

THREE NEW RECORDS OF LAURACEAE FOR BANGLADESH

MOHAMMAD SAYEDUR RAHMAN*, SALEH AHAMMAD KHAN¹, GAZI MOSHAROF HOSSAIN¹,
KHANDAKAR KAMRUL ISLAM AND MOHAMMAD AMDADUL HOQUE

Bangladesh National Herbarium, Chiriakhana Road, Mirpur-1, Dhaka-1216, Bangladesh

Keywords: Angiosperms; Lauraceae; *Litsea*; New record; Bangladesh.

Abstract

During the floristic explorations conducted in 2022–2023 in different forest areas of the northeast region of Bangladesh, some specimens of the family Lauraceae were collected. The critical examinations of these specimens have revealed that they belong to the species *Litsea kurzii*, *Litsea stocksii*, and *Litsea variabilis* of the family Lauraceae. These species are new to the flora of Bangladesh. A detailed taxonomic description, including data on ecology, distribution, and use, a list of representative specimens examined, and photographs of each of these species have been provided.

Introduction

Taxonomists are relentlessly describing new extant species every year. In Bangladesh, the endeavour of exploring new plant species is continuing, and as a consequence, the taxonomists of this country have published a notable number of new records in the last few decades, though sporadically. Likewise, after the publication of the Encyclopedia of the Flora and Fauna of Bangladesh (EFFB) (Ahmed *et al.* 2008–2009, 2009; Siddiqui *et al.* 2007), around 281 new records of Angiosperms have been published, mostly with information on the specific distribution of the recorded taxa (Rahman and Hassan, 2017; Islam and Rahman, 2017; Sourav *et al.*, 2017; Ara and Hassan, 2018; Rahman and Uddin, 2018; Uddin, 2018; Alfasane *et al.*, 2019, 2020; Hossain *et al.*, 2020; Sultana and Rahman, 2021; Hossain *et al.*, 2022; Rahman *et al.*, 2022; Sultana *et al.*, 2022; Uddin and Uddin, 2022). It means that in the last 13 years, around 7.78% of the EFFB's record of 3611 species and 5.6% of Khan (1977)'s estimate of 5000 species of Angiosperms to exist within the territory of Bangladesh have been newly added to the flora of this country. As a result, the total number of Angiosperm species in Bangladesh has increased to 3892 through the addition of these additional records to the 3611 species listed in the EFFB. Now, if Khan's (1977) estimation of 5000 species to occur in Bangladesh is considered, the existence of around 1108 (22.16%) species and their status in this country is yet to be confirmed through intensive and extensive field explorations, and the plant taxonomists of this country are working towards this goal.

Recently, in 2022–2023, floristic surveys were conducted in the northeast region of Bangladesh. During these surveys, some specimens of angiosperms collected by the authors from the Lithitila forest area of Juri, Moulvibazar district, and Nijpat of the Jaintiapur hill areas of Sylhet district appeared to be different. These specimens were preliminarily identified as belonging to Lauraceae, but they did not match with any specimens of this family collected previously from this country or with the taxonomic description or key characters of any species of this family known or reported previously from Bangladesh. Following the rigorous examinations of these specimens, matching their characters with the relevant published descriptions, key

* Corresponding author, Email: sayedur27bcs@gmail.com

¹Department of Botany, Jahangirnagar University, Savar, Dhaka-1342, Bangladesh

characters, and specimens available at the local herbaria and the Herbarium of the Botanical Survey of India (CAL), and images of Lauraceae voucher specimens available on the websites of a few international herbaria (e.g., Kew Herbarium, K and Missouri Botanical Garden's Herbarium, MO), these unknown specimens were found to belong to three species of the genus *Litsea* Lam. of the Lauraceae. These species have never been mentioned or reported previously in any publication on the flora covering the present territory of Bangladesh. Hence, these three species have been confirmed as new to the flora of Bangladesh. The specimens are presently deposited at the Bangladesh National Herbarium (DACB) and the Jahangirnagar University Herbarium (JUH).

Materials and methods

Field surveys were conducted from December 2022 to May 2023 in the evergreen, semi-evergreen, and deciduous forests in the northeast region of Bangladesh that belong to the administrative boundaries of the Habiganj, Moulvibazar, and Sylhet districts of Sylhet division. These field surveys were carried out in all three major seasons of the year, mostly in the forests and scrub jungles of the hilly regions and foothills of Habiganj, Moulvibazar, and Sylhet districts. The freshly collected plant specimens were processed, dried, and preserved following standard herbarium techniques (Hyland, 1972; Jain and Raw, 1977).

The taxonomic identification of these specimens was confirmed by matching their characters with the relevant taxonomic literature (e.g., Devis and Cullen, 1965; Geesink *et al.*, 1981; Hooker, 1890; Prain, 1903; Mia, 2009; Li *et al.*, 2008; Ngernsaengsaruy *et al.*, 2011), voucher specimens housed at DACB and JUH, and clear images available on the websites of a few international herbaria (e.g., K, Muséum National d'Histoire Naturelle P, and MO). A taxonomic description of each species was prepared through careful observation and examination of the morphological characters of the representative specimens. Nomenclatural information was verified following recent taxonomic publications (Li *et al.*, 2008) and the nomenclatural databases of POWO (2023), WFO (2023), GBIF Secretariat (2023), and Tropicos (2023). The voucher specimens have been deposited at DACB and JUH.

Results and Discussion

The taxonomic identification of the specimens of *Litsea* collected from different forest areas of the Sylhet division of Bangladesh has been confirmed as *L. kurzii* King ex Hook.f., *L. stocksii* (Meisn.) Hook.f., and *L. variabilis* Hemsl. The following taxonomic descriptions of these species, including the key for their identification, have been produced based on the collected specimens and field notes recorded during field visits.

***Litsea* Lam. Encycl. 3: 574 (1792)**

Litsea Lam., with over 300 species, is one of the largest genera in the Lauraceae family, which makes up a significant portion of tropical forests. This genus is native to tropical Asia, Australia, Mesoamerica, Florida, Georgia, North Carolina, and Virginia in North America, and a few in the Pacific Islands. It is introduced into Comoros, KwaZulu-Natal, Mauritius, Rodrigues, Réunion, Seychelles, and Trinidad and Tobago (POWO, 2023; Ngernsaengsaruy *et al.*, 2011). In Bangladesh, the genus *Litsea* is known to be represented by 19 species (Heinig, 1925; Khan and Banu, 1969; Mia and Huq, 1986; Alam, 1988; Das and Alam, 2001; Ara *et al.*, 2007; Mia, 2009; Arefin *et al.*, 2011; Ara and Khan, 2015; Basak and Alam, 2015; Rahman and Hassan, 2017; Rahman and Uddin, 2018; Uddin and Hassan, 2018; Uddin, 2018; Rahim, 2019).

KEY TO THE SPECIES

- | | |
|---|----------------------|
| 1. Leaves glabrous beneath; peduncles 1–2 cm long; perianth tube cylindrical, glabrous, inserted to the half portion of fruit at maturity..... | <i>L. stocksii</i> |
| - Leaves pubescent beneath, peduncles 0.3–0.8 cm long, perianth tube shallow cup-shaped, pubescent, attached only at the base of the fruit..... | 2 |
| 2. Leaf blade obovate, sometimes elliptic-oblong, margins ciliate, secondary veins ≥ 12 pairs..... | <i>L. kurzii</i> |
| - Leaf blade oblong or oblong-lanceolate, margins aciliate, secondary veins ≤ 10 pairs..... | <i>L. variabilis</i> |

Litsea kurzii King ex Hook.f., Fl. Brit. India 5: 164 (1886), Type: India: South Andaman, 23.9.64. S. Kurz s.n. (IT: K, image!); Brandis, Ind. Trees: 537 (1906); Parkinson, Forest Fl. Andaman Islands: 226 (1923); Kosterm., Bibliogr. Laur. 836 (1964); Ngernsaengsaruy *et al.*, Thai For. Bull. (Bot.) 39: 40–119 (2011). *Malapoenna kurzii* Kuntze in Revis. Gen. Pl. 2: 572 (1891). **(Fig. 1)**

Small tree, up to 7 m tall; bark smooth, lenticellate, brown; young branchlets densely hairy. Leaves spiral, blade obovate, sometimes elliptic-oblong, 15–25 by 5.0–9.5 cm, apex acuminate, sometimes cuspidate or obtuse, base cuneate or slightly oblique, margins ciliate or partly ciliate, glabrous above, glaucous, pubescent beneath; petioles 1.5–3.5 cm long, densely reddish-brown pubescent; midrib shallowly sunken above, raised beneath, secondary veins 12–15 pairs, shallowly sunken adaxially, raised abaxially. Inflorescence umbel, towards the branchlets or in leaf axils, the cluster of umbels 0.5–1.0 cm in diam.; peduncles 0.3–0.8 cm long, pubescent; bracts 4–5, decussate or imbricate, suborbicular or broadly ovate, concave, 3–5 by 3–4 mm, outer ones coriaceous, pale green to yellowish and pubescent outside, inner ones membranaceous, hairy, marginally fimbriate. Male flowers 6–7 in each umbel; pedicels up to 3 mm long, densely



Fig. 1. *Litsea kurzii* King ex Hook.f. a) A fruiting branchlet.

pubescent; tepals 6, ovate, subequal, 2.5–4.0 by 1.5–2.0 mm, membranaceous, pubescent; stamens 9, unequal; anthers 0.5–1.0 mm long; filaments slender, 2–4 mm long, villose. Female flowers 4–6 in each umbel; pedicels 1.5–2.5 mm long, densely pubescent; tepals 6, ovate, pubescent; ovaries ovoid, 1–1.5 by 0.8–1.0 mm, glabrous; styles 2–3 mm long; stigma peltate; staminodes 9, villose. Fruits ovoid, 1.0–1.1 by 0.8–0.9 cm, green with white dots, slightly pointed towards the apex, turning dark purple and black when ripe, glabrous, glaucous; perianth tubes shallow cup-shaped, spreading up to 0.4 cm in diam., pubescent; fruiting pedicels thickened, 0.3–0.5 cm long, pubescent; infructescence stalks 0.5–0.6 cm long, pubescent; fruit clusters 4.0 by 2.5 cm with 10–16 fruit in each cluster. *Flowering and fruiting period*: April–September.

Ecology: Often by streams in the rain forest, dry evergreen forests.

Specimens examined: **Moulvibazar**: Lathitila beat, Goalbari, Juri, 17.8.2015. *K.K. Islam* 302 (DACB); 23.5.2023, *M.S. Rahman* 4915 (DACB).

Distribution: Native to Bangladesh, India (Andaman Is. and Nicobar Is.), Myanmar, and Thailand.

Use: The trunks of the plant are used for making house pillars by the local people.

L. kurzii King ex Hook.f. seems similar to *L. grandis* (Nees) Hook.f., from which it can be easily distinguished by its tomentose chartaceous leaves, densely reddish-brown pubescent petioles, pale-green to yellowish and pubescence bracts, perianth tubes of ca. 0.4 cm in diam, 0.3–0.5 cm long fruiting pedicel, and 0.5–0.6 cm long infructescence stalks, in contrast to the sparsely pubescent coriaceous leaf, puberulous petioles, reddish-brown and puberulous bracts, perianth tubes of ca. 1.1 cm in diam., 0.5–1 cm long fruiting pedicel, and 0.8–1.4 cm long infructescence stalk of *L. grandis*.

Litsea stocksii (Meisn.) Hook.f., *Flora of British India* 5:176 (1886). *Flora of Bombay* 2:539 (1906); Srinivas and Krishnamurthy, *J. Indian bot. Soc.* 95 (3 & 4): 169–182 (2016). *Tetranthera oblonga* var. *stocksii* Meisn., *Prodr.* 15(1): 205 (1864). *Cryptocarya neilgherrensis* Meisn. (1864), *L. josephi* S.M.Almeida (1990), *L. vartakii* M.R.Almeida (1989). **(Fig. 2)**

Tree, up to 18 m tall, petioles 2.0–2.5 cm long, leaves alternate, leaf blades oblong to lanceolate, apically acute, 8–20 by 3–6 cm, white glaucous beneath, glabrous, lateral nerves 8–13 pairs. Inflorescence umbel, monoecious, 2.5 cm long, greyish tomentose, male inflorescence 4–8 flowered and female inflorescence 4–5 flowered, arranged in 1 whorl; pedicels 1 cm long in male flower, 0.5 cm long female flower; In male flower stamens 8–10, introrse, unequal, 6 larger, different in length, 4 smaller, largest one c. 0.34 cm long, filament c. 0.24 cm long, sparsely hairy, anther c. 0.12 cm long. Ovary in female flower straight, 1.0–1.3 mm by 0.6–0.8 mm half inferior, covered with the hairy perianth; styles 0.2–0.3 mm long; stigma dilated, 0.2–0.3 mm by 0.2 mm. Fruiting peduncles 1–2 cm long at the young stage; pedicels up to 0.5 cm long; perianth tube 0.5–0.7 cm long, up to 0.2 cm in diam. at the distal part of the fruit. Berry oblong, 1.0–1.5 cm long, seated on cup-like perianth tube; young fruit almost completely inserted into perianth tube; half portion of fruit inserted into perianth tube at maturity. *Flowering and fruiting period*: May to January.

Ecology: In evergreen and semi-evergreen forests.

Specimens examined: **Moulvibazar**: Lathitila beat, Goalbari, Juri, 14.11.2022, *K.K. Islam* and *M.A. Hoque* 5132 (DACB). **Sylhet**: Nijpat, Jaintiapur, 29.12.2022, *S.A. Khan*, *G.M. Hossain* and *M.S. Rahman* 15 (JUH); 24.05.2023, *M.S. Rahman* 4931 (DACB).

Distribution: Native to Bangladesh and India.

Uses: The leaf is used to cure irritation of the urinary bladder and urethra; the root is used for the treatment of bruises; and the fruit and seed are used to cure sprains and itches (Bhuinya *et al.*, 2010).

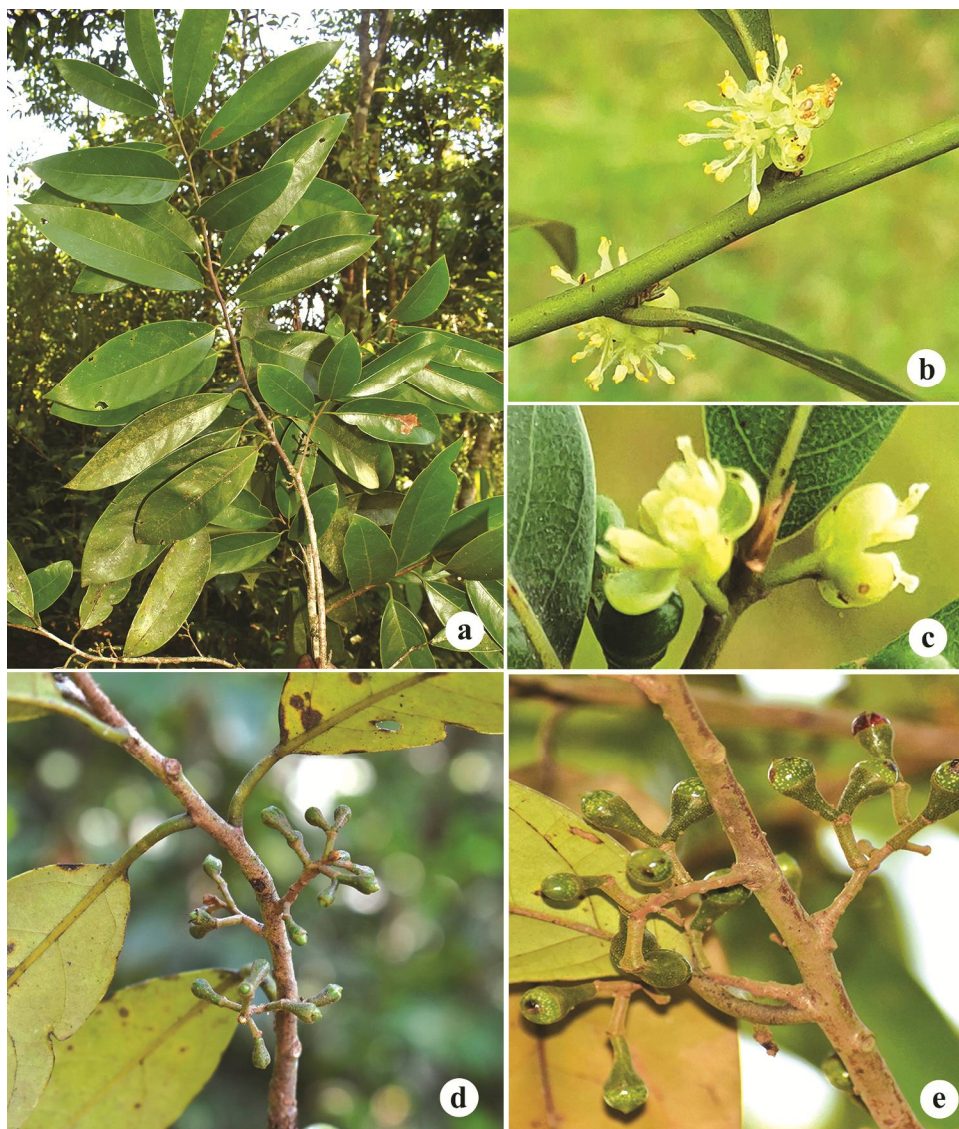


Fig. 2. *Litsea stocksii* (Meisn.) Hook. a) A branchlet showing habit, b) Male inflorescence c) Female inflorescence, d) Young infructescence and e) Mature infructescence.

L. stocksii (Meisn.) Hook.f. appears to be close to *L. laeta* (Wall. ex Nees) Hook.f., from which it differs by having 2.1–2.4 cm long petioles, an oblong berry inserted almost fully into the perianth tube or at least half porting of fruit, a fruiting pedicel c. 0.5 cm long with 1.8–2.0 cm long infructescence stalks, in contrast to the 0.6–1.6 cm long petioles, ovoid or ellipsoid berries inserted

into less than half of the perianth tube, 0.5–1.2 cm long fruiting pedicels, and less than 1.6 cm long infructescence stalks of *L. laeta*.

Litsea variabilis Hemsl., J. Linn. Soc. Bot. 26: 386 (1891); Liou Ho, Laurac. Chine & Indochine. 188 (1932); Allen, Ann. Missouri Bot. Gard. 25: 393 (1938); Kosterm., Bibliogr. Laur. 891 (1964); Ngernsaengsaruaay *et al.*, Thai For. Bull. (Bot.) 39: 40–119 (2011). **(Fig. 3)**

Small tree, up to 6 m tall; bark smooth, lenticellate, dark brown; branchlets sparsely pubescent or glabrous. Leaves spiral; leaf blades oblong or oblong-lanceolate, 8–14 cm by 2.5–4.5 cm, apically acute or acuminate, basally cuneate, marginally entire, chartaceous, dark green, glabrous adaxially, glaucous, sparsely pubescent, or glabrous abaxially; petioles 0.8–1.0 cm long, sparsely pubescent; midrib sunken above, raised beneath; secondary veins 6–10 pairs, shallowly sunken or flattened above, raised beneath, curving near margins; tertiary veins reticulate, distinct beneath. Inflorescences umbel, on reduced branchlets, umbels in the short cluster, in axils of leaves or along branchlets, clusters of umbels 0.7–1.0 cm long, 0.3–0.6 cm in diam.; peduncles 0.4–0.5 cm long, pubescent; bracts 4, decussate, suborbicular, or broadly ovate, concave, 2–5 by 2–3 mm, pubescent outside. Male flowers 3–4 in each umbel; pedicels 1–2 mm long, pubescent; tepals 6, elliptic or elliptic-oblong, subequal, 2.5–3.0 mm by 1.0–1.5 mm, membranaceous, hairy; stamens 8–12, unequal; anthers 0.5–1.2 mm long; filaments 1–2 mm long, villose, 2 glands at base or without glands; pistillode 1.5 mm long. Fruits globose, 0.7–1.1 cm in diam., green with white dots, turning black when ripe, glabrous, glossy; enlarged perianth tube, a shallow cup, 0.4–0.5 cm in diam., sparsely pubescent; fruiting pedicels 0.2–0.5 cm long, sparsely pubescent; shallow perianth tubes up to 0.2 cm in diam.; infructescence stalks 0.4–0.5 cm long, sparsely pubescent. *Flowering and fruiting period*: March–November.

Ecology: In the moist evergreen forest beside the canal.



Fig. 3. *Litsea variabilis* Hemsl. a) A branchlet with mature infructescence.

Specimens examined: **Moulvibazar:** Lathitila beat, Goalbari, Juri, 15.11.2022 K.K. Islam 5297 (DACB); 23.05.2023, M.S. Rahman 4897 (DACB).

Distribution: Native to Bangladesh, China, Laos, Thailand, and Vietnam.

Uses: The wood is heavy, slightly hard, and resistant to water and borer insects. It is used for furniture-making and house construction.

L. variabilis Hemsl. seems closer to *L. khasyana* Meisn, from which it can be clearly distinguished by its pubescent petioles and globose fruits, in contrast to *L. khasyana*'s glabrous petiole and ellipsoid or cylindrical fruit.

The images of all three species presented have been collected from mature plants naturally growing in the study area. The finding of these three species will make little contribution to the efforts to confirm the existence of more species in Bangladesh in addition to the current record of 3892 angiosperm species for this country.

Acknowledgement

The first author gratefully acknowledges the Bangladesh National Herbarium and Forest Department for providing financial and accommodation support, respectively.

References

- Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M. and Ahmed, A.T.A. (Eds). 2009. Encyclopedia of Flora and Fauna of Bangladesh. Vols. **9–10**. Asiatic Society of Bangladesh, Dhaka.
- Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (Eds). 2008–2009. Encyclopedia of Flora and Fauna of Bangladesh. Vols. **6–8, 12**. Asiatic Society of Bangladesh, Dhaka.
- Alam, M. K. 1988. Annotated Checklist of the Woody Flora of Sylhet Forests. Bulletin **5**, Plant Taxonomy Series, Bangladesh Forest Research Institute, Chittagong, pp. 01–153.
- Alfasane, M.A., Akhtar, A., Mehnaz, M., Ayesha, M. and Begum, Z.N.T. 2019. *Myriophyllum aquaticum* (Vell.) Verdc. (Haloragaceae): A new angiospermic record for Bangladesh. Bangladesh J. Plant Taxon. **26**(1): 127–130.
- Alfasane, M.A., Bhuiyan, R.A. and Eusufzai, M.K. 2020. *Utricularia geminiscapa* Benj. (Lentibulariaceae): A new angiospermic record for Bangladesh. Bangladesh J. Plant Taxon. **27**(1): 191–194.
- Ara, H. and Hassan, M.A. 2018. Three new species of Araceae from Bangladesh. Bangladesh J. Plant Taxon. **25**(2): 227–239.
- Ara, H. and Khan, B. 2015. Three new records of Lauraceae from Bangladesh. Bull. Bangladesh National Herb. **4**: 27–32.
- Ara, H., Manzur-ul-Kadir, M. and Khan, B. 2007. An Annotated Checklist of Lauraceae in Bangladesh. Bangladesh J. Plant Taxon. **14**(2): 147–162.
- Arefin, K., Rahman, M.M., Uddin, M.Z. and Hassan, M.A. 2011. Angiosperm flora of Satchhari National Park, Habigonj, Bangladesh. Bangladesh J. Plant Taxon. **18**(2): 117–140.
- Basak, S.R. and Alam, M.K. 2015. Annotated checklist of the tree flora of Bangladesh. Govt. of the People's Republic of Bangladesh. Bangladesh Forest Research Institute Chittagong, pp. 1–116.
- Bhuinya, T., Singh, P. and Mukherjee, K.K. 2010. Traditional uses of the Indian species of *Litsea* Lam. Phytotaxonomy **10**: 45–46.
- Das, D.K. and Alam, M.K. 2001. Trees of Bangladesh. Bangladesh Forest research institute, Chittagong, pp. 1–193.
- Devis, P.H. and Cullen, J. 1965. The identification of flowering plant families. Oliver and Boyd. Edinburgh and London, pp. 1–121.

- GBIF Secretariat, 2023. GBIF Backbone Taxonomy. Checklist dataset <https://doi.org/10.15468/39omei> accessed via <https://www.gbif.org/species/3033976> on 2023-04-30.
- Geesink, R., Leeuwenberg, A.J.M., Ridsdale, C.E. and Veldkamp, J.F. 1981. Thonner's analytical key to the families of flowering plants. Leiden University Press, The Hague/Boston/London, pp. 1–231.
- Heinig, R.L. 1925. List of plants of Chittagong Collectorate and Hill Tracts. The Bengal Government Branch Press, Darjeeling, India, pp. 1–84.
- Hooker, J.D. 1886. Flora of British India. Vol. 5. Bishen Singh-Mahendra Pal Singh, Dehra Dun, India, pp. 116–188.
- Hossain, G.M., Khan, S.A., Rahman, M.S. and Rahim, M.A. 2020. New records of three species and a variety of Angiosperms for Bangladesh. *Bangladesh J. Plant Taxon.* **27**(2): 251–260.
- Hossain, G.M., Khan, S.A., Shetu, S.S., Rahman, M.S. Ahmed, F.A. and Ali, M.H. 2022. Floristic survey of vascular plants in coastal district Bagerhat of Bangladesh. *Bangladesh J. Plant Taxon.* **29**(1): 43–78.
- Hyland, B.P.M. 1972. A technique for collecting botanical specimens in rain forest. *Flora Malesiana Bull.* **26**: 2038–2040.
- Islam, K.K. and Rahman, N. 2017. Two new records and one rediscovery of angiosperms for Bangladesh. *Bangladesh J. Plant Taxon.* **24**(2): 227–231.
- Jain, S.K. and Raw, R.R. 1977. *A Handbook of Field and Herbarium Methods.* Today and Tomorrows Printers and Publishers, pp. 1–157.
- Khan, M.S. 1977. Onagraceae. *In*: Khan, M.S. (Ed). *Flora of Bangladesh.* Fasc. **6**: 1–10. Bangladesh National Herbarium, BARC, Dhaka.
- Khan, M.S. and Banu, F. 1969. A taxonomic report on the angiospermic flora of Chittagong Hill Tracts-I. *J. As. Soc. Pak.* **14**(2): 217–222.
- Li, S., Li, X., Li, J., Huang, P., Wei, F., Cui, H. and Werff, H. 2008. Lauraceae. *In*: Wu, Z.Y., Raven, P.H. and Hong, D.Y. (Eds). 1994–2011. *Flora of China*, Vol. **7**. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis, pp. 102–254.
- Mia, M.K. 2009. Lauraceae. *In*: Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (Eds). *Encyclopedia of Flora and Fauna of Bangladesh.* Vol. **8**. Angiosperms: Dicotyledons (Fabaceae-Lythraceae). Asiatic Society of Bangladesh, Dhaka, pp. 332–364.
- Mia, M.M.K. and Huq, A.M. 1986. *Timber Plants of Bangladesh.* National Herbarium, Bangladesh Agricultural Research Council, Dhaka, Bangladesh, pp. 01–36.
- Ngernsaengsaruy, C. David J. Middleton, D.J. and Chayamarit, K. 2011. A revision of the genus *Litsea* Lam. (Lauraceae) in Thailand. *Thai For. Bull. (BOT.)* **39**: 40–119.
- POWO, 2023. *Plants of the World Online.* Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://www.plantsoftheworldonline.org>.
- Prain, D. 1903. *Bengal Plants.* Vol. **2**. Reprint 1981. Bishen Singh Mahendra Pal Sing, Dehra Dun, India, pp. 895–904.
- Rahim, M. 2019. *Taxonomy of the Family Lauraceae of Bangladesh.* MS Thesis. Unpublished. Plant Systematics & Biodiversity Laboratory, Department of Botany, Jahangirnagar University, Savar, Dhaka-1342.
- Rahman, M.O. and Hassan, M.A. 2017. New Angiospermic Taxa for the Flora of Bangladesh. *Bangladesh J. Plant Taxon.* **24**(2): 165–171.
- Rahman, M.S., Sultana, M. and Rahman, N. 2022. *Ageratum houstonianum* Mill. (Asteraceae)- A new angiosperm record for Bangladesh. *Bull. Bangladesh National Herb.* **8**: 103–106.
- Rahman, N. and Uddin, S.N. 2018. Seventy one new additions to the angiosperm flora of Bangladesh. *Bull. Bangladesh National Herb.* **6**: 49–70.
- Sourav, M.S.H., Halder, R., Kumar, P. and Schuiteman, A. 2017. *Eulophia obtusa* (Orchidaceae: Epidendroideae: Cymbideae) an addition to the flora of Bangladesh, with notes on its ecology and conservation status. *Kew Bull.* **72**: 19.

- Siddiqui, K.U., Islam, M.A., Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Rahman, M.M., Kabir, S.M.H., Ahmed, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (Eds). 2007. Encyclopedia of Flora and Fauna of Bangladesh. Vol. 11. Asiatic Society of Bangladesh, Dhaka, Bangladesh.
- Sultana, M. and Rahman, M.S. 2021. *Justicia comata* (L.) Lam. (Acanthaceae). A new angiosperm record for Bangladesh. Bull. Bangladesh National Herb. 7: 145–148.
- Sultana, M. and Rahman, M.S., Hoque, M.A. and Uddin, S.N. 2022. Discovery of three new records of angiosperm for Bangladesh from Sylhet Division. Bull. Bangladesh National Herb. 8: 93–102.
- Tropicos, 2023. Tropicos.org. Missouri Botanical Garden. <http://www.tropicos.org>, Missouri Botanical Garden-4344, Shaw Boulevard-Saint Louis, Missouri 63110, USA. Accessed on 10 June 2023.
- Uddin, M.S. and Uddin, S.B. 2022. *Struchium sparganophorum* (L.) Kuntze (Asteraceae): A New Angiosperm Record for the Flora of Bangladesh. Bangladesh J. Plant Taxon. 29(2): 431–435.
- Uddin, S.N. 2018. Discovery of seventy three New Records of vascular plants for Bangladesh from Chittagong and the Chittagong Hill-tracts Area. Bull. Bangladesh National Herb. 6: 1–47.
- Uddin, S.N. and Hassan, M.A. 2018. Vascular Flora of Chittagong and the Chittagong Hill Tracts. Vol. 2. Magnoliopsida Part 1 (Magnoliaceae-Lauraceae, <http://www.worldfloraonline.org/taxon/wfo-0000365695>. Accessed on: 05 May 2023.

(Manuscript received on 1 January 2023; revised on 5 June 2023)