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NOTES RELATING TO THE FLORA OF BHUTAN: VIII

Lauraceae

D. G. LONG

ABSTRACT. Revision of Lauraceae for the Flora of Bhutan has resulted in the following new taxa and combinations: *Cryptocarya bhutanica* Long *sp. nov.*, *Dodecadenia grandiflora* Nees var. *griffithii* (Hook. f.) Long *comb. et stat. nov.*, *Lindera pulcherrima* (Nees) Hook. f. subsp. *thomsonii* (Allen) Long *comb. et stat. nov.*, *Litsea albescens* (Hook. f.) Long *comb. et stat. nov.*, *Litsea hookeri* (Meisner) Long *comb. nov.*, *Litsea sikkimensis* (Meisner) Kostermans ex Long *comb. nov.*, *Parasassafras* Long *gen. nov.*; *Parasassafras confertiflora* (Meisner) Long *comb. nov.*, *Persea wallichii* Long *sp. nov.*, and *Persea glaucescens* (Nees) Long *comb. nov.* In addition the genus *Dodecadenia* is reported as new to China; *Lindera venosa* (Meisner) Hook. f. is shown to be a synonym of *L. bootanica* Meisner; the differences between *Litsea albescens* (Hook. f.) Long and *L. doshia* (D. Don) Kostermans and other related species are outlined; the confusion over the name *Litsea khasyana* is clarified; the differences between *Litsea kingii* Hook. f. and *L. cubeba* (Lour.) Pers. are outlined, along with notes on the distribution of *L. kingii*, including new records from W China; *Lindera griffithii* Meisner, *Lindera? hookeri* Meisner and *Litsea oreophila* Hook. f. are shown to be synonyms of the widespread *Litsea sericea* (Nees) Hook. f.; *Persea gamblei* (Hook. f.) Kostermans and *P. bombycina* (Hook. f.) Kostermans are shown to be conspecific, as are *Persea clarkeana* (Hook. f.) Kostermans and *P. gammieana* (Hook. f.) Kostermans; and notes on the identity of *Persea tomentosa* (D. Don) Sprengel are given. New lectotypes are proposed for several names.

CRYPTOCARYA

Cryptocarya bhutanica Long, **sp. nov.** Fig. 1.

A *C. amygdalina* Nees, species unica sympatrica generis, characteribus secundis recedit: folia ovato-elliptica (nec oblongo-elliptica), glauca (nec viridia) subtus, cum 7–9 (nec 4–7) paribus nervorum lateralium; fructus ellipsoideus, 3·5–4·5 × 1·8–2 cm (nec ovoideus, 2–2·5 × 0·8–1 cm).

Small tree to 10 m. Leaves alternate, ovate-elliptic, 14–23 × 7–11 cm, acuminate, base broadly cuneate or rounded, minutely reticulate on both surfaces, green above, glaucous beneath, lateral veins 7–9 pairs, prominent beneath, petioles 1·5–2·4 cm. Flowers unknown. Fruit ellipsoid, black, 3·5–4·5 × 1·8–2 cm.

S BHUTAN. Gaylegphug district, Surey 27°00′ N 90°32′ E, 1170 m, by stream at edge of village, 'tree 8 m with black ellipsoid drupes', 26 iii 1982, *Grierson & Long* 4018 (**holotype** E, iso K); Gaylegphug district, W bank of Chabley Khola, 55 km along Tongsa road, 27°05′ N 90°35′ E, 1720 m, on steep hillside with warm evergreen broad-leaved forest, 27 iii 1982, *Grierson & Long* 4033 (E, K, THIMPHU); Sarbhang district, 6 km below Dara Chu, on Chirang road, 26°57′ N 90°12′ E, 1810 m, in shady cool broad-leaved forest, *Castanopsis*, Lauraceae etc., 12 iii 1982, *Grierson & Long* 3687 (E, THIMPHU).

Although not known in flower, the above specimens are sufficiently distinct in foliage and fruit from all other Indian *Cryptocarya* species examined to merit description as a new species. The only other *Cryptocarya* species known in the E Himalaya is the widespread *C. amygdalina* Nees, which is readily distinguished from *C. bhutanica* by its

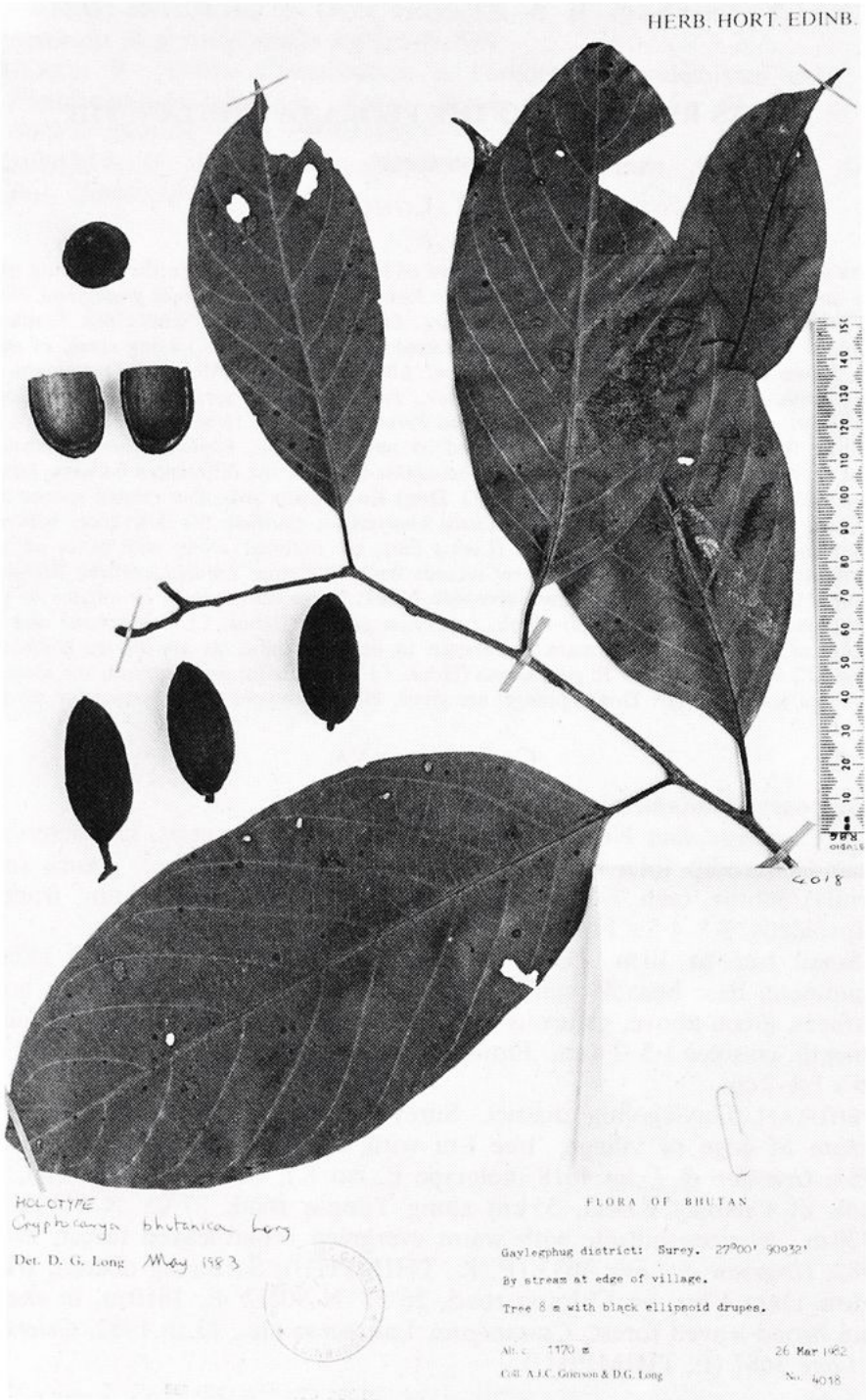

FIG. 1. *Cryptocarya bhutanica* Long (*Grierson & Long* 4018, holo. E).

oblong-elliptic, bluntly apiculate or shortly acuminate leaves, 10–22 × 5–9 cm, with 4–7 pairs of lateral veins and a green undersurface, and by the ovoid 2–2·5 × 0·8–1 cm fruit.

DODECADENIA

Dodecadenia grandiflora Nees var. **griffithii** (Hook. f.) Long, **comb. et stat. nov.**

Basionym: *D. griffithii* Hook. f., Fl. Brit. India 5:181 (1866).

BHUTAN. Locality unknown, *Griffith* KD 4312 (holotype K), EIC 2481 (iso. BM).

W BENGAL. Tonglo, Darjeeling, 2400 m, 10 iv 1904, *Osmaston* s.n. (K).

W CHINA, YUNNAN. Kiukiang Valley E of Monting, 2500 m, 13 ix 1938, *Yu* 20204 (E).

D. grandiflora var. **grandiflora**

NW INDIA. Kumaon, *Blinkworth* in Wallich Cat. 2544b (isosyntype K); Nyneetal, summit of Binsur, 2300–2440 m, *Madden* 537 (E).

NEPAL. Without locality, 1821, *Wallich* Cat 2544a (isosyntypes E, K); Karnali Valley N of Raskot, 2560 m, 26 iii 1968, *Stainton* 6176 (E); Darondi Khola S of Himal Chuli, 2560 m, 8 x 1967, *Stainton* 6031 (BM); between Samela and Dhaulakot, 2560 m, 5 iv 1952, *Polunin, Sykes & Williams* 1861 (E); above Dana, 2100 m 26 x 1962, *Creech & de Vos* 1193 (E).

ARUNACHAL PRADESH. Le, Nyam Jang Chu, 2560 m, 1 xi 1938, *Ludlow, Sherriff & Taylor* 6476 (E).

BANGLADESH. Silhet, *de Silva* in Wallich Cat. 2534 p.p. (E).

W CHINA, YUNNAN. Kengma, Chuichayko, 2500 m, 10 viii 1938, *Yu* 17296 (E).

Hooker (1886) proposed *Dodecadenia griffithii* as a new species distinguished from *D. grandiflora* Nees by its glabrous branchlets, glabrous ovary and 'leaves much more strongly reticulate between the nerves beneath'. Recent collections of *Dodecadenia* from the Himalayan region show that although the indumentum difference is constant, that of the reticulation is not, as some specimens of *D. grandiflora* have quite strongly reticulate leaves. Thus the two can scarcely be considered as species. The ranges of the two overlap so that varietal status is appropriate, particularly since both varieties are now known to occur both in the Himalaya and W China. The genus *Dodecadenia* has not previously been reported from China (Li, 1982).

LINDERA

Lindera bootanica Meisner in A. DC. Prodr. 15(1):245 (1864).

Syn.: *Daphnidium venosum* Meisner in A. DC. Prodr. 15(1):231 (1864).
Lindera venosa (Meisner) Hook. f., Fl. Brit. India 5:184 (1886).

E NEPAL. Dudh Kosi, Wapsi Khani, 1980 m, 27°30′ N 86°43′ E, 25 x 1969, *Stainton* 6608 (BM).

BHUTAN. Telagong [Tinlegang, Punakha district, 27°31′ N 89°48′ E], v 1838, *Griffith* KD 4325, EIC 2471, Itin. 919a, type of *Lindera bootanica* Meisner (holotype K; iso. BM, K); towards Oongar [Unjar near Lhuntsi,

Mongar district, 27°31′ N 91°05′ E], ii 1838, *Griffith* KD 4308, EIC 2474, Itin. 692, type of *Daphnidium venosum* Meisner (holotype K; iso. BM, K); Gichha, Punakha [Gasa, Upper Mo Chu district, 27°55′ N 89°46′ E], 2100 m, 24 viii 1914, *Cooper* 2709 (E); Punakha district, near Ngawang, Tang Chu, 27°30′ N 90°06′ E, 1850 m, 23 iv 1982, *Grierson & Long* 4623 (E, THIMPHU).

Comparison of the types of *Lindera bootanica* and *Daphnidium venosum* shows that they are conspecific. The type of *D. venosum,* collected by Griffith in February 1838, bears old leaves from the previous year, whilst the type of *L. bootanica,* collected in May of the same year bears only young new leaves. The two agree closely, however, on the very distinctive characters of glabrous striate bark, large terminal buds, short stout peduncles, large umbel scales and tomentose pedicels. *Grierson & Long* 4623, collected in April, bears both an old leaf and new shoots with young leaves and demonstrates that Griffith's plants are conspecific. It is surprising that Hooker overlooked their similarity as the combination of features of bark, buds and umbels described above is not found in any other *Lindera* from the Indian region.

These characters, however, are found in a Chinese species, *Lindera megaphylla* Hemsley (*L. oldhamii* Hemsley, *L. touyunensis* (Léveillé) Chun) which was placed as a synonym of *L. venosa* by Kostermans (1969b), but should probably be retained as a distinct species since it consistently has narrower, oblanceolate, somewhat more coriaceous leaves with more prominent reticulation on the upper surface. Li (1982) maintains *L. megaphylla* as a distinct species.

Cooper 2709 from Bhutan bears mature fruits which have not previously been described for *L. bootanica*: these are subglobose or broadly ellipsoid, 1·6–1·8 × 1·3–1·4 cm, and borne on an enlarged, entire, woody perianth cup 1–1·2 cm across, on a stout striate pedicel, 1·3–1·6 cm, which becomes thickened towards the apex.

Lindera pulcherrima (Nees) Hook. f. subsp. **thomsonii** (Allen) Long, **comb. et stat. nov.**

Basionym: *L. thomsonii* Allen, J. Arn. Arb. 22:22 (1941). Type: Khasia, 1500–2100 m, *Hooker & Thomson* s.n. (iso. E).

Allen (1941) distinguished *L. thomsonii* from its closest relative *L. pulcherrima* mainly on the very long caudate leaf apex of the former. Geographically *L. pulcherrima* is a more widespread taxon, ranging throughout the Himalayan region from Kumaon and W Nepal east to Bhutan and Assam; *L. thomsonii* on the other hand is not known west of eastern Bhutan. In Bhutan, where these ranges overlap, intermediate plants are found, and the two can scarcely be considered as clear-cut species. Because of the apparent geographical difference in their distribution they are best regarded as subspecies.

LITSEA

Litsea albescens (Hook. f.) Long, **comb. et. stat. nov.**

Basionym: *Litsea oblonga* (Nees) Hook. f. var.? *albescens* Hook. f., Fl. Brit. India 5:169 (1886).

Shrub to 6 m or small tree, evergreen, shoots brown when dry, almost smooth, appressed pale pubescent, without terminal vegetative buds. Leaves alternate, elliptic-lanceolate, 10–17 × 2·5–4·5 cm, gradually acuminate, base cuneate, brownish green above when dry, pale beneath, glabrous or pubescent on veins beneath; lateral veins 7–9 pairs, prominent beneath, slightly to strongly impressed on upper surface; petioles 4–6 mm. Umbel buds c. 3 mm, on short slender pubescent peduncles 2–8 mm, arranged racemosely on an axillary axis 8–12 mm, rarely shorter. Fruit oblong-ellipsoid, 17–23 × 9–10 mm, on shallow entire perianth cup 6–7 mm across, with short thick pedicel 4–7 mm.

SIKKIM & DARJEELING. Darjeeling, *Clarke* s.n. (**lectotype** K); Darjeeling, 1800 m, 20 iv 1876, *Clarke* 27502 (syntype K); Rishap, Darjeeling, 1200 m, 5 xi 1870, *Clarke* 13588 (syntype K); Khursiong, 1800 m, 11 x 1884, *Clarke* 36521A (E); Dumsong, 1800 m, iii 1875, *Gamble* 2918A (K); Rissoni, 1800 m, iii 1882, *Gamble* 10292 (K); Hum Forest, Darjeeling, 1800 m, *Lace* 2200 (E); Laba to Rissisuni, Darjeeling, 2130 m, 14 x 1902, *Lace* 2441 (E); Lopchu, 18 x 1902, *Lace* s.n. (E); Pedong to Dumsong road, 1740 m, v 1904, *Haines* 787 (E, K); Darjeeling, 1520 m, 11 v 1912, *Cave* s.n. (E); Darjeeling, 1680 m, 4 iv 1923, *Cowan* s.n. (E); Burmiak Forest, Darjeeling, 2400 m, 20 x 1923, *Cowan* s.n. (E).

BHUTAN. Chukka district, Sinchu La, 1800 m, 10 x 1915, *Cooper* 4957 (E, BM).

Litsea albescens is a well-defined species quite distinct from *L. doshia* in the characters listed in Table 1. In the Himalayan region *L. albescens* has been confused with several other species, notably *L. lancifolia* (Nees) Hook. f. which differs in its rusty brown tomentose shoots, opposite or subopposite leaves (reddish brown beneath when dry) and brown tomentose subsessile umbels not arranged in racemes. *L. lancifolia* appears to be absent from the E Himalaya.

Litsea panamanja (Nees) Hook. f. is similar in some respects but differs in its larger acute leaves with 10–12 pairs of lateral veins, longer petioles 1·5–2 cm, umbels arranged in stouter racemes on stalks up to 7 cm, and particularly in its much larger depressed globose fruits, c. 1·5 × 1·8 cm, half enclosed in a large fleshy perianth cup 2–2·5 cm across.

Vegetatively, *Litsea chartacea* (Nees) Hook. f. is quite similar but differs in the following characters: leaves more coriaceous and yellow-green when dry, only shortly acuminate, lateral veins less prominent

TABLE 1

	Litsea albescens	**Litsea doshia**
Leaf: shape	elliptic-lanceolate	oblong-elliptic
apex	gradually acuminate	acute
colour beneath when dry	pale whitish-green	brown
lateral veins	impressed on upper surface	not impressed on upper surface
petiole length	4–6 mm	8–16 mm
Umbel buds	c. 3 mm diam.	6–7 mm diam.
Arrangement of umbel peduncles	racemose on slender axis 8–12 mm	racemose on stout axis 4–15 mm

beneath and obscure above, petioles longer, 10–15 mm; umbel buds larger, 4–6 mm; peduncles forming sessile axillary clusters; fruit borne on a larger perianth cup 7–9 mm across on long slender 10–15 mm pedicel.

Litsea doshia appears to be absent from Sikkim and Bhutan; the published records, e.g. Hooker (1886), Cowan & Cowan (1929), probably all refer to *L. albescens*. *L. doshia* is apparently restricted to Nepal as listed below:

Litsea doshia (D. Don) Kostermans, J. Sci. Res. Indonesia 1:90 (1952).
Basionym: *Tetranthera doshia* D. Don, Prodr. Fl. Nepal. 65 (1825).
Syn.: *Tetranthera oblonga* Wall. ex Nees in Wallich, Pl. Asiat. Rar. 2:67 (1831) *nom. superfl.* Type: as for *Tetranthera doshia* D. Don.
Litsea oblonga (Wall. ex Nees) Hook. f., Fl. Brit. India 5:168 (1886).
NEPAL. Narainhetty, 1 xi 1802, *Hamilton* s.n., type of *Tetranthera doshia* D. Don, (holotype BM); Nepal, 1821, *Wallich* in Wall. Cat. 2542, (K, K–W, E); Nalmi Midam Khola, 1520 m, 3 v 1954, *Stainton, Sykes & Williams* 5188 (E); de Torke a' Okhaldhunga, 1800 m, 2 xi 1954, *Zimmermann* 1999 (E); Jagat, Marsyandi, 1300 m, 28 xi 1970, *Dobremez* 676 (BM).

Litsea khasyana Meisner in A. DC. Prodr. 15(1):227 (1864). Type: Khasia, 1200 m, *Hooker & Thomson* s.n. (holotype G–DC [microfiche!], iso. E).
Syn.: *Litsea meissneri* Hook. f., Fl. Brit. India 5:169 (1886), *nom. superfl.* Type: as for *Litsea khasyana* Meisner.

Litsea hookeri (Meisner) Long, **comb. nov.**
Basionym: *Cylicodaphne? hookeri* Meisner in A. DC. Prodr. 15(1):209 (1864). Types: Mishmee, towards Deeling, *Griffith* KD 4287 (syntype K); E Bengal, *Griffith* KD 4286 (syntype K); Khasia, 900–1200 m, *Hooker & Thomson* s.n. (**lectotype** G–DC [microfiche!]).
Syn.: *Tetranthera khasyana* Meisner in A. DC. Prodr. 15(1):185 (1864). Type: Khasya, 600–1200 m, *Hooker & Thomson* s.n. (holotype G–DC [microfiche!]); Khasia, Churra, 16 vi 1850, *Hooker & Thomson* 909 (iso. K).
Litsea khasyana (Meisner) Hook. f., Fl. Brit. India 5:164 (1886), *hom. illeg.* non. *Litsea khasyana* Meisner, 1864.
Litsea khasyana (Meisner) Hook. f. var. *hookeri* (Meisner) Hook. f, Fl. Brit. India 5:164 (1886).

The name *Litsea khasyana* has been used in the past for two different plants, both of which rightly belong in that genus. The name must be retained for the earlier one (*L. khasyana* Meisner) which Hooker unnecessarily renamed *L. meissneri*. The second plant was originally described twice by Meisner (1864) as *Cylicodaphne? hookeri* and *Tetranthera khasyana*. Hooker unfortunately used the name *Litsea khasyana* for this plant. He probably rejected the epithet *hookeri* due to the existence of the name *Litsea hookeriana* (Meisner) Hook. f. for a third plant, from Ceylon. Hooker's *Litsea khasyana* is an illegitimate homonym and the name *L. hookeri* must be used to replace it.

Litsea kingii Hook. f., Fl. Brit. India 5:156 (1886).

Kostermans & Chater (1982) placed *L. kingii* as a synonym of the

widespread SE Asian species *Litsea cubeba* (Lour.) Pers. (*L. citrata* Blume) whereas most previous authors have regarded it as a good species. In the E Himalaya the two are readily distinguished in several important characters listed in Table 2. They are also distinct ecologically. *L. kingii* is a much more widespread taxon than previously reported, distributed from E Nepal, Sikkim and Bhutan to the Khasia Hills, N Burma and W China. It is not listed from China by Li (1982). The following specimens have been seen:

E NEPAL. Dudh Kosi, 27°40′ N 86°40′ E, 2740 m, 29 ix 1969, *Stainton* 6567 (E).

SIKKIM & DARJEELING. Balasun, Sikkim, *Hooker* s.n. (**lectotype** K); without locality, *Hooker* s.n. (syntype K); Darjeeling, 2560 m, 3 ix 1875, *Clarke* 27362 (syntype K); Sonada, Darjeeling, 2130 m, 4 ix 1870, *Clarke* 13282D (syntype K); Darjeeling, *Lace* s.n. (E); Thesum La, Dumsong, 2440 m, iii 1875, *Gamble* 2923A (K); Senchal, 2560 m, iii 1911, *Ribu & Rhomoo* s.n. (E); Pachim to Jore bungalow, Darjeeling district, 2130 m, 25 x 1902, *Lace* 2463 (E); Senchal, 2440 m, ix 1880, *Gamble* 8447 (E).

BHUTAN. Without locality, 1838, *Griffith* EIC 907 (K); Tembje [Tamji, Upper Mo Chu district], 2130 m, 27 viii 1914, *Cooper* 2607 (E); Gichha [Gasa, Upper Mo Chu district], 2440 m, 24 viii 1914, *Cooper* 2775 (BM, E); Choling La, Gamri Chu [Sakden district], 2900 m, 9 iii 1936, *Ludlow & Sherriff* 1168 (BM); Takhtoo, Gamri Chu [Sakden district], 2280 m, 10 iii 1936, *Ludlow & Sherriff* 1210 (BM); between Tamji and Gasa [Upper Mo Chu district], 2000–2600 m, 13 v 1967, *Hara* et al. s.n. (BM); Charikhachor Chorten near Chendebi, Tongsa district, 2450 m, 21 v 1979, *Grierson & Long* 1220 (E).

KHASIA. ravine between Boga and Kala Panee, *Griffith* KD 4337, Itin. 1064 (syntype K).

N BURMA. Moku-ji Pass, 2750–3200 m, 27 v 1920, *Farrer* 1582 (E); W flank of N'Maikha-Salwin divide, 26°20′ N 98°48′ E, v 1925, *Forrest* 26571 (E); *ibid*, x 1925, *Forrest* 27279 (E); Tama Bum, N Triangle, 2900 m, 12 x 1953, *Kingdon Ward* 21451 (E); Kachin State, eastern approaches from Sumprabum to Kumon Range, 26°40′N 97°20′ E, W

TABLE 2

	Litsea cubeba	**Litsea kingii**
Habit	not deciduous; old leaves present at anthesis	deciduous; leafless at anthesis
Winter buds	absent; very young leaves white sericeous	present, acuminate, glabrous
Leaf: shape	lanceolate, acuminate	elliptic, acute
lateral veins	8–12 pairs	11–16 pairs
petiole	15–20 mm	9–12 mm
Inflorescence	umbels aggregated in short corymbs	umbels solitary or fascicled
Peduncle of umbel buds	2–6 mm, straight	6–10 mm, strongly deflexed
Habitat	subtropical and warm broad-leaved forests	cool broad-leaved and Conifer/Rhododendron forests
Altitude	300–1800 m	2100–2900 m

ridge of Bumpha Bum, 2740 m, 24 & 26 ii 1962, *Keenan* et al. 3518 (E), 3522 (E); *ibid*, lower slopes of Bumpha Bum, 2400–2750 m, 5 iii 1962, *Keenan* et al. 3554 (E); *ibid,* W ridge of Janrawng Bum, 2400 m, 10 iii 1962, *Keenan* et al. 3597 (E).
SZECHWAN. Mount Omei, 1500–1700 m, 16 viii 1928, *Fang* 3065 (E); Ching Chuan mountains, iv 1925, *Rock* 12038 (E).
YUNNAN. Fen Chen Lin Mt., 2130 m, *Henry* 10857 (E); W of Yunnan Sen, 17 iii 1904, *Ducloux* 373 (E); NW Yunnan, 1907, *Mombeig* 226 (E); Machang-kai valley N of Tengyueh, 25°20′ N, 1830–2100 m, ii 1913, *Forrest* 9659 (E); Lichiang Range, 27°30′ N, 3660 m, xi 1918, *Forrest* 17181 (E); hills NW of Tengyueh, 25°10′ N 98°35′ E, 1830 m, ii 1931, *Forrest* 29382 (E); Nung Tsuan Mt., iii 1933, *McLaren* C28 (E); Chengkang Snow Range, Pangca, 2300 m, 29 vii 1938, *Yu* 17084 (E); Salwin-Kiukiang Divide, E of Tehahtu, 2850 m, 15 ix 1938, *Yu* 20307 (E).

Litsea cubeba has a similar distribution in the Himalayan region from Nepal, Sikkim and Bhutan to Assam, Manipur and Burma, but with a much more tropical distribution elsewhere, in Malaya, S China, Indo-China, Thailand and Java. In Nepal, Sikkim and Bhutan it is found at much lower altitudes than *L. kingii*. *Litsea cubeba* has been described as a deciduous plant (e.g. by Hooker, 1886) but no leafless specimens have been located; this erroneous report may be due to confusion with *L. kingii*.

Litsea sericea (Wall. ex Nees) Hook. f., Fl. Brit. India 5:156 (1886).
Basionym: *Tetranthera sericea* Wall. [Cat. 2545 A, B (1830), *nom. nud.*] ex Nees in Wallich, Pl. Asiat. Rar. 2:67 (1831). Type: Nepal, 1821, *Wallich* Cat. 2545 A, B (isosyntypes K, E).
Syn.: *Lindera griffithii* Meisner in A. DC. Prodr. 15(1):245 (1864). Type: Bhutan, Tongsa district, above Tongsa, 2560 m, iii 1838, *Griffith* KD 4334, EIC 2465 (holotype K; iso. BM, K).
Lindera? hookeri Meisner in A. DC. Prodr. 15(1):245 (1864). Type: Sikkim, Lachoong, 3000–3350 m, 29 viii 1849, *Hooker* s.n. (holotype K).
Litsea oreophila Hook. f., Fl. Brit. India 5:156 (1886), *nom. superfl.* Type: *Lindera? hookeri* Meisner.

Study of the type collections of both *Lindera griffithii* and *Lindera? hookeri* shows that they are merely forms of the common E Himalayan plant *Litsea sericea*. Both were described from female plants, *L. griffithii* collected in March and without leaves, and *L.? hookeri* collected in August with mature leaves and winter buds. Both type specimens bear the characteristic obtuse outer bud scales on the rather bluntly pointed vegetative buds. No other Indian taxon of *Lindera* or *Litsea* bears this kind of bud. The types match well with other collections of *Litsea sericea* from Nepal, Sikkim and Bhutan in all significant respects. Hooker clearly realised that *Lindera? hookeri* was a *Litsea* and gave it the new name, *Litsea oreophila,* because of the existence of the name *Litsea hookeriana* (Meisner) Hook. f. for a different species.

Litsea sikkimensis (Meisner) Kostermans ex Long, **comb. nov.**
Basionym: *Lindera sikkimensis* Meisner in A. DC. Prodr. 15(1):245 (1864).

SIKKIM. Lachen, 3500–3650 m, 1 vi 1849, *Hooker* s.n. (holotype G–DC [microfiche!], iso. K); Kanglassa, 3350 m, 25 vi 1912, *Cave* s.n. (E).
NE UPPER BURMA. W flank of N'Maikha-Salwin divide, 26°10′ N, v 1919, *Forrest* 17929 (E).

Litsea sikkimensis is a rare, poorly known plant retained with some doubt by Hooker (1886) in the genus *Lindera,* as it was known only from a single female collection at that time. It is clearly closely allied to *Litsea sericea* in many respects, but differs in its striate shoots, densely reddish brown villous young parts and winter buds, leaf buds without obtuse membranous scales, leaves (immature) obovate, 7 × 3·5 cm or more, obtuse or subacute, and 3–6-flowered umbels. The isotype specimen at Kew was annotated '*Litsea sikkimensis* (Meissn.) Kosterm.' by Kostermans in 1972, but the combination has not been validly published until now.

PARASASSAFRAS

Parasassafras Long, **gen. nov.** (Figs 2 & 3). *Sassafrate* Nees similis sed foliis raro trilobatis, floribus in umbellis circum gemmam vegetabilem fasciculatis, squamis basi umbellis minutis, alternis, caducis, post anthesin cupula perianthii vix aucta, integra, sine reliquiis perianthii differt.

Small dioecious evergreen trees; shoots with conspicuous terminal and axillary vegetative buds. Leaves alternate, not clustered, strongly 3-veined from above base; juvenile leaves sometimes lobed near apex. Flowers unisexual in shortly peduncled umbels without persistent scales, borne around base of an axillary vegetative bud which produces a leafy shoot. Perianth segments 6, outer 3 shorter. Male flowers with 9 fertile stamens, outer 6 with eglandular filaments and ovoid anthers with 4 introse cells, inner 3 with biglandular filaments and oblong anthers with 4 introrse but sub-lateral cells. Female flowers with numerous staminodes, ovary globose with stout style and lobed capitate stigma. Fruits subglobose, borne around base of leafy shoot, perianth-cup persistent, entire, slightly enlarged.
Monotypic. Type species: *Parasassafras confertiflora* (Meisner) Long.

Parasassafras confertiflora (Meisner) Long, **comb. nov.**
Basionym: *Actinodaphne confertiflora* Meisner in A. DC., Prodr. 15(1):219 (1864).
Syn.: *Neocinnamomum confertiflorum* (Meisner) Kostermans, Bull. Bot. Surv. India 10:287 (1969) ['1968'].
Litsea confertiflora (Meisner) Kostermans, Reinwardtia 9:86 (1974).
Litsea shweliensis W. W. Smith, Notes RBG Edinb. 13:167 (1921).
BHUTAN. Dewangiri [Deothang, 26°52′ N 91°28′ E], 600–900 m, i 1838, *Griffith* KD 4333, EIC 2486, Itin. 109 (**holotype** K; iso. BM, K); Ngasamp [Mongar district], 1700 m, 27 viii 1915, *Cooper* 4660 (E, BM); Shali [Tashigang district, 27°29′ N 91°35′ E], 1800 m, 16 viii 1915, *Cooper* 4477 (E, BM); Deothang district, 10 km S of Riserboo, 2150 m, 25 vi 1979, *Grierson & Long* 2228 (E); Deothang district, Raling near Wamrong, 27 ix 1979, *Nawang & Tshering* 74 (E).
N BURMA. Hills E of Hpimaw, 26°00′ N 98°42′ E, 3000–3350 m, xi 1924, *Forrest* 25426 (E); W flank of Mt N'Maikha–Salwin divide, 26°17′ N

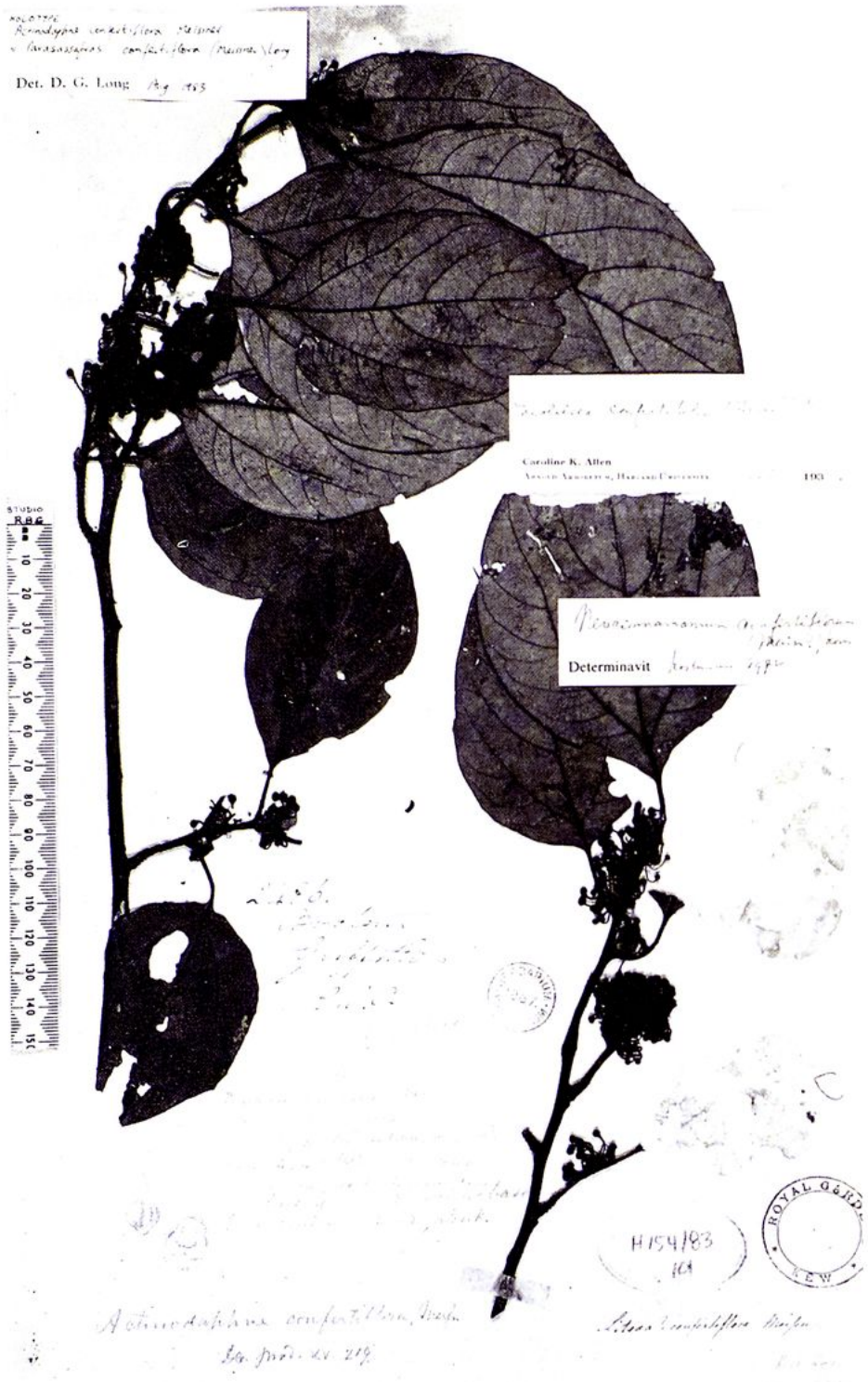

FIG. 2. *Parasassafras confertiflora* (Meisner) Long (*Griffith*, EIC 2486, holo. K).

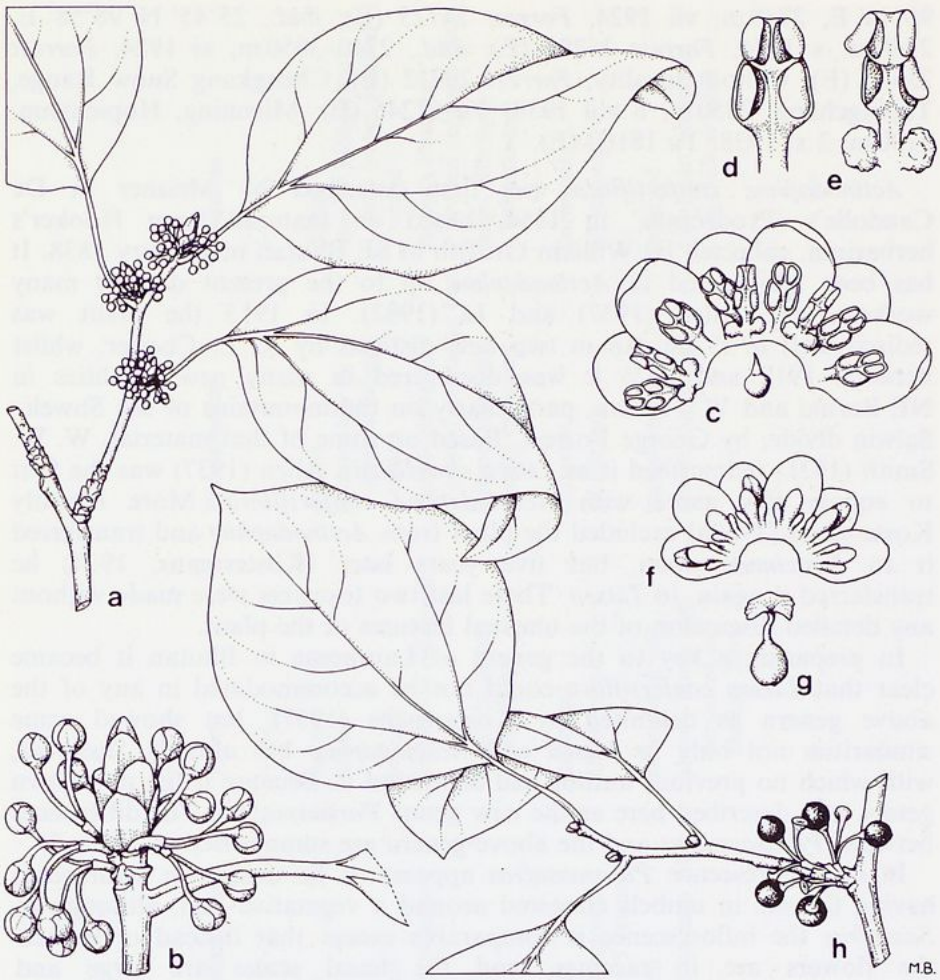

FIG. 3. *Parasassafras confertiflora* (Meisner) Long: a, portion of shoot bearing old leaves and clusters of umbels (in bud) borne around axillary vegetative buds; b, axillary vegetative bud and flower buds; c, male flower dissected; d, outer stamen; e, inner stamen with glandular filament; f, female flower dissected; g, ovary; h, mature fruit clustered around base of new leafy shoot. (a & b from *Griffith* KD 4333; c–e from *Forrest* 25426; f & g from *Forrest* 27453; h from *Cooper* 4660)

98°46′ E, 2400–2700 m, x 1925, *Forrest* 27453 (E); Uring Bum, 2300 m, 3 xi 1935, *Kingdon Ward* 21544 (E).

W CHINA, YUNNAN. W flank of Shweli–Salwin divide, 25°20′ N, 2740 m, viii 1912, *Forrest* 9022 (E); Shweli–Salwin divide, 25°20′ N, 3050 m, vii 1917, *Forrest* 15705, type of *Litsea shweliensis* W. W. Smith (holotype E); Shweli–Salwin divide, 25°30′ N, 3050 m, viii 1917, *Forrest* 15876 (E); *ibid.*, 2100 m, vii 1918, *Forrest* 17648 (E); *ibid.*, ix–x 1918, *Forrest* 17697 (E); Shweli–Salwin divide, 25°40′ N, 2440 m, viii 1919, *Forrest* 18405 (E); *ibid.*, 25°40′ N 98°40′ E, 2400–2700 m, vi 1924, *Forrest* 24374 (E); *ibid.*, 25°25′ N 98°58′ E, 2440 m, vi 1924, *Forrest* 24447 (E); *ibid.*, 25°40′ N 98°45′ E, 2100–2400 m, vi 1924, *Forrest* 24495 (E); *ibid.*, 25°48′ N

98°48′ E, 2740 m, vii 1924, *Forrest* 24725 (E); *ibid.*, 25°45′ N 98°58′ E, 2740 m, x 1924, *Forrest* 25285 (E); *ibid.*, 2740–3050 m, xi 1924, *Forrest* 25345 (E); without locality, *Forrest* 29912 (E); Chengkang Snow Range, Tapingchang, 2350 m, 6 viii 1938, *Yu* 17245 (E); Mienning, Hopientsun, 2100 m, 2 xi 1938, *Yu* 18160 (E).

Actinodaphne confertiflora was first described by Meisner in De Candolle's 'Prodromus' in 1864, based on material from Hooker's herbarium, collected by William Griffith in SE Bhutan in January 1838. It has been maintained in *Actinodaphne* up to the present day by many workers, e.g. Allen (1937) and Li (1982). In 1915 the plant was rediscovered in E Bhutan in two new districts by R. E. Cooper, whilst between 1912 and 1925 it was discovered in many new localities in NE Burma and W Yunnan, particularly on the mountains of the Shweli–Salwin divide, by George Forrest. Based on some of that material, W. W. Smith (1921) redescribed it as *Litsea shweliensis*. Allen (1937) was the first to equate this name with *Actinodaphne confertiflora*. More recently Kostermans (1969a) excluded the plant from *Actinodaphne* and transferred it to *Neocinnamomum*, but five years later (Kostermans, 1974) he transferred it again, to *Litsea*. These last two transfers were made without any detailed discussion of the unusual features of the plant.

In preparing a key to the genera of Lauraceae in Bhutan it became clear that *Litsea confertiflora* could not be accommodated in any of the above genera as delimited by Kostermans (1957), but showed some similarities not only to *Litsea* and *Actinodaphne* but also to *Sassafras*, with which no previous author had compared it. Because it fits no known genus, it is described here as the new genus *Parasassafras*. The differences between *Parasassafras* and the above genera are summarised in Table 3.

In its inflorescence *Parasassafras* appears to be unique in Lauraceae, having flowers in umbels clustered around a vegetative bud, although in *Sassafras* the inflorescence is comparable except that instead of umbels the flowers are in racemes, and the basal scales are large and subpersistent. In *Sassafras*, most specimens bear both unlobed and trilobed leaves; the unlobed leaves are very similar to those of *Parasassafras* particularly in venation, and it is noteworthy that one specimen of *Parasassafras* from Bhutan (*Grierson & Long* 2228) bears juvenile foliage of which two leaves are lobed towards the apex. A further important difference between *Parasassafras* and *Sassafras* is that in the latter the perianth cup becomes much enlarged in fruit whereas in the former it is only slightly enlarged.

The genus *Neocinnamomum* appears to be quite unrelated to *Parasassafras*, particularly in its inflorescence, bisexual flowers, anther structure and lobed fruiting perianth cup. *Litsea* is similar in some respects but is quite different in its constantly pinnately-veined leaves and umbels subtended by persistent decussate bracts, and these umbels are never borne around a vegetative bud. *Actinodaphne* differs most significantly in its clustered leaves and different inflorescence.

Rehder (1920) emphasised the character of the inflorescence in distinguishing the genus *Sassafras*: 'From all the genera of the tribe Litseae the genus *Sassafras* in easily separated by its racemes of slender-pedicelled flowers in the axils of the basal scales of the terminal branch-

TABLE 3

	Actinodaphne	**Neocinnamomum**	**Litsea**	**Parasassafras**	**Sassafras**
Bud scale scar rings	+	–	+ or –	+	+
Leaf: arrangement	clustered	distant	distant	distant	distant
lobing	absent	absent	absent	occasionally in juvenile foliage	usually 3-lobed but some leaves unlobed
venation	3-veined or pinnate	3-veined	pinnate	3-veined	3-veined
Inflorescence	panicles or clusters on old wood	axillary panicles	umbels on old wood	umbels clustered around vegetative bud	racemes clustered around vegetative bud
Scales at base of inflorescence	large or small, alternate, early caducous	absent	large, decussate, persistent	minute, alternate, early caducous	large, alternate, subpersistent
Flowers	unisexual	bisexual	unisexual	unisexual	unisexual
Anthers	all introrse	outer 6 introrse, inner 3 extrorse	all introrse	all introrse	all introrse
Fruiting perianth cup	enlarged	enlarged	enlarged or not	scarcely enlarged	enlarged
Persistent perianth segments	absent, cup entire	present as deep lobes	absent, rarely part persistent as shallow lobes	absent, cup entire	basal part persistent as shallow lobes

bud, while in other genera the flowers are arranged in lateral umbels or heads sometimes reduced to 1 flower, subtended by an involucre of 4–6 bracts, or as in *Actinodaphne* in lateral subsessile fascicles'. Such an interpretation also applies precisely to *Parasassafras,* except that in the latter the flowers are in umbels and the basal bud scales are smaller and early caducous.

PERSEA

Persea wallichii Long, **sp. nov.** Fig. 4.

Syn.: *Laurus sericea* Wall., Cat. 2606 (1828), *nom. nud.,* p.p.
Ocotea sericea Nees in Wallich, Pl. Asiat. Rar. 2:71 (1831), *hom. illeg.* non Kunth (1817), excl. syn. *Cinnamomum tomentosum* D. Don; non *Persea sericea* Kunth (1817).
Phoebe sericea Nees, Systema laurinarum 99 (1836), *nom. illeg.* excl. syn. *Cinnamomum tomentosum* D. Don.
?Machilus sericea Blume, Mus. Bot. Lugd.-Bat. 1:330 (1851).

P. glaucescenti (Nees) Long (*P. villosa* (Roxb.) Kostermans) similis sed foliis acutis, subtus in sicco viridibus vel brunneoviridibus, venis lateralibus leniter prominulis, paniculis griseopubescentibus, pedicellis fructiferis spissescentibus differt.

Deciduous or semi-evergreen tree to 15 m; young shoots without basal ring of bud-scale scars. Leaves rather distant, coriaceous, greenish when dry, 10–18 × 3–5·5 cm, acute, base rounded or broadly cuneate, sericeous beneath when young becoming glabrous, midrib impressed above, prominent beneath; lateral veins few, rather distant, 7–9 pairs, weakly prominent beneath, somewhat reticulate on both surfaces; petioles slender, 1·8–3 cm. Panicles 4–8 per shoot, erect, emerging with young leaves, 8–17 cm including greyish-pubescent peduncle 5–10 cm. Pedicels 2–3 mm. Perianth segments ovate, 3–3·5 mm, appressed greyish pubescent. Fruit globose, 8 mm diam. (immature) borne on a much thickened fleshy pedicel.

NEPAL. s. loc., 1821, *Wallich,* Wall. Cat. 2606a (**holotype** E; iso. E, K, K–W); Kaher Khola, 29°06′ N 80°40′ E, 1350 m, 16 iv 1973, *Dobremez* 1846 (BM); Langtang Valley, S side, 28°14′ N 85°32′ E, 1520 m, 23 iv 1962, *Bowes Lyon* 74 (E); between Thana and Bhartha, Tila Valley, 27°07′ N 81°36′ E, 1670 m, 21 iv 1952, *Polunin, Sykes & Williams* 1932 (E).

INDIA, KUMAON. s. loc., 1200–1500 m, leg? s.n., (E); Bhunital, iv 1886, leg? s.n. (E); Lohaghat Range, vii 1933, *Range Officer* s.n. (E).

The name *Machilus sericea* Blume has been a source of confusion since it was first published by Blume (1851) up to the present day. The epithet *sericea* dates back to a plant first collected in Nepal in 1821 by Wallich. He named it *Laurus sericea,* and included it (as *nomen nudum*) in his 'Catalogue' (Wallich, 1828) under the numbers 2606a from Nepal, collected in 1821 and 2606b from Dehra Dun, Kumaon, collected in 1825. Also in his herbarium (K–W) but not listed in the catalogue is a third gathering, numbered 2606c from Ava, Burma, collected in 1826. Hooker (1886, p. 139) later commented that 'Wallich's specimens of *Laurus sericea* A, B, C may or may not belong to one species'.

Study of his specimens in K–W reveals that 2606a from Nepal differs in

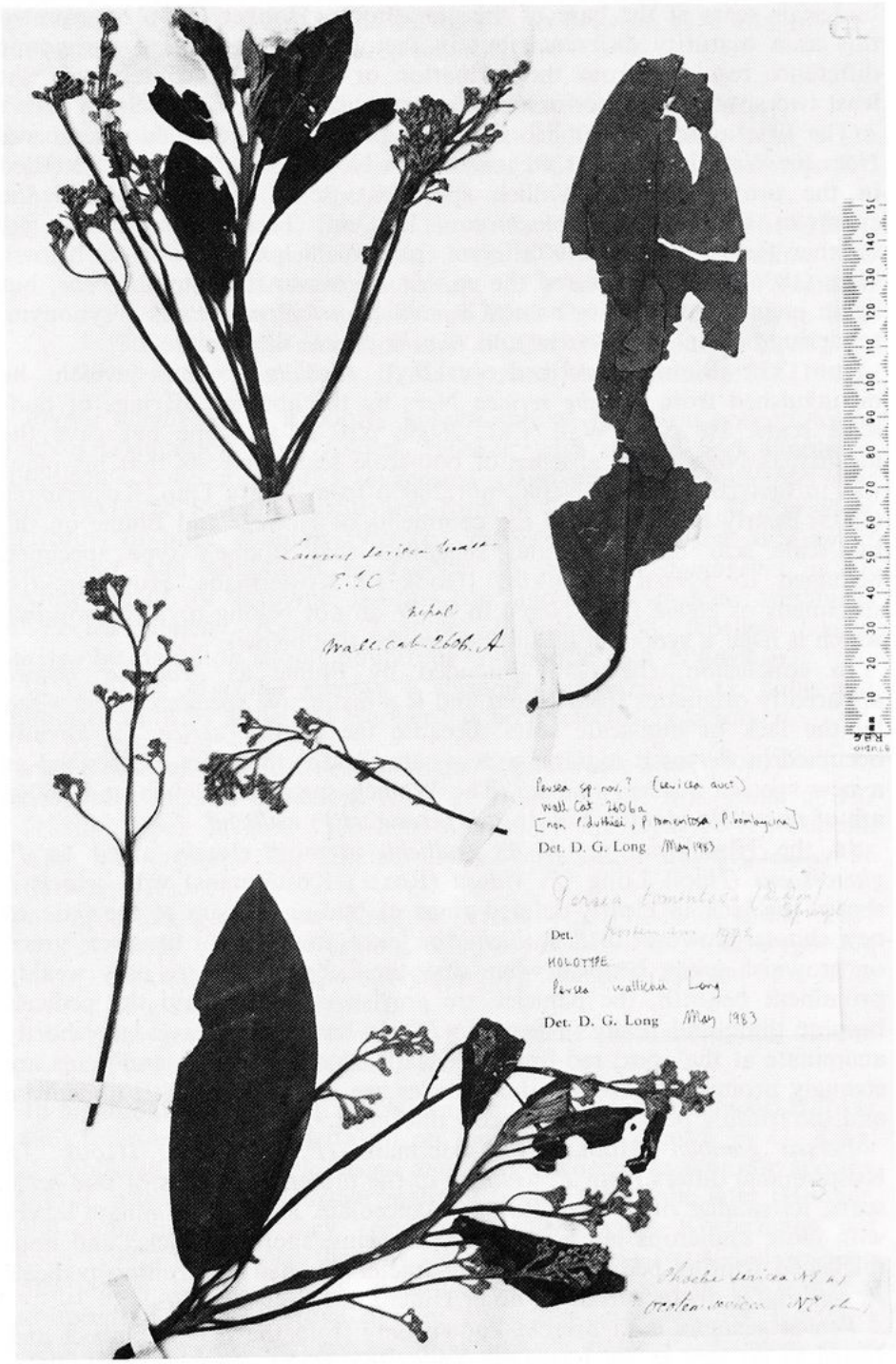

FIG. 4. *Persea wallichii* Long (*Wallich* Cat 2606a, holo. E).

several respects from 2606b and 2606c, particularly in its lack of rings of bud-scale scars at the base of the new shoots. Hooker (1886) interpreted this as a maturity difference but in fact it is an important taxonomic difference resulting from the formation or absence of winter buds. At least two species are therefore represented under Wall. Cat. 2606.

The first author to publish the epithet *sericea* with a description was Nees (in Wallich, 1831) as *Ocotea sericea* Nees (*hom. illeg.*) who included in the protologue the Wallich specimens 2606a and 2606b and the synonym *Cinnamomum tomentosum* D. Don. The last represents yet another *Persea* taxon quite different from Wallich Cat. 2606 (see below). Nees (1836) later transferred the epithet *sericea* to the genus *Phoebe,* but again included the earlier name *Cinnamomum tomentosum* as a synonym, rendering both *Ocotea sericea* and *Phoebe sericea* illegitimate.

In 1851 Blume described (validly) *Machilus sericea* which he distinguished from *Phoebe sericea* Nees by the absence of rings of bud-scale scars. He cited Wall. Cat. 2606b p.p. as the type but gave the locality as Nepal. The absence of bud-scale scars suggests that his plant was in fact 2606a, from Nepal, not 2606b from Dehra Dun. Kostermans (1975) clearly misinterpreted the comments of Hooker and Blume on the bud-scale scar character, and suggested that Blume's type specimen belonged to *Persea bombycina* (Hook. f.) Kostermans. However, the specimens of 2606a from Nepal in K–W do not belong to *P. bombycina,* which is itself a synonym of another species (see below).

In conclusion, the plant intended by Blume as *Machilus sericea* apparently originates from Nepal and is a distinctive species characterized by the lack of bud-scale scars; because the epithet '*sericea*' is already occupied in *Persea* it requires a new name and is therefore redescribed as a new species, *Persea wallichii.* The Wallich specimens 2606b and 2606c are of uncertain identity but do not belong to *P. wallichii.*

In the Himalayan region *P. wallichii* is most closely allied to *P. glaucescens* (Nees) Long (*P. villosa* (Roxb.) Kostermans) with which it shares the lack of clearly-defined rings of bud-scale scars at the base of new shoots. However in *P. wallichii* the leaves are acute at the apex, green or brownish green beneath when dry, the lateral veins are only weakly prominent beneath, the panicles are greyish pubescent and the pedicels become thick and fleshy in fruit; in *P. glaucescens* the leaves are shortly acuminate at the apex, red-brown beneath when dry, the lateral veins are strongly prominent beneath, the panicles are densely brownish tomentose and the fruiting pedicels are scarcely thickened.

Persea gamblei (Hook. f.) Kostermans (*P. bombycina* (Hook. f.) Kostermans) differs from *P. wallichii* in the presence of rings of bud-scale scars, its smaller often obovate or oblanceolate, shortly acuminate leaves with more numerous but obscure lateral veins, shorter panicles and non-thickened fruiting pedicels. In the character of enlarged fruiting pedicels *P. wallichii* is distinct from all other Himalayan *Persea* species.

Persea wallichii is at present known only from the NW Himalaya and Nepal as far east as the Langtang Valley (85°32′ E). Records of *Machilus sericea* from other areas, e.g. Sikkim (Cowan & Cowan, 1929) and Assam (Kanjilal et al., 1940) have not been confirmed and may belong to some other species.

Ecologically, little is known about *P. wallichii*; in W Nepal it apparently grows in warm broad-leaved forests between 1350 and 1670 m, but no associated plants have been recorded.

Persea gamblei (Hook. f.) Kostermans, Reinwardtia 6:192 (1962).
Basionym: *Machilus gamblei* King ex Hook. f., Fl. Brit. India 5:138 (1886). Types: [W Bengal] Cooch Behar, 1881, *King* s.n. (**lectotype** K); Assam, *Jenkins* s.n. (syntype K).
Syn.: *Machilus bombycina* King ex Hook. f., Fl. Brit. India 5:861 (1890). Types: Camrup, Rungpur, 3 iii 1809, *Buchanan-Hamilton* 988 (syntype E); Assam, Gualpara, 23 v 1808, *Buchanan-Hamilton* 989 (**lectotype** E, iso. K–W sub Wall. Cat. 2607d); Patgong, 26 ii 1809, *Buchanan-Hamilton* in Wall. Cat. 2607c (syntype K–W).
Persea bombycina (Hook. f.) Kostermans, Reinwardtia 6:191 (1962).

Persea bombycina is a poorly known species based on collections of Buchanan-Hamilton from Assam. Hooker, who studied and annotated Hamilton's collections in E suggested (Hooker, 1890) that *Machilus bombycina* was 'Perhaps a cultivated form of *M. gamblei* or *M. kurzii*, or all forms of one'. *Hamilton* 989 (E), labelled by Hamilton as *Laurus? bombycina,* and annotated by Hooker as *Machilus bombycina,* is an obvious choice for lectotype. It bears fruit and closely matches specimens of *Persea gamblei.* Another syntype, *Hamilton* 988, labelled *Laurus champa* by Hamilton is only doubtfully conspecific with *P. gamblei.*

In typifying *Machilus gamblei* a specimen collected by G. King and annotated both by King and Hooker has been selected as lectotype.

Persea clarkeana (Hook. f.) Kostermans, Reinwardtia 6:191 (1962).
Basionym: *Machilus clarkeana* King ex Hook. f., Fl. Brit. India 5: 137 (1886). Types: Sikkim, 1500–2400 m, *Hooker* s.n. (syntype K); Sikkim, *King* s.n. (syntype K); Sikkim, 2300–2400 m, 12 v 1874, *Treutler* 96 (**lectotype** K).
Syn.: *Machilus gammieana* King ex Hook. f., Fl. Brit. India 5:137 (1886). Types: Darjiling 2300 m, *Hooker* s.n. (**lectotype** K); Sikkim, 1874, *King* s.n. (syntype K); Tongloo, 2100 m, 11 x 1876, *King* 3105 (isosyntype E).
Persea gammieana (Hook. f.) Kostermans in Hara et al., Enum. Flowering Plants Nepal 3:186 (1982).

In his initial treatment of *Machilus* in the *Flora of British India,* Hooker (1886) followed work undertaken on the genus in Calcutta by G. King, and published *Machilus clarkeana* and *M. gammieana* as separate species; however, after receiving further material from Calcutta he later (Hooker, 1890) commented that they 'seem to be one species'. Kostermans and Chater (1982) maintained them as separate species in Nepal but with no indication as to how they might be distinguished. Study of the syntypes and recent collections from Bhutan and elsewhere supports Hooker's opinion that they are one species, for which the name *P. clarkeana* must be used. Lectotypes have been selected from Hooker's herbarium at Kew.

Persea glaucescens (Nees) Long, **comb. nov.**
Basionym: *Ocotea glaucescens* Nees in Wallich, Pl. Asiat. Rar. 2:71 (1831).

Type: *Laurus glaucescens* Wall. [*nom. nud.*], Sylhet, *de Silva* in Wall. Cat. 2592 (**lectotype** K–W; isolectotypes BM, E, K).

Syn.: *Phoebe glaucescens* (Nees) Nees, Systema laurinarum 100 (1836).
Laurus villosa Roxb., [Hort. Beng. 89, 1814, *nom. nud.*] ex Roxb., Fl. Indica ed. 2, 2:310 (1832). Type: ?
Machilus villosa (Roxb.) Hook. f., Fl. Brit. India 5:860 (1890).
Persea villosa (Roxb.) Kostermans, Reinwardtia 6:194 (1962).

As pointed out by Hooker (1886), the plant intended by Wallich (1828) as *Laurus glaucescens* Wall. (in Wall. Cat. 2592, *nom. nud.*) was different from that later validly published by Roxburgh (1832) as *Laurus glaucescens* Roxb.; the latter with 'leaves . . . triple-nerved', is presumably a *Cinnamomum* species. Because of this confusion, as well as the acceptance by Hooker of Roxburgh's *nomina nuda* from the *Hortus Bengalensis,* Hooker (1886) and later authors chose to ignore Nees' *Ocotea glaucescens* in favour of *Laurus villosa* Roxb. *nom. nud.* However, Nees' name is validly published and antedates valid publication of Roxburgh's *Laurus villosa* by one year. Nees' description is apparently largely based on Wall. Cat. 2592 from Sylhet, which is clearly the same plant as *Machilus villosa* (Roxb.) Hook. f.

Typification of *Ocotea glaucescens* Nees presents few difficulties. Nees included two elements in the protologue, viz 'α paniculis longioribus, ferrugineis.—*Laurus glaucescens* Roxb. Hort. Calcutt. p. 30. Wall. Cat. n. 2592.' and 'β paniculis brevioribus, incanis.—*Laurus floribunda* Wall. Cat. n. 2593, A, (ex parte, casu certe immixtis exemplis).' Of these, *Wallich* 2592 is undoubtedly the better lectotype, as it was almost certainly studied by Nees, agrees well with his description and represents Wallich's concept of *Laurus glaucescens*. Roxburgh's *Laurus glaucescens* on the other hand, though cited, was probably not examined by Nees, and according to Hooker (1886, p. 140) Roxburgh applied it to two different plants, one presumably a *Persea,* the other a *Cinnamomum* which he later validly published as *Laurus glaucescens* Roxb. The second element, *Laurus floribunda* Wall. Cat. 2593A p.p. is probably conspecific with 2592, but as it is part of a mixed collection with a *Cryptocarya* species it is much less satisfactory as a lectotype.

Persea tomentosa (D. Don) Sprengel, Syst. Veg. 4, Cur. Post. 156 (1827).
Basionym: *Cinnamomum tomentosum* D. Don, Prodr. Fl. Nepal 66 (1825).
Type: Nepal, Suembu, 19 iv 1802, *Buchanan-Hamilton* s.n. (holotype BM). Fig. 5.

Don's *Cinnamomum tomentosum* has long been regarded as a synonym of *Phoebe cathia* (D. Don) Kostermans (*Phoebe paniculata* (Nees) Nees) for example by Hooker (1886) and recently by Kostermans & Chater (1982). Study of the type specimen shows that the two are quite different plants in different genera. The type of *C. tomentosum* (Fig. 5) has elliptic leaves, rather dull above, with 9–11 pairs of lateral veins which are not impressed above; the shoots bear well-defined rings of bud-scale scars at the base of new growth; young panicles and leaves are produced simultaneously from these buds and the panicles are clustered at the base of these shoots. In *Phoebe cathia* the leaves are shorter and broader, rather glossy above, with only 5–7 pairs of lateral veins which are

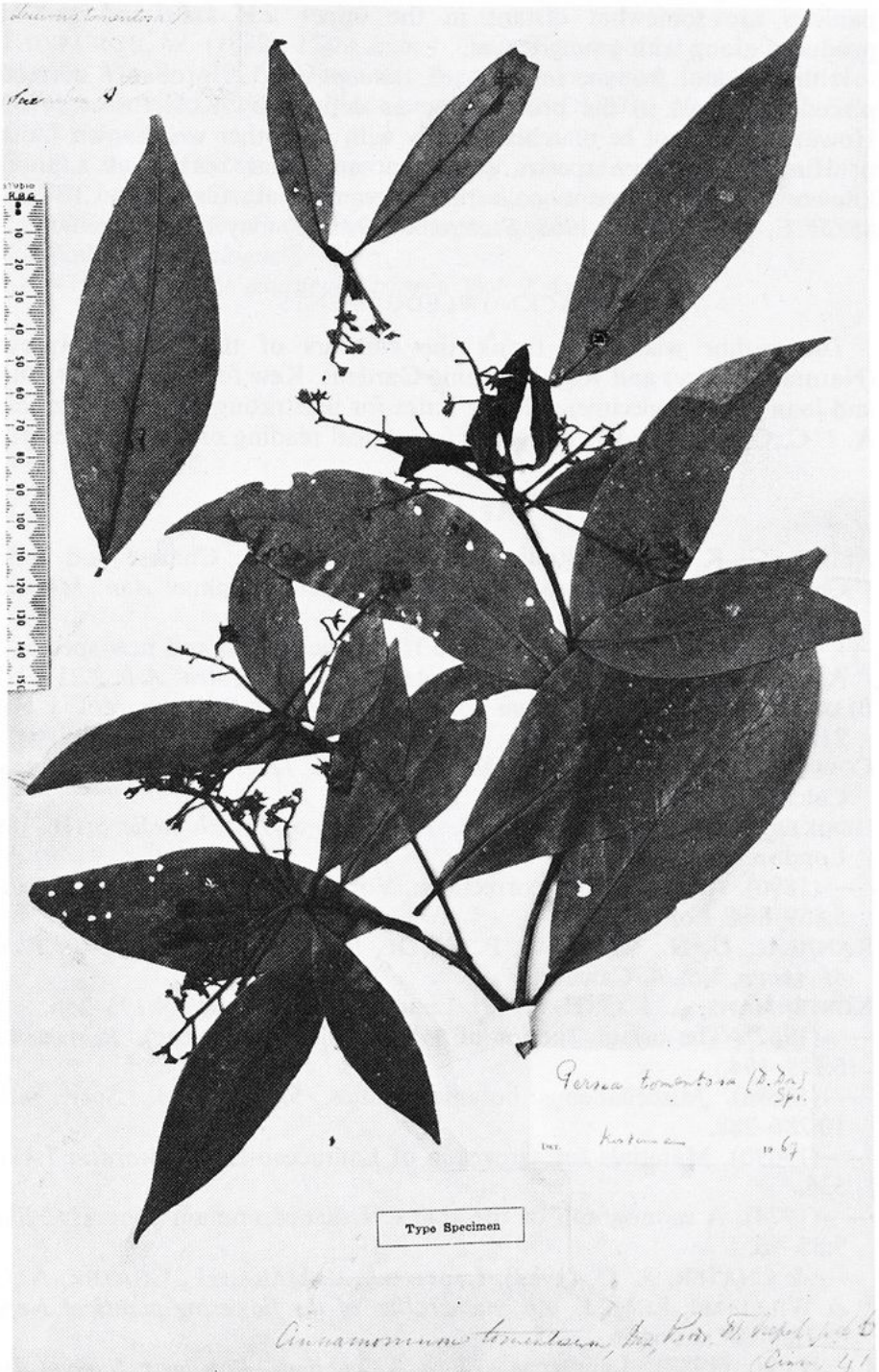

FIG. 5. *Persea tomentosa* (D. Don) Sprengel (*Buchanan-Hamilton* s.n., holo. BM).

distinctly impressed above, the shoots lack rings of bud-scale scars, the panicles are somewhat distant in the upper leaf axils and are not produced along with young leaves.

Although not known in fruit, *C. tomentosum* is probably correctly placed in *Persea* in the broad sense as defined by Kostermans (1962). However, it cannot be matched exactly with any other well-known Indian or Himalayan *Persea* species at present and must remain as a poorly known taxon. A recent collection from Nepal: Gakonda, 27°42′ N 85°27′ E, 1370 m, 19 iii 1967, *Stainton* 5719 (BM) may be conspecific.

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References

ALLEN, C. K. (1937). Studies in the Lauraceae I. Chinese and Indo-Chinese species of Litsea, Neolitsea and Actinodaphne. *Ann. Missouri Bot. Gard.* 25:361–434.

——(1941). Studies in the Lauraceae III. Some critical and new species of Asiatic Lindera, with occasional notes on Litsea. *J. Arn. Arb.* 22:1–31.

BLUME, C. L. (1851). *Museum botanicum Lugduno-Batavum.* Vol. 1 Part 21. Leiden.

COWAN, A. M. & COWAN, J. M. (1929). *The Trees of Northern Bengal.* Calcutta.

HOOKER, J. D. (1886). Laurineae. *The Flora of British India* 5:116–189. London.

——(1890). Additions and corrections, Vol. V. *The Flora of British India* 5:859–864. London.

KANJILAL, U. N., KANJILAL, P. C., DE, R. N. & DAS, A. (1940). *Flora of Assam.* Vol. 4. Calcutta.

KOSTERMANS, A. J. G. H. (1957). Lauraceae. *Reinwardtia* 4:193–256.

——(1962). The asiatic species of *Persea* Mill. (Lauraceae). *Reinwardtia* 6:189–194.

——(1969a). Miscellaneous botanical notes. 5. *Bull. Bot. Surv. India* 10:286–288.

——(1969b). Materials for a revision of Lauraceae II. *Reinwardtia* 7:451–536.

——(1974). A monograph of the genus Neocinnamomum Liou Ho. *Ibid.* 9:85–96.

—— & CHATER, A. O. (1982). Lauraceae. In HARA, H., CHATER, A. O. & WILLIAMS, L. H. J., *An enumeration of the flowering plants of Nepal* 3: 182–187. London.

LI, H.-W. (1982). Lauraceae. *Flora Reipublicae Popularis Sinicae.* 31. Peking.

MEISNER, C. F. (1864). Lauraceae in DE CANDOLLE, A., *Prodromus Systematis Naturalis Regni Vegetabilis* 15(1):1–260.

REHDER, A. (1920). The American and Asiatic species of Sassafras. *J. Arn. Arb.* 1:242–245.

ROXBURGH, W. (1832). *Flora Indica* 3 vols. Serampore.

SMITH, W. W. (1921). Diagnoses specierum novarum in herbario Horti Regii Botanici Edinburgensis cognitarum. DI–DL. *Notes RBG Edinb.* 13:149–187.

WALLICH, N. (1828). *A numerical list of dried specimens of plants in the East India Company Museum, collected under the superintendence of Dr Wallich of the Company's botanic garden at Calcutta.* Calcutta. ['Wallich's *Catalogue*'].

——(1831). *Plantae asiaticae rariores.* Vol. 2. London.