



## Phytodiversity of Family Convolvulaceae in Bangladesh Agricultural University Campus

Sarwar AKM Golam, Rahman M.M. and Ashrafuzzaman M.

Laboratory of Plant Systematics, Department of Crop Botany  
Bangladesh Agricultural University, Mymensingh 2202, Bangladesh  
E-mail: [drsarwar@bau.edu.bd](mailto:drsarwar@bau.edu.bd)

**Abstract:** The Morning Glory family Convolvulaceae consists of about 60 genera with 2,000 species, mainly distributed in the tropics and subtropical regions of the world. A total of 22 taxa belonging to 6 genera are present at the Bangladesh Agricultural University (BAU) campus. With 14 species *Ipomoea* is the dominant genus followed by *Argyreia* and *Merremia* (2 species each). All taxa are important as medicine and food crops except for the well-known ornamental blue daze, *Evolvulus glomeratus* Nees & Mart. Moreover, *Ipomoea carnea* subsp. *fistulosa* has been identified as an invasive (alien) species for Bangladesh with minimal to moderate concern. The present communication provides a comprehensive description of members of the family Convolvulaceae at the BAU campus with colour photographs for easy identification.

**Keywords:** Convolvulaceae, *Ipomoea*, *Merremia*, Medicinal value

The cosmopolitan family Convolvulaceae, widespread across tropical and temperate regions, is one of the major families of flowering plants with approximately 2000 species, classified into 60 genera and 12 tribes (Staples and Brummitt 2007). Among the genera, *Ipomoea* and *Convolvulus* are the most species-rich genera of this family (Cronquist 1988). Members of the family Convolvulaceae are easily distinguishable by their plicate corolla, axile placentation with few ovules, bi-collateral vascular bundles and latex usually present. Important food crops like sweet potatoes and water spinach are included in the family, along with a variety of ornamental plants like morning glories and bindweeds, the parasitic vines Dodders, and medicinal uses for example fever, jaundice, boils and inflammation, epilepsy, central nervous system (CNS) disorders, etc. (Chen et al., 2018, Ashfaq et al., 2020). This family is represented in Bangladesh, by 15 genera and 55 species (Ahmed et al., 2008).

The Bangladesh Agricultural University (BAU) campus is located in Mymensingh district (Bangladesh) and is about 56.0 km away from Garo Hills (Fig. 1). It has an area of ca. 486 ha and the whole area can roughly be divided into three basic topographic types – plain, somewhat undulated, and basin-shaped low-lying areas, which gives a fairly wide range of habitats, viz. agricultural lands, fallow lands, ponds, marshy lands, gardens, grasslands, etc. for the growth of different types of plants. The soil type of the area varies from clay, and clay loam to sandy loam (UNDP 1988). The temperature ranges from 11.9 °C to 32.5 °C and the average annual rainfall is 244.15 mm. Most of the area is under cultivation for different seasonal crops and vegetables. Since

their commencement, BAU Botanical Garden (in 1963) and BAU Germplasm Centre (in 1991) have played an important role in collecting, curating, and managing forest and fruit tree germplasm from home and abroad. We have recently been trying to convert the whole university campus into a conservatory of agricultural (fruit) and non-agricultural (forest) plant genetic resources. Here, we provided a comprehensive description with colour photographs, common names, and uses, of members of the family Convolvulaceae at the BAU campus.

### MATERIAL AND METHODS

A detailed survey on the Family Convolvulaceae of the BAU campus has been carried out through frequent visits during 2020 - 2023. Plant samples were collected, curated, and conserved during these visits at the Botanical Garden, Department of Crop Botany, Bangladesh Agricultural University. The collected fresh (or dried) specimens were identified by comparing them with pre-identified herbarium specimens or pertinent published literature (Khan 1985, Ahmed et al., 2008, other online resources). The global distribution and botanical names were updated following the Plants of the World Online (<https://powo.science.kew.org/>), International Plant Names Index (<https://www.ipni.org/>), and World Flora Online Plant List (<https://wfoplantlist.org/plant-list>). Brief descriptions and colour photographs are provided for easy recognition of these plants.

Flowering samples of collected plants were processed into mounted herbarium specimens following standard procedure (Anonymous 1996). The mounted herbarium sheets are deposited in Prof. Arshad Ali Herbarium at the

Botanical Garden, Department of Crop Botany, Bangladesh Agricultural University (AAHBAU).

**RESULTS AND DISCUSSION**

A total of 22 species, mostly twinner, belonging to 6 genera are present at the BAU campus (Table 1). With 14 species *Ipomoea* is the most dominant genus followed by *Argyreia* and *Merremia* (2 species each). All the species have medicinal uses except *Evolvulus glomeratus* (Table 1). The oldest use for the family is possibly as a purgative or in religious ritual (Srivastava and Rauniyar 2020). Several pharmacological properties e.g., diuretic, anthelmintic, blood purifier, deobstruent, laxative, antimicrobial, analgesic, carminative and anti-inflammatory actions have been ascribed to these plants, besides their use to treat abdominal diseases, dysentery, fevers, headache, bronchitis, skin disorders, cervical lymphadenitis, fistulas, constipation, chronic gout, ulcers, haemorrhoids, tumours, obesity, jaundice, herpes, diabetes, hypertension, fatigue, arthritis, rheumatism, hydrocephaly, meningitis, kidney ailments, and induced lacrimation (Gupta and Ved 2017, Srivastava and Rauniyar 2020, Zia-UI-Haq et al., 2012), Japanese encephalitis (Srivastava and Shukla 2015), CNS disorders (Chen et al., 2018), sexually transmitted ailments, diabetes, rheumatism, cough, quinsy (Venkateswarlu and Ganapathy 2018), cancer (Jaseela et al., 2022), and many more.

Recently, *Ipomoea carnea* subsp. *fistulosa* has been identified as an invasive (alien) species in Bangladesh with

minimal to moderate concern (Anon. 2024). Therefore, proper care and management strategies should be taken to control the spread of this species, though it has medicinal uses (Table 1).

Taxa of the family Convolvulaceae observed at the BAU campus are briefly described below, including botanical names, synonyms, morphological features, representative specimens and worldwide distribution.

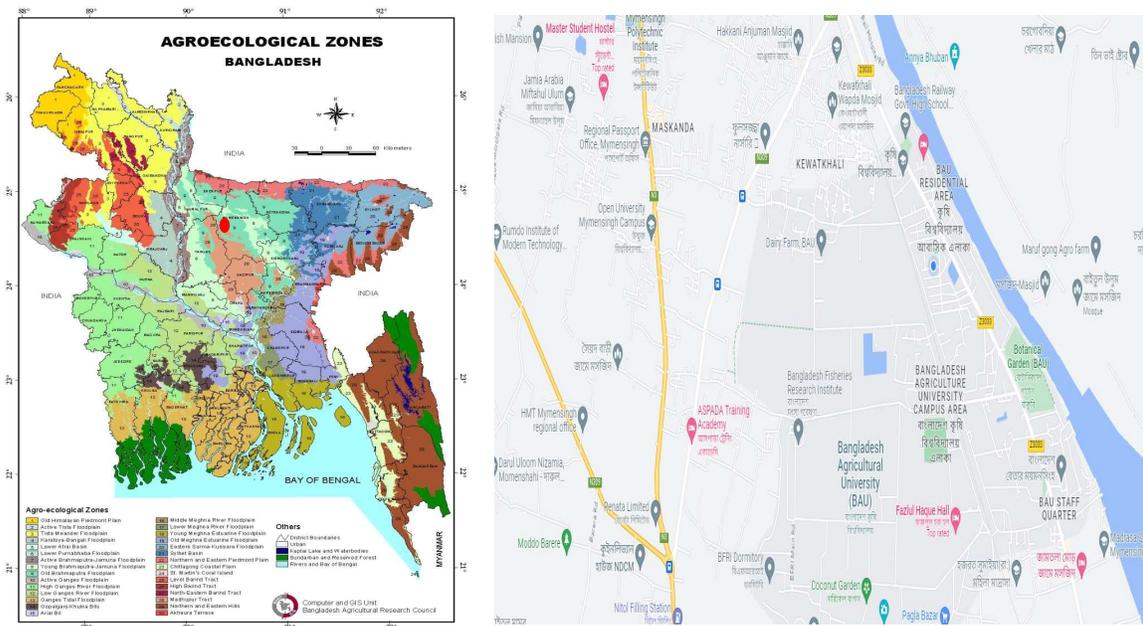
***Argyreia nervosa* (Burm. f.) Bojer Hortus Maurit.: 224. 1837.**

*Convolvulus nervosus* Burm. f., Fl. Ind.:48. 1768, Type: India, Fl. Ind. 1768. p. 48, tab. 20, fig. 1. *Convolvulus speciosus* L.f., Supp. Plant.:137. 1781. *Argyreiaspeciosa* (L.f.) Sweet, Sweet's Hort. Brit.:289. 1826. (Fig. 2A)

A woody perennial vine or liana, up to 15 m, young shoots and branches covered by a silky white pubescence. Leaves ovate-cordate, apiculate at tip, 15–25 cm x 13–20 cm, glabrous above, white tomentose (velvety) beneath, petiole white tomentose. Flowers pink or blue to purple with 7.5–30 cm long white-tomentose peduncles, borne in axillary many-flowered cymes; bracts ovate-lanceolate, acuminate, 3–4 cm long. Berry globose, 2 cm in diam., depressed apiculate, indehiscent, 4–6 seeds capsule<sup>-1</sup>.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 16 July 2020, Ashrafuzzaman & Sarwar 0005 (AAHBAU).

**Distribution:** Native to Bangladesh, India, Myanmar, Nepal; Introduced into Bermuda, Burkina, Cameroon, Central



**Fig. 1.** A. Geographic location of the study area Bangladesh Agricultural University campus (red dot in the Bangladesh Agroecological Zones map). B. Details of Bangladesh Agricultural University campus <<https://www.google.com/maps/@24.7255746,90.4219455,15z?entry=ttu>>

African Repu, Chad, Comoros, Cook Is., Cuba, Dominican Republic, Guinea, Haiti, Jamaica, Jawa, Leeward Is., Madagascar, Mauritius, Mozambique, New Caledonia, Nigeria, Pakistan, Panamá, Puerto Rico, Queensland, Rodrigues, Réunion, Senegal, Seychelles, Society Is., Sri Lanka, Sudan, Sumatera, Thailand, Tonga, USA, Venezuela, Windward Is., Zaire.

***Argyreiaroxburghii* (Sweet) Choisy Mém. Soc. Phys. Genève 6: 419. 1833 publ. 1834. [Conv. Or.: 37]**

*Ipomoea roxburghii* Sweet, Hort. Suburb. ed. 2, 289. 1826. *Argyreiaroxburghii* var. *siamica* Craib, Bull. Misc. Inform. Kew 1911. 423. 1911. (Fig. 2B)

A woody climber, stems to 4 m or taller, whitish hairy, glabrescent. Leaves ovate-cordate to suborbicular, 7–19 cm x 5.5–15.5 cm, acute softly patently villous on both surfaces, petiole 3–9 cm. Inflorescence erect or ascending, dichotomous, laxly cymose, 5 to many-flowered, peduncle 6–13 cm, flower funnellform, pale mauve, throat purple, midpetaline bands sparsely tomentose outside, otherwise

glabrous, 5–6.5 cm long. Berry globose, 13–15 mm, yellow or blackish, pulpy-soft, cupped by reflexed sepals. Seeds 4 capsule<sup>-1</sup>, subglobose.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 September 2023, Rahman, Sarwar & Ashrafuzzaman 001 (AAHBAU).

**Distribution:** Native to Bangladesh, Bhutan, East Himalaya, India, Myanmar, Nepal, Thailand; Introduced into Bermuda.

***Camoneaumbellata* (L.) A.R. Simões & Staples Bot. J. Linn. Soc. 183: 583. 2017.**

*Convolvulus umbellatus* L. Sp. Pl.:155. 1753. *Ipomoea polyanthes* Roem. & Schult. Syst. Veg., ed. 15[bis]. 4:234. 1819. *Merremiaumbellata* (L.) Hallier f. Bot. Jahrb. Syst. 16:552. 1893. (Fig. 2C)

A woody perennial twiner, slender with milky sap, up to 3 m in length. Leaves more or less cordate, 4–8 cm x 3–6 cm, acute at the apex, mucronulate, abaxially sparsely to densely hairy; hairs soft whitish, hairy or glabrescent adaxially; petiole 6–8 cm, glabrous or pubescent, a pair of auricles present at

**Table 1.** Members of the family Convolvulaceae collected from the Bangladesh Agricultural University campus.

Common/local name	Scientific name	Uses	Reference
Elephant creeper/Boro Dudhi	<i>Argyreia nervosa</i> (Burm. f.) Bojer	Weed, Medicinal	Grover 2021
Not Known	<i>Argyreia roxburghii</i> (Sweet) Choisy	Weed, Food, Medicinal	Barual et al., 2014
Yellow wood rose/Sada Kalmi	<i>Camonea umbellata</i> (L.) A.R. Simões & Staples	Vegetable, Medicinal	<a href="http://www.flowersofindia.net/">http://www.flowersofindia.net/</a>
Grape-leaf Wood Rose/Kornolata/ Halde provati	<i>Camonea vitifolia</i> (Burm.f.) A.R. Simões & Staples	Medicinal	Akter et al., 2021
Giant dodder/Shomolota	<i>Cuscuta reflexa</i> Roxb.	Medicinal	Muhammad et al., 2020
Blue daze	<i>Evolvulus glomeratus</i> Nees & Mart.	Ornamental	Srivastava & Rauniyar 2020
The Moon Flower/Dudhi Kalmi	<i>Ipomoea alba</i> L.	Vegetable, Weed, Feed, Medicinal	Rauniyar & Srivastava 2020
Water Spinach /Kalmi Shak	<i>Ipomoea aquatica</i> Forssk.	Vegetable, Feed, Medicinal	Alkiyumi et al., 2012
Sweet Potato/Misti Alu	<i>Ipomoea batatas</i> (L.) Lam.	Food, Feed, Medicinal	Mohanraj & Sivasankar 2014
Railway Creeper	<i>Ipomoea cairica</i> (L.) Sweet	Vegetable, Feed, Medicinal	Srivastava & Shukla 2015
Bush Morning Glory/Dhol kalmi	<i>Ipomoea carnea</i> Jacq.	Ornamental, Fuel, Food, Medicinal	Pant 2022
Pink Morning Glory	<i>Ipomoea carnea</i> subsp. <i>fistulosa</i> (Mart. ex Choisy) D.F. Austin	Medicinal	Mukherjee et al., 2011
Scarlet morning glory	<i>Ipomoea hederifolia</i> L.	Food, Medicinal	Zia-UI-Haq et al. 2012
Ocean Blue Morning Glory	<i>Ipomoea indica</i> (Burm.) Merr.	Ornamental, Fodder, Medicinal	Yuvarani & Selvam 2018
Palmate Morning Glory/Bhui Kumra	<i>Ipomoea mauritiana</i> Jacq.	Fodder, Medicinal, Food	Sulaiman et al., 2014
Beach Morning Glory/Chagol Kuri	<i>Ipomoea pes-caprae</i> (L.) R.Br.	Fodder, Medicinal	Akinniyi et al., 2022
Tiger's Footprint /Languli Lata	<i>Ipomoea pes-tigridis</i> L.	Medicinal	Selvam & Acharya 2015
Common morning-glory	<i>Ipomoea purpurea</i> (L.) Roth	Ornamental, Medicinal	Beheshti et al., 2021
Cypress Vine/Kunja Lata	<i>Ipomoea quamoclit</i> L.	Ornamental, Medicinal	Jaseela et al., 2022
Aiea morning glory/Choto ghanta	<i>Ipomoea triloba</i> L.	Medicinal, Food	Essiett & Obiobo 2014
Mexican morning glory/Indurkani	<i>Merremia emarginata</i> (Burm.f.) Hallier f.	Medicinal	Elumalai et al., 2011
Ivy Woodrose	<i>Merremia hederacea</i> (Burm.f.) Hallier f.	Feed, Medicinal	Charles et al., 2012.

base of petiole. Peduncles axillary, 10–12 cm, 8–10 flowered cymes, umbelliform. Pedicel 1–1.5 cm, flower dark yellow, funnel-shaped, 3–4 cm long, ca. 2.5–3 cm in breadth. Capsule sub-globose, ca. 1.5 x 1.2 cm in diameter, with ovate valves, brown coloured at maturity. Seeds 4 capsule<sup>-1</sup>, margins with longer brownish hairs.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 09 March 2021, Rahman, Sarwar & Ashrafuzzaman 008 (AAHBAU).

**Distribution:** Native to Argentina, Belize, Bolivia, Brazil, Burkina, Cameroon, Cayman Is., Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Florida, French Guiana, Gambia, Ghana, Guatemala, Guinea, Guyana, Haiti, Honduras, Ivory Coast, Jamaica, Leeward Is., Liberia, Mali, Mexico, Nicaragua, Nigeria, Panamá, Paraguay, Peru, Puerto Rico, Sierra Leone, Suriname, Trinidad-Tobago, Venezuela, Windward Is.; Introduced into Bangladesh, Comoros, Cook Is., East & West Himalaya, Galápagos, Hawaii, India, Jawa, Mauritius, Myanmar, Nepal, New Caledonia, Northern Territory, Queensland, Réunion, Samoa, Society Is., Sri Lanka, Tanzania, Vietnam.

**Camonea vitifolia (Burm.f.) A.R. Simões & Staples Bot. J. Linn. Soc. 183: 583. 2017.**

*Convolvulus vitifolius* Burm.f. Fl. Indica:45. 1768. *Ipomoea vitifolia* (Burm. f.) Sweet Hort. Brit.:289. 1826. nom. illeg. *Merremia vitifolia* (Burm. f.) Hallier f. Bot. Jahrb. Syst. 16:552. 1893. (Fig. 2D)

A twining shrub, stem brownish-black, young shoots patently hairy, up to 4 m. Leaves 5–7-lobed, 6–12 cm long, equally wide, base cordate, margin dentate-serrate, acute to acuminate at apex of lobation, sparsely fulvous hairy on both sides, basally 7-ribbed; petiole 3–8 cm. Inflorescence axillary, 1–3-flowered cymes; peduncles 4–5 cm, flower yellow, campanulate, 3.5–5 cm long, 4–6 cm across. Capsule 1–1.2 cm across, globose, fruiting sepals much larger. Seeds 4 capsule<sup>-1</sup>, ovoid.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 28 January 2023, Rahman, Sarwar & Ashrafuzzaman 001 (AAHBAU).

**Distribution:** Native to Andaman Is., Bangladesh, Cambodia, China, East Himalaya, India, Indonesia, Laos, Lesser Sunda Is., Malaya, Myanmar, Nepal, Philippines, Sri Lanka, Taiwan, Thailand, Vietnam; Introduced into Cook Is.

**Cuscutareflexa Roxb. Pl. Coromandel 2: 3. 1799.**

*Kaduriasreflexa* (Roxb.) Raf. Fl. Tellur. 4:91. 1838. *Monogynellareflexa* (Roxb.) Holub Folia Geobot. Phytotax. 12:429. 1977. (Fig. 2E)

A stout succulent twiner, stem up to 2.5 mm in diam., yellowish. Flowers sessile in lateral racemes. Calyx cupular, lobes herbaceous, c. 1.5 mm long, suborbicular. Corolla

cream-coloured, c. 7 mm across, 6–8 mm long, funnel-form; lobes ovate-triangular, erect. Stamens 5; filaments very short; corolla scale ovate to oblong, fimbriate, ovary c. 2 mm long, conical, stigma acute. Capsule succulent, c. 5 mm across, globose-conical. Seeds black.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 10 January 2023, Rahman, Sarwar & Ashrafuzzaman 015 (AAHBAU).

**Distribution:** Native to Afghanistan, Bangladesh, China, East & West Himalaya, India, Indonesia, Laos, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, Tibet, Vietnam; Introduced into Mauritius.

**Evolvulus glomeratus Nees & Mart. Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 11: 81. 1823.**

*Evolvulus glomeratus* subsp. *euglomeratus* Ooststr. Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 14:225. 1934, not validly publ. *Evolvulus glomeratus* var. *genuinus* Meisn. C.F.P. von Martius & auct. suc. (eds.), Fl. Bras. 7:335. 1869, not validly publ. *Evolvulus glomeratus* f. *genuinus* Ooststr. Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 14:226. 1934. (Fig. 2F)

An evergreen woody subshrub, up to 0.4 m tall and 1 m in diameter. Leaves and stems densely downy, covered with a light grey fuzz, lanceolate to elliptic, 0.8–1.5 cm x 2–3 cm. Flowers solitary, plate to funnel-shaped, up to 2 cm across, pale lavender or powder blue petals and white throats.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 15 May 2023, Rahman, Sarwar & Ashrafuzzaman 019 (AAHBAU).

**Distribution:** Native to Argentina, Bolivia, Brazil, French Guiana, Guyana, Paraguay, Suriname, Uruguay, Venezuela; Introduced into Bangladesh, Leeward Is., Windward Is.

**Ipomoea alba L. Sp. Pl. 161. 1753.**

*Ipomoea bona-nox* L. Sp. Pl., ed. 2:228. 1762, nom. superfl. *Ipomoea grandiflora* Lam. Tabl. Encycl. 1:467. 1793. *Convolvulus bona-nox* Spreng. Syst. Veg., ed. 16. 1:600. 1824. *Calonyction roxburghii* G. Don in Gen. Hist. 4:263. 1837. *Calonyction album* (L.) House Bull. Torrey Bot. Club 31:591. 1904. (Fig. 2G)

A perennial climber, the stem woody at the base. Leaves rounded, ovate, entire or 3–5-lobed, 5–15 cm long, basally cordate, apically acuminate, glabrous. Inflorescence 1 to several flowered cymes, flowers white, salverform, the tube 9–15 cm long, the limb 8–10 cm broad. Fruit capsular, ovoid to subglobose, 2–3 cm long, dark brown, glabrous. Seeds dark brown to black, glabrous.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 February 2023, Rahman, Sarwar & Ashrafuzzaman 009 (AAHBAU).

**Distribution:** Native to Argentina, Bahamas, Belize, Bolivia, Brazil, Central American Pac, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Florida, French Guiana, Galápagos, Guatemala, Guyana, Haiti, Honduras, Jamaica, Leeward Is., Mexico, Nicaragua, Panamá, Paraguay, Peru, Puerto Rico, Suriname, Trinidad-Tobago, Uruguay, Venezuela, Windward Is.; Introduced into Andaman Is., Angola, Australia, Bangladesh, Bermuda, Cameroon, Caroline Is., Central African Repu, China, Colorado, Comoros, Congo, Cook Is., East & West Himalaya, Equatorial Guinea, Ethiopia, Fiji, Gabon, Ghana, Guinea, Gulf of Guinea Is., India, Ivory Coast, Japan, Kenya, Indonesia, Kermadec Is., Korea, Laos, Lesser Sunda Is., Liberia, Line Is., Madagascar, Malaya, Marianas, Marquesas, Mauritius, Mozambique, Myanmar, Nepal, New Caledonia, New Guinea, Nigeria, Norfolk Is., Pakistan, Philippines, Pitcairn Is., Réunion, South Africa, Samoa, Sierra Leone, Society Is., Solomon Is., Sri Lanka, St. Helena, Sudan, Sulawesi, Tanzania, Texas, Thailand, Togo, Tokelau-Manihiki, Tonga, Tuamotu, Tubuai Is., Uganda, USA, Vanuatu, Vietnam, Zaïre, Zimbabwe.

***Ipomoea aquatica* Forssk. Fl. Aegypt.-Arab.: 44. 1775.** (Fig. 2H)

A creeping or floating aquatic herb, stems hollow, rooting at the nodes. Leaves alternate, usually oblong-lanceolate or narrowly triangular, 5–10 cm x 2–6 cm, base hastate, apex acute; petiole 6–10 cm long. Flowers purplish-white, solitary or few in cymes, funnel-form, c. 5 cm long, pale purple to nearly white, tube to 2 cm long, lobes obscure. Capsule globose, seeds 4 or 2 capsule<sup>-1</sup>, minutely pubescent.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 21 October 2021, Rahman, Sarwar & Ashrafuzzaman 001 (AAHBAU).

**Distribution:** Native to Angola, Bangladesh, Borneo, Botswana, Burundi, Cambodia, Cameroon, Caprivi Strip, Caroline Is., Central African Repu, Chad, China, Comoros, Congo, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Ghana, Gilbert Is., Guinea, Gulf States, India, Ivory Coast, Jawa, Kenya, KwaZulu-Natal, Laos, Lesser Sunda Is., Liberia, Madagascar, Malawi, Malaya, Mali, Maluku, Marianas, Mauritania, Mozambique, Myanmar, Namibia, Nepal, New Guinea, Nigeria, Northern Territory, Oman, Pakistan, Philippines, Queensland, Saudi Arabia, Senegal, Sierra Leone, Somalia, Sri Lanka, Sudan, Sulawesi, Sumatera, Tanzania, Thailand, Togo, Uganda, Vanuatu, Vietnam, West Himalaya, Western Australia, Yemen, Zambia, Zaïre, Zimbabwe; Introduced into Aruba, Belize, Brazil, Burkina, Christmas Is., Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Florida, French Guiana, Guatemala, Guyana, Haiti, Hawaii, Honduras, Jamaica, Leeward Is.,

Mauritius, Mississippi, Nauru, New Caledonia, Nicaragua, Palestine, Panamá, Peru, Puerto Rico, Réunion, Samoa, Seychelles, Society Is., Solomon Is., South China Sea, Suriname, Trinidad-Tobago, Wallis-Futuna Is.

***Ipomoea batatas* (L.) Lam. Tabl. Encycl. 1: 465. 1793.**

*Convolvulus batatas* L. Sp. Pl.:154. 1753. *Convolvulus esculentus* Salisb. Prodr. Stirp. Chap. Allerton: 123. 1796, nom. superfl. *Solanum batatas* (L.) Aikman in Barham, Hort. Amer.: 222, 153. 1794. (Fig. 2I)

A creeping perennial vine with tuberous roots, up to 4 m long. Leaf shape ranges from ovate-cordate to palmate, spirally arranged, petiole long, margin entire or palmately lobed, 5–10 cm long. Flowers axillary solitary or inflorescence few-flowered cyme, white or purplish, funnel-shaped, 4–7 cm long. Capsule 5–8 mm long, containing 1–4 seeds capsule<sup>-1</sup>, black and very hard seed coats.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 07 October 2023, Rahman, Sarwar & Ashrafuzzaman 025 (AAHBAU).

**Distribution:** Native to Belize, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panamá, Venezuela; Introduced into Algeria, Angola, Argentina, Azores, Bahamas, Bangladesh, Bermuda, Bolivia, Borneo, Brazil, Burkina, Burundi, Cambodia, Cameroon, Canary Is., Cape Provinces, Cape Verde, Caroline Is., Cayman Is., Central African Repu, Chad, Chile North, China, Christmas I., Comoros, Congo, Cook Is., Cuba, Dominican Republic, East Himalaya, Easter Is., Egypt, Eritrea, Ethiopia, Fiji, French Guiana, Galápagos, Ghana, Gilbert Is., Greece, Guinea, Guinea-Bissau, Guyana, Haiti, India, Ivory Coast, Jamaica, Jawa, Kenya, Kermadec Is., Kirgizstan, Korea, KwaZulu-Natal, Laos, Leeward Is., Lesser Sunda Is., Libya, Line Is., Madagascar, Madeira, Malawi, Malaya, Maluku, Marianas, Marquesas, Marshall Is., Mauritania, Mauritius, Mexico, Morocco, Mozambique, Myanmar, Nansei-shoto, Nauru, Nepal, New Caledonia, New Guinea, New York, New Zealand North, Nigeria, Niue, Pakistan, Paraguay, Peru, Philippines, Portugal, Puerto Rico, Queensland, Rodrigues, Rwanda, Réunion, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Society Is., Solomon Is., Somalia, Spain, Sri Lanka, St. Helena, Sudan, Sulawesi, Sumatera, Suriname, Tadzhikistan, Tanzania, Thailand, Tokelau-Manihiki, Tonga, Transcaucasus, Trinidad-Tobago, Tuamotu, Tubuai Is., Turkmenistan, Tuvalu, Uganda, Uruguay, USA, Vanuatu, Venezuelan Antilles, Vietnam, Wake I., Western Australia, Windward Is., Yemen, Zaïre, Zimbabwe.

***Ipomoea cairica* (L.) Sweet Hort. Brit.: 287. 1826.**

*Convolvulus cairicus* L. Syst. Nat., ed. 10. 2:922. 1759.

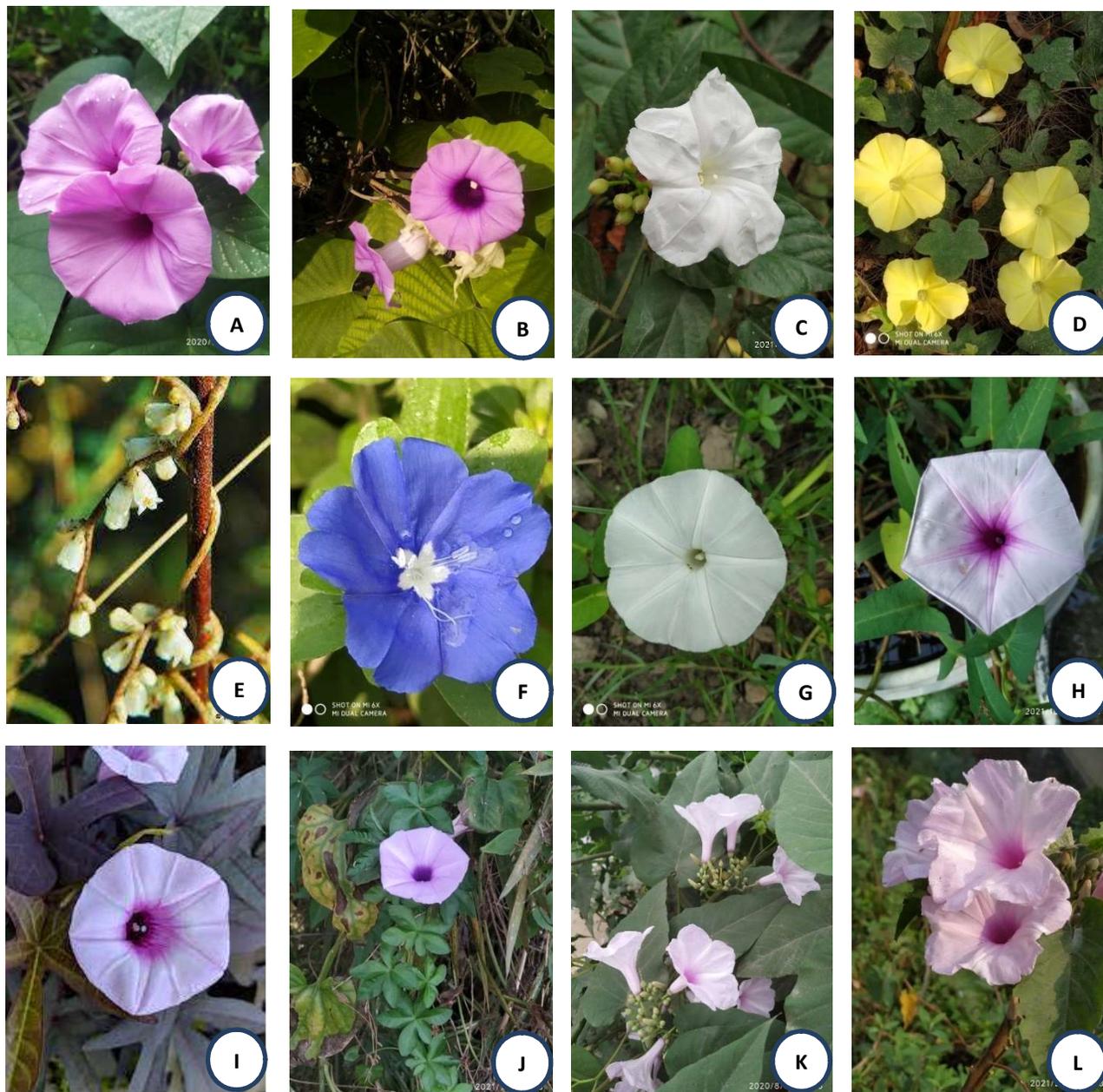
*Exocroaegyptiaca* Raf. Fl. Tellur. 4:80. 1838, nom. superfl. (Fig. 2J)

A perennial climbing plant, up to 5 m, somewhat woody at its base. Petiole 2-8 cm, base with leafy pseudostipules, leaf blade palmately 5-parted to base; apex acute or obtuse, mucronulate, ovate, ovate-lanceolate, or elliptic, (2.5-)4-5 X (0.5-)2-2.5 cm. Inflorescences 1- or several flowered, peduncle 2-8 cm, pedicel 0.5-2 cm, outer 2 sepals 4-6.5 mm; inner ones 5-9 mm, glabrous, corolla pink, purple, or reddish purple, with a darker centre, rarely white, funnellform, (2.5-)

5-7 cm. Capsule globose, ca. 1 cm. Seeds black, densely tomentose.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 03 January 2021, Rahman, Sarwar & Ashrafuzzaman 017 (AAHBAU).

**Distribution:** Native to Angola, Bangladesh, Botswana, Burkina, Burundi, Cameroon, Cape Provinces, China, Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Gulf of Guinea Is., Hainan, India, Ivory Coast, Japan, Kenya, KwaZulu-Natal,



**Fig. 2.** Photographs of different Convolvulaceae species. (A) *Argyreia nervosa*, (B) *Argyreiarioxburghii*, (C) *Camoneaumbellata*, (D) *Camoneavitifolia*, (E) *Cuscutareflexa*, (F) *Evolvulusglomeratus*, (G) *Ipomoea alba*, (H) *Ipomoea aquatica*, (I) *Ipomoea batatas*, (J) *Ipomoea cairica*, (K) *Ipomoea carnea*, and (L) *Ipomoea carneasubsp. fistulosa*

Laos, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Myanmar, Nepal, Nigeria, Northern Provinces, Oman, Palestine, Rodrigues, Rwanda, Réunion, Senegal, Sierra Leone, Somalia, South China Sea, Sri Lanka, Sudan, Swaziland, Taiwan, Tanzania, Thailand, Togo, Uganda, Vietnam, West Himalaya, Yemen, Zambia, Zaïre, Zimbabwe; Introduced into Argentina, Assam, Australia, Bismarck Archipelago, Bolivia, Borneo, Brazil, California, Canary Is., Cape Verde, Cayman Is., Christmas I., Colombia, Cuba, Ecuador, Egypt, Fiji, Guyana, Jamaica, Jawa, Kermadec Is., Leeward Is., Malaya, Maluku, Mexico, New Caledonia, New Guinea, New Zealand, Niue, Norfolk Is., Pakistan, Paraguay, Peru, Philippines, Saudi Arabia, Seychelles, Sicilia, Socotra, Tonga, Trinidad-Tobago, Tubuai Is., Uruguay, USA, Vanuatu, Venezuela, Western Australia, Windward Is.

***Ipomoea carnea* Jacq. Enum. Syst. Pl.: 13. 1760.**

*Convolvulus carneus* (Jacq.) Spreng. Syst. Veg., ed. 16. 1:602. 1824. (Fig. 2K)

A shrub, up to 5 m tall. Leaves suborbicular or ovate to lanceolate, up to 30 cm long, apex acuminate, slightly cordate leaf base, pubescent especially beneath. Flowers are arranged in cymes/panicles, dark pink to purple, slightly enlarged at the base. Capsule ovoid, glabrous. Seed many, black, pubescent.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 31 August 2020, Ashrafuzzaman, Sarwar & Rahman 0096 (AAHBAU).

**Distribution:** Native to Argentina, Belize, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panamá, Paraguay, Peru, Venezuela; Introduced into Aruba, Australia, Bahamas, Bangladesh, Burkina, Burundi, Cambodia, Cameroon, Caroline Is., Chad, China Southeast, Colorado, Comoros, Cuba, Dominican Republic, East & West Himalaya, Egypt, Eritrea, Ethiopia, Fiji, Guinea, Hainan, Haiti, India, Iran, Ivory Coast, Jamaica, Jawa, Kenya, KwaZulu-Natal, Laos, Leeward Is., Lesser Sunda Is., Libya, Madagascar, Malawi, Malaya, Marianas, Marquesas, Mauritius, Mozambique, Myanmar, Nansei-shoto, Nauru, Nepal, Netherlands Antilles, New Caledonia, New Guinea, Pakistan, Puerto Rico, Rodrigues, Rwanda, Réunion, Saudi Arabia, Seychelles, Society Is., Somalia, Sri Lanka, Sudan, Taiwan, Tanzania, Thailand, Trinidad-Tobago, Venezuelan Antilles, USA, Vietnam, Windward Is., Yemen, Zambia, Zaïre, Zimbabwe.

***Ipomoea carnea* subsp. *fistulosa* (Mart. ex Choisy) D.F.Austin Taxon 26: 237. 1977.**

*Convolvulus fistulosus* (Mart. ex Choisy) Kuntze in Revis. Gen. Pl. 3(2): 213. 1898. *Ipomoea fistulosa* Mart. ex Choisy in A.P.de Candolle, Prodr. 9:349. 1845. (Fig. 2L)

A shrub, woody at the base, hollow, glabrous, or minutely

puberulent, up to 2.5 m. Leaves ovate to lanceolate, 10–25 cm long, truncate to shallowly cordate basally, long acuminate apically, puberulent on both surfaces. Flowers in cymose-paniculate clusters, deep pink to rose-purple to almost white, 5–8 cm long. Fruit capsular, ovoid to subglobose, 2 cm long. Seeds covered with long comose brown trichomes.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 17 February 2021, Rahman, Sarwar & Ashrafuzzaman 022 (AAHBAU).

**Distribution:** Native to Argentina, Belize, Bolivia, Brazil, North, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panamá, Paraguay, Peru, Venezuela; Introduced into Australia, Bahamas, Bangladesh, Burundi, Cambodia, Cameroon, Caroline Is., Chad, China Southeast, Colorado, Comoros, Cuba, Dominican Republic, East & West Himalaya, Eritrea, Ethiopia, Fiji, Florida, Georgia, Guinea, Hainan, Haiti, India, Iran, Ivory Coast, Jamaica, Jawa, Kenya, KwaZulu-Natal, Laos, Leeward Is., Lesser Sunda Is., Madagascar, Malawi, Malaya, Marianas, Marquesas, Mauritius, Mozambique, Myanmar, Nansei-shoto, Nauru, Nepal, Netherlands Antilles, New Caledonia, New Guinea, Pakistan, Puerto Rico, Rodrigues, Rwanda, Réunion, Saudi Arabia, Seychelles, Society Is., Somalia, South Carolina, Sri Lanka, Sudan, Taiwan, Tanzania, Texas, Thailand, Trinidad-Tobago, Vietnam, Windward Is., Zambia, Zaïre, Zimbabwe.

***Ipomoea hederifolia* L. Syst. Nat., ed. 10. 2: 925. 1759.**

*Convolvulus coccineus* var. *hederifolius* (L.) Kuntze in Revis. Gen. Pl. 3(2):213. 1898. *Ipomoea coccinea* var. *hederifolia* (L.) A.Gray Syn. Fl. N. Amer. 2(1):209. 1878. *Mina hederifolia* (L.) Bello Apuntes Fl. Puerto-Rico 1:294. 1881. *Quamoclit coccinea* var. *hederifolia* (L.) House Ann. New York Acad. Sci. 18:262. 1908. *Quamoclit hederifolia* (L.) G.Don Gen. Hist. 4:259. 1837. (Fig. 3A)

An annual climber, glabrous to sparsely pubescent. Leaves ovate to suborbicular, 2–15 cm long, entire, dentate, trilobate or with 5–7 lobes, basally cordate, acute to acuminate apically, mostly glabrous. Flowers in few-to several-flowered cymes or solitary, red to red-yellow, 2.5–4.5 cm long, salverform. Fruit capsular, subglobose, 6–8 mm long. Seeds dark brown or black, pyriform.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 May 2023, Rahman, Sarwar & Ashrafuzzaman 027 (AAHBAU).

**Distribution:** Native to Argentina, Belize, Bermuda, Bolivia, Brazil, Cayman Is., Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Florida, French Guiana, Guatemala, Guyana, Haiti, Honduras, Jamaica, Leeward Is., Mexico, Nicaragua, Panamá, Paraguay, Peru, Puerto Rico,

Suriname, Trinidad-Tobago, USA, Venezuela, Windward Is.; Introduced into Angola, Australia, Bahamas, Bangladesh, Burundi, Cameroon, Central African Repu, China, Christmas I., Comoros, East & West Himalaya, Equatorial Guinea, Fiji, Ghana, Gulf of Guinea Is., Hawaii, India, Ivory Coast, Kenya, Korea, Madagascar, Malawi, Malaya, Marianas, Mauritius, Mozambique, Myanmar, Nauru, Nepal, New Caledonia, Nigeria, North Carolina, Northern Territory, Pakistan, Primorye, Rodrigues, Réunion, Senegal, Seychelles, Sierra Leone, Sri Lanka, Sudan, Tanzania, Thailand, Togo, Tonga, Tubuai Is., Uganda, Vanuatu, Vermont, Vietnam, Wallis-Futuna Is., Zambia, Zaïre, Zimbabwe.

***Ipomoea indica* (Burm.) Merr. Interpr. Herb. Amboin.: 445. 1917.**

*Convolvulus indicus* Burm. Auctuarium: 2 verso. 1755. *Pharbitis indica* (Burm.) Hagiw. Bot. & Zool. 6:1238. 1938. (Fig. 3B)

Atwining herb, sometimes prostrate, up to 6 m. Leaf blade ovate or circular, 5–15 cm x 3.5–14 cm, abaxially densely pubescent, adaxially sparsely pubescent, base cordate, apex acuminate or abruptly acuminate, petiole 2–18 cm. Inflorescences dense umbellate cymes, several flowered; peduncle 4–20 cm. Pedicel 2–5(–8) mm, flowers bright blue or bluish purple, ageing reddish-purple or red, with a paler centre, funnellform, 5–8 cm, glabrous. Capsule globose, 1–1.3 cm in diam.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 12 May 2019, Ashrafuzzaman & Sarwar 0105 (AAHBAU).

**Distribution:** Native to Argentina, Bahamas, Belize, Brazil, Cayman Is., Central American Pac, Colombia, Costa Rica, Cuba, Dominican Republic, Florida, French Guiana, Guatemala, Guyana, Haiti, Honduras, Jamaica, Leeward Is., Mexican Pacific Is., Mexico, Nicaragua, Panamá, Paraguay, Puerto Rico, Suriname, Texas, Trinidad-Tobago, Uruguay, Venezuela, Venezuelan Antilles, Windward Is.; Introduced into Alabama, Algeria, Assam, Australia, Azores, Baleares, Bangladesh, Bermuda, Bolivia, California, Cameroon, Canary Is., Cape Provinces, Caroline Is., Chile Central, China Southeast, Comoros, Congo, Cook Is., East Aegean Is., East Himalaya, Eritrea, Ethiopia, Fiji, France, Gabon, Galápagos, Ghana, Greece, Guinea, Hawaii, Japan, Juan Fernández Is., Kazan-retto, Kenya, Kriti, KwaZulu-Natal, Laos, Lesser Sunda Is., Madagascar, Madeira, Malawi, Malaya, Maluku, Marianas, Mauritius, Morocco, Myanmar, Nepal, New Caledonia, New Guinea, New Zealand, Nigeria, Niue, Norfolk Is., Northern Provinces, Pakistan, Palestine, Peru, Philippines, Pitcairn Is., Portugal, Rodrigues, Rwanda, Réunion, Samoa, Senegal, Sicilia, Sierra Leone, Society Is., Solomon Is., Somalia, South China Sea, Spain, Sri Lanka,

Sulawesi, Sumatera, Swaziland, Taiwan, Tanzania, Tasmania, Tonga, Tuamotu, Tubuai Is., Tunisia, Vanuatu, Victoria, Vietnam, Yugoslavia, Zambia, Zaïre, Zimbabwe.

***Ipomoea mauritiana* Jacq. Collectanea 4: 216. 1791.**

*Ipomoea paniculata* var. *mauritiana* (Jacq.) Kuntze in Revis. Gen. Pl. 2:445. 1891. (Fig. 3C)

Aperennial twining herb, to 10 m. Leaf circular, 7–18 cm X 7–22 cm, palmately 5–7 lobes, segments lanceolate or elliptic, apex acuminate or acute, mucronulate, petiole 3–11 cm. Inflorescences few to many flowered, peduncle 2.5–20 cm. Pedicel 0.9–2.2 cm, flowers pink or reddish purple, with a darker centre, funnellform, 5–6 cm. Capsule ovoid, 1.2–1.4 cm. Seeds dark brown, woolly-sericeous with long, easily detached hairs.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 February 2023, Rahman, Sarwar & Ashrafuzzaman 028 (AAHBAU).

**Distribution:** Native to Angola, Belize, Benin, Bolivia, Brazil, Burkina, Burundi, Cameroon, Cape Verde, Central African Repu, Chad, Colombia, Comoros, Congo, Costa Rica, Dominican Republic, Ecuador, Equatorial Guinea, French Guiana, Gabon, Gambia, Ghana, Guatemala, Guinea, Guinea-Bissau, Gulf of Guinea Is., Guyana, Haiti, Honduras, Ivory Coast, Jamaica, Kenya, KwaZulu-Natal, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Nicaragua, Nigeria, Panamá, Peru, Puerto Rico, Rodrigues, Réunion, Senegal, Sierra Leone, Somalia, Sudan, Suriname, Tanzania, Togo, Uganda, Venezuela, Zambia, Zaïre, Zimbabwe; Introduced into Bangladesh, Cambodia, Caroline Is., China, Christmas I., Fiji, India, Kazan-retto, Laos, Leeward Is., Lesser Sunda Is., Malaya, Myanmar, Nansai-shoto, Nepal, New Caledonia, New Guinea, Northern Territory, Ogasawara-shoto, Philippines, Queensland, Seychelles, Sri Lanka, Sulawesi, Taiwan, Thailand, Trinidad-Tobago, Vietnam, Windward Is.

***Ipomoea caprae* (L.) R.Br. J.H.Tuckey, Narr. Exped. Zaire: 477. 1818.**

*Convolvulus caprae* L. Sp. Pl.:159. 1753. *Convolvulus capripes* Stokes Bot. Mat. Med. 1:327. 1812, nom. superfl. *Ipomoea aegopoda* St.-Lag. Ann. Soc. Linn. Lyon 7:70. 1880, nom. superfl. *Plesiagopussovana* Raf. Fl. Tellur. 4:78. 1838, nom. superfl. (Fig. 3D)

A perennial herb, prostrate, up to 30 m, rooting at nodes. Petiole 2–10 cm, leaf ovate, elliptic, circular, reniform or quadrate to oblong, 3.5–9 cm X 3–10 cm, base broadly cuneate, truncate, or shallowly cordate, apex emarginate or deeply 2-lobed, mucronulate. Inflorescences 1- to several flowered, peduncle 4–14 cm. Pedicel 2–2.5 cm, flower purple or reddish purple, with a darker center, funnellform, 4–5 cm. Capsule globular, 1.1–1.7 cm, leathery, seeds black,

trigonus-globose, densely brownish tomentose.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 20 November 2020, Ashrafuzzaman & Sarwar 0041 (AAHBAU).

**Distribution:** Native to Aldabra, Angola, Aruba, Australia, Bahamas, Bangladesh, Belize, Benin, Bermuda, Borneo, Brazil, Burundi, Cambodia, Cameroon, Canary Is., Cape Provinces, Cape Verde, Caroline Is., Cayman Is., Central American Pac, China Southeast, Christmas I., Cocos (Keeling) Is., Colombia, Comoros, Congo, Cook Is., Costa Rica, Cuba, Djibouti, Dominican Republic, Easter Is., Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Fiji, French Guiana, Gabon, Galápagos, Georgia, Ghana, Gilbert Is., Guatemala, Guinea, Gulf of Guinea Is., Gulf States, Guyana, Hainan, Haiti, Hawaii, Honduras, India, Iran, Ivory Coast, Jamaica, Japan, Jawa, Kazan-retto, Kenya, Kermadec Is., Kuwait, KwaZulu-Natal, Leeward Is., Lesser Sunda Is., Liberia, Line Is., Louisiana, Madagascar, Madeira, Malawi, Malaya, Maluku, Marcus I., Marianas, Marquesas, Marshall Is., Mauritania, Mauritius, Mexico, Mississippi, Mozambique, Myanmar, Nansei-shoto, Nauru, Netherlands Antilles, New Caledonia, New Guinea, New Zealand North, Nicaragua, Nigeria, Norfolk Is., Northern Territory, Ogasawara-shoto, Oman, Pakistan, Palestine, Panamá, Peru, Philippines, Phoenix Is., Puerto Rico, Rodrigues, Réunion, Samoa, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Sinai, Society Is., Socotra, Solomon Is., Somalia, South China Sea, Sri Lanka, Sudan, Sulawesi, Sumatera, Suriname, Taiwan, Tanzania, Thailand, Togo, Tokelau-Manihiki, Tonga, Trinidad-Tobago, Tuamotu, Tubuai Is., Turks-Caicos Is., Tuvalu, USA, Vanuatu, Venezuela, Venezuelan Antilles, Vietnam, Wallis-Futuna Is., Windward Is., Yemen, Zambia, Zaïre, Zimbabwe; Introduced into Wake I.

***Ipomoea pes-tigridis* L. Sp. Pl.: 162. (1753) nom. cons.**

*Convolvuloides palmata* Moench Methodus:452. 1794, nom. superfl. *Convolvulus bryoniifolius* Salisb. Prodr. Stirp. Chap. Allerton:125. 1796, nom. superfl. *Convolvulus pes-tigridis* (L.) Spreng. Syst. Veg., ed. 16. 1:502. 1824. (Fig. 3E)

A twining annual herb, up to 3 m. Leaf circular or transversely elliptic, 2–10 cm x 3–13 cm, densely pubescent, apex mucronate, petiole 2–8 cm. Inflorescences capitate, few-flowered, peduncle 4–11 cm, pedicel obsolete. Corolla white, funnelform, 3–4 cm, midpetaline bands sparsely pubescent. Capsule ovoid, ca. 7 mm, 4-valved. Seeds ellipsoid, grey tomentellous.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 October 2023, Rahman, Sarwar & Ashrafuzzaman 027 (AAHBAU).

**Distribution:** Native to Angola, Bangladesh, Benin, Borneo,

Botswana, Burkina, Cambodia, Caprivi Strip, Central African Repu, Chad, China, East Himalaya, Guinea-Bissau, Hainan, India, Jawa, Kenya, Lesser Sunda Is., Malawi, Malaya, Mali, Maluku, Mauritius, Mozambique, Myanmar, Namibia, Nepal, New Guinea, Niger, Nigeria, Northern Provinces, Pakistan, Philippines, Somalia, South China Sea, Sri Lanka, Sudan, Sulawesi, Sumatera, Taiwan, Tanzania, Thailand, Vietnam, West Himalaya, Zambia, Zaïre, Zimbabwe; Introduced into Australia, Marianas, Northern Territory.

***Ipomoea purpurea* (L.) Roth Bot. Abh. Beobacht.: 27. 1787.**

*Convolvulus purpureus* L. Sp. Pl., ed. 2.:219. 1762. *Convolvuloides purpurea* (L.) Moench Methodus:452. 1794. *Diatremapurpurea* (L.) Raf. Fl. Tellur. 4:72. 1838. *Pharbitis purpurea* (L.) Bojer Hortus Maurit.:227. 1837. (Fig. 3F)

An annual climber, pilose to hirsute with spreading trichomes. Leaves broadly ovate to cordate, 2–10 cm long, entire or trilobate, pubescent on both surfaces. Inflorescence 1–5-flowered cymes, flower purple, pink, blue or with stripes of these colours on a white background, throat white, 3–5 cm long. Fruit capsular, depressed globose, 10 mm long. Seeds black, pyriform, glabrous.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 September 2023, Rahman, Sarwar & Ashrafuzzaman 031 (AAHBAU).

**Distribution:** Native to Argentina, Bolivia, Brazil, Chile Central, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Nicaragua, Panamá, Paraguay, Peru, Uruguay, USA, Venezuela; Introduced into Angola, Australia, Austria, Balears, Bangladesh, British Columbia, Bulgaria, Canada, Canary Is., Cape Provinces, Cape Verde, Central European Rus, China, Cuba, Cyprus, Dominican Republic, East European Russia, East & West Himalaya, Egypt, Eritrea, Ethiopia, France, Free State, Great Britain, Greece, Hainan, Haiti, India, Iran, Italy, Kenya, Korea, KwaZulu-Natal, Leeward Is., Lesotho, Madagascar, Madeira, Maryland, Mauritius, Michigan, Mozambique, Myanmar, Nepal, New Caledonia, New Zealand, Northern Provinces, Pakistan, Philippines, Primorye, Puerto Rico, Rodrigues, Romania, Rwanda, Réunion, Sicilia, South European Russi, Spain, Sri Lanka, Swaziland, Tadzhikistan, Tanzania, Thailand, Tibet, Tunisia, Turkey, Uganda, Windward Is., Yemen, Zambia, Zaïre, Zimbabwe.

***Ipomoea quamoclit* L. Sp. Pl.: 159. 1753.**

*Convolvulus pennatifolius* Salisb. Prodr. Stirp. Chap. Allerton: 124. 1796, nom. superfl. *Convolvulus pennatus* Desr. in J.B.A.M.de Lamarck, Encycl. 3:567. 1792, nom. superfl. *Convolvulus quamoclit* (L.) Spreng. Syst. Veg., ed. 16. 1:591. 1824. *Quamoclit pennata* Bojer Hort. Maurit.:224.

1837, nom. superfl. *Quamoclit quamoclit* (L.) Britton in N.L.Britton&A.Brown, III. Fl. N. U.S. 3:22. 1898, not validly publ. *Quamoclit vulgaris* Choisy yMém. Soc. Phys. Genève 6:434. 1833 publ. 1834 [Conv. Or.: 52]. (Fig. 3G)

An herbaceous, twining vine, up to 3.0 m tall. Leaf deeply lobed (nearly pinnate), 9–19 lobes on each side, 1–9 cm long. Flowers solitary or in 2-5-flowered cymes, red, pink, or white, trumpet-shaped, 2.5–5.1 cm x 2.5 cm. Fruit capsular, ovoid, 6-8 mm long. Seeds 4 capsule<sup>-1</sup>, ovoid, black.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 20 September 2019, Ashrafuzzaman& Sarwar 0071 (AAHBAU).

**Distribution:** Native to Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panamá; Introduced into Angola, Argentina, Australia, Bahamas, Bangladesh, Benin, Bermuda, Bolivia, Borneo, Brazil, Burundi, Cambodia, Cameroon, Cape Verde, Caroline Is., Cayman Is., Central African Repu, Chad, China Southeast, Christmas Is., Colombia, Comoros, Cuba, Dominican Republic, East & West Himalaya, Ecuador, Equatorial Guinea, Fiji, French Guiana, Gabon, Galápagos, Gambia, Georgia, Guinea, Gulf of Guinea Is., Guyana, Haiti, India, Ivory Coast, Jamaica, Korea, Laos, Leeward Is., Lesser Sunda Is., Liberia, Madagascar, Madeira, Malawi, Malaya, Marianas, Marquesas, Mauritius, Mozambique, Myanmar, Nepal, New Caledonia, Nigeria, Niue, Northern Territory, Ontario, Pakistan, Paraguay, Peru, Philippines, Phoenix Is., Primorye, Puerto Rico, Queensland, Romania, Réunion, Samoa, Senegal, Seychelles, Sierra Leone, Society Is., Solomon Is., Sri Lanka, Sulawesi, Suriname, Tanzania, Tennessee, Thailand, Togo, Trinidad-Tobago, Tubuai Is., Uruguay, USA, Vanuatu, Venezuela, Vermont, Vietnam, Wallis-Futuna Is., Windward Is., Zaïre.

***Ipomoea triloba* L. Sp. Pl.: 161. 1753.**

*Convolvulus trilobus* (L.) Desr. in J.B.A.M.de Lamarck, Encycl. 3:564. 1792. *Quamoclit triloba* (L.) G.Don Gen. Hist. 4:259. 1837. (Fig. 3H)

An annual twining or prostrate herb, glabrous or nodes sparsely pubescent. Petiole 2.5–6 cm, leaf blade broadly ovate to circular, 2.5–7 cm X 2–6 cm, glabrous or sparsely pilose, base cordate. Inflorescences dense umbellate cymes, 1- to several flowered, peduncle 2.5–5.5 cm. Pedicel 5–7 mm, flowers pink or pale purple, funnelform, 1.5–2 cm. Capsule globular, 5–6 mm, bristly pubescent. Seeds dark brown.

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 08 October 2023, Rahman, Sarwar & Ashrafuzzaman 033 (AAHBAU).

**Distribution:** Native to Aruba, Bahamas, Belize, Brazil, Cayman Is., Colombia, Costa Rica, Cuba, Dominican

Republic, El Salvador, Galápagos, Guatemala, Haiti, Honduras, Jamaica, Leeward Is., Mexico, Netherlands Antilles, Panamá, Puerto Rico, Trinidad-Tobago, Turks-Caicos Is., Venezuela, Windward Is.; Introduced into Australia, Borneo, Burkina, Cape Verde, Caroline Is., China, Christmas I., Ecuador, Egypt, Guinea, India, Ivory Coast, Jawa, Kazan-retto, Laos, Lesser Sunda Is., Malaya, Maluku, Marianas, Marshall Is., Mauritius, Myanmar, Nansei-shoto, Nepal, New Guinea, Northern Territory, Palestine, Peru, Philippines, Samoa, Senegal, Sierra Leone, Solomon Is., South China Sea, Sri Lanka, Sulawesi, Sumatera, Taiwan, Thailand, USA, Vietnam, West Himalaya.

***Merremia emarginata* (Burm.f.) Hallier f. Bot. Jahrb. Syst. 16: 552. 1893.**

*Evolvulus emarginatus* Burm.f. Fl. Indica:77. 1768. *Ipomoea emarginata* (Burm.f.) Kuntze Revis. Gen. Pl. 2:443. 1891. (Fig. 3I)

A perennial herb with prostrate stems rooting at the nodes, up to 0.75 m. Leaves reniform to broadly ovate, 0.5–3.5 mm x 0.6–3.5 mm, cordate basally with a broadly rounded sinus and rounded basal lobes, obtuse to broadly rounded or somewhat emarginate apically, coarsely crenate or entire, glabrous or sparsely appressed pilose, petiole 0.2–3.7 cm. Inflorescences solitary or in 2–3-flowered cymose, flowers subsessile, yellow with a paler tube, campanulate, 5–9 mm long. Fruits capsular, subglobose, 5–6 mm long, brownish-black or black. Seeds greyish-brown.

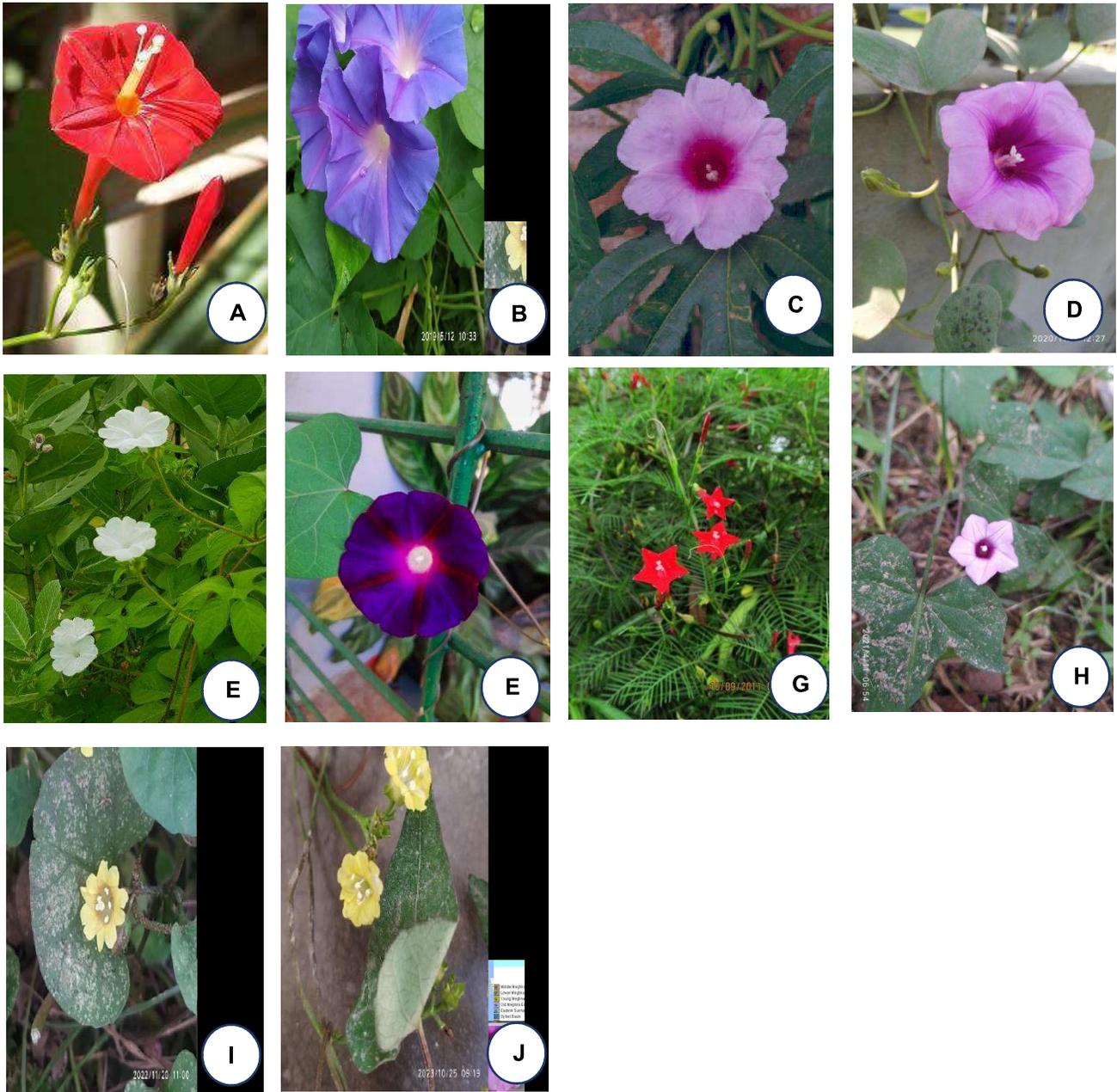
**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 20 November 2022, Rahman, Sarwar & Ashrafuzzaman 004 (AAHBAU).

**Distribution:** Native to Angola, Bangladesh, Borneo, Burkina, Burundi, Cameroon, Chad, China Southeast, Ethiopia, Hainan, India, Jawa, Lesser Sunda Is., Mauritania, Myanmar, Nepal, New Guinea, Philippines, Sri Lanka, Sudan, Sulawesi, Tanzania, Thailand, Uganda, Zaïre; Introduced into Madagascar.

***Merremia hederacea* (Burm.f.) Hallier f. Bot. Jahrb. Syst. 18: 118. 1893.**

*Convolvulus flavus* Willd. Sp. Pl., ed. 4. 1:852. 1798, nom. illeg. *Evolvulus hederaceus* Burm.f. Fl. Indica:77. 1768. (Fig. 3J)

A twining herb, glabrous or sparsely hirsute, rooting at nodes. Leaf 2–4 cm x 1.5–3 cm, cordate-ovate, base cordate or broadly cordate, rarely 3-lobed, petiole 1-2 cm long, glabrous or pubescent. Inflorescences one or few to many-flowered cymes, peduncle 2–4 cm long. Flower yellow, campanulate, c. 1.3 cm across, outside glabrous, inside villous basally. Capsule c. 5 mm long, depressed globose or broadly conical, reticulate wrinkled. Seeds trigonous-globose.



**Fig. 3.** Photographs of different Convolvulaceae species. (A) *Ipomoea hederifolia*, (B) *Ipomoea indica*, (C) *Ipomoea mauritiana*, (D) *Ipomoea pes-caprae*, (E) *Ipomoea pes-tigris*, (F) *Ipomoea purpurea*, (G) *Ipomoea quamoclit*, (H) *Ipomoea triloba*, (I) *Merremia emarginata*, and (J) *Merremia hederacea*

**Specimen examined:** Mymensingh, Bangladesh Agricultural University campus, 25 October 2023, Rahman, Sarwar & Ashrafuzzaman 010 (AAHBAU).

**Distribution:** Native to Australia, Bangladesh, Benin, Borneo, Burkina, Cambodia, Cameroon, Caroline Is., Central African Repu, Chad, China, Christmas I., Congo, East & West Himalaya, Ethiopia, Gabon, Ghana, Guinea, Guinea-Bissau, Hainan, India, Ivory Coast, Japan, Jawa, Kenya,

Laos, Lesser Sunda Is., Liberia, Madagascar, Malaya, Mali, Marianas, Mauritius, Mozambique, Myanmar, Nepal, New Guinea, Niger, Nigeria, Northern Territory, Pakistan, Philippines, Rwanda, Réunion, Senegal, Sierra Leone, Somalia, Sri Lanka, Sudan, Sumatera, Taiwan, Tanzania, Thailand, Togo, Vietnam, Zambia, Zaire, Zimbabwe; Introduced into Colombia, Cuba, Leeward Is., Society Is., Trinidad-Tobago, Windward Is.

## CONCLUSION

The morning glory family Convolvulaceae is represented by a total of 22 taxa belonging to 6 genera at the BAU campus; all taxa are important in both medicine and food crops except blue daze *Evolvulus glomeratus*, the well-known ornamental plant for decades. Green weed management techniques should, therefore, be used to control and utilise these plants (weeds) sustainably without compromising agricultural production and crop yield.

## REFERENCES

- Ahmed ZU, Hassan MA, Begum ZNT, Khondker M, Kabir SMH, Ahmed M, Ahmed ATA and Haque EU (eds) 2008. *Encyclopedia of Flora and Fauna of Bangladesh*. vol. 7 – Angiosperms: Dicotyledons (Balsaminaceae–Euphorbiaceae). Asiatic Society of Bangladesh, Dhaka. pp. 247–273.
- Akinniji G, Lee J, Kim H, Lee JG and Yang I. 2022. A medicinal halophyte *Ipomoea pes-caprae* (Linn.) R.Br.: A review of its botany, traditional uses, phytochemistry, and bioactivity. *Marine Drugs* **20**(5): 329.
- Akter S, Jahan I, Khatun MR, Khan MF, Arshad L, Jakaria M and Haque MA 2021. Pharmacological insights into *Merremia vitifolia* (Burm.f.) Hallier f. leaf for its antioxidant, thrombolytic, anti-arthritis and anti-nociceptive potential. *Bioscience Reports* **41**(1): BSR20203022.
- Alkiyumi S, Abdullah MA, Alrashdi AS, Salama SM, Abdelwahab SI and Hadi AH 2012. *Ipomoea aquatica* extract shows protective action against thioacetamide-induced hepatotoxicity. *Molecules* **17**(5): 6146-55.
- Anonymous 1996. *Techniques and Procedures for Collecting, Preserving, Processing, and Storing Botanical Specimens*. Research Branch, British Columbia Ministry of Forest, Victoria, B.C. Work Paper 18/1996.
- Anonymous 2024. *Strategic Management Plan of Invasive Alien Species of Plants of Selected Five Protected Areas (Summary)*. Bangladesh National Herbarium, Forest Department and IUCN Bangladesh. pp iv+27.
- Ashfaq S, Ahmad M, Zafar M, Sultana S, Nazish M and Khan A N. 2020. Systematics of medicinally important weeds of genus *Convolvulus*: Convolvulaceae. *Planta Daninha* **38**: e020216203.
- Baruah NC, Das S and Yadav SK 2014. Preliminary phyto-chemical analysis and antioxidant activities of methanol extract of *Argyrea roxburghii* Choisy. *International Journal of Herbal Medicine* **2**(1): 126-131.
- Beheshti F, Shabani A, Akbari Eidgahi MR, Kookhaei P, Vazirian M and Safavi M 2021. Anticancer activity of *Ipomoea purpurea* leaves extracts in monolayer and three-dimensional cell culture. *Evidence-Based Complementary and Alternative Medicine* doi: 10.1155/2021/6666567
- Charles A, Joseph M and Ramani VA 2012. Phytochemical investigation of *Merremia hederacea*. *Journal of Natural Product and Plant Resources* **2**(4): 486-489.
- Chen G-T, Lu Y, Yang M, Li J-L and Fan B-Y 2018. Medicinal uses, pharmacology, and phytochemistry of Convolvulaceae plants with central nervous system efficacies: A systematic review. *Phytotherapy Research* **32**: 823-864.
- Cronquist A 1988. *The Evolution and Classification of Flowering Plants*. The New York Botanical Garden, Bronx.
- Elumalai EK, Ramachandran M, Thirumalai T and Vinothkumar P. 2011. Antibacterial activity of various leaf extracts of *Merremia emarginata*. *Asian Pacific Journal of Tropical Biomedicine* **1**(5): 406-408.
- Essieth UA and Obiobo GE 2014. Phytochemical, nutrients and antinutrients of the *Ipomoea triloba*, *Ipomoea batatas*, *Ipomoea involucrata* leaves. *International Journal of Research* **1**: 1412-1418.
- Grover M 2021. An important ayurvedic medicinal herb *Argyrea speciosa* (Vidhara): A review. *Asian Journal of Pharmaceutical and Health Sciences* **11**(2): 2489-2496.
- Gupta S and Ved A 2017. *Operculina turpethum* (Linn.) Silva Manso as a medicinal plant species: A review on bioactive components and pharmacological properties. *Pharmacognosy Reviews* **11**(22): 158-166.
- Jaseela NM, Balasubramanian T, Suresha BS, Anaswara MR and Sushma YC 2022. Medical importance of *Ipomoea quamoclit*- a systematic review. *Asian Journal of Pharmaceutical and Health Sciences* **3**: 2722-2725.
- Khan MS 1985. Convolvulaceae. In Khan MS (ed). *Flora of Bangladesh*. Fascicle no. 30, Bangladesh National Herbarium, Dhaka. pp. 59.
- Mohanraj R and Sivasankar S 2014. Sweet potato (*Ipomoea batatas* [L.] Lam.) – a valuable medicinal food: A review. *Journal of Medicinal Food* **17**(7): 733-741.
- Muhammad N, Ullah S, Abu-Izneid T, Rauf A, Shehzad O, Atif M, Khan H, Naz H, Herrera-Calderon O, Khalil A and Uddin MS. 2020. The pharmacological basis of *Cuscuta reflexa* whole plant as an antiemetic agent in pigeons. *Toxic Reports* **7**: 1305-1310.
- Mukherjee D, Gupta A, Soni D and Jana GK 2011. *Ipomoea fistulosa*: an evaluation of its pharmacognostical and phytochemical profile. *International Journal of Chemical and Analytical Science* **2**(12): 1270-1273.
- Ojha G, Mishra KN and Mishra A 2016. Pharmacological uses and isolated chemical constituents of *Ipomoea digitata*: A review. *IOSR Journal of Pharmacy and Biological Sciences* **11**(3 Ver. II): 01-04.
- Pant D 2022. Phytochemistry and therapeutic properties of *Ipomoea carnea*. *Journal of Pharmacognosy and Natural Products* **8**: 182.
- Rauniyar N and Srivastava D 2020. Dudhikalmi (*Ipomoea alba*) a less exploited nutritive plant: A reassessment. *International Journal of Pharmacy and Biological Sciences* **10**(3): 19-24.
- Selvam NT and Acharya MV 2015. Review of *Ipomoea pes-tigris* L.: Traditional uses, botanical characteristics, chemistry and biological activities. *International Journal of Pharmaceutical Sciences and Research* **6**: 1443-1448.
- Srivastava D and Rauniyar N 2020. *Medicinal Plants of Genus Ipomoea*. LAP Lambert Academic Publishing, Latvia.
- Srivastava D and Shukla K 2015. *Ipomoea cairica*: a medicinal weed with promising health benefits. *International Journal of Information Research and Review* **2**: 687-694.
- Staples GW and Brummitt RK 2007. Convolvulaceae. In Heywood VH, Brummitt RK, Culham A, Seberg O (eds). *Flowering Plants of the World*. Firefly Books, Richmond Hill. pp. 108–110.
- Sulaiman C, Geetha SP and Indira B 2014. Identification of phenolic antioxidants in *Ipomoea mauritiana* Jacq. using spectrophotometric and mass spectroscopic studies. *Avicenna Journal of Phytomedicine* **4**(2): 89-96.
- UNDP (United Nations Development Programme) 1988. *Land Resource Appraisal of Bangladesh for Agricultural Development Report 2: Agroecological Regions of Bangladesh*. UNDP and FAO (Food and Agriculture Organization), Rome. p. 577.
- Venkateswarlu G and Ganapathy S 2018. Preliminary pharmacognostic and phytochemical study on *Argyrea cymosa* root. *Journal of Analytical & Pharmaceutical Research* **7**: 494-498.
- Yuvarani S and Selvam 2018. Phytochemical analysis and antibacterial activity of *Ipomoea indica* plant leaf extracts. *International Journal of Current Pharmaceutical Research* **10**(2): 86-88.
- Zia-Ul-Haq M, Riaz M and De Feo V 2012. *Ipomoea hederacea* Jacq.: A medicinal herb with promising health benefits. *Molecules* **17**(11): 13132-13145.