

11. NEOCINNAMOMUM H. Liu, Laurac. Chine & Indochine, 82, 86. 1932.

新樟属 xin zhang shu

Li Xiwen (李锡文 Li Hsi-wen), Li Jie (李捷); Henk van der Werff

Shrubs or small trees. Buds small, conical; bud scales thick and always hairy. Leaves alternate, entire, distichous, papery or sub-leathery, strongly triplinerved. Inflorescences glomerules, stipitate or rarely estipitate, remotely arranged in an axillary or terminal panicle or solitary in leaf axils. Flowers small, pedicellate. Perianth tube very short; perianth lobes 6, subequal, up to 2 mm, thick and slightly fleshy. Fertile stamens 9, all with filament; filaments of 1st and 2nd whorls glandless, those of 3rd whorl each with 2 glands; anthers 4-celled, upper 2 cells introrse (of 1st and 2nd whorls) or extrorse (of 3rd whorl) or all lateral, lower 2 cells larger and lateral, but sometimes anther cells all arranged in an almost transverse series. Staminodes stipitate, larger. Ovary pearlike, estipitate, gradually attenuate into a short style; stigma discoid. Drupe berrylike, ellipsoid or globose; perianth cup in fruit large and shallow, thickened, crateriform; perianth lobes in fruit persistent and slightly dilated, erect or patent; fruit stalk slender, gradually dilated toward apex.

About seven species: Bhutan, China, India, Indonesia (Sumatra), Myanmar, Nepal, Thailand, Vietnam; five species (three endemic) in China.

- 1a. Leaf blade transverse veins numerous, subhorizontal and subparallel, connected by remote vertical veinlets, forming transversely elongate reticulum; flower glomerules numerous, remote and arranged in an axillary or terminal panicle, panicle with a developed rachis 1. *N. caudatum*
- 1b. Leaf blade reticulate venation regular and fine; flower glomerules solitary and axillary, stipitate or estipitate, not arranged in a panicle.
 - 2a. Branchlets glabrous.
 - 3a. Perianth slightly puberulent or subglabrous 2. *N. fargesii*
 - 3b. Perianth densely rusty sericeous 4. *N. mekongense*
 - 2b. Branchlets densely hairy when young.
 - 4a. Branchlets and leaf blade abaxially densely rusty pubescent 3. *N. lecomtei*
 - 4b. Branchlets and leaf blade abaxially densely rusty or white sericeous 5. *N. delavayi*

1. *Neocinnamomum caudatum* (Nees) Merrill, Contr. Arnold Arbor. 8: 64. 1934.

滇新樟 dian xin zhang

Cinnamomum caudatum Nees in Wallich, Pl. Asiat. Rar. 2: 76. 1831; *Neocinnamomum poilanei* H. Liu; *N. yunnanense* H. Liu.

Trees, 5–15(–20) m tall, 25–38 cm d.b.h. Bark gray-black. Branchlets terete, brown when dry, striate, puberulent. Buds small; bud scales thick and hairy. Leaves alternate; petiole 8–12 mm, subglabrous, slightly sulcate adaxially; leaf blade greenish when fresh or brownish when dry abaxially, green when fresh or brown when dry adaxially, ovate or ovate-oblong, (4–)5–12 × (2–)3–4.5 cm, papery, glabrous on both surfaces, trinerved, midrib and basal lateral veins elevated abaxially, plane or slightly impressed adaxially, transverse veins numerous, slender, subhorizontal and subparallel, connected by remote vertical veinlets, forming transversely elongate reticulum, base cuneate, broadly cuneate, or subrounded, apex acuminate, acumen obtuse. Glomerules usually 5- or 6-flowered, on 0.5–1 mm stalk, remotely arranged into a panicle, panicle axillary or terminal, up to 10 cm, erect, unbranched or few branched; branches upright, (1.5–)2–4 cm; rachis of panicle rusty pubescent; bracts subulate, less than 1 mm, densely rusty puberulent. Pedicels 2–6 mm. Flowers small, yellow-green, 4–8 mm. Perianth lobes 6, subequal, triangular-ovate, ca. 1.2 mm, slightly thickened, densely rusty puberulent outside and inside. Fertile stamens 9, ca. 1 mm; filaments villous, nearly as long as anthers, those of 3rd whorl each with 2 large stalkless glands at base, others

glandless; anthers nearly square, those of 1st and 2nd whorls each with 2 introrse small cells and 2 lower introrse or lateral-introrse larger cells, those of 3rd whorl each narrower, with 2 upper extrorse cells and 2 lower lateral cells or with 4 cells arranged in an almost transverse series. Staminodes small, nearly estipitate. Ovary ellipsoid-ovoid, less than 1 mm; style longer; stigma discoid. Fruit narrowly ellipsoid, 1.5–2 × ca. 1 cm, red when ripe; perianth cup in fruit crateriform, 6–8 mm wide, with wilting persistent lobe at top; fruit stalk 0.5–1 cm, slightly dilated toward apex. Fl. (Jun–)Aug–Oct, fr. Oct–Feb of next year.

Sparse or dense forests along streamsides and roadsides, valleys; 500–1800 m. SW Guangxi, SW Guizhou, C and S Yunnan [Bhutan, India, Myanmar, Nepal, N Thailand, Vietnam].

2. *Neocinnamomum fargesii* (Lecomte) Kostermans, Reinwardtia 9: 91. 1974.

川鄂新樟 chuan e xin zhang

Cinnamomum fargesii Lecomte, Nouv. Arch. Mus. Hist. Nat., sér. 5, 5: 78. 1913; *Neocinnamomum wilsonii* C. K. Allen.

Shrubs or small trees, 2–7 m tall. Branchlets terete, striate, brown-spotted, glabrous. Leaves alternate; petiole 0.6–0.8 cm, concave-convex, glabrous; leaf blade greenish or white-green abaxially, green adaxially, broadly ovate, ovate-lanceolate, or rhombic-ovate, 4–6.5 × 3–4 cm, papery, glabrous on both surfaces, trinerved or subtrinerved, midrib and basal lateral veins elevated abaxially, impressed adaxially, basal lateral veins always with veins outside, transverse veins and veinlets conspic-

uous on both surfaces, base cuneate or broadly cuneate, margin cartilaginous, involute, and conspicuously undulate on upper part, apex slightly acuminate, acumen subacute. Pedicels 1–4 mm, sparsely puberulent or subglabrous. Flowers greenish, small, ca. 2 mm. Perianth lobes 6, subequal, broadly ovate, ca. 1.3×1.2 mm, acute, puberulent outside and inside. Fertile stamens 9, ca. 1 mm, puberulent; filaments as long as anthers, those of 3rd whorl each with 2 glands, others glandless; anthers of 1st and 2nd whorl each with 2 upper introrse cells and 2 lower lateral-introrse cells, those of 3rd whorl narrowly ovate, each with 2 upper lateral-introrse small cells and 2 lower extrorse larger cells. Staminodes small, deltoid, shortly stalked, puberulent. Ovary ellipsoid-ovoid, ca. 1.5 mm; style short; stigma discoid, emarginate at apex. Mature fruit red, subglobose, 1.2–1.5 cm in diam., apiculate; perianth cup in fruit crateriform, 0.5–1.2 cm wide and with wilting persistent lobes at top; fruit stalk 0.5–1.5 cm, slightly dilated toward apex. Fl. Jun–Aug, fr. Sep–Nov.

- Thickets; 600–1300 m. W Hubei, E Sichuan.

3. *Neocinnamomum lecomtei* H. Liu, Laurac. Chine & Indochine, 93. 1932.

海南新樟 hai nan xin zhang

Neocinnamomum complanifolium S. K. Lee & F. N. Wei;
N. hainaniamum C. K. Allen.

Shrubs, 3–4 m tall. Branchlets dark brown, terete, striate, densely pubescent initially but soon glabrate. Buds small; bud scales thick, densely rusty strigose. Leaves alternate or sometimes subopposite on young branchlets; petiole (0.5–)1–1.5 cm, concave-convex, densely rusty pubescent; leaf blade brownish abaxially when dry, brown adaxially, ovate to broadly ovate, (5.5–)8–12 \times (2.5–)4–7.5 cm, papery, densely rusty pubescent on both surfaces when young and abaxially when mature, subglabrate adaxially except on veins when mature, trinerved, midrib elevated abaxially, impressed adaxially, basal lateral veins opposite and oblique, extending to upper 1/3 or near leaf apex, always with some conspicuous veinlets outside, other lateral veins oblique, arising from upper part of midrib, transverse veins conspicuous, veinlets reticulate, \pm conspicuous on both surfaces, base broadly cuneate, subrounded, or subtruncate, apex acuminate, acumen obtuse. Flowers unknown. Inflorescence axillary, solitary, pedunculate; peduncle 2–5 mm. Fruit ellipsoid-globose, subglobose, or oblate, 1.5–2(–2.5) \times 0.9–1.5(–2) cm; perianth cup in fruit crateriform, 1–1.2 cm wide on top; perianth lobes in fruit persistent, densely rusty pubescent, subequal, thickened, wilting, outer ones ovate, ca. 3 \times 2.7 mm, inner ones ovate-oblong, ca. 5 \times 4 mm; fruit stalk 1–1.3 cm, dilated toward apex. Fl. Aug, fr. Oct–May of next year.

Dense forests, watersides in valleys; 400–500 m. S Guangxi, SW Guizhou, Hainan, SE Yunnan [N Vietnam].

4. *Neocinnamomum mekongense* (Handel-Mazzetti) Kostermans, Reinwardtia 9: 93. 1974.

沧江新樟 cang jiang xin zhang

Cinnamomum delavayi Lecomte var. *mekongense* Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 62:

218. 1925; *C. delavayi* var. *aromaticum* Lecomte ex S. K. Lee.

Shrubs or small trees, (1.5–)2–5 m tall. Bark dark brown. Branchlets slender, terete, striate, glabrous. Buds small, ovoid; bud scales compact, broadly ovate, slightly thickened, rusty sericeous, acute. Leaves alternate; petiole slender, 1–1.5 cm, concave-convex, glabrous; leaf blade glaucous and opaque abaxially, green and slightly shiny adaxially, ovate to ovate-elliptic, (4.5–)5–10 \times (1.7–)2.5–4.5(–5) cm, papery or subleathery, glabrous on both surfaces, trinerved, midrib and lateral veins conspicuous on both surfaces, basal lateral veins extending up to 3/4 of blade, other lateral veins small and short, transverse veins and veinlets reticulate on both surfaces, base cuneate, apex caudate-acuminate, acumen slender, 1.5–2 cm. Glomerules axillary, (1 or)2–5(or 6)-flowered, rusty sericeous; bracts minute, triangular-subulate, less than 1 mm, rusty sericeous, acute. Pedicels slender, 5–8(–10) mm, sulcate, rusty sericeous. Flowers green-yellow, small, ca. 2.5 mm in diam. when open. Perianth tube short, less than 1 mm; perianth lobes 6, triangular ovate, subequal, ca. 2 \times 1.5 mm, rusty sericeous on both surfaces, acute. Fertile stamens 9, ca. 1 mm (of 1st and 2nd whorls) or ca. 1.2 mm (of 3rd whorl); filaments of 1st and 2nd whorl as wide as 1/2 of anther, much shorter than anther, all glandless, but those of 3rd whorl as wide as anther, each with 2 orbicular-reniform glands at base; anthers of 1st and 2nd whorls ovate-rectangular, truncate at apex, 4-celled, upper 2 cells small and introrse, lower 2 cells large and extrorse-lateral, but anthers of 3rd whorl oblong, obtuse or subtruncate at apex, 4-celled, upper 2 cells small and extrorse, lower 2 cells large and lateral-extrorse. Staminodes small, triangular, stalked, including stalk ca. 0.5 mm. Ovary ovoid, ca. 1.2 mm, sessile, glabrous, base rounded but attenuate at apex; style short; stigma discoid. Mature fruit red, ovoid, ca. 12 \times 8.5–9 mm, apiculate; perianth cup in fruit crateriform, up to 7 mm wide on top; perianth lobes in fruit persistent, slightly dilated and wilting; fruit stalk slender, ca. 1.2 cm. Fl. Jun–Aug, fr. Nov–May of next year.

- Thickets, sparse forests, roadsides, waterside forest margins; (1400–)1700–2300(–2700) m. SE Xizang, NW and W Yunnan.

5. *Neocinnamomum delavayi* (Lecomte) H. Liu, Laurac. Chine & Indochine, 90. 1932.

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Cinnamomum delavayi Lecomte, Nouv. Arch. Mus. Hist. Nat., sér. 5, 5: 77. 1913; *C. parvifolium* Lecomte; *Neocinnamomum delavayi* var. *pauciflorum* Yen C. Yang; *N. parvifolium* (Lecomte) H. Liu.

Shrubs or small trees, (1.5–)2–5(–10) m tall. Bark dark brown. Branchlets slender, terete, striate, rusty- or white sericeous when young but glabrate when mature. Buds small; bud scales thick, densely rusty- or white sericeous. Leaves alternate; petiole 0.5–1 cm, concave-convex, densely appressed sericeous-pubescent initially but soon sparsely so; leaf blade glaucous and opaque abaxially, green and slightly shiny adaxially, elliptic-lanceolate to ovate or broadly ovate, (4–)5–11 \times (1.5–)2–6

cm, subleathery, densely rusty- or white sericeous on both surfaces when young, ± sericeous abaxially and glabrate adaxially when mature, trinerved, midrib and basal lateral veins elevated abaxially, always impressed adaxially, basal lateral veins arcuate-ascendant and up to 1/2–3/4 of leaf blade, axils of basal lateral veins sometimes dome-shaped abaxially and slightly bullate adaxially, other lateral veins all small, reticulate with transverse veins and veinlets, base acute to cuneate and always unequal on both sides, apex acuminate. Glomerules axillary, (1–)4–6(–10)-flowered; bracts triangular-subulate, ca. 0.5 mm, densely rusty sericeous-pubescent. Pedicels slender, ca. 5.8 mm, densely rusty sericeous-pubescent. Flowers small, yellow-green. Perianth tube very short; perianth lobes 6, triangular-ovate, subequal, outer ones ca. 1.8×1 mm, inner ones ca. 2.2×1.4 mm, all densely sericeous-pubescent outside and inside, acute. Fertile stamens 9, ca. 1.25 mm; filaments of 3rd whorl each with 2 orbicular-reniform glands at base, others glandless; anthers of 1st and 2nd whorls rectangular or ovate-rectangular, somewhat shorter than dilated filament, 4-celled, cells arranged in an almost transverse series, upper 2 introrse, lower 2 lateral-extrorse, anthers of 3rd whorl 4-celled, upper 2 cells small and lateral-extrorse, lower 2 cells large and extrorse. Staminodes subspatulate or ovoid, stalked, including villous stalk 0.6–0.8 mm. Ovary ellipsoid-ovoid, ca. 1 mm, sessile, glabrous, attenuate toward apex; style short; stigma discoid. Mature fruit red, ovoid, $1–1.5 \times 0.7–1$ cm; perianth cup in fruit crateriform, 5–8 mm wide on top; perianth lobes in fruit persistent, slightly dilated and wilting; fruit stalk slender, 0.7–2 cm, gradually dilated toward apex. Fl. Apr–Sep, fr. Sep–Jan of next year.

- Thickets, forest margins, sparse or dense forests along riverbanks, watersides, limestone hills; 1100–2300 m. S Sichuan, SE Xizang, Yunnan.

Essential oil distilled from the leafy branchlets (0.8%–1.7%) is used for cosmetics or medicine. The drupe contains oil or fat, which is used in soap manufacture. The leaves are used by local people for treating rheumatic disorders.

