

**2. NEOLITSEA** (Bentham & J. D. Hooker) Merrill, Philipp. J. Sci. 1(Suppl. 1):  
56. 1906, nom. cons.

新木姜子属 *xin mu jiang zi shu*

Huang Puhua (黄普华 *Huang Pu-hwa*); Henk van der Werff

*Litsea* sect. *Neolitsea* Bentham & J. D. Hooker, Gen. Pl. 3: 161. 1880; *Bryantea* Rafinesque; *Tetradenia* Nees (1831), not Bentham (1830).

Trees or shrubs, evergreen, dioecious. Leaves alternate, clustered, or verticillate, rarely subopposite, triplinerved, rarely pinninerved or subtriplinerved. Umbels solitary or fasciculate, pedunculate or not; bracts opposite, large, late deciduous; perianth segments 4, in 2 whorls. Flowers unisexual. Male flowers: fertile stamens 6 in 3 whorls of 2 each; filaments of 1st and 2nd whorls eglandular, of 3rd whorls 2-glandular at base; anthers all introrse, 4-celled. Female flowers: staminodes 6, clavate, of 1st and 2nd whorls eglandular, of 3rd whorls 2-glandular at base; ovary superior; style conspicuous; stigma peltate. Fruit seated on slightly enlarged disciform or concave perianth tube; pedicel often slightly thickened.

About 85 species: Indo-Malaysia to E Asia; 45 species (35 endemic) in China.

*Neolitsea bawangensis* R. H. Miao (Acta Sci. Nat. Univ. Sunyatseni 32(4): 57. 1993) was described from Hainan but could not be treated here because no material was seen by the present authors.

1a. Leaf blade pinninerved or subtriplinerved.

2a. Young branchlets glabrous.

3a. Young branchlets and petioles stouter; leaf blade thickly leathery, oblong or elliptic, larger, 6.5–13 × 1–4.2 cm, transverse veins distinct abaxially ..... 1. *N. pinninervis*

3b. Young branchlets and petioles relatively slender; leaf blade thinly leathery, ovate-lanceolate to lanceolate, elliptic, or oblong-lanceolate, smaller, 5–9 × 1.7–3.5 cm, transverse veins indistinct abaxially.

4a. Leaf blade lateral veins 8–12 pairs; filaments glabrous; fruit globose ..... 2. *N. wushanica*

4b. Leaf blade lateral veins 5 pairs; filaments pubescent at base; fruit ovoid ..... 3. *N. acuminatissima*

2b. Young branchlets with ferruginous tomentum or appressed pubescence.

5a. Young branchlets with dense ferruginous tomentum; fruit globose; perianth segments often persistent.

6a. Leaf blade 4–10 × 0.8–2.3 cm, petiole less than 7 mm; filaments and style glabrous ..... 4. *N. oblongifolia*

6b. Leaf blade 10–17 × 3.5–6 cm, petiole more than 10 mm; filaments and style hairy ..... 5. *N. cambodiana*

5b. Young branchlets with appressed gray-brown pubescence; fruit ellipsoid; perianth segments deciduous.

7a. Leaf blade lateral veins 13–15 pairs; fruiting tube cup-shaped, ca. 5 mm in diam. .... 6. *N. undulatifolia*

7b. Leaf blade lateral veins 4–6 pairs; fruiting tube shallowly discoid, ca. 2 mm in diam. .... 7. *N. confertifolia*

1b. Leaf blade trinerved at base or triplinerved.

8a. Leaf blade trinerved at base ..... 8. *N. menglaensis*

8b. Leaf blade triplinerved.

9a. Leaf blade glabrous abaxially when young.

10a. Leaf blade distinctly foveolate on both surfaces.

11a. Young branchlets with dense ferruginous or yellow-brown pubescence.

12a. Leaf blade elliptic or rounded-elliptic, abruptly acute at apex, acumen obtuse, base rotund or rounded ..... 29. *N. hainanensis*

12b. Leaf blade obovate, apex obtusely rounded, base cuneate ..... 30. *N. buisanensis*

11b. Young branchlets glabrous.

13a. Leaf blade oblong-lanceolate or oblong-obovate, apex obtusely rounded, lateral veins flat on both surfaces or impressed adaxially ..... 31. *N. obtusifolia*

13b. Leaf blade not as above, apex acuminate, lateral veins prominent on both surfaces.

14a. Petiole more than 15 mm, leaf blade ovate-oblong or obovate-oblong; style densely pubescent ..... 32. *N. parvigemma*

14b. Petiole less than 10 mm, leaf blade ovate; style glabrous ..... 33. *N. ovatifolia*

10b. Leaf blade not foveolate on both surfaces.

15a. Petiole 2–4 cm.

16a. Leaf blade less than 10 cm, lateral veins 2 or 3 pairs, indistinct abaxially; fruit ellipsoid, 1.3–1.8 cm ..... 34. *N. ellipsoidea*

16b. Leaf blade more than 10 cm, lateral veins 3–5 pairs, distinct abaxially; fruit globose or subglobose (*N. chui* sometimes ellipsoid, but less than 1 cm).

17a. Leaf blade broadly ovate, ovate, or ovate-oblong, 11–20 × 6.8–13 cm; fruit globose, 15–16 mm in diam. .... 35. *N. kwangsiensis*

- 17b. Leaf blade elliptic to ovate-elliptic, 8–16 × 2.7–9 cm; fruit subglobose or ellipsoid, ca. 8 mm in diam. .... 36. *N. chui*
- 15b. Petiole 0.7–1.5 cm, longest less than 2 cm.
- 18a. Midrib and lateral veins impressed adaxially, prominent abaxially ..... 38. *N. impressa*
- 18b. Midrib and lateral veins prominent on both surfaces.
- 19a. Leaf blade caudate-acuminate or shortly caudate-acuminate at apex.
- 20a. Leaf blade lateral veins 2 or 3 pairs, except for lowermost pairs, veins arising from above middle of blade; fruit ellipsoid ..... 39. *N. shingningensis*
- 20b. Leaf blade lateral veins 3–6 pairs, except for lowermost pairs, veins arising from middle or below middle of blade; fruit ovoid or obovoid.
- 21a. Young branchlets glabrous; fruit ovoid ..... 40. *N. homilantha*
- 21b. Young branchlets ferruginous pubescent; fruit obovoid ..... 41. *N. purpurascens*
- 19b. Leaf blade acute or acuminate at apex.
- 22a. Leaf blade often larger, 7.5–13 × 2.5–4.5 cm, veinlets indistinct abaxially ..... 37. *N. sutchuanensis*
- 22b. Leaf blade often smaller, 3.5–6.5(–9) × 1.3–2.5(–4) cm, veins distinctly prominent abaxially.
- 23a. Leaf blade oblong, obtusely acute at apex; style hirsute ..... 45. *N. hiiranensis*
- 23b. Leaf blade ovate, ovate-lanceolate, ovate-elliptic, or elliptic, acuminate or acute at apex; style with dense sericeous pubescence or pilose at base.
- 24a. Petiole pubescent; filaments with sericeous pubescence ..... 42. *N. pingbienensis*
- 24b. Petiole glabrous; filaments pilose only at base ..... 44. *N. daibuensis*
- 9b. Leaf blade hairy abaxially, at least on young leaves.
- 25a. Leaf blade with golden yellow or pale yellow sericeous hairs abaxially.
- 26a. Leaf blade shortly acuminate at apex, acumen obtuse; fruit globose ..... 9. *N. sericea*
- 26b. Leaf blade falcate-acuminate, acuminate, or abruptly acute at apex, acumen not obtuse; fruit ellipsoid.
- 27a. Leaf blade with dense golden yellow sericeous hairs abaxially, falcate-acuminate or acuminate at apex; rudimentary pistil glabrous ..... 10. *N. aurata*
- 27b. Leaf blade with dense appressed pale yellow sericeous pubescence abaxially, abruptly acute at apex; rudimentary pistil densely puberulent ..... 11. *N. lunglingensis*
- 25b. Leaf blade with pubescence or tomentum, not sericeous hairs abaxially.
- 28a. Young branchlets glabrous ..... 43. *N. konishii*
- 28b. Young branchlets hairy.
- 29a. Midrib and lateral veins distinctly impressed adaxially on leaf blade; umbel many flowered ..... 12. *N. velutina*
- 29b. Midrib and lateral veins elevated adaxially on leaf blade; umbel 6-flowered.
- 30a. Leaf blade lateral veins 1 pair, arising 3–8 mm from base and extending to apex, veinlets 6–9 at one side near margin ..... 13. *N. chrysotricha*
- 30b. Leaf blade lateral veins 2–6 pairs, lowermost pair arising from base or a little above base and extending to above middle of blade.
- 31a. Leaf blade larger, mostly more than 12 cm, largest 15–30 cm.
- 32a. Leaf blade obovate, ovate, or elliptic, often 2–2.5 × as long as broad.
- 33a. Young branchlets and petioles with dense appressed gray-white short pubescence; fruiting pedicel 4–5 mm ..... 14. *N. howii*
- 33b. Young branchlets and petioles with dense ferruginous-yellow tomentum; fruiting pedicel ca. 10 mm ..... 15. *N. alongensis*
- 32b. Leaf blade mostly oblong shapes, often 3 × or more as long as broad.
- 34a. Leaf blade ovate-oblong or oblong, gray pubescent abaxially, transverse veinlets indistinct ..... 16. *N. villosa*
- 34b. Leaf blade oblong-lanceolate or oblong-oblong-lanceolate, with yellow-brown villous hairs or tomentum abaxially, transverse veinlets distinct.
- 35a. Leaf blade caudate-acuminate at apex, broadly cuneate or rotund at base, abaxially with relatively dense yellow-brown tomentum, slightly glaucous or not ..... 17. *N. tomentosa*
- 35b. Leaf blade shortly acute or abruptly acute at apex, base cuneate, glabrate abaxially, mostly glaucous ..... 18. *N. levinei*
- 31b. Leaf blade smaller, mostly less than 10 cm, largest not over 13 cm.
- 36a. Young branchlets, leaf blade abaxially, and petioles with dense ferruginous-yellow tomentum; petiole ca. 5 mm ..... 19. *N. hsiangkweiensis*
- 36b. Young branchlets, leaf blade abaxially, and petioles with pubescence; petiole often more than 10 mm.
- 37a. Fruit obovoid-ellipsoid or ellipsoid to ovoid.

- 38a. Leaf blade lanceolate or obovate-lanceolate, pubescent abaxially when old; rudimentary pistil densely hairy ..... 27. *N. aciculata*
- 38b. Leaf blade elliptic or oblong-elliptic, becoming glabrous abaxially when old; rudimentary pistil glabrous ..... 28. *N. polycarpa*
- 37b. Fruit globose or nearly globose.
- 39a. Fruiting pedicels more than 15 mm ..... 20. *N. longipedicellata*
- 39b. Fruiting pedicels less than 12 mm.
- 40a. Leaf blade slightly appressed pubescent or along veins yellow pubescent abaxially.
- 41a. Leaf blade apex acuminate, base obtuse to cuneate, not decurrent, with gray appressed pubescence abaxially when young; fruiting pedicels ca. 10 mm ..... 25. *N. variabilima*
- 41b. Leaf blade narrowly acuminate at apex, base cuneate, slightly decurrent, only along veins with yellow pubescence abaxially when young; fruiting pedicels 4–5 mm ..... 26. *N. zeylanica*
- 40b. Leaf blade densely brown or gray villous abaxially when young.
- 42a. Leaf blade lateral veins, except for lowermost pair, arising from middle or below middle of blade, most distinct adaxially; petiole 1–2 cm ..... 21. *N. phanerophlebia*
- 42b. Leaf blade lateral veins, except for lowermost pair, arising from above middle of blade, often indistinct adaxially; petiole 0.5–0.8 cm.
- 43a. Leaf blade thickly leathery, shiny adaxially, margin not sinuous-rugose in a dry state ..... 22. *N. pulchella*
- 43b. Leaf blade thinly leathery, somewhat shiny adaxially, margin sinuous-rugose in a dry state.
- 44a. Fruiting pedicels (6–)10–12 mm; leaf blade distinctly gray-white abaxially, lateral veins 4 or 5 pairs ..... 23. *N. pallens*
- 44b. Fruiting pedicels 3–5 mm; leaf blade grayish green abaxially, lateral veins 3 or 4 pairs ..... 24. *N. brevipes*

**1. *Neolitsea pinninervis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 38. 1978.

羽脉新木姜子 *yu mai xin mu jiang zi*

Shrubs or small trees, up to 12 m tall. Branchlets glabrous. Leaves alternate or clustered at apex of branchlet, subverticillate; petiole to 2 cm, glabrous; leaf blade oblong or elliptic, 6.5–13 × 1–4.2 cm, thickly leathery, shiny, glabrous on both surfaces, pinninerved, lateral veins 7–9 pairs, transverse veins distinct abaxially, base cuneate or broadly cuneate, apex abruptly acute or falcate-acute. Umbels 2 or 3 in leaf axils, male umbel 5-flowered; peduncle 1–2 mm. Pedicel villous. Perianth segments 4, elliptic. Male flowers: fertile stamens 6–8; filaments covered with pubescence at base, of 3rd whorls each with 2 stipitate shield-shaped glands at base; rudimentary pistil ovoid; style pubescent. Fruit subglobose, ca. 6 mm in diam., black at maturity; fruiting pedicel 1–1.2 cm, pubescent or subglabrous, thickened at apex. Fl. Mar–Apr, fr. Aug–Sep.

• Dense or sparse mountain forests, mountaintops; 700–1700 m. N Guangdong, Guangxi, Guizhou, Hunan.

**2. *Neolitsea wushanica*** (Chun) Merrill, Sunyatsenia 3: 250. 1937.

巫山新木姜子 *wu shan xin mu jiang zi*

Small trees, 4–10 m tall. Branchlets glabrous or pubescent. Leaves alternate or clustered toward apex of branchlet; petiole 8–15 mm, glabrous or pubescent; leaf blade elliptic or oblong-lanceolate, 5–9 × 1.7–3.5 cm, glabrous on both surfaces, glaucous abaxially, pinninerved or sometimes subtriplinerved, lateral veins 8–12 pairs, base somewhat acuminate, apex acute or

subacuminate. Umbels axillary or lateral, sessile, 5-flowered. Pedicel sericeous-pubescent. Perianth segments 4. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 small glands at base; rudimentary pistil small, glabrous. Fruit globose or ellipsoid, 5–7 mm in diam., seated on shallowly discoid perianth tube, purple-black at maturity; fruiting pedicel slightly thickened at apex.

• Mountain slopes, forest margins, mixed forests, dense forests; 400–1500 m. Fujian, Guangdong, Guizhou, Hubei, SW Hunan, Shaanxi, Sichuan, NE Yunnan.

- 1a. Young branchlets and petioles glabrous; petiole more than 1 cm; fruit globose, 6–7 mm in diam. .... 2a. var. *wushanica*
- 1b. Young branchlets and petioles pubescent; petiole less than 1 cm; fruit ellipsoid, 8–9 × 5–6 mm ..... 2b. var. *pubens*

**2a. *Neolitsea wushanica* var. *wushanica***

巫山新木姜子(原变种) *wu shan xin mu jiang zi* (yuan bian zhong)

*Litsea wushanica* Chun, J. Arnold Arbor. 9: 153. 1928; *L. gracilipes* Hemsley (1891), not J. D. Hooker (1886); *Neolitsea gracilipes* H. Liu; *N. viridis* W. C. Cheng & S. Y. Hu.

Young branchlets and petioles glabrous; petiole slender, 10–15 mm. Fruit globose, 6–7 mm in diam. Fl. Oct, fr. Jun–Jul of next year.

• Mountain slopes, forest margins, mixed forests; 400–1500 m. Fujian, Guangdong, Guizhou, Hubei, Shaanxi, Sichuan, NE Yunnan (Yiliang).

**2b. *Neolitsea wushanica* var. *pubens*** Yen C. Yang & P. H. Huang, *Acta Phytotax. Sin.* 16(4): 38. 1978.

紫云山新木姜子 *zi yun shan xin mu jiang zi*

Young branchlets and petioles pubescent; petiole shorter, 8–10 mm. Fruit ellipsoid, 8–9 × 5–6 mm.

- Dense forests; ca. 1200 m. SW Hunan.

**3. *Neolitsea acuminatissima*** (Hayata) Kanehira & Sasaki, *Trans. Nat. Hist. Soc. Formosa* 20: 381. 1930.

尖叶新木姜子 *jian ye xin mu jiang zi*

*Tetradenia acuminatissima* Hayata, *Icon. Pl. Formosan.* 3: 166. 1913.

Small trees. Branchlets subverticillate, glabrous. Leaves alternate or clustered at apex of branchlet; petiole 1–1.5 cm, glabrous; leaf blade ovate-lanceolate to lanceolate, 6–9 × 1.8–2.5 cm, glabrous on both surfaces, pinninerved or subtriply-nerved, lateral veins 5 pairs, base obtuse or cuneate, apex acuminate to caudate-acuminate. Umbels axillary or lateral, sessile or subsessile, male umbel 4-flowered. Pedicel 4–5 mm. Perianth segments 4, rotund. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 reniform glands at base; rudimentary pistil ovoid. Fruit ovoid, 7–10 mm; fruiting pedicel ca. 1 cm, pubescent to glabrous. Fr. Oct–Nov.

- Evergreen broad-leaved forests on high mountains. Taiwan.

**4. *Neolitsea oblongifolia*** Merrill & Chun, *Sunyatsenia* 2: 234. 1935.

长圆叶新木姜子 *chang yuan ye xin mu jiang zi*

Trees, 8–10 m tall, sometimes up to 22 m tall. Young branchlets, petioles, and inflorescences ferruginous pubescent. Leaves alternate, sometimes 4–6 clustered at apex of branchlet, subverticillate; petiole 3–7 mm; leaf blade oblong or oblong-lanceolate, 4–10 × 0.8–2.3 cm, glabrous on both surfaces, except for midrib with ferruginous pubescence when young abaxially, pinninerved, lateral veins 4–6 pairs, base acute, apex obtuse, acute, or acuminate. Umbels 3–5, axillary or lateral, sessile, 4- or 5-flowered. Pedicel ca. 5 mm. Perianth segments 4, ovate, with ferruginous pubescence outside. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 rounded glands at base. Fruit globose, 8–10 mm in diam., dark black-brown at maturity; fruiting pedicel thickened at apex; perianth segments often persistent. Fl. Aug–Nov, fr. Sep–Dec.

- Valleys, dense forests, forest margins; 300–900 m. Guangxi, Hainan.

The wood is used for construction, furniture, and agricultural tools. The seeds contain 25%–30% oil.

**5. *Neolitsea cambodiana*** Lecomte, *Notul. Syst. (Paris)* 2: 335. 1913.

锈叶新木姜子 *xiu ye xin mu jiang zi*

Trees, 8–12 m tall, 10–15 cm d.b.h. Young branchlets densely ferruginous tomentose or yellow-brown appressed pubescent. Leaves 3–5-subverticillate; petiole 1–1.5 cm, pubes-

cence similar to that on young branchlets; leaf blade oblong-lanceolate, oblong-elliptic, lanceolate, obovate, or elliptic, 10–17 × 3.5–6 cm, densely ferruginous tomentose on both surfaces when young and becoming glabrous, glabrate abaxially, pinninerved or subtriply-nerved, lateral veins 4 or 5 pairs, base narrow or cuneate, apex acuminate, subcaudate, or abruptly acute. Umbels 5–7-clustered, sessile or subsessile, 4- or 5-flowered. Male flowers: perianth segments ovate; fertile stamens 6, exserted; filaments villous at base, of 3rd whorls each with 2 small glands at base; rudimentary pistil glabrous. Fruit globose, 8–10 mm in diam., seated on flat discoid perianth tube; fruiting pedicel ca. 7 mm.

Mixed forests, sparse forests, roadsides, thickets; below 1000 m. Fujian, Guangdong, Guangxi, Hainan, Hunan, S Jiangxi [Cambodia, Laos].

- 1a. Young branchlets and petioles densely ferruginous tomentose ..... 5a. var. *cambodiana*
- 1b. Young branchlets and petioles yellow-brown appressed pubescent ..... 5b. var. *glabra*

**5a. *Neolitsea cambodiana* var. *cambodiana***

锈叶新木姜子(原变种) *xiu ye xin mu jiang zi (yuan bian zhong)*

*Neolitsea ferruginea* Merrill.

Young branchlets and petioles densely ferruginous tomentose. Leaf blade oblong-oblong-lanceolate, oblong-elliptic, or lanceolate, densely ferruginous tomentose on both surfaces when young and becoming glabrous, base cuneate, apex subcaudate or abruptly acute. Fl. Oct–Dec, fr. Jul–Aug of next year.

Mixed forests; below 1000 m. Fujian, Guangdong, Guangxi, Hainan, Hunan, S Jiangxi [Cambodia, Laos].

The bark, branchlets, and leaves contain glue and may be used for making incense. The leaves are used medicinally for treating furunculosis.

**5b. *Neolitsea cambodiana* var. *glabra*** C. K. Allen, *Ann. Missouri Bot. Gard.* 25: 418. 1938.

香港新木姜子 *xiang gang xin mu jiang zi*

*Actinodaphne hongkongensis* Chun; *Neolitsea hongkongensis* (Chun) C. K. Allen.

Young branchlets and petioles yellow-brown appressed pubescent. Leaf blade oblong-lanceolate, obovate, or elliptic, glabrous on both surfaces, base narrow or cuneate, apex acuminate or abruptly acute.

- Roadsides, thickets, sparse forests; below 1000 m. Fujian, Guangdong, Guangxi.

**6. *Neolitsea undulatifolia*** (H. Léveillé) C. K. Allen, *J. Arnold Arbor.* 17: 328. 1936.

波叶新木姜子 *bo ye xin mu jiang zi*

*Litsea undulatifolia* H. Léveillé, *Fl. Kouy-Tchéou*, 220. 1914–1915.

Shrubs or small trees, 2–7 m tall. Young branchlets ap-

pressed pubescent and becoming glabrous. Leaves clustered at apex of branchlet, subverticillate; petiole 6–12 mm; leaf blade lanceolate or narrowly elliptic, 6–10 × 1.4–2.5 cm, glabrous on both surfaces, except puberulent along midrib adaxially, pinninerved, lateral veins 13–15 pairs, acuminate at both ends. Umbels 2 or 3, clustered, sessile, 4- or 5-flowered. Pedicel ca. 2 mm, yellow villous. Male flowers: perianth segments 4 (or 5 or 6), ovate; fertile stamens 6 (–8 or 9); filaments glabrous, of 3rd whorls each with 2 broadly cordate glands at base; rudimentary pistil small, glabrous. Fruit ellipsoid, ca. 12 × 8 mm, seated on cup-shaped perianth tube, ca. 5 mm in diam.; fruiting pedicel 8–10 mm, thickened at apex, pubescent. Fl. Nov, fr. Jan–Feb.

• Stony mountains, thickets; 1400–2000 m. SW Guangxi, Guizhou, SE Yunnan.

This species is extremely variable, especially in the number of stamens and perianth segments. These variations sometimes occur on the same plant.

**7. *Neolitsea confertifolia*** (Hemsley) Merrill, Lingnan Sci. J. 15: 419. 1936.

簇叶新木姜子 *cu ye xin mu jiang zi*

*Litsea confertifolia* Hemsley, J. Linn. Soc., Bot. 26: 379. 1891; *Actinodaphne confertifolia* (Hemsley) Gamble; *Fiwa confertifolia* (Hemsley) Nakai.

Small trees, 3–7 m tall. Young branchlets and petioles covered with gray-brown pubescence and becoming glabrous. Leaves conferted, subverticillate; petiole 6–7 mm; leaf blade oblong or lanceolate to narrowly lanceolate, 5–12 × 1.2–3.5 cm, glaucous abaxially and pubescent when young, shiny and glabrous adaxially, pinninerved or sometimes subtriplinerved, lateral veins 4–6 pairs, base cuneate, apex acuminate. Umbels often 3–5-fascicled in leaf axils, subsessile, 4-flowered. Pedicel ca. 2 mm, sericeous-villous. Perianth segments 4, broadly ovate. Male flowers: fertile stamens 6; filaments hirsute at base, of 3rd whorls each with 2 large stipitate glands at base; rudimentary pistil glabrous. Fruit ovoid or ellipsoid, 8–12 × 5–6 mm, seated on flat discoid perianth tube, ca. 2 mm in diam.; fruiting pedicel 4–8 mm. Fl. Apr–May, fr. Sep–Oct.

• Watersides, thickets, dense forests; 400–2000 m. N Guangdong, NE Guangxi, Guizhou, SW Henan, Hubei, S Hunan, W Jiangxi, SE Shaanxi, Sichuan.

Leaf size in this species is extremely variable. The plants of Shaanxi and Henan usually have smaller and narrower leaves, while in Guizhou, Hubei, Hunan, and Sichuan the leaves are broader and larger.

The wood is used for furniture. The seeds are used for their oil.

**8. *Neolitsea menglaensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 39. 1978.

勐腊新木姜子 *meng la xin mu jiang zi*

Large trees, ca. 10 m tall, ca. 35 cm d.b.h. Branchlets stout, glabrous. Leaves alternate or 3–5 clustered at apex of branchlet; petiole 1–2 cm, slightly flat, glabrous; leaf blade elliptic or obovate-elliptic, 4.5–10.5 × 1.2–4.3 cm, glabrous on both surfaces, trinerved, lateral veins 3 or 4 pairs, lowermost

pair arising from base, with 6–8 curved thin veinlets at one side near margin, apex acuminate, rotund, or broadly cuneate. Umbels 1- to more fascicled in leaf axils, female umbel 5-flowered; peduncle stout and short. Pedicel 3–4 mm, densely sericeous-pubescent. Perianth segments 4, ovate. Female flowers: staminodes 6 (–8); filaments pubescent, of 3rd whorls each with 2 stipitate rounded glands at base; ovary ellipsoid, glabrous; style slender, exerted, with sericeous pubescence; stigma large, 2-lobed. Fl. Jan.

• Sparse forest at foothill of calcareous mountain. S Yunnan.

**9. *Neolitsea sericea*** (Blume) Koidzumi, Bot. Mag. (Tokyo) 40: 343. 1926.

舟山新木姜子 *zhou shan xin mu jiang zi*

*Laurus sericea* Blume, Bijdr. 554. 1826; *Litsea glauca* Siebold; *Malapoëna sieboldii* Kuntze; *Neolitsea glauca* (Siebold) Koidzumi; *N. sieboldii* (Kuntze) Nakai; *Tetradenia glauca* (Siebold) Matsumura.

Trees up to 10 m tall. Young branchlets and petioles with dense golden yellow sericeous pubescence and becoming glabrous. Leaves alternate; petiole 2–3 cm; leaf blade elliptic to lanceolate-elliptic, 6.6–20 × 2–4.5 cm, with dense golden yellow sericeous hairs on both surfaces when young and becoming glabrous, shiny adaxially, glaucous abaxially with yellow-brown or orange-brown appressed sericeous hairs, triplinerved, lateral veins 4 or 5 pairs, lowermost pair arising 6–10 mm from base, with 4–6 curved thin veinlets at one side near margin, apex shortly acuminate, acumen obtuse. Umbels axillary or lateral, sessile, clustered, 5-flowered. Pedicel 3–6 mm, densely villous. Perianth segments 4, elliptic. Male flowers: fertile stamens 6; filaments villous at base, of 3rd whorls each with 2 stipitate reniform glands at base; rudimentary pistil glabrous. Fruit globose, ca. 1.3 cm in diam., seated on shallowly discoid perianth tube. Fl. Sep–Oct, fr. Jan–Feb.

Forests on mountain slopes. Taiwan, Zhejiang [Japan, Korea].

**10. *Neolitsea aurata*** (Hayata) Koidzumi, Bot. Mag. (Tokyo) 23: 256. 1918.

新木姜子 *xin mu jiang zi*

Trees, up to 14 m tall, ca. 18 cm d.b.h. Young branchlets and petioles ferruginous or yellow-brown pubescent or glabrous. Leaves alternate or clustered toward apex of branchlet; petiole 8–12 mm; leaf blade oblong, elliptic, oblong-lanceolate, lanceolate, oblanceolate, or oblong-obovate, 8–14 × 2.5–4 cm, densely golden yellow sericeous or white, yellow, brown-yellow, or red-brown sericeous abaxially when young, glabrous adaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 2–3 mm from base, base cuneate or rotund, apex acuminate or falcate-acuminate. Umbels 3–5-fascicled toward apex of branchlet or internode, 5-flowered. Pedicel ca. 2 mm. Perianth segments 4, elliptic. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 stipitate glands at base; rudimentary pistil glabrous. Fruit ellipsoid, ca. 8 × 6 mm, seated on shallowly discoid perianth tube; fruiting pedicel 5–7 mm, pilose.

Broad-leaved forests and forest margins on mountain slopes, weed-tree forests; 500–1900 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan].

*Neolitsea aurata* is extremely variable in leaf shape and indumentum color.

- 1a. Young branchlets and petioles glabrous.
- 2a. Leaf blade sparsely yellow sericeous abaxially when young, margin not undulate, not hyaline, base not decurrent ..... 10d. var. *paraciculata*
- 2b. Leaf blade red-brown sericeous abaxially when young, margin undulate, hyaline, base decurrent ..... 10e. var. *undulatula*
- 1b. Young branchlets and petioles ferruginous or yellow-brown pubescent.
- 3a. Leaf blade often oblong-obovate, densely white appressed sericeous abaxially when young ..... 10c. var. *glauca*
- 3b. Leaf blade densely golden yellow or sparsely brown-yellow sericeous abaxially when young.
- 4a. Leaf blade oblong, elliptic, oblong-lanceolate, or oblong-obovate, broader, more than 2.5 cm wide, densely golden yellow sericeous abaxially when young ..... 10a. var. *aurata*
- 4b. Leaf blade lanceolate or oblanceolate, narrower, less than 2.4 cm wide, sparsely brown-yellow sericeous abaxially when young .. 10b. var. *chekiangensis*

**10a. *Neolitsea aurata* var. *aurata***

新木姜子(原变种) *xin mu jiang zi* (*yuan bian zhong*)

*Litsea aurata* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 246. 1911; *Neolitsea aurata* f. *glabrescens* H. Liu; *N. kwangtungensis* Hung T. Chang; *N. sericea* (Blume) Koidzumi var. *aurata* (Hayata) Hatusima; *Tetradenia aurata* (Hayata) Hayata.

Young branchlets and petioles ferruginous pubescent. Leaf blade oblong, elliptic, oblong-lanceolate, or oblong-obovate, 8–14 × 2.5–4 cm, densely golden yellow sericeous abaxially when young. Fl. Feb–Mar, fr. Sep–Oct.

Forest margins on mountain slopes, weed-tree forests; 500–1700 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan [Japan].

The roots are used medicinally for treating stomach pain and edema.

**10b. *Neolitsea aurata* var. *chekiangensis*** (Nakai) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 39. 1978.

浙江新木姜子 *zhe jiang xin mu jiang zi*

*Neolitsea chekiangensis* Nakai, J. Jap. Bot. 16: 128. 1940.

Young branchlets and petioles ferruginous pubescent. Leaf blade lanceolate or oblanceolate, 8–13 × 0.9–2.4 cm, sparsely

brown-yellow sericeous abaxially when young, indumentum easily deciduous, glabrate.

• Weed-tree forests on mountains; 500–1300 m. Anhui, Fujian, Jiangsu, Jiangxi, Zhejiang.

The seed core contains oil that is used for making soaps and lubricants. Aromatic oil may be extracted from the branchlets and leaves for use in cosmetics. The bark is used medicinally for treating stomach pain.

**10c. *Neolitsea aurata* var. *glauca*** Yen C. Yang, J. W. China Border Res. Soc., Ser. B, 15: 80. 1945.

粉叶新木姜子 *fen ye xin mu jiang zi*

Young branchlets and petioles sparsely yellow-brown pubescent. Leaf blade often oblong-obovate, glabrate, densely white appressed sericeous abaxially when young and becoming sparsely hairy when old.

• Broad-leaved forests on mountain slopes; 800–900 m. Sichuan.

**10d. *Neolitsea aurata* var. *paraciculata*** (Nakai) Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 40. 1978.

云和新木姜子 *yun he xin mu jiang zi*

*Neolitsea paraciculata* Nakai, Fl. Sylv. Kor. 22: 46. 1939.

Young branchlets and petioles glabrous. Leaf blade often narrower, sparsely yellow sericeous abaxially when young, indumentum easily deciduous, glabrate.

• Weed-tree forests on mountains; 500–1900 m. N Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang.

**10e. *Neolitsea aurata* var. *undulatula*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 40. 1978.

浙闽新木姜子 *zhe min xin mu jiang zi*

Young branchlets and petioles glabrous. Leaf blade red-brown sericeous abaxially when young and becoming glabrous when old, base decurrent, margin undulate and hyaline.

• Weed-tree forests on mountain slopes. Fujian, S Zhejiang.

**11. *Neolitsea lunglingensis*** H. W. Li, Acta Phytotax. Sin. 16(4): 40. 1978.

龙陵新木姜子 *long ling xin mu jiang zi*

Small trees, ca. 5 m tall. Young branchlets densely yellow-brown puberulent and becoming glabrous. Leaves clustered toward apex of branchlet; petiole 1–2.2 cm, densely puberulent; leaf blade elliptic or elliptic-oblong, 4.5–9 × 1.7–3.5 cm, densely appressed villous abaxially, glabrous or along midrib slightly puberulent adaxially, triplinerved, lateral veins 4 pairs, lowermost pair arising 2–5 mm from base, base acute, apex abruptly acuminate with acumen. Umbels 1–3-fascicled in leaf axils, sessile, male umbel 5-flowered. Pedicel ca. 4 mm. Perianth segment 4, broadly ovate. Male flowers: fertile stamens 6; filaments pilose, of 3rd whorls each with 2 stipitate adnate cordate-reniform glands at base; rudimentary pistil densely pilose. Fruit ovoid, ca. 10 × 8 mm, glabrous; fruiting pedicel 0.8–1 cm, thickened at apex. Fl. Dec, fr. Sep.

• Evergreen broad-leaved forests on mountain slopes; 1700–2000

m. W Yunnan.

**12. *Neolitsea velutina*** W. T. Wang, Acta Phytotax. Sin. 6: 216. 1957.

毛叶新木姜子 mao ye xin mu jiang zi

Small trees. Branchlets white or ferruginous velutinous. Leaves often 2 or 3 clustered at apex of branchlet; petiole ca. 6 mm, white or ferruginous velutinous; leaf blade elliptic or broadly obovate, 4.8–7.5(–15) × 1.8–3.5(–5.5) cm, ferruginous pubescent abaxially, more densely so along veins, glabrous adaxially, triplinerved, lateral veins 3 pairs, lowermost pair arising from near base, nearly vertical, midrib and lateral veins distinctly impressed adaxially. Umbels fascicled, many flowered; peduncle short. Pedicel 2–3 mm, densely yellow velutinous. Perianth segments 4, ovate-elliptic. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 stipitate ovoid glands at base; rudimentary pistil lacking. Female flowers: staminodes glabrous; ovary ovoid; style slender, glabrous. Fl. Nov–Dec.

• Mixed broad-leaved forests; 600–1400 m. Guangdong, Guangxi, SE Yunnan.

**13. *Neolitsea chrysotricha*** H. W. Li, Acta Phytotax. Sin. 16(4): 40. 1978.

金毛新木姜子 jin mao xin mu jiang zi

Small trees, 3–6 m tall. Young branchlets densely golden yellow villous. Leaves alternate or 3–5 clustered toward apex of branchlet; petiole 1–2 cm, puberulent; leaf blade elliptic-lanceolate or oblanceolate, 7.5–13.5 × 2.5–4.5 cm, glaucous and densely golden yellow villous abaxially, glabrous or along veins golden yellow villous adaxially, triplinerved, lateral veins 1 pair, arising 3–5 mm from base, obliquely spreading toward leaf apex, with 6–9 curved veinlets at one side near margin, base acute, apex caudate-acuminate with acumen. Fruiting inflorescence umbellate, axillary, with (3–)6–8 fruits. Fruit ovoid, ca. 9 × 5 mm, abruptly acute at apex; fruiting pedicel ca. 7 mm, slightly thickened at apex, densely yellow villous. Fr. Jun.

• Evergreen broad-leaved forests in valleys; 2500–3000 m. W Yunnan.

**14. *Neolitsea howii*** C. K. Allen, Ann. Missouri Bot. Gard. 25: 424. 1938.

保亭新木姜子 bao ting xin mu jiang zi

Trees or shrubs, up to 9 m tall. Young branchlets and petioles appressed gray pubescent. Leaves alternate or clustered at apex of branchlet, subverticillate; petiole 1–1.5 cm, stout, wrinkled; leaf blade obovate or elliptic, 9.5–18 × 3.5–7 cm, glaucous, gray-white pubescent, and becoming glabrous abaxially, glabrous and shiny adaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 0.5–1 cm from base, with 6–8 fine veinlets at one side near margin, base acute, apex acuminate. Fruiting inflorescence umbellate, axillary, with 7 fruits, sessile. Fruit ellipsoid or nearly globose, ca. 12 × 9 mm, glabrous, seated on shallowly discoid perianth tube; fruiting pedicel 4–5 mm, stout, pubescent. Fr. Aug.

• Mixed forests on mountains. Hainan.

**15. *Neolitsea alongensis*** Lecomte, Fl. Indo-Chine 5: 143. 1914.

下龙新木姜子 xia long xin mu jiang zi

Small trees, 6–8 m tall. Young branchlets densely ferruginous-yellow tomentose and becoming glabrous. Leaves alternate, subverticillate, or subopposite toward apex of branchlet; petiole 1–2 cm, densely ferruginous-yellow tomentose; leaf blade ovate, obovate, or elliptic, 8–16 × 4–7.5 cm, glaucous, covered with gray pubescence, and becoming glabrous abaxially, glabrous adaxially, triplinerved, lateral veins 4 or 5 pairs, lowermost pair arising 5–10 mm from base, other pairs arising from above middle of blade. Umbels 3–5-fascicled, axillary or lateral, male umbel 5-flowered; peduncle short or lacking. Pedicel short. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments ca. 1 mm, villous at base, of 3rd whorls each with 2 stipitate rounded glands at base; rudimentary pistil ovoid, glabrous. Fruit ellipsoid, 1.6–1.8 × ca. 1.3 cm, seated on shallowly discoid perianth tube; fruiting pedicel ca. 1 cm. Fl. Jun–Jul, fr. Aug–Sep.

Sparse forests, valleys, streamsides, seashores. Guangxi, S Yunnan [Vietnam].

**16. *Neolitsea villosa*** (Blume) Merrill, Philipp. J. Sci., C, 4: 261. 1909.

兰屿新木姜子 lan yu xin mu jiang zi

*Litsea villosa* Blume, Mus. Bot. 1: 349. 1851; *L. kotoensis* (Hayata) Kanehira; *Neolitsea kotoensis* (Hayata) Kanehira & Sasaki; *Tetradenia hayatae* Nemoto; *T. kotoensis* Hayata.

Trees. Young branchlets densely yellow-brown pubescent. Leaves alternate or clustered toward apex of branchlet, subverticillate; petiole 8–12 mm, densely yellow-brown pubescent; leaf blade ovate-oblong or oblong, 8–20 × 3–4.5 cm, glaucous and gray pubescent abaxially, with pubescence denser along midrib, glabrous and shiny adaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 3–5 mm from base, obliquely extending to mid-leaf, vanishing near margin, other pairs arising from above middle of leaf. Fruit ellipsoid, ca. 12 mm; fruiting pedicel ca. 7 mm. Fr. Jun–Jul.

• Broad-leaved forests. Taiwan.

This species was treated in FRPS (31: 356. 1982) as *Neolitsea kotoensis*. However, the original description and type material of *Tetradenia kotoensis* show its characters to be quite similar to those of *N. villosa*, and so the two entities are here treated as conspecific.

**17. *Neolitsea tomentosa*** H. W. Li, Acta Phytotax. Sin. 16(4): 41. 1978.

绒毛新木姜子 rong mao xin mu jiang zi

Small trees, 3–5 m tall. Young branchlets and petioles densely yellow-brown tomentose. Leaves alternate or often 3–5-verticillate at apex of branchlet; petiole 1–2 cm; leaf blade oblong or rotund-oblong, 16.5–28 × 5–7.5 cm, densely yellow-brown tomentose abaxially, shiny and along veins yellow-brown tomentose adaxially, triplinerved, lateral veins 4 pairs, lowermost pair arising 5–15 mm from base, with numerous slightly conspicuous veinlets at one side near margin, base

broadly cuneate or rotund, apex caudate-acuminate with acute acumen. Umbels 4–6-fascicled in leaf axils, 5-flowered. Pedicel ca. 1 mm. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments pubescent, of 3rd whorls each with 2 stipitate rounded-cordate glands at base; rudimentary pistil ellipsoid, glabrous. Fruit ovoid, ca. 10 × 8 mm, apiculate at apex; fruiting pedicel 5–6 mm, densely tomentose. Fr. Sep.

• Dense forests in valleys or on mountains; 1400–1700 m. SE Yunnan.

**18. *Neolitsea levinei*** Merrill, Philipp. J. Sci., C, 13: 138. 1918.

大叶新木姜子 da ye xin mu jiang zi

*Benzoin levinei* (Merrill) Chun ex H. Liu; *Neolitsea chinensis* (Gamble) Chun; *N. lanuginosa* Gamble var. *chinensis* Gamble.

Trees, up to 22 m tall. Young branchlets and petioles covered with dense yellow-brown pubescence. Leaves 4- or 5-verticillate; petiole 1.5–2 cm; leaf blade oblong-lanceolate to oblong-oblong-lanceolate or elliptic, 15–31 × 4.5–9 cm, glabrate and mostly glaucous abaxially, densely yellow-brown villous when young, shiny and glabrous adaxially, triplinerved, lateral veins 3 or 4 pairs, transverse veins conspicuous abaxially, base acute, apex shortly acute or abruptly acute. Umbels lateral, 5-flowered; peduncle ca. 2 mm. Pedicel ca. 3 mm, with dense pubescence. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 stipitate ellipsoid glands at base; rudimentary pistil ovoid. Fruit ellipsoid or globose, 12–18 × 8–15 mm, black at maturity; fruiting pedicel 7–10 mm, densely pubescent. Fl. Mar–Apr, fr. Aug–Oct.

• Roadsides, watersides, dense forests in valleys; 300–1300 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan.

*Neolitsea levinei* var. *tibetica* H. P. Tsui (Acta Bot. Yunnan. 16: 35. 1994) was described from SE Xizang (Mêdog) but could not be treated here because no material was seen by the present authors. Judging from the description in the protologue, it almost certainly belongs in *Cinnamomum*, rather than in *Neolitsea*, and is perhaps a synonym of *C. iners* (species no. 41).

The roots are used medicinally.

**19. *Neolitsea hsiangkweiensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 41. 1978.

湘桂新木姜子 xiang gui xin mu jiang zi

Trees, up to 22 m tall. Young branchlets and petioles densely ferruginous-yellow tomentose and becoming glabrate. Leaves 6–8 clustered toward apex of branchlet, subverticillate; petiole ca. 5 mm; leaf blade oblong or obovate-oblong, 10–12 × 2.5–4 cm, densely ferruginous-yellow tomentose abaxially and becoming glabrate, glabrous and shiny adaxially, triplinerved, lateral veins 4–6 pairs, lowermost pair arising ca. 1 cm from base, other pairs arising from middle or above middle of blade, base broadly cuneate, apex shortly acuminate or abruptly acute. Umbels 7- or 8-fascicled, sessile, male umbel 5-flowered. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 sessile small glands

at base; rudimentary pistil lacking. Fruit globose, ca. 1 cm in diam., seated on small discoid perianth tube; fruiting pedicel ca. 5 mm. Fl. Feb–Mar, fr. Oct–Nov.

• Dense forests on mountains, mountains of calcareous rock; 800–1000 m. W Guangxi, W Hunan.

**20. *Neolitsea longipedicellata*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 42. 1978.

长梗新木姜子 chang geng xin mu jiang zi

Trees, up to 11 m tall. Young branchlets and petioles appressed puberulent and becoming glabrous. Leaves alternate or subverticillate; petiole 1–1.2 cm, flat; leaf blade ovate or oblong, 5–8.5 × 2–3.5 cm, glaucous, appressed puberulent, and becoming glabrous abaxially, glabrous adaxially, triplinerved, lateral veins 2 or 3 pairs, lowermost pair arising 2–3 mm from base, other pairs arising from above middle of blade, base rounded or rotund, apex shortly caudate or acuminate. Umbels axillary or lateral, male umbel 5-flowered. Pedicel sericeous-villous. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 peltate stipitate glands at base; rudimentary pistil ovoid, glabrous. Fruit globose, ca. 8 mm in diam., black at maturity, seated on shallowly small discoid perianth tube; fruiting pedicel 1.5–2 cm. Fl. Mar–Apr, fr. Nov.

• Dense forests in valleys, roadsides on mountains; ca. 1500 m. N Guangxi.

**21. *Neolitsea phanerophlebia*** Merrill, Lingnan Sci. J. 7: 305. 1931.

显脉新木姜子 xian mai xin mu jiang zi

Small trees, up to 10 m tall. Branchlets and petioles densely ferruginous pubescent. Leaves verticillate or scattered; petiole 1–2 cm; leaf blade oblong to oblong-elliptic or oblong-lanceolate to ovate, 6–13 × 2–4.5 cm, glaucous, densely appressed pubescent and villous abaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 5–10 mm from base, with 6–8 veinlets at one side near margin, base acute or obtuse, apex acuminate. Umbels 2–4-fascicled, axillary, sessile, male umbel 5- or 6-flowered. Pedicel 2–3 mm. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 rounded glands at base; rudimentary pistil lacking. Fruit subglobose, 5–9 mm in diam., glabrous, purple-black at maturity; fruiting pedicel 5–7 mm, with appressed pubescence. Fl. Oct–Nov, fr. Jul–Aug of next year.

• Sparse forests in valleys; below 1000 m. Guangdong, Guangxi, Hainan, Hunan, Jiangxi.

**22. *Neolitsea pulchella*** (Meisner) Merrill, Philipp. J. Sci., C, 13: 137. 1918.

美丽新木姜子 mei li xin mu jiang zi

*Litsea pulchella* Meisner in A. Candolle, Prodr. 15(1): 224. 1864; *L. zeylanica* Nees & T. Nees var. *chinensis* Benth.

Small trees, 6–8 m tall. Young branchlets and petioles covered with brown pubescence and becoming glabrate. Leaves alternate or clustered toward apex of branchlet, subverticillate; petiole 6–8 mm; leaf blade elliptic or oblong-elliptic, 4–6 × 2–3



cm, thickly leathery, glaucous, gray villous, and becoming glabrous or glabrate abaxially, shiny and glabrous when young adaxially, except pubescent along midrib, triplinerved, lateral veins 2 or 3 pairs, lowermost pair arising 4–6 mm from base, other pairs arising from above middle of blade. Umbels axillary, solitary, or 2- or 3-fascicled, male umbel 4- or 5-flowered. Perianth segments 4, elliptic. Male flowers: fertile stamens 6; filaments below middle villous, of 3rd whorls each with 2 stipitate rounded small glands at base; rudimentary pistil lacking. Fruit globose, 4–6 mm in diam., seated on shallowly discoid perianth tube; fruiting pedicel 5–6 mm. Fl. Oct–Nov, fr. Aug–Sep of next year.

- Mixed forests, valleys. Fujian, Guangdong, Guangxi, Hainan.

**23. *Neolitsea pallens*** (D. Don) Momiyama & H. Hara, J. Jap. Bot. 47(9): 269. 1972.

灰白新木姜子 hui bai xin mu jiang zi

*Tetradenia pallens* D. Don, Prodr. Fl. Nepal. 66. 1825; *Litsea consimilis* (Nees) Nees; *L. umbrosa* Nees var. *consimilis* (Nees) J. D. Hooker; *Tetradenia consimilis* Nees.

Small trees, 5–15 m tall. Young branchlets and petioles yellowish brown pubescent and becoming glabrous. Leaves alternate or 3–5 clustered toward apex of branchlet; petiole 6–15 mm; leaf blade elliptic or elliptic-lanceolate, 5–8 × 2–3 cm, glabrous on both surfaces when old, triplinerved, lateral veins 4 or 5 pairs, lowermost pair arising 3–6 mm from base, sometimes with most inconspicuous veinlets at one side near margin, base cuneate or broadly cuneate to rotund, margin often undulate in a dried state, apex acuminate to caudate-acuminate. Fruit globose, ca. 8 mm in diam., glabrous, apiculate at apex, seated on flat discoid perianth tube; fruiting pedicel slender, (6–)10–12 mm, yellowish brown pubescent. Fr. Jun–Jul.

Evergreen broad-leaved forests; 2100–2400 m. S Xizang [India, Nepal, Pakistan].

- This species is one of the main trees in its habitat.

**24. *Neolitsea brevipes*** H. W. Li, Acta Phytotax. Sin. 16(4): 43. 1978.

短梗新木姜子 duan geng xin mu jiang zi

Small trees, 4–10 m tall. Young branchlets and petioles densely brown pubescent. Leaves alternate or 3–5 clustered at apex of branchlet; petiole 5–8 mm; leaf blade elliptic or oblong-lanceolate, 6–12 × 2–4 cm, glaucous and gray-yellow pubescent when young abaxially, glabrous adaxially, except midrib puberulent, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 3–6 mm from base, other pairs arising from above middle of blade, apex caudate-acuminate. Umbels solitary or fascicled, sessile, 5-flowered. Pedicel 1–1.5 mm, pubescent. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 stipitate rounded cordate glands at base; rudimentary pistil lacking. Fruit globose, ca. 6 mm in diam., seated on flat discoid perianth tube; fruiting pedicel 3–5 mm. Fl. Dec–Jan, fr. Sep–Nov.

Streamsides on mountains, thickets, sparse forests, evergreen broad-leaved forests; 1300–1700 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, SE Yunnan [India, Nepal].

**25. *Neolitsea variabilissima*** (Hayata) Kanehira & Sasaki, Trans. Nat. Hist. Soc. Formosa 20: 382. 1930.

变叶新木姜子 bian ye xin mu jiang zi

*Tetradenia variabilissima* Hayata, Icon. Pl. Formosan. 3: 167. 1913; *Neolitsea aciculata* (Blume) Koidzumi var. *variabilissima* (Hayata) J. C. Liao.

Trees. Young branchlets covered with pubescence and becoming glabrous. Leaves alternate or clustered toward apex of branchlet, subverticillate; petiole ca. 1 cm, pubescent; leaf blade ovate-lanceolate, obovate-lanceolate, or long obovate, 8–15 × 3–5 cm, gray appressed pubescent and becoming glabrous abaxially, shiny and glabrous adaxially when young, except base of midrib pubescent, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising ca. 5 mm from base, base cuneate or obtuse, apex acuminate. Umbels 2- or 3-fascicled, axillary or lateral, 4- or 5-flowered. Pedicel ca. 2 mm, densely pubescent. Perianth segments 4, lanceolate. Female flowers: staminodes 6, glabrous, of 3rd whorls each with 2 stipitate glands at base; ovary ovoid; style pubescent. Fruit obovate-ellipsoid, ca. 5 mm in diam.; fruiting pedicel ca. 1 cm. Fl. Feb–Jul, fr. Nov–Dec.

- Broad-leaved forests; 600–2300 m. C Taiwan.

**26. *Neolitsea zeylanica*** (Nees & T. Nees) Merrill, Philipp. J. Sci. 1(Suppl. 1): 57. 1906.

南亚新木姜子 nan ya xin mu jiang zi

*Litsea zeylanica* Nees & T. Nees, Cinnam. Disp. [Amoen. Bot. Bonn. Fasc. 1:] 58. 1823; *Tetradenia zeylanica* (Nees & T. Nees) Nees.

Trees, up to 20 m tall. Young branchlets yellow puberulent and becoming glabrous. Leaves alternate or clustered toward apex of branchlet; petiole 1–1.5 cm, yellow pubescent when young; leaf blade ovate-oblong or oblong, 7–11 × 2.5–4 cm, glaucous, yellow pubescent along midrib, and becoming glabrous abaxially, shiny and glabrous adaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 5–8 mm from base, other pairs arising from above middle or middle of blade, base cuneate, slightly decurrent, apex narrowly acuminate. Umbels axillary, subsessile, 4- or 5-flowered. Pedicel ca. 2 mm, pubescent. Perianth segments 4. Male flowers: fertile stamens 6; filaments villous, of 3rd whorls each with 2 rounded small glands; rudimentary pistil small; style villous. Fruit subglobose, 6–7 mm in diam., seated on small nearly flat perianth tube; fruiting pedicel 4–5 mm. Fl. Oct–Nov, fr. Oct–Dec.

Forests, thickets; 700–1000 m. S Guangxi [India, Malaysia, Sri Lanka, Thailand, Vietnam, and probably elsewhere in SE Asia; Australia].

**27. *Neolitsea aciculata*** (Blume) Koidzumi, Bot. Mag. (Tokyo) 32: 258. 1918.

台湾新木姜子 tai wan xin mu jiang zi

*Litsea aciculata* Blume, Mus. Bot. 1: 347. 1851; *Neolitsea acutotrineria* (Hayata) Kanehira & Sasaki; *Tetradenia acutotrineria* Hayata.

Trees. Branchlets gray pubescent. Leaves alternate or

clustered at apex of branchlet, subverticillate; petiole 0.5–1 cm, pubescent; leaf blade lanceolate or obovate-lanceolate, 6–9 × 2–3.2 cm, glaucous and appressed gray pubescent abaxially, glabrous adaxially, triplinerved, lateral veins 3 or 4 pairs, base acute or acuminate, apex caudate-acuminate or acuminate. Umbels axillary or lateral, 4-flowered; peduncles extremely short or lacking. Pedicel 2–3 mm, pubescent. Perianth segments 4, ovate or elliptic. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 sagittal glands at base; rudimentary pistil densely pubescent. Fruit obovate-ellipsoid, ca. 7 × 5–6 mm, seated on flat discoid perianth tube; fruiting pedicel 7–9 mm, gradually thickened at apex. Fr. Jun–Jul.

Evergreen broad-leaved forests; 1300–2000 m. Taiwan [Japan].

This species was treated in FRPS (31: 364. 1982) as *Neolitsea acutotrineria*. However, the original description and type material of *Tetradenia acutotrineria* show its characters to be quite similar to those of *N. aciculata*, from Japan, and so the two entities are here treated as conspecific.

**28. *Neolitsea polycarpa*** H. Liu, Laurac. Chine & Indochine, 150. 1932.

多果新木姜子 *duo guo xin mu jiang zi*

*Neolitsea chui* Merrill var. *brevipes* Yen C. Yang.

Trees, up to 20 m tall. Young branchlets pubescent and becoming glabrous or glabrate. Leaves alternate or clustered at apex of branchlet, subverticillate; petiole 8–15 mm, pubescent and becoming glabrous; leaf blade elliptic or oblong-elliptic, 6–11 × 1.7–4 cm, glaucous, pubescent, and becoming glabrous abaxially, shiny and glabrous adaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising ca. 5 mm from base, base cuneate, apex acuminate or long acuminate. Umbels 5- or 6-fascicled in leaf axils, 5-flowered. Pedicel 2.5–3 mm, densely pubescent. Perianth segments 4, elliptic or rounded. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 stipitate small glands at base; rudimentary pistil ellipsoid, glabrous. Fruit ovoid, 7–10 × 3–4 mm, seated on flat shallowly discoid perianth tube; fruiting pedicel 7–8 mm, subglabrous. Fl. Mar–Apr, fr. Oct–Nov.

Broad-leaved forests; 1200–2400 m. SE Yunnan [Vietnam].

The seeds contain ca. 45% oil.

**29. *Neolitsea hainanensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 43. 1978.

海南新木姜子 *hai nan xin mu jiang zi*

Trees or small trees, up to 10 m tall. Young branchlets and petioles pubescent. Leaves subverticillate or alternate; petiole 5–10 mm; leaf blade elliptic or rounded-elliptic, 3.7–7 × 2–3.5 cm, glabrous and distinctly foveolate on both surfaces, triplinerved, lateral veins 2 or 3 pairs, lowermost pair arising ca. 3 mm from base, other pairs arising from above middle of blade, base broadly cuneate or rotund, apex abruptly acute, with acumen. Umbels solitary or fascicled, axillary or lateral, 5-flowered. Pedicel villous. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments villous at base, of 3rd whorls each with 2 stipitate rounded glands at base; rudimentary pistil gla-

brous. Fruit globose, 6–8 mm in diam., seated on nearly flat discoid perianth tube; perianth segments often persistent; fruiting pedicel 4–4.5 mm, pubescent. Fl. Nov, fr. Jul–Aug.

• Mixed forests on mountain slopes; above 700 m. Hainan.

**30. *Neolitsea buisanensis*** Yamamoto & Kamikoti, Trans. Nat. Hist. Soc. Formosa 22: 411. 1932.

武威山新姜子 *wu wei shan xin jiang zi*

*Neolitsea zeylanica* (Nees & T. Nees) Merrill var. *obovata* H. Liu.

Shrubs or small trees, 4–6 m tall. Young branchlets and petioles densely ferruginous pubescent. Leaves alternate or clustered on top branchlets; petiole 1 cm; leaf blade obovate, 3.5–6 × 1.5–2.5 cm, glabrous, distinctly foveolate on both surfaces, triplinerved, lateral veins 2 or 3 pairs, lowermost pair arising ca. 5 mm from base, other pairs arising from above middle of blade, base cuneate, apex obtuse or abruptly acute. Umbels axillary, sessile, solitary or 2- or 3-fascicled, male umbel 4-flowered. Pedicel 2–3 mm, sericeous-pubescent. Perianth segments 4, elliptic. Male flowers: fertile stamens 6; filaments villous at base, of 3rd whorls each with 2 small subsessile glands at base; rudimentary pistil glabrous. Fruit globose, 4–5 mm in diam.; fruiting pedicel 6–9 mm, pubescent. Fl. Dec–Jan.

• Dense forests in valleys; ca. 1000 m. S Guangxi, Hainan, S Taiwan.

*Neolitsea buisanensis* f. *sutsuoensis* J. C. Liao (Mem. Coll. Agric. Natl. Taiwan Univ. 26(2): 119. 1986) was recognized in Fl. Taiwan, ed. 2 (2: 489. 1996), as a separate form with ovate leaf blades acuminate at the apex.

**31. *Neolitsea obtusifolia*** Merrill, Lingnan Sci. J. 14: 6. 1933.

钝叶新木姜子 *dun ye xin mu jiang zi*

Trees, 8–20 m tall, ca. 50 cm d.b.h. Branchlets glabrous. Leaves alternate or clustered, subverticillate; petiole 1–1.2 mm; leaf blade oblong-lanceolate or nearly oblong-obovate, 4.5–10 × 2–3.5 cm, foveolate on both surfaces, glaucous abaxially, triplinerved, lateral veins 4 or 5 pairs, fine, lowermost pair arising 2–7 mm from base, base cuneate, apex obtuse. Umbels axillary or lateral, solitary or 2- or 3-fascicled, 3–5-flowered. Pedicel ca. 3 mm, appressed pubescent. Perianth segments 4, oblong-ovate. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 small rounded glands at base; rudimentary pistil ovoid, glabrous. Fruit globose, 8–10 mm in diam., seated on discoid perianth tube; fruiting pedicel 8–9 mm, pilose. Fl. Sep–Nov, fr. Dec–Feb of next year.

• Mixed forests on mountain slopes; ca. 600 m. Hainan.

The wood is yellow-brown, hard, heavy, finely textured, more or less straight-grained, and does not become fissile or warped in a dried state. It is used in industry and construction.

**32. *Neolitsea parvigemma*** (Hayata) Kanehira & Sasaki, Trans. Nat. Hist. Soc. Formosa 20: 381. 1930.

小芽新木姜子 *xiao ya xin mu jiang zi*

*Tetradenia parvigemma* Hayata, Icon. Pl. Formosan. 5: 175. 1915.

Small trees. Branchlets and petioles glabrous. Leaves alternate or clustered, subverticillate; petiole 1.5–2 cm; leaf blade ovate-oblong or obovate-oblong, 8–9 × 3.5–4 cm, distinctly foveolate on both surfaces, glaucous abaxially, triplinerved, lateral veins 3 pairs, lowermost pair arising ca. 5 mm from base, base obtusely rounded or sometimes acute, apex acuminate. Umbels axillary, 5–7-flowered; peduncle extremely short or lacking. Pedicel ca. 2 mm, yellow-brown pubescent. Perianth segments 4, triangular-oblong. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 small stipitate rounded glands at base; rudimentary pistil present; style pubescent. Female flowers: staminodes 1–1.5 mm, pubescent at base; ovary ovoid, glabrous at base. Fl. Feb–Mar.

- Evergreen broad-leaved forests. SC Taiwan.

**33. *Neolitsea ovatifolia*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 44. 1978.

卵叶新木姜子 *luan ye xin mu jiang zi*

*Neolitsea ovatifolia* var. *puberula* Yen C. Yang & P. H. Huang; *N. phanerophlebia* Merrill f. *glabra* H. Liu.

Shrubs. Branchlets glabrous. Leaves alternate or clustered toward apex of branchlet; petiole 8–10(–15) mm, slightly flat, glabrous; leaf blade glaucous abaxially, ovate, 4–6(–8.5) × 2–2.5(–4) cm, glabrous and distinctly foveolate on both surfaces, triplinerved, lateral veins 4 or 5 pairs, lowermost pair arising ca. 2 mm from base, other pairs arising from middle or below middle of blade, base obtusely rounded to cuneate, apex acuminate. Umbels solitary or 3- or 4-fascicled, 5-flowered; peduncle very short or lacking. Pedicel sericeous-pubescent. Perianth segments 4, elliptic. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 sessile rounded small glands at base; rudimentary pistil glabrous; style glabrous. Fruit globose or subglobose, ca. 10 mm in diam., glabrous; fruiting pedicel 5–8 mm, very stout, glabrous. Fr. Aug.

- Sparse forests in valleys. Guangdong, Guangxi, Hainan, SE Yunnan.

**34. *Neolitsea ellipsoidea*** C. K. Allen, Ann. Missouri Bot. Gard. 25: 428. 1938.

香果新木姜子 *xiang guo xin mu jiang zi*

Trees, up to 30 m tall, ca. 2 m d.b.h. Branchlets glabrous, stout. Leaves alternate or clustered toward apex of branchlet; petiole flat, 2–3 cm, glabrous; leaf blade elliptic or broadly elliptic, 7–10 × 2.3–5 cm, glabrous on both surfaces, glaucous abaxially, triplinerved, lateral veins 2 or 3 pairs, lowermost pair arising ca. 6 mm from base, other pairs arising from above middle of blade, base broadly cuneate, apex shortly acute. Umbels axillary or lateral, solitary or 2-fascicled, 2–5-flowered; peduncle 1–2 mm. Pedicel 3–4 mm, ferruginous pubescent. Perianth segments 4, elliptic, fragrant, ferruginous pubescent outside. Male flowers: fertile stamens 6; filaments pubescent, of 3rd whorls each with 2 reniform glands at base; rudimentary pistil glabrous. Fruit ellipsoid, 13–18 × 10–13 mm, seated on flat discoid perianth tube, black-brown at maturity; fruiting pedicel stout, wrinkled. Fl. Jun–Jul, fr. Oct–Nov, or fl. Oct–Dec, fr. Apr–May of next year.

- Forest margins, roadsides, sparse forests on mountains, mixed forests; 700–1000 m. Hainan.

A record from Guangdong (in Fl. Hainan. 1: 298. 1964) is erroneous.

The wood is light and relatively easy to work; it is used for making furniture, musical instruments, plywood, decorative veneer, etc. The seed core contains ca. 60% oil.

**35. *Neolitsea kwangsiensis*** H. Liu, Laurac. Chine & Indochine, 146. 1932.

广西新木姜子 *guang xi xin mu jiang zi*

Shrubs or small trees, ca. 5 m tall. Branchlets stout, glabrous. Leaves alternate or clustered toward apex of branchlet; petiole 2.5–4 mm, glabrous; leaf blade broadly ovate, ovate, or ovate-oblong, 11–20 × 6.8–13 cm, glabrous on both surfaces, glaucous abaxially, triplinerved, lowermost lateral veins arising 5–8 mm from base, with 10–13 veinlets at one side near margin, transverse veins prominent on both surfaces, base rotund or attenuate, apex acuminate or obtuse. Umbels 5–8-fascicled, axillary or lateral, pedunculate. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments glabrous, of 3rd whorls each with 2 shortly stipitate peltate glands at base; rudimentary pistil glabrous. Fruit globose, 15–16 mm in diam.; fruiting pedicel 6–7 mm, pubescent. Fl. Dec, fr. Aug of next year.

- Roadsides, sparse or dense forests in valleys; 500–1100 m. S Fujian (Nanjing), Guangdong, Guangxi.

**36. *Neolitsea chui*** Merrill, Lingnan Sci. J. 7: 306. 1931 [“*chuii*”].

鸭公树 *ya gong shu*

*Neolitsea subfoveolata* Merrill.

Trees, 8–18 m tall, ca. 40 cm d.b.h., glabrous, except for pubescent inflorescence. Leaves alternate or clustered toward apex of branchlet; petiole 2–4 cm; leaf blade elliptic to oblong-elliptic or ovate-elliptic, 8–16 × 2.7–9 cm, glaucous abaxially, triplinerved, lateral veins 3–5 pairs, lowermost pair arising 2–5 mm from base, other pairs arising from middle or above middle of blade, base acute, apex acuminate. Umbels axillary or lateral, clustered, 5- or 6-flowered; peduncle very short or lacking. Pedicel 4–5 mm. Perianth segments 4, ovate or oblong. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 reniform glands at base; rudimentary pistil ovoid. Fruit ellipsoid or subglobose, ca. 10 × 8 mm; fruiting pedicel ca. 7 mm, slightly thickened. Fl. Sep–Oct, fr. Dec.

- Sparse forests in valleys or on hills; 500–1400 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, SE Yunnan.

The seed core contains ca. 60% oil.

**37. *Neolitsea sutchuanensis*** Yen C. Yang, J. W. China Border Res. Soc., Ser. B, 15: 82. 1945.

四川新木姜子 *si chuan xin mu jiang zi*

*Neolitsea sutchuanensis* var. *gongshanensis* H. W. Li; *N. sutchuanensis* f. *longipedicellata* Yen C. Yang.

Small trees, up to 10 m tall. Young branchlets glabrous or

sparsely puberulent. Leaves alternate or in clusters of 2–4; petiole 1–2 cm, glabrous or puberulent when young; leaf blade glaucous abaxially, elliptic or ovate-elliptic, 7.5–13 × 2.5–4.5 cm, glabrous on both surfaces or sometimes abaxially ± appressed brown-yellow puberulent, triplinerved, lateral veins 3–5 pairs, lowermost pair arising 5–8 mm from base, other pairs arising from above middle of blade, base broadly cuneate or slightly rounded, apex acute or ± acuminate. Fruiting inflorescences umbellate, solitary or 2-fascicled; peduncle stout and short, ca. 2 mm, glabrous. Fruits 5 or 6 per inflorescence, ellipsoid, 5–6(–11) × 4–5(–9) mm, glabrous; fruiting pedicel 5–15 mm, thickened at apex, puberulent; perianth tube discoid. Fr. Nov–Dec.

• Dense forests on mountain slopes; 1200–1800 m. Guizhou, SW Hunan (Xinning), Sichuan, Yunnan.

**38. *Neolitsea impressa*** Yen C. Yang, J. W. China Border Res. Soc., Ser. B, 15: 81. 1945.

凹脉新木姜子 *ao mai xin mu jiang zi*

Shrubs or small trees, ca. 5 m tall. Branchlets glabrous except at top. Leaves alternate or clustered toward apex of branchlet; petiole 5–8 mm, glabrous or puberulent; leaf blade ovate or elliptic-obovate, 5–9.5 × 2.4–4 cm, glabrous on both surfaces, glaucous abaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 5–6 mm from base, other pairs arising from middle or below middle of blade, base broadly cuneate or rotund, apex abruptly acute or subcaudate. Umbels 2–4-fascicled, sessile, 5-flowered. Pedicel short, densely pubescent. Perianth segments 4, elliptic. Male flowers: fertile stamens 6; filaments glabrous or pubescent only at base, of 3rd whorls each with 2 stipitate large peach-shaped glands at base; rudimentary pistil glabrous. Fruit ellipsoid or ovoid-ellipsoid, ca. 10 × 6 mm; fruiting pedicel 5–6 mm. Fl. Apr–May, fr. Aug–Sep.

• Mixed forests. Sichuan.

**39. *Neolitsea shingningensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 44. 1978.

新宁新木姜子 *xin ning xin mu jiang zi*

Shrubs or small trees, ca. 5 m tall. Branchlets glabrous. Leaves alternate or subverticillate; petiole 1 cm, slightly flat, glabrous; leaf blade ovate or ovate-oblong, 5–9 × 1.7–3 cm, glabrous on both surfaces, triplinerved, lateral veins 2 or 3 pairs, lowermost pair arising 4–6 mm from base, other pairs arising from middle or above middle of blade, with 1 pair of lateral veinlets at one side near margin, ca. 1 mm from base, acutely projecting to middle, base rounded or broadly cuneate, apex shortly caudate or acuminate. Umbels 2-fascicled, lateral, 4-flowered; peduncle ca. 1 mm. Pedicel villous. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 sessile orbicular glands at base; rudimentary pistil glabrous. Fruit ellipsoid, 6–7 × ca. 5 mm; fruiting pedicel 5–7 mm, slightly thickened at apex. Fl. Mar–Apr, fr. Sep–Oct.

• Sparse forests on mountain slopes; 1200–1500 m. NE Guizhou (Fanjing Shan), Hunan.

**40. *Neolitsea homilantha*** C. K. Allen, Ann. Missouri Bot. Gard. 25: 419. 1938.

团花新木姜子 *tuan hua xin mu jiang zi*

Shrubs or small trees. Branchlets glabrous. Leaves clustered toward apex of branchlet, subverticillate or scattered; petiole 7–16 mm, glabrous; leaf blade elliptic, 4.5–8 × 2–3.5 cm, glabrous on both surfaces, triplinerved, lateral veins 4–6 pairs, lowermost pair arising 2–10 mm from base, other pairs arising from middle or below middle of blade, base cuneate or rotund, apex subcaudate-acuminate. Umbels 3–7-fascicled, axillary, 5-flowered; peduncle very short or lacking. Pedicel 2–3 mm, densely pubescent. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 shortly stipitate rounded-cordate glands at base; rudimentary pistil ca. 1.5 mm, pubescent. Fruit ovoid, ca. 9 × 8 mm; fruiting pedicel 7–9 mm, slightly thickened at apex. Fl. Oct–Nov or Jan–Mar, fr. Oct–Nov.

• Mixed forests in wet ditch sides, thickets on calcareous rock; 1200–2000 m. Xizang, Yunnan.

The fresh leaves contain ca. 0.7% aromatic oil.

**41. *Neolitsea purpurascens*** Yen C. Yang, J. W. China Border Res. Soc., Ser. B, 15: 81. 1945.

紫新木姜子 *zi xin mu jiang zi*

*Neolitsea zeylanica* (Nees & T. Nees) Merrill var. *fangii* H. Liu.

Small trees, ca. 7 m tall. Young branchlets ferruginous pubescent and becoming glabrous. Leaves alternate or clustered toward apex of branchlet; petiole 1–1.4 cm, pubescent when young; leaf blade ovate or elliptic, 4.5–7.4 × 1.7–3 cm, glaucous abaxially, triplinerved, lateral veins 3 or 4 pairs, lowermost pair arising 3–4 mm from base, other pairs arising from middle or below middle of blade, base rotund or broadly cuneate, apex caudate. Umbels solitary or fascicled, sessile, male umbel 5-flowered. Pedicel pubescent. Perianth segments 4, ovate. Male flowers: fertile stamens 6; filaments pubescent at base, of 3rd whorls each with 2 shortly stipitate small glands at base; rudimentary pistil ovoid. Fruit obovoid, 6–7 × ca. 5 mm, black at maturity; fruiting pedicel 6–8 mm, slightly thickened at apex, glabrous. Fl. Apr–May, fr. Aug–Sep.

• Mixed forests; 1500–2000 m. Sichuan.

**42. *Neolitsea pingbienensis*** Yen C. Yang & P. H. Huang, Acta Phytotax. Sin. 16(4): 45. 1978.

屏边新木姜子 *ping bian xin mu jiang zi*

Shrubs, 1–2 m tall. Branchlets glabrous. Leaves alternate or clustered toward apex of branchlet; petiole 8–12 mm, pubescent; leaf blade elliptic or ovate-elliptic, 5–9 × 2.2–4 cm, glabrous on both surfaces, slightly glaucous abaxially when old, triplinerved, lateral veins 4 or 5 pairs, lowermost pair arising 5 mm from base, extending over ca. 2/3 of leaf, other pairs arising from above middle of blade, base slightly rounded-obtuse, apex acuminate or acute. Umbels 1 or 2, axillary or lateral, female umbel 5-flowered; peduncle extremely short or

lacking. Pedicel 2–3 mm. Perianth segments 4, yellow, elliptic. Female flowers: staminodes 6; filaments covered with sericeous pubescence, of 3rd whorls each with 2 stipitate peltate glands at base; ovary ovoid, densely gray-yellow sericeous at apex; style ca. 1 mm; stigma capitate. Fl. Apr–May.

- Moist dense forests; 1800–1900 m. SE Yunnan.

**43. *Neolitsea konishii*** (Hayata) Kanehira & Sasaki, Trans. Nat. Hist. Soc. Formosa 20: 381. 1930.

五掌楠 wu zhang nan

*Litsea konishii* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 248. 1911; *Tetradenia konishii* (Hayata) Hayata.

Large trees, ca. 80 cm d.b.h. Bark brown, smooth. Branchlets glabrous. Leaves alternate or clustered toward apex of branchlet, subverticillate; petiole ca. 1 cm; leaf blade lanceolate or oblong, 10–15 × 3–4 cm, glaucous, appressed pubescent when young, and becoming glabrous abaxially, glabrous adaxially, triplinerved, lateral veins 3 pairs, lowermost pair arising 3–5 mm from base, base cuneate, apex abruptly acuminate. Umbels numerous, axillary or lateral, 5- or 6-flowered. Male pedicel ca. 4 mm, pubescent. Perianth segments 4, ovate-lanceolate. Male flowers: fertile stamens 6, exserted; filaments pubescent at base, of 3rd whorls each with 2 stipitate glands at base; rudimentary pistil lacking. Fruit ovoid, ca. 1.5 × 1.2 cm, black at maturity. Fl. Apr–May, fr. Sep–Oct.

- Evergreen broad-leaved forests; ca. 1500 m. Taiwan [Japan].

The wood is used for construction and furniture-making.

**44. *Neolitsea daibuensis*** Kamikoti, Trans. Nat. Hist. Soc. Formosa 22: 411. 1932.

大武山新木姜子 da wu shan xin mu jiang zi

Trees. Branchlets glabrous. Leaves alternate or clustered at apex of branchlet; petiole glabrous; leaf blade ovate or ovate-lanceolate, 4.5–6.5 × 1.5–2.5 cm, glabrous on both surfaces, glaucous abaxially, triplinerved, lateral veins 2 or 3 pairs, at angle of 30° from midrib, extending toward leaf apex, base obtuse or obtuse-cuneate, apex acuminate. Umbels axillary, sessile, 3–5-flowered. Male perianth tube short, segments 4, narrowly ovate, ciliate. Male flowers: fertile stamens 6; filaments pilose at base, of 3rd whorls each with 2 shortly stipitate large glands at base; rudimentary pistil ellipsoid-globose, covered with pubescence. Female flowers and fruit not seen.

- Broad-leaved forests on mountains. S Taiwan.

**45. *Neolitsea hiiranensis*** T. S. Liu & J. C. Liao, Quart. J. Taiwan. Mus. 24: 409. 1971.

南仁山新木姜子 nan ren shan xin mu jiang zi

Small trees. Young branchlets and petioles glabrous. Leaves clustered at apex of branchlet; petiole 6–10 mm; leaf blade oblong, 3.5–6 × 1.3–2.3 cm, glabrous on both surfaces, glaucous abaxially, triplinerved, lateral veins 2 or 3 pairs, base obtuse to acute, apex obtuse. Pedicels ca. 3 mm. Perianth tube densely hispid; segments 4, oblong, 2.5–3 mm, apex obtuse or acute, ciliate. Male flowers: fertile stamens 6; filaments pilose at base, of 3rd whorls each with 2 glands at base; rudimentary pistil cylindrical. Female flowers: staminodes 6, of 1st and 2nd whorls linear-clavate, hispid, of 3rd whorls sagittate, each with 2 glands at base; ovary ellipsoid, glabrous; style hispid. Fruit ovoid, glabrous.

- S Taiwan.

