

### 13. NOTHAPHOEBE Blume, Mus. Bot. 1: 328. 1851.

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Shrubs or trees. Leaves alternate, petiolate, pinninerved. Cymose panicle axillary or terminal, branched, pedunculate. Flowers bisexual, pedicellate; bracteoles minute. Perianth tube short; perianth lobes 6, unequal, outer 3 much smaller. Fertile stamens 9; filaments villous, those of 3rd whorl each with 2 shortly stalked orbicular-reniform or broadly reniform glands, others glandless; anthers 4-celled, cells of 1st and 2nd whorls all introrse but those of 3rd whorl extrorse or lateral-extrorse. Staminodes 3, of innermost whorl, triangular-cordate, shortly stalked. Ovary ovoid; style slender; stigma capitate. Drupe berrylike, ellipsoid or globose.

About 40 species: SE Asia and North America; two species (both endemic) in China.

One of the present authors (van der Werff) is of the opinion that the two species placed here in *Nothaphoebe* do not belong to this genus and that, instead, *N. cavaleriei* is better placed in *Phoebe*, while *N. konishii* is better placed in *Machilus*. The generic placement of *N. fargesii* H. Liu (Laurac. Chine & Indochine, 78. 1932; see FRPS 31: 82. 1982), described from Chongqing (Chengkou), remains uncertain.

- 1a. Leaves oblanceolate or obovate-lanceolate, 10–18 × 2.5–5 cm, abaxially covered with finely pubescent hairs only visible under lens, lateral veins 8–12 pairs; cymose panicle subglabrous ..... 1. *N. cavaleriei*  
1b. Leaves oblong-obovate or oblong-lanceolate, smaller, 6.5–8 × (1.8–)2–3 cm, abaxially covered with pubescent hairs visible with naked eye, lateral veins 5–7 pairs; cymose panicle conspicuously villous ..... 2. *N. konishii*

**1. *Nothaphoebe cavaleriei*** (H. Léveillé) Yen C. Yang, J. W. China Border Res. Soc., Ser. B, 15: 75. 1945.

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*Lindera cavaleriei* H. Léveillé, Repert. Spec. Nov. Regni Veg. 10: 371. 1912; *Alseodaphne omeiensis* Gamble; *Machilus dunniana* H. Léveillé; *M. mairei* H. Léveillé; *Nothaphoebe duclouxii* Lecomte; *N. omeiensis* (Gamble) Chun; *Persea cavaleriei* (H. Léveillé) Kostermans; *Phoebe dunniana* (H. Léveillé) Kostermans; *P. tenuirhachis* R. H. Miao.

Trees, 3–7(–12) m tall. Old branchlets subterete, glabrous, yellow-brown when dry, densely oblong-lenticellate; young branchlets ± angled, subglabrous. Leaves alternate, clustered at apex of branchlet; petiole 1.5–2 cm, sulcate adaxially, glabrous; leaf blade green-white abaxially, dark green adaxially, oblanceolate or obovate-lanceolate, 10–18 × 2.5–5 cm, leathery, finely pubescent abaxially, hairs only visible under lens, glabrous adaxially, midrib very elevated abaxially, impressed adaxially, lateral veins 8–12 pairs, very elevated abaxially, plane adaxially, transverse veins and veinlets ± conspicuous on both surfaces, base cuneate, apex shortly acuminate. Cymose panicle axillary, 9–16 cm, lax, branched, terminal branchlet bearing a 2- or 3-flowered cyme; peduncle (2.5–)6–8 cm, peduncle and rachis subglabrous; bracteoles minute, linear, ca. 1 mm. Pedicels 3–5 mm. Flowers yellowish or yellow-white, ca. 3 mm. Perianth tube short; perianth lobes 6, broadly ovate, inner 3 larger, ca. 3 × 1.6 mm, outer 3 as long as ca. 1/2 of inner ones, all sparsely pubescent outside and densely villous at middle inside. Fertile stamens 9; filaments sparsely villous, those of 3rd whorl each with 2 shortly stalked orbicular-reniform glands near base, others glandless; anthers 4-celled, cells of 1st and 2nd whorls introrse but those of 3rd whorl extrorse. Staminodes 3, triangular-cordate. Ovary ovoid; style slender; stigma capitate. Fruit globose, 1.2–1.4 cm in diam., glabrous, with persistent unequal perianth lobes at base. Fl. May–Jul, fr. Aug–Sep.

• Always growing in evergreen broad-leaved forests or sparse forests; 900–1700 m. Guizhou, Sichuan, NE Yunnan.

**2. *Nothaphoebe konishii*** (Hayata) Hayata, Icon. Pl. Formosan. 3: 164. 1913.

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*Machilus konishii* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 240. 1911; *Persea konishii* (Hayata) Kostermans.

Medium-sized or large-sized trees, up to 2 m d.b.h. Bark dark brown, smooth. Branchlets brown-red, striate, lenticellate, with orbicular leaf scars; young branchlets red-black. Leaves alternate, petiolate; leaf blade oblong-obovate or oblong-lanceolate, 6.5–8 × (1.8–)2–3 cm, leathery, pubescent abaxially, glabrous adaxially, venation elevated abaxially, impressed adaxially, lateral veins 5–7 pairs, arising from midrib at a 40° angle, transverse veins and veinlets ± conspicuous on both surfaces, base broadly cuneate, apex abruptly acuminate, acumen obtuse and up to 1 cm. Cymose panicle terminal or axillary, yellowish brown villous, several branched; branches divaricate. Perianth tube short; perianth lobes 6, pilose outside but villous inside, unequal, outer 3 smaller, narrowly ovate, ca. 3 × 1.2–1.3 mm, inner 3 larger, ovate, 3.6–4 × 1.8–2.5 mm, obtuse at apex, many nerved, conspicuously valvate. Fertile stamens 9, inserted on throat of perianth tube, almost equal, 3–3.5 mm; filaments 2–3 mm, glabrous except villous at base, complanate, those of 3rd whorl each with 2 dilated glands at base, other filaments glandless; glands broadly reniform, stalked, complanate, ca. 1 mm; anthers of 1st and 2nd whorls ca. 1 mm, obtuse, 4-celled, cells introrse, upper 2 smaller, but anthers of 3rd whorl a little shorter than those of 1st and 2nd whorls, 4-celled, upper 2 cells smaller and introrse, lower 2 cells larger and extrorse. Staminodes subulate, 1.2–1.5 mm. Ovary ovoid, ca. 1 mm; style elongate, ca. 2 mm; stigma truncate. Fruit globose, ca. 7 mm,

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ca. 7 mm, with persistent, reflexed, and barely dilated perianth lobes on top. Fl. May–Jul, fr. Aug–Sep.

- Evergreen broad-leaved forests; ca. 2500 m. C and S Taiwan.

Chang (Fl. Taiwan 2: 458. 1972), following Kostermans (Reinwardtia 6: 192. 1962), regarded this species as a member of the genus *Persea*. However, in the type material, the outer perianth lobes are much smaller than the inner ones, so two of the present authors (Li and Li) believe it is better to regard this species as a member of *Nothaphoebe*.

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