

A TAXONOMIC ACCOUNT OF LYTHRACEAE J. ST.-HIL. IN BANGLADESH

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Abstract

This study has confirmed the occurrence and distribution of 28 species belonging to six genera of the family Lythraceae *s.str.* in Bangladesh. The species of this family are dominated by herbs (19), followed by trees (6) and shrubs (3). In this country, about 26 species are found as wild and two species as cultivated or planted. Each taxon has been represented with updated nomenclature, local name, English name, diagnostic characters, global distribution, occurrence in Bangladesh, and data on uses and representative specimens examined. 25 species are native to Bangladesh, and the other three have been introduced into this country. About 82.14% of the species are found to be economically useful. The threatened status of *Lagerstroemia tomentosa* has been assessed as Endangered, while both *Lagerstroemia parviflora* and *Woodfordia fruticosa* have been assessed as Vulnerable by IUCN Bangladesh.

Introduction

Lythraceae, commonly known as the loosestrife family, comprises 32 genera and over 620 species of trees, shrubs, and herbs worldwide. The family is primarily distributed in tropical regions, with relatively few species found in temperate zones. The diverse ecological habitats in Bangladesh support both wild and cultivated species of this family. Their ecological roles range from stabilizing soil and preventing erosion to supporting pollinators and aquatic biodiversity. Several species also hold ethnobotanical significance, being used in traditional medicine, ornamentation, and as sources of food or raw materials. Despite their ecological and economic importance, comprehensive studies on the taxonomy, distribution, and conservation status of these species in Bangladesh have been limited. Comprehensive studies on the taxonomy, distribution, and conservation status of these species in Bangladesh have been scarce, despite their ecological and economic significance.

The flora of Bangladesh has been explored through various kinds of taxonomic studies conducted in the 18th to 20th centuries. The taxonomic studies published so far in this country mostly include the brief taxonomic accounts, such as the checklists of a particular area or plant group by various authors (Heinig, 1925; Sinclair, 1956; Rahman and Yusuf, 1996; Alam, 1988; Rahman *et al.*, 2015; Haque *et al.*, 2018; Mia and Uddin, 2000; Ara *et al.*, 2007; Roy and Khan, 2020; Khanam *et al.*, 2020; Khan *et al.*, 2021a and b; Hossain *et al.*, 2022; Shetu *et al.*, 2022), as well as the detailed taxonomic study of a particular region (e.g., Uddin and Hassan, 2018). Hooker (1879), Prain (1903), Alam (1988) and Rahman (2009) described the species of Lythraceae of Bangladesh. However, these previous studies either do not cover the family Lythraceae or do not provide information on the exact locality, specific distribution and the specimens examined. Though 84 fascicles of 94 small- to moderate-sized families by the Bangladesh National Herbarium (Rahman and Khanam, 2003; Mia *et al.*, 2007; Khanam and Ara, 2008) have been published, these families do not include Lythraceae. It implies that no detailed taxonomic study on

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the Lythraceae family, including the detailed description and specific distribution of the species based on specimen examination, has been published in Bangladesh. This study aims to fill that gap by providing a detailed taxonomic account of 28 species under six genera of the family Lythraceae *s.str.* following the classification system of Cronquist (1988), which is currently in use in Bangladesh.

Materials and Methods

This study on the family Lythraceae was primarily based on the herbarium materials preserved in different herbaria of Bangladesh. Besides, all specimens of this family, housed in the Bangladesh Forest Research Institute Herbarium (BFRIH), Bangladesh National Herbarium (DACB), Dhaka University Salar Khan Herbarium (DUSH), Chittagong University Herbarium (HCU), and Jahangirnagar University Herbarium (JUH), were examined during 2022-2024. Relevant floristic works and published literature on this family of Bangladesh published by various researchers have been consulted during the study. Additionally, species-specific field visits were carried out across various districts of Bangladesh to collect representative plant specimens. The collected specimens were prepared, dried, and preserved following standard herbarium techniques and procedures as outlined by Bridson and Forman (1989), and Singh and Subramaniam (2008). All new specimens have been deposited in the Jahangirnagar University Herbarium (JUH) for future reference.

The taxonomic identification of the specimens was verified by comparing their morphological characteristics with high-quality images of Lythraceae voucher specimens available on the websites of several international herbaria (e.g., K, P, and MO), as well as through consultation of relevant taxonomic literature (e.g., Hooker, 1879; Prain, 1903; Rahman 2009). Nomenclatural information was confirmed using authoritative online databases, including Plants of the World Online (POWO, 2025), World Flora Online (WFO, 2025), the Global Biodiversity Information Facility (GBIF Secretariat, 2023), and Tropicos (2025), along with the most recent taxonomic publications.

Taxonomic treatment

This study represents a total of 28 species belonging to 6 genera of the Lythraceae family of Bangladesh. Among these species, the highest number of species were herbs (19), which were followed by trees (6) and shrubs (3). About 26 species were found as wild, and 2 species were cultivated or planted in this country. Each species has been represented with a local name, distinguished characters, flowering (Fl.) and fruiting (Fr.) times, occurrence in Bangladesh, global distribution, use and representative specimens examined. The list of genera and species is arranged alphabetically.

***Ammannia L.*, Sp. Pl. 1: 119 (1753).**

1. ***Ammannia auriculata*** Willd. (Hort. Berol. [Willd.]), 1: 7, pl. 7 (1803); —TYPE: Egypt: Aegypt prope Rosette, Anonymous s.n., LT, designated by Graham, J. Arnold Arbor. 66: 403 (1985). Rani *et al.*, Bangladesh J. Plant Taxon. 31(1): 15-24 (2024).

Local name: Earleaf ammannia. *English name:* Eared Redstem (GBIF Secretariat 2023).

An annual erect herb. Leaves opposite, lanceolate, 15–30 mm × 0.8–12 mm, glabrous. Inflorescence cymes, laxly flowered, 8–10 flowers per inflorescence. Flowers 1.2–2 × 1.2–1.8 mm. Fruit is a capsule with a persistent erect calyx, 1.5–1.8 mm long. Fl. & Fr.: August–December.

Ecology: In wet places, marshes, river banks and rice fields (Cook, 1996).

Use: Use as a counter-irritant for rheumatic pains (Cook, 1996).

Occurrence in Bangladesh: It seems to be native to Bangladesh (POWO, 2025). It occurs in Dinajpur and Rajshahi districts.

Global Distribution: The species is native to East, West, West-Central, and South tropical Africa, temperate and tropical Asia, Northern America, and Southern America. It is introduced Eastern temperate Asia, Kirgizistan, Northern- and Western Australia, Queensland, Southeastern Europe, Sardegna and Hawaii (POWO, 2025; WFO, 2025).

Specimens examined: **Dinajpur:** Dinajpur, 11 viii 1977, *Shahera Begum* 14934 (DACB); **Rajshahi:** South side of Amalihala, 12 x 1977, *Md. Nazrul Islam* 73 (DACB 14933).

2. ***Ammannia baccifera*** L. Sp. Pl. 1:120 (1753); Hook, f., Fl. Brit. India, 2:569 (1879); TYPE: China, Osbeck, Herb. Linn.-156.4, LT, designated by Graham, S.A.T., J. Arnold Arbor. 66: 405 (1985). Prain, Beng. Pl. 1:500 (1903); Heinig, List Pl. Chitt.: 30 (1925); Rahman in Ahmed *et al.*, (ed.), Encycl. Fl. Fauna Bangladesh 8:409 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1):879 (2018).

Local names: Dadmari.

English name: Monarch Redstem.

An annual, hygrophilous herb. Leaves sessile, obovate, obovate-lanceolate or ovate-oblong, 1–48 × 0.4–8.5 mm, glabrous. Inflorescence axillary cymes, ± sessile, glomerular or solitary. Flowers up to 1mm long. Capsules slightly exceeding the hypanthium, 1.2–1.6 (–2) mm in diameter. Fl. & Fr.: April–October.

Ecology: Moist place, river banks and rice fields.

Use: Use as a counter-irritant for rheumatic pains (Cook, 1996).

Occurrence in Bangladesh: Native to Bangladesh (POWO, 2025). It is found throughout the country (Rahman, 2009).

Global Distribution: Native to East, Northeast, South, West, and West-Central tropical Africa, Northern and Southern Africa, the Western Indian Ocean, and temperate and tropical Asia. It is introduced to Eastern Asia, Indo-China, Southeastern Europe, and the Caribbean Islands (POWO, 2025; WFO, 2025).

Specimens examined: **Bandarban:** Lama, Kalinga beel, 19 xii 1990, *Mia et al.*, M. 26 (DACB); **Chandpur:** Chandpur, 10 ii 1965, *M.S. Khan* 545 (DUSH); **Chattogram:** Sitakundu, Baraiyadhala, 06 iii 2017, *Tajul et al.*, TOK-3917 (DACB).

3. ***Ammannia multiflora*** Roxb., Fl. Ind. 1: 447 (1820); Hook. f., Fl. Brit. India, 2: 570 (1879); Prain, Beng. Pl.1:501 (1903); Heinig, List Pl. Chitt. 30 (1925); Rahman in Ahmed *et al.*, (ed.), Encycl. Fl. Fauna Bangladesh 8: 410 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 880 (2018).

Local name: Jerry-jerry.

English name: Joy Weed.

An annual erect herb, glabrous. Leaves sessile, opposite, elliptic, linear-lanceolate to oblanceolate, 15–39 × 2–5 mm. Inflorescences in axillary cymes, peduncles 0.5–4.8 mm. Flowers 4–7, 0.6–1.5 mm long. Fruit a capsule. Fl. & Fr.: July–October.

Ecology: Moist places, riverbanks, rice fields.

Use: *A. multiflora* is often found as a weed in cultivated land. This species has shown potent in vitro antimalarial activity (Upadhyay *et al.*, 2011).

Occurrence in Bangladesh: It is native to Bangladesh (POWO, 2025). It occurs in Chattogram, Dhaka, and Mymensingh (Rahman, 2009).

Global Distribution: Native to East, Northeast, and West-Central tropical Africa (Tanzania, Sudan, Egypt, Zaire), Western Indian Ocean (Comoros, Madagascar); temperate and tropical Asia, Australasia and Caroline Is. Extinct in Socotra (POWO, 2025; WFO, 2025).

Specimens Examined: **Bagerhat:** Shoronkhola, Supoti, 26 xii 2019, *Mohammad Amdadul Hoque* MAH. 65 (DACB); **Bandarban:** Lama forest range, 10 x 2017, *Hossen et al.*, I.H. 2998 (DACB); **Manikgonj:** Ghior, *Pingky Rani & M.A. Rahim s.n.*, 2 ix 2023, 10184 (JUH).

Note: It is cited as a synonym of *Ammannia auriculata* Willd., Hort. Berol.: Tab. 7. (1803) in the GBIF secretariat (2023).

4. ***Ammannia verticillata*** (Ardr.) Lam., Encycl. [J. Lamarck & al.] 1(1): 131 (1783); Rahman in *Ahmed et al.*, Encycl. Fl. Fauna Bangladesh 8: 410 (2009).

Local name: Banmarich.

English name: Toothcup.

An annual glabrous herb. Leaves opposite, decussate, sessile, linear, lanceolate and scabrid, 5–8 × 1.5–2 mm broad. Inflorescence axillary cyme, sessile. Flowers 2 mm long, pedicels 0.4–2.8 mm long, petals absent. Fruit a capsule, globose. Fl. & Fr.: July–October.

Ecology: Moist and marshy places, river banks, sometimes standing in temporary water and paddy fields.

Use: No information is available.

Occurrence in Bangladesh: It is introduced to Bangladesh. Cox's Bazar, Dhaka, Patuakhali.

Global Distribution: Native to temperate and tropical Asia, and Eastern Europe. Introduced into the Indian Subcontinent, and Middle, Southeastern, and Southwestern Europe (POWO, 2025).

Note: It is cited as a synonym of *Ammannia baccifera* L. (GBIF Secretariat, 2023). *Cornelia verticillata* Ard. (1764) and *Ditheca verticillata* (Ard.) Miq. (1856) are its homotypic synonyms (POWO, 2025).

Specimens examined: **Cox's Bazar:** Teknaf, Rajarchara, 12 ii 1993, *Khan et al.*, K. 8940 (DACB); **Dhaka:** Savar, 5 iv 1970, *Nazim* 70 (DUSH); **Patuakhali:** Kolapara, Kuakata, 4 i 1980, *Khan et al.*, K. 5939 (DACB).

Cuphea P.Br., Civ. Nat. Hist. Jamaica: 216 (1756).

1. ***Cuphea carthagenensis*** (Jacq.) J.F. Macbr., Publ. Field Mus. Nat. Hist., Bot. Ser. 8(2): 124(1930); —TYPE: Brazil, s.coll. K000532968, (NT: K). Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 882 (2018).

Local Name: Panica.

English Name: Tarweed; Colombian Waxweed.

Woody herb, much-branched. Leaves opposite, short petiolated, elliptic, ovate or obovate. Inflorescence solitary, axillary cyme, 4–6.5 × 1–3 mm. Flower campanulate, pubescent with glandular hair. Fruit a capsule, globose, 3–4.8 mm long. Fl. & Fr.: December–April.

Ecology: Moist places.

Use: It is used to treat unspecified medicinal disorders, as a medicine and for fuel. It is mostly used to treat diseases like hypertension, cardiovascular diseases, fever, and viral diseases like herpes. It is an agricultural weed in both native and introduced ranges.

Occurrence in Bangladesh: Introduced into Bangladesh. Khagrachari, Rangamati, and Sylhet districts.

Global Distribution: Native to the Indian Subcontinent (Nepal) and Northern and Southern America. It is introduced to Africa (Macaronesia, Guinea, Liberia & Cameroon), temperate Asia (Southeast China, Taiwan, and Nansei-shoto of Japan), tropical Asia (Indian Subcontinent except

Nepal, and Malesia), Australasia (New South Wales, and Queensland), Northern America (USA), Pacific Islands and Puerto Rico (POWO, 2025; WFO, 2025).

Note: Lythrum carthagenense Jacq. (1760) is its homotypic synonym.

Specimens examined: Khagrachari: Baghaichari, Machalong Reserve Forest, 18 xii 2017, *Kawsar et al.*, KH. 7997 (DACB); *Rangamati:* Barkal, Sakrechari forest, 14 i 2017, *Jayanta et al.*, JCR. 2146 (DACB-66989); Barkal reserve forest, east side hill, 10 i 2016, *K.K. Islam*, KKI. 2073 (DACB); Barkal reserve forest, 6 viii 2017, *Joyanta et al.*, JCR. 6129 (DACB).

2. **Cuphea hyssopifolia** Kunth, Non. gen. Sp. 6: 199 (1823); —TYPE: Mexico, Veracruz, near Jalapa, *Humboldt and Bonpland* 4435, no date (HT: F, P, microfiche 149: III 4), V0062436F (IT, F), Mexico, *Bonpland A.J.A.* 4435 (P01901635) (IT, P), Mexico, *Bonpland, A.J.A.* 4435 (P00679420) (LT, P). Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 882 (2018).

Local name: Cuphea.

English name: Mexican Heather; False Heather.

A small shrub. Leaves opposite, sessile, decussate, lanceolate. Flowers solitary, and pedicelate. Fruit a capsule, as long as the calyx tube, included. Fl. & Fr.: July-December.

Ecology: Cultivated in gardens and house, grows along the edges of creeks and rivers in moist conditions.

Use: The plant is harvested from the wild for local use as medicine and insecticide. It is often grown as an ornamental in the tropics. In the temperate zone it can be grown as a summer bedding plant. It has environmental uses and for food (POWO, 2025).

Occurrence in Bangladesh: Introduced into Bangladesh. Recorded from Bogura, Chattogram, Cox's Bazaar, Khagrachari, and Rangamati.

Global Distribution: Native to Northern America (Mexico) and Central America. Introduced into Morocco, tropical Asia (Indian Subcontinent, Thailand, and Malesia). New Zealand, the Southeastern U.S.A., Pacific, and Southern America (POWO, 2025; WFO, 2025).

Note: Parsonsia hyssopifolia (Kunth) Standl. (1924) is its homotypic synonym (POWO, 2025).

Specimens examined: Bogura: Shibgonj, Mokamtola, 3 viii 2023, *Pingky Rani* 10207 (JUH); **Chattogram:** Haidgaon, Patia, 3 iv 2017, *Shah Alam* SA. 506 (DACB); Rawjan, Andher Manik, 5 x 2017, *Moniruzzaman et al.*, MAK. 5917 (DACB); Sitakundo Eco Park, 1 x 2016, *Tajul et al.*, TOK.1271 (DACB).

Lagerstroemia L., Syst. Nat. ed. 10, 2: 1068 (1759).

1. **Lagerstroemia duperreana** Pierre ex Gagnep., in Leconite, Not. Syst. (Paris) 3: 358 (1918); —TYPE: Unknown country, Azie vaste land, Pierre, J.B.L. 4998 (L0010051), September 1869, & unknown locality, Pierre, J.B.L. 4998 (L05847430), September 1869 (ST, L); Viet Nam, Ad Bao Chang, Pierre, J.B.L. 4998 (A00068489), September 1865; and Lao PDR, Thorel, M. Le. Dr. 2241 (BM000944598), 1866-1868 (IST, BM, A). *Lagerstroemia thorelii* Gagnep., in Leconite. Not. Syst. 3: 362 (1918); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 416 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 887 (2018).

Local name: Jarul, Barsha.

English name: Thorel's Crape Myrtle.

A medium-sized tree. Leaves opposite, glabrous, petiolated, elliptic, simple, 7–11 × 4–6 cm. Inflorescence axillary panicle. Flower 3–4 cm in diameter, purple or whitish-pink colour. Fruit a capsule, oval-shaped, 1-1.3 cm long, surrounded by persistent calyx. Fl. & Fr.: July-September.

Ecology: It is cultivated on high land.

Use: Used as an ornamental plant in the gardens and as an avenue tree in the streets (Rahman, 2009).

Occurrence in Bangladesh: Native to Bangladesh, it is commonly found throughout the country (Rahman, 2009).

Global distribution: Native to tropical Asia (Bangladesh, Cambodia, India, Lao PDR, Thailand and Viet Nam (POWO, 2025; WFO, 2025).

Specimens examined: **Chattogram:** Bariadhala, Hazarikhill, 30 x 1978, *Huq et al.*, H.3992 (DACB); **Dhaka:** Dhaka University Botany Garden, 4 viii 1980, *Momtaz Begum* 437 (DACB); Dhanmondi Kakepar Uddan, 1 ix 1988, *Rezia Khatun* 379 (DACB).

2. **Lagerstroemia indica** L., Sp. Pl. ed. 2,1: 734 (1762);—TYPE: Rumphius, "Tsjinkin", Herb. Amboin. 7: 61, pl. 28, f.1 (1755), LT, designated by Merrill, Interpr. Herb. Amboin. 381 (1917); Hook. f., Fl. Brit. India. 2: 575 (1886); Prain, Beng. Pl. 1: 504 (1903); Heinig, List Chittagong: 30 (1925); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 412 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 884 (2018).

Local name: Choto Jarul.

English name: Crepe Myrtle.

A large shrub or small tree. Leaves sessile or shortly petiolated, elliptic, obovate, glabrous, 5.5–15 × 5–38 mm. Inflorescence a panicle, dense-flowered, showy. Flowers purple, 3–3.5 × 5.5–5.7 cm. Fruit a capsule, 8–14 mm × 8–11 mm, 6-valved. Fl. & Fr.: June–November.

Ecology: Semi-shaded place, wild or cultivated.

Use: Bark and leaves are used as hydragogue, febrifuge, purgative, and stimulant (Rahman, 2009).

Occurrence in Bangladesh: It is native to Bangladesh; it occurs throughout the country (Rahman, 2009).

Global Distribution: Native to temperate (China, Taiwan) and tropical Asia (Indian Subcontinent, Indo-China). Introduced into temperate Asia (Korea, Tadjikistan, Turkmenistan, Uzbekistan), tropical Asia (Indian Subcontinent, Andaman Is. Nicobar Is., Lao PDR, Thailand, Maluku, Philippines), North-Central, Northeastern, South-Central, Southeastern and Southwestern U.S.A. and the Pacific (POWO, 2025; WFO, 2025).

Specimens examined: **Chattogram:** Chattogram University Campus, 29 viii 2016, *Tajul et al.*, TOK. 0116 (DACB); **Dhaka:** Dhanmondi Lakepar, 1 ix 1988, *Rezia Khatun* RK.379 (DACB); R/A collected from the Island of Rode no.2, 31 vii 1991, *Rezia Khatun* RK 674 (DACB).

3. **Lagerstroemia macrocarpa** Wall. *ex* Kurz., J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42(4): 234 (1874); —TYPE: Thailand, Arthur Francis George Kerr 678 (BM000944600) (HT, BM). Hook, f., Fl. Brit. India. 2: 575 (1886); Prain, Beng. Pl. 1: 504 (1903); Heinig, List Chittagong: 30 (1925); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 412 (2009), Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 884 (2018).

Local name: Betua Jarul.

English name: Not known.

A medium-sized tree. Leaves ovate–oblong, shortly petiolated. Flowers light purple in colour and large, 3.3–7.0 cm in diameter. Fruit a capsule, oblong, 2–4 cm long, woody, calyx persistent, dehiscent into 6 valves. Fl. & Fr.: June–November.

Ecology: In mixed and open forests.

Use: *Lagerstroemia macrocarpa* produces hardy, reddish wood widely used for furniture and other purposes. Its timber is highly prized for use in making building pillars and boards. Wood is used for agricultural implements, country boats, and other construction purposes (Rahman, 2009).

Occurrence in Bangladesh: Native to Bangladesh, it occurs in Chattogram, Dhaka, and Rangamati districts.

Global Distribution: Native to tropical Asia (Bangladesh, Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam (POWO, 2025; WFO, 2025). The GBIF Secretariat (2023) reports it additional occurrence in China and the USA.

Specimens examined: **Chattogram:** Sarkarigona, Chandaish, 5 xii 1908, *Sukla et al.*, 10942 (BFRIH); **Dhaka:** Savar, JU Campus, 18 vii 2023 *Pingky Rani* 10180 (JUH); 15 viii 2023 *Pingky Rani* 10181 (JUH); **Rangamati:** Dabhuachari, Rangamati sadar, 29 v 1908, *M.K. Alam* 10471 (BFRIH); RRI Campus, 2 viii 1997, *Rahman and Chandan* 1678 (HCU).

4. ***Lagerstroemia parviflora*** Roxb., Pl. Coromandel, t. 66 (1795); —TYPE: India, *W. Roxburgh* s.n. (BM000521782). Prain, Beng. Pl. 1: 503 (1903); *Kanjilal et al.*, Fl. Assam 2: 310 (1940); *Lagerstroemia parviflora* Roxb. var. *benghalensis* C.B. Clarke in Hook. F., Fl. Brit. Ind. 2: 576 (1879); *Rahman in Ahmed et al.*, Encycl. Fl. Fauna Bangladesh 8: 412 (2009); *Uddin and Hassan*, Vas. Fl. Chittagong and CHT. 2 (1): 885 (2018).

Local name: Sidha Jarul.

English name: Crepe Flower.

A medium-sized tree. Leaves elliptic, oblong-ovate, 5.5–12 × 2–4.5 cm, pubescent. Inflorescence axillary or terminal cyme, 2–6 flowered, pubescent. Flowers small, less than 1 cm, petals white, pubescent. Fruit a capsule, 3–4 valved. Fl. & Fr.: April–December.

Ecology: Deciduous and mixed forests.

Use: Agricultural implements, carts, doors, window frames, rafters, and house pillars are examples of typical usage. Elephants consume this species' bark. Black dye is made from the tannins in the bark. The tree yields edible gum with a sweet flavour. Due to its exceptional charcoal production, it is also a great fuel tree.

Occurrence in Bangladesh: Native to Bangladesh, it occurs in the forests of Chattogram, Cumilla, Dhaka, Dinajpur, Panchogar, Sylhet, and Tangail districts (*Rahman*, 2009).

Global Distribution: Native to tropical Asia (Bangladesh, Bhutan, Nepal, Pakistan, and Myanmar (POWO, 2025; WFO, 2025). GBIF Secretariat (2023) reports its additional occurrence in Nigeria, Brazil and Panama.

Note: *Murtughas parviflora* (Roxb.) Kuntze (1891) is its homotypic synonym (POWO, 2025). Its current status in Bangladesh is VU (*Saqee*, 2024).

Specimens examined: **Chattogram:** Korerhat, Ramgarh, 7 x 1970, *Khan and Huq* K. 2068 (DACB); Chattogram Hill Tracts, 6 v 1994, Ramgarh, 26367 (DACB); BFRI, Near Mosque area, *Sydul Hossain* 9519 (BFRIH); **Savar:** JU Campus, 5 viii 2007, *M.A. Rahim* 10210 (JUH); Sripur, 20 iii 1964, *D.K. Das* 344 (BFRIH); **Khagrachari:** Ramgarh, 31 xii 1985, *Huq and Mia* H. 7305 (DACB); **Mymensingh:** Dokhla, 17 ix 1980, *Mia and Rahman* M. 282 (DACB).

5. ***Lagerstroemia speciosa*** (L.) Pers., Syn. 2: 72 (1807); —TYPE: LINN 939.1, cited as Lectotype in Linnaean Plant Names and their Types. *Uddin and Hassan*, Vas. Fl. Chittagong and CHT. 2 (1): 886 (2018); *Lagerstroemia flos-reginae* Retz. Observ. Bot. 5:25 (1779); *Clarke in Hook. f.*, Fl. Brit. India. 2: 577 (1886); Prain, Beng. Pl. 1: 504 (1903); *Heinig*, List Chittagong: 30 (1925); *Kanjilal et al.*, Fl. Assam 2: 311 (1940); *Sinclair*, Bull. Bot. Soc. Beng. 9 (2): 95 (1955); *Rahman in Ahmed et al.*, Encycl. Fl. Fauna Bangladesh 8: 415 (2009).

Local name: Jarul, Pannya Jarul.

English name: Queen Flower.

A medium-sized, deciduous tree. Leaves simple, opposite, lanceolate, elliptic, oblanceolate, oval, 8–18 × 3–8 cm, glabrous. Inflorescence axillary or terminal panicle. Flowers showy, 6.5–7.5

cm in diameter, purple or whitish purple colour, pubescent. Fruits capsule, ellipsoidal or subglobose. Fl. & Fr.: April-August.

Ecology: Forest edges of forest streams, swamps, ditches and river banks. It is also planted on the roadsides, gardens and in parks.

Use: Wood is strong and fairly durable; it is used for carts, making boats, doors, windows, and house posts. The root is considered an astringent, stimulant, and febrifuge. In Andaman, the fruit is applied to the treatment of aphthae of the mouth. It was used as an avenue tree.

Occurrence in Bangladesh: Native to Bangladesh, it is found throughout the country (Rahman, 2009).

Global distribution: Native to temperate (China South-Central), and tropical Asia (Indian Subcontinent, Indo-China and Malesia and Papuasias). Introduced into Africa (Comoros), Pacific (Marianas, Fiji, Vanuatu) and Southern America (Cuba, Dominican Republic, Haiti, Jamaica, Leeward Is.), Puerto Rico, Trinidad-Tobago and Venezuelan Antilles) (POWO, 2025; WFO, 2025).

Note: *Lagerstroemia munchhausia* L. ex Forsyth f. (1794), *Munchausia speciosa* L. (1770) and *Murtughas speciosa* (L.) Kuntze (1891) are the homotypic synonyms. Jimbo, T. (POWO 2025). It is Least Concern in Bangladesh (Saqee, 2024).

Specimens examined: **Bandarban:** Naikhyongchari, Gumdum, 7 iv 2017, *Ukchain Chakma* UC.164 (DACB); Rowangchari, 17 v 2017, *Uho et al.*, 200 (DACB); Khaiyachalang Forest Range, 24 xi 2016, *Hossen et al.*, IH.1999 (DACB); **Chattogram:** Chattogram Hill Tracts: Rangupani, 6 vi 1969, *M.S. Khan* 1742 (DUSH); Champatali, 30 iv 1970, *D.K. Das and M.K. Alam* 3926 (BFRIH); Sitakundo, 25 vi 1984, *D.K. Das* 6401 (BFRIH).

6. ***Lagerstroemia tomentosa*** Presl, Bot. Bemerk.:142. (1844). —TYPE: India. Botany L 0940360 India: BM000944615, L0940360, P05141602 (IT: BM, L, P), Myanmar: A00003404, GH00003405 (IT: A, GH). Clarke in Hook. f., Fl. Brit. India. 2: 578 (1886); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 416 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 888 (2018).

Local name: Not known.

English name: Not known.

A deciduous tree. Leaves opposite, or semi-alternate, oblong, 5–12 × 3 – 5.5 cm. Inflorescences terminal, peduncled cymes. Flowers 6-merous, large, 2–2.5 × 2–3 cm. Fruits capsule, ovoid, 0.8–1.2 × 0.6–1 cm, opening by 6 valves, tomentose. Fl. & Fr.: August-November.

Ecology: Mixed forest.

Use: Wood is used to make matches, bows, spears and cart wheels (Rahman (2009).

Occurrence in Bangladesh: native to Bangladesh. It has been raised in Mascumba forests of the Chattogram Hill Tracts (Das and Alam, 2001).

Global Distribution: Native to temperate (China South-Central) and tropical Asia (Bangladesh, India, Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam) (POWO, 2025; WFO, 2025).

Note: K000729730, M0274958/795435/428611 and PRC453995 are cited as types without any category (GBIF Secretariat 2023). *Murtughas tomentosa* (C. Presl) Kuntze (1891) is its homotypic synonym. Its current status in Bangladesh is Endangered (EN) (Saqee, 2024)

Specimen examined: **Tangail:** Madhupur, 19 viii 1990, *M.K. Alam and Bashak* (BFRIH).

Lawsonia L., Sp. Pl (1753).

1. **Lawsonia inermis** L., Sp. Pl.: 349 (1753); —TYPE: 1. —TYPE: Senegal, Dedit, R. s.n. (K000310554), January 1825 (HT, K). Sinclair, Bull. Bot. Soc. Beng. 9 (2): 95 (1955); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 417 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 889 (2018); *Lawsonia alba* Lam. (1789); Hook. f., Fl. Brit. India. 2: 575 (1886); Prain, Beng. Pl. 1: 502 (1903); Heinig, List Chittagong: 30 (1925).

Local name: Mehendi.

English name: Hena; Camphire.

A leaf-sheathing shrub or a small tree. Leaves opposite, glabrous, elliptic, obovate, or ovate, 1.3–4.5 × 0.5–2 cm. Inflorescence terminal, cymes, 4–20 cm long. Flowers 4–6 × 3–5 mm, pedicels 1.8–3.7 mm long. Fruit capsule, 3–5 mm long. Fl. & Fr.: June–December.

Ecology: High land where it is cultivated.

Use: Traditionally, the leaves have been used to treat wounds and ulcers and to reduce inflammation of the skin (Nadkarni 1994). Additionally, its leaves have been used as a haematinic and expectorant to treat fevers, hemicranias, cephalalgia, leukoderma, and ophthalmia (Warrier *et al.*, 2004).

Occurrence in Bangladesh: It is introduced into Bangladesh. It is found throughout the country (Rahman, 2009).

Global Distribution: Native to East tropical Africa (Kenya, Tanzania) and Northeast tropical Africa (Djibouti, Eritrea, Ethiopia, Somalia, Western Asia (Oman, Saudi Arabia, Yemen); tropical Asia (India, Pakistan) and Southern America (Panamá). Introduced into Africa; temperate (Tadzhikistan, Iraq, Lebanon-Syria, Palestine) and tropical Asia (incl. Bangladesh), Northern America (Mexico); Marianas and Southern America (POWO, 2025; WFO, 2025).

Note: *Dedit, R. 1825* (K000310554), collected from Senegal, and *Baron, R. 1887* (K000310555), collected from Madagascar are cited as the types in GBIF Secretariat (2023), without any category. *Lawsonia alba* Lam. (1789) is its homotypic synonym (POWO 2025).

Specimens examined: **Bandarban:** Rawangchari, Rawangchari forest, 4 xi 2016, *Hossen et al.*, IH. 1454 (DACB); **Chattogram:** Anawara, Parkir Chor Coastal Area, 5 xii 2016, *Tajul et al.*, TOK. 2281 (DACB); A.G. Mill, 25 vi 1976, *D.K. Das*, s.n. (BFRIH); Sandip, Gachua, 4 vi 2010, *Noor Hassan Sajib* 257 (HCU); **Cox's Bazar:** Chakaria, Fashiakhali, 10 iv 2017, *Niyamul et al.*, NK. 4337 (DACB).

Rotala L., Mint. 2: 143 (1771).

1. **Rotala cordata** Koehne, Bot. Jahrb. 1:172 (1881); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 419 (2009). —TYPE: Thailand: *Hosseus, C.C.*, 275 (1904), M-0168536 / 566286 / 243558 (HT: M); L0010069 (IT: L).

Local name: Red stem plant.

English name: Not known.

An annual, terrestrial herb. Leaves sessile, decussate, lanceolate and oblong, 1.5–2.5 × 3–7 mm. Inflorescence solitary, axillary or lateral branches or on main stem. Flowers sessile. Fl. & Fr.: August–April.

Ecology: Sides of streams and waterfalls.

Use: Primarily used as an aquarium plant, for aquascaping, and as a midground plant.

Occurrence in Bangladesh: It is native to Bangladesh. It is collected from Dhaka, Dinajpur, Mymensingh, Narsingdi and Sylhet districts (Rahman, 2009).

Global Distribution: Native to temperate (China, Hainan) and tropical Asia (Bhutan, Bangladesh, India, Nepal, Sulawesi and Sumatera of Indonesia, Lao PDR, Myanmar, Nepal, New Guinea, Thailand, and Viet Nam) (POWO, 2025; WFO, 2025).

Specimen examined: **Manikganj:** Daulotpur, 22 ix 2005, *M.A. Rahim* 10199 (JUH).

2. ***Rotala densiflora*** (Roth) Koehne, Bot. Jahrb. Syst. 1(2): 164 (1880); —TYPE: India, *s.coll.* 1847, K000729635. Sinclair, Bull. Bot. Soc. Beng. 9 (2): 95 (1955); Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 417 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 891 (2018).

Local name: Jalmukhi.

English name: Dense-flowered *Rotala*.

An erect herb. Leaves sessile, opposite, decussate, linear, lanceolate, 13–17 × 2–4 mm. Flower solitary in axils, sessile, 1–2 mm long. Capsules 1–1.5 mm long, opening by 3 valves. Seeds semi-ovoid. Fl. & Fr.: October–December.

Ecology: In rice fields growing as a weed.

Use: It is commonly used in aquascaping as a midground or background plant.

Occurrence in Bangladesh: It is native to Bangladesh. It is collected from Cox's bazar, Khagrachari, and Sylhet district (Khanam, 2009).

Global Distribution: Native to temperate (China Southeast, Tadjikistan, Uzbekistan, Iran), tropical Asia (Assam, Bangladesh, India, Nepal, Pakistan, Sri Lanka, Myanmar, Borneo) and Australasia (Queensland). Introduced into Africa (Sudan, Cameroon, Zaire) and Europe (Italy) (POWO, 2025; WFO, 2025).

Note: *Ammannia densiflora* Roth in J.J. Roemer & J.A. Schultes (1818) and *Ditheca densiflora* (Roth) Miq. (1856) are homotypic synonyms.

Specimens examined: **Chattogram:** Mirsarai, near forest beat office, 27 i 1973, *Khan and Huq*. K. 2787 (DACB); Kutubdia, 26 xii 1983, *Huq et al.*, H. 6626 (DACB); **Cox's Bazar:** Jadipahar. 10 x 1998, *Khan and Huq*. K. 2462 (DACB); Ukhia, Rezu range, 12 xii 1984, *Khan et al.*, K. 6870 (DACB); **Khagrachari:** Ramgarh, 29 xii 1985, *Huq and Mia* H. 7266 (DACB); **Patuakhali:** Kolapara, Kuakata, 4 i 1980, *Khan et al.*, Khan. 5906 (DACB).

3. ***Rotala fimbriata*** Wight., Ic. Ind. Or. 1: t. 217 (1840); —TYPE: India, *R. Wight s.n.*, L0010073 (IT: L). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 421 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 893 (2018); *Ammannia pentandra* Roxb. Var. *fimbriata* (Wight) C. B. Clarke (1879); Hook. f., Fl. Brit. India. 2: 569 (1886); Prain, Beng. Pl. 1: 500 (1903); Heinig, List Chittagong, 30 (1925).

Local name: Piaingaga duba.

English name: Fringed Flower Plant.

An annual erect herb. Leaves sessile, decussate, lanceolate, and oblong, 1–3.5 mm long, apex obtuse, base cordate-cuneate, auriculate. Inflorescence solitary. Fruit a capsule, round. Seeds semi-ellipsoidal, 1.2–1.5 mm long. Fl. & Fr.: August–February.

Ecology: Moist soil and rice field.

Use: Consider as a weed of rice fields (Rahman, 2009).

Occurrence in Bangladesh: It is recorded from the Chattogram district (Rahman, 2009) and native to Bangladesh.

Global Distribution: Native to tropical Asia (Bangladesh, India, and Sri Lanka) (POWO, 2025).

Specimens examined: **Chattogram:** Fatikchari, Dhurun, 10 i 1989, *Huq, Rahman and Mahfuz* H. 8947 (DACB); **Dhaka:** Manikgonj, 8 xii 1979, *M.S. Khan* 5750 (DACB); Narayanganj,

Siddirganj, 19 xi 1975, *Huq and Rahman* H. 1579; Manikganj, 8 xii 1979, *M.S. Khan* 5760 (DACB); **Noakhali**: Momarijpur, Dagonbhuia, 18 xi 1981, *Huq et al.*, H. 5302 (DACB).

4. ***Rotala indica*** (Willd.) Koehne, Bot. Jahrb. 1: 172 (1880); —TYPE: Japan. *J. Pierot s.n.* L0328026, and Indonesia. *T. Horsfield, s.n.* U1361870 (HT: L or U). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 421 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 894 (2018); *Ammannia peploids* Spreng. Syst. Veg. 1: 444 (1824); Hook. f., Fl. Brit. India. 2: 566(1886); Prain, Beng. Pl. 1: 500 (1903); Heinig, List Chittagong: 30 (1925).

Local name: Not known.

English name: Indian Toothcup; Indian Rotala.

An annual herb. Leaves sessile, simple, opposite, decussate, obovate, sub-orbicular, 0.3–1.5 × 0.3–0.6 cm. Inflorescence solitary, flower length 2–2.5 mm. Capsules opening by 2 valves. Fl. & Fr.: October–April.

Ecology: Moist place and rice field.

Use: The species is used as a popular and suitable aquarium plant, because of its impressive growth form and beautiful colouration (Rahman, 2009).

Global Distribution: Native to temperate and tropical Asia. Introduced into Africa (Congo), Europe (Italy, Portugal), and Northern America (Louisiana, California) (POWO, 2025; WFO, 2025).

Specimens examined: **Bandarban**: Rajbila Forest Range, 13 xi 2016, *Hossen et al.*, IH.1565 (DACB); Lama, Kelingabil, 19 xii 1990, *Mia, Rahman and Mahfuz* M. 2633 (DACB); **Chattogram**: Chandanaish, Dhopachori, Boroghona, 8 ii 2017, *Tajul et al.*, TOK. 3459 (DACB).

5. ***Rotala malampuzhensis*** R.V. Nair ex C.D.K. Cook, Boissiera 29: 98 (1979); Pingky *et al.*, Bangladesh J. Plant Taxon. 31(1): 15-24 (2024). —TYPE: H868/68, HT (K).

Local name: Janglimehendi.

English name: Monarch Redstem.

An annual, aquatic, caespitose herb. Leaves opposite, decussate, glabrous, 2 leaves per node, elliptic-oblong, 8–12 × 1–2 mm. Flowers sessile, 2–2.5 × 1–1.5 mm, 2- flowers per node. Fruit a capsule, crimson red, ca. 1 mm long, opening by 3 valves, surface semitransparent and raised. Seeds 0.3–0.6 mm long, straw-coloured or crimson red. Fl. & Fr.: October–January.

Ecology: Moist or wet soil, usually in rice fields, temporary pools, beside streams and in wet pockets in rocks (Cook, 1996).

Use: The submerged leaves of this plant help oxygenate the water, supporting a healthier aquatic ecosystem.

Occurrence in Bangladesh: It is native to Bangladesh and found in Moulvibazar.

Global Distribution: Native to Assam, India (POWO, 2025; WFO, 2025).

Specimen examined: **Moulvibazar**: Kulaura, Tilagaon, Lalpur, Lalpur Chabagan, 22 i 2023, Najmul *et al.*, MOUL. 00746 (DACB).

Note: *Ameletia indica* (Willd.) DC. (1825), *Ammannia indica* (Willd.) Druce (1917), *A. peploides* Spreng. (1824), and *Peplis indica* Willd. (1799) are homotypic synonyms (POWO, 2025).

6. ***Rotala mexicana*** Schlttdl. & Cham., Linnaea 5: 567 (1830); —TYPE: Mexico: Veracruz: in aquis fluentibus prope Hacienda de la Laguna, *Schiede and Deppe* 566, Oct. (HT: HAL-98154; IT: LE & MO). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 408-428 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 891 (2018); *Ammannia pygmaea* Kurz, J. Bot. 5: 376 (1867); Hook. f., Fl. Brit. India. 2: 568 (1886); Prain, Beng. Pl. 1: 500 (1903); Heinig, List

Chittagong: 30 (1925). *Schiede, C.J.W.* 566 (BC: MO-2151195/A:2486644) (IT, MO) (Tropicos, 2025).

Local name: Not known.

English name: Mexican Rotala; Diminutive Rotala.

An annual herb. Leaves simple, sessile, arranged in whorls 3–8, dimorphic; aerial leaves linear-lanceolate, or ovate, 8–10 mm long; submerged leaves linear, 7–12 × 1.2–2 mm. Flowers solitary, sessile, 2 × 1.8 mm. Fruit a capsule, opening by 3 valves. Fl. & Fr.: October–December.

Ecology: Moist soil and rice field.

Use: It is used in aquascaping for its vibrant colour and its ability to create an attractive midground or background in aquariums.

Occurrence in Bangladesh: It is native to Bangladesh and found in North Bengal (Khanam, 2009).

Global Distribution: Native to East, Northeast, South, West and West-Central tropical Africa; Southern Africa; temperate (North-Central & Southeast China, Taiwan, Japan, Korea) and tropical (Bangladesh, Bhutan, India, Jawa, Nepal, New Guinea, Myanmar, Philippines, Thailand, and Viet Nam) Asia (POWO, 2025; WFO, 2025).

Note: *Ammannia mexicana* (Cham. & Schldl.) Baill. (1895) is its homotypic synonym.

Specimen examined: **Chattogram:** Kaptai, 15 iii 2017, *Matiur Rahman* 813 (DACB).

7. ***Rotala ramosior*** (L.) Koehne, C.F.P. von Martius and auct. suc. (eds.), Fl. Bras. 13(2): 194 (1877); —TYPE: Philippines, L.A. Chamisso, (Coll. De Candolle), G00227389 (IT: G); L2487855, L2487856 (NT: L). Pingky *et al.*, Bangladesh J. Plant Taxon. 31(1): 15-24 (2024).

Local name: Not known.

English name: Lowland Toothcup (GBIF Secretariat, 2023).

An annual, amphibious or terrestrial herb. Leaves opposite, decussate, oblong to narrowly oblanceolate, 5–6 × 0.5–0.8 mm, glabrous. Inflorescence axile, one per leaf axis. Flowers small, 4-merous, globose, reddish, sessile or shortly pedicellate, 1.3–1.8 mm long. Fruit a capsule, pinkish red, surface non-transparent and even, 1.8–2 mm in diameter, opening by 3 valves. Seeds ovoid, c. 0.2 × c. 0.1 mm, brown.

Fl. & Fr.: July–October.

Ecology: On plain land, agricultural fields, moist soil.

Use: It is widely used in aquascaping for its vibrant green to reddish colouration and its ability to create a visually striking midground or background in aquariums.

Global Distribution: Native to Northern and Southern America. Introduced into Asia-temperate (Taiwan), Asia-tropical (Philippines) and Europe (Greece, Italy) (POWO, 2025; WFO, 2025).

Note: *Ammannia ramosior* L. (1753) is its basionym (POWO 2025).

Specimen examined: **Sylhet:** Chattak, 5 i 1978, *Huq and Rahman* H. 3653 (DACB).

8. ***Rotala rosea*** (Poir) C.D.K. Cook, Boissiera 29: 86 (1979); —TYPE: Indonesia, Java, C.L. Blume, L0010078 / L0010079 (HT: L). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 423 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 894 (2018); *Ammannia pentandra* Roxb., Fl. Ind. 1: 448 (1820); Hook. f., Fl. Brit. India. 2: 568 (1886); Prain, Beng. Pl. 1: 500 (1903); Heinig, List Chittagong: 30 (1925).

Local name: Not known.

English name: Rosy Rotala.

An erect herb. Leaves sessile, opposite, decussate, linear-lanceolate, 1–2 × ca. 0.5 cm. Flowers solitary, sessile, 1–2 mm long. Fruit a capsule, opening by 3 valves. Fl. & Fr.: October–January.

Ecology: Moist or wet soil, usually in rice fields.

Use: Appears as weed in rice fields (Khanam, 2023).

Occurrence in Bangladesh: It is native to Bangladesh and found in Chattogram, Cox's Bazar, Mymensingh, and Sylhet districts (Khanam, 2009).

Global Distribution: Native to temperate Asia (South-Central and Southeast China), tropical Asia (Bangladesh, India, Jawa, Sumatera, Nepal, New Guinea, Malaya, Myanmar, Philippines, Sri Lanka, Thailand, Viet Nam) and Australasia (Northern Territory). Introduced into temperate Asia (Japan, Korea, Nansei-shoto, and Taiwan (POWO, 2025; WFO, 2025)). *Ammannia rosea* Poir. (1810) is its basionym (POWO 2025).

Specimens examined: **Dhaka:** Rajendrapur, Kapasia, Shatiabari, 18 xii 1973, *Khan and Huq*, K. 34809 (DACB); Salna forest, 2 xii 1980, *Huq et al.*, H. 4888 (DACB); Tarabo to Maotiile, 27 x 1979, *Huq et al.*, H. 4395 (DACB); Savar, 18 viii 1974, *Md. Golam Mostab*, 19 (DUSH); **Rajshahi:** Godagari, 17 xi 1988, *Huq et al.*, H. 8698 (DACB).

9. ***Rotala rotundifolia*** (Buch-Ham. ex Roxb.) Koehne, Bot. Jahrb. 1: 175 (1880); —TYPE: Nepal, N. Wallich, 1821, K000729621 (K), PH00024984 (K), BM000944561 (BM). Rahman in Ahmed *et al.*, *Encycl. Fl. Fauna Bangladesh* 8: 423 (2009); Uddin and Hassan, *Vas. Fl. Chittagong and CHT*. 2 (1): 894 (2018); *Ammannia rotundifolia* Buch.-Ham. ex Roxb. Hook. f., *Fl. Brit. India*. 2: 566 (1886); Prain, *Beng. Pl.* 1: 500 (1903); Heinig, *List Chittagong*: 30 (1925).

Local name: Not known.

English name: Dwarf *Rotala*.

A glabrous herb. Leaves sessile or shortly petiolated, opposite, decussate, ovate, orbicular or elliptic, 1–2 × 1.5–2.5 cm. Inflorescence pedunculated raceme, many-flowered. Fruit a capsule, opening by 4 valves. Fl. & Fr.: October–April.

Ecology: In moist soil.

Use: *Rotala rotundifolia* is traditionally used as a medicinal plant for its antipyretic, detoxifying, anti-inflammatory, and diuretic properties. It is used in the treatment of cirrhosis, gonorrhoea, menstrual cramps, and piles in China.

Occurrence in Bangladesh: It is native to Bangladesh and found in Chattogram, Cumilla, Dhaka, Noakhali and Sylhet districts (Khanam, 2009).

Global Distribution: Native to temperate Asia (South-Central and Southeast China, Hainan, Japan, Nansei-shoto, and Taiwan) and tropical Asia (Bangladesh, Bhutan, India, Nepal, Lao PDR, Myanmar, Thailand, and Viet Nam). Introduced into Alabama, Brazil Southeast, Florida, Queensland (POWO, 2025; WFO, 2025).

Note: *Ameletia rotundifolia* (Buch.-Ham. ex Roxb.) Wight (1839), *Ammannia rotundifolia* Buch.-Ham. ex Roxb. (1820), and *Mirkooa rotundifolia* (Buch.-Ham. ex Roxb.) Wight (1839) are its homotypic synonyms (POWO 2025).

Specimens examined: **Chattogram:** Chattogram University Campus, Biological Faculty, 7 iii 2011, *M.A. Rahman* 8183 (HCU); Raozan, near the rubber plantation, 31 i 1971, *Khan and Huq* K. 2414 (DACB); Teknaf, 21 i 1968, *M.S. Khan* 703 (DUSH); Chandra Forest, 21 iv 1949, *M.A.F. Jalal* 4 (DUSH); **Cox's Bazar:** Ukhia, 9 iii 2000, *Md. Rashed* 10167 (JUH); **Dhaka:** Ramkrishnadi, 12 xi 1983, *Mia* 937 (DACB); Chasara, *Moula Haksha* 115 (DUSH); **Jhalakathi:** Jhalakathi, Chankhati, 3 iii 1985, *Huq and Mia* H. 6701 (DACB).

10. ***Rotala serpyllifolia*** (Roth) Brem., Act. Bot. Neerl. 3(1): 149 (1954); Lao PDR, E. Poilane, 1932, L2487636; or India. B. Heyne, L0614160 (IT: L). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 425 (2009); *Ammannia tenuis* (Wight) C.B. Clarke., Hook.f. Fl. Brit. Ind. 2: 567 (1879).

Local name: Not known.

English name: The Dwarf Rotala.

An annual herb. Leaves opposite, decussate, linear-ovate, 0.5–1.2 × 0.3–0.7 cm. Inflorescence terminal spike or raceme, pedunculate. Fruit a capsule, ca. 2 × 1 mm long, opening by 2 valves. Fl. & Fr.: 10-12.

Ecology: Moist place and rice field.

Use: Not known.

Occurrence in Bangladesh: It is native to Bangladesh and found in Bandarban, Chattogram, and Khagrachari districts.

Global Distribution: Native to tropical Asia (Bangladesh, India, Lao PDR, and Pakistan) (POWO, 2025).

Note: *Aetheilema rothii* Steud. (1840) and *Micranthus serpyllifolius* Roth (1821) are its homotypic synonyms (POWO 2025).

Specimens examined: **Bandarban:** Quantum, Lama Forest range, 14 iii 2018, *Islam and Miah*, MSI. 7202 (DACB 70842); **Chattogram:** Chandanaish, Dhopachori, Boroghona, 11 iv 2017, *Tajul et al.*, TAK. 4139 (DACB); **Khagrachari:** Dighinala, Naraichhari Reserve Forest, 28 ii 2017, *Kawsar et al.*, KH. 3820 (DACB).

11. ***Rotala simpliciuscula*** (S. Kurz) Koehne, Bot. Jahrb. 1: 159 (1880); Bangladesh. J.D. Hooker and T. Thomson G00227390 (IT: G), M-0146229 / 479544 / 177341 (IST: M). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 425 (2009); Uddin and Hassan, Vas. Fl. Chittagong and CHT. 2 (1): 895 (2018); *Ammannia simpliciuscula* S.Kurz; J. Asiat. Soc. Beng. 40: II. 54 (1871); Hook. f., Fl. Brit. India. 2: 568 (1886); Prain, Beng. Pl. 1: 500 (1903); Heinig, List Chittagong: 30 (1925).

Local name: Not known.

English name: Not known.

An amphibious, annual herb. Leaves opposite, decussate, oblong, 2-2.5 mm long. Fruit a capsule, globose, 1.2–1.4 × 1–1.2 mm, opening by 3 valves. Seeds hemispherical. Fl. & Fr.: October-January.

Ecology: Moist rice field and marshy situation.

Use: Not known.

Occurrence in Bangladesh: It is native to Bangladesh. It was collected only from Chattogram districts by Hooker and Thomson (Kew) (Cook, 1979). No other collection has been reported in Bangladesh (Khanam, 2009).

Global Distribution: Native to tropical Asia (Bangladesh, India-Assam, Myanmar).

Note: *Ammannia simpliciuscula* Kurz (1871) is its basionym (POWO 2025).

Specimen examined: 5 i 1978, *Huq and Rahman*, H. 3653 (DACB).

12. ***Rotala subrotunda*** (Wall. Ex Kurz) Koehne, Bot. Jahrb. 1: 174 (1880); —TYPE: Myanmar, N. Wallich, 1824, BR0000005782840 (IT: BR), N. Wallich, 1826, K000729615 (ILT:K). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 426 (2009); *Ammannia subrotunda* Wall. ex Kurz., J. Asiat. Soc. Beng. 40: II. 55 (1871).

Local name: Not known.

English name: Not known.

An annual herb. Leaves sessile, opposite, decussate, linear, 0.3–1×0.5–1 mm. Inflorescence solitary, spike-like racemes, pedunculated. Fruit a capsule, ellipsoidal, opening by 2 valves. Seed ellipsoidal. Fl. & Fr.: December-May.

Ecology: Moist and marshy place.

Use: Beyond its aesthetic value, it plays a role in maintaining a healthy aquarium ecosystem by removing excess nutrients, oxygenating the water and preventing the formation of harmful anaerobic pockets.

Occurrence in Bangladesh: It is native to Bangladesh and distributed in Sunamgonj, Moulvibazar, and Sylhet districts.

Global Distribution: Native to tropical Asia (Bangladesh, India and Myanmar) (POWO, 2025).

Note: *Ammannia simpliciuscula* Kurz (1871) is its homotypic synonym (POWO 2025).

Specimen examined: **Faridpur**: Roypur, 15 x 1961, *Amjad Ali Khan* 12 (DUSH).

13. *Rotala wallichii* (Hook. f.) Koehne, Bot. Jahrb: 1: 154 (1880); —TYPE: Myanmar, W. Gomez, 1827, K000729665 (HT: K), K000729667 & China, s. coll., K000729668 (IT: K). Rahman in Ahmed *et al.*, Encycl. Fl. Fauna Bangladesh 8: 427 (2009); *Ammannia wallichii* (Hook.f.) Kurz; J. Asiat. Soc. Beng. 46: II. 84 (1877).

Local name: Whorly Rotala

English name: Not known.

An aquatic herb. Leaves whorls, 22 mm long; aerial leaves linear, oblong, 4–3 mm long. Flowers solitary, sessile in axillary. Fruit a capsule, globose, opening by 2 valves. Seeds semi-ovoid, 0.5–0.7 mm long. Fl. & Fr.: September-October.

Ecology: Inundated maize and rice field.

Use: It is cultivated as a decorative aquarium plant (Cook, 1979).

Occurrence in Bangladesh: It is native to Bangladesh and found in Cumilla and Maulvibazar districts (Khanam, 2009).

Global Distribution: Native to Bangladesh, Chinese Taipei, Cambodia, Southeast China, India, Lao PDR, Malaya, Myanmar, Singapore, Taiwan, Thailand, and Viet Nam (GBIF Secretariat 2023; POWO, 2025).

Native to temperate Asia (China Southeast, Taiwan), tropical Asia (Bangladesh, Lao PDR, Malaya, Myanmar, Thailand and Viet Nam (POWO 2025; WFO).

Note: *Ammannia wallichii* (Hook.f.) Kurz (1877) and *Hydrolythrum wallichii* Hook.f. (1867) are homotypic synonyms of this species.

Specimens examined: **Cumilla**: Dudkundi, Bathakandi, 19 ix 1977, *Mafiz* (DACB); **Moulvibazar**: Tajpur, 11 x 1973, *Khan et al.*, K. 3212 (DACB); **Sherpur**: Sripur, 15 vi 2001, *Shah Kamal Uddin* (DACB); **Sylhet**: Hakaluki Haor, 8 vi 2011, *Md. Forhad Ahmed* 207 (HCU).

***Rotala* sp.**, a dubious taxon

A creeping herb, branched or simple, ascending, erect or floating and rooting at the below. Leaves in 3 whorls at upper part of the stem and opposite at lower part of the stem, decussate, linear, 5-6 mm long. Flower solitary, monomorphic, sessile, 1 mm long. Ovary globose, 0.8 mm long. Capsule ellipsoidal, ca. 1 mm long, opening by 3 valves. Seeds 9-15, brown, semi-ellipsoidal, 0.2-0.4 mm long. Fl. and Fr.: August-October.

Ecology: Found in marshes and wet places such as the margins of pools.

Occurrence in Bangladesh: Savar, Dhaka.

Global Distribution: Bangladesh, India, the western peninsula and Australia.

Specimen examined: **Dhaka:** Savar: Sinduria bill, 25 ix 2024, Pingky and Rahim (10326).

Woodfordia Salisb., *Parad. Lond.* 1(2): t. 42 (1806).

1. **Woodfordia fruticosa** (L.) Kurz., *J. Asiat. Soc. Beng.*, 40(2): 56 (1871); —TYPE: LINN 626.4 (LT). Kanjilal *et al.*, *Fl. Assam* 2: 313 (1940); Rahman in Ahmed *et al.*, *Encycl. Fl. Fauna Bangladesh* 8: 427 (2009); Uddin and Hassan, *Vas. Fl. Chittagong and CHT.* 2 (1): 896 (2018); *Woodfordia floribunda* Salisb., *Parad. Lond. T.* 42 (1806); Hook.f., *Fl. Brit. India.* 2: 572n (1886); Prain, *Beng. Pl.* 1: 502 (1903).

Local name: Dhatriphul.

English name: Fire-flame Bush (GBIF Secretariat, 2023).

An erect shrub. Leaves opposite, 2.5–14 × 1–1.4 cm, ovate to lanceolate. Inflorescence axillary with 3–16 flowers on short peduncled cymes. Flowers narrowly cyathiform, shortly tubular, floral tubes light red to orange. Capsules ovate-elliptic, thin-walled, included within hypanthium, 2-valved, irregularly dehiscent. Fl. & Fr.: January-May.

Ecology: Forest.

Use: It is extremely important for treating a wide range of conditions, such as rheumatoid arthritis, bleeding, diabetes, jaundice, fever, skin infections, liver issues, stomach issues, allergies, asthma, indigestion, constipation, diarrhoea, and menstrual disorders (Rahman, 2009).

Occurrence in Bangladesh: It is native to Bangladesh. It occurs in the districts of Dhaka, Chattogram, Cox's Bazar and Chattogram Hill Tracts (Rahman, 2009).

Global distribution: Native to Africa (Tanzania, Comoros and Madagascar), temperate Asia (Saudi Arabia, South-Central and Southeast China), and tropical Asia (Bangladesh, Bhutan, India, Jawa, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Lesser Sunda & Sulawesi, Sri Lanka and Viet Nam (POWO, 2025, WFO, 2025).

Note: *Grislea tomentosa* Roxb. (1795), *Lythrum fruticosum* L. (1759), *Woodfordia floribunda* Salisb. 1806), and *Woodfordia fruticosa* f. genuina Kurz ex Koehne (1881), *Woodfordia tomentosa* Bedd. are the homotypic synonyms of this species (POWO, 2025). It is currently Vulnerable (VU) in Bangladesh (Begum and Rahman, 2024).

Specimens examined: **Bandarban:** Matamuhuri Forest range, 27 ii 2017, *Hossen et al.*, IH 4470 (DACB); Ruma, Thanapara, 24 i 2017, *K.K. Islam*, KKI. 852 (DACB 47177); **Chattogram:** Nunerchhara, Baroiyadhala foothill of Hajarikhil, 12 iv 1994, *Huq and Mia*, 10256 (DACB); Baluchara, Chattagram BCSIR, 20 vi 2023, *Md. Mahfuzur Rahman*, (DACB); Hajarikhil to Baroiyadhala, 21 iii 2000, *Khan et al.*, K. 10351 (DACB).

Eight species which were previously included in Punicaceae, Sonneratiaceae, and Trapaceae and later circumscribed under Lythraceae s.l. in the APG IV system have been excluded from this study in order to follow the classification system of Cronquist (1988), as this system is in practice in this country. Globally, a total of 19 species are classified as the Least Concern, and the status of the rest is not assessed (IUCN, 2025). The threatened status of only four species of Lythraceae s.str. is evaluated, and the rest are not yet assessed in Bangladesh (IUCN Bangladesh, 2024).

References

- Alam, M.K. 1988. Annotated Checklist of the Woody Flora of Sylhet Forests. Plant Taxonomy Series, Bangladesh Forest Research Institute, Chittagong. *Bull.* 5: 1-153.
- Ara, H., Mia, M.M.K. and Khan, B. 2007. An annotated checklist of Lauraceae in Bangladesh. *Bangladesh J. Plant Taxon.* 14(2): 147–162.

- Begum, M. and Rahman, M.O. 2024. *Woodfordia fruticosa*. In: Rahman (ed.), IUCN Bangladesh. Plant Red List of Bangladesh Vol. 2. Bangladesh National Herbarium, Forest Department, Ministry of Environment, Forest and Climate Change and IUCN, International Union for Conservation of Nature and Natural Resources. p. 107.
- Bridson, D. and Forman, L. 1989. The Herbarium Handbook. Royal Botanic Gardens, Kew, pp. 214.
- Cronquist, A. 1988. The Evolution and Classification of Flowering Plants. Second Edition, 1988. Bronx, NY: The New York Botanical Garden, pp. 1–555.
- Das, R.M. and Alam, M.K. 2001. Trees of Bangladesh. Bangladesh Forest Research Institute (BFRI), Chittagong. pp. 1–342.
- GBIF Secretariat, 2023. GBIF Backbone Taxonomy. Checklist dataset <https://doi.org/10.15468/39omei> accessed via GBIF.org on 2025-06-06.
- Haque, A.K.M.K., Khan, S.A., Uddin, S.N. and Shetu, S.S. 2018. An annotated checklist of the Angiospermic flora of Rajkandi reserve forest of Moulvibazar, Bangladesh. Bangladesh J. Plant Taxon. **25**(2):187–207.
- Heinig, R.L. 1925. List of plants of Chittagong Collectorate and Hill Tracts. The Bengal Government Branch Press, Darjeeling, pp. 30.
- Hooker, J.D. 1879. The Flora of British India. Vol. 2. L. Reeve & Co., London. pp. 565–588.
- Hossain, G.M., Khan, S.A., Shetu, S.S., Rahman, M.S. Rahman in 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.
- IUCN Bangladesh, 2024. Plant Red List of Bangladesh Vol. 2. Bangladesh National Herbarium, Forest Department, Ministry of Environment, Forest and Climate Change and IUCN, International Union for Conservation of Nature and Natural Resources. pp. xiv+662.
- IUCN, 2025. The IUCN Red List of Threatened Species. Version 2025-2. <<https://www.iucnredlist.org>>
- Khan, S.A., Hossain, G.M., Shetu, S.S., Rahim, M.A., Islam, M.S., Rahman in Ahmed, F.A. and Fairy, R.H. 2021b. A preliminary taxonomic study on the flora of Rangpur district, Bangladesh. Bangladesh J. Plant Taxon. **28**(2): 329–365.
- Khan, S.A., Sultana, S., Hossain, G.M., Shetu, S.S., and Rahim, M.A. 2021a. Floristic composition of Jahangirnagar University Campus - A semi-natural area of Bangladesh. Bangladesh J. Plant Taxon. **28**(1): 27–60.
- Khanam M., 2009. In: Rahman in Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M. and Rahman in 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). Asiat. Soc. Bangladesh, Dhaka. pp. 421–427.
- Khanam, M. and Ara, H. (eds.) 2007–2008. Flora of Bangladesh, Fasc. **56–58**. Bangladesh National Herbarium, Dhaka.
- Khanam, R., Khan, S.A. and Rahim, M.A. 2020. Angiosperms in Narsingdi District of Bangladesh: Class Magnoliopsida. Bangladesh J. Plant Taxon. **27**(1): 153–271.
- Mia, M. M. K., Ara, H. and Khan, B. 2007. Capparaceae. In: Khanam, M. and Ara, H. (eds.) Flora of Bangladesh, Fasc. **57**. Bangladesh National Herbarium, Dhaka. pp. 1–25.
- Mia, M.M.K. and Uddin, S.N., 2000. An annotated checklist of Verbenaceae in Bangladesh. Bangladesh J. Plant Taxon. **7**(2): 27 – 45.
- Nadkarni, N.M. 1994. Diversity of species and interactions in the upper tree canopy of forest ecosystems, Am Zool. **34**(1): 70–78.
- POWO, 2025. Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://www.plantsoftheworlds online.org>.
- Prairie, D. 1903. Bengal Plants, Vol. 1-2. Indian reprint 1963. Botanical Survey of India, Calcutta. pp. 1–1013.
- Rahman, M.A. and Yusuf, M. 1996. Diversity, ecology and ethnobotany of the Zingiberaceae of Bangladesh. J. Econ. Taxon. Bot. Addl. Series **12**: 13-19.

- Rahman, M.M. and Khanam, M. (eds.). 2003. Flora of Bangladesh, Fasc. **55**. Bangladesh National Herbarium, Dhaka.
- Rahman, M.O., 2009. *In*: Rahman in Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M. and Rahman in 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), Asiat. Soc. Bangladesh, Dhaka. pp. 408–428.
- Rahman, S.R., Hossain, G.M., Khan, S.A., Uddin, S.N. 2015. An annotated checklist of the vascular plants of Sundarban Mangrove Forest of Bangladesh. *Bangladesh J. Plant Taxon.* **22**(1): 17–41.
- Roy, G.K. and Khan, S.A. 2020. Preliminary taxonomic study on homestead flora of four districts of Bangladesh: Magnoliopsida. *Bangladesh J. Plant Taxon.* **27**(1): 37–65.
- Saqee, A. 2024. *Lagerstroemia parviflora*, *Lagerstroemia speciosa* and *Lagerstroemia tomentosa*. *In*: Rahman (ed.), IUCN Bangladesh. Plant Red List of Bangladesh Vol. **2**. Bangladesh National Herbarium, Forest Department, Ministry of Environment, Forest and Climate Change and IUCN, International Union for Conservation of Nature and Natural Resources, pp. 103–109.
- Shetu, S.S., Hossain, G.M., Khan, S.A. and Rahim, M.A. 2022. An inventory of vascular flora of Lamai Hills and their adjacent areas of Cumilla district, Bangladesh. *Bangladesh J. Plant Taxon.* **29**(2): 203–240.
- Sinclair, J., 1956. The Flora of Cox's Bazar, East Pakistan. *Bull. Bot. Soc. Beng.* **9**(2): 1- 116.
- Singh, H.B. and Subramaniam, B. 2008. Field Manual on Herbarium Techniques. National Institute of Science Communication and Information Resources, pp. 1–297.
- Tropicos, 2025. Tropicos.org. Missouri Botanical Garden. 21 Dec 2025 <https://tropicos.org> Missouri Botanical Garden - 4344 Shaw Boulevard - Saint Louis, Missouri 63110
- Uddin, S.N. and Hassan, M.A. 2018. Vascular Flora of Chittagong and the Chittagong Hill Tracts: Vol. **2**. Bangladesh National Herbarium, Zoo Road, Mirpur 1, Dhaka 1216. pp. 878-896.
- Upadhyay, H.C., Dwivedi, G.R., Darokar, M.P., Chaturvedi, V. and Srivastava, S.K., 2011. Bioenhancing and antimycobacterial agents from *Ammannia multiflora*. *Planta medica*, pp. 79–81.
- WFO, 2025. World Flora Online. Published on the Internet; <http://www.worldfloraonline.org>. Accessed on: 21 October 2025.

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