

THREE NEW RECORDS OF LAURACEAE FROM BANGLADESH

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Abstract

The paper deals with three species of the family Lauraceae which are new records for Bangladesh, viz. *Lindera neesiana* (Wallich ex Nees) Kurz, *Litsea khasyana* Meissn., and *Litsea umbellata* (Lour.) Merr. An updated nomenclature, important synonyms, description, phenology, ecology, specimen citation and geographical distribution are provided for each species.

Introduction

The family Lauraceae consists of some 30 to 50 genera and about 2000 or more species, widespread in tropical and subtropical regions throughout the world (Cronquist, 1981). In Bangladesh, the family is represented by 13 genera and 46 species (Ara *et al.*, 2007 and Mia, 2009). Hooker (1886, 1890) and Prain (1903) have previously reported 39 species under 11 genera and 23 species under 9 genera of the Lauraceae respectively, from the area now in Bangladesh. However, Heinig (1925) reported 20 species under 9 genera from Chittagong and the Chittagong Hill tracts, and Sinclair (1956) reported 5 species under 3 genera from the area of Cox's Bazar. Alam (1988) recorded 30 species and 9 genera from Sylhet region. During the course of a revisionary work on Lauraceae of Bangladesh the authors visited the Central National Herbarium, Howrah (CAL), India. At that herbarium, they came across four herbarium specimens (Griffith 4324, 4280, 4286, 4301) collected from the area now falls under Bangladesh, and were not previously reported from Bangladesh territory by any literature. As no comprehensive taxonomic work on the family has been done, a program has been taken to collect specimens and to complete a revisionary work on the family Lauraceae of Bangladesh.

Materials and Methods

The paper is based on the herbarium specimens collected from present Bangladesh territory and stored at the Central National Herbarium, Howrah, India (CAL). All specimens were critically examined by using Stereo Microscope and identifications were confirmed by consulting relevant floristic literatures of Hook. f. (1886, 1890), Prain (1903), Kanjilal *et al.* (1940), Shugang *et al.*, 2008.

Result and Discussion

During the course of this revisionary work on the family Lauraceae of Bangladesh the authors came across three species namely, *Lindera neesiana* (Wallich ex Nees) Kurz, *Litsea khasyana* Meissn., and *Litsea umbellata* (Lour.) Merr. respectively. None of these species appeared in the relevant publications of the regional flora, viz. Hooker (1886, 1890), Prain (1903), Heinig (1925), Raizada (1941), Datta and Mitra (1953), Sinclair (1956), Khan and Banu (1972), Huq and Khan (1984), Khan and Hassan (1984), Khan *et al.* (1994), Mia and Khan (1995), Rahman and Hassan

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(1995), Rahman and Uddin (1997), Uddin *et al.* (1998), Uddin and Rahman (1999), Rashid *et al.* (2000), Khan and Huq (2001), Rahman (2004a, b), Tutul *et al.* (2009, 2010) and Uddin and Hassan (2010). Since there has been no record of occurrence of *Lindera neesiana* (Wallich *ex* Nees) Kurz, *Litsea khasyana* Meissn. and *Litsea umbellata* (Lour.) Merr. in any floristic works of Bangladesh, these species are being reported here for the first time as new records for Bangladesh.

A detailed description with updated nomenclature, important synonyms, ecology and geographical distribution for each species are given below.

1. *Lindera neesiana* (Wallich *ex* Nees) Kurz, Prelim. Rep. Forest Pegu. App. A, 103; App. B, 74. 1875. **(Fig. 1)**

Benzoin neesianum Wallich *ex* Nees in Wallich, Pl. Asiat. Rar. 2: 63. 1831.

Aperula neesiana (Wallich *ex* Nees) Blume, Mus. Bot. 1: 366. 1851.

Benzoin fruticosum (Hemsley) Rehder, J. Arnold Arbor. 1: 145. 1919.

Lindera fruticosa Hemsley, J. Linn. Soc., Bot. 26(176): 388 1891.

Lindera pomiensis (H.B. Cui) H.B. Cui, Acta Bot. Yunnan. 10(1): 124. 1988.

Litsea fruticosa (Hemsley) Gamble, Pl. Wilson. 2(1): 77-78. 1914.

Deciduous, middle sized, aromatic trees, up to 20 m tall. Bark green or green-brown; young branchlets green, brownish yellow or brown when dry, smooth; winter buds ovate. Leaves alternate; petiole 10-12 mm long; leaf blade ovate, or lanceolate, or narrowly ovate, rarely sub-orbicular, 5-14 × 2.5-8.0 cm, base rounded or broadly cuneate, slightly oblique, apex acuminate, margins entire, membranous, greenish pale abaxially, dark green adaxially, papery, densely pubescent, later gradually glabrate abaxially, glabrous adaxially, trinerved or triplinerved.

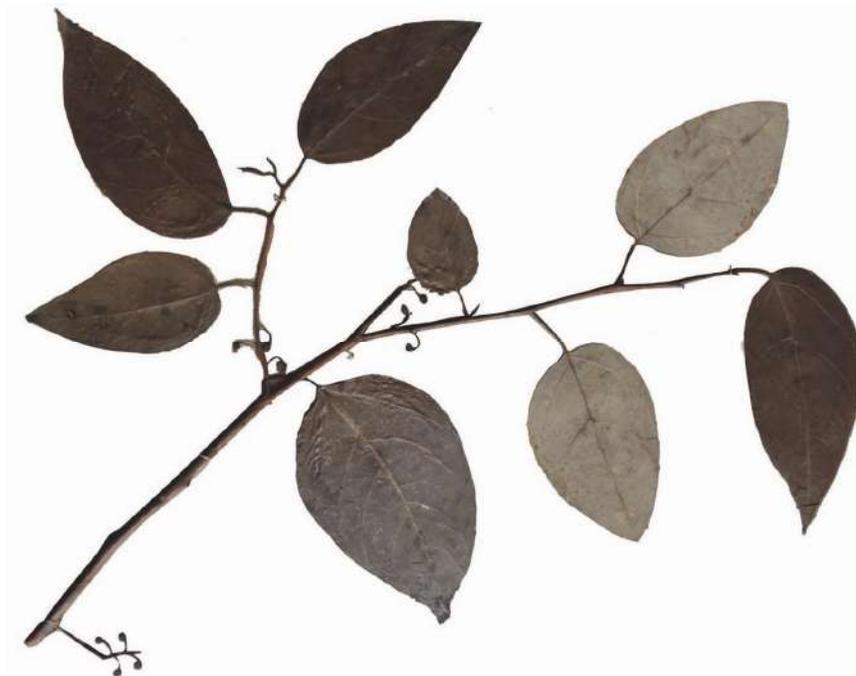


Fig. 1. *Lindera neesiana* (Wallich *ex* Nees) Kurz.

Inflorescence 5-8 flowered umbels, solitary or fascicled, 4 mm diameter, 5-7 fruits in each head, peduncles ca. 4 mm long, glabrous; involucre bracts 4, ciliate, pubescent on base inside, 7-9 flowers included. Male flowers: tepals green before bloom, broadly elliptic or subrounded, glabrous, apex rounded, ca. 1 mm in outside whorl; stamens 9, filaments glabrous, 2-glandular at base in 3rd whorl; glands triangular-reniform, stipitate, sometimes 1 at filament in 1st and 2nd whorl; pistil exerted at center, less than 1 mm. Female flowers yellow; pedicels ca. 2 mm long, pubescent; tepals broadly ovate, glabrous, apex rounded, ca. 1.5 mm in outer whorl, ca. 1.2 mm in inner whorl; reduced stamens fasciated, ca. 0.8 mm in 1st and 2nd whorls, 2-glandular at filament base in 3rd whorl; glands triangular or oblong, unequal in size, irregular long stipitate; ovary elliptic, glabrous. Fruits subglobose to globose, 6-8 mm in diameter, seated on 6 lobed unaltered perianth; stipes 4-7 mm long. Flowering and fruiting: April-November.

Ecology: Hilly forests, valleys, thickets; between 200-1000 m altitude.

Distribution: Bhutan, India, Myanmar, Nepal and China.

Specimen examined: East Bengal, 15 vi 1863, Griffith 4324 (CAL).

2. ***Litsea khasyana*** Meissn. in DC. Prod. 15(1): 227. 1864.

(Fig. 2)

Tetranthera khasyana Meisn. in DC., Prodr. 15(1): 185. 1864.

Litsea hookeri (Meisn.) Long var. *khasyana* (Meisn.) T. Bhuinya & P. Singh *comb. nov.*

A small or middle sized tree; young parts yellowish-brown pubescent. Bark brownish, smooth with white patches and faint horizontal wrinkles; inside pale yellow, turning brownish-yellow. Leaves alternate, oblong, oblong-lanceolate or elliptic-oblong, 12-25 × 5-9 cm, acute at both base and apex, coriaceous, glabrous above, glaucous beneath, rusty-pubescent, ultimately glabrous beneath, lateral nerves 10-14 pairs, impressed above and quite stout and prominent beneath;



Fig. 2. *Litsea khasyana* Meissn.

petiole 6-25 mm long. Flowers in umbellate heads; heads above 8 mm across; bracts 6; peduncles 5-10 mm long. Perianth lobes 6, elliptic, 2.5-3.0 × 1.5-2.0 mm, gland-dotted, puberulous outside, glabrous inside, perianth tube 1.0-1.5 mm long, funnel shaped, green, hairy inside, densely puberulous outside. Male flowers: stamens 12, in 4 rows, outer 2 rows 2.5-3.0 mm long, exserted, inner 2 rows 1.5-2.5 mm long, glandular; filaments slender, hairy at base; anthers 1.0-1.5 mm long, 4 celled, upper 2 cells introrse, lower 2 cells partly latrorse; pistillode 0.5 mm long. Female flowers: staminodes 12, in 4 rows, outer 2 rows 3.5-4.0 mm long, exserted, inner 2 rows 2.5-3.0 mm long, glandular, hairy at base; pistil 3-4 mm long; style 1.8-2.5 mm long, glabrous; stigma spreading, ovary 0.8-1.2 mm long, globose, glabrous. Berries depressed globose, 15-18 × 8-11 mm, green when young, purple at maturity, glabrous, seated on persistent perianth tube, perianth tube saucer shaped, 12-16 mm in diameter, entire, dark brown, glabrous; fruiting pedicel 6-9 mm long, stout, swollen, yellowish brown, puberulous. Flowering and fruiting: March - September.

Ecology: Evergreen forests; up to 1000 m altitude.

Distribution: India, Myanmar.

Specimen examined: East Bengal, Griffith 4280 (CAL) and 4286 (K).

3. *Litsea umbellata* (Lour.) Merr., Philip. Jour. Sci. Bot. 14: 242. 1919.

(Fig. 3)

Hexanthus umbellatus Loureiro, Fl. Cochinch. 1: 196. 1790.

Litsea amara Blume, Bijdr. Fl. Ned. Ind. 11: 563 1826.

Litsea hexantha Jussieu, Ann. Mus. Par. 6: 212. 1805.

Tetranthera amara (Blume) Nees, Syst. Laur. 551. 1836.

Evergreen shrubs or small trees, 3-9 m tall, ca. 20 cm diameter. Branchlets ferruginous tomentose. Leaves alternate; petiole 6-8 mm, ferruginous tomentose; leaf blade elliptic or oblong-ovate, 6-12 × 3-4.2 cm, red-brown tomentum lower surface, bright green upper surface, pinninerved, lateral veins 8-15 pairs, vertically spreading, base obtuse, apex apiculate or acuminate. Umbels often in cluster of 3-6 at short branchlets, 4-flowered; short branchlets 2-3 mm,



Fig. 3. *Litsea umbellata* (Lour.) Merr.

stout, ferruginous tomentose; peduncle 2-3 mm, ferruginous tomentose. Male flowers: pedicel 1.0-1.5 mm long, ferruginous villous; perianth segments 6, lanceolate or ovate, unequal in size; fertile stamens 9; filaments villous, of 3rd whorls each with 2 sessile reniform glands at base; rudimentary pistil lacking. Fruit globose, ca. 6 mm in diameter, apiculate at apex, seated on shallowly discoid perianth tube; perianth segments often persistent; fruiting pedicel ca. 3 mm, thickened at apex, ferruginous tomentose. Flowering and fruiting: April-September.

Ecology: Thickets or sparse forests in valleys or on hills; between 300-1000 m altitude.

Distribution: India, China, Cambodia, Indonesia, Laos, Malaysia, Thailand and Vietnam.

Specimen examined: East Bengal, Collection date unknown, Griffith 4301 (CAL).

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