

Five new records of *Litsea* (Lauraceae) for Thailand

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ABSTRACT. *Litsea castanea* Hook.f., *L. cordata* (Jack) Hook.f., *L. firma* (Blume) Hook.f., *L. hirsutissima* Gamble and *L. tomentosa* Blume are described as five new records from peninsular Thailand. Lectotypes or neotypes are designated for all names.

Litsea comprises more than 300 species, mostly distributed in tropical Asia, Oceania, Australia and North and Central America. It is a large genus in the Flora Malesiana area (Van der Werff, 2001). In peninsular Malaysia, Kochummen (1989) reported 54 species and eight varieties of *Litsea* in a wide variety of habitats. During preparation of a taxonomic revision of the genus *Litsea* for the Flora of Thailand, five species were first recorded from the peninsula namely, *Litsea castanea*, *L. cordata*, *L. firma*, *L. hirsutissima* and *L. tomentosa*. All are previously known from peninsular Malaysia.

Litsea castanea Hook.f., Fl. Brit. Ind. 5: 171. 1886; Boerl., Handl. Fl. Ned. Ind. 3: 145. 1900; Gamble, J. Asiat. Soc. Bengal 75(1): 155. 1912; Burkill & Holttum, Gard. Bull. Straits Settlement. 3: 69. 1923; Ridl., Fl. Malay Penins. 3: 121. 1924, reprint 1967; Burkill & Henderson, Gard. Bull. Straits Settlement. 3: 415. 1925; Kosterm., Bibliogr. Laur. 797. 1964; Corner, Ways. Trees Malaya 1, 3rd ed. 384. 1988; Kochummen in Ng, Tree Fl. Malaya 4: 152. fig. 9. 1989; R.H.M.J. Lemmens, I. Soerianegara & W.C. Wong, Plant Resources of South-East Asia 5(2). Timber Trees: Minor Commercial Timbers: 311. 1995. Type: Malaysia, Malacca, *Maingay* 1269 (lectotype K!, designated here; isolectotype K!). Fig. 1.

Large tree 20–30 m tall; bark smooth, lenticellate, reddish brown; branchlets puberulous, with densely reddish brown scurfy scales. *Leaves* spiral; blade obovate or elliptic, 5–15 by 3–8 cm, apex acute, obtuse or retuse, base cuneate or oblique, margin entire, coriaceous, brown or dark brown when dry, glabrous on both surfaces or sparsely puberulous, lepidote on midrib and secondary veins beneath; petiole 1–3 cm long, sparsely puberulous, with reddish brown scurfy scales; midrib sunken above, raised beneath, secondary veins in 7–12 pairs, sunken above, raised beneath, curving or curving and looping near margin, tertiary veins scalariform-finely reticulate, distinct beneath. *Inflorescences* on umbel-bearing reduced branchlets, in clusters of umbels, along branchlets

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or in the axils of leaves, clusters of umbels 1–2 cm long; umbels 1–1.2 cm in diam.; peduncles 0.6–1.2 cm long, puberulous, with reddish brown scurfy scales; bracts (4–)5, usually imbricate, suborbicular, broadly ovate or ovate, concave, 5–7 by 3–4.5 mm, coriaceous, puberulous, with densely reddish brown scurfy scales outside. *Male flowers* 6–8 in each umbel; tepals 6, in 2 whorls of 3 linear-oblong or oblong, subequal, 2.5–3.5 by 0.8–1 mm, membranaceous, pubescent; pedicels 2–3 mm long, densely pubescent; stamens 12–16, usually in 4–5 whorls of 3, unequal; anthers 0.8–1.5 mm long; filaments slender, 3–6 mm long, villose, outer whorls with 2 glands, nearly at base or inner whorls without gland; pistillode none. *Female flowers* not known. *Fruits* ovoid, sometimes cylindrical, 1.8–2.6 by 1–1.2 cm, glabrous; enlarged perianth tube cup-shaped, 0.7–1 cm high, 1–1.3 cm in diam., puberulous, margin entire; fruiting pedicels 0.4–1 cm long, puberulous; young fruits completely enclosed in turbinate enlarged perianth tube with a circular hollow at the top; infructescence stalks 0.5–1.5 cm long, puberulous, with densely reddish brown scurfy scales.

Thailand.—PENINSULAR: Yala [Betong, Khao 1490, 4 Sep. 2005, Poopath 364 (BKF)], Narathiwat [Sirindhorn Waterfall, Hala-Bala Wildlife Sanctuary, 22 Nov. 1999, *Niyomdham, Puudjaa & Chonkunjana* 5925 (AAU); Hala-Bala Wildlife Research Station, 18 June 2003, *Ngernsaengsaruaq & Chantarasuwan* 374 (BK, BKF, Herbarium of the Department of Botany, Kasetsart University); Hala-Bala Wildlife Research Station, 24 Oct. 2003, *Ngernsaengsaruaq* 451 (Herb. Department of Botany, Kasetsart University, spirit specimen)].

Distribution.—Malay Peninsula, Singapore, Sumatra, Borneo.

Ecology.—In tropical rain forest and lower montane forest, 100–1,400 m. Flowering June–November; fruiting August–September.

Vernacular.—Ka thang bai lek (กะทังใบเล็ก).

Note.—The description of fruiting material is based on herbarium specimens deposited at Kew as follows: *Ali* 34134, 21 Sept. 1937, Malay Peninsula; *Hashuin* s.n., 1908, Johore; *Hassan & Kadim* 91, 28 Jan. 1959; *Kostermans* 9796, 21 July 1954, East Borneo; *Meng* 32321, 5 Nov. 1982, Selangor; *Ngadiman* 35782, 15 Dec. 1938, Singapore; *Smith* 77970, 30 Sept. 1957, Kepong; *Thorenaar* 523, Sumatra; *Wray* 3119, Sept. 1888, Perak.

Litsea cordata (Jack) Hook.f., Fl. Brit. Ind. 5: 177. 1886; Boerl., Handl. Fl. Ned. Ind. 3: 145. 1900; Gamble, J. Asiat. Soc. Bengal 75(1): 144. 1912; Burkill, J. Straits Branch Roy. Asiat. Soc. 73: 263. 1916; Ridl., Fl. Malay Penins. 3: 118. 1924, reprint 1967; Burkill & Henderson, Gard. Bull. Straits Settlements 3: 415. 1925; Kosterm., Bibliogr. Laur. 807. 1964; Kochummen in Ng, Tree Fl. Malaya 4: 154. 1989; R.H.M.J. Lemmens, I. Soerianegara & W.C. Wong, Plant Resources of South-East Asia 5(2). Timber Trees: Minor Commercial Timbers: 312. 1995.—*Tetranthera cordata* Jack, Malayan Misc. 2(7): 34. 1822; Meisn. in DC., Prodr. 15(1): 196. 1864; Merr., J. Arnold Arbor. 33: 248. 1952; Kosterm., Bibliogr. Laur. 1387. 1964. Type: Thailand, Narathiwat, Sirindhorn Peat Swamp Forest, *Ngernsaengsaruaq & Chantarasuwan* 373 (neotype BKF!, selected here; isoneotypes BK!, Herb. Department of Botany, Kasetsart University!).—*Tetranthera cordifolia* Meisn. in DC., Prodr. 15(1): 196. 1864; Drury, Handbook Ind. Fl. 3: 67. 1869; Kosterm., Bibliogr. Laur. 1387. 1964.—*Litsea cordifolia* (Meisn.) Fern.-Vill. in Blanco, Fl. Philipp. 3: 181. 1880; Kosterm., Bibliogr. Laur. 807. 1964. Type: Malaysia, Malacca, Wight Herbarium, *Griffith* s.n. (holotype K!). Figs. 2, 6: A–B.

Medium-sized tree 15–20 m tall; bark smooth, lenticellate, greyish brown or grey; young parts densely reddish brown tomentose; branchlets tomentose. *Leaves* spiral; blade broadly ovate, 8.5–20.5 by 5.5–14 cm, apex acute or acuminate, base cordate, sometimes unequal, margin entire, thinly coriaceous, dark green, glabrous above, except tomentose on midrib and secondary veins above, tomentose beneath; petiole 1.5–2.5 cm long, tomentose; midrib distinctly sunken above, raised beneath, secondary veins in 6–12 pairs, distinctly sunken above, raised beneath, curving and looping near margin, tertiary veins scalariform-reticulate, prominent beneath. *Inflorescences* on umbel-bearing reduced branchlets with the appearance of a raceme of umbels, in the axils of leaves or along branchlets, raceme of umbels (3–)4.5–16 cm long; umbels 0.6–1.2 cm in diam.; peduncles 0.4–1 cm long, tomentose; bracts (4–)6, usually imbricate, suborbicular, broadly ovate or ovate, concave, 3–7 by 3–5 mm, tomentose outside. *Male flowers* 6–8(–9) in each umbel; tepals 6 in 2 whorls of 3, ovate-oblong or ovate-lanceolate, subequal, 2–4 by 0.5–1 mm, membranaceous, hairy; pedicels 1.5–4 mm long, densely tomentose; stamens 9–12 in 3–4 whorls of 3, unequal; anthers 0.8–1.2 mm long; filaments slender, 2–4 mm long, villous, outer whorls 2 glands at base or inner whorls without gland; inner pistillode none. *Female flowers* 6–8 in each umbel; tepals 6, ovate-oblong or ovate-lanceolate, subequal, 1.5–2.5 by 0.5–0.8 mm, membranaceous, hairy; pedicels 1.5–2 mm long, densely tomentose; ovary ellipsoid, 1–1.5 by 0.5–0.8 mm, glabrous; style 1–1.5 mm long; stigma peltate; staminodes 9–12, linear, 1–1.5 mm long, hairy, 2 glands or without glands. *Fruits* ellipsoid, 1.5–2.5 by 0.7–1 cm, glabrous; enlarged perianth tube a shallow cup or nearly flattened, 0.3–0.4 cm in diam., sparsely tomentose; fruiting pedicels 0.6–1.8 cm long, sparsely tomentose; infructescence stalks 0.5–1.5 cm long, sparsely tomentose.

Thailand.—PENINSULAR: Narathiwat [Sirindhorn Peat Swamp Forest, 18 June 2003, *Ngernsaengsaruy & Chantarasuwan* 373 (neotype BKF; isoneotypes BK, Herb. Department of Botany, Kasetsart University)].

Distribution.—Malay Peninsula, Singapore, Sumatra, Borneo, Philippines.

Ecology.—In peat swamp forest, 0–10 m. Flowering May–July.

Vernacular.—Ka thang phru bai hua chai (กะพังพรุใบหัวใจ).

Notes.—*Litsea cordata* is characterised by the broadly ovate leaf, 8.5–20.5 by 5.5–14 cm and the cordate leaf base. Inflorescences on umbel-bearing reduced branchlets have the appearance of a raceme of umbels, (3–) 4.5–16 cm long.

The description of flowering (female flowers) and fruiting material is based on herbarium specimens deposited at Kew. Female flowers: *Ridley* 9597, Sept. 1899, Perak; *Scortechini* s.n., Perak. Fruiting material: *King's Collector* 353, Aug. 1880, Malay Peninsula; *King's Collector* 3962, March 1883, Perak; *Kunstler* 5180, Nov. 1883, Perak; *Kunstler* 8269, Sept. 1883, Kepong; *Millard* 1793, 22 Sept. 1959, Selangor; *Sinclair & Kiah* 40927, 22 Sept. 1955, Trengganu.

Litsea firma (Blume) Hook.f., *Fl. Brit. Ind.* 5: 162. 1886; Boerl., *Handl. Fl. Ned. Ind.* 3: 142. 1900; Gamble, *J. Asiat. Soc. Bengal* 75(1): 138. 1912; Ridl., *Fl. Malay Penins.* 3: 116. 1924, reprint 1967; Burkill & Henderson, *Gard. Bull. Straits Settlm.* 3: 416. 1925; Henderson, *Gard. Bull. Straits Settlm.* 4: 312. 1928; Corner, *Ways. Trees Malaya* 1: 347. 1940, 3rd ed. 385. 1988;

Kosterm., Bibliogr. Laur. 817. 1964; Kochummen in Ng, Tree Fl. Malaya 4: 156. 1989; H. Keng, Concise Fl. Singapore: 19. 1990; R.H.M.J. Lemmens, I. Soerianegara & W.C. Wong, Plant Resources of South-East Asia 5(2). Timber Trees: Minor Commercial Timbers: 315. 1995.— *Tetranthera firma* Blume, Mus. Bot. Lugd. Bat. 1(24): 381. 1851; Meisn. in DC., Prodr. 15(1): 190. 1864; Kosterm., Bibliogr. Laur. 1392. 1964. Type: Borneo, *Korthals* s.n. (lectotype K!, selected here; isolectotype U!).— *Litsea sibuyanensis* Elmer, Leaflet. Philipp. Bot. 2: 724. 1910; Merr., Enum. Philipp. Flowering Plants 2: 197. 1923; Kosterm., Bibliogr. Laur. 880. 1964. Type: Philippines, Island of Sibuyan, *Elmer* 12536 (lectotype K!, designated here; isolectotypes BM!, GH). Fig. 3.

Medium-sized tree 15–20 m tall; bark smooth to scaly, lenticellate, greyish brown; branchlets puberulous, with brown scurfy scales. *Leaves* spiral; blade obovate or elliptic, 6–13 by 2.5–5.5 cm, apex obtuse or acute, base cuneate or oblique, margin entire, coriaceous, reddish brown when dry, glabrous or sparsely puberulous on midrib and secondary veins above, puberulous, finely lepidote beneath; petiole 0.8–2.3 cm long, puberulous or glabrescent; midrib sunken above, raised beneath, secondary veins in 7–14 pairs, sunken above, raised beneath, curving or curving and looping near margin, tertiary veins scalariform-reticulate, prominent beneath. *Inflorescences* on umbel-bearing reduced branchlets, in clusters of umbels, along branchlets or in the axils of leaves, clusters of umbels 1–2 cm long; umbels 0.5–1 cm in diam.; peduncles 0.5–1 cm long, pubescent; bracts (4–)5, usually imbricate, suborbicular or broadly ovate, concave, 3.5–4.5 by 3–4 mm, outer coriaceous, pubescent outside, inner membranaceous, hairy. *Male flowers* 5–8 in each umbel; tepals 5–6, usually in 2 whorls of 3, oblong or oblong-lanceolate, subequal, 2–2.5 by 0.5–0.8 mm, membranaceous, hairy; pedicels 1.5–2 mm long, densely pubescent; stamens 9–12(–14), in 3–4(–5) whorls of 3, unequal; anthers 0.8–1.5 mm long; filaments slender, 3–5 mm long, villose, outer whorls 2 glands at base or inner without gland; pistillode none. *Female flowers* 5–6 in each umbel; tepals 5–6, usually in 2 whorls of 3, oblong or oblong-lanceolate, subequal, 2–2.5 by 0.5–0.8 mm, membranaceous, hairy; pedicels 1–2 mm long, densely pubescent; ovary ovoid, 1–1.2 by 0.8–1 mm, glabrous; style 1.5–2.5 mm long; stigma peltate; staminodes 9–12, linear, 1.5–2 mm long, hairy, 2 glands or without glands. *Fruits* ovoid, 1–1.4 by 0.5–0.8 cm, glabrous; enlarged perianth tube cup-shaped, 0.4–0.5 cm high, 0.6–0.8 cm in diam., puberulous, margin entire; fruiting pedicels 0.3–0.6 cm long, puberulous; infructescence stalks 0.4–1 cm long, puberulous.

Thailand.— PENINSULAR: Narathiwat [Hala-Bala Wildlife Sanctuary, 6 May 2003, *Ngernsaengsaruy* 313 (BKF, Herb. Department of Botany, Kasetsart University)].

Distribution.— Malay Peninsula, Singapore, Sumatra, Borneo, Philippines, New Guinea.

Ecology.— In tropical rain forest, ca. 300 m. Flowering April–May.

Vernacular.— Ka thang pa ba la (กะตังป่าบาลา).

Note.— The description of flowering (female flowers) and fruiting material is based on herbarium specimens deposited at Kew. Female flowers: *Kohhat* 5244, 2 June 1935, North Borneo; *Kostermans* 5826, 19 July 1951, East Borneo; *Kostermans* 6182, 15 July 1951, Borneo; *Kostermans* 6184, 11 July 1951, Borneo; *Kostermans* 6561, 21 April 1952, East Borneo; *Mikil* 30265, 23 May 1962, North Borneo. Fruiting material: *Ambri & Arifin* 471, 10

March 1992, Indonesia; C.W. 3479, 17 Feb. 1998, Indonesia; *Endert* 5061, 18 Nov. 1925, Borneo; K.M.K. 95097, 27 Aug. 1962, Kepong; *Kostermans* 7717, 2 Aug. 1952, Borneo; *Madani* 36879, 5 Nov. 1963, North Borneo; *Martyn* 18582, 2 Sept. 1961, North Borneo; *Meng* 32621, 18 Aug. 1982, Selangor; *Mikil* 31585, 9 Aug. 1962, North Borneo; *Ngadiman* 35509, 15 Aug. 1938, Singapore; *van Rossum* 21, Sumatra; *Shea & Minjulu* 76056, 8 Sept. 1972, Sabah; *Sidiyasa* 649, 30 Jan. 1991, Indonesia; *Wood* 16254, 12 Sept. 1955, North Borneo; *Wright* 27118, 18 Aug. 1968, Sarawak.

Litsea hirsutissima Gamble, Bull. Misc. Inform. Kew 1910: 357. 1910; J. Asiat. Soc. Bengal 75(1): 142. 1912; Ridl., Fl. Malay Penins. 3: 118. 1924, reprint 1967; Burkill & Henderson, Gard. Bull. Straits Settlements 3: 416. 1925; Calder & Ramaswami, Records Bot. Survey India 11(1): 82. 1926; Kosterm., Bibliogr. Laur.: 831. 1964; Kochummen in Ng, Tree Fl. Malaya 4: 158. 1989. Type: Malaysia, Perak, Gopong, *King's Collector* 404 (lectotype K!, selected here). Figs. 4, 6: C–D.

Shrub or small tree 1–5 m tall; young parts very densely brown or reddish brown villose; branchlets densely villose; *Leaves* spiral; blade usually elliptic or broadly elliptic, sometimes obovate, 10–21 by 5.5–12 cm, apex acuminate or caudate, base cuneate, sometimes obtuse, margin ciliate, chartaceous, dark green, sparsely villose above, villose on midrib and secondary veins above, glaucous, densely villose beneath; petiole 0.5–1 cm long, villose; midrib shallowly sunken above, raised beneath, secondary veins in 9–14 pairs, shallowly sunken or flattened above, raised beneath, curving and looping near margin, tertiary veins scalariform-reticulate, prominent beneath. *Inflorescences* on umbel-bearing reduced branchlets, in short clusters of umbels, in the axils of leaves or along branchlets, rarely cauliflorous, clusters of umbels 0.8–1 cm long; umbels 0.5–0.7 cm in diam.; peduncles 0.3–0.7 cm long, villose; bracts 4, decussate, suborbicular or broadly ovate, concave, 3–5 by 3–4 mm, villose outside. *Male flowers* 5 in each umbel; tepals 6, in 2 whorls of 3, linear-oblong or oblong, subequal, 3–3.5 by 0.5–1 mm, membranaceous, hairy; pedicels 1–2.5 mm long, villose; stamens 7–10, usually in 2–3 whorls of 3, unequal; anthers 0.5–1 mm long; filaments slender, 2.5–4 mm long, villose, outer whorls 2 glands nearly at base or inner whorls without gland; pistillode none. *Female flowers* not known. *Fruits* ovoid or broadly ovoid, 1.2–1.4 by 0.8–1 cm, green with white dots, glabrous, glossy; enlarged perianth tube a shallow cup, 0.5–0.7 cm in diam., fruiting pedicels thickened, 0.6–0.8 cm long, sparsely villose; infructescence stalks 0.5–0.7 cm long, villose.

Thailand.—PENINSULAR: Chumphon [Phato, along the trail to Heo Lom Waterfall]]; Ranong [Khao Phota Luang Kaeo, 16 July 1979, *Niyomdham et. al.* 330 (AAU, BKF, C, K, L); Khlong Na Kha Wildlife Sanctuary, along the nature trail near headquarters, 29 Sept. 2003, *Ngernsaengsaruy* 428 (Herb. Department of Botany, Kasetsart University), 429 (BKF, Herb. Department of Botany, Kasetsart University); Wang Kum Protection Unit, Khlong Na Kha Wildlife Sanctuary, 25 Apr. 2004, *Ngernsaengsaruy* 529 (BKF, Herb. Department of Botany, Kasetsart University), 530 (BK, BKF, Herb. Department of Botany, Kasetsart University)]; Phangnga [Khao Nang Hong, between Thap Put and Phangnga, 24 Aug. 1967, *Shimizu, Fukuoka & Nalampoon* T 8014 (BKF); Khao Phra Mi, 7 July 1972, *K. Larsen, S.S. Larsen, Nielsen & Santisuk* 30736 (AAU, BKF, K, L), 30742 (AAU, BKF, K)].

Distribution.—Malay Peninsula.

Ecology.— In tropical rain forest, 50–400 m. Flowering April–September, fruiting July–October.

Vernacular.— Thang bai khon khlong na kha (ทั้งใบขนคลอจนาคา).

Note.— Gamble (1910) described *Litsea hirsutissima* based on three syntypes [Curtis 1344 (K!), Perak, road to Gunong Hijan; King's Collector 404 (K!), 8379 (not found), Perak, Goping and Thaiping]. The second one is selected here as the lectotype.

Litsea tomentosa Blume, Bijdr. 566. 1825; Boerl., Handl. Fl. Ned. Ind. 3: 141. 1900; Koorders & Valetton, Bijdr. 10. Boomsoorten Java: 138. 1904; Gamble, J. Asiat. Soc. Bengal 75(1): 132. 1912; Ridl., Fl. Malay Penins. 3: 115. 1924, reprint 1967; Backer & Bakh.f., Fl. Java 1: 125. 1963; Kosterm., Bibliogr. Laur. 886. 1964; Kochummen in Ng, Tree Fl. Malaya 4: 165. 1989; R.H.M.J. Lemmens, I. Soerianegara & W.C. Wong, Plant Resources of South-East Asia 5(2). Timber Trees: Minor Commercial Timbers: 322. 1995, non Heyne, non Okubo, Type: Indonesia, Java, *Unknown* s.n. (lectotype K!, designated here). Figs. 5, 6: E–F.

Small tree 8 m tall; bark smooth, lenticellate, greyish brown; branchlets densely tomentose. *Leaves* spiral, crowded toward the apex of branchlets, closely spaced; blade obovate, 15–30 by 7.5–16 cm, apex acute, base cuneate, margin ciliate, chartaceous, green, tomentose or tomentulose above, densely tomentose on midrib and secondary veins above, glaucous, densely tomentose beneath; petiole 1.5–2.5 cm long, densely tomentose; midrib shallowly sunken above, raised beneath, secondary veins in 11–16 pairs, shallowly sunken above, raised beneath, curving and looping near margin, tertiary veins scalariform-finely reticulate, prominent beneath, finely areolate and distinct above. *Inflorescences* on umbel-bearing reduced branchlets, in clusters of umbels, along branchlets, clusters of umbels 2–3 cm long; umbels 1.2–2 cm in diam.; peduncles 1.2–2.5 cm long, tomentose; bracts 4–5, decussate or imbricate, suborbicular or broadly ovate, concave, 8–10 by 6–8 mm, tomentose outside. *Male flowers* 5–6 in each umbel; tepals 9–12, in 3–4 whorls of 3, elliptic or elliptic-oblong, unequal, 4–5 by 1.5–2 mm, membranaceous, hairy; pedicels 2.5–4 mm long, densely tomentose; whorled stamens 24–30 in total, unequal; anthers 1.5–2 mm long; filaments slender, 2–5 mm long, villose, outer whorls 2 glands at base or inner whorls without gland; pistillode 2 mm long, glabrous. *Female flowers* 5–6 in each umbel tepals 8–12, elliptic or elliptic-oblong, unequal, 2–3 by 0.5–1 mm, membranaceous, hairy; pedicels 1.5–3 mm long, densely tomentose; ovary ovoid, 1–1.5 mm in diam., glabrous; style 1.5–2 mm long; stigma peltate; staminodes 26–30, linear, 1.5–2 mm long, villose, 2 glands or without glands. *Fruits* not known.

Thailand.— PENINSULAR: Nakhon Si Thammarat [Khao Luang National Park, along the trail from Khiri Wong to the summit, 7 May 2004, *Ngernsaengsaruy* 542 (BK, BKF, Herb. Department of Botany, Kasetsart University)].

Distribution.— Malay Peninsula, Sumatra, Java, Borneo.

Ecology.— Open areas in disturbed tropical rain forest, ca. 600 m. Flowering: April–May.

Vernacular.— Ka thang bai khon (กะทั้งใบขน).

Notes.— The description of flowering material (female flowers) is based on herbarium specimen deposited at Kew, Curtis 1182, May 1887, Malay Peninsula, Perak.

Niyomdham (1997) and The Forest Herbarium, Royal Forest Department (2001) reported that *Litsea tomentosa* occurs in Narathiwat Province. There were, however, no Thai herbarium specimens of *Litsea tomentosa* from Narathiwat deposited in any Thai and foreign herbaria. During a field trip in May 2004, a *Litsea* sp., with only one male plant, was found in Khao Luang National Park, Nakhon Si Thammarat Province. During the period of August–October 2004, the first author visited Kew and found out that this unknown *Litsea* from Khao Luang was well matched with the type specimen of *Litsea tomentosa* from Java.

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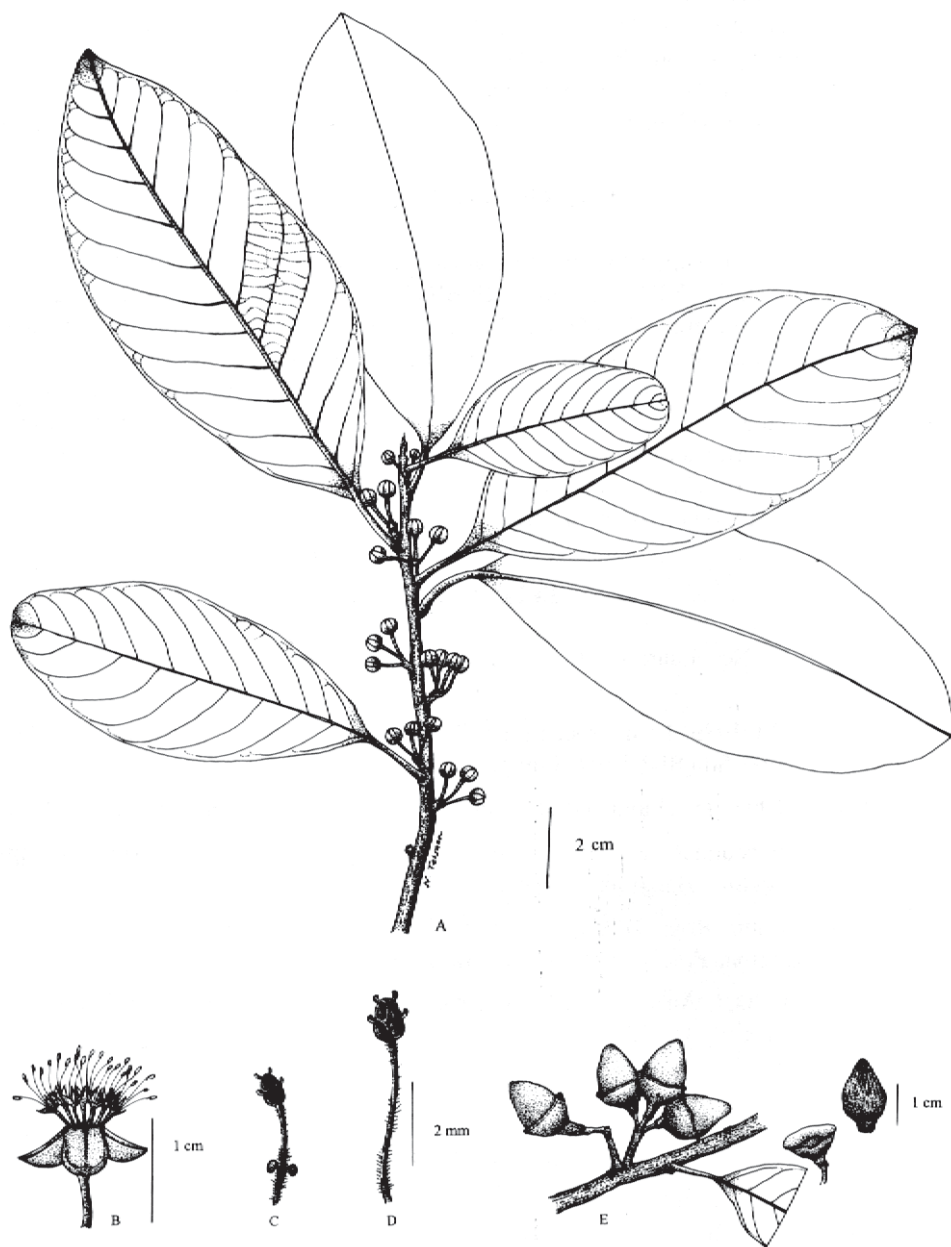


Figure 1. *Litsea castanea* Hook.f.: A. flowering branch with inflorescence buds; B. male inflorescence; C. outer whorled stamen with 2 glands; D. inner whorled stamen without gland; E. fruiting branch and fruit. Drawn by N. Tetsana.



Figure 2. *Litsea cordata* (Jack) Hook.f.: A. flowering branch with inflorescence buds; B. male inflorescence; C. outer whorled stamen with 2 glands; D. inner whorled stamen without glands; E. pistil; F. staminode with 2 glands; G. staminode without gland; H. fruiting branch. Drawn by N. Tetsana.



Figure 3. *Litsea firma* (Blume) Hook.f.: A. flowering branch with inflorescence buds; B. male inflorescence; C. outer whorled stamen with 2 glands; D. inner whorled stamen without gland; E. fruiting branch. Drawn by N. Tetsana.

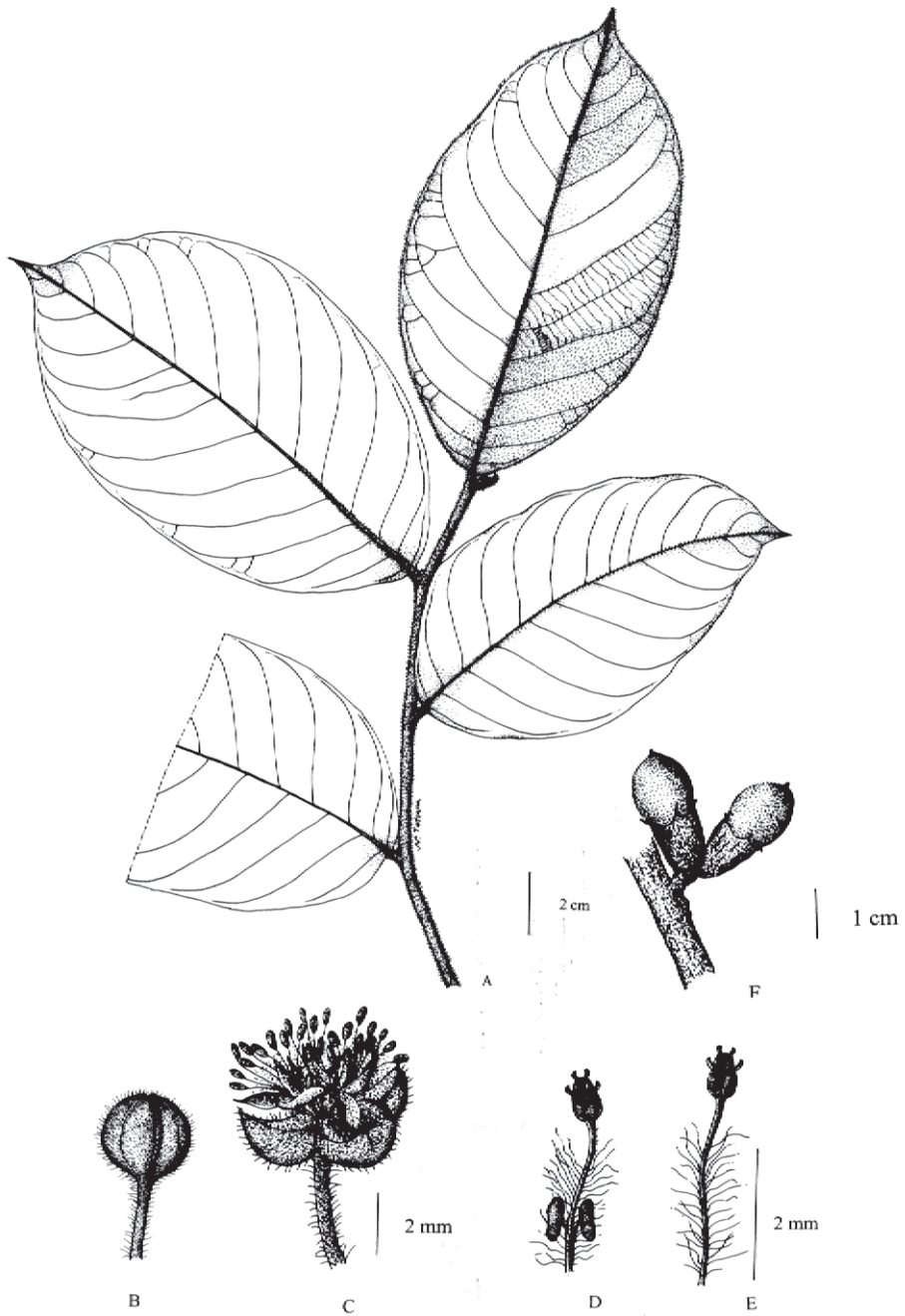


Figure 4. *Litsea hirsutissima* Gamble: A. branchlet with leaves; B. inflorescence bud; C. male inflorescence; D. outer whorled stamen with two glands; E. inner whorled stamen without gland; F. infructescence. Drawn by N. Tetsana.

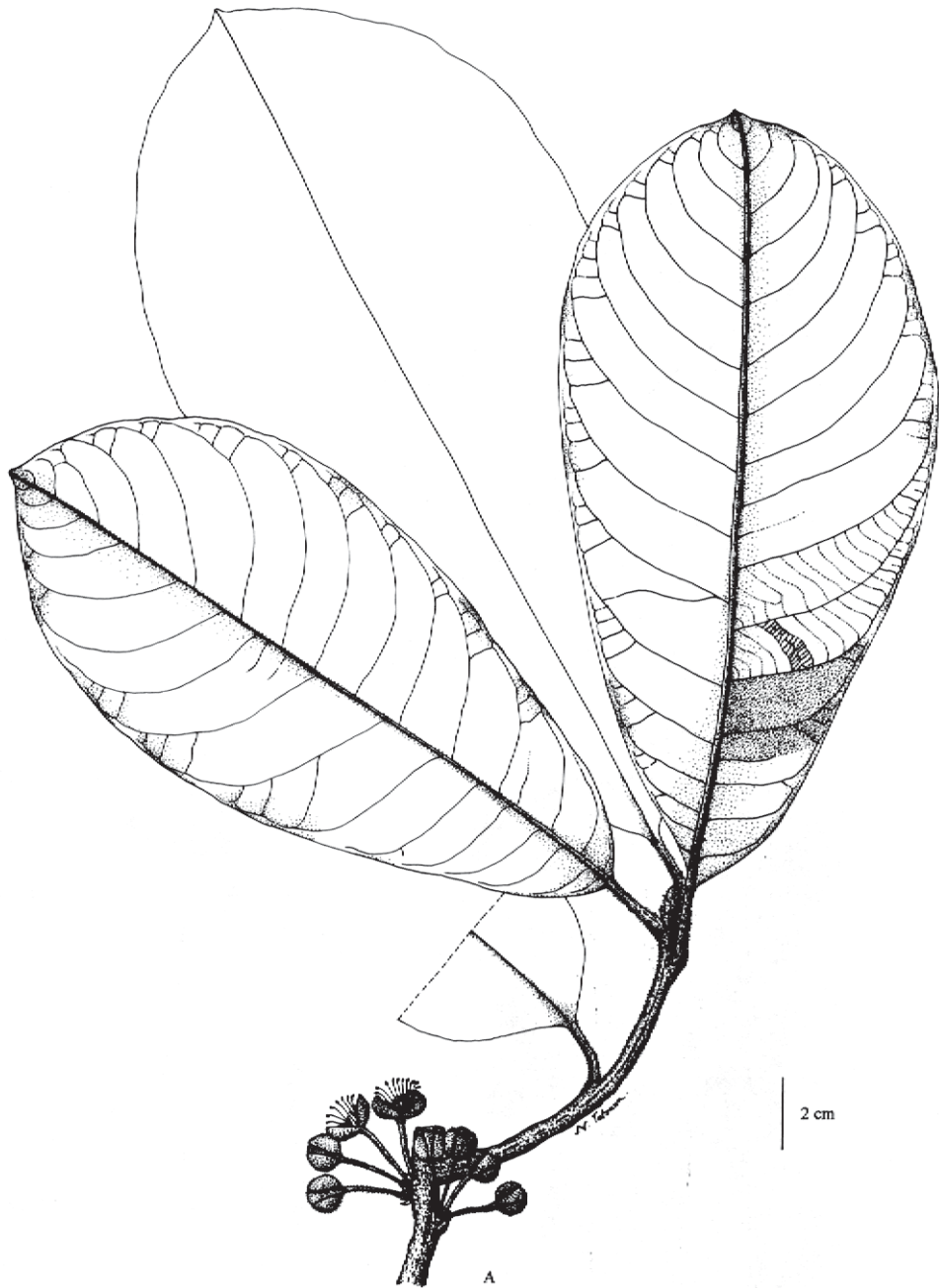


Figure 5. *Litsea tomentosa* Blume: A. flowering branch with male inflorescences. Drawn by N. Tetsana.

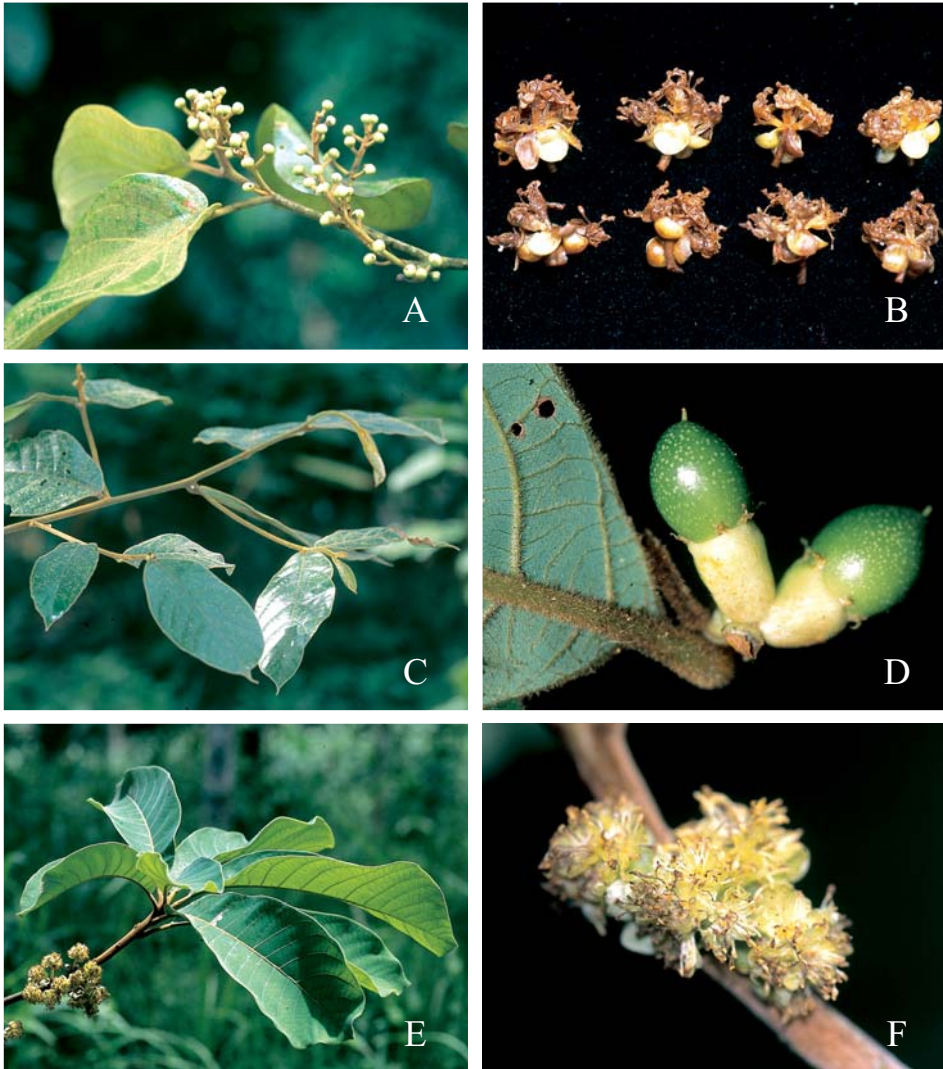


Figure 6. *Litsea cordata* (Jack) Hook.f.: A. flowering branch with inflorescence buds; B. male inflorescence; *Litsea hirsutissima* Gamble: C. flowering branch with inflorescence buds; D. infructescence; *Litsea tomentosa* Blume: E. flowering branch with male inflorescences; F. male inflorescences. Photographed by C. Ngernsaengsaruy (B-F); B. Chantarasuwan (A).