A Revision of the Genus *Vitex* (Lamiaceae) in Thailand

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ABSTRACT.– The genus *Vitex* L. in Thailand is revised. Sixteen species are enumerated and described; viz. *V. canescens*, *V. cochinchinensis*, *V. gamosepala*, *V. glabrata*, *V. limonifolia*, *V. longisepala*, *V. negundo*, *V. peduncularis*, *V. pinnata*, *V. quinata*, *V. rotundifolia*, *V. scabra*, *V. siamica*, *V. thailandica*, *V. trifolia* and *V. vestita*. In addition, *V. vestita* var. *siamica* and *V. vestita* f. *quinquefoliolata* are reduced as synonymies of *V. vestita*. Two species, *V. limonifolia* and *V. pierrei*, are typified. A key to the species, photographs, ecological and distributional information are provided.

KEY WORDS: Revision, *Vitex*, Lamiaceae, Thailand

INTRODUCTION

The genus *Vitex* was established by Linnaeus (1753) with four species; *V. agnus-castus*, *V. negundo*, *V. pinnata* and *V. trifolia* in Verbenaceae. The last three of these four species are found in Thailand. The genus is comprised of approximately 250 known species worldwide, members of which are distributed mainly in the tropics and subtropics. *Vitex* and several genera, e.g. *Clerodendrum*, *Paravitex* (= *Vitex*) and *Tectona*, of the former Verbenaceae have been transferred to the Lamiaceae based upon the results of phylogenetic analyses (Cantino *et al.*, 1992; Harley *et al.*, 2004). In Thailand, Clarke (1900-1916) was the first botanist who recorded four species of *Vitex* from Ko Chang, Trat province; *V. ovata*, *V. pubescens*, *V. trifolia* and *V. vestita*. The most recent major revision of the genus in Thailand is that of Fletcher (1938). He recognised 18 species and also made the key to species. Moldenke (1971), Suvattii (1978), Smitinand (1980) and The Forest Herbarium, Royal Forest Department (2001) have since published their checklists of *Vitex* in Thailand. From their works I had studied carefully not only types and specimens but also collected living specimens in the fields and put the synonymies together, and added an overlooked name for the revision. The present work forms the basis of an account being prepared for the Flora of Thailand.

MATERIALS AND METHODS

In this study all herbarium material from Thailand and adjacent areas has been consulted from the following herbaria: AAU, BCU, BK, BKF, BM, C, CMU, E, HN, K, KKU, L, P, PSU and QBG. The abbreviations follow Thiers (2011) and Biology Herbarium, Chiang Mai University. Field observation was carried out throughout Thailand and ecological data and location were also provided.

SYSTEMATICS

Genus *Vitex* L.


Trees or shrubs, rarely straggling or prostrate shrubs; young branches and branchlets 4-angled, glabrous to hairy. Leaves opposite, digitately 3–7-foliolate, rarely 1-foliolate or simple, the central one the largest and the lowest pair smallest; leaflets entire, rarely crenate, serrate or incised, often glandular, petiolate. Inflorescence terminal and/or axillary; mostly dichasial cymes, short and dense to open and spreading, panicle-like cyme, sometimes verticillaster-like cyme; bracts and bracteoles small and narrow. Flowers zygomorphic. Calyx campanulate or cupuliform, (3–) 5-lobed; lobe triangular, truncate or shortly toothed, usually accrescent. Corolla infundibuliform, bilabiate with a short tube; upper lip 2-lobed, the lower lip 3-lobed, the central lobe of the lower one much largest. Stamens didynamous, inserted in middle part of tube, exserted; anthers 2-lobed, parallel at first, afterwards divaricate, black, rarely dark purple. Ovary superior, 2-locular, syncarpous, later usually 4-locular, with one ovule in each locule; style terminal, filiform; stigma bifid. Fruits globose, ovoid or obovoid drupe, pale green or green turning to purplish black, black or dark brown when mature. Seeds exalbuminous.

There are about 250 species distributed throughout the tropics and subtropics. Sixteen species are enumerated in Thailand.

**Key to the Thai Vitex species**

1. Prostrate or straggling shrubs.........2
   - Trees or shrubs.........................3
2. Inflorescence and leaves aromatic when crushed..............11. *V. rotundifolia*
   - Inflorescence and leaves non-aromatic...............................14. *V. thailandica*
3. Inflorescence axillary......................4
   - Inflorescence terminal or both terminal and axillary..................8
4. Inflorescence less than 7 cm long, not exceeding the leaves........5
   - Inflorescence more than 7 cm long, exceeding the leaves.............7
5. Calyx lobes 3, unequal.........................3. *V. gamosepala*
   - Calyx lobes 5, subequal.......................6
6. Bracteoles and calyx lobes linear.........................6. *V. longisepala*
   - Bracteoles filiform; calyx lobes truncate..............................16. *V. vestita*
7. Inflorescence a compound dichasium. Leaves eglandular........4. *V. glabrata*
   - Inflorescence a panicle-like cyme or thyse. Leaves glandular-scaly on lower surface........8. *V. peduncularis*
8. Inflorescence a verticillaster-like cyme or thyse..........................9
   - Inflorescence a panicle-like or a compact pyramidal panicle-like cyme........11
9. Shrubs. Inflorescence rarely unbranched..........................2. *V. cochinchinensis*
   - Trees. Inflorescence branched........10
10. Petiole winged.............5. *V. limonifolia*
   - Petiole unwinged.............1. *V. canescens*
11. Shrubs or small trees. Inflorescence and leaves aromatic when crushed........12
   - Trees. Inflorescence and leaves non-aromatic..........................13
12. Leaves (3–) 5-foliolate, often lanceolate or narrowly lanceolate, the central leaflet distinctly stalked........7. *V. negundo*
   - Leaves 1–3 (–5)-foliate, often obovate, the central leaflet almost sessile............15. *V. trifolia*
13. Trunk often with buttress and large spines. Leaflets scabrid.....12. *V. scabra*
– Trunk stout without spine. Leaflets glabrous or with minute hairs.........14
14. Flowers less than 4 mm long..................13. **V. siamica**

– Flowers at least 5 mm long.............15
15. Inflorescence a compact pyramidal panicle-like cyme. Leaflets mostly 3, stiffy pubescent on lower surface. Terminal petiolule 1-6 mm long...........10. **V. quinata**

– Inflorescence a spreading panicle-like cyme. Leaflets mostly 5, glabrous or sparsely pubescent on lower surface. Terminal petiolule 12-30 mm long........

1. **Vitex canescens** Kurz
   (Figure 1A)


Tree 7–20 m high; branchlets 4-angled, densely hairy; bark yellowish grey, slightly smooth or cracked. Leaves with (3–) 5 leaflets; petiole 5–10 cm long, hairy; leaflets coriaceous, ovate or obovate, 8–14 by 2–8 cm, apex acute, base obtuse, margin entire, rarely crenate, both surfaces of leaflet with hairs and yellowish brown glands; secondary veins 5–10-paired; petiolule 1.5–5 cm long, petiolule of the lowest pair 1–2 mm long, densely hairy. Inflorescence terminal, a verticillaster-like cyme or thyrs, branched, 7-20 cm long; peduncle 4–7 cm long, densely hairy; bracteoles, 2–7 mm long; pedicel 1–2 mm long, densely hairy. 

*Calyx*: tube 2–3 mm long, outside with hairs and glands; lobes 5, triangular, 1.5–2 mm long; *Corolla* yellowish brown; tube 6–6.5 mm long, outside with dense hairs and glands, inside glabrous; upper lobe ovate to slightly rounded or triangular, 1–1.8 by 1–1.5 mm, lower lobe ovate or rounded, margin crenate, 2–2.5 by 1.5–2 mm. *Stamens*: filament glabrous with whitish hairs at base; short filament 4.5–5 mm long, long filament 5–5.5 mm long; anthers 0.5–1 mm long, subequal. *Ovary* ovoid or slightly globose; style 6-6.5 mm long; stigma 0.5–0.6 mm long. *Fruits* slightly globose, 3–7 mm in diam.


**Distribution.**– India (Assam), Myanmar, China (Yunnan, Hainan), Laos, Cambodia, Vietnam.

**Ecology.**– Dipterocarp, mixed deciduous and dry evergreen forests, alt. 25-750 m. Flowering in March-August.

**Vernacular.**– Chang, Chong aang, Chong aang ton, Phaa sian, Kaanon lua, Khee hen, Kham paan, Kham pon, Kamchang, Khong laeng, Lee-luu-pho-di, Phawang, Saambai, Samo kaanon, Samo teenpet, Sang aa, So sian, Sawong yuak, Teen nok.
**Note.**—*Vitex canescens* is distinctive in having densely and softly pubescent in all parts but roughish on the upper surface of the leaf, a terminal, branched and verticillaster-like inflorescence. Two collections, *D.J. Collins 72* and *Pierre 1839*, are mentioned in the original description. *D.J. Collins 72* at K, which was collected from Chon Buri province, Thailand, is the best preserved and so it is designated here as the lectotype.

2. *Vitex cochinchinensis* Dop
(Figure 1B)


Shrub 1–2 m high; branchlets densely hairy; bark yellowish grey, slightly smooth. *Leaves* with 1–3 (–5) leaflets; petiole 0.5–5 cm long, hairy; leaflets coriaceous, ovate, obovate, lanceolate or oblong, 2–12 by 1–6 cm, apex acute, base obtuse, margin entire, rarely crenate, upper surface of leaflet with hairs and whitish glands, lower surface with dense hairs and yellowish glands; secondary veins 5–10-paired; petiolule 1–15 mm long, petiolule of the lowest pair 1–3 mm long, densely hairy. *Inflorescence* terminal, a verticillaster-like cyme or thyrse, 4–12 cm long; peduncle 1.5–5 cm long, densely hairy; bracteoles lanceolate or linear-oblong, 5–15 mm long; pedicel absent. *Calyx*: tube 3–7 mm long, outside with dense hairs, inside glabrous; lobes 5, triangular, 1–2 mm long. *Corolla* greenish yellow; tube 6–6.5 mm long, outside with dense hairs, inside glabrous; upper lobe ovate, 1–1.8 by 1–1.5 mm; lower lobe ovate or rounded, margin crenate, 2–2.5 by 1.5–2 mm. *Stamens*: filament glabrous with whitish hairs at base; short filament 4.5–5 mm long, long filament 5–5.5 mm long; anthers 0.5–1 mm long, subequal. *Ovary* slightly globose; style 7–14 mm long; stigma 0.5–0.6 mm long. *Fruits* slightly globose, 3–7 mm in diameter.

**Thailand.**—NORTH-EASTERN: Nong Khai; EASTERN: Si Sa Ket.

**Distribution.**—Vietnam.

**Ecology.**—Dry dipterocarp forest, alt. 150-350 m. Flowering in March-June.

**Vernacular.**—Phaa sian poom.

**Note.**—*Vitex cochinchinensis* differs from *V. canescens* in the unbranched inflorescence and the habit which is a shrub. It is widespread from southern Vietnam to northeastern Thailand.


Tree 10–15 m high; branchlets hairy; branches slightly smooth; bark brownish grey. *Leaves* with 3 leaflets; petiole 2–9 cm long; leaflets chartaceous, elliptic or ovate, 3–12 by 1.5–5 cm, apex acuminate, base cuneate or attenuate, margin entire, upper surface green, glabrous, lower surface brownish red, glabrous, with glands; secondary veins 4–7-paired; petiolule of central leaflet 5–30 mm long, petiolule of lateral pair 5–7 mm long. *Inflorescence* axillary, a compound dichasium, 2–4 cm long, shorter than leaf; peduncle 1–2 cm long; bracteoles linear, 1.5–2 mm long.
Calyx: tube 6–9 mm long, outside with yellow glands, inside glabrous; lobes 3,
lanceolate or oblong, apex acute, 3–5 mm long, other two lobes shorter than the first one, triangular, 1–2 mm long. Corolla yellowish; tube 6–12 mm long, outside with sparse hairs and scattered glands, inside glabrous or with sparse hairs and glands; upper lobe triangular, 2–3 mm long, lower lobe rounded or slightly rounded, margin crenate, 1–2 mm long. Stamens filament glabrous with whitish hairs at base; short filament 5–6 mm long, long filament 7–10 mm long; anthers 1–2 mm long. Ovary slightly globose or ovoid; style 10–12 mm long; stigma 0.1–0.2 mm long. Fruits globose, 1–1.5 cm in diameter.

Thailand.—NORTH-EASTERN: Loei; EASTERN: Nakhon Ratchasima; SOUTH-WESTERN: Uthai Thani, Kanchanaburi, Prachuap Khiri Khan; PENINSULAR: Ranong, Surat Thani, Phangnga, Nakhon Si Thammarat, Pattani, Yala, Narathiwat.

Distribution.—Laos, Malaysia and Indonesia (Sumatra).

Ecology.—Moist evergreen forest, alt. 0-500 m. Flowering in March-August.

Vernacular.—Maak lek maak noi and Maak sakhang.

Note.—The distinguishing features of *V. gamosepala* are the three calyx lobes which are unequal in length, and the unequal stigmatic lobes.


Tree 10–20 m high; branchlets 4-angled, minutely puberulous; bark yellowish or grey, slightly smooth. Leaves with 3–5 leaflets petiole 6–9 cm long; leaflets chartaceous, obovate or elliptic, 8–12 by 2.5–4 cm, apex acuminate, base obtuse or acute, margin entire, both surfaces of leaflets with scabrid hairs and scattered yellowish glands; secondary veins 10–15-paired; petiolule 5–10 cm long. Inflorescence terminal, a corymb-like dichasium; peduncle 4–6 cm long; bracteoles linear, 5–10 mm long; pedicel 5–6 mm long, puberulous. Calyx: tube 1.5–2.5 mm long, outside glabrous or puberulous, inside glabrous; lobes 5, minute toothed, 0.4–0.5 mm long. Corolla pale yellowish or whitish yellow; tube 2.5–3 mm long, outside with whitish hairs, inside puberulous; upper lobe 1–1.5 by 1–1.5 mm, triangular, lower lobe 3–3.5 by 4.5 mm, slightly rounded, crenate. Stamens: filament glabrous with whitish hairs at base; short filament 3.5–4.5 mm long; long filament 4.5–7 mm long; anthers 0.5–1 mm long. Ovary ellipsoid or ovoid, glabrous; style 2.5–3 mm long; stigma 0.6–1.2 mm long. Fruits globose, ellipsoid or ovoid, 3–15 mm in diameter.

Distribution.— India, Bangladesh, Myanmar, Laos, Cambodia, Vietnam, Malaysia, Indonesia, Philippines, New Guinea, Australia.

Ecology.— Dipterocarp and dry evergreen forests, alt. 10-1,280 m. Flowering in February-June.

Vernacular.— Farang khok, Khai nao, Khee hen, Khomm khwaan, Nao nai, Teen nok.

Note.— Vitex glabrata is distinctive on account of its loose, axillarly, corymb-like inflorescence which is markedly dichotomous and spreading branches.

5. Vitex limonifolia Wall. ex Walp.


Tree 10–20 m high; branchlets hairy; bark dark grey or black, slightly smooth or cracked. Leaves with (3–) 5 leaflets; petiole winged, 1.5–5 by 2–3 cm, pubescent; leaflets coriaceous, elliptic to broadly elliptic, broadly lanceolate or ovate, 5–25 by 2–10 cm, apex acute, acuminate or aristate, base attenuate, margin entire, rarely crenate, upper surface of leaflets with sparse hairs and yellowish glands, lower surface pubescent, with yellowish glands; secondary veins 10–25-paired, hairy; expetiolulate. Inflorescence terminal, a verticillaster-like cyme or thyrs, 15-25 cm long, with yellow hairs; peduncle 2–8 cm long; bracts broadly lanceolate or linear-oblong, 8–10 by 3–5 mm; bracteoles lanceolate, 1–2 by 0.2–0.5 mm; pedicel 1–5 mm long, densely hairy. Calyx: tube 2–4 mm long, outside with hairs; lobes 5, triangular, 1–1.5 mm long. Corolla yellowish white; tube 6–6.5 mm long, outside with sparse hairs or glabrous, inside with dense long hairs; upper lobe triangular, 1–5 mm, lower lobe rounded or slightly rounded, margin entire, 1.5–2.5 by 5–10 mm. Stamens: filament glabrous with whitish hairs at base; short filament 3–4 mm long; long filament 4–5 mm long; anthers 1–2 mm long, subequal. Ovary ellipsoid or slightly globose, upper part hairy; style 4–5 mm long; stigma 0.5–1 long. Fruits globose, 3–6 mm in diameter.

Thailand.— NORTHERN: Mae Hong Son, Chiang Mai, Lampang, Phrae, Tak, Nakhon Sawan; EASTERN: Nakhon Ratchasima; SOUTH-WESTERN: Uthai Thani, Kanchanaburi, Ratchaburi, Phetchaburi, Prachuap Khiri Khan; CENTRAL: Lop Buri, Saraburi; SOUTH-EASTERN: Chon Buri, Chanthaburi; PENINSULAR: Surat Thani, Nakhon Si Thammarat.

Distribution.— Myanmar, Laos, Cambodia, Vietnam.

Ecology.— Moist and dry evergreen forests, alt. 0-800 m. Flowering in May-August.
Vernacular.– Lam-puun-saa-mo, Samo luang, Samo non, Samo teenpet, Sawong, Sawong hin, Sawong luang, Sawong teenpet, Sawong yai, Teen nok.

Note.– *Vitex limonifolia* uniques in this genus on account of its large leaves and leaflets and its large winged petiole. Three collections, *Wallich* 1754.1, *Wallich* 1754.2 and *Wallich* 1754.C, are mentioned in the original description as *Wallich* 1754. *Wallich* 1754.C is the best preserved with flowers and leaves and so it is designated as the lectotype.

6. *Vitex longisepala* King & Gamble
(Figure 1C)


Tree 10−15 m high; branchlets puberulous with brownish hairs; bark brownish or black, slightly smooth. *Leaves* with 3 leaflets; petiole 2−10 cm long; leaflets chartaceous or subchartaceous, elliptic or ovate, 10−30 by 5−16 cm, apex acuminate or long-acuminate, base attenuate or obtuse, margin entire, both surfaces of leaflets with scabrid hairs and scattered glands; secondary veins 5−10-paired; petiolule of central leaflet 2−6 mm long, the lowest pair 0.5-1 mm long. *Inflorescence* axillary, a compound dichasium, 3−7 cm long; peduncle 1−2 cm long; bracteoles lanceolate or linear, 6−10 by 1.5−4 mm; pedicel 1−2 mm long. *Calyx*: tube 2.5−3 mm long, outside densely hairs, inside glabrous; lobes 5, oblong-lanceolate, 3-6 by 1.5-4 mm. *Corolla* pale yellow; tube 5−8 mm long, outside with yellowish glands, inside with sparse glands; upper lobe 3−5 mm long, triangular, lower lobe 2−7 by 2−5 mm, rounded or slightly rounded. *Stamens*: filament glabrous with whitish hairs at base; short filament 6−8 mm long, long filament 8−10 mm long; anthers 1−2.5 mm long. *Ovary* globose; style 9−12 mm; stigma 0.2−0.5 mm long. *Fruits* globose, 1−1.5 cm in diameter.

Thailand.– PENINSULAR: Pattani, Yala, Narathiwat.

Distribution.– Malaysia.

Ecology.– Moist and dry evergreen forests, alt. 50-750 m. Flowering in March-May.

Vernacular.– Kaun tai.

Note.– *Vitex longisepala* is distinct from the other members of this genus by virtue of its dense pubescence on the leaf surface and the calyx lobes that are oblong lanceolate shaped.

7. *Vitex negundo* L.


*Vitex chinensis* Mill., Garden Dict. ed. 8, no. 5. 1768. Type: ex Hort., *Miller* s.n. (holotype BM).

*Vitex leucoxylon* Blanco, Fl. Filip.: 516. 1837; ed. 2, 359. 1845. Type: Philippines, not located.

Shrub 1−3 m high; branchlets puberulous; bark thin, dark brown or black, slightly smooth. *Leaves* with (1−3−) 5 leaflets; petiole 3−7 cm long; leaflets
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chartaceous, lanceolate or elliptic, 1–10 by 1–4 cm, apex acute or acuminate, base attenuate or obtuse, margin serrate or entire, upper surface of leaflets dark green, hairy or glabrous, lower surface with short hairs, greyish and scattered glands; secondary veins 5–10-paired; petiolule of central leaflet 5–15 mm long, the lowest pair 5–10 mm long. *Inflorescence* terminal, a panicle-like cyme or thyrs, 10–25 cm long; peduncle 2–5 cm long; bracteoles 1–3 mm long; pedicle 1–3 mm long. *Calyx*: tube 1.5–2.5 mm long, outside with short hairs, inside glabrous: lobes 5, triangular, c. 1 cm long. *Corolla* yellowish white, tube 1–4 mm long, outside with short hairs, inside with whitish hairs; upper lobe triangular, 1–2 by 1–2 mm; lower lobe rounded, crenate, 1.5–2 by 1–2 mm. *Stamens*: filament glabrous with whitish hairs at base; short filament 3–4.5 mm long; long filament 4–6 mm long; anthers 0.5–1 mm long. *Ovary* globose or ellipsoid; style 4–6 mm long; stigma 0.1–0.5 mm long. *Fruits* globose, 5–10 mm in diameter.

**Thailand.**— NORTHERN: Nan, Tak; EASTERN: Surin, Roi Et; SOUTHWESTERN: Prachuap Khiri Khan; CENTRAL: Krung Thep Maha Nakhon; PENINSULAR: Ranong, Surat Thani, Songkhla, Narathiwat.

**Distribution.**— Iraq, Kuwait, Pakistan, India, Bhutan, Sri Lanka, Myanmar, China, Taiwan, Vietnam, Malaysia, Philippines, Australia, Polynesia.

**Ecology.**— Deciduous forest or open limestone hills, alt. 0-900 m. Flowering in March-August.

**Vernacular.**— Khonthee khemaa, Kuu-ning, Ku-no-kaa-mo.

**Note.**— *Vitex negundo* has distinctive leaflets which are white on the lower surface of the leaf, an entire or coarsely toothed margin and is aromatic when crushed.

**8. Vitex peduncularis** Wall. ex Schauer

*Vitex peduncularis* Wall. [Cat. no. 1753, 1831, *nom. nud.*] ex Schauer in DC., Prodr. 11: 687. 1847. Type: Myanmar, Moulmein, *Wallich* 1753 (holotype G-DC!).

Tree 10–20 m. high; branchlets 4-angled, sparsely greyish hairs; bark brownish or dark grey, smooth or scaly. *Leaves* with 3–5 leaflets; petiole winged or unwinged, 5–11 cm long; leaflets chartaceous, lanceolate or narrowly elliptic, 8–15 by 2.5–4 cm, apex acute, base acute, margin entire or crenate, both surfaces of leaflets glabrous or glabrescent, with scattered yellowish glands; secondary veins 10–15-paired, petiolule 1–2 cm long or absent. *Inflorescence* terminal, a panicle-like cyme or thyrs, 7–21 cm long, with short hairs; peduncle 5–10 cm long; bracts linear, 3–4 mm long, caducous; bracteoles linear or narrowly triangular, 0.5–1.5 mm long; pedicel 5–6 mm long, with short hairs. *Calyx* greenish-grey; tube 1.5–2.5 mm long, outside with sparsely greyish hairs and scattered yellowish glands; lobes 5, triangular or truncate, 0.5–1 mm long. *Corolla* yellowish white; tube 2–3 mm long, outside with short hairs and scattered yellowish glands, inside with long whitish hairs; upper lobe triangular, 1–1.5 by 1–1.5 mm, lower lobe ovoid-rounded, crenate, 3–3.5 by 4–4.5 mm. *Stamens*: filament glabrous with whitish hairs at base; short filament 2.5–3.5 mm long, long filament...
3.5–4.5 mm long; anthers 0.5–1 mm long. 

Ovary ellipsoid or globose; style 2.5–3 mm long; stigma 0.2–0.4 mm long. Fruits globose or ellipsoid, 5–10 mm in diameter.


**Distribution.**– India, Bangladesh, Myanmar, China, Laos, Cambodia, Vietnam.

**Ecology.**– Dry dipterocarp, moist and dry evergreen forests, alt. 250-1,150 m. Flowering in March-June.

**Vernacular.**– Haa chan, Kaa chaplak, Kaa sam peek, Khae teen nok, Ma yang, Pathang-mi, Poe-to-meh, Samo teen pet, Samo wong, Teen kaa, Teen nok, Teen nok phuu, Teen pet.

**Note.**– This species resembles *V. altissima* L.f. from India but differs in having the axillary inflorescence. The plant has unwinged petiole except for Phengklai et al. 6637 (BKF) and Suvarnasara 43 (BKF).

**9. Vitex pinnata** L. 
(Figure 1D)


Tree 12–15 m high; branchlets 4-angled, sparsely hairy; bark brownish or dark grey. Leaves with 3–5 leaflets; petiole winged, older plant unwinged, 3–10 cm long; leaflets chartaceous, elliptic or obovate, 8–15 by 2.5–4 cm, apex acute or obtuse, base acute, margin entire, both surfaces of leaflets glabrous or glabrescent, with scattered glands; secondary viens 10–15-paired, petiolule 1–5 mm long. Inflorescence terminal, a compact pyramidal panicle-like cyme, 7–20 cm long; peduncle 2–7 cm long; bracteoles linear or lanceolate, 3–12 by 2.5 mm; pedicel absent. Calyx: tube 4–6 mm long, outside with sparsely hairs, inside glabrous; lobes 5, triangular, 0.5–1 mm long. Corolla pale violet or violet; tube 2–3 mm long, outside with sparsely hairy or densely short hairs, inside glabrous or with long whitish hairs; upper lobe triangular, 1–1.5 by 1–1.5 mm, lower lobe ovoid-rounded, crenate, 3–3.5 by 4–4.5 mm. Stamens: filament glabrous with whitish hairs at base; short filament 10–11 mm long, long filament 11–15 mm long; anthers 0.5–1 mm long. Ovary ellipsoid or globose; style 7–15 mm long; short stigma 0.3–0.4 mm long, long stigma 0.7–0.8 mm long. Fruits globose, 8–15 mm in diameter.

**Thailand.**– NORTHERN: Chiang Mai, Phitsanulok; NORTH-EASTERN: Loei, Nong Khai, Sakon Nakhon, Mukdahan, Khon Kaen; EASTERN: Chaiyaphum, Nakphon Ratchasima, Buri Ram, Si Sa Ket, Ubon Ratchathani; SOUTH-WESTERN: Uthai Thani, Rachaburi, Phetchaburi, Prachuap Khiri Khan; CENTRAL: Lop Buri, Saraburi; SOUTH-EASTERN: Sa
Kaeo, Prachin Buri, Chachoengsao, Chon Buri, Chanthaburi, Trat; PENINSULAR: Chumphon, Ranong, Surat Thani, Phang-nga, Phuket, Krabi, Nakhon Si Thammarat, Trang, Satun, Songkhla, Yala, Narathiwat.

**Distribution.**— India, Sri Lanka, Bangladesh, Myanmar, Laos, Cambodia, Vietnam, Malaysia, Indonesia, Philippines.

**Ecology.**— Dry dipterocarp and mixed deciduous forests, alt. 0-400 m. Flowering in March-September.

**Vernacular.**— Kaanon, Ka phun, Kaa saam peek, Khai nao, Khon samo, Lue-mae, Nao, Non, Non den, Ta phrun, Ta phun, Ta phun thong, Ta phum, Sa phun thong, Samo buang, Samo hin, Samo kaanon, Samo paa, Samo teen nok, Samo teen pet, Sawong hin, Teen nok.

**Note.**— *Vitex pinnata* is characterized by both surfaces of the leaf being glabrous or sparsely with hairs and the terminal and compact pyramidal panicle-like cyme inflorescence with lanceolate or elliptic oblong bracts.

### 10. *Vitex quinata* (Lour.) F.N. Williams


*Cornutia quinata* Lour., Fl. Cochinch. 2: 387. 1790. Type: China, Canton, Loureiro s.n. (holotype P, picture K!).


Tree 10–20 m high; bark brown to dark grey, slightly smooth or cracked; branchlets 4-angled, with sparse hairs. *Leaves* with 3 (–5) leaflets; petiole 3–13 cm long; leaflets chartaceous, lanceolate or elliptic, 8–17 by 4–10 cm, apex mucronulate or caudate, base cuneate or obtuse, margin entire, both surfaces of leaflets smooth or with sparse bristles; upper surface with white glands, lower surface with yellow glands; secondary veins 9–12-paired; petiolule 1.5–4.5 cm long. *Inflorescence* axillary, a spreading panicle-like cyme, whitish grey, 15-35 cm long; peduncle 3–5 cm long; bracts foliaceous, lanceolate or oblanceolate, 10–22 by 5–7 mm with petiole ca. 3 mm long; bracteoles linear or oblong, 0.7–1 by 0.5–1 mm, caducous; pedicel 5–6 mm long with short hairs. *Calyx*: tube 1.5–2.5 mm long, outside with grey hairs and scattered yellow glands, inside glabrous; lobes 5, slightly lobed or truncate, 0.5–0.8 mm long. *Corolla* whitish yellow; tube 2–3 mm long, outside with cream short hairs and scattered yellow glands; upper lobe triangular, 1–1.5 by 1.5 mm, lower lobe ovate-rounded with lobed margin, 3–3.5 by 4–4.5 mm. *Stamens*: filament glabrous with long whitish hairs at base; short filament 2.5–3.5 mm long, long filament 3.5–4.5 mm long; anthers 0.5–1.4 mm long. *Ovary* globose or ovoid; short
stigma 0.2–0.4 mm long, long stigma 0.5–0.8 mm long. Fruits globose or ellipsoid, 5–10 mm in diameter.


**Distribution.**– India, Myanmar, China, Taiwan, Laos, Vietnam, Malaysia, Indonesia, Philippines, New Guinea, Polynesia.

**Ecology.**– Mixed deciduous, moist and dry evergreen forests, alt. 40–1,500 m. Flowering in March–June.

**Vernacular.**– Ee pae, Saa Khaang.

**Note.**– *Vitex quinata* is distinguished by its terminal and thinly cinereous tomentose inflorescence.

(Figure 1E)

*Vitex rotundifolia* L.f., Suppl. Pl. Syst. Veg.: 294. 1782. Type: Japan, Thunberg s.n. (Hb. Thunb. 14619 (holotype LINN-SM; isotype UPS-THUNB [picture].  


*Vitex repens* Blanco, Fl. Filip.: 513. 1837. Type: Philippines, not located.  


Prostrate shrub with adventitious roots at node, branchlets erect; bark brownish or greyish, smooth. Leaves palmately compound, with 1 leaflet, sometimes with 3 leaflets when young, all parts aromatic; petiole 3–20 mm long; leaflets coriaceous, rounded, obovate or elliptic, 1–5.5 by 1–4.5 cm, apex obtuse or acute, base obtuse or acute, margin entire, upper surface greenish, glabrescent, lower surface with greyish hairs and glands; secondary veins 3–5-paired, inconspicuous reticulate; petiolule 0.5–4 cm long. Inflorescence terminal, a panicle-like cyme or thyrs, 7–12 cm long; bracts foliaceous, 7–20 by 5–10 mm; peduncle 1–7 cm long; cyme or compound cyme, bracteoles linear, caducous, 1–2 mm long; pedicle 0.5–1 mm long. Calyx campanulate, greenish-grey, 5-lobed; tube 3–5 mm long, outside with short greenish hairs, inside glabrous. Corolla infundibuliform, 10–14 mm long, purplish or blue, aromatic; upper lobe 2–3 by 2–3 mm, triangular; lower lobe 5–6 by 3–5 mm, rounded, crenate; tube 4–8 mm long, outside with short hairs, inside with long whitish hairs. Stamens: filament glabrous with whitish hairs at base; short filament 6–7 mm long, long filament 7.5–8 mm long; anthers 1.5 mm long, whitish-purple. Ovary globose or dome-shaped; style 9–15 mm long; stigma 4–5 mm long. Fruits globose, 5–6 mm in diameter.
Thailand.— SOUTHWESTERN: Kanchanaburi, Ratchaburi, Prachuap Khiri Khan; SOUTHEASTERN: Chon Buri, Rayong, Chanthaburi, Trat; PENINSULAR: Chumphon, Phuket, Nakhon Si Thammarat, Songkhla, Narathiwat.

Distribution.— China, Korea, Japan, Taiwan, Vietnam, Malaysia, Australia, Polynesia.

Ecology.— Along sandy seashore. Flowering in June-October.

Vernacular.— Khon thi, Khon thiso, Khon thiso thale, Kuu-ning.

Note.— Vitex rotundifolia is readily distinguished from all other member of its genus by its habit which is a prostrate shrub on the sandy seashore.

12. Vitex scabra Wall. ex Schauer (Figure 1F)

Vitex scabra Wall. [Cat. no. 1758. 1831, nom. nud.] ex Schauer in DC., Prodr. 11: 695. 1847. Type: Myanmar, Seagaen (Sokaen), Wallich 1758 (holotype G-DC!, isotype K-W!); Thailand, Udon Thani, Nong Bua A.F.G. Kerr 8612 (epitype K!, isoeptotypes BK!, BKF!, chosen by Chantaranothai et al., 2004).

Tree 10–12 m high, buttressed, with yellowish brown bark and large spines. Leaves with 3–5 leaflets; petiole 2–4 cm long; leaflets chartaceous, elliptic or obovate, 2–10 by 1–4 cm, apex acute acuminate or cuspidate, base acute, margin entire or crenate; both surfaces of leaflets scabrous; secondary veins in 5–10-paired; petiolule 1–3 mm long. Inflorescence axillary or terminal, a panicle-like cyme or thyrs, 4–12 cm long; peduncle 2–3 cm long; bracteoles linear, 2.5–3 mm long; pedicel 1–2 mm long. Calyx: tube 3.5–5 mm long; outside with short hairs and scattered glands, inside glabrous with brownish lines; lobes 5, triangular, 0.5–1 mm long. Corolla pale or dark yellow; tube 3–10 mm long, outside glabrous or with hairs and sparse glands, inside with white hairs; upper lobe triangular or rounded, 3–3.5 by 1.5–1.1 mm; lower lobe rounded, crenate, 3.5–4 by 2.5–3 mm. Stamens: filament glabrous with long whitish hairs at base; short filament 3.5–4 mm long, long filament 5.5–6.5 mm long; anthers 0.5–1 mm long. Ovary globose; style 7–14 mm long; stigma 0.5–0.8 mm long. Fruits ellipsoid or rarely globose, 1–1.5 cm in diameter.

Thailand.— NORTHERN: Chiang Mai, Chiang Rai; NORTHEASTERN: Loei, Udon Thani, Nong Khai, Sakon Nakhon, Mukdahan, Khon Kaen; EASTERN: Chaiyaphum, Nakhon Ratchasima; SOUTHWESTERN: Uthai Thani, Kanchanaburi, Ratchaburi, Phetchaburi, Prachuap Khiri Khan; CENTRAL: Saraburi; SOUTHEASTERN: Sa Kaeo, Chanthaburi, Trat; PENINSULAR: Chumphon, Phangnga, Songkhla.

Distribution.— Myanmar, Laos, Cambodia.

Ecology.— Dipterocarp, mixed deciduous and dry evergreen forests, alt. 0-700 m. Flowering in April-August.

Vernacular.— Ee pae, Maak lek maak noi, Ma khaang, Sa-khaang.

Note.— Vitex scabra is a very distinct species because of the leaf texture which is distinctly scabrous. The species has been
overlooked and misidentified under *V. quinata* for a long time.

### 13. *Vitex siamica* F.N. Williams  
(Figure 2A)


Tree 7–12 m high; branches and branchlets hairy, old branches with lenticels; bark brown to dark grey, slightly smooth. *Leaves* with 3 (–5) leaflets; petiole 1.5–5 cm long; leaflets subchartaceous, ovate, obovate, elliptic or lanceolate, 2–10 by 1.5–5 cm, apex acute acuminate or cuspidate, base acute, margin entire or serrate, both surfaces of leaflets smooth and with sparse glands or hairs on midvein; secondary veins 12–24-paired; petiolule of central leaflet 1–
1.5 cm long, petiolule of lateral leaflet 0.5–1 cm long or absent. Inflorescence axillary or terminal, a panicle-like cyme or thyrsus, 2–10 cm long; bracts foliaceous, spathulate, 1–5 by 0.3–1.5 cm with petiole 0.7–1 mm long; peduncle 1–2 cm long; bracteoles lanceolate or linear-oblong, 1.5–2 mm long. Calyx: tube 2–3 mm long, outside glabrous or with long white hairs, inside glabrous; lobes 5, triangular, 1–1.5 mm long. Corolla pale yellow; tube 2.5–3.5 mm long, outside glabrous, inside with long white hairs; upper lobe triangular, 1–1.5 mm long; lower lobe ovate-rounded with lobed margin, 1.5–2.5 by 1–1.5 mm. Stamens: filament glabrous with long whitish hairs at base; short filament 1–2 mm long, long filament 2–2.5 mm long; anthers 0.5–1 mm long. Ovary globose or ovoid; style 2–3 mm long; stigma 0.1–0.5 mm long. Fruits globose, 2–5 mm in diameter.

Thailand.– SOUTH-WESTERN: Ratchaburi, Prachuap Khiri Khan; PENINSULAR: Chumphon, Surat Thani, Phangnga, Krabi, Phatthalung, Trang, Songkhla, Yala.

Distribution.– Malaysia.

Ecology.– Limestone hill in evergreen forest, alt. 0-150 m. Flowering in May-August.

Vernacular..– Krachang khao.

Note.– Morphologically V. siamica appears close to V. ajugaeflora Dop from Vietnam. Although both species have a similar size and shape of the calyx tube and shape of the inflorescence, those taxa are by no means conspecific. The most obvious distinguished characters are sparse white hairs or glabrous calyx tube, hairy on both surfaces of the calyx lobe and filiform bracts which are hairy of the latter.

14. Vitex thailandica Bramley


Vitex holoadenon Dop, Trav. Lab. for Toulouse 1(1): 8. 1928. Type: Cambodia, Houdon, Kompong Luong, Expédition du Me Kong, 1866-1868, Thorel 2028 (type K!). syntype: Cambodia, Pursart, Pierre 1218

Straggling shrub, branchlets 4-angled or terete, glabrous. Leaves simple; petiole 5–10 mm long; lamina chartaceous, ovate or elliptic, 3–8 by 2–4 cm, apex acute, obtuse or obtuse-apiculate, base rotundate or attenuate, margin entire, upper surface brown, glabrescent, lower surface brownish with hairs and glands; secondary veins 7–9-paired; petiolule 0.5–4 cm long. Inflorescence terminal, a compound diacthasium, 10-12 cm long, with hairs and glands; bracts 1-3 mm long; peduncle 1–7 cm long; bracteoles linear, caducous, 1–2 mm long; pedicel 0.5–1 mm long. Calyx: tube 2–5 mm long, outside with short hairs, inside glabrous; lobes 5, triangular or obtuse. Corolla yellowish white; tube ca. 5 mm long; upper lobes 2 mm long, lower lobes with rounded apex, 5 mm long. Stamens: filament glabrous with whitish hairs at base; short filament 5 mm long, long...
filament 7 mm long; anthers 0.7-0.8 mm long. *Ovary & fruits* not seen.

**Thailand.**– CENTRAL: Suphan Buri, Ang Thong, Phra Nakhon Si Ayutthaya; SOUTH-EASTERN: Sa Kaeo.

**Distribution.**– Cambodia, Vietnam.

**Ecology.**– In evergreen forest by stream or river banks, alt. 20-50 m.

**Vernacular.**– .

**Note.**– *Vitex thailandica* is distinct by its straggling shrub and simple leaves.

15. *Vitex trifolia* L. *(Figure 2B)*


Shrub 50–150 cm high; branchlets puberulous; bark brown, slightly smooth. *Leaves* with 1–3 leaflets; petiole 5–30 mm long; leaflets chartaceous, obovate or elliptic, 2.5–7.5 by 1–4 cm, apex and base acute, margin entire; upper surface dark green, glabrous, lower surface with glands and grey hairs; secondary veins 4–12-paired; petiolule absent. *Inflorescence* terminal, a panicle-like cyme, 5–20 cm long; peduncle 2–5 cm long; bracts foliaceous, obovate or oblanceolate, 2–5 by 1–1.5 mm with petiole 1–5 mm long; bracteoles linear, 1–2 mm long. *Calyx* green with pale purple; tube 2–4.5 mm long, outside with short grey hairs, inside glabrous; lobes 5, triangular, 0.3–0.5 mm long. *Corolla* funnel-shaped, 8–12 mm long, pale purple; upper lobe 2–3 by 2–3 mm, triangular, one lower lobe 6–7 by 4–6 mm, rounded with entire margin; tube 3–7 mm long, outside with cream short hairs, inside with white hairs. *Stamens*: filament glabrous with long whitish hairs at base; short filament 6.5–7.5 mm long; long filament 7.5–8.5 mm long; anthers 1–1.5 mm long, dark purple. *Ovary* globose or ovoid; style 7–13 mm long; stigma 1–1.3 mm long. *Fruits* globose, 5–8 mm in diameter.


**Distribution.**– India, Sri Lanka, Bangladesh, China, Japan, Vietnam, Malaysia, Indonesia, Brunei, Philippines, New Guinea, Australia, Polynesia.

**Ecology.**– Deciduous forest, alt. 0-700 m. Flowering in March-August.

**Vernacular.**– Dinso, Dok samut, Khon dinso, Khon thiso, Khon thiso khaao, Khun teeso, Muut phoeng, Phee suea, Phae suea noi, See suea noi, Seeso, Thiso.

**Note.**– *Vitex trifolia* differs from *V. negundo* in its obovate leaflets with the central one being almost sessile.

16. *Vitex vestita* Wall. ex Walp. *(Figure 2C, D)*

4: 85. 1845. Type: East India, Toong-Dong Avæ, Wallich 1750 (lectotype K!, isolecotype K-W!, designated by de Kok, 2008).


Small tree 1–3 m high; branchlets with villous hairs; bark dark brown. *Leaves* with 3 (–5) leaflets; petiole 1.5–3 cm long, hairy; leaflets subchartaceous, ovate, lanceolate or elliptic, 5–11 by 4–7 cm, apex acuminate, base acuminate or attenuate, margin entire; both surfaces of leaflets with sparsely villous hairs and yellow glands; secondary veins 8–10-paired, hairy; petiolute of central leaflet 1–1.5 cm long, petiolute of lateral leaflet 2–5 mm long or absent. *Inflorescence* axillary, a compound diachasium, 3–7 cm long, shorter than leaf, with yellow villous hairs; peduncle 1–2 cm long; bracteoles linear, 2–3 mm long; pedicel 1–2 mm long or sessile. *Calyx*: tube 2–3.5 mm long, outside with villous hairs, inside with hairs or glabrous; lobes 5, minutely toothed or truncate. *Corolla* whitish yellow; tube 4–7 mm long, outside with yellow villous hairs and scattered small yellow glands upper lobe triangular, 1–1.5 by 1–1.5 mm, lower lobe ovate-rounded with lobed margin, 3–3.5 by 3–4.5 mm. *Stamens*: filament glabrous with long whitish hairs at base; short filament 2–3 mm long; long filament 3.5–4 mm long; anthers 0.5–1.5 mm long. *Ovary* globose or ovoid; style 2.5–3 mm long; stigma 0.4–0.5 mm long. *Fruits* oblong, 5–7 mm in diameter.

**Thailand.**– NORTHERN: Mae Hong Son, Chiang Mai, Chiang Rai, Lamphun, Lampang, Tak; NORTH-EASTERN: Phetchabun, Loei; EASTERN: Chaiyaphum; SOUTH-WESTERN: Kanchanaburi, Prachuap Khiri Khan; SOUTH-EASTERN: Chon Buri, Chanthaburi, Trat; PENINSULAR: Ranong, Yala, Narathiwat.

**Distribution.**– India, Myanmar, China, Vietnam, Malaysia, Indonesia, Brunei.

**Ecology.**– Mixed deciduous, moist and dry evergreen forests, alt. 0-1,450 m. Flowering in March-August.

**Vernacular.**– Khort nguu, Pha hai noi, Teen nok khao.

**Note.**– *Vitex vestita* is closely related to *V. longisepala* but differs in having the much smaller leaves, the small and caducous bracts and the small and truncate calyx lobes.

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**LITERATURE CITED**


APPENDIX

Specimens Examined

1. *Vitex canescens*: Boonsong 4 (BKF); Bunchoo 729 (BCU, BK); C. Bunnab 228 (BKF); D. Bunpheng 49 (BKF), 1167 (BKF); P. Charoenmayu 399 (BKF); D.J. Collins 72 (E), 706 (US); Dee 41 (BKF), 49 (BKF); N. Fukuoka 63679 (BKF); S. Gardner ST0130 (BKF); S. Gardner & P. Sidisunthorn ST0471 (BKF); 2089 (Herb. Biology, Chiang Mai University); T. Jonganurak 509 (BCU-2 sheets); M. Kanokvichid 228 (BKF); D. Khantchai 341 (BKF); S. Khoomgratok 97-3 (KKU); R.M. King 5493 (L, US); KK 1144 (BCU), 1282 (BCU-2 sheets); A. Kostermans 719 (BK, K-2 sheets, L-3 sheets), 1248 (US, L-3 sheets), s.n. (BK); A. Kostermans & G. den Hoed 652 (BK, L, P); A. Marcan 1765 (E), 2170 (E); K. Larsen, S.S. Larsen, S.S. Renner, C. Niyomdham, W. Ueachirakan & P. Sirirugs 42788 (AAU); J.F. Maxwell 72-60 (AAU, L-2 sheets), 72-109 (AAU, BK), 74-296 (BK, BKF), 74-580 (BK, L), 75-48 (AAU), 75-240 (AAU, BK, L), 75-480 (BK, L), 76-303 (AAU, BK, L), 85-575 (BK, Herb. Biology, Chiang Mai University), 88-379 (BK, E-2 sheets), 88-499 (BK), 89-603 (BK, L), 94-277 (Herb. Biology, Chiang Mai University), 94-403 (Herb. Biology, Chiang Mai University), 95-263 (BK, Herb. Biology, Chiang Mai University), 97-399 (BK, Herb. Biology, Chiang Mai University); Meesathan 3 (BK); D. Nakkan 51 (BK), 176 (BK), 274 (BK); W. Nanakorn 500 (BK, L-2 sheets); Pa-Yun 2 (BK); C. Phengklai 26 (BK, K), 96 (BK), 3230 (L-2 sheets); S. Phengnaren 404 (BK); S. Phusomsaeng 157 (BK, E, K, L-2 sheets, P); S. Pinnin 404 (L, P); Piya et al. 41 (BCU); Prayoon 2 (BK); Preecha 399 (BK); K. Saifu 22461 (Herb. Biology, Chiang Mai University); B. Sangkhachand 968 (BK), 1879 (BK); T. Smitinand s.n. (BK), s.n. (BK); Somkhid 429 (BK), s.n. (BK); W. Somprasong 60 (BK), 60A (BK); D.D. Soejarto & N. Nantasan 6036 (L); BGO. Staff 18 (QBG), 459 (QBG), 6096 (QBG); A. Suksamrarn 5 (BK, K), 6 (BK), 12 (BK); E. Smith 761 (BK-2 sheets, E); S. Sutheesorn 1269 (BK), 1340 (BK), 2394 (BK); Teerawat 3 (BK); Thapthimthong 4 (BK), s.n. (BK); S. Thirachint 3 (BK); T. Tipatabiankarn 10740 (BK); P. Trisarasri 236 (BCU); Vanpruk 33 (BK), 425 (BK, K); Vibul 22 (BK-2 sheets); Williams & T. Smitinand 17162 (BK); Winit 256 (E); Worawut 18 (BK, L).

2. *Vitex cochinchinensis*: C. Leeratiwong 2001-12 (PSU); J.F. Maxwell 76-537 (AAU, BK); C. Niyomdham 4465 (BK, BKF-2 sheets, 5083 (BKF); S. Phengnaren 153 (BKF), s.n. (BKF); C. Phengklai s.n (BKF); R. Pooma 1597 (BKF); R. Pooma, K. Phattarahirankanok, S. Sirimongkol & M. Poopath 4118 (BKF, K); R. Pooma, W.J.J.O. de Wilde, B.E.E. Dyfjes, V. Chamchumroon & K. Phattarahirankanok 2726 (BKF-2 sheets); T. Smitinand 2551 (BK, K); S. Suddee, A. Paton, T. Jonganurak & V. Chamchumroon 982 (K); A. Suksamrarn 7 (BKF); Th. Wongprasert et al. 046-86 (BKF-2 sheets); Vanpruk 941 (BKF), Winit 566 (BKF).
3. Vitex gamosepala: KB 1922 (BFK); S. Gardner & P. Sidisunthorn ST0825 (BFK-2 sheets); S. Gardner & P. Tippayasri ST1326 (BFK); R. Geesink & T. Smitinand 4960 (AAU, BFK, E, L-2 sheets, P); R. Geesink, T. Hattink & C.C. Charoenphol 7390 (AAU, BFK, K, L, P); A.F.G. Kerr 7440 (BK, E, K); M.C. Lakshnakara 695 (BK, K); K. Larsen & S.S. Larsen 33 (BFK), 421 (BFK), 32838 (BFK, K, L), 32931 (BFK, K, L-2 sheets, P), 33421 (AAU, BFK, K, P); R. Geesink, T. Hattink & C.C. Charoenphol 3957 (BFK, K, L-2 sheets); T. Santisuk 636 (BKF-4 sheets), 819 (BK, BKF, US); T. Santisuk & B. Nimanong 284 (BFK); T. Smitinand 1160 (BFK); R. Pooma, K. Phattarahirankanok, S. Sirimongkol, M. Poopath & S. Sangrit 4531 (BFK); P. Puudjaa 710 (BFK-2 sheets); B. Sangkhachand 848 (BFK); T. Santisuk 636 (BKF-4 sheets), 819 (BK, BKF, US); T. Santisuk & B. Nimanong 284 (BFK); T. Smitinand 11764 (BFK-2 sheets, K, L-2 sheets); T. Smitinand & T. Santisuk s.n. (BFK-2 sheets); S. Thaworn 483 (BFK), 756 (BKF); Tippan 97 (BK).

4. Vitex glabrata: D. Barnkol s.n. (BK); S. Boongird 7 (BFK, US); C. Boonnab 271 (BFK); D. Bourcke s.n. (BK); D. Bunpheng 37 (BFK), 343 (BFK), 349 (BFK); C. Chermsirivathana 524 (BK); D.J. Collins 165 (K), 1247 (BK, BM, E, K, US); G. Congdon 591 (AAU); Damrongsak 56 (BFK); Dee 37 (BFK), 343 (BFK), 349 (BFK); S. Gardner & P. Sidisunthorn ST0551 (BFK); R. Geesink & T. Smitinand 4976 (AAU, BKF, E, K, L, P); R. Geesink, T. Hattink & C. Phengkli 6617 (L); H. Hoe 202 (BK); Kanthachai 58 (BFK); A.F.G. Kerr 3369 (E), 4391 (BK, BM, E, K), 6031 (BK, BM, K), 6156 (BK, BM, E, K), 7748 (BK, BM, E, K), 15211 (BK, BM, E, K), 15370 (BK, BM, E, K), 17103 (BK, BM, E, K), 19121 (BK, BM, E, K), 21602 (BK), s.n. (BK-19070), s.n. (BK-19072); A. Kostermans 99 (BK, K, L-2 sheets, P), 705 (BK, K, L-2 sheets, P), 1166 (L), 1222 (L-2 sheets, US), 1317 (L, US); M.C. Lakshnakara 960 (BK, BM, E, K); K. Larsen, S.S. Larsen, S.S. Render, C. Niyomdham, W. Ueachirakan & P. Sirirugs 42987 (AAU); K. Larsen et al. 58 (BFK); A. Marcan 1722 (K), 2086 (E); J.F. Maxwell 74-418 (AAU, BK), 75-214 (BK), 96-616 (Herb. Biology, Chiang Mai University); Narong 1 (BFK); C. Niyomdham, W. Ueachirakan & P. Smitinand 3661 (BFK-2 sheets); Noe 202 (BK, E); C. Phengkli s.n. (BFK); C. Phengkli et al. 9112 (BFK); S. Phusomsaeng 238 (AAU, BFK, E, K, L, P); S. Phusomsaeng & S. Pinnin 383 (L, US); D. Prapat 56 (BFK-2 sheets, K, L); Put 1612 (BFK, E); P. Puudjaa 145 (BFK-2 sheets); Rabil 383 (BK, BM, E, K); S.S. Renner et al. s.n. (PSU); S.N. 381 (BFK); Sa-ard 7 (BFK); B. Sangkhachand 12 (BFK, K); B. Sangkhachand & B. Nimanong 1277 (BFK, E, K, L, P); T. Santisuk 1278 (BFK, PSU), s.n. (BFK-85364); T. Smitinand 1415 (K); T. Smitinand & H. Sleumer 1030 (L); Snan 299 (BFK, K), 412 (BFK, K); B. Sukkri 6 (L); Suksamrarn s.n. (BFK); H. Takahashi T-63209 (BFK); Th. SØrensen et al. s.n. (BFK), s.n. (BFK); Tippan 133 (BK); P. Trisarasri 268 (BCU); C.F. van Beusekom & C. Phengkli 1305 (K), 1307 (E); Vanpruk 725 (BFK, K); Th. Wongprasert s.n. (BFK-99500), s.n. (BFK-120219).

5. Vitex limonifolia: Asa s.n. (BFK); M. Banterngsuk 6 (US); D. Bunpheng 41 (BFK), 148 (BFK,K); A. Bunyarataphand & C. Phengkli 87 (BFK, K, P); D.J. Middleton, S. Suddee, S.J. Davies & C. Hemrat 843 (K); K. Chaichareon 11 (BCU); Chantana-orapin 2 (BCU); P. Charoenmayu 495 (BCU); D.J. Collins 9 (E, L); R. Geesink, D. Phanichapol & T.
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6. Vitex longisepala: C.S.S. 180 (BKF); C. Charoenphol, K. Larsen & E. Warncke 3975 (AAU, BKF, P); R. Geesink, T. Hattink & C. Charoenphol 6390 (BKF, K, L); A.F.G. Kerr 7113 (BK, BM, E, K); Kiah 24275 (BK, E); M.C. Lakshanakara 634 (E); K. Larsen & S.S. Larsen 32697 (AAU, BKF, P); K. Larsen, S.S. Larsen, A.S. Barford, W. Nanakorn, W. Ueachirakan & P. Sirirugs 41740 (AAU); K. Larsen, S.S. Larsen, C. Niyomdham, W. Ueachirakan & P. Sirirugs 42212 (AAU, BKF); K. Larsen, S.S. Larsen, C. Tange, R. Moran, C. Niyomdham & P. Puudjaa 45608 (AAU); C. Leeratiwong 05-213 (PSU); J.F. Maxwell 86-1092 (AAU, BKF, L); D. Middleton, V. Chamchanroom, S. Lindsay, M. Phuphat & R. Pooma 3508 (BKF); C. Niyomdham 5805 (BKF-2 sheets); B. Phusomsaeng & C. Niyomdham 384 (BKF, L); T. Premrasm 3266 (BKF); C. Promdej & C. Niyomdham 295 (BKF, K, L); S. Pinnin & S.S. 445 (BKF, K, L, P); B. Sangkhchand & B. Nimanong 1245 (BKF, L-2 sheets); B. Sangkhchand, S. Phusomsaeng & B. Nimanong 1000 (BKF, L, P); P. Sangkhchand 434 (BKF), 434A (BKF), 1241 (BK); T. Santisuk s.n. (BKF-2 sheets); T. Smitinand 10543 (BKF-2 sheets), 10943 (BKF, L, P), s.n. (BKF).
7. *Vitex negundo*: Boonnag 538 (BCU); G. Congdon 872 (AAU); A.F.G. Kerr 3657 (BK, E), 4286 (BK, BM), 14238 (BK, BM, E, K), 16627 (BK, BM, E, K); S. Khoomgratok 99-6 (KKU); M.C. Lakshnakara 538 (BCU); G. Congdon 872 (AAU); A.F.G. Kerr 3657 (BK, E), 4286 (BK, BM), 14238 (BK, BM, E, K), 16627 (BK, BM, E, K); S. Khoomgratok 99-6 (KKU); M.C. Lakshnakara 664 (BK, BM, E, K); A. Marcan 263 (BM); J.F. Maxwell 85-575 (BKF); Y. Paisooksantiwatana & S. Sutheesorn 897-82 (BK), 1023-82 (BK); Pensaeang 19 (BCU); R. Pooma, K. Phattarahirankanom, S. Sirimongkol & M. Poopath 4627 (BKF-2 sheets); R. Pooma, N. Phattarahrantricin & S. Sirimongkol 6706 (BKF-2 sheets); Rabil 55 (BK, BM, E, K); B. Sangkhachand 856 (BKF); Sawai & Rob 737 (KKU); T. Smitinand 40 (BKF), 60 (BKF); S. Sutheesorn 1099 (BK); S. Sutheesorn & Y. Palsooksantivatana 897-82 (BK), 1023-82 (BK); Winit 235 (BKF); Zimmermann 2 (BM).

8. *Vitex peduncularis*: Amnat 110 (BKF), s.n. (BKF); Anpruk 300 (BKF); BGO. Satff 1 (QBQ), 5 (QBQ), 547 (QBQ), 731 (QBQ), 6390 (QBQ); K. Bunchuai 85 (BKF-2 sheets), 115 (BKF), 125 (BKF), 181 (BK, E, P); K. Bunchuai & B. Nimanong 1352 (BKF), 1359 (BKF, K, L, P), 1467 (AAU, BKF, E, K, P), K. Chayamarit, T. Santisuk, T. Boonthavikoon, R. Pooma, S. Suddee & K. Phattarahirankanok 2953 (BKF-2 sheets); K. Chayamarit, T. Santisuk, T. Wongprasert, T. Boonthavikoon, R. Pooma, S. Suddee & K. Phattarahirankanok 2953 (BKF-2 sheets); C. Chermsirivathana 524 (BK); Damrongskak 8 (BKF), s.n. (BKF); S. Dhamachart 1 (BKF); N. Fukuoka T-62014 (BKF); Kasem 344 (BK, BKF); A.F.G. Kerr 5275 (BK, BM, K-2 sheets), 10590 (BK, BM, E-2 sheets, K), 613 (BK, BM, E, K); S. Khoomgratok 96-1 (KKU); R.M. King 5461 (L, US); S. Kopachon 14361 (Herb. Biology, Chiang Mai University); A. Kostermans 813 (BK, K, L-2 sheets, P); H. Koyama & C. Phengklai T-39034 (BKF); K. Larsen 33 (BKF), 677 (BKF); K. Larsen & S.S. Larsen 33677 (AAU, L, P), 33951 (AAU, BKF, K, L, P); K. Larsen, T. Santisuk & E. Warneke 2770 (AAU, L); C. Leeratiwong 06-314 (PSU), s.n. (PSU-13425); J.F. Maxwell 74-158 (AAU, BK), 75-214 (AAU, BK, L), 75-342 (AAU, BK, L), 76-293 (AAU, BK, L), 87-605 (BKF, L), 88-342 (AAU, BKF, L), 90-572 (E, L), 91-590 (AAU, E, L), 91-639 (E, L, P), 93-332 (L-2 sheets, Herb. Biology, Chiang Mai University), 93-740 (BKF, Herb. Biology, Chiang Mai University, L-2 sheets), 94-386 (Herb. Biology, Chiang Mai University), 96-616 (BKF), 97-400 (BKF, Herb. Biology, Chiang Mai University), 97-578 (BKF, Herb. Biology, Chiang Mai University), 98-593 (BKF, s.n. (BKF); G. Murata et al. T-17429 (BKF); Narong 8 (BKF); Native A33 (US); S. Nilphanit 23 (BKF); B. Nimanong & Sinchai 184 (BKF-2 sheets), 17429 (BKF); P. Nuchorn 10 (BKF); P. Pasatchasatnukul 1 (QBQ); P. Phakthu 36 (BKF); C. Phengklai 121 (BKF), 145 (BKF, L), 3031 (BKF, L); C. Phengklai & T. Smitinand 145 (BKF); C. Phengklai et al. 6318 (AAU, BKF-2 sheets, E, K), 6637 (BKF), 7215 (BKF-2 sheets, K, L), 12207 (BKF), 12223 (BKF), 12225 (BKF), 13228 (BKF-2 sheets, s.n. (BKF); S. Phengnaren & C. Hambananda 609 (BKF, L); Phrayapananuchon 10 (BKF); S. Phusomsaeng 212 (BKF, K, L); R. Pooma 174 (BKF); R. Pooma, K. Phattarahirankanok, S. Sirimongkol & M. Poopath 5038 (BKF); Pradit 891 (BK); Prayad 848 (BK); Put 2788 (BK, BM, E, K); Saikaew 29 (BKF); P. Sangkhachand 76 (BKF, K), 394 (BK), 848 (BK), 979 (BKF-2 sheets, K, L), s.n. (BKF); Sanoh 461 (BKF); T. Santisuk s.n. (BKF), s.n. (BKF-2 sheets); Sawai & Rob 728 (KKU); T. Shimizu, H. Koyama & M. Hutoh T-8785 (BKF), T-10445 (AAU, BK, K, L), 10495 (L);
9. Vitex pinnata: B.S. 870 (BKF); M. Banternsuk 13 (US); S. Boongird 22 (BKF, US); C. Boonnab 5 (BKF), 157 (BKF), 251 (BKF), 255 (BKF), 391 (BKF); S. Boontim s.n. (KKU-1814); K. Bunchuai 1022 (BKF, K, L), 1926 (BKF); Bunnak 727 (BKF), 3037 (BKF-2 sheets); D. Bunpheng 49 (BKF), 439 (BKF, K), 982 (BKF); S. Chadchawan 3 (BCU-3 sheets); C. Chai-anan 426 (BKF); P. Chantaranothai et al. 1836 (KKU), s.n. (KKU-8710), s.n. (KKU-9665); K. Chayamarit, R. Pooma, V. Chamcumrnon, K. Phattarahiranankanok & D.J. Middleton 2700 (BKF-2 sheets); C. Chermsirivathana & Kasem 1311 (BK); N. Chintana 25 (BK, E-2 sheets); D. J. Collins 186 (BK, E, L); G. Congdon 30 (AAU), 211 (AAU), 716 (AAU); Damrongsak 15 (BKF, L-3 sheets), 86 (BKF), 403 (BKF), s.n. (BKF); Dee 49 (BKF); N. Fukuoka & W. Nanakorn T-35877 (BK); N. Fukuoka, T. Santisuk & W. Nanakorn T-35928 (BKF, L); Fung s.n. (BKF); S. Gardner ST0105 (BKF), ST0130a (BKF); S. Gardner & P. Sidisunthorn ST0558 (BKF), ST0717 (BKF); R. Geesink & T. Santisuk 157 (BK); R. Geesink, T. Hattink & C.C. Charoenphol 7294 (AAU, BKF, K, L); R. Geesink et al. 7294 (BKF, K, L), 7491 (BK); Hamilton & G. Congdon 211 (BCU, BKF); B. Hansen & T. Smitinand 12186 (BKF, K, L-2 sheets); Herb. Trip 11 (BCU); P. Intrasirirak 4341 (L); Jaray 33 (BK); W. Kasonbua 93 (KKU); A.F.G. Kerr 6893 (BK, BM, E-2 sheets, K), 7491 (BK, BM, E-2 sheets, K), 10885 (BK, BM, E, K), 11132 (AAU, BK, BM, K, L), 11389 (AAU, BK, BM, E, K), 13875 (BK, BM, E, K), 17085 (BK, BM, E, K); S. Khoongratok 97-2 (KKU); R. M. King 5422 (US), 5499 (L, US-2 sheets); M.C. Lakshnakara 611 (BK, BM, K, L); K. Larsen 10029 (BKF); K. Larsen, S.S. Larsen, A.S. Barford, W. Nanakorn, W. Ueachirakan & P. Sirirugsa 41029 (AAU), 41262 (AAU); K. Larsen, S.S. Larsen, C.T. Norgaard, K. Phasen, P. Puudjaa & W. Ueachirakan 43926 (AAU); K. Larsen, T. Smitinand & E. Warncke 1571 (AAU, BKF, L, P), K. Larsen, S.S. Larsen, I. Nielsen & T. Santisuk 30645 (AAU, BKF, E, L, P), 31756 (AAU, BKF, E, S); N. Fukuoka & W. Nanakorn T-17576 (BKF, L), T-17627 (AAU, BKF, K, L-2 sheets); G. Murata, N. Fukuoka, T. Yahara, H. Nagamasu & N. Nantasan T-37401 (AAU, BKF, K, L); G. Murata, C. Phengklai, S. Mitsuta, N. Fukuoka, T. Yahara, H. Nagamasu & N. Nantasan T-37401 (AAU, BKF, T-17576 (BKF, L), T-17627 (AAU, BK, K, L-2 sheets); G. Murata, C. Phengklai, S. Mitsuta, N. Fukuoka, T. Yahara, H. Nagamasu & N. Nantasan T-37401 (BKF), T-37450
(AAU, BKF), T-37497 (BKF), T-41838 (BKF), T-49765 (BKF), T-50554 (BKF), T-50558 (BKF), T-50770 (BKF), T-50849 (BKF), T-51147 (BKF), T-51152 (BKF); D. Nakkant 170 (BKF-4 sheets); W. Nanakorn 628 (BKF-2 sheets); M. Newman 46 (BKF, L); Ng 1066 (BKF); P. Nitisirirak 431 (BKF, K, P); C. Niyomdham 599 (BKF-2 sheets), 576 (BKF-2 sheets); C. Niyomdham, B. Sangkhachand, M. Suangto & O. Vijitranand 204 (AAU, BKF, K), 1565 (BKF, E, K); C. Niyomdham & D. Sriboonma 1565 (AAU, BKF, K, L, P); A. Paungsaap 17 (BCU); C. Phengklai 941 (BKF); C. Phengklai et al. 204 (AAU, BKF, K), 1565 (BKF, E, K, L, P); C. Phengklai 230 (L), 12081 (BKF), 12378 (BKF), 12408 (BKF), 13074 (BKF-2 sheets), 13245 (BKF), 13731 (BKF), 15388 (BKF), 15678 (BKF); S. Phusomsaeng 431 (BKF-2 sheets, K, L); S. Phusomsaeng et al. 1591 (BKF-2 sheets, K, L); Ploenchit 431 (BKF-2 sheets); R. Pooma, V. Chamchumroon & K. Phattarahiranankanok 1930 (BKF-2 sheets); R. Pooma, W.J.J.O. de Wilde, B.B.E. Dyfjes, V. Chamchumroon & K. Phattarahiranankanok 2369 (BKF-2 sheets), 2426 (BKF-2 sheets); R. Pooma, K. Phattarahiranankanok & S. Sirimongkol 4718 (BKF-2 sheets); R. Pooma, N. Pattharahirantricin & S. Sirimongkol 6504 (BKF); Pradit 63 (BK), 223 (BK), 478 (BK), 509 (BK); D. Prapat 15 (L); C. Promdej, Samruay & Sakarin 230 (BKF-2 sheets, K, P); Put 56 (BKF-2 sheets), 249 (BKF-2 sheets), 338 (BKF), 854 (BK, BM, E, K), 894 (AAU, L), 1258 (BK, BM, E, K), 4273 (BK, BM, E, K); P.N. & S.S. 410 (BKF-2 sheets); QBG staff 5 (QBG); Rabil 21 (AAU, BK, BM, E, K), 80 (BK, BM, K), 243 (AAU, BK, BM, E, K, L); Sa-ard 22 (BKF); Sanan 347 (BKF), 582 (BKF), 647 (BKF); B. Sangkhachand & B. Nimonong 1233 (BKF, L); Sanoh 582 (BKF), s.n. (BKF); T. Shimizu, T. Toyokuni, H. Koyama, T. Yahara & T. Santisuk T-18006 (AAU, BKF, P); T. Shimizu & A. Nalampoong T-14663 (AAU, BKF, K), A. Senbunroong & S. Davies 54 (BKF); Sindhiphona 70 (BKF); E. Smith 304 (BK); T. Smitinand 807 (BKF), 1414 (BKF), 2818 (BKF), 2968 (BKF), s.n. (BKF); D.D. Soejarto, T. Santisuk, K. Taylor & N. Nantassan 5885 (BKF, L), 5888 (BKF); T. Sriburi 7 (BKF); F. Srisanit s.n. (BKF); BGO Satff 68 (QBG), 1580 (QBG), 3383 (QBG), 8413 (QBG); Students s.n. (PSU); S. Suddee, A. Paton, T. Jonganurak & V. Chamchumroon 981 (K), 993 (K), 996 (K); B. Sukkri 7 (BCU); A. Suksamran s.n. (BKF); S. Supasamrn 581 (BK), 685 (BK), 1053 (BK), 1216 (BK), 3389 (BK); S.N. 400 (BKF); S.P. et al. 1591 (BKF); S. Thavorn s.n. (BKF); W. Thephuttee et al. 82 (BCU-2 sheets); P. Tippayasri ST0949 (BKF); Thoen 29 (BKF); P. Trisarasar 337 (BCU), 362 (BCU); TDBS 10029 (BKF), 42186 (BKF); Th. Wongprasert et al. s.n. (BKF-124620-2 sheets), s.n. (BKF-124541-2 sheets), s.n. (BKF-124680-2 sheets); Vacharee 68 (BK); C.F. van Beusekom s.n. (BKF); C.F. van Beusekom & C. Phengklai 651 (AAU-2 sheets, BKF, E, K, L, P); C.F. van Beusekom & T. Santisuk 2781 (AAU, BKF, E, L, P); Vanpruk 607 (BKF, K); Yasothon 46 (BK).

10. *Vitex quinata*: Adisai 481 (BK); K. Bunchuai 76 (BK, K); K. Chayamarit et al. 161 (BKF); D.J. Middleton, P. Karaket, S. Lindsay, T. Phutthaisi & S. Suddee 4708 (K); H.H.
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11. *Vitex rotundifolia*: Adisai 991 (BK); D. Bourcke s.n. (BK, E, K); P. Chantaranoithai et al. s.n. (KKU-8729); C.C. Charoenphol, K. Larsen & E. Warncke 3427 (AAU); CN. Fukuoka T-14654 (BK, K); N. Fukuoka & H. Koyama T-62026 (BK); Hamilton & G. Congdon 119 (AAU, BCU, BKF); Jaray 116 (BK); A.F.G. Kerr 16127 (BK, BM), S. Khoomgratok 99-7 (KKU); M.C. Lakshnakara 78 (BK-2 sheets, BM, E-2 sheets); K. Larsen, T. Smitinand & E. Warncke 1246 (AAU), 1321 (BKF); K. Larsen & S.S. Larsen 33723 (AAU, P); A. Marcan 2262 (E); D.J. Middleton, M. Phupat, R. Pooma & K. Williams 3220 (BK); C. Niyomdham et al. 274 (AAU, BKF, E, K, P); S. Phengharen 201 (BK, K); C. Phengklai 801 (BK); P. Rungsiyanonda 8 (BCU); B. Sangkhachand 1118 (BK, K, P); T. Smitinand 1458 (BK); BGO. Sattf 3595 (QBG), 3620 (QBG); A. Sukasamrarn 8 (BK); S. Surawakin 6 (BCU); S. Suthesornsorn 220 (BK), 2023 (BK-2 sheets); O. Thaithong 1044 (BCU); Umpai 42 (BK); Viroj s.n. (PSU); Winit 142 (BK); Th. Wongprasert et al. s.n. (BKF-123082-2 sheets).
12. **Vitex scabra**: Adisai 481 (BK); Asa s.n. (BKF); BGO Satff 6521 (QBG); Bot2537 19 (BCU); K. Bunchuai 1671 (BKF, K, L); D. Bunpheng 107 (BKF), 1148 (BKF), s.n. (BKF); D.J. Middleton, S. Suddee, J.S. Davies & C. Hemrat 1102 (P); P. Charoenmayu 481 (BK); Asa s.n. (BKF); BGO Satff 6521 (QBG); Bot2537 19 (BCU); K. Bunchuai 1671 (BKF, K, L); D. Bunpheng 107 (BKF), 1148 (BKF), s.n. (BKF); D.J. Middleton, S. Suddee, J.S. Davies & C. Hemrat 1102 (P); P. Charoenmayu 386 (BKF); A. Kostermans 1358 (L-2 sheets); M.C. Lakshnakara 886 (BK, BM, E), 1304 (BK, BM, K); K. Larsen & S. Sinden 9385 (BKF); C. Phengklai et al. 327 (KKU), 407 (KKU); Damrongsetsak 97-4 (KKU); A. Kostermans 1358 (L-2 sheets); M.C. Lakshnakara 886 (BK, BM, E), 1304 (BK, BM, K); K. Larsen & S.S. Larsen 34054 (AAA, BKF, P); K. Larsen & T. Smitinand 9385 (BKF); K. Larsen, T. Santisuk & E. Warncke 1935 (E), 3273 (AAA, BKF, L); K. Larsen, T. Smitinand & E. Warncke 1385 (AAA, BKF); C. Leeratiwong 04-93 (KKU); A. Marcan 733 (BM), 2657 (BM, K); J.F. Maxwell 76-318 (AAA, BK, L); D.J. Middleton, C. Hemrat, S. Lindsay, S. Suddee & S. Suwanachat 1702 (BKF); D.J. Middleton, S. Suddee, S.J. Davies & C. Hemrat 954 (BKF), 1102 (BKF); D.J. Middleton, S. Suddee & C. Hemrat 1309 (BKF); Nai Noe 201 (BK, BM, E, K); Narong s.n. (BKF); C. Phengklai s.n. (BKF); V. Phadungehevit 24 (BCU); C. Phengklai et al. 12247 (BKF-2 sheets); S. Phengnare 153 (BKF), 437 (BKF), 478 (BKF, K), s.n. (BKF); R. Poorna 1543 (BKF-2 sheets), 1661 (BKF); R. Poorna, V. Chamchumroon, N. Koobkhandhod & P. Chantaboon 3492 (BKF-2 sheets); R. Poorna, K. Phattarahirukanok, S. Sirimongkol & M. Popath 4087 (BKF, K); R. Poorna, W.J.J.O. de Wilde, B.B.E. Dyffes, V. Chamchumroon & K. Phattarahirukanok 2467 (BKF-2 sheets), 2529 (BKF-2 sheets), 2768 (BKF-2 sheets); C. Promsakka 5 (BCU); Put 118 (BK, E, K), 2841 (BK, BM, E, K); B. Sangkhachand 53 (BKF, K), 964 (BKF, L); T. Santisuk s.n. (BKF); T. Shimizu, N. Fukuoka & A. Nalampoon T-7598 (AAA, BKF, L), T-7641 (BK, L); T. Smitinand 1478 (BKF), 2551 (BKF, K), 4859 (BKF, K), s.n. (BKF); T. Smitinand & C. Phengklai 8829 (AAA, BKF); T. Smitinand & T. Santisuk s.n. (BKF-71090-2 sheets); Somruay, Sakern & Aditep 149 (BKF); D.D. Soejarto & N. Nantasan 6058 (AAA, L); Th. Sorensen et al. s.n. 118 (BKF-2 sheets); V. Sudhatsathien 137 (BCU); A. Suksamarrarn 7 (BKF); S. Suwansawat 453 (BKF); P. Suwarakna 1430 (BK, K); S. Thaworn et al. s.n. (BKF); P. Trisarasri 253 (BCU); Vanprak 941 (BKF); Winit 546 (E), 566 (BKF, E, K); Th. Wongprasert s.n. (BKF-99404-2 sheets).

13. **Vitex siamica**: Adisai 950 (BK); P. Chantaranonthai et al. s.n. (KBU-9590); G. Congdon 733 (AAA); N. Fukuoka T-35842 (BKF); S. Gardner & P. Tippayasri ST1190 (BKF-2 sheets); A.F.G. Kerr 10948 (BK, BM, E, K), 13175 (BK, BM, E, K), 16948 (BK), 17317 (BK, BM, E, K), 18775 (BK, BM, E, K), 18923 (BK, BM, E, K); K. Larsen, T. Smitinand & E. Warncke 1238 (AAA, BKF); K. Larsen & S.S. Larsen 33677 (BK, K); J.F. Maxwell 86-398 (AAA, BKF, L, PSU); D.J. Middleton, S. Suddee, S.J. Davies & C. Hemrat 1163 (K); C. Niyomdham 1258 (AAA, BKF, E, K, P), 3000 (BKF-2 sheets); C. Phengklai 1258
14. **Vitex thailandica**: H.-J. Esser, K. Chayamarit, C. Ngernsangsaruay, K. Phattarahirankanok & P.C. van Welzen98-19 (K); A.F.G.Kerr 7002 (K), 19329 (K); A. Marcan 1004 (K); Put 2573 (K).

15. **Vitex trifolia**: Adisai 991 (BK); ASA s.n. (BKF); P. Boonma s.n. (BKF); Bunnag 538 (BK); D. Bunpheng 1134 (BK, K); Chit 275 (BK); D.J. Collins s.n. (BK); G. Congdon 1005 (AAU), s.n. (PSU); Din 149 (BKF), 287 (BKF); J.K. Jackson 6113 (BKF); Jaray 116 (BK); Khantchai 85 (BKF), 122 (BKF); A.F.G. Kerr 4662 (BK); S. Khoomgratok 97-5 (KKU); Lung Ai s.n. (BK); Noi Mao s.n. (BK); A. Marcan 1907 (E), 2109 (E); D. Nakkan 2 (BKF), 287 (L); W. Nanakorn 218 (BKF); B. Nasongkhla et al. 203 (BCU-2 sheets), 224 (BCU-2 sheets); C. Niyomdham 2012 (BK); C. Phengklai 801 (BKF, K); C. Phengklai et al. 11961 (BKF), 15193 (BKF); S. Phengnaren 201 (BKF); R. Pooma 120 (BKF, s.n. (BKF); Rabil 55 (BK, BM, E, K); V. Chamchumroon & C. Puff 1092 (BKF); K. Chayamarit et al. 1681 (BK); B. Hansen, G. Seidenfaden & T. Smitinand 10808 (AAU, BKF); Herb. Trip 560 (BCU); K. Iwatsuki & N. Fukuoka T-3565 (BKF); A.F.G. Kerr 6238 (BK, BM, E, K); K. Larsen & B. Hansen 5209 (BKF); K. Larsen, S.S. Larsen, I. Nielsen & T. Santsik 31575 (AAU); K. Larsen, T. Santsik & E. Warrnche 1935 (AAU, L); C. Leeratiwong 2001-11 (PSU); Loei s.n. (BKF-2003); J.F. Maxwell 72-514 (AAU, BK), 73-232 (AAU, BK), 91-697 (AAU, K), 93-1129 (L, Herb. Biology, Chiang Mai University), 93-1189 (BKF), 98-653 (BKF), 98-1422 (BKF); G. Murata, N. Fukuoka & C. Phengklai T-17428 (AAU, BKF, K, L), T-17429 (AAU, BKF, K, L-2 sheets), T-17473 (AAU, BKF, K, L); S. Nilphanit 35 (BKF); Y. Paisooksantivatana & T. Chuaycharoen 646-81 (BK); O. Petrmitr 462 (BKF); R. Poorna, K. Phattarahirankanok, S. Sirimongkol & M. Popath 4600 (BKF), 4627 (BKF, K); Sawai 1036 (KKU); J. Schmidt 434 (K); T. Shimizu, H. Toyokuni, H. Koyama, T. Yahara & C. Niyomdham T-22100 (BKF); T. Smitinand 2645 (BKF); T. Smitinand & H. Sleumer 1019 (BKF); Th. Sørensen, K. Larsen & B. Hansen 5209 (BKF, K); M. Tagawa, K. Iwatsuki, H. Koyama, N. Fukuoka, A. Nalampoon & A. Chintayungkun T-9094 (AAU, BKF, K, L), T-9130 (BKF, L), T-9295 (AAU, BKF, K, L-2 sheets); M. Tagawa, T. Shimisu, M. Hutoh, H. Koyama & A. Nalampoon T-9933 (BKF); TDBS 5209 (BKF), 10808 (BKF); B. Sangkhachand 348 (BKF, E, K, L, P); K. Suvabandhu 346 (L-2
sheets, P); S. Suddee, A. Paton, T. Jonganurak & V. Chamchumroon 943 (K); S. Suddee & P. Puujaa 1100 (K); C.F. van Beusekom, R. Geesink, C. Phengklai & B. Wongwan 4320 (BKF, K, L, P); Th. Wongprasert 997-153 (BKF-130026-2 sheets), s.n. (BKF-128942-2 sheets); U. Yindee 1 (KKU).