



RESEARCH PAPER

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Addition of one hundred and two taxa to the angiosperm checklist of Rajshahi City

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Abstract

This paper reported an additional occurrence of 102 angiosperm species belonging to 46 families in and around Rajshahi City. Among them, 76 species are under Magnoliopsida (Dicots), and 26 are under Liliopsida (Monocots). Regarding habit, 51 species are herbs, 29 are shrubs, 14 are grasses, 2 are climbers, and 6 are trees. An enumeration of the recorded species is presented with updated botanical names, local names (wherever available), family, habit, habitat and use.

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Introduction

Documentation of plant species in an area is important in the field of taxonomy and further scientific research. Rajshahi City is located on the banks of the great Padma between 24°20' and 24°24' north latitude and 88°32' and 88°40' east longitude and has a total area of 95.56 sq km and is surrounded by Paba Upazila. Rajshahi City is not as densely populated city like Dhaka and Chattogram. However, Rajshahi City loses its floristic composition daily due to unplanned housing, excessive infrastructure development, etc. Plant species of the city are grown naturally in the graveyard, embankment side, railway side, roadside, in around the house, and some are also planted as ornamental, or others uses at various premises of the institution, roadside, and park.

Several researchers have studied the floristic diversity of Rajshahi City in the form of floristic accounts or ethnobotany or ethnomedicinal observations. Researcher such as Rahman *et al.*, 2007a, b; Rahman *et al.*, 2008; Ara *et al.*, 2011; Rahman *et al.*, 2015; Zahra and Rahman, 2018; Hasan, 2019; Faria *et al.*, 2021; Hasan, 2021a, b; Rahman, 2021a, b; Hasan, 2022; Hasan, 2023 have been published their article with the occurrence of 636 taxa in this area. Current investigations were carried out in the same area to discovered more species and described only species that have not been mentioned in the previous works. The study's objective is to confirm the presence of more species in Rajshahi city and the places adjacent to it that will enrich the current species of Angiosperm by several researchers.

Materials and methods

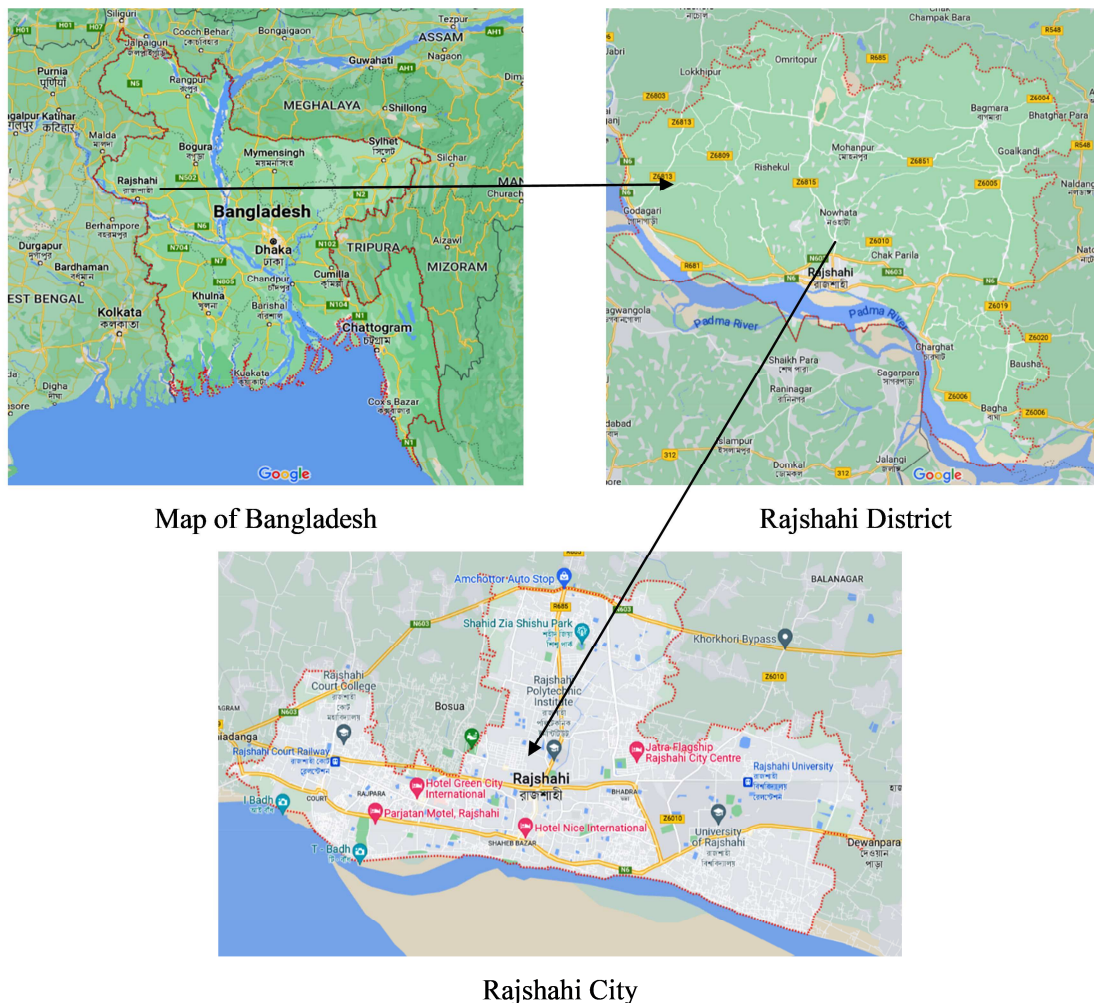


Fig. 1. Map of Bangladesh showing Rajshahi District, Rajshahi City, and the places adjacent to Rajshahi City. (Adopted from Google Maps).

The present work is the outcome of an extensive survey at different corners of Rajshahi City in different seasons from January 2021 to December 2022 (Fig. 1). Collected specimens have been housed at the Department of Botany, Rajshahi Government City College, Rajshahi, Bangladesh. Specimens were identified up to species with the help of Ahmed *et al.* (2009), Uddin and Hassan (2018 a, b, c), relevant literature and online flora. The up-to-date nomenclature has been cited based on "Plants of the world online (<http://www.plantsoftheworldonline.org>)" and Pasha and Uddin (2013).

Results and discussion

The present study revealed that the occurrence of additional 102 angiosperm species belonging to 46

families. Magnoliopsida is represented by 76 species belonging to 39 families, whereas Liliopsida is represented by 26 species belonging to 7 families. These species exhibit diverse life forms in the area, *viz.*, herbs are represented by 51, shrubs by 29, trees by 6, grasses by 14, and climbers by 2 species (Table 1). The family Euphorbiaceae appears as the largest in Magnoliopsida, represented by 8 species, whereas the Poaceae, the most prominent family in Liliopsida, comprises 14 species in this addition. The finding of these 102 species will make a worthwhile contribution to confirm the existence of more species in the Rajshahi City area in addition to the current record of 636 angiosperm species for Rajshahi City.

Table 1. Enumeration of additional hundred angiosperms in and around Rajshahi City.

SL	Family name	Scientific name	Local name	Habit	Habitat	Status	Uses
1.	Acanthaceae	<i>Hygrophila phlomoides</i> Nees	Filamo	H	Wl	Wd	--
2.	Acanthaceae	<i>Phaulopsis imbricata</i> (Forssk.) Sweet	Kantasi	H	Fl	Wd	--
3.	Acanthaceae	<i>Ruellia prostrata</i> Poir.	Posta booti	H	Rs	Wd	--
4.	Acanthaceae	<i>Ruellia simplex</i> C.Wright	--	H	Ga	Pl	Or
5.	Aizoaceae	<i>Trianthema portulacastrum</i> L.	Gadabani	H	Fl	Wd	Lv
6.	Amaranthaceae	<i>Alternanthera paronychioides</i> A.St.-Hil.	Jhuli khata	H	Rs	Wd	--
7.	Amaryllidaceae	<i>Hymenocallis littoralis</i> (Jacq.) Salisb.	Upakallis	H	Ga	Pl	Or
8.	Amaryllidaceae	<i>Scadoxus multiflorus</i> (Martyn) Raf.	Ball ful	H	Ga	Pl	Or
9.	Amaryllidaceae	<i>Zephyranthes citrina</i> Baker	Holud piasful	H	Ga	Pl	Or
10.	Amaryllidaceae	<i>Zephyranthes rosea</i> Lindl.	Golapi piasful	H	Ga	Wd	Or
11.	Annonaceae	<i>Polyalthia suberosa</i> (Roxb.) Thwaites	Murmuri	T	Rs	Wd	Mf
12.	Apocynaceae	<i>Rauwolfia tetraphylla</i> L.	Bara chadar	S	Rs	Wd	Me
13.	Asparagaceae	<i>Dracaena trifasciata</i> (Prain) Mabb.	Sutahar	H	Rs	Wd	Me
14.	Asteraceae	<i>Cosmos sulphureus</i> Cav.	Shumo phul	H	Ga	Pl	Or
15.	Asteraceae	<i>Ixeris polycephala</i> Cass.	Fala geris	H	Cf	Wd	--
16.	Asteraceae	<i>Pseudoconyza viscosa</i> (Mill.) D'Arcy	--	H	Rs	Wd	--
17.	Asteraceae	<i>Blumea axillaris</i> (Lam.) DC.	Nilmoli	H	Rs	Wd	--
18.	Asteraceae	<i>Erigeron sumatrensis</i> Retz.	--	H	Rs	Wd	--
19.	Boraginaceae	<i>Euploca ovalifolia</i> (Forssk.) Diane & Hilger	Nagaphuli	H	Rs	Wd	--
20.	Boraginaceae	<i>Euploca strigosa</i> (Willd.) Diane & Hilger	Chitiphul	H	Rs	Wd	--
21.	Brassicaceae	<i>Cardamine hirsuta</i> L.	Poshmi cardamin	H	Wl	Wd	--
22.	Campanulaceae	<i>Campanula dimorphantha</i> Schweinf.	Ghanti	H	Rs	Wd	--
23.	Caryophyllaceae	<i>Polycarpon prostratum</i> (Forssk.) Asch. & Schweinf.	Chutki sak	H	Fl	Wd	--
24.	Cleomaceae	<i>Cleome rutidosperma</i> DC.	Begunehurhurey	H	Rs	Wd	--
25.	Commelinaceae	<i>Commelina paludosa</i> Blume	Jatakanchira	H	Rs	Wd	--
26.	Commelinaceae	<i>Cyanotis axillaris</i> (L.) D.Don ex Sweet	Axinot	H	Wl	Wd	--
27.	Crassulaceae	<i>Kalanchoe delagoensis</i> Eckl. & Zeyh.	--	H	Bw	Wd	Or
28.	Cyperaceae	<i>Cyperus brevifolius</i> (Rottb.) Hassk.	Sobuj nirbish	H	Rs	Wd	--
29.	Cyperaceae	<i>Cyperus iria</i> L.	Iri ghasi	H	Wl	Wd	--
30.	Cyperaceae	<i>Fimbristylis dichotoma</i> subsp. <i>dichotoma</i>	Joyna chech	H	Cf	Wd	--
31.	Elaeocarpaceae	<i>Elaeocarpus serratus</i> L.	Karatipai	T	Hs	Pl	Fr
32.	Euphorbiaceae	<i>Euphorbia cotinifolia</i> L.	Tamat	S	Rs	Pl	Or
33.	Euphorbiaceae	<i>Euphorbia hypericifolia</i> L.	Agni pata	H	Cf	Wd	--
34.	Euphorbiaceae	<i>Euphorbia milii</i> Des Moul.	Katamukut	S	Ga	Pl	Or

SL	Family name	Scientific name	Local name	Habit	Habitat	Status	Uses
35.	Euphorbiaceae	<i>Euphorbia neriifolia</i> L.	Monsasij	S	Ga	Pl	Me
36.	Euphorbiaceae	<i>Euphorbia pulcherrima</i> Willd. ex Klotzsch	Lalpatahori	S	Ga	Pl	Or
37.	Euphorbiaceae	<i>Euphorbia tirucalli</i> L.	Lankasij	S	Hs	Pl	Me
38.	Euphorbiaceae	<i>Euphorbia tithymaloides</i> L.	Berachita	S	GA	Pl	Ha
39.	Euphorbiaceae	<i>Jatropha gossypifolia</i> L.	Lal bherenda	S	Rs	Wd	Me
40.	Fabaceae	<i>Calliandra tergemina</i> (L.) Benth.	Margi calianandra	S	Rs	Pl	--
41.	Fabaceae	<i>Lathyrus aphaca</i> L.	Janglimotor	H	Cf	Wd	--
42.	Fabaceae	<i>Mimosa diplotricha</i> C.Wright	Sada lajurikher	S	Ga	Pl	Me
43.	Fabaceae	<i>Mimosa rubicaulis</i> Lam.	--	S	Rs	Wd	--
44.	Lamiaceae	<i>Clerodendrum × speciosum</i> W.Bull	--	C	Ga	Pl	Or
45.	Lamiaceae	<i>Clerodendrum indicum</i> (L.) Kuntze	Bamunhatti	S	Rs	Wd	Me
46.	Lamiaceae	<i>Ocimum gratissimum</i> L.	Ram tulasi	S	Hs	Pl	Me
47.	Linderniaceae	<i>Bonnaya antipoda</i> (L.) Druce	Sada pani ghas	H	Fl	Wd	--
48.	Linderniaceae	<i>Bonnaya ciliata</i> (Colsm.) Spreng.	Vui-neem	H	Fl	Wd	--
49.	Linderniaceae	<i>Lindernia procumbens</i> (Krock.) Philcox	Bokpuspo	H	Fl	Wd	--
50.	Linderniaceae	<i>Torenia anagallis</i> (Burm.f.) Wannan, W.R.Barker & Y.S.Liang	Pani ghas	H	Rs	Wd	--
51.	Loranthaceae	<i>Scurrula parasitica</i> L.	Paras pargasa	S	Ot	Wd	--
52.	Malpighiaceae	<i>Galphimia gracilis</i> Bartl.	Swarna jhara	S	Ga	Pl	Or
53.	Malvaceae	<i>Malvastrum coromandelianum</i> (L.) Garcke	Coromondol joba	S	Rs	Wd	--
54.	Malvaceae	<i>Melochia corchorifolia</i> L.	Tikiokra	S	Rs	Wd	--
55.	Malvaceae	<i>Sida rhombifolia</i> L.	Lalberela	S	Rs	Wd	--
56.	Malvaceae	<i>Triumfetta rhomboidea</i> Jacq.	Bonokra	S	Rs	Wd	Me
57.	Mazaceae	<i>Mazus pumilus</i> (Burm.f.) Steenis	Tutra	H	Cf	Wd	--
58.	Molluginaceae	<i>Glinus lotoides</i> L.	Alu ghas	H	Fl	Wd	--
59.	Moraceae	<i>Ficus heterophylla</i> L.f.	Bhui-dumur	S	Fl	Wd	--
60.	Nymphaeaceae	<i>Nymphaea rubra</i> Roxb. ex Andrews	Lal shapla	H	Po	Pl	Me
61.	Olcaceae	<i>Olex scandens</i> Roxb.	Kokoaru	C	Rs	Wd	--
62.	Onagraceae	<i>Ludwigia hyssopifolia</i> (G.Don) Exell	Panilong	H	Wl	Wd	--
63.	Orchidaceae	<i>Zeuxine strateumatica</i> (L.) Schltr.	Shwet-huli	H	Gl	Wd	--
64.	Passifloraceae	<i>Turnera ulmifolia</i> L.	Turan	S	Bw	Pl/Wd	Or
65.	Phyllanthaceae	<i>Phyllanthus fraternus</i> G.L.Webster	--	H	Rs	Wd	--
66.	Plantaginaceae	<i>Veronica anagallis-aquatica</i> L.	Panieronti	H	Cf	Wd	--
67.	Poaceae	<i>Chloris barbata</i> Sw.	Bata ghas	G	Rs	Wd	--
68.	Poaceae	<i>Coix lacryma-jobi</i> L.	Tosbi	G	Wl	Wd	--
69.	Poaceae	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Kakpaya	G	Rs	Wd	--
70.	Poaceae	<i>Digitaria setigera</i> Roth	Sheti ghas	G	Rs	Wd	--
71.	Poaceae	<i>Echinochloa colonum</i> (L.) Link	Shama ghas	G	Cf	Wd	--
72.	Poaceae	<i>Echinochloa crus-galli</i> (L.) P.Beauv.	Bara Shama ghas	G	Cf	Wd	--
73.	Poaceae	<i>Hemarthria compressa</i> (L.f.) R.Br.	Pan-sheru	G	Wl	Wd	--
74.	Poaceae	<i>Paspalum distichum</i> L.	Gitla ghas	G	Rs	Wd	--
75.	Poaceae	<i>Phragmites karka</i> (Retz.) Trin. ex Steud.	Nolkhagra	G	Rb	Wd	--
76.	Poaceae	<i>Setaria flavida</i> (Retz.) Veldkamp	--	G	Rs	Wd	--
77.	Poaceae	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Halde kawn	G	Cf	Wd	--
78.	Poaceae	<i>Setaria verticillata</i> (L.) P.Beauv.	--	G	Rs	Wd	--
79.	Poaceae	<i>Sporobolus diandrus</i> (Retz.) P.Beauv.	Benajoni ghas	G	Rs	Wd	--
80.	Poaceae	<i>Leptochloa panicea</i> (Retz.) Ohwi	Mona ghas	G	Rs	Wd	--
81.	Polygonaceae	<i>Muehlenbeckia platyclada</i> (F.Muell.) Meisn.	Ribon bush	H	Ga	Pl	Or
82.	Polygonaceae	<i>Persicaria glabra</i> (Willd.) M.Gómez	Bihagni	H	Wl	Wd	--
83.	Polygonaceae	<i>Persicaria lanata</i> (Roxb.) Tzvelev	Shet-panimarich	H	Wl	Wd	--
84.	Rubiaceae	<i>Ixora finlaysoniana</i> Wall. ex G.Don	Sada rongon	T	Bt	Wd	Or
85.	Rubiaceae	<i>Ixora undulata</i> Roxb. ex Sm.	Palukajui rangan	S	Bt	Wd	--
86.	Rubiaceae	<i>Leptopetalum biflorum</i> (L.) Neupane & N.Wikstr.	Lora papra	H	Rs	Wd	--
87.	Rubiaceae	<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Kelikadam	T	Ga	Pl	--
88.	Rubiaceae	<i>Mussaenda philippica</i> A.Rich.	Musesenda	S	Ga	Pl	Or
89.	Rubiaceae	<i>Richardia scabra</i> L.	Nakli ipecac	H	Rs	Wd	--
90.	Rutaceae	<i>Berberga koenigii</i> L.	Borosunga	S	Rs	Wd	Me

SL	Family name	Scientific name	Local name	Habit	Habitat	Status	Uses
91.	Salicaceae	<i>Casearia tomentosa</i> Roxb.	Maun	T	Rs	Wd	--
92.	Salicaceae	<i>Flacourtia indica</i> (Burm.f.) Merr.	Boiciful	S	Rs	Wd	Mf
93.	Sapotaceae	<i>Manilkara hexandra</i> (Roxb.) Dubard	Khirkhejur	T	Ga	Pl	--
94.	Solanaceae	<i>Capsicum annuum</i> L.	Kachamarich	S	Ga	Cu	Sp
95.	Solanaceae	<i>Solanum americanum</i> Mill.	Tit-begun	H	Rs	Wd	--
96.	Solanaceae	<i>Solanum erianthum</i> D.Don	Arasa	S	Rs	Wd	--
97.	Tamaricaceae	<i>Tamarix gallica</i> L.	Gola jhao	S	Rb	Wd	--
98.	Typhaceae	<i>Typha domingensis</i> Pers.	Hogla	H	Wl	Wd	Me
99.	Urticaceae	<i>Gonostegia pentandra</i> (Roxb.) Miq.	--	H	Wl	Wd	--
100.	Urticaceae	<i>Laportea interrupta</i> (L.) Chew	Lalbichuti	H	Rs	Wd	--
101.	Urticaceae	<i>Pilea microphylla</i> (L.) Liebm.	Latamaricha	H	Bw	Wd	Or
102.	Vitaceae	<i>Leea aequata</i> L.	Kakjonghla	S	Bt	Wd	--

Habit: C= Climber; G= Grass; H= Herb; S= Shrubs and T= Tree. Habitat: Bt= Bamboo thicket; Bw= Brick wall; Cf= Crop field; Fl= Fallow land, Ga= Garden; Hs= Homestead; Ot= On the tree; Po= Pond; Rb= River bank; Rs= Road side and Wl= Wet land. Status: Cu= Cultivated; Pl= Planted and Wd= Wild. Uses: Fr= Fruit; Ha= Hedge plant; Lv= Leafy vegetable; Me= Medicinal; Mf= Minor fruit; Or= Ornamental and Sp= Spice.

Conclusion

Based on the findings of this study, it is clear that the presence of Magnoliopsida (Dicots, 76) is more than Liliopsida (Monocots, 26). Most of the plants are herb and wild types. But the floral diversity of the city is in great risk due to unplanned urbanization. Finally, to gather proper knowledge on Angiosperm in Rajshahi City, this study will significantly contribute to the scientific community.

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