66. 1831; *Litsea atrata* S. K. Lee; *L. polyantha* Jussieu f. *glabra* H. Liu; *Litsea salicifolia* f. *glabra* (H. Liu) C. K. Allen.

Evergreen trees, up to 10 m tall. Branchlets glabrous. Leaves alternate; petiole 1–1.5 cm, glabrous; leaf blade long elliptic, 9–19 × 3–5.5 cm, glaucous and yellow-brown puberulent when young abaxially, glabrous adaxially, pinninerved, lateral veins 10–15 pairs, base acute, apex acuminate or acute. Umbels axillary, in cluster of 2–6; peduncle 3–7 mm, glabrous or subglabrous; male umbel 4–6-flowered. Male flowers: pedicel ca. 1 mm, pubescent; perianth segments 6, ovate or lanceolate; fertile stamens 9; filaments villous at base, of 3rd whorls each with 2 stipitate globose glands at base; rudimentary pistil lacking. Fruit oblong, 10–11 × 5–6 mm; fruiting pedicel 4–7 mm, glabrous. Fl. Apr–May, fr. Jun–Sep.

Sparse forests in valleys; 300–1200 m. Guangdong, Guangxi, SW Guizhou, Hainan, S Yunnan [Bangladesh, Bhutan, India, Myanmar, Nepal, Vietnam].

**33. *Litsea monopetala*** (Roxburgh) Persoon, Syn. Pl. 2: 4. 1807.

假柿木姜子 jia shi mu jiang zi

*Tetranthera monopetala* Roxburgh, Pl. Coromandel 2: 26. 1798; *Litsea polyantha* Jussieu.

Evergreen trees up to 18 m tall, ca. 15 cm d.b.h. Branchlets densely ferruginous pubescent. Leaves alternate; petiole 1–3 cm, densely hairy like branchlets; leaf blade broadly ovate or obovate to ovate-oblong, 8–20 × 4–12 cm, densely ferruginous pubescent abaxially, along midrib ferruginous pubescent adaxially when young, pinninerved, lateral veins 8–12 pairs, base rounded or acute, apex obtuse or rounded, rarely acute. Umbels clustered on shortest branchlets, 4–6-flowered or more; peduncle 4–6 mm. Male flowers: pedicel 6–7 mm, ferruginous pubescent; perianth segments 5 or 6, yellow-white, lanceolate; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 stipitate glands at base. Fruit long ovoid, ca. 7 × 5 mm, seated on shallowly discoid perianth tube; fruiting pedicel ca. 1 cm. Fl. Nov–May or Jun of next year, fr. Jun–Jul.

Thickets or sparse forests on sunny slopes; below 1500 m, but mostly found on hills at low elevations. Guangdong, Guangxi, SW Guizhou, Hainan, S Yunnan [Bhutan, Cambodia, India, Laos, Malaysia, Myanmar, Nepal, Pakistan, Thailand, Vietnam].

The wood is used for furniture. The seed core contains ca. 30% oil and is used for industrial oil. The leaves are used as a topical medicine for the treatment of arthritis.

**34. *Litsea albescens*** (J. D. Hooker) D. G. Long, Notes Roy. Bot. Gard. Edinburgh 41: 508. 1984.

白叶木姜子 *bai ye mu jiang zi*

*Litsea oblonga* (Nees) J. D. Hooker var. *albescens* J. D. Hooker, Fl. Brit. India 5: 169. 1886.

Evergreen shrubs or small trees, up to 6 m tall. Branchlets brown when dry, almost smooth, gray appressed pubescent. Leaves alternate; petiole 4–6 mm; leaf blade elliptic-lanceolate, 10–17 × 2.5–4.5 cm, abaxially glaucous and glabrous or pubescent along veins, adaxially brownish green and glabrous, lateral veins 7–9 pairs, somewhat or conspicuously impressed adaxially but elevated abaxially, base cuneate, apex acuminate. Umbels axillary, ca. 3 mm in diam., 3–6-flowered when in bud, racemously arranged in an axillary short shoot of 8–12 mm; peduncle 2–8 mm, slender, pubescent. Flowers unknown. Fruit oblong-ellipsoid, 17–23 × 9–10 mm, on shallow entire perianth cup 6–7 mm across; fruiting pedicel thick, 4–7 mm. Fr. Nov–Dec.

Evergreen broad-leaved forests; 1500–2000 m. SE Xizang [Bhutan, India (Darjeeling, Sikkim)].

**35. *Litsea dilleniifolia*** P. Y. Pai & P. H. Huang, Acta Phytotax. Sin. 16(4): 51. 1978.

五桠果叶木姜子 *wu ya guo ye mu jiang zi*

Evergreen trees, 20–26 m tall, 28–30 cm d.b.h. Branchlets stout, glabrous, conspicuously angulate with elliptic lenticels; leaf scars rotund, large, 4–5 mm in diam. Leaves alternate; petiole 2.5–5 cm, stout, glabrous; leaf blade oblong or obovate-oblong, 21–60 × 11–14.5 cm, glabrous on both surfaces and glaucous abaxially, pinninerved, lateral veins 15–22 pairs, midrib stout, transverse veinlets conspicuous on both surfaces, base cuneate or oblique, apex shortly acuminate or rotund. Umbels 6–8 in racemes on short branchlets, 5-flowered; short branchlets ca. 4 mm in diam., densely ferruginous pubescent. Male flowers: pedicel 3–4 mm, densely ferruginous pubescent; perianth segments 8, long ovate; fertile stamens 16 or 17; filaments below middle yellow pubescent, of 3rd whorls each with 2 shortly stipitate rounded-cordate glands at base; rudimentary pistil ovoid, glabrous. Fruit compressed globose, ca. 1.5 × 2–2.3 cm, purple-red at maturity, seated on cup-shaped perianth tube; fruiting pedicel ca. 4 mm, stout, pilose. Fl. Apr–May, fr. Jul.

• Moist areas of riverbanks in rain forests; ca. 500 m. S Yunnan.

**36. *Litsea liuyingii*** H. Liu, Bull. Soc. Bot. France 80: 566. 1933 [*“liuyingii”*].

圆锥木姜子 *yuan zhui mu jiang zi*

Evergreen trees. Branchlets glabrous. Leaves alternate; petiole 1.5–2 cm, furrowed, glabrous; leaf blade elliptic or lan-

ceolate, 10–20 × 3–8 cm, glabrous on both surfaces and glaucous abaxially, pinninerved, lateral veins 10–12 pairs, transverse veinlets conspicuous, base cuneate, apex acute or obtuse. Umbels in panicles on short branchlets, male umbel 3-flowered; short branchlets 3–4 cm, pubescent. Male flowers: pedicel ca. 3 mm, pubescent; perianth segments 6, ovate, 5-nerved; fertile stamens 26–32; filaments stout and short, pubescent, of outside 6- or 8-glandular, of inside each with 2 sessile subglobose glands at middle; rudimentary pistil lacking. Female flower and fruit unknown. Fl. Oct.

• Evergreen broad-leaved forests. S Yunnan.

After checking the type specimen (*Henry 12839*, A [HUH-00041720]), the present authors confirm that the perianth segments are 6, not 8 as described in FRPS (31: 304. 1982).

**37. *Litsea szemaouis*** (H. Liu) J. Li & H. W. Li, Acta Bot. Yunnan. 28: 105. 2006.

思茅木姜子 *si mao mu jiang zi*

*Litsea pierrei* Lecomte var. *szemaouis* H. Liu, Laurac. Chine & Indochine, 174. 1932 [*“szemois”*]; *L. baviensis* Lecomte var. *szemaouis* (H. Liu) C. K. Allen.

Evergreen trees, 6–25 m tall, 17–30 cm d.b.h. Branchlets glabrous. Leaves alternate; petiole 2–3 cm, glabrous; leaf blade elliptic or oblong-elliptic, rarely ovate-oblong, 10–21 × 3–5 cm, glabrous on both surfaces, lateral veins 7–9 pairs, base and apex attenuate. Umbels 3–5 in racemes on short branchlets, 4- or 5-flowered; short branchlets 2–3 cm; peduncle 3–4 mm, pubescent. Male flowers: pedicel pubescent; perianth segments 6, lanceolate or oblanceolate to oblong; fertile stamens 9; filaments long exserted, yellow-brown pubescent, of 3rd whorls each with 2 shortly stipitate rounded glands at base; rudimentary pistil yellow-brown pubescent. Fruit globose or compressed globose, ca. 1.5 cm in diam., seated on cup-shaped perianth tube; tube thin, truncate at apex; fruiting pedicel ca. 1 cm, stout, glabrous. Fl. Jun–Jul, fr. Oct–Nov.

• Broad-leaved forests; 800–1500 m. S Yunnan.

**38. *Litsea panamanja*** (Buchanan-Hamilton ex Nees) J. D. Hooker, Fl. Brit. India 5: 175. 1886.

香花木姜子 *xiang hua mu jiang zi*

*Tetranthera panamanja* Buchanan-Hamilton ex Nees in Wallich, Pl. Asiat. Rar. 2: 67. 1831.

Evergreen trees, ca. 20 m tall, ca. 60 cm d.b.h. Branchlets pubescent and becoming glabrous. Leaves alternate; petiole ca. 2 cm, glabrous; leaf blade oblong or lanceolate, 10–18 × 3–7 cm, glabrous on both surfaces, pinninerved, lateral veins 7–11 pairs, base cuneate, apex acuminate or shortly acute. Umbels in racemes on short branchlets, pubescent, 5-flowered. Male flowers: pedicel ca. 1.5 mm, pubescent; perianth segments 6, oblong or ovate; fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 shortly stipitate glands at base; rudimentary pistil glabrous. Fruit compressed globose, ca. 6 × 10 mm, seated on cup-shaped perianth tube; fruiting pedicel ca. 8 mm, thickened at apex. Fl. Aug–Sep, fr. Mar of next year.

Evergreen broad-leaved forests; 500–2000 m. SE Guangxi, S

Yunnan [Bhutan, India, Nepal, N Vietnam].

**39. *Litsea semecarpifolia*** (Wallich ex Nees) J. D. Hooker, Fl. Brit. India 5: 165. 1886.

玉兰叶木姜子 *yu lan ye mu jiang zi*

*Tetranthera semecarpifolia* Wallich ex Nees in Wallich, Pl. Asiat. Rar. 3: 31. 1832; *Litsea magnoliifolia* Yen C. Yang & P. H. Huang.

Evergreen trees, 12–20 m tall, 20–79 cm d.b.h. Branchlets stout, angulate, densely ferruginous-brown pubescent when young. Leaves alternate; petiole 2–4.5 cm, densely hairy like young branchlets; leaf blade elliptic or obovate-elliptic to obovate, 11–20 × 5–10 cm, densely brown puberulent abaxially when young, along midrib ferruginous pubescent adaxially when young, pinninerved, lateral veins 9–12 pairs, base cuneate or rotund, apex rounded-obtuse or shortly acute. Umbels 8–12 in racemes on short branchlets, 6-flowered; short branchlets 3–6 cm, densely ferruginous pubescent; peduncle 2.5–5 mm. Male flowers: pedicel ca. 2 mm; perianth segments 8, lanceolate or oblanceolate; fertile stamens 12–14, exerted; filaments pubescent, of 3rd and 4th whorls each with 2 subsessile obovoid glands at base; rudimentary pistil ca. 2.5 mm. Fruit compressed globose, ca. 1.2 × 1.6 cm, apiculate, black at maturity, seated on discoid perianth tube; fruiting pedicel 1–1.8 cm, pubescent. Fl. Nov, fr. Sep–Oct of next year.

Evergreen broad-leaved forests, high grasslands; 600–1400 m. S and SW Yunnan [E Bangladesh, Myanmar, N Thailand].

**40. *Litsea martabanica*** (Kurz) J. D. Hooker, Fl. Brit. India 5: 164. 1886.

滇南木姜子 *dian nan mu jiang zi*

*Tetranthera martabanica* Kurz, Forest Fl. Burma 2: 301. 1877, based on *T. calophylla* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42: 192. 1873, not Miquel (1852); *Litsea garrettii* Gamble.

Evergreen trees, 4–12 m tall. Young branchlets pale yellow pubescent. Leaves alternate; petiole 1–2 cm, ferruginous tomentose; leaf blade long elliptic, 8–16 × 3.6–6 cm, ferruginous tomentose and becoming subglabrous abaxially, glabrous adaxially, pinninerved, lateral veins 6–8 pairs, reticulate-veined abaxially, base cuneate, apex long acuminate or slightly falcate-acuminate. Umbels 4–8 in racemes on short branchlets, 5-flowered; short branchlets 1.5–4 cm; peduncle 8–10 mm, pubescent. Male flowers: pedicel 6–8 mm; perianth segments 6, yellow, oblong; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 small stipitate reniform glands at base; rudimentary pistil glabrous. Fruit oblong, 10–15 × 5–6 mm, black at maturity, seated on cup-shaped perianth tube; fruiting pedicel 6–8 mm, slightly thickened at apex. Fl. Oct–Nov, fr. Jun–Jul of next year.

Thickets, broad-leaved forests; 500–2500 m. S and SW Yunnan [Myanmar, Thailand].

**41. *Litsea tibetana*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 52. 1978.

西藏木姜子 *xi zang mu jiang zi*

Evergreen shrubs. One-year-old branchlets densely brown pubescent. Leaves alternate; petiole ca. 1 cm, brown pubescent; leaf blade oblong or elliptic-lanceolate, 6–12 × 2.5–4 cm, brown pubescent abaxially, glabrous adaxially, pinninerved, lateral veins 8–12 pairs, transverse veinlets conspicuous abaxially, base broadly cuneate, apex acuminate. Flowers unknown. Fruit oblong, 12–15 × 6–8 mm, seated on shallowly discoid perianth tube; fruiting pedicel ca. 1 cm, slightly thickened at apex. Fr. Aug–Sep.

• Thickets on mountain slopes; ca. 1300 m. SE Xizang.

**42. *Litsea longistaminata*** (H. Liu) Kostermans, Bull. Bot. Surv. India 10: 286. 1968.

长蕊木姜子 *chang rui mu jiang zi*

*Litsea garrettii* Gamble var. *longistaminata* H. Liu, Laurac. Chine & Indochine, 196. 1934; *L. longistaminata* var. *pubescens* H. P. Tsui.

Evergreen trees, up to 10 m tall, ca. 20 cm d.b.h. Branchlets yellow-brown or ferruginous tomentose. Leaves alternate; petiole 1–2 cm, densely ferruginous tomentose; leaf blade obovate to obovate-oblong, 15–25 × 4.6–11.5 cm, pubescent and becoming glabrous abaxially, glabrous adaxially, pinninerved, lateral veins 7–9 pairs, base cuneate or obtuse, apex rounded and with abrupt acumen or acuminate. Umbels 4–6 in racemes on short branchlets, 5- or 6-flowered; peduncle ca. 1 cm, ferruginous. Male flowers: pedicel 2.5–3 mm; perianth segments 6, oblong or ovate-rounded; fertile stamens 9, ca. 7 mm, exerted; filaments pubescent, of 3rd whorls each with 2 stipitate small glands at base; rudimentary pistil small, glabrous. Fruit oblong, ca. 17 × 8 mm, apiculate at apex, seated on discoid perianth tube; fruiting pedicel 3–4 mm, pubescent. Fl. Dec–Jan, fr. Jun–Jul.

Open mountain slopes, valleys, thickets, mixed forests; 800–2000 m. SE Xizang, S Yunnan [Vietnam].

*Litsea dumiana* H. Léveillé (Repert. Spec. Nov. Regni Veg. 9: 460. 1911) was described from Guizhou and characterized by its sessile inflorescence, long-exserted stamens, and large oblong-lanceolate pinninerved leaves, covered abaxially with long slightly villous hairs. Allen (Ann. Missouri Bot. Gard. 25: 388, 391. 1938) considered Léveillé's taxon to be similar to *L. garrettii* var. *longistaminata*, but the present authors could not ascertain its status because they have seen no material.

**43. *Litsea pedunculata*** (Diels) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 52. 1978.

红皮木姜子 *hong pi mu jiang zi*

Evergreen shrubs or small trees, up to 6 m tall. Young branchlets glabrous or densely pubescent. Leaves alternate; petiole 5–10 mm, glabrous or densely pubescent; leaf blade oblong-lanceolate to elliptic, 3.5–7 × 1.5–3 cm, glabrous on both surfaces or sparsely pubescent and along veins villous abaxially and along veins gray-yellow pubescent adaxially, abaxially glaucous, lateral veins 8–12 pairs, base cuneate, obtuse, or rounded, apex acute, acuminate, or caudate-acuminate. Umbels axillary, solitary, 3–5-flowered; peduncle 2–7 mm.

Male flowers: pedicel short; perianth segments 6, sometimes 3 or 4, broadly ovate or rotund; fertile stamens 9, sometimes 7 or 12; filaments pubescent, of 3rd whorls each with 2 sessile cordate glands at base; rudimentary pistil ovoid, glabrous. Fruit oblong 6–7 × 4–4.5 mm, seated on discoid perianth tube; fruiting pedicel ca. 2 mm, glabrous or densely pubescent. Fl. May, fr. Jul–Aug.

• Mixed forests on moist mountain slopes or mountaintops; 1300–2300 m. Guangxi, Guizhou, Hubei, Hunan, S Jiangxi, Sichuan, Yunnan.

This species is extremely variable and unstable in the number of stamens and perianth segments.

- 1a. Branchlets, petioles, fruiting pedicels, and peduncles glabrous; leaf blade acute or acuminate at apex, glabrous on both surfaces ..... 43a. var. *pedunculata*  
1b. Branchlets, petioles, fruiting pedicels, and peduncles densely gray-yellow pubescent; leaf blade caudate-acuminate at apex, along veins gray-yellow pubescent adaxially, sparsely pubescent and along veins villous abaxially ..... 43b. var. *pubescens*

**43a. *Litsea pedunculata* var. *pedunculata***

红皮木姜子(原变种) hong pi mu jiang zi (yuan bian zhong)

*Lindera pedunculata* Diels, Bot. Jahrb. Syst. 29: 350. 1901; *Benzoin pedunculatum* (Diels) Rehder; *Litsea merrilliana* C. K. Allen; *Pseudolitsea tsaii* Yen C. Yang.

Evergreen shrubs or small trees. Branchlets glabrous or subglabrous. Petiole glabrous; leaf blade glabrous on both surfaces, apex acute or acuminate. Fruiting peduncle 5–7 mm, glabrous; fruiting pedicel glabrous.

• Mixed forests on moist mountain slopes or mountaintops; 1300–2300 m. Guangxi, Guizhou, Hubei, Hunan, S Jiangxi, Sichuan, SE Yunnan.

**43b. *Litsea pedunculata* var. *pubescens* Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 53. 1978.**

毛红皮木姜子 mao hong pi mu jiang zi

Evergreen shrubs. Branchlets, petioles, fruiting pedicels, and peduncles densely gray-yellow pubescent. Leaf blade sparsely pubescent and along veins villous abaxially, along veins gray-yellow pubescent adaxially, apex caudate-acuminate. Fruiting peduncle ca. 2 mm.

• Yunnan.

**44. *Litsea pittosporifolia* Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 53. 1978.**

海桐叶木姜子 hai tong ye mu jiang zi

Evergreen shrubs, 1.5–3 m tall. Branchlets glabrous. Leaves alternate; petiole 3–8 mm, glabrous; leaf blade elliptic or obovate, 4–7.5 × 2–3.8 cm, glabrous on both surfaces, pinninerved, lateral veins 7–10 pairs, from midrib extending 60°, vanishing near margin, base cuneate or rounded-obtuse, apex

rounded-obtuse. Umbels axillary at apex of branchlet, solitary or in cluster of 2 or 3, 3-flowered; peduncle very short. Male flowers: pedicel short, pubescent; perianth segments 6, ovate; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 sessile reniform glands at base; rudimentary pistil lacking. Fruit ellipsoid, 11–14 × 5–6 mm, seated on cup-shaped perianth tube; fruiting pedicel ca. 4 mm, pubescent. Fl. Jul–Aug, fr. Mar–Apr.

• Moist areas of dense forests in valleys; 800–900 m. W Guangdong (Dinghu Shan).

**45. *Litsea hunanensis* Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 53. 1978.**

湖南木姜子 hu nan mu jiang zi

Evergreen small trees, ca. 5 m tall. Branchlets glabrous. Leaves alternate; petiole 5–6 mm, glabrous; leaf blade obovate-lanceolate or lanceolate, 5–7 × 1–2.5 cm, glabrous on both surfaces and glaucous abaxially, pinninerved, lateral veins 6–9 pairs, conspicuously reticulate-veined on both surfaces, base cuneate or acute, apex abruptly acute or acuminate. Fruiting inflorescences umbellate, axillary at apex of branchlet; peduncle nearly absent; bracts persistent at fruiting. Fruit ellipsoid, ca. 11 × 6–7 mm, seated on discoid perianth tube; fruiting pedicel 1–2 mm, thickened, gray-yellow pubescent. Fr. Apr–May.

• Dense forests on mountains. S Hunan.

**46. *Litsea kwangtungensis* Hung T. Chang, Acta Sci. Nat. Univ. Sunyatseni 1960(1): 26. 1960.**

广东木姜子 guang dong mu jiang zi

Evergreen shrubs, 1.5–3 m tall. Young branchlets gray-brown, glabrous. Leaves alternate; petiole 5–7 mm, glabrous; leaf blade oblong or narrowly oblong, 4–11.5 × 1–3 cm, glabrous on both surfaces, pinninerved, lateral veins 6–9 pairs, base cuneate, apex slightly acute or obtuse. Umbels axillary, solitary, 3- or 4-flowered; peduncle very short, pubescent. Fruit ellipsoid, 7–8 × 4–5 mm, seated on cup-shaped perianth tube; fruiting pedicel ca. 3 mm, puberulent. Fr. Nov.

• Dense forests on mountains; below 100 m. C and S Guangdong.

**47. *Litsea suberosa* Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 54. 1978.**

栓皮木姜子 shuan pi mu jiang zi

*Litsea elongata* (Nees) J. D. Hooker var. *suberosa* (Yen C. Yang & P. H. Huang) N. Chao & J. S. Liu.

Evergreen small trees, ca. 5 m tall. Old branchlets glabrous, with thin corky bark and conspicuous lenticels; young branchlets glabrous or pilose. Leaves alternate; petiole 5–15 mm, glabrous or pilose on both sides; leaf blade oblanceolate or narrowly long elliptic, 6–17 × 1.5–5 cm, along veins pilose or glabrous abaxially, glabrous adaxially, pinninerved, lateral veins 13–15 pairs, base cuneate, apex abruptly acute. Umbels axillary; male umbel 5-flowered; peduncle very short. Male flowers: pedicel ca. 2 mm; perianth segments 6, ovate-rounded; fertile stamens 9; filaments villous, of 3rd whorls each with 2

rounded small glands at base; rudimentary pistil lacking. Fruit ellipsoid, 10–12 × 5–7 mm, seated on cup-shaped perianth tube; fruiting pedicel 3–4 mm, pubescent. Fl. Jul–Sep, fr. Oct–Nov.

• Forests or thickets on mountain slopes; 800–1500 m. N Guangdong, W Hubei, Hunan, S Sichuan.

**48. *Litsea chengshuzhii*** H. P. Tsui, Acta Bot. Yunnan. 16: 34. 1994.

树志木姜子 *shu zhi mu jiang zi*

Evergreen trees, 5–10 m tall. Young branchlets brown-yellow appressed puberulent and becoming glabrous. Leaves alternate; petiole 1.5–2 cm, glabrous; leaf blade elliptic, 10–26 × 5–13 cm, glaucous and densely white appressed pubescent when young, becoming sparsely pubescent abaxially, glabrous adaxially, pinninerved, lateral veins 6–11 pairs, with conspicuous parallel veinlets on both surfaces, base broadly cuneate to rounded, apex acuminate. Umbels axillary, 6-flowered; peduncle 5–12 mm, glabrous. Male flowers: perianth segments 6, long elliptic, yellow, glabrous, subequal; stamens 12(–14), of 1st to 3rd whorls subequal, ca. 3.5 mm, anthers 4-celled, superior 2 cells introrse, inferior 2 cells lateral, of 4th whorls small, ca. 2.2 mm, anthers 2-celled, introrse; filaments slender, pubescent, of 3rd and 4th whorls each with 2 stipitate glands at base; rudimentary pistil small. Female flower and fruit not seen.

• Evergreen broad-leaved forests; ca. 1000 m. SE Xizang.

**49. *Litsea depressa*** H. P. Tsui, Acta Bot. Yunnan. 16: 31. 1994.

扁果木姜子 *bian guo mu jiang zi*

Evergreen trees, ca. 15 m tall. Branchlets glabrous, stout. Leaves alternate, congregated toward apex of branchlet; petiole 1.7–3.2 cm; leaf blade yellow-brown abaxially, oblong-lanceolate or oblanceolate, 14–26 × 4.5–8 cm, foveolate adaxially, pinninerved, lateral veins 6–10 pairs, slightly conspicuously reticulate-veined adaxially, base broadly cuneate, apex acute or rounded, apiculate. Flowers not seen. Fruit purple, white-spotted, compressed globose, ca. 2 × 3 cm, seated on cup-shaped entire perianth tube; fruiting pedicel ca. 1 cm.

• Semi-evergreen rain forests; ca. 900 m. SE Xizang.

**50. *Litsea garciae*** Vidal, Revis. Pl. Vasc. Filip. 228. 1886.

兰屿木姜子 *lan yu mu jiang zi*

*Cylicodaphne garciae* (Vidal) Nakai; *Lepidadenia kawakamii* (Hayata) Masamune; *Litsea kawakamii* Hayata; *Tetradenia kawakamii* (Hayata) Nemoto.

Evergreen trees. Branchlets stout, subglabrous. Leaves alternate; petiole stout, 1.5–2.5 cm, furrowed, glabrous; leaf blade ovate-lanceolate or obovate-lanceolate to lanceolate, 25–40 × 6–15 cm, glabrous on both surfaces and glaucous abaxially, pinninerved, lateral veins 16–20 pairs, prominently reticulate-veined on both surfaces, base cuneate to narrowly cuneate, apex obtuse. Flowers in axillary umbels. Pedicel stout. Fruit compressed globose, ca. 2.2 × 3 cm, orange-red at maturity, seated on cup-shaped perianth tube; fruiting pedicel ca. 1.5 cm. Fr. Aug–Sep.

Evergreen broad-leaved forests. Taiwan [Philippines].

**51. *Litsea lancilimba*** Merrill, Philipp. J. Sci. 23: 244. 1923.

大果木姜子 *da guo mu jiang zi*

Evergreen trees, up to 20 m tall, to 60 cm d.b.h. Branchlets conspicuously angular, glabrous. Leaves alternate; petiole 1.6–3.5 cm, stout, glabrous; leaf blade lanceolate, 10–20(–50) × 3.5–5 cm, glabrous on both surfaces and glaucous abaxially, pinninerved, midrib conspicuously prominent on both surfaces, lateral veins 12–14 pairs, base cuneate, apex acute or acuminate. Umbels axillary, solitary, or in cluster of 2–4, 5-flowered; peduncle stout and short. Male flowers: pedicel ca. 4 mm, white pubescent; perianth segments 6, lanceolate; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 stipitate glands at base. Fruit oblong, 1.5–2.5 × 1–1.4 cm, seated on discoid perianth tube; fruiting pedicel 5–8 mm, stout. Fl. Jun, fr. Nov–Dec.

Dense forests; 900–2500 m. S Fujian, Guangdong, Guangxi, Hainan, Hunan, SE Yunnan [Laos, Vietnam].

The wood is light and brash, but not fissile or resistant to borer insects, and is used for furniture and joinery parts. The seeds may be used for industrial oil.

**52. *Litsea subcoriacea*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 55. 1978.

桂北木姜子 *gui bei mu jiang zi*

*Litsea subcoriacea* var. *stenophylla* Yen C. Yang & P. H. Huang.

Evergreen trees, 6–7 m tall. Branchlets conspicuously angulate, glabrous. Leaves alternate; petiole 0.5–3 cm, glabrous; leaf blade lanceolate or elliptic-lanceolate, 5.5–20 × 1.5–5.5 cm, glaucous and glabrous or along veins pilose when young abaxially, glabrous adaxially, lateral veins 9–13 pairs, conspicuously reticulate-veined abaxially, midrib impressed adaxially, base cuneate, apex acuminate, abruptly acute, or slightly falcate-curved. Umbels clustered on short branchlets, male umbel 5-flowered; peduncle ca. 2 mm, pubescent. Male flowers: pedicel pubescent; perianth segments 6, ovate; fertile stamens 9; filaments pubescent at base, of 3rd whorls each with 2 small rounded glands at base; rudimentary pistil lacking. Fruit ellipsoid, ca. 1.5 × 0.8 cm, seated on cup-shaped perianth tube; perianth tube usually irregularly lobed; fruiting pedicel 4–6 mm, pubescent. Fl. Aug–Sep, fr. Jan–Feb.

• Sparse or dense forests in valleys, roadsides, rocky mountains; 400–2000 m. N Guangdong, N Guangxi, SE Guizhou, W Hunan, NE Zhejiang (Ningbo).

**53. *Litsea greenmaniana*** C. K. Allen, Ann. Missouri Bot. Gard. 25: 394. 1938.

华南木姜子 *hua nan mu jiang zi*

*Litsea greenmaniana* var. *angustifolia* Yen C. Yang & P. H. Huang.

Evergreen small trees, 6–8 m tall. Young branchlets pubescent and becoming glabrous. Leaves alternate; petiole 0.5–1.3 cm, pubescent and becoming subglabrous; leaf blade ellip-

tic, lanceolate, or suboblanceolate, 4–13.5 × 0.7–3.5 cm, glabrous on both surfaces and glaucous abaxially, lateral veins ca. 10 pairs, conspicuously reticulate-veined abaxially, base cuneate, apex acuminate or falcate-acute. Umbels 1–4 clustered on short branchlets, 3- or 4-flowered per male umbel; peduncle 3–4 mm, pubescent. Male flowers: pedicel short; perianth segments 6, yellow, ovate or elliptic; fertile stamens 9; filaments villous, of 3rd whorls each with 2 sessile cordate glands at base; rudimentary pistil small, glabrous. Fruit ellipsoid, ca. 13 × 8 mm, seated on cup-shaped perianth tube; fruiting pedicel ca. 3 mm. Fl. Jul–Aug, fr. Dec–Mar of next year.

• Weed-tree forests in valleys, dense forests on mountain slopes; below 1200 m. Fujian, Guangdong, Guangxi, S Jiangxi (Quannan).

**54. *Litsea hypophaea*** Hayata, Icon. Pl. Formosan. 5: 167. 1915.

黄肉树 *huang rou shu*

*Actinodaphne pedicellata* Hayata; *Fiwa hypophaea* (Hayata) Nakai; *F. pedicellata* (Hayata) Nakai; *Litsea kostermansii* C. E. Chang; *L. krukovii* Kostermans; *L. pedicellata* (Hayata) Hatusima (1971), not Bartlett (1909); *L. taiwaniana* Kamikoti; *Tetradenia hypophaea* (Hayata) Makino & Nemoto.

Trees, branchlets pubescent. Leaves alternate; petiole 3–6 mm, pubescent; leaf blade obovate or obovate-lanceolate, 3–9 × 1.2–3 cm, glaucous abaxially and pubescent along veins, glabrous adaxially, pinninerved, lateral veins 5–7 pairs, base cuneate, apex obtuse or obtusely acuminate. Umbels clustered or solitary in leaf axils, male umbel 4-flowered; peduncle 4–7 mm. Pedicel densely villous. Perianth segments 6, obovate or ovate, pubescent along midrib outside. Male flowers: fertile stamens 9; filaments villous, of 3rd whorls each with 2 shield-shaped glands at base; rudimentary pistil lacking. Fruit ellipsoid, ca. 8 × 5 mm, seated on shallowly, thinly cup-shaped perianth tube; perianth tube 2–3 × ca. 5 mm, pubescent outside; fruiting pedicel short, ca. 1 mm. Fl. Oct.

• Evergreen broad-leaved forests; low elevations. Taiwan.

This species resembles either *Litsea* or *Actinodaphne* and was treated in FRPS (31: 260. 1982) as *A. pedicellata*. However, it has four decussate involucre bracts, which are characteristic of *Litsea*, and so it should be included in that genus.

The wood may be used for construction and furniture.

**55. *Litsea gongshanensis*** H. W. Li, Acta Phytotax. Sin. 16(4): 56. 1978.

贡山木姜子 *gong shan mu jiang zi*

Evergreen shrubs or small trees, 2.5–6 m tall. Branchlets puberulent or subglabrous. Leaves alternate; petiole 5–8 mm, puberulent, soon becoming glabrous; leaf blade lanceolate, oblanceolate, or oblong, 5–14.5 × 1.4–4 cm, glaucous and glabrous except for sparsely puberulent midrib abaxially, glabrous adaxially, pinninerved, lateral veins 8–10 pairs, transverse veinlets conspicuous abaxially, base cuneate, apex shortly acuminate. Umbels solitary or in cluster of 2 or 3, axillary, male umbel 3- or 4-flowered; peduncle 5–10 mm, sparsely puberulent. Male flowers: pedicel 1.5–2 mm, sericeous-pubescent; perianth

segments 6, ovate; fertile stamens 9; filaments sericeous-pubescent, of 3rd whorls each with 2 long stipitate rounded glands at base; rudimentary pistil clavate, glabrous. Fruit ellipsoid, ca. 15 × 8 mm, seated on discoid perianth tube; fruiting pedicel 4–5 mm, thickened at apex. Fl. Nov, fr. Jun–Jul of next year.

• Sparse forests on mountain slopes, broad-leaved forests on riverbanks; 1300–1400 m. Xizang, NW Yunnan.

**56. *Litsea viridis*** H. Liu, Laurac. Chine & Indochine, 188. 1932.

干香柴 *gan xiang chai*

Evergreen small trees, 3–6 m tall. Young branchlets puberulent and becoming glabrous. Leaves alternate; petiole 5–10 mm, puberulent when young; leaf blade elliptic, 8–13 × 2.5–4.5 cm, gray-yellow puberulent abaxially, glabrous adaxially, except sparsely puberulent on midrib, pinninerved, lateral veins 8–10 pairs, conspicuously reticulate-veined on both surfaces, base cuneate, apex acuminate. Umbels often in cluster of 2–5 on short branchlets; short branchlets 2–3 mm. Male flowers: perianth segments 6, ovate-rounded; fertile stamens 9; filaments glabrous, of 3rd whorls each with 2 rounded-cordate small glands at base; rudimentary pistil lacking. Fruit ellipsoid, ca. 15 × 8 mm, apiculate at apex, seated on discoid perianth tube; fruiting pedicel ca. 3 mm, puberulent. Fr. Nov–Dec.

Sparse forests on riverbanks in valleys; 400–1100 m. SE Yunnan [Vietnam].

**57. *Litsea yunnanensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 56. 1978.

云南木姜子 *yun nan mu jiang zi*

*Litsea baviensis* Lecomte var. *venulosa* H. Liu; *L. napoensis* D. Fang.

Evergreen trees, 8–30 m tall, up to 60 cm d.b.h. Young branchlets gray-yellow pubescent and becoming glabrous. Leaves alternate; petiole 1–2 cm, hairy like young branchlets; leaf blade oblong, elliptic, or ovate-elliptic, 12–26 × 4.5–11.5 cm, glaucous and puberulent or along veins pubescent and becoming glabrous abaxially, glabrous or puberulent at base of midrib adaxially, pinninerved, lateral veins 5 pairs, conspicuously reticulate-veined abaxially, base cuneate or rounded-obtuse, apex acuminate, abruptly acute, or obtuse. Umbel in cluster of 2–5 on short branchlets, axillary, male umbel 5- or 6-flowered; peduncle 6–10 mm, densely pubescent. Male flowers: pedicel ca. 2 mm; perianth segments 6, ovate or broadly ovate; fertile stamens 9–12; filaments densely yellow pubescent, of 3rd whorls each with 2 shortly stipitate rounded-cordate glands at base; rudimentary pistil ovoid, glabrous. Fruit ca. 2.5 × 1.5 cm, almost entirely enclosed in perianth tube when young, exserted from perianth tube at maturity; perianth tube cup-shaped; fruiting pedicel 1–1.5 cm, gradually thickened toward apex. Fl. May, fr. Oct–Nov.

Mountain slopes, roadsides, sparse forests or mixed forests on streamsides; 800–1900 m. Guangxi, SE Yunnan [Vietnam].

**58. *Litsea chinpingensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 57. 1978.

金平木姜子 *jin ping mu jiang zi*

Evergreen trees, 10–20 m tall, ca. 20 cm d.b.h. Young branchlets puberulent and becoming glabrous. Leaves alternate; petiole 1–1.8 cm, furrowed, glabrous; leaf blade lanceolate or narrowly elliptic, 8–17 × 2.2–4.2 cm, glabrous on both surfaces, pinninerved, lateral veins 7–11 pairs, conspicuously reticulate-veined on both surfaces, base cuneate, apex acuminate or shortly acute. Umbels in cluster of 3 or 4 on short branchlets, axillary, 4- or 5-flowered; peduncle ca. 8 mm, sparsely pubescent. Female flowers: perianth segments 6, ovate or ovate-rounded; staminodes 9–12; filaments pubescent at base, of 3rd or 4th whorls each with 2 subsessile triangular large glands at base; ovary ovoid-rounded; style stout, short; stigma large, pel-tate, glabrous. Fruit ellipsoid, ca. 2.2 × 1.5 cm, seated on discoid perianth tube; fruiting pedicel 1.6–2.5 cm, stout. Fr. Aug–Sep.

- Moist broad-leaved forests; 1500–2100 m. NW and S Yunnan.

**59. *Litsea vang*** Lecomte var. ***lobata*** Lecomte, *Nouv. Arch. Mus. Hist. Nat.*, sér. 5, 5: 84. 1913.

沧源薄托木姜子 *cang yuan bao tuo mu jiang zi*

*Litsea pierrei* Lecomte var. ***lobata*** (Lecomte) C. K. Allen.

Evergreen trees, ca. 18 m tall. Young branchlets gray-yellow puberulent and becoming glabrous. Leaves alternate; petiole 1.2–1.5 cm, hairy like branchlets; leaf blade elliptic, 11.5–17 × 4–6 cm, glabrous on both surfaces, lateral veins 5–7 pairs, transverse veinlets conspicuously reticulate on both surfaces, base broadly cuneate or rotund, apex acuminate or shortly acute. Flowers not seen. Fruiting inflorescence umbellate, solitary or 2, lateral; peduncle 1–1.5 cm, very stout, with 1–3 fruits. Fruit ellipsoid, 2–2.5 × 1.3–1.5 cm, black at maturity, seated on deeply cup-shaped perianth tube, with many rotund lenticels outside, margin 3- or 4-lobed, lobes large and irregular; fruiting pedicel 1–1.5 cm, very stout. Fr. May–Jun.

Dense forests in valleys; ca. 800 m. W Yunnan [Cambodia].

*Litsea vang* var. *vang* occurs in Cambodia, Laos, and Vietnam.

**60. *Litsea baviensis*** Lecomte, *Nouv. Arch. Mus. Hist. Nat.*, sér. 5, 5: 87. 1913.

大薯木姜子 *da e mu jiang zi*

*Litsea maclurei* Merrill.

Evergreen trees, up to 20 m tall, ca. 60 cm d.b.h. Young branchlets covered with pubescence. Leaves alternate; petiole 1–1.6 cm; leaf blade elliptic or oblong-elliptic, 11–24 × 3–7.5 cm, glaucous and puberulent abaxially, glabrous adaxially, pinninerved, lateral veins 7 or 8 pairs, base cuneate, apex shortly acuminate or obtuse. Umbels few in cluster on short branchlets, axillary; short branchlets 2–3 mm, pubescent. Male flowers: pedicel pubescent; perianth segments 6, broadly ovate; fertile stamens 9; filaments sparsely pubescent or subglabrous, of 3rd whorls each with 2 small glands at base. Fruit ellipsoid, 2.5–3 × 1.7–2 cm, shiny and smooth, apex apiculate, purple-black at maturity, seated on thickly woody cupular perianth tube; perianth tube warty outside; fruiting pedicel ca. 3 mm, stout. Fl. May–Jun, fr. Feb–Mar or Sep.

Dense forests, streamsides; 400–2000 m. W Guangxi, Hainan, SE Yunnan [N Thailand, Vietnam].

This species has yellow-green hardwood, which is less fissile and not misshapen in a dried state. It is used for making furniture, joinery parts, pianos, etc.

**61. *Litsea litseifolia*** (C. K. Allen) Yen C. Yang & P. H. Huang, *Acta Phytotax. Sin.* 16(4): 57. 1978 [*“litseaeifolia”*].

海南木姜子 *hai nan mu jiang zi*

*Actinodaphne litseifolia* C. K. Allen, *Ann. Missouri Bot. Gard.* 25: 408. 1938 [*“litseaeifolia”*].

Evergreen shrubs or small trees, up to 6 m tall, ca. 10 cm d.b.h. Young branchlets tomentose and becoming glabrous. Leaves alternate; petiole 1–1.5 cm, pubescent when young and becoming glabrous; leaf blade elliptic or oblanceolate-elliptic, 13–18 × 5.5–7.5 cm, glaucous and sparsely pubescent abaxially, with pubescence denser along veins, glabrous adaxially, pinninerved, lateral veins 10–12 pairs, arcuate and connected at apex, base and apex acute. Umbels axillary, solitary or in cluster of 2 or 3, male umbel 7-flowered. Male flowers: pedicel short; perianth segments 6, long elliptic, pale green; fertile stamens 9(–13); filaments below middle villous, of 3rd whorls each with 2 shortly stipitate large glands at base; rudimentary pistil bottle-shaped, glabrous. Fruit ellipsoid, seated on cup-shaped perianth tube; fruiting pedicel stout and short. Fl. May–Sep, fr. Oct–Nov.

- Forests or sparse forests on mountains; above 1400 m. S Hainan.

**62. *Litsea pseudoelongata*** H. Liu, *Laurac. Chine & Indochine*, 179. 1934.

竹叶木姜子 *zhu ye mu jiang zi*

*Litsea lii* C. E. Chang; *L. lii* var. *nunkaotahangensis* (J. C. Liao) J. C. Liao; *L. morrisonensis* Hayata var. *lii* (C. E. Chang) S. S. Ying; *L. nunkaotahangensis* J. C. Liao.

Evergreen small trees, up to 10 m tall. Branchlets pubescent. Leaves alternate; petiole 5–9 mm, pubescent when young; leaf blade broadly linear, 7–12 × 1–2.5 cm, glaucous and sometimes ferruginous-yellow pubescent abaxially when young, glabrous adaxially, pinninerved, lateral veins 15–20 pairs, base acute and slightly decurrent, apex obtuse-acute. Umbels axillary, usually in cluster of 3–5 on short branchlets, male umbel 4-flowered; short branchlets 5–10 mm. Male flowers: pedicel short, pubescent; perianth segments 6, sometimes 4 or 8, ovate or elliptic; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 subsessile long ellipsoid glands at base; rudimentary pistil lacking. Fruit long ovoid, ca. 10 × 7–8 mm, acute at apex, seated on shallowly cup-shaped perianth tube; fruiting pedicel ca. 2 mm, pubescent. Fl. May–Jun, fr. Oct–Dec.

- Thickets, forests; 600–2400 m. S Guangdong, Guangxi, Hainan, Taiwan.

According to the original descriptions and photographs of the types of *Litsea lii* and *L. nunkaotahangensis*, the two entities (except for the smaller fruits ca. 3 × 2.5 mm) are quite similar to *L. pseudoelongata*. Therefore, they have been reduced here to synonymy.

**63. *Litsea oligophlebia*** Hung T. Chang, Acta Sci. Nat. Univ. Sunyatseni 1960(1): 25. 1960.

少脉木姜子 shao mai mu jiang zi

Evergreen trees, ca. 13 m tall. Young branchlets densely yellow-brown pubescent. Leaves alternate; petiole 5–8 mm, yellow-brown villous; leaf blade oblanceolate or oblong-oblan- ceolate, 4–10 × 1–2.5 cm, pubescent abaxially, midrib near base pubescent adaxially, pinninerved, lateral veins 4 or 5 pairs, im- pressed abaxially, base cuneate, apex acuminate or acute. Um- bels solitary or in cluster of 2–4, male umbel 5-flowered; pe- duncle lacking. Male flowers: pedicel short, pubescent; perianth segments 6, ovate-triangular; fertile stamens 9; filaments pilose at base, of 3rd whorls each with 2 stipitate peltate glands at base; rudimentary pistil lacking. Fruit ovoid-rounded, 5–7 × ca. 4 mm at immaturity, seated on discoid perianth tube; fruiting pedicel ca. 2 mm, pubescent. Fl. Aug–Sep, fr. May–Jun.

- Sparse forests in valleys; 200–300 m. S Guangxi.

**64. *Litsea yaoshanensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 58. 1978.

瑶山木姜子 yao shan mu jiang zi

Evergreen shrubs. Branchlets covered with dense gray- yellow pubescence. Leaves alternate; petiole 3–7 mm, densely hairy like branchlets; leaf blade lanceolate or oblanceolate, 5– 11.5 × 1–2.5 cm, gray-yellow pubescent and along veins villous abaxially, glabrous adaxially, except for hairy midrib, pinni- nerved, lateral veins 8–10 pairs, conspicuously reticulate-veined abaxially, slightly prominent or prominent adaxially, base atten- uate or slightly obtuse, apex attenuate. Umbel solitary in leaf axils toward apex of branchlet, male umbel 5-flowered; pedun- cle ca. 3 mm, pubescent. Male flowers: pedicel 1.5–2 mm, pu- bescent; perianth segments 6, ovate; fertile stamens 9; filaments pubescent below middle, of 3rd whorls each with 2 rounded- cordate small glands at base; rudimentary pistil lacking. Fruit ellipsoid, ca. 8 × 5 mm at immaturity, seated on cup-shaped perianth tube; fruiting pedicel ca. 2 mm, pubescent. Fl. Aug– Sep, fr. Jan–Feb.

- Thickets on mountain slopes; ca. 200 m. N Guangxi.

**65. *Litsea akoensis*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 245. 1911.

屏东木姜子 ping dong mu jiang zi

Evergreen small trees. Young branchlets densely brown pubescent. Leaves alternate; petiole 1–1.5 cm, pubescent or hir- sute; leaf blade oblong-obovate, long elliptic, elliptic, or lanceo- late, rarely oblanceolate, 5–15 × 2–4 cm, along veins pubescent or hirsute abaxially, glabrous or only base of midrib pubescent adaxially, pinninerved, lateral veins 5–8 pairs, conspicuously reticulate-veined abaxially, base cuneate, apex obtuse or obtuse- acute. Umbels in cluster of 2 or 3 or solitary, axillary, 4- or 5- flowered; peduncles 6–15 mm, pubescent or hirsute. Male flow- ers: pedicels short, pubescent or hirsute; perianth segments 5 or 6, sometimes 7 or 8, ovate; fertile stamens 9–16, exserted; fila- ments pubescent or hirsute, of 3rd and 4th whorls each with 2 shortly stipitate cordate glands at base; rudimentary pistil small

or lacking. Fruit oblong, ca. 10 × 6 mm, seated on cup-shaped perianth tube. Fl. Aug–Sep, fr. Mar–Apr.

- Evergreen broad-leaved forests; below 500 m. Taiwan.

- 1a. Petioles, leaf blade along veins abaxially, peduncles of inflorescence, and filaments pubescent; rudimentary pistil small ..... 65a. var. *akoensis*
- 1b. Petioles, leaf blade along veins abaxially, peduncles of inflorescence, and filaments hirsute; rudimentary pistil lacking ..... 65b. var. *sasakii*

**65a. *Litsea akoensis* var. *akoensis***

屏东木姜子(原变种) ping dong mu jiang zi (yuan bian zhong)

*Actinodaphne akoensis* (Hayata) T. S. Liu & J. C. Liao; *Cylicodaphne akoensis* (Hayata) Nakai; *Tetradenia akoensis* (Hayata) Nemoto.

Petiole ca. 1 cm, pubescent; leaf blade oblong-obovate or long elliptic, 6–10 × 2–4 cm, along veins pubescent abaxially, glabrous adaxially, except pubescent on base of midrib. Pedun- cles of inflorescence 6–10 mm, pubescent. Male flowers: fila- ments pubescent; rudimentary pistil small.

- Evergreen broad-leaved forests; below 500 m. Taiwan.

**65b. *Litsea akoensis* var. *sasakii*** (Kamikoti) J. C. Liao, Taxon. Rev. Fam. Lauraceae Taiwan, 84. 1988.

浸水营木姜子 jin shui ying mu jiang zi

*Litsea sasakii* Kamikoti, Trans. Nat. Hist. Soc. Formosa 22: 412. 1932; *Actinodaphne sasakii* (Kamikoti) T. S. Liu & J. C. Liao; *Fiwa sasakii* (Kamikoti) Nakai; *L. linii* C. E. Chang.

Petiole 1–1.5 cm, hirsute; leaf blade elliptic, oblong, or lanceolate, rarely oblanceolate, 5–15 × 2–3.5 cm, along veins hirsute abaxially, glabrous adaxially. Peduncles of inflorescence 10–15 mm, hirsute. Male flowers: filaments hirsute; rudimen- tary pistil lacking.

- Evergreen broad-leaved forests; low to medium elevations. Tai- wan.

*Litsea linii* and *L. sasakii* were treated in FRPS (31: 334–335. 1982) as insufficiently known species. However, the descriptions and type material show their characters to be quite similar to those of *L. akoensis*. They differ only in their hirsute indumentum and in lacking a rudimentary pistil, which are here considered differences justifying at most varietal rank.

**66. *Litsea kwangsiensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 58. 1978.

红楠刨 hong nan pao

Evergreen trees, 8–12 m tall, ca. 20 cm d.b.h. Branchlets densely yellow-brown pubescent. Leaves alternate; petiole 1–2 cm, pubescent when young; leaf blade lanceolate or oblong- lanceolate, 7–12 × 1.5–3 cm, glabrous on both surfaces, pinni- nerved, lateral veins 8–12 pairs, densely reticulate-veined, base broadly cuneate or obtuse-rounded, apex shortly acuminate with obtuse acumen. Umbels 1–3 on short branchlets in leaf axils toward apex of branchlet, male umbel 5-flowered. Male

flowers: pedicel villous; perianth segments 6, ovate; fertile stamens 9; filaments villous, of 3rd whorls each with 2 shortly stipitate rounded glands at base; rudimentary pistil lacking. Fruit ellipsoid, ca. 10 × 6–7 mm, seated on cup-shaped perianth tube; fruiting pedicel 3–4 mm, villous. Fl. Aug–Sep, fr. Feb–Mar of next year.

• Broad-leaved forests on mountain slopes, valleys; 300–1200 m. S Guangxi.

The wood is yellow, fine, shiny, and is used for making products such as high-grade furniture.

**67. *Litsea liboshengii*** H. P. Tsui, Acta Bot. Yunnan. 16: 3. 1994.

勃生木姜子 bo sheng mu jiang zi

Evergreen trees, ca. 10 m tall. Young branchlets covered with yellow pubescence. Leaves alternate; petiole 0.7–2 cm, densely yellow pubescent; leaf blade long elliptic, 11.6–21 × 3–6.3 cm, covered with gray pubescence on both surfaces, especially along veins, pinninerved, lateral veins 5–7 pairs. Umbels axillary or axillary on short branchlets, ca. 20-flowered; peduncle stouter, 1.5–2 cm, yellow pubescent; involucre bracts decussate, appressed pubescent on both surfaces. Male flowers (bud): pedicel appressed pubescent; perianth segments 6, subequal, appressed pubescent on both surfaces; fertile stamens 9; filaments pubescent, of 3rd whorl each with 2 stipitate glands at base; rudimentary pistil small, glabrous. Female flower and fruit not seen.

• Evergreen broad-leaved forests; ca. 2100 m. SE Xizang.

**68. *Litsea sinoglobosa*** J. Li & H. W. Li, Acta Bot. Yunnan. 28: 107. 2006.

圆果木姜子 yuan guo mu jiang zi

*Litsea globosa* Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 58. 1978, not Kostermans (1970).

Evergreen shrubs or small trees, up to 16 m tall. Young branchlets covered with appressed pubescence. Leaves alternate; petiole 6–20 mm, pubescent when young; leaf blade elliptic or obovate-elliptic, 5–14.5 × 2–5 cm, along veins pubescent abaxially, glabrous adaxially, pinninerved, lateral veins 8–12 pairs, conspicuously reticulate-veined, base cuneate, apex acuminate. Umbels solitary or in cluster of 2 on short branchlets, male umbel 4-flowered. Male flowers: pedicel short, pubescent; perianth segments 6, elliptic; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 shortly stipitate reniform large glands at base; rudimentary pistil lacking. Fruit globose or subglobose, ca. 6 mm in diam., seated on discoid perianth tube; fruiting pedicel ca. 3 mm, pubescent. Fl. Feb–Mar, fr. May–Jun.

• Sparse forests; 100–600 m. N Guangdong, S Hunan.

**69. *Litsea wilsonii*** Gamble in Sargent, Pl. Wilson. 2: 78. 1914.

绒叶木姜子 rong ye mu jiang zi

Evergreen trees, up to 10 m tall. Branchlets gray-white tomentose. Leaves alternate; petiole 1–3.5 cm, gray-white tomentose and becoming glabrous; leaf blade obovate, 5.5–18 × 3–9 cm, tomentose on both surfaces when young, tomentose abaxially and glabrous adaxially when old, pinninerved, lateral veins 6–10 pairs, with conspicuous parallel transverse veins abaxially, base cuneate, apex abruptly acute. Umbels solitary or in cluster of 2 or 3 on short branchlets, male umbel 6-flowered; peduncle ca. 1 cm. Male flowers: pedicel ca. 5 mm, tomentose; perianth segments 6; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 shortly stipitate yellow glands at base. Fruit ellipsoid, ca. 13 × 7–8 mm, seated on cup-shaped perianth tube, red becoming deep purple-black at maturity; fruiting pedicel 6–7 mm. Fl. Aug–Sep, fr. May–Jun.

ially and glabrous adaxially when old, pinninerved, lateral veins 6–10 pairs, with conspicuous parallel transverse veins abaxially, base cuneate, apex abruptly acute. Umbels solitary or in cluster of 2 or 3 on short branchlets, male umbel 6-flowered; peduncle ca. 1 cm. Male flowers: pedicel ca. 5 mm, tomentose; perianth segments 6; fertile stamens 9; filaments pubescent, of 3rd whorls each with 2 shortly stipitate yellow glands at base. Fruit ellipsoid, ca. 13 × 7–8 mm, seated on cup-shaped perianth tube, red becoming deep purple-black at maturity; fruiting pedicel 6–7 mm. Fl. Aug–Sep, fr. May–Jun.

• Mountain slopes, roadsides, thickets, weed-tree forests; 300–1800 m. Guizhou, Sichuan.

**70. *Litsea hayatae*** Kanehira, Formos. Trees, rev. ed. 217. 1936.

台湾木姜子 tai wan mu jiang zi

*Litsea obovata* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 252. 1911, not (Nees) Nees (1836); *Cylicodaphne hayatae* (Kanehira) Nakai; *L. akoensis* Hayata var. *chitouchiaoensis* J. C. Liao; *L. akoensis* f. *hayatae* (Kanehira) S. S. Ying; *L. akoensis* var. *hayatae* (Kanehira) J. C. Liao; *Tetradenia obovata* Nemoto (1931), not Nees (1831).

Evergreen small trees. Young branchlets gray-brown pubescent. Leaves alternate; petiole 1–2 cm, gray-yellow pubescent; leaf blade obovate to broadly oblong, 15–20 × 8–10 cm, gray-brown pubescent abaxially, glabrous adaxially except for pubescent midrib, pinninerved, lateral veins 6–9 pairs, base narrowly cuneate, apex rounded-obtuse. Umbels axillary, 5-flowered; peduncle ca. 5 mm, pubescent. Male flowers: pedicel short, villous; perianth segments 6, oblong; fertile stamens 9(–12); filaments glabrous, of 3rd (and 4th) whorls each with 2 stipitate cordate glands at base. Fruit ellipsoid, ca. 8 × 6 mm, seated on cup-shaped perianth tube. Fl. Oct–Nov.

• Evergreen broad-leaved forests; 1500–2500 m. Taiwan.

Liao (Taxon. Rev. Fam. Lauraceae Taiwan, ed. 2, 88. 1995) reduced *Litsea hayatae* to the synonymy of *L. akoensis*. However, *L. hayatae* has larger, wider leaves (15–20 × 8–10 cm vs. 5–15 × 2–4 cm), shorter peduncles (ca. 5 mm vs. 6–15 mm), and glabrous (vs. pubescent) filaments. *Litsea akoensis* var. *chitouchiaoensis* was described on the basis of its large broadly obovate leaves, but these characters are quite similar to those of *L. hayatae* and are within the range of variation for that species.

**71. *Litsea kobuskiana*** C. K. Allen, J. Arnold Arbor. 18: 290. 1937.

安顺木姜子 an shun mu jiang zi

*Eurya esquirolii* H. Léveillé, Fl. Kouy-Tchéou, 414. 1914–1915; *Litsea esquirolii* (H. Léveillé) C. K. Allen (1936), not H. Léveillé (1911); *L. faberi* Hemsley var. *ganchouensis* H. Liu.

Evergreen small trees, 3–8 m tall, ca. 12 cm d.b.h. Young branchlets densely gray-yellow pilose. Leaves alternate; petiole 8–13 mm, gray-yellow villous; leaf blade lanceolate-elliptic, 6–10 × 1.2–2.5 cm, glaucous and pubescent abaxially, with pubescence denser along midrib, glabrous adaxially, pinninerved, lateral veins 5–8 pairs, conspicuously reticulate-veined adaxially, midrib slightly prominent abaxially, transverse veinlets

inconspicuous abaxially, base cuneate, apex acuminate. Umbels 1–3, axillary in upper parts of branchlets, male umbel 3- or 4-flowered; peduncle ca. 2 mm, pubescent. Male flowers: pedicel short, densely pubescent; perianth segments 6; fertile stamens 9; filaments pubescent at base, of 3rd whorls each with 2 rounded glands at base; rudimentary pistil small. Fruit not seen. Fl. Aug.

• Dense forests on mountains; 800–1800 m. N Guangxi, S Guizhou.

**72. *Litsea acutivena*** Hayata, Icon. Pl. Formosan. 5: 163. 1915.

尖叶木姜子 *jian ye mu jiang zi*

*Actinodaphne acutivena* (Hayata) Nakai; *A. nakaii* (Hayata) T. S. Liu & J. C. Liao; *Litsea elongata* (Nees) J. D. Hooker var. *acutivena* (Hayata) S. S. Ying; *L. nakaii* Hayata; *Tetradenia acutivena* (Hayata) Nemoto; *T. nakaii* (Hayata) Makino & Nemoto.

Evergreen trees, up to 7 m tall. Young branchlets densely yellow-brown villous and becoming subglabrous. Leaves alternate or clustered toward apex of branchlet; petiole 6–12 mm, densely hairy like young branchlets; leaf blade lanceolate, oblanceolate, or oblong-lanceolate, 4–11 × 2–4 cm, yellow-brown pubescent abaxially, more densely so along veins, glabrous adaxially when young, except for hairy midrib, pinninerved, lateral veins 9 or 10 pairs, midrib impressed adaxially, transverse veinlets conspicuous abaxially, base cuneate, apex acute or shortly acuminate. Umbels clustered toward apex of branchlet, male umbel 5- or 6-flowered; peduncle ca. 3 mm. Male flowers: perianth segments 6, long elliptic; fertile stamens 9; filaments hairy, of 3rd whorls each with 2 peltate glands at base; rudimentary pistil small. Fruit ellipsoid, 12–20 × 10–12 mm, black at maturity, seated on cup-shaped perianth tube; fruiting pedicel ca. 1 cm. Fl. Jul–Aug, fr. Dec–Feb.

Dense forests on mountains; 500–2500 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, S Jiangxi (Dayu), Taiwan [Cambodia, Laos, Vietnam].

**73. *Litsea elongata*** (Nees) J. D. Hooker, Fl. Brit. India 5: 165. 1886.

黄丹木姜子 *huang dan mu jiang zi*

Evergreen small or medium-sized trees, up to 12 m tall, ca. 40 cm d.b.h. Branchlets densely brown tomentose. Leaves alternate or subverticillate; petiole 2–25 mm, densely brown tomentose; leaf blade oblong, oblong-lanceolate, narrowly lanceolate, or oblanceolate, 5–22 × 1.2–6 cm, pubescent abaxially and villous along midrib and lateral veins, glabrous adaxially, lateral veins 10–20 pairs, transverse veinlets conspicuously prominent abaxially, base cuneate or rounded, apex obtuse, shortly acuminate, caudate-acute, or long caudate-acute. Umbels solitary, rarely clustered, 4- or 5-flowered per umbel; peduncle absent or to 10 mm. Male flowers: pedicel sericeous-villous; perianth segments 6, ovate; fertile stamens 9–12; filaments villous, of 3rd or 4th whorls each with 2 sessile rounded glands at base; rudimentary pistil glabrous. Fruit oblong, 11–13 × 7–8 mm, seated on cup-shaped perianth tube, black-purple at

maturity; fruiting pedicel 2–3 mm. Fl. May–Nov, fr. Feb–Jun.

Roadsides, streamsides, weed-tree forests on mountain slopes, shady moist places, sparse forests, thickets; 500–2300 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Xizang, Yunnan, Zhejiang [India, Nepal].

This species is variable in the size and shape of its leaves, especially in repeatedly disturbed secondary forests or dense thickets.

- 1a. Leaves subverticillate; petiole less than 5 mm; peduncle absent or nearly absent ..... 73c. var. *subverticillata*
- 1b. Leaves alternate; petiole more than 10 mm; peduncle 2–10 mm.
  - 2a. Leaf blade obtuse or shortly acuminate at apex; peduncle less than 5 mm ..... 73a. var. *elongata*
  - 2b. Leaf blade caudate or long caudate-acute at apex; peduncle more than 5 mm ..... 73b. var. *faberi*

**73a. *Litsea elongata* var. *elongata***

黄丹木姜子(原变种) *huang dan mu jiang zi* (yuan bian zhong)

*Daphnidium elongatum* Nees in Wallich, Pl. Asiat. Rar. 2: 63. 1831.

Evergreen small or medium-sized trees. Leaves alternate; petiole 1–2.5 cm; leaf blade oblong or oblong-lanceolate to oblanceolate, 6–22 × 2–6 cm, apex obtuse or shortly acuminate. Peduncle usually stout and short, 2–5 mm, densely brown tomentose.

Roadsides, streamsides, weed-tree forests on mountain slopes; 500–2000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Xizang, Yunnan, Zhejiang [India, Nepal].

The wood is used for construction, furniture, etc. The seeds may be used for industrial oil.

**73b. *Litsea elongata* var. *faberi*** (Hemsley) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 59. 1978.

石木姜子 *shi mu jiang zi*

*Litsea faberi* Hemsley, J. Linn. Soc., Bot. 26: 381. 1891; *L. faberi* f. *dolichophylla* Yen C. Yang.

Evergreen small trees. Leaves alternate; petiole 1–2 cm; leaf blade oblong-lanceolate or narrowly lanceolate, 5–16 × 1.2–3.6 cm, apex caudate-acute or long caudate-acute, midrib and lateral veins impressed adaxially. Peduncle slender, 5–10 mm.

• Shady moist places on mountain slopes, sparse forests; 1500–2300 m. Guizhou, Sichuan, NE Yunnan.

The leaves and fruits are processed for their aromatic oil. The seeds contain oil.

**73c. *Litsea elongata* var. *subverticillata*** (Yen C. Yang) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 59. 1978.

近轮叶木姜子 *jin lun ye mu jiang zi*

*Litsea subverticillata* Yen C. Yang, J. W. China Border

Res. Soc., Ser. B, 15: 79. 1945.

Evergreen small trees. Leaves subverticillate; petiole shorter, 2–5 mm; leaf blade thinly leathery or membranous, black-green in a dry state. Peduncle absent or nearly absent.

• Roadsides on mountain slopes, thickets; 1200–1900 m. W Guangxi, SW Guizhou, SW Hubei, W Hunan, Sichuan, SE Yunnan.

**74. *Litsea machiloides*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 60. 1978.

润楠叶木姜子 *run nan ye mu jiang zi*

Evergreen trees, ca. 13 m tall. Branchlets covered with gray-yellow pubescence. Leaves clustered toward apex of branchlet, subverticillate; petiole ca. 1 cm, gray-yellow pubescent; leaf blade long lanceolate or ovate-long lanceolate, 13–22 × 2.2–3.2 cm, gray pubescent abaxially, glabrous and shiny adaxially, pinninerved, lateral veins 14–19 pairs, transverse veinlets slightly prominent abaxially, base attenuate, apex acuminate or long acuminate and slightly curved. Umbels axillary or lateral, solitary or clustered toward apex of branchlet, male umbel 4-flowered; peduncle lacking. Male flowers: perianth segments 6, long ovate; fertile stamens 9; filaments pubescent at base, of 3rd whorls each with 2 peltate glands at base; rudimentary pistil lacking. Fruit ellipsoid or obovoid-ellipsoid, ca. 13 × 6 mm, seated on discoid perianth tube; fruiting pedicel stout and short, 2–3 mm, pubescent. Fl. Jul–Aug, fr. Dec.

• Shady places in valleys; ca. 500 m. W Guangdong (Gaoyao).

