

ANGIOSPERMIC FLORA OF GAZIPUR DISTRICT, BANGLADESH.



A
DISSERTATION SUBMITTED
TO
THE UNIVERSITY OF DHAKA
FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN
BOTANY (PLANT TAXONOMY)

MAY 2015

By

REHANA TABASSUM
B. Sc. Hons., M. Sc. (DU)
Registration no. 118/2002-2003
Re-registration no. 105/2007-2008
New-registration no. 87/2011-2012

Dedicated to

my beloved parents

&

Late Prof. M. Salar Khan

Father of Angiosperm Taxonomy of Bangladesh

DECLARATION

I hereby declare that the work presented in this thesis entitled "**Angiospermic flora of Gazipur district, Bangladesh**" is the result of my own investigation. I further declare that this thesis has not been submitted in any previous application for the award of any other academic degree in any university. All sources of information have been specifically acknowledged by referring to the authors.

May, 2015

**(Rehana Tabassum)
Author**

CERTIFICATE

This is to certify that the research work presented in this dissertation entitled “Angiospermic flora of Gazipur district, Bangladesh” is the outcome of the original work carried out by Rehana Tabassum at the Plant Taxonomy, Ethnobotany and Herbal Medicine Laboratory, Department of Botany, University of Dhaka under my supervision.

This is further certified that the style and contents of this dissertation is approved for submission in fulfillment of the requirements for the degree of Doctor of Philosophy in Botany (Plant Taxonomy).

*(Prof. Dr. Md. Abul Hassan)
Supervisor
Department of Botany
University of Dhaka
Dhaka-1000, Bangladesh*

ACKNOWLEDGEMENTS

All praises and gratitude belong to the Almighty “ALLAH” the most merciful, Who enabled me to complete this work.

The author has the honour to acquaint candidly her profound respect and deepest gratitude to her supervisor Professor Dr. Md. Abul Hassan, Department of Botany, University of Dhaka for his continuous supervision, encouragement, valuable advice and useful suggestions throughout the progress of the work and also for his constant help in the preparation of the manuscript.

I express my profound veneration to late Dr. M. Salar Khan, Former Professor of the Department of Botany, University of Dhaka and Honorary Advisor of Bangladesh National Herbarium, Dhaka for his help, suggestions and inspiration.

I am grateful to the Chairman, Department of Botany, University of Dhaka to allow me to work in the Dhaka University Salar Khan Herbarium and utilize library facilities.

The author is indebted Dr. Z. N. Tahmida Begum, Professor, Department of Botany, University of Dhaka for her useful suggestions throughout the progress of work.

I express my sincere and heartfelt gratitude to Dr. Momtaz Begum, Professor, Department of Botany, University of Dhaka and Dr. Md. Zashim Uddin, Professor, Department of Botany, University of Dhaka for their enormous help, suggestions and continuous support during the research period. Sincere thanks are also due to Dr. Md. Oliur Rahman, Professor, Department of Botany, University of Dhaka for his invaluable help and suggestions during the study as well as in the preparation of the manuscript.

The author is grateful to Mrs. Hosne Ara, Director-in-Charge, Bangladesh National Herbarium for allowing me to work in the Bangladesh National Herbarium. Special thanks to Dr. Sarder Nasir Uddin, Senior Scientific Officer, Bangladesh National Herbarium for his invaluable help and suggestions during research period.

I am grateful to Dr. Mahbuba Sultana, Dr. Maksuda Khatun, Nahid Sultana, Sumona Afroz, Zahidur Rahman, Amit Sarker and Amit Kumar Dey who helped a lot on many occasions during the course of the work.

It is my pleasant duty to thank Md. Aman Ullah, Senior Herbarium Assistant, Department of Botany, University of Dhaka who assisted me in various ways.

Thanks are due to Mirza Zulfikar Ali, Field man and Md. Azam Khan, Laboratory Assistant, Department of Botany, University of Dhaka for their assistance and co-operation in preserving the specimens.

I wish to express my special thanks to my husband and other members of my family who have been a constant source of inspiration during the course of my research work. It will be unfair, if I do not express my gratitude to my elder daughter Rowshan E-gule Jannat and my little sweet daughter Rubaiyet E-gule Jannat, who missed me a lot when they needed me the most.

The Author

CONTENTS

	Page no.
List of Figures	iii
List of Photographs	iii
List of Tables	iv
List of Families	vi
ABSTRACT	x
CHAPTER 1: INTRODUCTION	1
1.1 Flora	1
1.1.1 District ‘Flora’	1
1.1.2 Why Gazipur district	2
1.2 Description of the study area	4
1.2.1 Area and location	4
1.2.2 Topography	4
1.2.3 Soil	4
1.2.4 Temperature	5
1.2.5 Humidity	5
1.2.6 Rainfall	7
1.2.7 Land use pattern	7
1.3 Aims and objectives	7
CHAPTER 2: MATERIALS AND METHODS	9
2.1 Collection of plant specimens	9
2.2 Methods of study	11
2.3 Methods of presentation	12

CHAPTER 3: TAXONOMIC TREATMENT	13
3.1 Magnoliopsida (Dicotyledons)	13
3.1.1 <i>Key to the families</i>	13
3.1.2 Taxonomic description of the taxa	26
3.2 Liliopsida (Monocotyledons)	462
3.2.1 <i>Key to the families</i>	462
3.2.2 Taxonomic description of the taxa	464
CHAPTER 4: DISCUSSION	621
4.1 Floral analysis	621
4.2 Vegetation analysis	650
4.2.1 Habit forms	652
4.2.2 Phenology	653
4.2.3 Exotic plant species	654
4.2.4 Status of occurrence	654
4.2.5 Economically important plants	655
4.2.6 Threats to the angiospermic flora	656
4.2.7 Recommendations	657
4.2.8 Conclusion	657
CHAPTER 5: REFERENCES	667
INDEX OF SCIENTIFIC NAMES	679

LIST OF FIGURES

Figure no.	Title	Page no.
Fig. 1	Map of the study area	6
Fig. 2	Pie-chart showing percentage of habit-forms of taxa	653
Fig. 3	Histogram showing the percentage of flowering and fruiting times of recorded species during the calendar year	654

LIST OF PHOTOGRAPHS

Photo no.	Title	Page no.
1.	A part of Gazipur <i>Sal</i> forest	658
2	Bangabandhu Sheikh Mujib Safari Park, Gazipur	658
3	Homestead vegetation	659
4	Roadside vegetation	659
5	Scrub jungle	660
6	Wetland vegetation	660
7	Under growth of <i>Sal</i> forest	661
8	Rice cultivation in <i>Baid</i>	661
9	Encroachment into the forest for industrial setup	662
10	Appearance of regeneration in degraded <i>Sal</i> forest	662
11	<i>Crescentia cujete</i> L.	663
12	<i>Gloriosa superba</i> L.	663
13	<i>Pterospermum semisagittatum</i> Buch.-Ham. ex Roxb.	663
14	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	663
15	<i>Argyreia nervosa</i> (Burm. f.) Boj.	664

Photo no.	Title	Page no.
16	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	664
17	<i>Curcuma zedoaria</i> (Christm.) Rosc.	664
18	<i>Derris scandens</i> (Roxb.) Benth.	664
19	<i>Desmodium pulchellum</i> (L.) Benth.	665
20	<i>Dillenia pentagyna</i> Roxb.	665
21	<i>Flemingia strobilifera</i> (L.) R. Br.	665
22	<i>Merremia hirta</i> (L.) Merr.	665
23	<i>Nymphaea nouchali</i> Burm. f.	666
24	<i>Sagittaria guayanensis</i> H.B & K. subsp. <i>lappula</i> (D. Don) Bogin	666
25	<i>Shorea robusta</i> Roxb. ex Gaertn.	666
26	<i>Zanthoxylum rhesta</i> (Roxb.) DC.	666

LIST OF TABLES

Table no.	Title	Page no.
1.	Monthly temperature (°C) of the study area in 2013	5
2	Monthly average relative humidity (%) of the study area in 2013	5
3	Monthly average rainfall (mm) of the study area	7
4	Field trips along with date and area visited	9
5	Number of genera and species under each family	621
6	A concise statement of the families, genera and infra generic taxa with their percentage of occurrence	625

Table no.	Title	Page no.
7	Ten largest families of Dicot and Monocot with their number of genera and species	626
8	Monogeneric-multispecific and monogeneric-monospecific families.	627
9	A comparative account of the World flora, Country flora and Gazipur district flora.	628
10	A comparative account of the floristic elements of the present work with some other similar works.	629
11	The following taxa are found to be common to all the seven floristic areas.	630
12	A list of forest flora of Gazipur district.	631
13	A list of aquatic flora of Gazipur district (arranged alphabetically).	643
14	A list of homestead flora of Gazipur district (arranged alphabetically).	648
15	Habit form analysis of the taxa.	652
16	Analysis of flora based on status of occurrence.	655
17	A concise list of important medicinal, timber, dye and oil yielding plants.	655

LISTS OF FAMILIES

Sl. No.	Family name	Page no.
1.	ACANTHACEAE	403
2.	AGAVACEAE	608
3.	ALANGIACEAE	262
4.	ALISMATACEAE	465
5.	ALOACEAE	607
6.	AMARANTHACEAE	74
7.	ANACARDIACEAE	305
8.	ANNONACEAE	27
9.	APIACEAE	327
10.	APOCYNACEAE	332
11.	APONOGETONACEAE	471
12.	ARACEAE	482
13.	ARECACEAE	474
14.	ARISTOLOCHIACEAE	39
15.	ASCLEPIADACEAE	342
16.	ASTERACEAE	439
17.	BALSAMINACEAE	326
18.	BASELLACEAE	86
19.	BIGNONIACEAE	416
20.	BIXACEAE	141
21.	BOMBACACEAE	122
22.	BORAGINACEAE	372
23.	BRASSICACEAE	160
24.	BROMELIACEAE	589
25.	CACTACEAE	70
26.	CAESALPINIACEAE	187
27.	CAMPANULACEAE	420
28.	CANNABACEAE	53
29.	CANNACEAE	597
30.	CAPPARACEAE	157
31.	CARICACEAE	143
32.	CARYOPHYLLACEAE	90

Sl. No.	Family name	Page no.
33.	CASUARINACEAE	66
34.	CERATOPHYLLACEAE	44
35.	CHENOPODIACEAE	71
36.	CLUSIACEAE	108
37.	COMBRETACEAE	257
38.	COMMELINACEAE	499
39.	CONVOLVULACEAE	359
40.	COSTACEAE	596
41.	CRASSULACEAE	172
42.	CUCURBITACEAE	144
43.	CUSCUTACEAE	368
44.	CYPERACEAE	507
45.	DILLENACEAE	102
46.	DIOSCOREACEAE	612
47.	DIPTEROCARPACEAE	105
48.	EBENACEAE	168
49.	ELAEOCARPACEAE	111
50.	ERIOCAULACEAE	506
51.	EUPHORBIACEAE	266
52.	FABACEAE	202
53.	FLACOURTIACEAE	139
54.	GENTIANACEAE	331
55.	HYDROCHARITACEAE	467
56.	HYDROPHYLLACEAE	371
57.	LAMIACEAE	383
58.	LAURACEAE	31
59.	LECYTHIDACEAE	137
60.	LEEACEAE	290
61.	LEMNACEAE	496
62.	LENTIBULARIACEAE	419
63.	LILIACEAE	602
64.	LIMNOCHARITACEAE	464
65.	LINACEAE	298
66.	LORANTHACEAE	264

Sl. No.	Family name	Page no.
67.	LYTHRACEAE	239
68.	MAGNOLIACEAE	26
69.	MALPIGHIACEAE	299
70.	MALVACEAE	123
71.	MARANTACEAE	598
72.	MELASTOMATACEAE	255
73.	MELIACEAE	309
74.	MENISPERMACEAE	46
75.	MENYANTHACEAE	369
76.	MIMOSACEAE	174
77.	MOLLUGINACEAE	87
78.	MORACEAE	54
79.	MORINGACEAE	166
80.	MUSACEAE	590
81.	MYRSINACEAE	170
82.	MYRTACEAE	245
83.	NAJADACEAE	473
84.	NYCTAGINACEAE	68
85.	NYMPHAEACEAE	41
86.	OCHNACEAE	104
87.	OLEACEAE	393
88.	ONAGRACEAE	252
89.	ORCHIDACEAE	618
90.	OROBANCHACEAE	402
91.	OXALIDACEAE	323
92.	PANDANACEAE	481
93.	PAPAVERACEAE	50
94.	PASSIFLORACEAE	142
95.	PEDALIACEAE	415
96.	PHYTOLACCACEAE	67
97.	PIPERACEAE	35
98.	PLUMBAGINACEAE	101
99.	POACEAE	546
100.	POLYGALACEAE	300

Sl. No.	Family name	Page no.
101.	POLYGONACEAE	91
102.	PONTEDERIACEAE	599
103.	PORTULACACEAE	84
104.	POTAMOGETONACEAE	472
105.	PUNICACEAE	251
106.	RANUNCULACEAE	44
107.	RHAMNACEAE	288
108.	RHIZOPHORACEAE	261
109.	ROSACEAE	174
110.	RUBIACEAE	421
111.	RUTACEAE	314
112.	SAPINDACEAE	301
113.	SAPOTACEAE	167
114.	SCROPHULARIACEAE	396
115.	SMILACACEAE	610
116.	SOLANACEAE	346
117.	STERCULIACEAE	118
118.	THEACEAE	107
119.	TILIACEAE	112
120.	TRAPACEAE	244
121.	ULMACEAE	51
122.	URTICACEAE	63
123.	VERBENACEAE	374
124.	VITACEAE	293
125.	XYRIDACEAE	498
126.	ZINGIBERACEAE	591

ABSTRACT

1. A total of 833 taxa under 489 genera and 126 families have been recorded from the area of Gazipur district. Among the taxa recorded, the number of taxa under Magnoliopsida and Liliopsida are 605 and 228 respectively. Magnoliopsida consists of 98 families and 369 genera, while Liliopsida consists of 28 families and 120 genera. This is the outcome of 40 trips in 95 localities of the district covering forest areas, plain land, village thickets and wet lands, as well as herbarium specimens and relevant literature survey.
2. The families have been arranged according to Cronquist's system of classification (1981).
3. Dichotomous bracketed keys to the families, genera and species have been provided. The genera and species have been arranged alphabetically under each family.
4. Original citation of each taxon with valid name and important synonyms, local name and English name (when available), brief description, chromosome number, flowering and fruiting time, ecological notes, distribution, uses and specimen examined have been provided.
5. Habitat, duration of life-span, phenology, status of occurrence, economical importance of the species and also locations are provided. Exotic taxa are specified as well.
6. Of the total number of taxa, herbs are represented by the highest number (463= 55.58%), followed by trees (174= 20.89%), shrubs (116= 13.93%), climbers (75= 9.0%), epiphytes and parasites taxa constitutes less than 1% of the total angiospermic flora.
7. The phenology of the species shows much seasonal overlapping. In the rainy season 380 species produce flowers/ fruits, in winter 367 species produce flowers/ fruits, while 86 species produce flowers/ fruits throughout the year.
8. Out of 833 angiospermic taxa recorded, 160 species (19.23%) appear to be exotic, of which 48 are trees, 30 shrubs and 82 herbs including climbers.
9. Of the recorded taxa, 766 appear to be important from ecological and/ or economic point of view.
10. In the study area the following species have been recorded only once and hence considered as rare in the area: *Ecbolium ligustrinum* (Vahl) Vollesen (Acanthaceae), *Entada rheedii* Spreng. (Mimosaceae), *Hygrophila schulli* (Buch.-

Ham.) M. R. & S. N. Almeida (Acanthaceae), *Leea alata* Edge. (Leeaceae), *Pterospermum semisagittatum* Buch.-Ham. ex Roxb. (Sterculiaceae) and *Strobilanthes scaber* Nees (Acanthaceae). On the other hand the following species have been recorded from most of the localities visited and hence considered common in the study area, such as *Amaranthus viridis* L. (Amaranthaceae), *Calotropis procera* (L.) R. Br. (Asclepiadaceae), *Centella asiatica* (L.) Urban (Apiaceae), *Chenopodium album* L. (Chenopodiaceae), *Cleome rutidosperma* DC. (Capparaceae), *Eclipta alba* (L.) Hassk. (Asteraceae), *Nelsonia canescens* (Lamk.) Spreng. (Acanthaceae), *Ricinus communis* L. (Euphorbiaceae), *Shorea robusta* Roxb. ex Gaertn. f. (Dipterocarpaceae) and *Synedrella nodiflora* (L.) Gaertn. (Asteraceae).

11. Ethnobotanical information collected from local people, specially from people belonging to *Koch*, *Garo* and *Santal* communities, are also provided.
12. The study has identified threats to the plant diversity of the district and has proposed some measures for their conservation.

CHAPTER- 1

INTRODUCTION

CHAPTER 1**INTRODUCTION****1.1. FLORA**

A flora is an inventory of the plants of a definite area. This inventory is usually authenticated by citations of specimens and of localities or stations where each element is known to have occurred. It is customary to arrange the plants treated in a flora according to a recognized system of classification (Lawrence 1951). In short it is a taxonomic listing of plants of a definite area. For a proper utilization of the vegetable raw materials in a developing country, the need for surveying the plant resources, indigenous, naturalized and introduced for developing rural, as well as urban economy, is often emphasized, and for this factual data, involving the vegetation, flora and economic plants of the area are essential for planning development programmes. Such assessment of the floristic components and the resulting inventory of the vegetable raw materials of potentially economic value would not only help plant base industries of a developing country, but also would stimulate rural people to utilize the minor forest product available locally or in the neighbourhood for cottage industries. For drawing up rational, social forestry schemes, such assessment of floristic wealth of a region is essential (Panigrahi and Musti 1989).

It should be realized that a “flora” will be able to offer critical knowledge of numerous forest products, plants containing vegetable oils, fats and resins, timber, gums, fruits, fibres, dyes and medicine or species which may serve for afforestation for ornamental use, as new green manures, fodder plants, or possibly, of species withstanding of drought or being resistant to fire or inundation, suitable for combating erosion and often economic aspect (van Steenis 1948). Further, there is a severe threat to natural vegetation owing to increasing urbanization. Listing of the endangered, threatened and extinct species of a flora and drawing attention to the occurrence of such species in different forest types would aid in creating an awareness amongst the people as a whole to protect such species from extinction and to take necessary measures for conservation of our seriously disturbed ecosystems and the environment, ‘flora’ is an inventory for such purpose and hence a necessity. Floristic study is necessary to have knowledge of its plant resources.

1.1.1. DISTRICT ‘FLORA’

Preparation of a country ‘Flora’ is of great importance and it remains the goal of the taxonomists working for a country. It requires long time, huge amount of money, groups of expert taxonomists and sometimes help from big World Herbaria like Kew,

Edinburgh etc. Examples of some country 'Flora' are Flora Malesiana, Flora of Ceylon, Flora of Thailand, Flora of Pakistan and Flora of India.

Districts are the smaller administrative units of a country each with its definite area. Therefore, preparation of district 'Flora' requires much less time, less amount of money and labour, and it could be done within a limited period of time. However, district 'Flora's ultimately help in preparing the country 'Flora'. A district 'Flora' can directly help the planners of the district to plan plant based development programmes. Hence, district 'Flora' in restricted sense, is sometimes more important than the country 'Flora'.

Realizing the importance of the district 'Flora' our neighbouring country India has produced many district 'Floras', viz. Flora of Murshidabad district (Bakshi 1984), Flora of Howrah district (Bennet 1979) and Flora of Hassan district (Saldanha and Nicolson 1981) which together helped in revising 'Flora of India'.

1.1.2. WHY GAZIPUR DISTRICT

Bangladesh has 64 districts, Gazipur is one of them. There are some other districts which are floristically more rich, also taxonomically and ecologically more important. Still Gazipur district has been selected for the present study, because of the following facts:

- i) The district not only contains forest ecosystems but also wetland and cropland ecosystems indicating heterogeneity of biodiversity.
- ii) Because of its nearest distance from Dhaka, the research workers do not need to make a station to stay there, but can easily come back to Dhaka making a successful collection trip to any area of the district.
- iii) When other neighbouring districts (Narayanganj, Munshiganj, Manikganj and Narsingdi) possess more low-lying areas, Gazipur district has considerable highland areas.
- iv) Because of highland, capital city is rapidly expanding towards North into Gazipur.
- v) Besides urbanization and housing, the industrialists of the country are preferring the area to establish garment factories, poultry farms and also big industries occupying forest land, plain land, as well as cultivated and wetlands.
- vi) Because of so many multidirectional pressures on Gazipur land areas its floristic elements and richness of biodiversity are rapidly diminishing and possibly in near future a large number of species with huge genetic diversity will be driven out or lost forever.

Therefore, Gazipur district has been selected for the present floristic studies.

There has been no previously published flora of the Gazipur district, however, a general record of Angiospermic plant of Dhaka-Mymensingh Sal forest was first made by Huda (1967) under the caption “A Preliminary Taxonomic Report on the Vegetation of Sal forest of Dacca-Mymensingh”. That was a mere list based on the collection of Prof. M.S. Khan and others. Alam (1995a, 1999) also worked on the woody flora of *Sal* forest. Ismail and Mia (1973) presented an ecological work on the Sal forests of Bangladesh under the caption ‘Studies on some deciduous Sal forest of Bangladesh’. It was entirely a different type of work.

The existing published ‘Floras’, before the independence of Bangladesh, that cover Gazipur district area are: ‘Flora Indica’ by Roxburgh (1814), ‘Flora of British India’ by Hooker (1872-1897) and ‘Bengal Plants’ by Prain (1903). However, no specimen was cited from the area now under Gazipur district.

Datta and Mitra (1953) published a floristic paper entitled “Common plants in and around Dacca”. Unfortunately in the work also no specimen citation was furnished.

However, some isolated chunk of works have been done in the district, viz. Bhawal National Park by Rahman and Hassan (1995) and Ghagotia union under Kapasia upazila by Alam *et al.* (2006).

1.2. DESCRIPTION OF THE STUDY AREA

1.2.1. AREA AND LOCATION

Gazipur district is located at just north of capital city Dhaka, Bangladesh. The previous name of the region was “Joydebpur”. Once, the region was under the deep jungle of Bhawal Pargana. Gazipur district is one of the ancient and historical region with hundred years old tradition. Sakeswar Monument of emperor Ashok period, Dardia fort of Mourja period, Buddhist Monastery of the king Dhol Samudra reminds us the history of 2500 years ago. The best Muslin (very thin fabrics) of the country was produced in Titbati village in Kapasia that was very popular throughout the world. During the liberation war, first armed defence was introduced from the region in 19 March, 1971. The Gazipur district is located between 23°53" to 24°20" N latitudes and between 90°9" to 90°42" E longitude. The current Gazipur district is formed in 1 March 1984 under Dhaka division. Gazipur district is bordered by Kishoreganj and a part of Mymensingh district to the north, Dhaka and Narayanganj districts to the south, Kishoreganj and Narsingdi districts to the east, Dhaka and Tangail districts to the west. The area of current Gazipur district is 1741.53 sq km. There is a city corporation having 4 Municipalities in Gazipur named Tongi, Sreepur, Kaliganj and Kaliakoir. The number of Upazilla (sub-district) in Gazipur district is 5, namely Gazipur Sadar, Sreepur, Kaliakoir, Kapasia and Kaligonj containing 44 Unions, 715 Mauzas and 1,114 Villages.

1.2.2. TOPOGRAPHY

The study area consists of highland (medium high plain land and some hillock which are locally known as ‘Tek’) and low plain land. There are many ponds, *beels* and channels. The area is relatively high, cannot hold waters during monsoon. Some waters retained by raising “bandh” around fields. The low land is normally flooded between 90 cm and 180 cm depth during monsoon. The Sal forest area gives an undulated configuration and consists of high lands called ‘*chalias*’ intercepted by numerous depressions called ‘*baidis*’. The *chalias* are covered with forest plants, predominantly ‘Sal’, whereas the *baidis* are cultivated with paddy. The important rivers of the district are Lablong, Brahmaputra, Paruli, Turag, Suti, Goali, Banar, Balu, Chelai, Bangshi, Shitalakha, etc. Total forest area in the region is 273.42 sq km.

1.2.3. SOIL

The soil of the district is mainly dominated by the extension of shallow upland soil. There are some high ridges with dissected terrace and alluvium in the valley. The district composed of some red and brown clay of the mixed variety of deep dissected

terrace soil. There are some fertile lands with grey and white brown plain clay (Census of Agriculture-1996, Zilla series, Gazipur, Ministry of Planning, Bangladesh). The soil of Sal forest is yellowish-red, sandy clay loam, mixed with scattered manganese-ferous iron ore, the soil is uniform by compact and hard when dry eroding with the heavy monsoon rainfall. The newer alluvium is grey. The porosity of the soil is relatively very poor. With the onset of the monsoon the soil melts and becomes very soft. The organic carbon in the soil is approximately 0.73% and soil p^H is 5.5 (Ismail and Mia 1973).

1.2.4. TEMPERATURE

The temperature of the area fluctuates between 12.7°C and 38°C throughout the year. The monthly minimum temperature of the area varies from 12.7°C to 26.2°C, while the maximum temperature ranges from 24.5°C to 33.7°C. The highest value of temperature was noted in April, while the lowest value was found in January.

Table 1: Monthly temperature (°C) of the study area in 2013.

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum temperature	24.5	28.1	32.5	33.7	32.9	32.1	32.1	31.6	31.8	31.6	29.6	26.4
Minimum temperature	12.7	15.5	20.4	23.6	24.5	26.1	26.2	26.3	25.9	23.8	15.2	14.1

Source: BBS 2013

1.2.5. HUMIDITY

Monthly average relative humidity varies from 62 to 83% throughout the year. The highest value of humidity was recorded in July and September, while the lowest recorded in March.

Table 2: Monthly average relative humidity (%) of the study area in 2013.

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average humidity	71	64	62	71	76	82	83	82	83	78	73	73

Source: BBS 2013

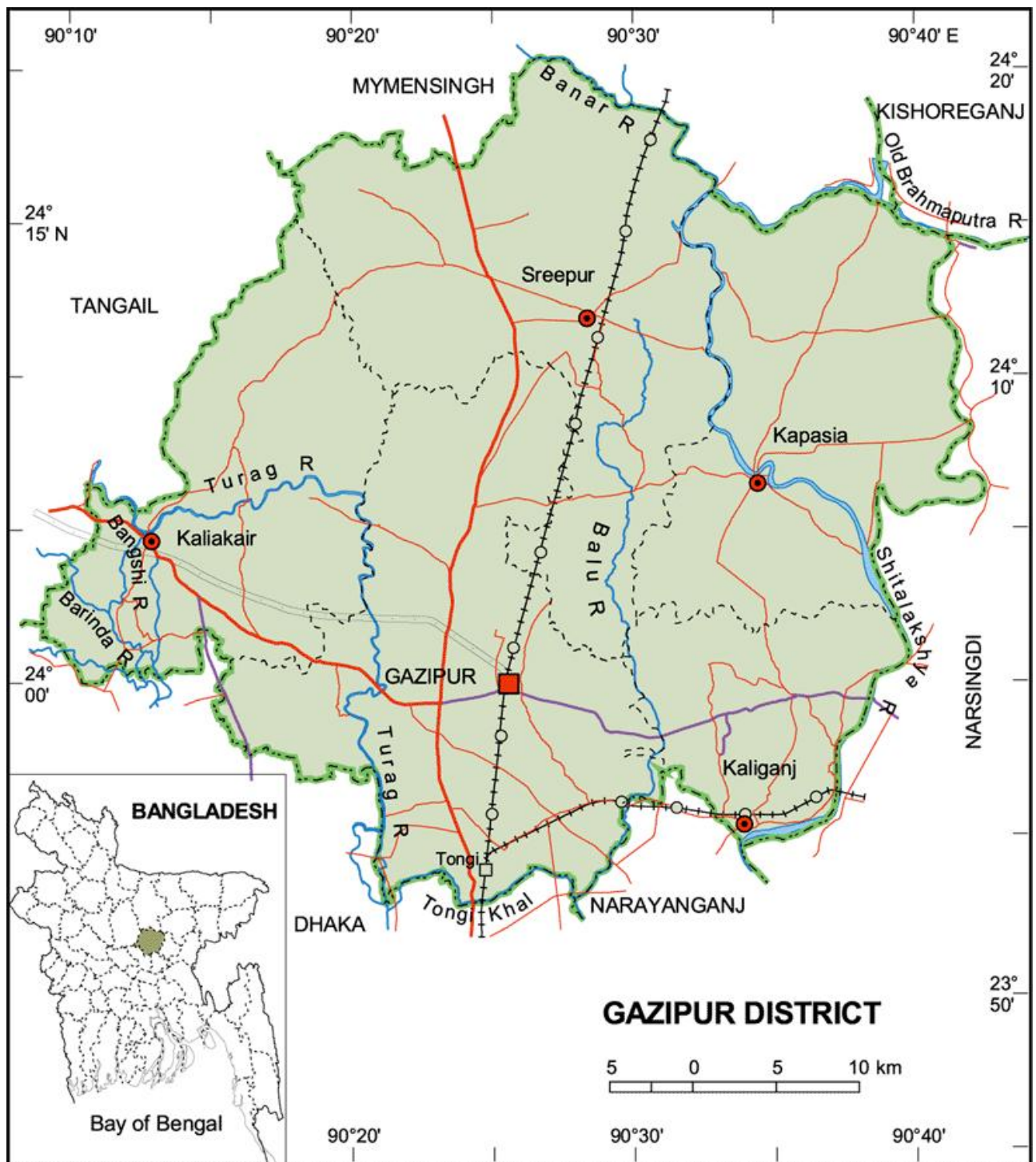


Fig. 1. Map of the study area

1.2.6. RAINFALL

Monthly rainfall in Gazipur ranges from 7.7 to 373.1 mm throughout the year. The maximum rainfall was recorded in July, while the minimum was noted in January.

Table 3: Monthly average rainfall (mm) of the study area.

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average rainfall	7.7	28.9	65.8	156.3	339.4	340.4	373.1	316.5	300.4	172.3	34.4	12.8

Source: BBS 2013

1.2.7. LAND USE PATTERN

The land other than the forest is mainly used for cultivation. Rice (*Oryza sativa* L.), Jute (*Corchorus capsularis* L.) and Sugarcane (*Saccharum officinarum* L.) are main agricultural crops. Vegetables (*Cucumis sativus* L., *Cucurbita maxima* Duch. ex Lamk., *Solanum melongena* L., *Solanum tuberosum* L.) and fruits (*Psidium guajava* L., *Artocarpus heterophyllus* Lamk., *Mangifera indica* L., *Musa paradisiaca* L. etc.) are also common in this area. There are also some woody plant species which are planted such as *Swietenia mahagoni* Jacq., *Acacia auriculiformis* A. Cunn. ex Benth. & Hook., *Samania saman* (Jacq.) Merr. and *Tectona grandis* L. f. Currently ponds and a number of water bodies are used for pisciculture.

1.3. AIMS AND OBJECTIVES

- i) Gazipur district possesses vast rich Sal forest area. At present most of the species of the district are under a great risk due to deforestation, illegal encroachment into the forest area for agricultural expansion, destruction of habitats, urbanization, and adverse effects of climate change. Because of these threats the ecosystems of the area has become vulnerable. As a result biodiversity of the area including agro-biodiversity are changing, Many indigenous species are disappearing from the area, as well as, many new invasive, alien species are occupying these habitats. The loss of biodiversity has adverse effects on the livelihoods, health and food security of the area. Hence, there is a great need for recording existing plant species of the area before their disappearance from natural habitats.
- ii) Besides this, many people living in the rural areas of the district use plant resources like fire wood, vegetable, fruits, timber etc and also for the treatment of the common ailments. The work aims at presenting plant wealth in systemic manner, ways to correctly identify the plant species through a combination of analytical keys and brief descriptions. Data on distribution and abundance of species will further facilitate rational exploitation of the plant resources.

Gazipur district has been selected for the floristic studies to achieve the following aims and objectives:

- (a) To collect plant specimens from various parts of the district and to make an inventory of angiospermic plants.
- (b) To make taxonomic enumerations of all the taxa available in Gazipur district from all possible habitats.
- (c) To make notes on the physical and ecological conditions of the sampling habitats.
- (d) To determine the status of occurrence and identify the threatened plant species in the study area.
- (e) To identify the species having economical importance.
- (f) To prepare the angiospermic 'Flora' of Gazipur district with diagnostic characters, updated nomenclature and identification keys.
- (g) To find out the threats to the plant communities and to make suggestions for conservation of the threatened and economically important plant species of the district.

CHAPTER- 2

MATERIALS AND METHODS

CHAPTER 2

MATERIALS AND METHODS

2.1. COLLECTION OF PLANT SPECIMENS

Field study of a particular area is the basic approach to a thorough inventory of the plants involved. Floras based on field studies are significant contributions and users of them know that the author of the 'Flora' know the plants involved as living organisms. It is now agreed that field collections are the core of any modern floristic study.

The present work is mainly based on the personal collection of the author from all over the Gazipur district, *viz.* Gazipur Sadar, Sreepur, Kapasia, Kaliakoir and Kaligang. A total of 40 field trips have been made covering all seasons and main areas from 2000-2014. Collected plant materials are deposited in Dhaka University Salar Khan Herbarium (DUSH) and Bangladesh National Herbarium (DACB).

Table 4: Field trips along with date and area visited.

Sl. No.	Date	Upazila	Locality
1.	03.11.2000	Gazipur Sadar	Rajendrapur Sal forest, Board Bazar, Sitpara
2.	30.01.2001	Gazipur Sadar	Konia, Tongi Bazar
3.	07.06.2002	Sripur	Merua, Dolaid, Bagrahatta
4.	02.11.2002	Gazipur Sadar	Kamalpara
5.	05.03.2003	Kaliganj	Kolafata, Nagorik
6.	11.04.2003	Gazipur Sadar	Rajendrapur Sal forest
7.	05.09.2003	Kaliganj	Nimtoli
8.	29.04.2005	Kaliganj	Memberbari, Chamundi
9.	14.03.2008	Kaliganj	Borga Bazar, Mirer Bazar
10.	26.03.2008	Kaliganj	Meghdubi
11.	04.04.2008	Kaliganj	Khudabon
12.	24.04.2008	Kapasias	Latapata Bazar, Borun
13.	16.05.2008	Gazipur Sadar	Rajendrapur sal forest
14.	26.08.2008	Kaliakoir	Chandra
15.	06.11.2009	Gazipur Sadar	Gozaria
16.	14.12.2009	Kapasias	Torgao, Baoraid

Sl. No.	Date	Upazila	Locality
17.	08.01.2010	Kaliakoir	Vogora, Mouchak, Uluhara
18.	05.03.2010	Kaliganj	Konabari, Kolabagan, Khoraid, Meghdubi
19.	09.05.2010	Kaliakoir	Chandra, Shohagpolly, Nabinagar, Horinhatia, Jorapukur, Nagpara, Kamalpara
20.	16.05.2010	Kapasias	Torgao, Jongolbari, Ranibari, Chala, Bozankandi
21.	21.06.2010	Sripur	Garabon, Shopnil Baganbari, Bagher Bazar
22.	03.07.2010	Kapasias	Konabari, Saldio-Ranimohol
23.	23.08.2010	Kaliganj	Kolerhat, Pubail, Taltia, Kudab Tumulia
24.	04.02.2011	Gazipur Sadar	Konia, Nagpur, Markun, Nayanpur, Hotapara
25.	12.02.2011	Kaliakoir	Mouchak
26.	17.02.2012	Sripur	Piruzali, Veramtoly
27.	09.03.2012	Kapasias	Barishabo, Pakundia, Amrayid, Borhor
28.	21.09.2012	Sripur	Borkul, Gorgoria, Toporbari,
29.	02.01.2013	Kaliganj	Gudara Ghat, Bardati, Bortula, Bhulta
30.	18.02.2013	Sripur	Bagher Bazar
31.	19.08.2013	Gazipur Sadar	Shalikchura, Raklal, Badam, Chaydana, Khainukar, Cherag Ali, Shukib Road, Boroichuti, Dighir Chala, Khataldi
32.	13.09.2013	Kaliakoir	Hijoltoli, Srinail, Boroichuti
33.	01.10.2013	Kaliakoir	Shaheb Bazar, Shimultoli
34.	21.10.2013	Sripur	Bohererchala
35.	30.10.2013	Gazipur Sadar	Etahata, Borboika
36.	.3.11.2013	Kapasias	Vobonerchala, Kandunia
37.	02.12.2013	Kaliganj	Banglahola
38.	14.12.2013	Kapasias	Sanmania
39.	01.01.2014	Kaliakoir	Mathalyth
40.	09.08.2014	Sripur, Gazipur Sadar	Indronil, Porabari

The collections were made in minimum three sets as possible and the originals preserved at the Dhaka University Salar Khan Herbarium, and the duplicates were

gifted to the Bangladesh National Herbarium. The third set was retained for critical examination of the floral parts.

Herbarium material is a great aid to floristic study of an area. It is important because of (i) verification of preliminary determinations made of the field collections, (ii) determination of the collection records of the plants of the area as evidenced by materials already in the herbarium and (iii) examination of authentic material for the verification of names applicable to the collection involved. Therefore, herbarium materials of DACB and DUSH were also consulted.

Some relevant literatures were consulted at the Library of Botany Department, Dhaka University, Bangladesh, Bangladesh National Herbarium (DACB), Soil Research and Development Institute, Bangladesh Bureau of Statistics and Central Library of Dhaka to collect necessary data.

2.2. METHODS OF STUDY

After collection of the materials a tag with a number joined with it. A field note book was maintained where the field information has been recorded according to the collection number. Under traditional process the collected specimens were dried and the herbarium sheets were made in the usual traditional methods.

All the specimens have been examined and characters were studied carefully by using simple microscope in the herbarium. The collected plant specimens were identified with the help of standard literature and comparing with herbarium specimens both of Dhaka University Salar Khan Herbarium (DUSH) and Bangladesh National Herbarium (DACB) and also confirmed by experts or senior taxonomists. Description of the species, their valid names, synonyms, author citation, ecology and distribution were compared with Ahmed *et al.* 2008, Ahmed *et al.* 2008-2009, Alam (1995, 2001), Ara and Khan (2009), Begum (1987, 1995), Begum *et al.* 1998, Bor (1960)), Brandis (1906), Das and Alam (2001), Dassanayake and Forsberg (1980-1987), Gamble (1922), Ghani (1998), Hajra (1998, 1995, 1995a), Hassan (1970, 1989), Hooker (1872-1897), Huq and Begum 1984, Kanjilal *et al.* (1934-1938), Khan (1972-1987), Khan and Halim (1987), Khan and Rahman (1989-2002), Khan *et al.* 2001, Khanam and Ara (2007-2008), Mayo *et al.* (1997), Nasir and Ali (1970-1990), Prain (1903), Rahman *et al.* (2000), Rahman and Das (2001), Rahman and Khanam (2003), Santisuk and Larsen (1997-2005), Sharma and Sanjappa (1993), Sharma *et al.* (1993), Siddiqui *et al.* (2007), Smitinand and Larsen (1972-1998), Sujit (2010) and van Steenis (1962-1986).

For the updated, valid nomenclature, following literature have been consulted- Flora of Bangladesh (Khan 1972-1987, Khan and Rahman 1989-2002, Rahman 2003, Rahman and Khanam 2003, Khanam and Ara 2007-2008 and Ara and Khan 2009), Plants Name of Bangladesh (Huq 1986), Encyclopedia of Flora and Fauna of

Bangladesh (Siddiqui 2007, Ahmed *et al.* 2008, Ahmed *et al.* 2008-2009), Index Kewensis (Jackson 1893-1955). For distribution of species and genera under each family Cronquist (1981) and Heywood *et al.* (2007) were consulted. Threatened categories of plants were confirmed with the help of Khan *et al.* (2001). Some exotic plant species were also determined comparing with the reports of Islam *et al.* (2003), Hossain and Pasha (2004) and Akter and Zuberi (2009).

For ethnobotanical studies all available literatures have been consulted (Rahman and Yusuf 1996; Alam 1998, 2002; Rahman *et al.* 1998, 2000, 2002; Rahman 1999, 2003; Alam and Khisa 2000).

2.3. METHODS OF PRESENTATION

The families have been arranged according to Cronquist's system of classification (Cronquist 1981). The genera and species under each family have been arranged alphabetically. Dichotomous bracket keys to identify the families, genera and species have also been provided. Updated nomenclature including important synonyms, vernacular names, salient features, habitat, phenology, specimens examined and uses have been furnished under each species. Ethnobotanical data have been gathered through open questionnaires, however no separate chapter for ethnobotany has been provided.

CHAPTER- 3

TAXONOMIC TREATMENT

CHAPTER 3

TAXONOMIC TREATMENT

3.1. MAGNOLIOPSIDA (Dicotyledons)

Plants woody or herbaceous, with typical secondary growth in stems and roots (except in some herbaceous plants). Mature root-system either primary, or adventitious, or both. Vascular bundles open (in herbaceous forms) or arranged in a ring, rarely in 2 or more rings or scattered; well developed vessels in roots, stems and leaves. Leaves with reticulate venation. Flowers with various sorts of nectaries, but without septal nectaries, or altogether without nectaries. Floral parts, when of definite number, typically borne in sets of 5, less often 4, rarely 3 or other numbers. Pollen grains typically triaperturate or of triaperturate-derived type (*viz.* biaperturate, multiaperturate, and inaperturate), or uniaperturate. Cotyledons 2, rarely 1, 3, or 4, or embryo not differentiated into parts.

The Dicotyledon families found in Gazipur district have been arranged according to the classification of Cronquist (1981).

3.1.1. Key to the families:

- | | | | |
|----|--|-----|-----------------------|
| 1. | Petals absent, or at least some of the petals free at the base | 2 | |
| - | Petals present, all united at the base | 101 | |
| 2. | At least male flowers borne in deciduous catkins; flowers always unisexual and apetalous; plants always woody | 3 | |
| - | Flowers not in catkins, or if so the plant herbaceous; polypetalous or apetalous; bisexual or unisexual; herbaceous or woody | 7 | |
| 3. | Leaves pinnate | 4 | |
| - | Leaves simple or lobed | 6 | |
| 4. | Flowers hypogynous; petals valvate, regular; stamens more than 10 | | Mimosaceae |
| - | Flower perigynous; petals imbricate, irregular; stamens 10 or less | 5 | |
| 5. | Corolla papilionaceous, adaxial petals largest; sepals mostly connate below to form a tube; filaments forming a close sheath around the pistil | | Fabaceae |
| - | Corolla not papilionaceous, adaxial petals smallest; sepals mostly distinct; filaments not forming a sheath around the pistil | | Caesalpinaceae |

6.	Styles 3, often divided; fruit schizocarpic; seeds carunculate	Euphorbiaceae
-	Styles 1-6, simple; fruit not schizocarpic; seeds not carunculate	Moraceae
7.	Gynoecium of 2 or more free carpels	8
-	Gynoecium of 1 carpel or syncarpous	13
8.	Perianth and stamens hypogynous	9
-	Perianth and stamens perigynous	Rosaceae
9.	Leaves simple	10
-	Leaves compound	Rutaceae
10.	Sepals and petals 5	Dilleniaceae
-	Perianth not as above	11
11.	Climbers; flowers unisexual	Menispermaceae
-	Trees or shrubs; flowers bisexual	12
12.	Stamens with connective truncate, over topping anther sacs; fruit usually a fleshy syncarp; endosperm convoluted	Annonaceae
-	Stamens with connective not as above; fruit various, not as above; endosperm not convoluted	Magnoliaceae
13.	Perianth of 2 or more whorles, calyx and corolla both present	14
-	Perianth of 1 whorl, sometimes petaloid or absent; if perianth of 2 or more whorls then the segments of each whorl indistinguishable in flower	62
14.	Stamens more than twice the number of petals (petals never more than 10)	15
-	Stamens twice the number of petals or fewer	31
15.	Perianth and stamens hypogynous	16
-	Perianth and stamens perigynous or epigynous	30
16.	Placentation axile or free-central	17
-	Placentation marginal or parietal	26
17.	Leaves alternate	18
-	Leaves opposite	Clusiaceae
18.	Anthers opening by terminal pores	Elaeocarpaceae

-	Anthers opening lengthwise	19
19.	Leaves punctuate with pellucid, aromatic glands	Rutaceae
-	Leaves not punctuate thus	20
20.	Stipules absent; leaves usually evergreen	Theaceae
-	Stipules present; leaves usually deciduous	21
21.	Filaments free; anthers 2-celled	Tiliaceae
-	Filaments united into a tube, at least around the ovary, often around the styles; anthers often 1-celled	22
22.	Style 1, capitate or lobed, stigmas 1-several; pollen grains not spiny; stipules usually deciduous; carpels 2-5	23
-	Styles divided, several; pollen grains spiny; stipules often persistent; carpels often 5 or more	Malvaceae
23.	Stamens epipetalous, filaments usually connate	24
-	Stamens alternipetalous, filaments free	Balsaminaceae
24.	Stamens in 2-whorls, those of outer whorls usually staminodial; trunks of stems relatively slender	25
-	Stamens in several whorls, staminodes absent; trunks of stems often swollen, spiny	Bombacaceae
25.	Ovules central or basal	Sapotaceae
-	Ovules parietal	Sterculiaceae
26.	Carpel 1, with marginal placentation	27
-	Carpels 2 or more, placentation parietal	29
27.	Flowers hypogynous; petals valvate, regular; stamens more than 10	Mimosaceae
-	Flowers perigynous; petals imbricate, irregular; stamens 10 or less	28
28.	Corolla papilionaceous, adaxial petals largest; sepals mostly connate below to form a tube; filaments forming a close sheath around the pistil	Fabaceae
-	Corolla not papilionaceous, adaxial petals smallest; sepals mostly distinct; filaments not forming a sheath around the pistil	Caesalpinaceae

29.	Leaves opposite	Clusiaceae
-	Leaves alternate	Capparaceae
30.	Leaves stipulate, alternate, not with pellucid aromatic glands	Rosaceae
-	Leaves exstipulate, opposite, with pellucid aromatic glands	31
31.	Stipule present; leaves not glandular punctate; perianth segments valvate; stamens 4-10; endosperm present	Rhizophoraceae
-	Stipule absent; leaves translucent glandular punctate; perianth segments imbricate; stamens numerous; endosperm absent	Myrtaceae
32.	At least one whorl of the perianth hypogynous, or stamens hypogynous or inserted on the top of a hypogynous disc in which the ovary may be immersed	33
-	Stamens and perianth perigynous, or ovary fully or partly inferior	52
33.	Placentation axile, apical, basal or free central	34
-	Placentation parietal	46
34.	Resinous trees or shrubs; leaves simple or pinnate, alternate; flowers with a hypogynous disc, mostly unisexual; stamens 4-5 or 8-10; fruit 1-seeded, drupe-like	35
-	Combination of characters not as above	37
35.	Plant herb or undershrub; ovules numerous	36
-	Shrubs or trees; ovule 1 or 2 per carpel	Anacardiaceae
36.	Ovary 4-30; flowers bisexual	Crassulaceae
-	Ovary 1-5 locular; flowers unisexual or polygamous	Caricaceae
37.	Placentation free central or basal	Plumbaginaceae
-	Placentation axile or apical	38
38.	Anthers opening by terminal pores; stamens not antipetalous	Polygalaceae
-	Anthers opening by longitudinal slits or stamens antipetalous	39
39.	A well developed hypogynous, glandular disc present below or around the ovary	40
-	Hypogynous disc absent	42
40.	Stamens antipetalous	Vitaceae

-	Stamens not antipetalous	41
41.	Leaves with pellucid aromatic glands	Rutaceae
-	Leaves without pellucid aromatic glands	42
42.	Corolla zygomorphic	43
-	Corolla actinomorphic	44
43.	Leaves alternate; flowers in fascicle or panicle; endosperm absent	Sapindaceae
-	Leaves opposite or in whorls; flowers solitary or in glomerules or in cymose panicle; endosperm present	Molluginaceae
44.	Leaves pinnately compound; sepals and petals 3 or 4; stamens 6-10; ovary 3- more locular	Meliaceae
-	Leaves simple; sepals and petals 5; stamens 5; ovary 2-locular	Linaceae
45.	Filaments united below	Sterculiaceae
-	Filaments free	Oleaceae
46.	Flowers zygomorphic	47
-	Flowers actinomorphic	50
47.	Ovary of 1 carpel with marginal placentation; fruit a legume	48
-	Ovary of 2 or more carpels with basal placentation; fruit not a legume	Capparaceae
48.	Flowers hypogynous; petals valvate, regular; stamens more than 10	Mimosaceae
-	Flowers perigynous; petals imbricate, irregular; stamens 10 or less	49
49.	Corolla papilionaceous, adaxial petals largest; sepals mostly connate below to form a tube; filaments forming a close sheath around the pistil	Fabaceae
-	Corolla not papilionaceous, adaxial petals smallest; sepals mostly distinct; filaments not forming a sheath around the pistil	Caesalpinaceae
50.	Petals and stamens numerous	Flacourtiaceae
-	Petals and stamens definite, usually less than 7	51

51.	Climbers with tendrils	Passifloraceae
-	Herbs with no tendril	Brassicaceae
52.	Anthers poricidal; stamens geniculate; leaves with 3 parallel main veins	53
-	Anthers opening by slits or valves; stamens geniculate; leaves with reticulate venation	55
53.	Anthers with pores	Melastomataceae
-	Anthers with longitudinal slits	54
54.	Leaves usually opposite; flowers solitary or in fascicles; stamens free; anther introrse, dorsifix	Punicaceae
-	Leaves alternate; flowers in racemes; stamens more or lessconnate; anthers latrorse, basifix	Lecythidaceae
55.	Placentation parietal, placentae sometimes intrusive	Cucurbitaceae
-	Placentation axile, basal, apical or fre-central	56
56.	Stamens antipetalous; tree or shrubs with simple leaves	Rhamnaceae
-	Stamens antisepalous or twice as many as petals; herbaceous or woody; leaves simple to compound	57
57.	Flowers born in umbels, sometimes condensed into heads or superposed whorls; leaves usually compound; ovary inferior	Apiaceae
-	Flowers usually not born in umbels; leaves usually simple; ovary superior or inferior	58
58.	Ovary 1-locular with 2-5 ovules; fruit leathery or drupe-like, 1-seeded	Combretaceae
-	Ovary (1-) 2-5-locular, ovules various; fruit not as above	59
59.	Ovules solitary in each locule	Alangiaceae
-	Ovules 2-numerous in each locules	60
60.	Ovary superior	61
-	Ovary inferior	Onagraceae
61.	Placenta 1	Lythraceae
-	Placentas 2	Moringaceae
62.	Stamens not borne on the perianth or ovary naked	63

- Stamens apparently borne on the perianth, or ovary partly or fully inferior	85	
63. Flowers unisexual	64	
- Flowers bisexual	78	
64. Ovary 3-locular; styles 3	65	
- Ovary 1-, 2- or 4- locular; styles 1-2	68	
65. Stipules present		Euphorbiaceae
- Stipules absent	66	
66. Submerged aquatic herb; perianth segments 6-many; stamens 10-20		Ceratophyllaceae
- Terrestrial herb; perianth segments 2-6; stamens 1-3	67	
67. Leaves radical; flowers in cymes; petals 5, contorted		Oxalidaceae
- Leaves cauline; flowers solitary; petals 4 or 8, imbricate		Ranunculaceae
68. Stamens 2, anther cells back to back		Oleaceae
- Stamens more than 2, anther cells not back to back	69	
69. Placentation parietal; stamens numerous; fruit a berry or capsule		Flacourtiaceae
- Combination of characters not as above	70	
70. Trees, shrubs or climbers; ovule apical	71	
- Combination of characters not as above	73	
71. Sap watery; fruit a drupe	72	
- Sap milky; fruit a syncarp or samara		Moraceae
72. Flower bisexual or unisexual, then the male ones in lax cymes or in fascicles		Ulmaceae
- Flowers unisexual, the male ones in spike, or in racemes		Cannabaceae
73. Stinging hairs present, or plant rough to the touch; stamens sensitive, inflexed in bud; often with cystoliths; seeds with a straight embryo	74	
- Stinging hairs absent; stamens neither sensitive nor inflexed in bud; without cystoliths; seeds with a curved embryo	75	

74.	Leaves in alternate or opposite, blade like; stamens 1-5	Urticaceae
-	Leaves in whorls, scale like; stamens 1	Casuarinaceae
75.	Stipules present; stamens more than tepals; perigynous	76
-	Stipules absent; stamens as many as tepals; hypogynous	78
76.	Tepals 2; stamens 8- more	77
-	Tepals 2-5; stamens 7 or less	Caryophyllaceae
77.	Leaves compound; flowers zygomorphic; stamens connate into 2 bundles of three	Papaveraceae
-	Leaves simple; flowers actinomorphic; stamens free	Phytolaccaceae
78.	Perianth scarious; stamens often connate below	Amaranthaceae
-	Perianth greenish or absent; stamens free	Chenopodiaceae
79.	Trees or trailing ericoid shrublets, rarely an aromatic shrubs	80
-	Herbs and climbers or non aromatic shrubs	84
80.	Stamens numerous; ovary 5 or more locular	81
-	Stamens 12 or fewer; ovary with fewer than 5-loculi	82
81.	Flowers in fascicles; endosperm present	Tiliaceae
-	Flowers in panicles; endosperm absent	Dipterocarpaceae
82.	Leaves evergreen, with pellucid, aromatic glands; anther opening by valves	Lauraceae
-	Leaves mostly deciduous, without pellucid, aromatic glands; anthers opening by slits	83
83.	Stamens 2; leaf base not oblique	Oleaceae
-	Stamens 4-8; leaf base oblique	Ulmaceae
84.	Perianth absent; flowers borne in a continuous fleshy spikes; leaves often fleshy, without ochrea	Piperaceae
-	Perianth present; flowers borne in a spikes; leaves well-developed, often not fleshy, with ochrea	Polygonaceae
85.	Trees or shrubs	86
-	Herbs, climbers or parasite	90
86.	Stamens alternating with the sepals	Rhamnaceae

-	Stamens opposite to or more numerous than the sepals	87
87.	Placentation parietal; stamens numerous; fruit a berry or capsule	Flacourtiaceae
-	Combination of characters not as above	88
88.	Flowers hypogynous; petals valvate, regular; stamens more than 10	Mimosaceae
-	Flowers perigynous; petals imbricate, irregular; stamens 10 or less	89
89.	Corolla papilionaceous, adaxial petals largest; sepals mostly connate below to form a tube; filaments forming a close sheath around the pistil	Fabaceae
-	Corolla not papilionaceous, adaxial petals smallest; sepals mostly distinct; filaments not forming a sheath around the pistil	Caesalpinaceae
90.	Root or branch parasite	Loranthaceae
-	Free living plant	91
91.	Style entirely free	92
-	Style connate, at least at base	94
92.	Aquatic plant; ovules 1 per carpels	Nymphaeaceae
-	Terrestrial plant; ovules many per carpels	93
93.	Flowers in panicles; filaments free	Bixaceae
-	Flowers in racemes; anther subsessile, connate	Ochnaceae
94.	Ovary superior	95
-	Ovary partly or fully inferior	97
95.	Carpels (2-) 3, ovule 1, basal; perianth persistent in fruit; leaves usually alternate, entire	Polygonaceae
-	Combination of characters not as above	96
96.	Leaves opposite, usually entire	Lythraceae
-	Leaves alternate, usually lobed or compound	Rosaceae
97.	Ovary 6-locular; perianth 3-lobed or tubular and zygomorphic, bizarre	Aristolochiaceae
-	Combination of characters not as above	98

98.	Ovules 1-5; seed 1	Chenopodiaceae
-	Ovules and seeds numerous	99
99.	Free floating; leaves rhomboid; petiole swollen	Trapaceae
-	Aquatic or terrestrial; leaves elliptic-oblong; petiole not swollen	100
100.	Sap milky; petals 5; ovary 3-locular	Campanulaceae
-	Sap watery; petals 2 or 4; ovary (1-) 4 (5-) locular	Onagraceae
101.	Ovary superior	102
-	Ovary partly or fully inferior	Rubiaceae
102.	Corolla actinomorphic	103
-	Corolla zygomorphic	145
103.	Stamens 2, anther cells back to back; plant woody	Oleaceae
-	Combination of characters not as above	104
104.	Parasite or saprophytes, without chlorophyll	Cuscutaceae
-	Free-living plants with chlorophyll	105
105.	Stamens antipetalous; placentation axile, free central or basal	106
-	Stamens antisepalous or more numerous or fewer than corolla lobes; placentation various, never free central	110
106.	Leaf-opposed tendrils usually present; petals calyptrate; placentation axile	107
-	Tendrils absent; petals not calyptrate; placentation free-central or basal	108
107.	Tendriferous vines; ovules paired in each chamber of the ovary; filaments distinct	Vitaceae
-	Shrubs or trees without tendril; ovules solitary in each chamber of the ovary; filaments connate into a tube	Leeaceae
108.	Placentation basal, ovule 1, pendulous on long, curved funicle; fruit 1-seeded	109
-	Placentation free central; ovules usually numerous though fruit often 1-seeded	Myrsinaceae
109.	Stigmas 5	Plumbaginaceae

-	Stigma 1	Nyctaginaceae
110.	Anthers opening by pores	Solanaceae
-	Anthers opening lengthwise, or pollen in masses (pollinia)	111
111.	Stamens at least twice the number of corolla lobes	112
-	Stamens as many as the number of corolla lobes or fewer	115
112.	Leaves with pellucid, aromatic glands; calyx cupular	Rutaceae
-	Leaves without pellucid, aromatic glands; calyx lobed	113
113.	Leaves stipulate; stamens united, forming a long tube around the styles	Malvaceae
-	Leaves exstipulate; stamens free or shortly united	114
114.	Flowers unisexual; fruit fleshy	Ebenaceae
-	Flowers bisexual; fruit a capsule	Theaceae
115.	Leaves alternate or all basal; carpels never 2 and almost free with single terminal style	116
-	Leaves opposite or whorled, alternate only when carpels 2 and almost free with single terminal style	120
116.	Flowers in scorpioid cymes or the calyx with appendaged sinuses; styles gynobasic or terminal	Boraginaceae
-	Flowers neither in scorpioid cymes nor the calyx with appendaged; styles terminal	117
117.	Ovules 1-2 per loculus	118
-	Ovules 3-numerous per loculus	119
118.	Sepals free; corolla lobes contorted and infolded, rarely imbricate; twiners, herbs or dwarf shrubs	Convolvulaceae
-	Sepals connate; corolla lobes imbricate; trees or shrubs	Boraginaceae
119.	Corolla lobes usually folded, contorted or valvate; septum often oblique; internal phloem present	Solanaceae
-	Corolla lobes imbricate; septum horizontal; internal phloem absent	Scrophulariaceae
120.	Milky sap usually present; fruit often of 2 follicles and seeds with silky appendages	121

- Milky sap absent; fruit a capsule or fleshy and seeds without silky appendages 122
- 121. Pollen granular, transferred directly from anthers; corona absent; corolla lobes contorted in bud **Apocynaceae**
- Pollen often in pollinia, transferred by means of specialized translators; corona present; corolla lobes contorted or valvate in bud **Asclepiadaceae**
- 122. Placentation parietal; carpels 2 123
- Placentation axile; carpels 2-3 124
- 123. Leaves radical or alternate, rarely opposite; corolla imbricate; fruit loculicide **Hydrophyllaceae**
- Leaves opposite; corolla contort, rarely imbricate; fruit septicide **Gentianaceae**
- 124. Stamens fewer than corolla lobes 125
- Stamens as many as corolla lobes 126
- 125. Stamens inserted above the base of the corolla tube **Verbenaceae**
- Stamens adnate to the base of the corolla tube **Pedaliaceae**
- 126. Stamens more numerous than the corolla lobes, or anthers opening by pores 127
- Stamens as many as corolla lobes or fewer, not opening by pores 130
- 127. Two lateral sepals petaloid; filaments united 129
- No sepals petaloid; filaments free 128
- 128. Corolla valvate **Menyanthaceae**
- Corolla imbricate or contorted **Gentianaceae**
- 129. Anthers opening by longitudinal slits; gynoecium of 3 carpels; stipules usually well developed **Malpighiaceae**
- Anthers opening by terminal pores; gynoecium of 2 carpels; stipules usually absent **Polygalaceae**
- 130. Stamens as many as corolla lobes; zygomorphy weak 131
- Stamens fewer than corolla lobes, 4 or 2; zygomorphy pronounced 132

- | | | |
|------|--|-------------------------|
| 131. | Flowers in scorpioid cymes; fruit of 4 one-celled nutlets | Boraginaceae |
| - | Flowers not in scorpioid cymes; fruit a many seeded capsule | Scrophulariaceae |
| 132. | Placentation axile; ovules 4 or many | 133 |
| - | Placentation parietal, free-central, basal or apical; ovules many or 1-2 | 140 |
| 133. | Ovules numerous but not superposed | 134 |
| - | Ovules 4, or more numerous and superposed | 138 |
| 134. | Seeds winged; mainly trees, shrubs or climbers with opposite, pinnate, digitate or rarely simple leaves | Bignoniaceae |
| - | Seeds usually wingless; mainly herbs or shrubs with simple leaves | 135 |
| 135. | Stamens alternipetalous | 136 |
| - | Stamens epipetalous | 137 |
| 136. | Corolla lobes variously imbricate in bud; septum horizontal; leaves opposite or alternate; internal phloem absent | Scrophulariaceae |
| - | Corolla lobes usually folded, contorted or valvate in bud; septum usually oblique; leaves alternate; internal phloem absent | Solanaceae |
| 137. | Ovule 1 | Basellaceae |
| - | Ovules 2-more | Portulacaceae |
| 138. | Fruit a capsule; ovules 4-many, usually superposed | Acanthaceae |
| - | Fruit not a capsule; ovules 4, side by side | 140 |
| 139. | Style gynobasic, or if terminal then corolla with a reduced upper lip; fruit usually of 4 one-seeded nutlets; corolla often strongly bilabiate; calyx often 2-lipped | Lamiaceae |
| - | Style terminal, upper lip of corolla well developed; fruit usually a berry or drupe; corolla often less strongly zygomorphic; calyx actinomorphic | Verbenaceae |
| 140. | Ovules 4-many; fruit a capsule, rarely a berry or drupe | 141 |
| - | Ovules 1-2, fruit indehiscent, often dispersed in the calyx | Scrophulariaceae |
| 141. | Ovules 4, side by side | Verbenaceae |

-	Ovules many	142
142.	Leaves scale-like, never green; root parasite	143
-	Leaves green, expanded; free living plant	Bignoniaceae
143.	Placentas 4; calyx laterally 2-lipped	Orobanchaceae
-	Placentas 2; calyx equally 4-lobed	144
144.	Calyx shallowly divided; stamens 2 or 4, adnate to the base of corolla tube; endosperm absent	Lentibulariaceae
-	Calyx deeply divided; stamens 2, inserted on the corolla tube; endosperm present	Scrophulariaceae
145.	Inflorescence an involucrate capitulum; ovules always solitary	Asteraceae
-	Inflorescence and ovules not as above	145
146.	Climbers with tendrils; flowers unisexual; stamens 1-5; placentation parietal; fruit berry-like	Cucurbitaceae
-	Trees or shrubs, without tendrils; flowers bisexual; stamens numerous; placentation not parietal; fruit berry or capsule	147
147.	Corolla calyptrate	Myrtaceae
-	Corolla connate, saucer shaped or campanulate	Cactaceae

3.1.2. TAXONOMIC DESCRIPTION OF THE TAXA

Family 1. **MAGNOLIACEAE** A. L. de Jussieu (1789)

Evergreen trees or shrubs, more often deciduous. Leaves simple, alternate, pinnately veined, entire or lobed, stipules large, enfolding the terminal bud, deciduous. Flowers large, terminal or axillary, usually solitary, regular, hypogynous. Perianth in 3 or more series, tepals 6-18, free, more or less similar and all petaloid, less often clearly differentiated into sepals and petals. Stamens numerous, free, spirally arranged. Carpels numerous, usually free, ovules most commonly 2, but sometimes several, anatropous. Fruits variously follicular or indehiscent berry or samaroid. Seeds mostly large with abundant oily and proteinaceous endosperm.

The family Magnoliaceae comprises 12 genera and about 220 species. In Bangladesh, this family is represented by 2 genera and 6 species.

In the present study area this family is represented by a single genus with a single species.

Genus 1. **Michelia** L., Gen. ed. 1: 119 (1737).

1. **Michelia champaca** L., Sp. Pl.: 536 (1753); Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 42 (1872); Prain, Beng. Pl. 1: 127 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 1 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 86 (1956).

Vernacular name: *Champa*.

English name: Champak.

Medium to large, evergreen tree. Leaves ovate to elliptic-lanceolate. Flowers solitary, axillary, pale yellow, becoming orange, fragrant. Fruits ovoid to ellipsoid, woody, laxly arranged. *Flowering and fruiting*: March-July. *Chromosome number*: $2n = 38$ (Fedorov, 1969). *Planted*.

Distribution: India, Nepal, Sri Lanka, Bhutan, Myanmar, Thailand, China, Malaysia and Japan.

Status of occurrence: Common.

Uses: Timber yielding plant. Flowers are used in perfume, also used medicinally.

Specimens examined: Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1974 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2513 (DUSH); Gazipur Sadar, Shalikechura, 19.08.2013, R. Tabassum, 2677 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3677 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3842 (DUSH).

Family 2. **ANNONACEAE** A. L. de Jussieu (1789)

Trees or shrubs, often woody climbers, aromatic. Leaves simple, alternate, exstipulate. Inflorescence determinate, often reduced to a single flower, terminal, axillary. Flowers usually bisexual, trimerous. Sepals 3, free or connate. Petals 6, distinctly or shortly connate at the base or coherent above the stamens and carpels, hypogynous. Stamens many. Carpels mostly numerous. Ovaries 1 or more, apocarpous, very rarely (*Annona*) syncarpous, style short or absent, ovules 1 or more. Fruit 1- or many-seeded, usually with indehiscent carpels. Seeds large, albumen dense, ruminate.

The family Annonaceae consists of about 130 genera and 2300 species, distributed in both the Old and the New World, but largely confined to tropical regions. In Bangladesh, the family is represented by 15 genera and 42 species.

In the present study area it is represented by 4 genera and 6 species.

Key to genera:

1. Fruit syncarpous, with completely united carpels and seeds embedded in pulp

Annona

- Fruit apocarpous, with carpels forming free, often stipitate, monocarps 2
- 2. Sepals or inner petals and sometimes also outer petals clearly imbricate; stellate hairs often present Uvaria
- Sepals and inner and outer petal whorls all valvate or rarely very narrowly imbricate at tip only; simple hairs usually present, less often plant glabrous 3
- 3. Inner petals basally clawed or stipitate, laminas vaulted and connate into an apical cap at least initially Miliusa
- Inner petals not basally clawed, spreading or connivent and apically 3-edged Polyalthia

Genus 2. **Annona** L., Sp. Pl.: 536 (1753).

Key to species:

- 1. Outer petals outside surface and carpels hairy; ripe syncarp not pruinose, areoles flattened and separated by $\pm$ raised ridges; fruit pulp yellowish Annona reticulata
- Outer petals and carpels glabrous; ripe syncarp slightly pruinose, areoles convex and separated by deep grooves; fruit pulp whitish Annona squamosa

2. **Annona reticulata** L., Sp. Pl.: 537 (1753). Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 1: 78 (1872); Prain, Beng. Pl. 1: 134 (1903, reprint 1963); Khatoon in Nasir & Ali (Eds.), Fl. Pak. 167: 11 (1985); Mitra in Shara *et al.* (Eds.), Fl. Ind. 1: 207 (1993); Khanam & Rahman in Khan & Rahman (Eds.), Fl. Bangl. 52: 5 (2002).

Vernacular names: *Ata phal*, *Nona*.

English name: Bullock's Heart.

Small tree. Leaves simple, entire, lanceolate to oblanceolate. Inflorescence leaf-opposed or extra axillary, generally 2-3 flowered. Flowers yellowish-green, fragrant. Fruit a fleshy syncarp, heart-shaped to globose, reddish-brown when ripe. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 14, 16$ (Fedorov, 1969). *Grows in homestead gardens*.

Distribution: Widely cultivated in Old and New World tropics.

Status of occurrence: Cultivated, sometimes naturally grows.

Uses: Ripe fruit is eaten.

Specimens examined: Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2238 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2468 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2575 (DUSH); Kaliakoir, Hijoltoli,

13.09.2013, R. Tabassum, 2931 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3501 (DUSH).

3. **Annona squamosa** L., Sp. Pl.: 537 (1753). Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 1: 78 (1872); Prain, Beng. Pl. 1: 134 (1903, reprint 1963); Khatoon in Nasir & Ali (Eds.), Fl. Pak. 167: 11 (1985); Mitra in Shara *et al.* (Eds.), Fl. Ind. 1: 207 (1993); Khanam & Rahman in Khan & Rahman (Eds.), Fl. Bangl. 52: 6 (2002).

Vernacular names: *Sharifa, Sitaphal*. English names: Custard Apple, Sugar Apple.

Small tree. Leaves elliptic to oblong-obovate, obtuse to acute, young leaves sparsely hairy. Inflorescence terminal or leaf-opposed, on short axillary branches. Carpels basally connate. Fruit yellowish-green, glaucous, tuberculate. Seeds dark brown to black, covered with custard-like granular pulp. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 14, 16$ (Fedorov, 1969). *Cultivated in homestead*.

Distribution: Widely distributed throughout tropical South America. It is also grown in Thailand, the Philippines, Malaysia and the Indian subcontinent.

Status of occurrence: Cultivated.

Uses: Ripe fruit is eaten.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 797 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1108 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1876 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2061 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2239 (DUSH).

Genus 3. **Miliusa** Leschen. *ex* A. DC., Mem. Anon.: 37, t. 3 (1832).

4. **Miliusa velutina** (Dunal) Hook. f. & Thom., Fl. Ind.: 139 (1855) *et* Hook. f., Fl. Brit. Ind. 1: 87 (1872); Prain, Beng. Pl. 1: 130 (1903, reprint 1963); Khatoon in Nasir & Ali (Eds.), Fl. Pak. 167: 3 (1985); Mitra in Shara *et al.* (Eds.), Fl. Ind. 1: 222 (1993); Khanam & Rahman in Khan & Rahman (Eds.), Fl. Bangl. 52: 22 (2002); *Uvaria velutina* Dunal, Monogr. Anon.: 91 (1817); *Uvaria villosa* Roxb., Fl. Ind. ed. Carey 2: 664 (1832).

Vernacular names: *Gandhi-gajari, Bul-gajari*

Deciduous tree, Leaves broadly elliptic-ovate to obovate, cordate, acute to acuminate. Inflorescence extra axillary or terminal on short lateral branches. Flowers 3-6, sepals and petals golden tomentose outsides. Ripe carpels ovoid, pilose, stipe tomentose.

Flowering and fruiting: October - June. *Chromosome number:* $2n = 18$ (Kumar and Subramaniam, 1986). *Forest floor.*

Distribution: Pakistan, India, Nepal and Myanmar.

Status of occurrence: Apparently rare.

Specimens examined: Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1546 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1957 (DUSH).

Genus 4. **Polyalthia** Blume, Fl. Jav. Annon. 68. t. 33-34 B-C (1829).

Key to species:

1. Leaf blade margin undulate, secondary veins 18-24 on each side of midvein **Polyalthia longifolia**
- Leaf blade margin not undulate, secondary veins 13-20 on each side of midvein **Polyalthia simiarum**

5. **Polyalthia longifolia** (Sonn.) Thw., Enum. Pl. Zeyl.: 398 (1864). Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 1: 62 (1872); Prain, Beng. Pl. 1: 133 (1903, reprint 1963); Mitra in Shara *et al.* (Eds.), Fl. Ind. 1: 274 (1993); Khanam & Rahman in Khan & Rahman (Eds.), Fl. Bangl. 52: 26 (2002); *Uvaria longifolia* Sonn., Voy. aux Indes 2: 260, t. 131 (1782); *Unona longifolia* (Sonn.) Dunal, Monogr. Anon.: 109 (1817).

Vernacular name: *Debdaru*.

English name: Mast Tree.

Tall tree with dense leafy and weeping branches. Leaves ovate-oblong or ovate-lanceolate, cuneate to cordate, strongly undulate, acuminate. Inflorescence short-peduncled or sessile raceme or umbel-like. Flowers mostly numerous in axil. Ripe carpels purple, glabrous. Seed, solitary, pinkish or yellowish-white, readily separating from fruit wall. *Flowering and fruiting:* March - October. *Chromosome number:* $2n = 18$ (Kumar and Subramaniam, 1986). *Planted in homestead and roadside.*

Distribution: India and Sri Lanka.

Status of occurrence: Common.

Uses: Wood is used as cheap timber.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 30 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 753 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1022 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1604 (DUSH); Sripur, Bgher Bazar, 18.02.2013, R. Tabassum, 2504 (DUSH).

6. **Polyalthia simiarum** (Hook. f. & Thom.) Hook. f., & Thom. in Hook. f., Fl. Brit. Ind. 1: 63 (1872); Prain, Beng. Pl. 1: 204 (1903, reprint 1981); Khanam & Rahman in Khan & Rahman (Eds.), Fl. Bangl. 52: 27 (2002). *Guatteria simiarum* Hook. f. & Thom., Fl. Ind.: 142 (1855).

Vernacular name: *Arjan*.

Tree. Leaves ovate-oblong or oblong-lanceolate. Inflorescence in fascicles, in the old axils or on woody tubercles. Flowers yellowish-green. Ripe carpels obovoid, turning orange-red to blue-black. *Flowering and fruiting*: May - September. *Forest areas*.

Distribution: India, Bhutan, Myanmar, Thailand, Malaysia, Laos and Vietnam.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3864 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3931 (DUSH).

Genus 5. **Uvaria** L., Sp. Pl.: 536 (1753).

7. **Uvaria hamiltonii** Hook. f. & Thom., Fl. Ind. 1: 96 (1855) *et* Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 1: 48 (1872); Prain, Beng. Pl. 1: 129 (1903, reprint 1963); Mitra in Shara *et al.* (Eds.), Fl. Ind. 1: 290 (1993); Khanam & Rahman in Khan & Rahman (Eds.), Fl. Bangl. 52: 33 (2002).

Vernacular name: *Latkan*.

Scandent shrub. Stem hairy. Leaves elliptic to elliptic-oblong, cordate, acuminate, densely rufous stellate-tomentose below. Inflorescence extra-axillary. Flowers solitary or 2-3 together, brick-red, brown tomentose. Ripe carpels orange-coloured, tomentose. *Flowering and fruiting*: May - October. *Forest floor*.

Distribution: India, Nepal, Myanmar and Thailand.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 441 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 805 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1547 (DUSH).

Family 3. **LAURACEAE** A.L. de Jussieu (1789)

Aromatic, mostly evergreen erect shrubs or trees, rarely leafless twining parasites. Leaves alternate, rarely opposite or subopposite, often crowded at the ends of branches, exstipulate, usually entire, lobed. Flowers regular, small, hermaphrodite or dioecious, in axillary or lateral cymes or clusters, racemes or panicles, bracts usually

absent, when present deciduous. Perianth usually inferior, tube sometimes enlarged in fruits, limb usually 6-cleft. Stamens usually a multiple of the perianth-lobes, in 2-4 series on tube, filaments flattened, anthers 2 to 4-celled, opening by upcurved deciduous lids. Ovary 1-celled, ovule 1, anatropous, pendulous, styles terminal, stigmas often 3-lobed, discoid or dilated. Fruit a dry or fleshy berry or drupe, enclosed in or adnate to the perianth tube. Seeds pendulous, albumen absent, cotyledons plano-convex.

The family Lauraceae consists of about 50 genera and about 2000 or more species, widespread in tropical and subtropical regions of the world. In Bangladesh, this family is represented by 13 genera and 46 species.

In the present study area the family is represented by 2 genera and 5 species.

Key to genera:

1. Flowers unisexual, rarely bisexual, in pseudoumbels or racemes,
rarely solitary; bracts large, forming an involucre **Litsea**
- Flowers bisexual, rarely unisexual, in panicles or clusters, rarely
in pseudoumbels; bracts small, not forming an involucre **Cinnamomum**

Genus 6. **Cinnamomum** Schaeffer, Bot. Exped.: 74 (1760).

Key to species:

1. Leaf blade elliptic-oblong, 12-30 × 4-9 cm, thickly
leathery, trinerved or triplinerved, apex obtuse,
acute, or acuminate, base subrounded or attenuate,
basal lateral veins oblique, basal lateral veins and
midrib reaching leaf apex; petiole 1-1.5 cm **Cinnamomum
bejolghota**
- Leaf blade ovate to oblong-ovate or ovate-
lanceolate, smaller, leathery or subleathery to
papery, triplinerved, apex acute or rounded but not
obtuse, base acute or rounded, basal lateral veins
extending up to 3/4 of leaf blade or evanescent near
apex; petiole 1.5-2 cm **Cinnamomum verum**

8. **Cinnamomum bejolghota** (Buch.-Ham.) Sweet, Hort. Brit. ed. 1: 344 (1827); Hook. f., Fl. Brit. Ind. 5: 128 (1886); Prain, Beng. Pl. 2: 673 (1903, reprint 1963). *Laurus bejolghota* Buc.-Ham. (1822), *Cinnamomum obtusifolium* (Roxb.) Nees (1831).

Vernacular names: *Ram Tej-pata, Kinton.*

Large tree. Leaves alternate, elliptic-oblong or elliptic, obtuse. Inflorescence a panicle, crowded, subterminal. Flowers small, yellowish-white or greenish-white, usually hoary with silky pubescence. Fruits ellipsoid or subglobose, seated on the slightly enlarged perianth. *Flowering and fruiting*: January - July. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Mixed deciduous and evergreen forests, usually along streams.*

Distribution: The central and eastern Himalayas, Andamans and Myanmar.

Status of occurrence: Seems to be rare.

Uses: Occasionally used for flavouring.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 741 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1257 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1834 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2147 (DUSH).

9. **Cinnamomum verum** J. S. Presl, Prin. Rostlin 2: 36 (1825). *Cinnamomum zeylanicum* Blume (1826); Hook. f., Fl. Brit. Ind. 5: 131 (1886); Prain, Beng. Pl. 2: 673 (1903, reprint 1963).

Vernacular names: *Darchini, Daruchini.* English names: Cinnamon, True Cinnamon.

Moderate-sized evergreen tree. Leaves opposite or subopposite, rarely alternate, ovate, ovate-lanceolate. Inflorescence a lax panicle, terminal, many-flowered. Flowers yellow. Fruits oblong or ovoid-oblong, minutely apiculate, dry or slightly fleshy, dark purple, surrounded by the enlarged campanulate perianth. *Flowering and fruiting*: January - March. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Planted.*

Distribution: India, Malay Peninsula, Myanmar and Sri Lanka. Cultivated in the Malay Island and elsewhere in the tropics.

Status of occurrence: Cultivated.

Uses: Spice yielding plant.

Specimens examined: Sripur, Gorgoria, 21.06.2014, R. Tabassum, 1400 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1835 (DUSH).

Genus 7. **Litsea** Lamk., Dict. 3: 574 (1989).*Key to species:*

1. Perianth segments imperfect, lacking, or 3 or 4 **Litsea glutinosa**
 - Perianth segments 6-8 **2**
2. Perianth tube not or slightly enlarged at fruit; fruiting tube complanate or shallowly discoid **Litsea monopetala**
 - Perianth tube very enlarged at fruit; fruit $\pm$ surrounded by discoid or cup-shaped fruiting tube **Litsea laeta**

10. **Litsea glutinosa** (Lour.) Robinson, Philipp. J. Bot. Sci. 6: 321 (1911); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956). *Sebifera glutinosa* Lour., Fl. Cochinch.: 638 (1790). *Litsea chinensis* Lamk., Encyc. Method 3: 574 (1789); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1&2): 12 (1953). *Litsea sebifera* (Willd.) Pers., Syn. Pl. 2: 4 (1807); Hook. f., Fl. Brit. Ind. 5: 157 (1886); Prain, Beng. Pl. 2: 675 (1903, reprint 1963); Heinig, List Chittagong: 57 (1926).

Vernacular names: *Kukur-chita*, *Ratun* English names: Soft Bollygum, Bolly Garur, Menda. Beech.

Small to medium-sized, aromatic, evergreen tree. Leaves alternate, very variable, elliptic-oblong or ovate-lanceolate, acute, obtuse or shortly acuminate. Inflorescence in 8-12 flowered umbels, arranged in common pedunculate corymbs. Flowers dioecious, yellowish or white. Berries spherical, black when ripe. *Flowering and fruiting*: April - January. *Chromosome number*: $2n = 24, 48$ (Kumar and Subramaniam, 1986). *Village thickets, forest areas, also planted*.

Distribution: Sri Lanka, India, Pakistan, China, Malaya Island to Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 420 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1136 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1668 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3535 (DUSH).

11. **Litsea laeta** Wall. ex Nees in Wall., Pl. As. Rar. 2 : 67 (1831). *Tetranthera laeta* Nees (1831).

Vernacular name: *Bon-hoalu*.

Small to medium-sized tree, young shoots usually finely ferruginous-pubescent. Leaves alternate, elliptic, lanceolate or narrowly oblong. Inflorescence umbels in

axillary clusters, rarely solitary, 4-flowered. Flowers cream-coloured. Fruits oblong-ovoid, almost white, seated on the enlarged salver-shaped perianth. *Flowering and fruiting*: November - April. *Forests*.

Distribution: Tropical Eastern Himalaya, Bhutan, India and Sikkim.

Status of occurrence: Seems to be rare.

Specimens examined: Sripur, Piruzali, 17.02.2012, R. Tabassum, 2009 (DUSH); Kalikoir, Chandra, 13.09.2013, R. Tabassum, 2919 (DUSH).

12. ***Litsea monopetala*** (Roxb.) Pers., Syn. Pl. 2: 4 (1807); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 12 (1953); Sinclair, Bull. Bot. Soc. Beng. 9 (2): 105 (1955). *Tetranthera monopetala* Roxb., Pl. Coromand. 2: 26. t. 148 (1798). *Litsea polyantha* Juss. in Ann. Mus. Hist. Nat. paris 6: 211 (1805); Hook. f., Fl. Brit. Ind. 5: 162 (1886); Prain, Beng. Pl. 2: 676 (1903, reprint 1963); Heinig, List Chittagong: 57 (1926).

Vernacular names: *Bara Kukur-chita*, *Huoria*, *Kat Meda*.

Small to medium-sized, evergreen tree, young parts rusty-tomentose. Leaves alternate, extremely variable, ovate-oblong, oblanceolate or elliptic-oblong. Inflorescence in pedunculate umbellate heads. Flowers greenish-yellow. Fruits globose to ellipsoid, blackish when ripe, supported by the persistent perianth and the thickened pedicels. *Flowering and fruiting*: March - November. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Evergreen, mixed evergreen and village grooves*.

Distribution: Bhutan, India, Malay Peninsula, Myanmar, Nepal and South West China.

Status of occurrence: Apparently common.

Uses: Medicinal palnt.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3865 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3932 (DUSH).

Family 4. **PIPERACEAE** C. A. Agardh (1825)

Herbs, shrubs or climbers, sometimes vine or epiphytes, usually aromatic. Leaves simple, alternate, often opposite or whorled, stipules absent or 2. Flowers small, axillary or terminal, or in fleshy spikes, hermaphrodite or unisexual, bracts small, usually peltate, perianth absent. Stamens 1-10, often 3+3, filaments usually free, anthers bisporangiate and monothecal (*Peperomia*) or tetrasporangiate and dithecal (*Piper*). Ovary superior, unilocular, 1-4 short stigmas with very short styles, ovule solitary, orthotropous. Fruit a small drupe or nutlet, pericarp fleshy. Seed solitary, with scanty endosperm.

The family Piperaceae consists of about 10 genera and 1400-2000 species, widespread in tropical regions of the world. In Bangladesh, this family is represented by 2 genera and 11 species.

In the present study area the family is represented by 2 genera and 6 species.

Key to genera:

1. Prophylls present, often adnate to petiole, leaving conspicuous scars around stem nodes; leaves alternate; stigmas 3-5, rarely 2 **Piper**
- Prophylls absent, without or scars at nodes; leaves often opposite or whorled in Chinese species; stigma 1, rarely 2-cleft **Peperomia**

Genus 8. **Peperomia** Ruiz & Pavon, Prod.: 8 (1797).

13. **Peperomia pellucida** (L.) H. B. & K., Nov. Gen. Sp. 1: 64 (1815); Prain, Beng. Pl. 2: 669 (1903, reprint 1963); R. L. Heinig, List Chittagong: 56 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 8 (1953); J. Sinclair in Bull. Bot. Soc. 9 (2): 105 (1956); Khan in M. S. Khan, Fl. Bangladesh 37: 1 (1988). *Piper pellucidum* L., Sp. Pl. 1: 30 (1753).

Vernacular name: *Luchi pata*. English names: Peperomia, Pepper elder, Shiny bush.

Annual leafy herb. Stem soft, translucent. Leaves simple, cordate. Inflorescence a terminal or axillary spike. Flowers minute, bisexual, yellowish-green. Fruits drupe-like, sub-globose. *Flowering and fruiting*: July - September. *Chromosome number*: $2n = 20, 22, 24, 44, 46, 48$ (Kumar and Subramaniam, 1986). *Grows in moist-shady places and old walls*.

Distribution: A native to tropical America but naturalized in tropics.

Status of occurrence: Very common.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 613 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2342 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2427 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2634 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3543 (DUSH).

Genus 9. **Piper** L., Sp. Pl. 1: 28 (1753).

Key to species:

1. Bracts oblong, spatulate-oblong, or obovate-oblong, adnate to rachis with only sides and apex free **2**

- Bracts orbicular, peltate with free margin all round 3
- 2. Fruit with base narrowed into 1-4 mm stalk **Piper nigrum**
- Fruit with base rounded, not narrowed into distinct stalk **Piper rhytidocarpum**
- 3. Fruits apically tomentose, completely fused to each other to form a nearly smooth, fleshy, cylindric mass (often cultivated) **Piper betle**
- Fruit glabrous, distinct, sometimes very soft when fully ripe and then difficult to separate when pressed and dried 4
- 4. Leaves very finely powdery pubescent abaxially; apical leaves often nearly sessile, base cordate and clasping; leaves with outermost veins often $\pm$ pedately divided **Piper longum**
- Leaves glabrous; apical leaves clearly petiolate, base subcordate to $\pm$ rounded; leaves with outermost veins not dividing above base **Piper peepuloides**

14. **Piper betle** L., Sp. Pl.: 28 (1753). Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 5: 85 (1886); Prain, Beng. Pl. 2: 668 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956). *Chavica betle* (L.) Miq. (1844), *Piper pinguispicum* C. DC. & Koord. (1909).

Vernacular names: *Pan*, *Tambuli*.

English names: Betel, Betel vine.

Perennial stout twinning climber. Leaves simple, alternate, cordate or ovate-oblong or oblique, firmly coriaceous. Inflorescence a cylindrical spike. Male spikes long. Female spikes erect. Fruit a fleshy drupe, small, ovoid or globose. Seeds suborbicular. *Flowering and fruiting*: December - May. *Chromosome number*: $2n = 26, 32, 42, 52, 58, 64, 68, 78$ (van der Vossen and Wessel, 2000). *Dry shady place in well-drained, friable loamy and clayey soil rich in organic matter*.

Distribution: A native to Malaysia, widely spread in tropical regions of the world.

Status of occurrence: Cultivated.

Uses: Betel is chewed with other ingredients, also a medicinal plant.

Specimens examined: Kaliganj, BorgaBazar, 14.03.2008, R. Tabassum, 255 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1821 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2034 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2133 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3051 (DUSH).

15. **Piper longum** L., Sp. Pl.: 29 (1753); Hook. f., Fl. Brit. Ind. 5: 83 (1886); Prain, Beng. Pl. 2: 668 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 8 (1953). *Piper latifolium* Hunter (1809), *Chavica roxburghii* Miq. (1844).

Vernacular names: *Pipul*, *Pipla*, English names: Indian long pepper, Long pepper. *Pipul morich*.

Perennial herb, rooting at the nodes. Leaves simple, alternate, lanceolate to ovate-lanceolate. Inflorescence of cylindric spikes. Flowers small, white or pinkish-white. Drupes large, pungent. *Flowering and fruiting*: June - September. *Chromosome number*: $2n = 24, 26, 48, 52, 96$ (Kumar and Subramaniam, 1986). *Grows in shady places*.

Distribution: Widely cultivated in India and Sri Lanka but occasionally elsewhere, including South East Asia.

Status of occurrence: Common.

Uses: A medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 195 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 930 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1139 (DUSH).

16. **Piper nigrum** L., Sp. Pl.: 28 (1753); Hook. f., Fl. Brit. Ind. 4: 90 (1883); Prain, Beng. Pl. 2: 669 (1903). *Piper aromaticum* Lamk. (1791).

Vernacular names: *Gol morich*, *Kali morich*, English names: Black pepper, Round pepper.

Perennial woody climber, adhering to supports with short adventitious roots present at the nodes. Leaves simple, alternate, ovate-lanceolate. Inflorescence a spike, appearing opposite the leaves on plagiotropic branches. Male spikes slender. Female spikes cylindric. Perianth absent. Drupes globose, red when ripe. Seeds globose. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 36, 48, 52, 60, 78, 104, 128$ (Kumar and Subramaniam, 1986). *Grows in shaded places rich in mineral and organic matter*.

Distribution: A native to the Western Ghats of Kerala State in India, and found Indonesia, Malaysia, Thailand, Brazil, China, Japan and Sri Lanka.

Status of occurrence: Common.

Uses: A spice yielding plant.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 575 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 787 (DUSH); Kaliganj, Bhulta,

02.01.2013, R. Tabassum, 2327 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2902 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3379 (DUSH).

17. **Piper peepuloides** Roxb., Fl. Ind. 1: 159 (1820); Hook. f., Fl. Brit. Ind. 5: 83 (1886); Prain, Beng. Pl. 2: 668 (1903, reprint 1963). *Chavica peepuloides* Wight (1927).

Vernacular name: *Pipal*.

English name: Round pipli.

Bush climber. Leaves simple, alternate, ovate-oblong, oblong or linear-oblong. Flowers small, in dense cylindric spike. Sepals and petals absent. Male spikes slender. Female spikes shortly cylindric. Drupes globose. *Flowering and fruiting*: July - December. *Grows in shaded places of forest bed*.

Distribution: Bhutan, India, Nepal, Laos, Cambodia, Vietnam and Myanmar.

Status of occurrence: seems to be rare.

Uses: A medicinal plant.

Specimen examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1209 (DUSH).

18. **Piper rhytidocarpum** Hook. f., Fl. Brit. Ind. 5: 92 (1886); Prain, Beng. Pl. 2: 669 (1903, reprint 1963). *Piper madidum* Y. C. Tseng (1986).

Vernacular name: *Ban-pipul*.

Climbing shrub. Leaves broadly ovate, apex acute-acuminate. Flowers small, in cylindric spikes, sepal and petal absent. Fruit a drupe, small, ovoid or globose. *Flowering and fruiting*: February - April. *Grows in evergreen forest bed*.

Distribution: Nepal, Bhutan and India.

Status of occurrence: Common.

Specimen examined: Gazipur Sadar, Rajendrapur Senanibash, 10.05.2008, R. Tabassum, 375 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2381 (DUSH).

Family 5. **ARISTOLOCHIACEAE** A. L. de Jussieu (1789)

Perennial herbs, often woody at the base, undershrubs or shryblets, erect, prostrate or woody climbers. Leaves simple, alternate, mostly entire, but sometimes trilobed, exstipulate. Flowers solitary, or in terminal or lateral racemes or cymes, bisexual,

regular or irregular. Calyx synsepalous, tubular at least below, regular and 3-lobed to more often distinctly irregular (often S-shaped or pipe-shaped) and then 3-lobed to 1-lobed, often larged and coloured. Petals wanting or much-reduced, well-developed and alternate with the 3 calyx lobes. Stamens 4-many, most commonly 6 (in one or less often 2 cycles) or occasionally 12, free or with the filaments (or both filaments and anthers) joined to the style to form a gynostegium, anthers tetrasporangiate and dithecal. Gynostegium of 4-6 carpels, superior, ovary half-inferior or inferior, placentation axile or parietal, ovules numerous in each locule, mostly anatropous. Fruits usually capsular (though sometimes with a fleshy endosperm), many-seeded, rarely follicular and indehiscent. Seeds 1-many, endosperm oily (sometimes also starchy), embryo very small.

The family Aristolochiaceae consists of some 8 to 10 genera and about 600 species, mainly tropical, but a few species occur well within temperate regions. In Bangladesh, this family is represented by a single genus with 4 species.

In the present study area this family is represented by 2 species.

Genus 10. **Aristolochia** L., Sp. Pl. 2: 960 (1753).

Key to species:

- | | |
|--|----------------------------|
| 1. Leaves linear to obovate-oblong; flowers 1-3 together | Aristolochia indica |
| - Leaves deeply cordate; flowers many | Aristolochia tagala |

19. **Aristolochia indica** L., Sp. Pl.: 960 (1753); Hook. f., Fl. Brit. Ind. 5: 75 (1886); Prain, Beng. Pl. 1: 666 (1903, reprint 1963). *Aristolochia lanceolata* Wight (1858).

Vernacular name: *Isharmul*, *Bamohati* English name: Indian Birthwort.
(*Santal*).

Perennial twiner. Leaves simple, alternate, lamina obovate to pandurate. Inflorescence a 4-10 flowered corymb in the leaf axils. Flowers bisexual, trumpet-shaped, greenish. Fruit an oblong-ovoid capsule; *Flowering and fruiting*: August - November. *Chromosome number*: $2n = 12$ (Fedorov, 1969). *Edges of forests and fallow lands*.

Distribution: India, Nepal and Sri Lanka.

Status of occurrence: Common.

Uses: Roots are used in muscle pain by *Santal*.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 80 (DUSH); Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 462 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2293 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R.

Tabassum, 3024 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3531 (DUSH).

20. **Aristolochia tagala** Cham., Linnaea 7 : 207, t. 5, 3 (1832); Prain, Beng. Pl. 1: 667 (1903, reprint 1963). *Aristolochia roxburghiana* Klotzs. (1832), *Aristolochia megalophylla* K. Schum. (1889), *Aristolochia mindanaensis* Warb. (1905).

English names: Birthwort, Dutchman's Pipe.

Climber. Leaves petiolate, lamina ovate to ovate-oblong, cordate at the base with rounded auricles. Inflorescence racemose or paniculate. Flowers pale yellowish or greenish to purplish or dark reddish-brown. Fruits subglobose, slightly pyriform or oblong. *Flowering and fruiting*: April - January. *Chromosome number*: $2n = 14$ (Fedorov, 1969). *Evergreen, mixed deciduous forests and thickets*.

Distribution: India, Sri Lanka, Myanmar, Cambodia, Vietnam, China, Thailand, Malaysia, the Solomon Islands and Australia.

Status of occurrence: Common.

Uses: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 366 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 987 (DUSH).

Family 6. **NYMPHAEACEAE** Salisbury (1805)

Aquatic rhizomatous herbs. Leaves arising from rhizome, simple, long-petioled, leaf blade cordate or hastate to peltate, usually floating. Flowers solitary, large and showy, bisexual, regular, hypogynous to epigynous. Sepals 4-6, free. Petals 8 to many, usually passing into the stamens. Stamens many, spirally arranged, filaments flat and free. Carpels 3-35, stigmas usually radiating. Fruits berry-like, spongy.

The family Nymphaeaceae consists of 5 genera and about 50 species, of cosmopolitan distribution. In Bangladesh, the family is represented by 4 genera and 9 species.

In the present study area the family is represented by a single genus with 3 species.

Genus 11. **Nymphaea** [Tourn.] L., Sp. Pl.: 510 (1753).

Key to species:

1. Leaves spinous-dentate, densely hairy below; sepals conspicuously white veined; petals mostly purplish or bluish with pinkish tinge

2

- Leaves not spinous-dentate, glabrous; sepals obscurely veined; petals mostly white, pink and violet blue

Nymphaea nouchali

2. Petals white or white with pinkish tip; stamens less than 50

Nymphaea pubescens

- Petals deep purple or violet-purple; stamens more than 50

Nymphaea rubra

21. **Nymphaea nouchali** Burm. f., Fl. Ind.: 120 (1768). *Nymphaea stellata* Willd., Sp. Pl. 2: 1153 (1799); Hook. f., Fl. Brit. Ind. 1: 114 (1872); Prain, Beng. Pl. 1: 140 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 13 (1953).

Vernacular name: *Nil-shapla*, *Nilkomol*. English names: Blue water lily, Blue lotus.

Perennial aquatic herb. Leaves elliptic-orbicular, rather broadly peltate, irregularly repand-dentate, often blotched with purple or dull red on the under surface. Flowers solitary on long peduncles, slightly scented, sepals usually green or sometimes dull red, petals 10-30, usually in 3 series, light blue, dull yellowish-white, rose or purplish. Fruits spongy berry, ripening under water when still enclosed by persistent sepals. *Flowering and fruiting*: June - October. *Chromosome number*: $2n = 28, 56, 84$ (Fedorov, 1969). *Stagnant inland water bodies*.

Distribution: India, Sri Lanka, Myanmar, Malaysia, Indonesia, Thailand, Laos, Cambodia, Vietnam, the Philippines, New Guinea and Taiwan.

Status of occurrence: Common.

Uses: Peduncles are used as vegetables.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 01.12.2000, R. Tabassum, 21 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 566 (DUSH); Kaliakior, Chandra, 09.05.2010, R. Tabassum, 926 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1289 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1619 (DUSH).

22. **Nymphaea pubescens** Willd., Sp. Pl. 2: 1154 (1799). Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 1: 114 (1872); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 86 (1956). *Nymphaea nouchali* auct. non Burm. f. (1768), *Nymphaea esculenta* Roxb. (1832); Prain, Beng. Pl. 1: 140 (1903, reprint 1963); *Nymphaea lotus* var. *pubescens* (Willd.) Hook. f. & Thoms. (1855).

Vernacular names: *Sada shapla*, *Shaluk*. English names: Water Lily, White water lily.

Perennial aquatic herb. Rhizome usually stoloniferous, tuberous. Leaves broadly ovate-elliptic, or reniform to orbicular, repand to spinous-dentate and somewhat crispate along margin. Flowers slightly fragrant, sepals-4, green or dull purplish-green outside and velutinous pubescent beneath, petals 10-25, white. Fruit a berry. Seeds ellipsoid. *Flowering and fruiting*: all round the year; profusely during June - October. *Chromosome number*: $2n = 84$ (Fedorov, 1969). *Stagnant inland water bodies*.

Distribution: India, Sri Lanka, Myanmar, Malaysia, Indonesia, Thailand, Laos, Cambodia, the Philippines, New Guinea and Vietnam.

Status of occurrence: Common.

Uses: Rhizomes, peduncles and fruits are used as food, flowers as medicine and ornamental.

Specimens examined: Gazipur Sadar, Sitpara, 01.12.2000, R. Tabassum, 22 (DUSH); Kaligonj, Kalafata, 04.04.2008, R. Tabassum, 305 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 567 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 653 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2525 (DUSH).

23. **Nymphaea rubra** Roxb. ex Andrews, Bot. Rep. 8: 104. t. 503 (1808); Prain, Beng. Pl. 1: 140 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 3 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 13 (1953).

Vernacular name: *Lal shapla*.

English name: Red water lily.

Perennial aquatic herb. Leaves simple, long petioled, peltate, lamina reniform to orbicular. Flowers showy, crimson-red. *Flowering and fruiting*: all round the year, profusely during August - January. *Chromosome number*: $2n = 70$ (Fedorov, 1969). *Stagnant inland water bodies*.

Distribution: India, Sri Lanka, Myanmar, Malaysia, Indonesia, Thailand, Laos, Cambodia, the Philippines and Vietnam.

Status of occurrence: Common.

Uses: Petioles and rarely used as vegetables, flowers are used as medicine and ornamental.

Specimens examined: Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1682 (DUSH); Gazipur Sadar, Rajendropur Sennanibash, 04.02.2011, R. Tabassum, 1730 (DUSH); Kaliakoir, Nabinagar, 12.02.2011, R. Tabassum, 1985 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2018 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3670 (DUSH).

Family 7. **CERATOPHYLLACEAE** S. F. Gray (1821)

Submerged, aquatic, rootless, perennial herbs. Leaves whorled, sessile, dichotomously dissected into slender segments, exstipulate. Flowers small, axillary, unisexual, hypogynous, the male and female flowers usually on different nodes of the same plant, the male often above the female. Perianth (sepals) 8-15 in a single whorl, connate at the base. Stamens usually 10-20, free, spirally arranged on a flat receptacle, filaments and anthers not well differentiated. Carpel 1, ovary 1-ovuled, style terminal, stigma decurrent. Fruit an achene or nut. Seeds without perisperm and endosperm.

The family Ceratophyllaceae consists of the single genus *Ceratophyllum* with about 6 species of cosmopolitan distribution. In Bangladesh, this family is represented by 2 species.

In the present study area the family is represented by a single species.

Genus 12. **Ceratophyllum** L., Sp. Pl.: 992 (1753).

24. **Ceratophyllum demersum** L., Sp. Pl.: 992 (1753). Hook. f., Fl. Brit. Ind. 5: 639 (1888); Prain, Beng. Pl. 2: 743 (1903, reprint 1963); Subramanyam, Aqua. Anglo.: 52 (1962); Khan, Fl. Bangl. 10: 1 (1979).

Vernacular name: *Sheola*.

English names: Con's Tail, Hornwort.

Submerged, rootless herb. Leaves densely whorled. Flowers unisexual, male and female flowers at different nodes. Fruit a small nutlet, green to dark pinkish. *Flowering and fruiting*: August - September. *Stagnant freshwater where it occurs as submerged herb*.

Distribution: Throughout India and Sri Lanka and in temperate and tropical countries.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 1000 (DUSH); Sripur, Bagher Bazar, 18.02. 2013, R. Tabassum, 2454 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2804 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3560 (DUSH).

Family 8. **RANUNCULACEAE** de Jussiey (1789)

Herbs, rarely shrubs or woody climbers. Leaves basal and cauline, alternate, rarely opposite, always exstipulate or petioles sometimes broadened into stipule-like auricles at the base, leaf-bases often sheathing. Inflorescence 1-flowered, cymose, racemose, thyrsoid or paniculate. Flowers actinomorphic or zygomorphic. Sepals 3-8, mostly 5, free, sometimes showy and petaloid. Petals 5 or more, free, someone funnel-shaped or sometimes spurred with sub-basal nectar glands. Stamens usually many, spirally

arranged, free, anthers small, basifixed. Carpels 1 to many, unilocular, stigmas simple, ovule usually solitary and basal. Fruits aggregated of 1-seeded achenes or few to many-seeded follicles, dehiscing along dorsal suture. Seeds small, endosperm copious, fleshy.

The family Ranunculaceae consists of about 50 genera and 1900 species, distributed in northern temperate and alpine regions, some in subtropical or tropical areas. In Bangladesh, the family is represented by 4 genera and 6 species.

In the present study area the family is represented by 2 genera with 2 species.

Key to genera:

1. Flowers zygomorphic/ bilabiate; rootstock not tuberous; leaves deeply dissected **Nigella**
- Flowers actinomorphic/ not bilabiate; rootstock tuberous; leaves not dissected/ (lobate/ rarely pinnate) **Ranunculus**

Genus 13. **Nigella** L., Sp. Pl.: 534 (1753).

25. **Nigella sativa** L., Sp. Pl.: 753 (1762); Prain, Beng. Pl. 1: 125 (1903, reprint 1963). *Nigella indica* Roxb. (1824).

Vernacular names: *Kala-jeera, Mugrala*.

English name: Black cumin.

Slender or stout annual herb. Stem erect, simple or branched, finely striate. Leaves decompose, segments linear, divergent. Flower single, without an involucre, sepals 5, ovate-oblong, shortly clawed, white, petals shortly stipitate. Fruit a follicle, longitudinally united, tuberculate on back with subequal beak. Seeds ovoid to subtrigonal, rugulose-tuberculate. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 12$ (Fedorov, 1969). *Homesteads and sometimes in cultivated fields*.

Distribution: South Europe, North Africa and South East Asia.

Status of occurrence: Cultivated.

Uses: Medicinally important plant.

Specimens examined: Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3329 (DUSH); Kapasia, Kandunia, 03. 11.2013, R. Tabassum, 3671 (DUSH).

Genus 14. **Ranunculus** L., Sp. Pl.: 548 (1753).

26. **Ranunculus sceleratus** L., Sp. Pl.: 776 (1753). Hook. f. & Thom. in Hook. f., Fl. Brit. Ind. 1: 13 (1872); Prain, Beng. Pl. 1: 125 (1903, reprint 1963);

Vernacular names: *Jal-dhania*, *Palik*, *Podika*, English names: Water Celery, *Kandir*. Indian Buttercup.

Erect, stout annual herb. Stem sulcate, hollow. Radical leaves petaloid, reniform, 3-partite at the base, cauline leaves obovate, unlobed or bluntly 3-5 toothed or shortly 3-partite. Flowers several, yellow, diffusely racemose, sepals elliptic, somewhat reflexed, caducous, petals as long as sepals or shorter, yellow. Fruit an obovoid achene, small. *Flowering and fruiting*: February - March. *Chromosome number*: $2n = 12, 32$ (Fedorov, 1969). *Marshes, wet places, irrigated fields, ditches and river banks*.

Distribution: Japan, China, Myanmar, Nepal, Pakistan, Iran, Syria, Egypt, Europe and Russia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 866 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1132 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1710 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2311 (DUSH).

Family 9. **MENISPERMACEAE** A. L. de Jussieu (1789)

Mostly dioecious twiners or climbers, rarely erect plants. Leaves alternate, simple, mostly entire and palmately-veined at the base, exstipulate, petiolate, petioles often swollen at the base. Flowers minute, unisexual, greenish or greenish-yellow, usually actinomorphic, the perianth mostly many-seriate, generally 3-merous. Sepals, petals and stamens free or united. Staminodes 6 or absent. Carpels free, usually 1-6. Fruit of drupes with style-scar close to the base, endocarp usually bony and mostly ornamented and horseshoe-shaped. Seeds with or without endosperm.

The family Menispermaceae consists of about 70 genera and about 400 species, widespread in tropical and subtropical regions of the World. In Bangladesh, this family is represented by 13 genera and 16 species.

In the present study area the family is represented by 4 genera and 5 species.

Key to genera:

1. Flowers and fruits in pedunculate umbel-like cymes or discoid heads, these often in compound umbels, sometimes forming a terminal thyrses by reduction of apical leaves, rarely a slender axillary thyrses of heads

Stephania

- Flowers and fruits in cymes, these flat-topped or in elongated thyrses, sometimes racemelike 2
- 2. Stamens fused into $\pm$ peltate synandrium with anthers in a marginal ring **Cyclea**
- Stamens free or with filaments fused at base only, anthers free, not fused into ring 3
- 3. Petal apex 2-lobed **Cocculus**
- Petal apex not lobed **Tinospora**

Genus 15. **Cocculus** DC. Syst. 1: 515 (1817).

27. **Cocculus hirsutus** (L.) Theob. in Mason, Burm. ed. Theob. 2: 657 (1883). Diels in Pflanzenr. Menisp.: 236 (1910); Craib in Fl. Siam. En. 1: 66 (1925); Forman, Kew Bull. 43(3): 400 (1988); Mia, Fl. Bangl. 51: 8 (1996). *Menispermum hirsutum* L., Sp. Pl. 1: 341 (1753), *Cocculus villosus* (Lamk.) DC., Syst. 1: 525 (1817); Hook. f., Fl. Brit. Ind. 1: 101 (1872); Prain, Beng. Pl. 1: 137 (1903, reprint 1963).

Vernacular names: *Huyer*, *Jaliamani*.

English name: Broom creeper.

Slender climber. Leaves papyraceous, ovate to elliptic. Male inflorescence axillary fascicle of 2-3 or more flowered, male flowers greenish-white. Female inflorescence usually shorter than male. Drupes globose. *Flowering and fruiting*: August - May. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Grows in evergreen, semi-evergreen, mixed deciduous and scrub forests*.

Distribution: India, Sri Lanka, Myanmar, southern China, tropical Africa and Arabia.

Status of occurrence: Rare.

Uses: Medicinal palnt.

Specimen examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2387 (DUSH).

Genus 16. **Cyclea** Arn. ex Wight, III. Ind. Bot. 1: 22 (1840).

28. **Cyclea barbata** Miers, Contrib. Bot. 3: 237 (1871). Diels in Pflanzenr. Menisp.: 314 (1910); Forman, Kew Bull. 14: 77 (1960); in Fl. Thai. 5(3): 328 (1991); Mia, Fl. Bangl. 51: 9 (1996). *Cyclea peltata* sensu Miq., Fl. Ind. Bat. 1(2): 86 (1858); *Cyclea wallichii* Diels, Pflanzenr. Menisp.: 315 (1910).

Vernacular name: *Patalpur*.

Slender climber. Leaves peltate, ovate, deltoid-ovate or broadly ovate. Male inflorescence axillary or cauliflorous, flowers in dense clusters, light green to light yellow. Female inflorescence similar to male but usually broader, female flowers in a sessile dense head. Drupes obliquely obovate to rotund. *Flowering and fruiting*: March - November. *Chromosome number*: $2n = 48$ (Fedorov, 1969). *Grows in evergreen, semi-evergreen and deciduous forests*.

Distribution: India, Myanmar, Thailand, South Vietnam and Indonesia.

Status of occurrence: Common.

Uses: Medicinal palnt.

Specimens examined: Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 869 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2774 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2376 (DUSH).

Genus 17. **Stephania** Lour., Fl. Cochinch. 1: 608 (1790).

29. **Stephania japonica** (Thunb.) Miers, Ann. Mag. Nat. Hist. Ser. 3, 18: 14 (1866). Diels in Pflanzenr. Menisp.: 277 (1910); Forman, Kew Bull. 11: 49 (1956); Mia, Fl. Bangl. 51: 19 (1996). *Menispermum japonicum* Thunb., Fl. Jap.: 193 (1784). *Stephania hernandifolia* (Willd.) Walp. *pro parte*, Repert. 1: 96 (1842); Hook. f., Fl. Brit. Ind. 1: 103 (1872); Prain, Beng. Pl. 1: 136 (1903, reprint 1963).

Vernacular names: *Akanadi, Nimukha, Raj pathda*.

English name: Tape vine.

Soft woody climber. Leaves peltate, thinly papyraceous, broadly triangular, ovate, acuminate. Inflorescence axillary, compound umbelliform cymes. Flowers unisexual, greenish-white or light yellow. Drupes more or less obovate, light yellowish to orange-red. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Grows edges of forests, village thickets and on hedge plants*.

Distribution: India, Nepal, Singapore, Sri Lanka, Mylay Islands, tropical Australia and Africa.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 307 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 369 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 826 (DUSH).

Genus 18. **Tinospora** Miers, Ann. Mag. Nat. Hist. Ser. 2, 7: 35 (1851).

Key to species:

1. Stem not tuberculate; petals 6; endocarp 6-7 mm long **Tinospora cordifolia**
- Stem tuberculate; petals 3; endocarp 11-13 mm long **Tinospora crispa**

30. **Tinospora cordifolia** (Willd.) Hook. f. & Thoms., Fl. Ind. 1: 184 (1855). Miers, Contrib. Bot. 3: 31, pl. 91. (1871); Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 97 (1872); Prain, Beng. Pl. 1: 137 (1903, reprint 1963); Mia, Fl. Bangl. 51: 23 (1996). *Menispermum cordifolium* Willd., Sp. Pl. ed. 4, 4: 826 (1806); *Cocculus convolvulaceus* DC., Syst. Veg. 1: 518 (1817).

Vernacular names: *Ghora-gulantha*, *Ponkhiraj* English name: *Tinospora gulantha* (Koch).

Woody climber. Leaves thinly papyraceous, broadly cordate. Male inflorescence pseudo-racemose, usually solitary, axillary, arising from the axils of leaf scars on old leafless stem or axils of the leaves, male flower minute, yellow. Female inflorescence similar to male, female flowers usually arising singly along axis. Drupes red. *Flowering and fruiting*: January - October. *Chromosome number*: $2n = 24, 26$ (Fedorov, 1969). *Grows in village thickets and forests*.

Distribution: Sri Lanka, India and Myanmar.

Status of occurrence: Common.

Uses: Roots are used in jaundice by Koch ethnic people.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1195 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2693 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3016 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3568 (DUSH).

31. **Tinospora crispa** (L.) Hook. f. & Thoms., Fl. Ind. 1: 183 (1855); Miers, Contrib. Bot. 3: 34 (1871); Hook. f., Fl. Brit. Ind. 1: 96 (1872); Mia, Fl. Bangl. 51: 24 (1996). *Menispermum crispum* L., Sp. Pl. ed. 2, 1: 464 (1763); *Menispermum tuberculatum* Lamk., Encycl. Meth. Bot. 4: 96 (1797).

Vernacular name: *Gulantha*.

Lofty woody climber. Stem tuberculate or warted. Leaves thin papyraceous, broadly ovate to orbicular. Male inflorescence not appearing with the leaves but from the older leaves, male flowers in 1-3 flowered fascicles, yellow. Female inflorescence short, female flowers similar to male. Drupes circular or ellipsoidal, yellow to orange. *Flowering and fruiting*: January - June. *Grows in village thickets and forests*.

Distribution: India, Myanmar, Thailand, Cambodia, China, Malaysia, Indonesia and the Philippines.

Status of occurrence: Seems to be rare.

Uses: A medicinal plant.

Specimens examined: Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 316 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 972 (DUSH); Gazipur Sadar, Rajendropur Sal Forest, 04.02.2011, R. Tabassum, 1712 (DUSH); Sripur, Piruzali, 17.02. 2012, R. Tabassum, 2048 (DUSH).

Family 10. **PAPAVERACEAE** A. L. de Jussieu (1789)

Herbs with coloured juice. Leaves alternate or the floral ones opposite or whorled, often much-divided. Flowers mostly solitary, showy, actinomorphic, hermaphrodite. Sepals 2-3, caducous or calyptrate. Petals 4-6 or 8-12, free, biseriate, imbricate, often crumpled. Stamens numerous, free, anthers 2-celled, opening length-wise. Ovary superior, composed of 2 or more united carpels, 1-celled with parietal placentas, or several-celled by the intrusive placentas reaching the middle, stigmas opposite or alternate with the placentas, ovules numerous, anatropous. Fruits capsular, opening by valves or pores. Seeds small, embryo minute in copious fleshy or oily endosperm.

The family Papaveraceae consists of some 25 genera and about 200 species, occurring mainly in temperate and tropical parts of the Northern Hemisphere. In Bangladesh, this family is represented by 2 genera and 2 species.

In the present study area the family is represented by a single species.

Genus 19. **Argemone** L., Sp. Pl.: 508 (1753).

32. **Argemone maxicana** L., Sp. Pl.: 508 (1753); Hook. f., Fl. Brit. Ind. 1: 117 (1872); Prain, Beng. Pl. 1: 142 (1903, reprint 1963).

Vernacular names: *Baroshialkanta*, English names: Mexican poppy, Yellow *Shialkanta*.
Mexican poppy.

Herb with yellow juice. Stem prickly, branching. Leaves thistle-like, stem clasping, oblong, sinuately pinnatifid, spinous, veins white. Flowers yellow, terminal on a short, leafy branches, sepals 3, prickly, horned at the top, petals 6. Fruit an oblong-ovoid capsule, opening by 4-6 valves. Seeds numerous, globose, netted. *Flowering and fruiting:* February - June. *Chromosome number:* $2n = 28$ (Kumar and Subramaniam, 1986). *Grows in fallow lands and roadsides.*

Distribution: Indigenous to tropical America, Mexico and the West Indies; naturalized throughout Indian subcontinent.

Status of occurrence: Common.

Uses: A medicinal plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1444 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1684 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2771 (DUSH); Kaliakoir, Simultoly Ataboho, 13.09.2013, R. Tabassum, 3258 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3484 (DUSH).

Family 11. **ULMACEAE** Mirbel (1815)

Trees or shrubs. Leaves alternate and commonly distichous, simple, pinnately nerved or triplinerved at the base, stipules usually caducous. Inflorescence in axillary clusters or cymes, sometimes borne on leafless shoots, rarely a solitary flower, bracteate. Flowers small. Perianth 4-8 lobed, sepeloid. Stamens as many as the tepals and opposite them, or rarely twice as many as or up to 15, free or with the filaments borne on the calyx tube, anthers 2-celled, dehiscing longitudinally. Ovary superior, usually unilocular, ovule solitary, anatropous, pendulous, styles simple, with 2 stigmatic slender arms. Fruit a drupe or a broadly winged samara, indehiscent, 1-seeded. Seeds exalbuminous.

The family Ulmaceae consists of about 18 genera and 150 or more species, widely distributed in both tropical and temperate regions, especially in the Northern Hemisphere. In Bangladesh, this family is represented by 4 genera and 6 species.

In the present study area the family is represented by 2 genera and 2 species.

Key to genera:

- | | |
|--|---------------|
| 1. Flowers unisexual, shortly pedicellate; fruit 1.5-4 mm in diam., with persistent tepals and stigmas, stalk short; leaf blade margin denticulate | Trema |
| - Flowers polygamous, long pedicellate; fruit 5-15 mm in diam., without persistent tepals and stigmas, stalk long; leaf blade margin entire or serrate | Celtis |

Genus 20. **Celtis** L., Sp. Pl.: 1043 (1753).

33. **Celtis timorensis** Span., Linnaea 15: 343 (1841). *Celtis cinnamomea* Lindl. ex Planch. (1848); Hook. f., Fl. Brit. Ind. 5: 482 (1888); Prain, Beng. Pl. 2: 719 (1903,

reprint 1963); R. L. Heinig, List Chittagong: 63 (1925), *Celtis dysodoxylon* Thw. (1861).

Medium-sized evergreen tree. Leaves alternate, ovate-elliptic or elliptic-oblong. Inflorescence a branched cyme. Male, female and bisexual flowers with 5 tepals. Fruit a drupe, yellow, becoming red to orange-red when mature. Seeds with scanty endosperm. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 20$ (Kumar and Subramaniam, 1986). *Forest areas*.

Distribution: Sri Lanka, India, Nepal, Myanmar, Thailand, Cambodia, Vietnam, Laos and Malaysia.

Status of occurrence: Rare.

Uses: The wood of the plant is used as indigenous medicine.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1248 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2107 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2889 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3149 (DUSH).

Genus 21. **Trema** Lour., Fl. Cochinch.: 539, 562 (1790).

34. **Trema orientalis** (L.) Blume, Ann. Mus. Bot. Lugd.-Bat. 2: 62 (1856); Hook. f., Fl. Brit. Ind. 5: 484 (1888); Prain, Beng. Pl. 2: 720 (1903, reprint 1963); R. L. Heinig, List Chittagong: 62 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 4 (1953); J. Sinclair in Bull. Bot. Soc. 9 (2): 106 (1956). *Celtis orientalis* L., Sp. Pl. 1044 (1753), *Sponia orientalis* (L.) Decne. (1834).

Vernacular names: *Banjiga*, *Jibon*. *English names*: Charcoal tree, Indian Nettle-tree.

Medium-sized, fast growing evergreen tree. Leaves alternate, ovate-lanceolate to elliptic-lanceolate. Inflorescence of axillary cymes. Flowers unisexual, greenish. Drupes more or less globose, topped by the styles, black when mature. *Flowering and fruiting*: January - June. *Chromosome number*: $2n = 20, 40$ (Kumar and Subramaniam, 1986). *Grows in homesteads and water edges*.

Distribution: Tropical Africa, Sri Lanka, India, Myanmar, Indonesia, China, Malaysia and Australia.

Status of occurrence: Common.

Uses: The wood is used as fuel.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 212 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 939 (DUSH); Sripur, Borkul,

21.06.2010, R. Tabassum, 1148 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1472 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2697 (DUSH).

Family 12. **CANNABACEAE** Endlicher (1837)

Annual or perennial, tall, erect or twining herbs. Leaves alternate or the lower opposite, margin deeply divided, lobes lanceolate, serrate, penninerved or palmatinerved, stipules persistent. Flowers small, axillary, unisexual, plants being dioecious, males fascicled in short pendulous cymes, females in axillary racemes or in pairs, occasionally flowers bisexual. Male flowers with 5 sepals, imbricate, petal absent, stamens 5, adnate to the sepals, filaments filiform, anthers oblong, pistillode absent. Female flowers with hyaline perianth, ovary comprised of 2 carpels, 1 fertile and 1 sterile, fertile one 1-locular, ovule pendulous, reversed, campylotropous, style terminal, stylar arms 2. Fruit a somewhat compressed, crustaceous nut (*Cannabis*) or of 2 flattened achenes enclosed in sepals (*Humulus*). Seeds more or less flattened, albumen fleshy, embryo curved, cotyledons broad, thick.

The family Cannabaceae consists of 2 genera and 3 species native to North Temperate regions. In Bangladesh, it is represented by a single genus and a single species.

Genus 22. **Cannabis** [Tourn.] L., Sp. Pl.: 1027 (1753).

35. **Cannabis sativa** L., Sp. Pl.: 1027 (1753); Hook. f., Fl. Brit. Ind. 5: 487 (1888); Prain, Beng. Pl. 2: 720 (1903, reprint 1963). *Cannabis indica* Lamk. (1783).

Vernacular names: *Bhang*, *Kief*, *Ganja*, *Charas*, English names: Hemp, Indian *Siddhi*.
Hemp, Marijuana.

Erect, aromatic annual herb. Leaves petiolate, opposite below, alternate above, lamina palmately lobed, lobes usually lanceolate, middle one longest, margin coarsely serrate, apex acuminate. Male flowers in axillary paniced cymes, females in axillary racemes, green or yellowish-green. Fruit a nut. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Roadsides and fallowlands, also cultivated illegally*.

Distribution: North West Himalayas and Central Asia.

Status of occurrence: Seems to be rare.

Uses: The flatten resin tops is called *Ganja* mature leaves with resinous deposit is called *Bhang* are smoked with or without tobacco.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3955 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4004 (DUSH).

Family 13. **MORACEAE** Link (1831)

Trees, shrubs, vines or rarely herbs, frequently with milky or watery latex, sometimes spiny. Leaves simple, rarely compound, alternate, rarely opposite, stipulate, leaf blade simple, sometimes with cystoliths, margin entire or palmately lobed. Inflorescence axillary, frequently paired, racemose, spicate, capitate or rarely cymose, sometimes a fig or syconium with flowers completely enclosed within a hollow receptacle. Flowers unisexual, small to very small. Calyx lobes 2-4. Corolla absent. Male flowers with stamens as many as and opposite to calyx lobes (except in *Artocarpus*), anthers 1 or 2-loculed, pistillode (rudimentary sterile pistil) often present. Female flowers with 4 calyx lobes, ovary superior, semi-inferior or inferior, 1- or 2-loculed, ovule 1 in each locule, style branches 1 or 2, stigmas usually filiform. Fruit a drupe or an achene, enveloped by an enlarged calyx or immersed in a fleshy receptacle, often joined into a syncarp. Seed solitary.

The family Moraceae consists of about 40 genera and nearly 1000 species, widespread in tropical and subtropical regions. In Bangladesh, it is represented by 7 genera and 58 species.

In the present study area the family is represented by 4 genera and 14 species.

Key to genera:

- | | |
|---|-------------------|
| 1. Inflorescences a fig with many minute flowers completely enclosed within a hollow receptacle opening by an apical pore closed by scale-like bracts | Ficus |
| - Inflorescences a capitulum, spike, or raceme, rarely a cyme, or with flowers inserted on a discoid receptacle | 2 |
| 2. Stamens straight in flower buds, rarely inflexed | Artocarpus |
| - Stamens inflexed in flower buds | 3 |
| 3. Plant sometimes spiny, particularly on juvenile growth; bisexual inflorescences sometimes present; pistillode absent | Streblus |
| - Plant unarmed; bisexual inflorescences absent; pistillode often present | Morus |

Genus 23. **Artocarpus** J. R. Forst. & J. G. Forst.,
Char. Gen. Pl. ed. 1: 51 (1775).

Key to species:

- | | |
|--|----------|
| 1. Stipules amplexicaul, leaving continuous scar around node; mesophyll with resin cells | 2 |
|--|----------|

- Stipules lateral, leaving small D-shaped scars;
mesophyll without resin cells **Artocarpus lacucha**
- 2. Plant deciduous; bracts many **Artocarpus chama**
- Plant evergreen; bracts few or absent **3**
- 3. Branchlets mostly pubescent; leaves on mature trees pinnately lobed or pinnatipartite; male inflorescences 7-30(-40) cm; fruiting syncarp 8-15 cm in diam. **Artocarpus communis**
- Branchlets glabrous; leaves on mature trees entire; male inflorescences 2-7 cm; fruiting syncarp 25-50 cm in diam. **Artocarpus heterophyllus**

36. **Artocarpus chama** Buch.-Ham. ex Wall., Cat. no. 4657 (1814). *Artocarpus chaplasha* Roxb., Fl. Ind. 3: 525 (1832); King in Hook. f., Fl. Brit. Ind. 5: 543 (1888); Prain, Beng. Pl. 2: 729 (1903, reprint 1963); R. L. Heinig, List Chittagong: 66 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 5 (1953); J. Sinclair in Bull. Bot. Soc. 9 (2): 107 (1956).

Vernacular names: *Chambal, Cham, Chapalish.*

English name: Monkey Jack.

Large, deciduous, monoecious tree. Leaves stipulate, stipule large amplexicaul, juvenile leaves (of seedlings, saplings and coppice) very large, lobed or pinnatifid, adult ones (of mature parts) elliptic-ovate. Flowers unisexual, greenish, densely crowded on globose receptacles. Fruit a globose syncarp, tuberculate. *Flowering and fruiting*: April - August. *Chromosome number*: $2n = 56$ (Kumar and Subramaniam, 1986). *Deciduous and evergreen forests*.

Distribution: India.

Status of occurrence: Common.

Uses: Fruits are edible. Timber is used for furniture and railway sleepers.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 751 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1993 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 19.08.2013, R. Tabassum, 2574 (DUSH).

37. **Artocarpus communis** J. R. Forster & G. Forster, Char. Gen. Pl. 51. 1775. *Artocarpus altilis* (Parkinson) Fosberg (1941), *Artocarpus incisus* (Thunberg) L. f. (1872), *Radermachia incisa* Thunberg (1776), *Sitodium altile* Parkinson (1773).

Vernacular name: *Breadfruit*.

English name: Breadfruit.

Evergreen monoecious tree. Leaves spirally arranged, stipulate, leaf blade ovate to ovate-elliptic, leaves on mature trees pinnately lobed, or pinnatipartite, lobes 3-8, lanceolate. Inflorescences axillary, solitary, yellow. Fruiting syncarp obovoid to globose, green to yellow, brown to black when mature, tuberculate. Drupes ellipsoid. *Flowering and fruiting*: May - July. *Gardens*.

Distribution: Breadfruit is probably native to tropical Asia; now cultivated throughout the tropics.

Status of occurrence: Cultivated.

Uses: Roasted, baked, fried or boiled fruits are eaten.

Specimens examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3866 (DUSH); Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3956 (DUSH).

38. **Artocarpus heterophyllus** Lamk., *Encycl. Meth.* 3: 210 (1789); J. Sinclair in *Bull. Bot. Soc.* 9 (2): 107 (1956). *Artocarpus integrifolia* L.; Hook. f., *Fl. Brit. Ind.* 5: 541 (1888); Prain, *Beng. Pl.* 2: 729 (1903, reprint 1963); R. L. Heinig, *List Chittagong*: 65 (1925); Datta & Mitra, *Bull. Bot. Soc. Beng.* 7 (1& 2): 5 (1953). *Artocarpus brasiliensis* Gomez (1812).

Vernacular name: *Kanthal*.

English name: Jackfruit.

Medium-sized to large semi-evergreen tree. Plant exudes white viscid latex when injured. Leaves simple, alternate, ovate-elliptic to elliptic. Female and male inflorescence borne on the same plant. Flowers unisexual, greenish. Fruit a syncarp, barrel or pear-shaped, tuberculate. *Flowering and fruiting*: February - July. *Chromosome number*: $2n = 56$ (Verheij and Coronel, 1992). *Grows in well-drained highland, cannot tolerate water-logged conditions*.

Distribution: Most probably indigenous to the Western Ghats of India. Later it was introduced to and became naturalized in most South East Asian countries and other parts of the tropics.

Status of occurrence: Cultivated, but sometimes naturally grows.

Uses: Immature green fruit is used as vegetable, ripe fruit fleshy and edible.

Specimens examined: Kaliganj, Khoraid, 05.03.2010, R. Tabassum, 719 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1474 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1964 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2523 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2873 (DUSH).

39. **Artocarpus lacucha** Buch.-Ham., Mem. Wern. Soc. 5: 333 (1826). *Artocarpus lakoocha* Wall. [Cat. 165, n. 4655 (1831), *nom. nud.*] ex Roxb., Fl. Ind. ed. 2, 3: 524 (1832); King in Hook. f., Fl. Brit. Ind. 5: 541 (1888); Prain, Beng. Pl. 2: 729 (1903, reprint 1963); R. L. Heinig, List Chittagong: 66 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 107 (1956).

Vernacular names: *Dewphal*, *Dewa*, *Dewa-cham*, English name: Monkey *Bonkanthal*. Jack.

Large deciduous monoecious tree. Leaves simple, alternate, lamina elliptic, ovate or oblong. Flowers unisexual, on receptacles, greenish. Fruit a syncarp, globose, smooth, orange-yellow when ripe. *Flowering and fruiting*: April - June. *Chromosome number*: $2n = 56$ (Kumar and Subramaniam, 1986). *Grows in moist or dry soil*.

Distribution: India, Myanmar and Malaysia; introduced and cultivated elsewhere.

Status of occurrence: Common.

Uses: Ripe fruit fleshy and edible.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 158 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 627 (DUSH).

Genus 24. **Ficus** L., Sp. Pl. 2: 1059 (1753).

Key to species:

- | | |
|---|----------------------------|
| 1. Stipules not fully amplexicaul; involucral bracts mostly scattered along peduncle; male flowers always with pistillode | Ficus heterophyllus |
| - Stipules always fully amplexicaul; involucral bracts in a whorl of 3 at base of peduncle; male flowers often without pistillode | 2 |
| 2. Hypanthodia borne on trunk or main old branches | 3 |
| - Hypanthodia borne on young branches in leaf axils or behind the leaves | 5 |
| 3. Leaves opposite, rarely subopposite. Figs pale-green or greenish-yellow | Ficus hispida |
| - Leaves alternate. Figs pink, purple-brown or rose-red | 4 |
| 4. Receptacles all axillary or rarely from fallen leaf-scars | Ficus hirta |
| - Receptacles all in fascicles from old branches | Ficus racemosa |

- 5. Lateral nerves not parallel in leaf blade **Ficus benjamina**
- Lateral nerves parallel in leaf blade **6**
- 6. Leaves rusty or whitish pubescent beneath at least when young, glabrous above **Ficus benghalensis**
- Leaves completely glabrous on both sides **7**
- 7. Leaf acumen about $\frac{1}{2}$ as long as lamina; stipules small **Ficus religiosa**
- Leaf acumen about $\frac{1}{4}$ as long as lamina; stipules large **Ficus rumphii**

40. **Ficus benghalensis** L., Sp. Pl.: 1059 (1753); Hook. f., Fl. Brit. Ind. 5: 499 (1888); Prain, Beng. Pl. 2: 735 (1903, reprint 1963); R. L. Heinig, List Chittagong: 63 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 5 (1953). *Ficus indica* L. (1753), *Urostigma benghalense* (L.) Gasp. (1844).

Vernacular names: *Bot*, *Botgachh*.

English name: Banyan tree.

Very large, evergreen to semi-deciduous tree. Leaves ovate, ovate-elliptic to rhomboid. Inflorescence a hypanthodium, produced in axillary pairs on young shoots. Figs depressed-globose, pinkish-red. *Flowering and fruiting*: May - August. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Grows in plain lands*.

Distribution: Thought to be of Bengal origin; common in India, Pakistan and introduced in tropics.

Status of occurrence: Common.

Uses: Leaves are used in cold by *Santal*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 14 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1323 (DUSH); Kaligonj, Pubail, 23.08. 2010, R. Tabassum, 1596 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3065 (DUSH); Kapasia, Voboner chala, 3.11.2013, R. Tabassum, 3587(DUSH).

41. **Ficus benjamina** L., Mart.: 129 (1767); Prain, Beng. Pl. 2: 735 (1903, reprint 1963); R. L. Heinig, List Chittagong: 64 (1925). *Ficus nitida* Thunb. (1786), *Ficus pyrifolia* Salisb. (1796), *Ficus comosa* Roxb. (1799), *Ficus retusa* L. var. *nitida* (Thunb.) Miq. (1867); J. Sinclair in Bull. Bot. Soc. 9(2): 107 (1956).

Vernacular name: *Pakur*.

English names: Yellow Fig, Java Fig.

Medium-sized evergreen tree. Leaves simple, alternate, lamina ovate-elliptic to ovate-lanceolate. Hypanthodia sessile, in axillary pairs, ovoid. Male flowers: pedicellate,

sepals 3, stamen solitary. Female flowers: sessile, sepals 3-4, ovary ovoid, style lateral. Figs orange, glabrous. *Flowering and fruiting*: July - November. *Chromosome number*: $2n = 26, 52$ (Kumar and Subramaniam, 1986). *Usually planted as ornamental tree along roadsides*.

Distribution: India, Nepal, Myanmar, China, Malaysia, Pakistan, Sri Lanka and tropical Australia.

Status of occurrence: Planted.

Uses: Avenue tree, wood is a good fuel.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1378 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2261 (DUSH); Gazipur Sadar, Shalikechura, 19.08.2013, R. Tabassum, 2610 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3204 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3495 (DUSH).

42. **Ficus heterophylla** L. f., Suppl. Pl. 442 (1781); King in Hook. f., Fl. Brit. Ind. 5: 518 (1888); Prain, Beng. Pl. 2: 736 (1903, reprint 1963); R. L. Heinig, List Chittagong: 64 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 6 (1953). *Ficus scabrella* Roxb. (1832).

Vernacular names: *Bhui dumur*, *Ballam dumur*, *Gaori-sheora*.

English name: Climbing stream fig.

Creeping shrub. Leaves simple, oblong or narrowly elliptic to subovate, margin serrate, sometimes variously lobed. Figs pyriform, yellow when ripe. *Flowering and fruiting*: November - February. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Grows in shady and marshy places*.

Distribution: Throughout the hotter part of India, Myanmar, South China, Sri Lanka and Indonesia.

Status of occurrence: Common.

Specimens examined: Kapasia, Junglebari, 14.12.2009, R. Tabassum, 561 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1681 (DUSH); Gazipur Sadar, Markun, 04.02.2011. R. Tabassum, 1918 (DUSH); Sripur, Baghmara, 18.02.2013, R. Tabassum, 2415 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3193 (DUSH).

43. **Ficus hirta** Vahl, Enum. 2: 201 (1805). f., Suppl. Pl. 442 (1781); King in Hook. f., Fl. Brit. Ind. 5: 531 (1888); Prain, Beng. Pl. 2: 737 (1903, reprint 1963). *Ficus hirsuta* Roxb. (1832), *Ficus tridactylites* Gagnep. (1927), *Ficus hirta* Vahl var. *imberbis* Gagnep. (1928).

Vernacular names: *Dangra*, *Khandadumur*, *Pakur*, *Khuskadumur*.

Shrub or small tree. Leaves spirally arranged, stipulate, stipule red, leaf blade elliptic to oblong to obovate or ovate to cordiform to suborbicular, when young palmately 3-7 lobed, or pinnately lobed. Figs axillary on normal leafy shoots, in pairs. Fruit an achene, ellipsoid-globose. *Flowering and fruiting*: November - May. *Chromosome number*: $2n = 26$ (Krause, 1930). *Grows in forest and forest margins*.

Distribution: Bhutan, China, India, Indonesia, Malaysia, Myanmar, Nepal, Thailand and Vietnam.

Status of occurrence: Cultivated.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3957 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 3996 (DUSH).

44. ***Ficus hispida*** L. f., Suppl. Pl. 442 (1781); King in Hook. f., Fl. Brit. Ind. 5: 522 (1888); Prain, Beng. Pl. 2: 736 (1903, reprint 1963); R. L. Heinig, List Chittagong: 65 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 6 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 107 (1956). *Ficus oppositifolia* Roxb. (1798).

Vernacular names: *Dumur*,
Kakdumur.

English names: Opposite-leaved fig, Rough-leaved stem fig.

Shrub or low tree. Leaves simple, opposite, decussate, lamina ovate-oblong to ovate-elliptic. Figs depressed globose to pyriform, greenish-yellow when ripe, hispid. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Grows in hedges, thickets, village surrounding and forests*.

Distribution: India, Pakistan, Myanmar, China, Malaysia, Australia and New Guinea.

Status of occurrence: Common.

Uses: Fruits are used as medicine.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 642 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2224 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2711 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3770 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3811 (DUSH).

45. ***Ficus racemosa*** L., Sp. Pl.: 1060 (1753). *Ficus glomerata* Roxb., Pl. Corom. 2: t. 123 (1798); King in Hook. f., Fl. Brit. Ind. 5: 535 (1888); Prain, Beng. Pl. 2: 737 (1903, reprint 1963); R. L. Heinig, List Chittagong: 65 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 107 (1956).

Vernacular names: *Dumur, Jagyadumur.* English names: Cluster fig, Redwood fig.

Small to medium-sized tree. Leaves ovate-lanceolate to elliptic-lanceolate. Figs borne in clusters on stem, subpyriform-globose, red when ripe. *Flowering and fruiting:* March - May and again September - November. *Chromosome number:* $2n = 26$ (Fedorov, 1969). *Usually grows along channels and by ponds.*

Distribution: India, Pakistan, Sri Lanka, South China, Myanmar, Thailand, Malaysia, Indonesia to North Australia.

Status of occurrence: Common.

Uses: Medicinal palnt.

Specimens examined: Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 259 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 829 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 956 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1190 (DUSH); Sripur, Gargoria, 21.06.2010, R. Tabassum 1450 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2343 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2710 (DUSH) ; Tongi, Raklal, 19.08.2013, R. Tabassum, 2803 (DUSH).

46. **Ficus religiosa** L., Sp. Pl.: 1059 (1753); King in Hook. f., Fl. Brit. Ind. 5: 513 (1888); Prain, Beng. Pl. 2: 735 (1903, reprint 1963); R. L. Heinig, List Chittagong: 64 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7(1& 2): 6 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 107 (1956). *Urostigma religiosum* (L.) Gasp. (1853).

Vernacular names: *Ashwathwa, Ashwat, Panbot.* English names: Peepal tree. The Pipal.

Large to medium-sized deciduous tree. Leaves simple, alternate, lamina ovate, apex abruptly long acuminate, acumen nearly half as long as the blade. Figs in axillary pairs, depressed-globose, deep purple when ripe. *Flowering and fruiting:* March - October. *Chromosome number:* $2n = 26$ (Fedorov, 1969). *Grows in shrubberies, on old walls, and also planted along roadsides and near temple.*

Distribution: China, India, Pakistan, Sri Lanka, Myanmar and Thailand. It has been introduced in South East Asia, Middle East, North Adrica, USA and elsewhere.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Khudabon, 26.03.2008, R. Tabassum, 273 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 06.11.2008, R. Tabassum, 430 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1196 (DUSH); Kaliakoir, Srinail,

13.09.2013, R. Tabassum, 3113 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3478 (DUSH).

47. **Ficus rumphii** Blume, Bijdr.: 437 (1825); Hook. f., Fl. Brit. Ind. 5: 512 (1890); Prain, Beng. Pl. 2: 735 (1903, reprint 1963); R. L. Heinig, List Chittagong: 64 (1925). *Ficus cordifolia* Roxb. (1832), *Urostigma cordifolium* (Roxb.) Miq. (1847).

Vernacular names: *Gai aswathwa*, *Sunamjor* (*Santal*). English name: Weeping Fig.

Moderate-sized deciduous tree. Leaves simple, alternate, lamina broadly ovate, apex prolonged acute. Hypanthodia sessile, in axillary pairs. Figs black when full ripe, globose to obovoid, smooth. *Flowering and fruiting*: March - November. *Chromosome number*: $2n = 22, 26$ (Kumar and Subramaniam, 1986). *Grows well near riverbanks and shrubberies, also planted along roadsides.*

Distribution: Pakistan, India, Myanmar and Malaysia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 05.03.2002, R. Tabassum, 171 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 491 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 946 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2403 (DUSH); Gazipur sadar, Chaydana, 19.08.2013, R. Tabassum, 2857 (DUSH).

Genus 25. **Morus** L., Sp. Pl. 2: 986 (1753).

48. **Morus alba** L., Sp. Pl. 2: 986 (1753). *Morus indica* L. (1753); Hook. f., Fl. Brit. Ind. 5: 492 (1888); Prain, Beng. Pl. 2: 726 (1903, reprint 1963), *Morus atropurpurea* Roxb. (1832), *Morus moretiana* Jacq. ex Burr. (1873).

Vernacular names: *Tunt*, *Tut*. English names: Mulberry, White mulberry.

Small to medium-sized tree. Leaves simple, alternate, lamina ovate, margin sharply serrate. Flowers in catkin inflorescence. Fruit an ovoid syncarp, pinkish to dark purple when ripe. *Flowering and fruiting*: May - July. *Chromosome number*: $2n = 28$ (Fedorov, 1969). *Village thickets and also along roadsides.*

Distribution: Native of China, now widely cultivated in temperate and tropical regions.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 29.04.2005, R. Tabassum, 231 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 752 (DUSH); Sripur, Borkul,

21.06.2010, R. Tabassum, 1168 (DUSH); Gazipur Sadar, Shalichura, 19.08.2013, R. Tabassum, 2614 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3617 (DUSH).

Genus 26. **Streblus** Lour., Fl. Cochinch. 2: 614 (1790).

49. **Streblus asper** Lour., Fl. Cochinch. 2: 615 (1790); King in Hook. f., Fl. Brit. Ind. 5: 589 (1888); Prain, Beng. Pl. 2: 727 (1903, reprint 1963); R. L. Heinig, List Chittagong: 63 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7(1& 2): 6 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 106 (1956). *Trophis aspera* Retz. (1789), *Streblus lactescens* Blume (1918).

Vernacular names: *Sheora*, *Assshaora*, *Sheora*, English names: Siamese rough bush, Tooth brush tree.
Harbi.

Small evergreen tree. Leaves elliptic-obovate to elliptic, scabrous. Male flowers fragrant, with white stamens, female flowers green, solitary. Drupes yellow to orange, globose. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 26$ (Mehra and Gill, 1974). *Secondary forests, open places, lowlands and village thickets*.

Distribution: Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, the Philippines, Sri Lanka, Thailand and Vietnam.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 94 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 563 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1951 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2827 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3784 (DUSH).

Family 14. **URTICACEAE** A. L. de Jussieu (1789)

Herbs, subshrubs or rarely small trees. Leaves simple, petiolate, generally stipulate, mostly with cystoliths. Inflorescence axillary, cymose, spicate or capitate, rarely flowers solitary. Flowers minute, unisexual, hypogynous, regular, usually green. Perianth 1-whorled, tepals usually 3-5, persistent. Male flowers: stamens usually 3-5, filaments inflexed in bud, anthers 2-celled, dorsifixed, pistillode usually present. Female flowers: ovary superior, monocarpellary, unilocular, with one basal ovule, style 1, simple, stigmas capitate, mostly penicillate, staminodes usually absent, if present scaly. Fruit an achene or a small nut, or rarely a drupe, more or less enclosed by a persistent, accrescent perianth. Seeds with membranous testa, embryo straight.

The family Urticaceae consists of about 45 genera and 700 or more species, widely distributed in tropical and subtropical regions of the World. In Bangladesh, the family is represented by 10 genera and 21 species.

In the present study area the family is represented by 2 genera with 2 species.

Key to genera:

- | | |
|--|------------------|
| 1. Plants armed with stinging hairs; female flowers without staminodes | Laportea |
| - Plants without stinging hairs; female flowers with or without staminodes | 2 |
| 2. Cystoliths usually linear or fusiform; stigma sessile, penicillate-capitate; perianth lobes of female flowers free or connate at base, staminodes present | Pilea |
| - Cystoliths dotlike or very short blunt rods (botuliform); stigma often on a style, mostly linear, less often penicillate-capitate; perianth lobes of female flowers usually connate into a tube, rarely strongly reduced, or absent, staminodes absent | Pouzolzia |

Genus 27. **Laportea** Gaud. in Freyc., Voy. Bot.: 498 (1826).

50. **Laportea interrupta** (L.) Chew, Gard. Bull. Sing. 21: 200 (1965). *Urtica interrupta* L. (1753); Prain, Beng. Pl. 2: 721 (1903, reprint 1963), *Fleurya interrupta* (L.) Wight (1853); J. Sinclair in Bull. Bot. Soc. 9(2): 107 (1956).

Vernacular name: *Lal bichuti*.

Monoecious, annual herb. Leaves ovate or elliptic-ovate, margin coarsely serrate. Panicles often suppressed, side-branches solitary. Flowers fasciculate at intervals along elongated peduncles. Achenes asymmetrically ovoid, completely surrounded by a narrow membranous wing. *Flowering and fruiting*: August - November. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Disturbed habitats (roadsides) under partial shade*.

Distribution: Throughout the Old World tropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 140 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 909 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1098 (DUSH); Sripur, Bagher Bazar,

18.02.2013, R. Tabassum, 2477 (DUSH); Kaligonj, banglahaola, 02. 12.2013, R. Tabassum, 3788 (DUSH).

Genus 28. **Pilea** Lindl., Coll. Bot.: t. 4 (1821).

51. **Pilea microphylla** (L.) Liebm., Kongel. Danske Vidensk. Selsk. Skr. 5, Ser. 2: 296, 302 (1851); Prain, Beng. Pl. 2: 722 (1903, reprint 1963); R. L. Heinig, List Chittagong: 66 (1925); *Parietaria microphylla* L. (1759), *Pilea muscosa* Lindl. (1821); Hook. f., Fl. Brit. Ind. 5: 551 (1888).

Vernacular name: *Latamarich*. English names: Artillery plant, Gunpowder plant.

Annual prostrate or procumbent herb. Leaves opposite, but the leaves of a pair of very unequal size, simple, lamina obovate, elliptic or elliptic-ovate. Inflorescence an axillary small cymose cluster. Flowers yellowish-green. Fruit an oblong or ellipsoid achene. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 36$ (Kumar and Subramaniam, 1986). *Old walls, dams, roads and pathways in gardens*.

Distribution: Originated from South and Central America, widely spread in Africa, Madagascar and Asia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2199 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2688 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3150 (DUSH); Kapasia, Kanduni, 03.11.2013, R. Tabassum, 3681 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3845 (DUSH).

Genus 29. **Pouzolzia** Gaudich. in Freyc., Voy. Bot.: 503 (1826).

52. **Pouzolzia zeylanica** (L.) Benn., Pl. Jav. Rar.: 67 (1838); J. Sinclair in Bull. Bot. Soc. 9 (2): 107 (1956). *Pouzolzia indica* (L.) Gaudich. Freyc. Bot. Voy.: 503 (1826); Hook. f., Fl. Brit. Ind. 5: 581 (1888); Prain, Beng. Pl. 2: 724 (1903, reprint 1963); R. L. Heinig, List Chittagong: 67 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 5 (1953).

Vernacular name: *Kullaruki*.

Monoecious perennial herb. Leaves opposite in lower portion, upper leaves alternate, broadly ovate or elliptic-ovate. Inflorescence of axillary clusters. Flowers greenish-white. Achenes ovoid or ellipsoid, black, enclosed by perianth. *Flowering and fruiting*:

June - December. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986).
Grows in damp open forests, grasslands and disturbed habitats.

Distribution: From India, throughout South East Asia to Australia and introduced in Central America.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Murua, 07.06.2002, R. Tabassum, 113 (DUSH); Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 209 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 395 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 1001 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2090 (DUSH).

Family 15. **CASUARINACEAE** R. Brown (1814)

Trees or shrubs, branchlets jointed, sulcate or grooved. Leaves reduced to scales at the nodal region of the branches. Flowers naked in spikes, unisexual. Male spikes elongated on terminal portions of the lateral branches, and female ones ovoid or capitate on the twigs. Male flowers with a single stamen and subtended by 2 or 4 scale-like bracteoles. Female flowers minute, subtended by 2 scale-like bracts. Fruits crowded into a 'cone' with persistent bracts.

The family Casuarinaceae consists of the single genus *Casuarina*, with about 50 species worldwide distributed. In Bangladesh, it is represented by a single genus with a single species.

Genus 30. **Casuarina** Adans., Fam. 2: 481 (1763).

53. ***Casuarina equisetifolia*** Forst., Char. Gen.: 103, t. 52 (1776); Hook. f., Fl. Brit. Ind. 5: 598 (1890); Prain, Beng. Pl. 2: 739 (1903, reprint 1963); Benth, Trees of Calcutta, 421 (1946). *Casuarina muricata* Roxb., F.; Ind. ed. Carey, 632 (1832); Khan and Huq in Khan (Ed.), Fl. Bangladesh 1: 2 (1972).

Vernacular name: *Jhau*.

English names: Australian pine, Ironwood.

Spreading tree. Branchlets long, slender, cylindrical, jointed or grooved, internodes 7-ridged with the same number of scale-leaves at the nodal region. Flowers unisexual, male flowers borne in terminal spikes on short lateral branches, each having 2 bracteoles, female flowers naked, borne in dense spherical heads on the twigs. Cones elliptic, formed of woody bracts enclosing the mature fruits. Fruits 1-seeded samaroid

nut. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Gardens, roadsides and sandy habitats*.

Distribution: Indigenous to the sea coast of New South Wales in Australia, but later introduced in various countries.

Status of occurrence: Cultivated.

Uses: The plant is used as an avenue tree in the forest area.

Specimens examined: Kapshia, Borun, 24.04.2008, R. Tabassum, 330 (DUSH); Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 473 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2993 (DUSH); Kaligonj, Banlahaola, 02.12. 2013, R. Tabassum, 3807 (DUSH).

Family 16. **PHYTOLACCACEAE** R. Brown (1819)

Herbs, shrubs or rarely trees, sometimes scandent. Leaves simple, exstipulate, alternate, entire, pinnately reticulate. Flowers usually in terminal, leaf-opposed or axillary racemose inflorescence, bisexual or rarely unisexual. Perianth simple, white or coloured, mostly uniseriate, 4-5 partite, more or less persistent. Stamens 3-many, alternate with the perianth segments or irregularly inserted on a fleshy, minute hypogynous disc, filaments free or connate below, anthers 2-locular, dorsifixed. Carpels 1-many, free or connate, ovary usually superior, ovule solitary, styles absent or very short, stigmas as many as carpels. Fruit a berry, drupe, achene, urticule or schizocarp. Seeds erect to reniform, sometimes arillate, with abundant endosperm.

The family Phytolaccaceae consists of about 17 genera and 110 species, largely distributed in the tropics and subtropics of America. In Bangladesh, it is represented by a single genus with a single species.

Genus 31. **Rivina** L., Sp. Pl.: 121 (1753).

54. **Rivina humilis** L., Sp. Pl.: 121 (1753); Hook. f., Fl. Brit. Ind. 5: 21 (1886); Prain, Beng. Pl. 2: 660 (1903, reprint 1963); Khan and Huq in Khan (Ed.), Fl. Bangladesh 1: 3 (1972).

English name: Pokeweed.

Herb, woody at the base. Leaves simple, ovate. Flowers hermaphrodite, in axillary, rarely terminal, many-flowered racemes, perianth 4-partite, white at the young stage but becoming greenish at maturity. Fruits indehiscent, subglobose, red when ripe. *Flowering and fruiting*: October - April. *Chromosome number*: $2n = 108$ (Kumar and Subramaniam, 1986). *Grows in the waste places, also in gardens*.

Distribution: Indigenous to the United States of America, distributed from Florida to Texas.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 139 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 868 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1420 (DUSH).

Family 17. **NYCTAGINACEAE** A. L. de Jussieu (1789)

Herbs, shrubs or trees. Leaves simple, usually opposite, rarely alternate, entire, exstipulate, petiolate. Flowers perfect, seldom unisexual, hypogynous, commonly in cymose (sometimes head-like) inflorescence, often subtended by large and conspicuous, sometimes even corolloid involucre. Calyx a well developed, slender, 3-8 lobed tube, valvate or plicate in bud, commonly corolloid. True corolla absent. Stamens 1-5, sometimes many, hypogynous, filaments joined at the base, anthers tetrasporangiate and dithecal, opening by longitudinal slits. Ovary superior, 1-loculed, ovule 1, style 1, stigmas globose. Fruit an achene-like anthocarp, enclosed by persistent perianth. Seed 1, endospermic.

The family Nyctaginaceae consists of about 30 genera and 300 species, occurring mainly in tropical and subtropical regions of both the Old and New World. In Bangladesh, this family is represented by 3 genera and 4 species.

In the present study area the family is represented by 3 genera with 3 species.

Key to genera:

- | | |
|--|----------------------|
| 1. Shrubs, trees, or spiny vines; leaves often alternate | Bougainvillea |
| - Herbs or subshrubs; leaves always opposite | 2 |
| 2. Flowers enclosed by a calyxlike involucre; fruit globose, obovoid, oblong, fusiform, or terete, sometimes ribbed, without sticky glands | Mirabilis |
| - Flowers in cymose panicles, umbels, or verticils; fruit clavate, obconic, turbinate, terete, or obovoid, 5- or 10-ribbed, with sticky glands | Boerhaavia |

Genus 32. **Boerhaavia** L., Sp. Pl. 1: 3 (1753).

55. **Boerhaavia diffusa** L., Sp. Pl. 1: 3 (1753). *Boerhaavia repens* L. (1753); Hook. f., Fl. Brit. Ind. 4: 709 (1885); Prain, Beng. Pl. 2: 645 (1903, reprint 1963). *Boerhaavia coccinea* Mill. (1768), *Boerhaavia adsendens* Willf. (1797).

Vernacular names: *Punarnava*, *Gondhapurna*. English names: Pigweed, Spreading Hog-weed.

Perennia creeping or climbing herb. Leaves simple, opposite or subopposite, base obtuse, cordate or truncate, apex acute to obtuse. Flowers in umbelliform clusters, perianth campanulate, white, red, pink or violet. Fruits small, 5-ribbed. *Flowering and fruiting*: April - August. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Open dry localities, pastures, sides of railroad, roadsides, fallow lands and secondary forests*.

Distribution: Tropical and subtropical Asia, Africa, America and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 439 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 881 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1280 (DUSH); Kapasia, Chonabari, 03.07.2010, R. Tabassum, 1527 (DUSH).

Genus 33. **Bougainvillea** Commers. ex Jussieu, Gen. Pl.: 91 (1789).

56. **Bougainvillea spectabilis** Willd., Sp. Pl. 2: 348 (1789); Prain, Beng. Pl. 2: 645 (1903, reprint 1963). *Bougainvillea peruviana* Nees & Mart. (1832).

Vernacular names: *Bagan bilsh*, *Kagoj phul*. English names: Paper flower, Bougainvillea.

Evergreen climbing shrub. Stem densely tomentose, well-armed with spines, spines curved. Leaves simple, alternate, ovate, pubescent. Flowers tubular, partially to completely surrounded by showy colourful bracts, sepals 5, corolla-like, tip villous, yellow above, lilac beneath. *Flowering*: generally profuse in dry season. Fruit formation is rare. *Chromosome number*: $2n = 20, 34, 51$ (Fedorov, 1969). *Sunny and well-drained soil*.

Distribution: A native of Brazil and in widely cultivated in the tropics and subtropics.

Status of occurrence: Cultivated.

Uses: It is used as decorative hedge.

Specimens examined: Kapasia, Saldio, 03.07.2010, R. Tabassum, 1473 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2181 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2772 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3117 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3698 (DUSH).

Genus 34. **Mirabilis** L., Sp. Pl. 1: 177 (1753).

57. **Mirabilis jalapa** L., Sp. Pl.: 177 (1753); Prain, Beng. Pl. 2: 644 (1903, reprint 1963).

Vernacular names: *Sandhyamalati*, *Krishnakali*. English names: 4 O'clock plant, Beauty of the night.

Perennial herb. Root tuberous, nodes swollen. Leaves opposite, ovate-elliptic. Inflorescence 3-7 flowered cymes. Flowers fragrant, single or in clusters, red, magenta, pink, yellow or white, sometimes different colour on the same plant, perianth funnel-shaped, stamens 5-6, exserted. Fruit a anthocarp, ovoid, 5-ribbed, black when mature. *Flowering and fruiting*: March - May and August - November. *Chromosome number*: $2n = 54, 58$ (Fedorov, 1969). *Sunny to partly shady, moist, well-drained soil and in gardens*.

Distribution: A native of South America and widely cultivated and found as an escape in many tropical areas.

Status of occurrence: Cultivated.

Uses: Ornamental plant and it has medicinal value.

Specimens examined: Kaligonj, Kolafata, 29.04. 2005, R. Tabassum, 225 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1330 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2686 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3172 (DUSH); Kapasia, Kandunia Village, 03.11.2013, R. Tabassum, 3659 (DUSH).

Family 18. **CACTACEAE** A. L. de Jussieu (1789)

Fleshy herbs or woody plants. Stem simple or caespitose, many forms branched and tree-like, often greatly elongated and cylindrical, flattened or fluted, frequently constricted and jointed with watery or milky sap. Leaves simple, alternate, flat and leaf-like but cylindric, scale-like or absent, usually with clusters of spines and sometimes bristles in the axils. Flowers usually solitary, sometimes clustered, bisexual or unisexual, actinomorphic. Perianth weakly differentiated into sepals and petals. Stamens numerous, arising spirally or in groups from the inner face of the hypanthium, anthers 2-celled, dehiscing longitudinally. Carpels 3-many, ovary inferior, unilocular, ovules numerous, anatropous, placentation parietal, style 1, stigmas as many as carpels. Fruit a berry, spiny or bristly. Seeds with embryo, usually non-endospermic.

The family Cactaceae consists of some 30 to 200 or more genera, with at least 1,000, perhaps as many as 2,000 species and a familiar feature of the American desert

landscape, and are cultivated as pot-plants by a large cult of dedicated amateur horticulturist. In Bangladesh, this family is represented by a single genus and a single species.

Genus 35. **Opuntia** Mill., Gard. Abr. ed. 4 (1754).

58. **Opuntia dillenii** Haw., Suppl. Pl. Succ.: 79 (1819); Hook. f., Fl. Brit. Ind. 2: 657 (1879); Prain, Beng. Pl. 1: 388 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9(2): 96 (1956). *Cactus dillenii* Ker-Gawl. (1818).

Vernacular name: *Phanimanasa*. English names: Erect prickly pear, Indian fig.

Succulent perennial undershrub, with flattened stem-segments. Spines 2-5 (-10) per areole, yellowish to brownish. Leaves small, deciduous. Flowers sessile, solitary, bright yellow. Fruits obovoid, purplish when ripe, few areoles with glochidia. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 22, 48, 66$ (Kumar and Subramaniam, 1986). *Sandy places of dry zones*.

Distribution: Native of United States. Also found in Africa, India and Sri Lanka.

Status of occurrence: Common.

Uses: Medicinal plant and it is also used as hedge.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 771 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2452 (DUSH); Gazipur Sadar, Khataldi, 19.08.2013, R. Tabassum, 2725 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3551 (DUSH).

Family 19. **CHENOPODIACEAE** Ventenat (1799)

Herbs, shrubs, rarely trees, seldom climbers. Stem often succulent. Leaves simple, alternate or opposite, exstipulate. Inflorescence spike, panicle or racemes. Flowers small, usually green, 1 to many, bisexual, rarely unisexual. Sepals 5 (1-6), free or connate at the base. Petal absent. Stamens 5 (1-6), opposite to the sepals, sometimes fewer, filaments free or connate at the base, anthers opening longitudinally. Carpels 2-3 (up to 5), united, ovary unilocular, ovule solitary and basal. Fruit a utricle or a small nut.

The family Chenopodiaceae consists of about 100 genera and 1,500 species of cosmopolitan distribution, but especially abundant in desert and semi-desert regions, many are halophytes. In Bangladesh, this family is represented by 7 genera and 8 species.

In the present study area the family is represented by 3 genera and 4 species.

Key to genera:

- | | | |
|----|---|--------------------|
| 1. | Perianth basally adnate to ovary, enlarged, incrassate, and hardened in fruit | Beta |
| - | Perianth free from ovary, not enlarged, incrassate, or hardened in fruit | 2 |
| 2. | Flowers unisexual (plants monoecious or dioecious) | Spinacia |
| - | Flowers bisexual or plants sometimes polygamous | Chenopodium |

Genus 36. **Beta** L., Sp. Pl. 1: 222 (1753).

59. **Beta vulgaris** L., Sp. Pl. 1: 222 (1753); Hook. f., Fl. Brit. Ind. 5: 5 (1886); Prain, Beng. Pl. 2: 658 (1903, reprint 1963).

Vernacular names: *Beet, Palak*.

English names: Garden beet, Common beet.

Succulent herb. Taproot modified into underground tuber. Leaves long petioled, simple, alternate or spiral on a short stem, often ovate. Inflorescence paniculate with many branched spikes; flowers bisexual, greenish. Fruit a nut. *Flowering and fruiting*: March - April. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Fertile, moist soil*.

Distribution: Worldwide.

Status of occurrence: Cultivated.

Uses: It is used as salad, also used as cooked vegetable.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1164 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1790 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2105 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3030 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3822 (DUSH).

Genus 37. **Chenopodium** L., Sp. Pl. 1: 218 (1753).*Key to species:*

- | | | |
|----|---|---------------------------------|
| 1. | Plant with simple and glandular hairs or glands, aromatic | Chenopodium ambrosioides |
| - | Plant glabrous to vesicular hairy (farinose), not aromatic but sometimes bad smelling | Chenopodium album |

60. **Chenopodium album** L., Sp. Pl. 1: 219 (1753); Hook. f., Fl. Brit. Ind. 5: 3 (1886); Prain, Beng. Pl. 2: 657 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956).

Vernacular names: *Batua shak*, *Chandan betu*. English names: White goosefoot, Pigweed.

Erect scentless annual herb. Stem mealy, green or red, ribbed. Leaves simple, alternate, lamina ovate to ovate-rhomboid, usually coarsely toothed. Flowers small, greenish-white, clustered and arranged in a large, axillary and terminal leafy panicle. Fruit a membranous utricle, enclosed in the perianth. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 36, 54$ (Kumar and Subramaniam, 1986). *Crop fields where it grows as a weed, and sandy riverbanks*.

Distribution: In most countries of the world.

Status of occurrence: Common.

Uses: It is used as vegetable.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 120 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1735 (DUSH); Kaligonj, Bhulta, 02.01.2013, R. Tabassum, 2339 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3031 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3721 (DUSH).

61. **Chenopodium ambrosioides** L., Sp. Pl. 1: 219 (1753); Hook. f., Fl. Brit. Ind. 5: 4 (1886); Prain, Beng. Pl. 2: 657 (1903, reprint 1963).

Vernacular name: *Chandan betu*. English names: Mexican tea, American wormseed.

Strongly scented, profusely branched annual herb. Leaves simple, alternate, lamina oblong-lanceolate, usually shallowly serrate-dentate. Inflorescence axillary or terminal, leafy panicles. Flowers small, pale green. Nuts 1-seeded. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 16, 32, 36, 48, 64$ (Kumar and Subramaniam, 1986). *Waste places and roadsides*.

Distribution: Native of central and South America, introduced in Europe, Africa, Asia and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Kolafata, 29.04.2005, R. Tabassum, 228 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1736 (DUSH);

Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2068 (DUSH); Kaliakior, Fulbari, 01.10.2013, R. Tabassum, 3325 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3614 (DUSH).

Genus 38. **Spinacia** L., Syst. ed. 1 (1735).

62. **Spinacia oleracea** L., Sp. Pl. 2: 1027 (1753); Hook. f., Fl. Brit. Ind. 5: 6 (1886); Prain, Beng. Pl. 2: 658 (1903, reprint 1963).

Vernacular name: *Palong shak*.

English names: Spinach, Garden spinach.

Erect annual herb. Leaves simple, alternate, petiolate, lamina ovate to hastate, entire. Inflorescence in male plants elongated and spike-like, in female plants an axillary cluster. Flowers usually unisexual, small, green. Fruit a utricle, indehiscent, 1-seeded. *Flowering and fruiting*: February - March. *Chromosome number*: $2n = 12$ (Kumar and Subramaniam, 1986). *Well-drained fertile soil*.

Distribution: Probably originated from northern Iran, Afghanistan and Turkmenistan, now cultivated worldwide.

Status of occurrence: Cultivated.

Uses: It is used as leafy vegetable.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 304 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1138 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1492 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2544 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3338 (DUSH).

Family 20. **AMARANTHACEAE** A. L. de Jussieu (1789)

Herbs or subshrubs, rarely scandent. Leaves alternate or opposite, exstipulate, entire or nearly so. Inflorescence a dense head, spike, raceme or panicle, often cymose, bracteate. Flowers perfect or sometimes unisexual, actinomorphic, hypogynous or nearly so, apetalous. Sepals mostly 3-5, rarely 1 or 2, sometimes absent. Stamens as many as and opposite to the sepals, rarely few, filaments free or connate at the base into a tube, anthers unilocular or bilocular. Ovary superior, unilocular, ovules 1-many, placentation basal, style slender, stigma capitate, filiform. Fruit an achene, utricle, nut or a capsule, rarely a berry. Seeds rounded to lenticular or ovoid.

The family Amaranthaceae comprises of 65 genera and 900 species, distributed widely in tropical and subtropical regions. In Bangladesh, the family is represented by 12 genera and 28 species.

In the present study area the family is represented by 7 genera and 15 species.

Key to genera:

- | | | |
|----|---|----------------------|
| 1. | Leaves alternate | 2 |
| - | Leaves opposite | 3 |
| 2. | Ovary with 2 to many ovules | Celosia |
| - | Ovary with 1 ovule | Amaranthus |
| 3. | Flowers 2 or more in cymous partial inflorescence, sterile flowers present | Cyathula |
| - | Flowers solitary, without any branching in axils of bracteoles, without sterile flowers | 4 |
| 4. | Inflorescences heads or complex thyrsoid structures; anthers 1-loculed | 5 |
| - | Inflorescences spikes; anthers 2-loculed | 6 |
| 5. | Stigma 1, capitate, pseudostaminodes present | Alternanthera |
| - | Stigmas 2-lobed or forming 2 or 3 linear branches, pseudostaminodes absent | Gomphrena |
| 6. | Pseudostaminodes fringed or long fimbriate | Achyranthes |
| - | Pseudostaminodes triangular, subulate, oblong, or absent | Aerva |

Genus 39. **Achyranthes** L., Sp. Pl. 1: 204 (1753).

63. **Achyranthes aspera** L., Sp. Pl. 1: 204 (1753); Hook. f., Fl. Brit. Ind. 4: 730 (1885); Prain, Beng. Pl. 2: 654 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956). *Cyathula geniculata* Lour. (1790), *Achyranthes aspera* L. var. *rubro-fusca* Wight (1852).

Vernacular names: *Apang*, *Bilaikhamchi*, English name: Prickly chaff-flower. *Upatlengra*.

Perennial herb or undershrub. Stem usually branched from the base, thickened at the nodes. Leaves simple, opposite, orbicular, obovate or elliptic. Inflorescence terminal and lateral spikes. Flowers greenish. Fruit an utricle, oblong. *Flowering and fruiting*: June - October. *Chromosome number*: $2n = 14, 42$ (Fedorov, 1969). *Grows in sunny open places, roadsides and waste places*.

Distribution: Throughout the world in tropical and warmer regions.

Status of occurrence: Common.

Uses: It is a valuable medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 39 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1556 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2031 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2321 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3076 (DUSH).

Genus 40. **Aerva** Forssk., Fl. Aegypt. Arab.: 170 (1775).

64. **Aerva sanguinolenta** (L.) Blume, Bijdr.: 547 (1825). *Achyranthes sanguinolenta* L. (1762), *Achyranthes scandens* Roxb. (1824), *Aerva scandens* Wall. ex Moq. (1849); Hook. f., Fl. Brit. Ind. 4: 727 (1885); Prain, Beng. Pl. 2: 653 (1903, reprint 1963).

Vernacular names: *Bishallakarani, Lal Apang, Nuriya.*

Straggling or subscandent perennial herb. Leaves alternate and opposite, elliptic, elliptic-oblong or ovate-lanceolate. Inflorescence solitary or fascicled, whitish to pale purplish, spikes often pyramidal. Flowers bisexual or female, white with a greenish centre. Fruit an utricle, broadly ovoid, indehiscent. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 36, 44$ (Fedorov, 1969). *Homesteads and gardens.*

Distribution: India, China, Malaysia, the Philippines and tropical Africa.

Status of occurrence: Cultivated.

Uses: It is a medicinal plant.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 129 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 838 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1797 (DUSH); Kapasia, Kandunia, 03.11.2011, R. Tabassum (DUSH).

Genus 41. **Alternanthera** Forssk., Fl. Aegypt. Arab.: 28 (1775).

Key to species:

- | | |
|--|------------------------------------|
| 1. Heads with a peduncle, axillary | Alternanthera philoxeroides |
| - Heads all sessile, axillary, rarely terminal | 2 |
| 2. Tepals abaxially glabrous | Alternanthera sessilis |
| - Tepals abaxially hairy | Alternanthera bettzickiana |

65. **Alternanthera bettzickiana** (Regel) Nichols., Ill. Dict. Gard. 1: 59 (1884). *Telanthera bettzickiana* Regel (1862).

English name: Joseph's coat.

Erect or ascending perennial herb. Stem with 2 opposite furrows. Leaves opposite, spatulate, rhomboid-obovate. Inflorescence of sessile, terminal and axillary, spherical or oblong heads. Flowers white. Fruit an utricle, thin-walled. *Flowering and fruiting*: throughout the year. *Gardens, sunny or moderately shady localities*.

Distribution: Native of tropical America, probably Brazil and now widespread in tropical regions of the world.

Status of occurrence: Cultivated.

Uses: It is used as a hedge plant.

Specimens examined: Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 695 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3303 (DUSH).

66. **Alternanthera philoxeroides** (Mart.) Griseb., Symb. Argent. in Abh. Ges. Wiss. Gött. 24: 36 (1879). *Bucholzia philoxeroides* Mart. (1826), *Achyranthes philoxeroides* (Mart.) Stand. in J. Wash. Acad. Sci. 5: 74 (1915).

Vernacular names: *Helencha*, *Malancha shak*. English name: Alligator weed.

Perennial, polymorphic herb. Leaves opposite, oblong or linear-oblong, lanceolate, oblong-obovate. Inflorescence a head, head solitary, spherical. Flowers white. Fruit not seen. *Flowering*: March - June. *Chromosome number*: $2n = 68$ (Fedorov, 1969). *Stagnant or slow moving shallow water, pools, ditches and wet places*.

Distribution: Native of Brazil, common in India, introduced in Indonesia and Malaysia.

Status of occurrence: Very common.

Uses: It is used as vegetable.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 90 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 755 (DUSH); Kaliganj, Kalehat, 23.08.2010, R. Tabassum, 1559 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2673 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3595 (DUSH).

67. **Alternanthera sessilis** (L.) R. Br. *ex* Roem. & Schult., Syst. 5: 554 (1819); Hook. f., Fl. Brit. Ind. 4: 731 (1885); Prain, Beng. Pl. 2: 655 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956). *Gomphrena sessilis* L., Sp.: 225 (1753), *Illecebrum sessilis* L. (1762), *Alternanthera triandra* Lamk. (1783), *Alternanthera denticulata* R. Br. (1810), *Achyranthes villosa* Blanco (1837).

Vernacular names: *Chanchi, Highcha, Sachi-shak*. English name: Sessile joyweed.

Much-branched, decumbent or prostrate herb. Leaves simple, opposite, linear, oblong, elliptic or oval. Inflorescence a head, axillary often clustered. Flowers white. Utricles compressed, emarginate. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 34, 36$ (Fedorov, 1969). *Wet paddy fields, swamps, ditches to dry roadsides and fallow lands*.

Distribution: Widespread in the tropics and sub-tropics of both Old and New worlds.

Status of occurrence: Common.

Uses: Used as cooked vegetables.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 92 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 844 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1749 (DUSH); Kaliganj, Bortula, 02.01.2013, R. Tabassum, 2343 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3597 (DUSH).

Genus 42. **Amaranthus** L., Sp. Pl. 1: 989 (1753).

Key to species:

- | | |
|---|------------------------------|
| 1. Leaf axils with paired spines | Amaranthus spinosus |
| - Leaf axils without paired spines | 2 |
| 2. Inflorescence consisting entirely of axillary, cymose clusters, no terminal leafless spike present | 3 |
| - Inflorescence with a terminal leafless spike, or a panicle whose apical part is spike-like | 4 |
| 3. Perianth segments (without the arista) longer than the constantly circumscissile capsule | Amaranthus tricolor |
| - Perianth segments (without the arista) shorter than the circumscissile or irregularly rupturing capsule | Amaranthus graecizans |

4. Capsule scarcely exceeding the female perianth, strongly muricate, $\pm$ globose; seeds with shallow, scurfy verrucae on the reticulate pattern of the testa 5
- Capsule distinctly exceeding the female perianth; seeds without shallow verrucae **Amaranthus lividus**
5. Stem erect, somewhat branched; utricles very rugose **Amaranthus viridis**
- Stem ascending, much branched (frequently at base); utricles smooth or slightly rugose **Amaranthus blitum**

68. **Amaranthus blitum** L., Sp. Pl. ed. 1: 990 (1753); Hook. f., Fl. Brit. Ind. 4: 721 (1885); Prain, Beng. Pl. 2: 651 (1903, reprint 1963). *Amaranthus oleraceus* L. (1763), *Amaranthus ascendens* Lois. (1880).

Vernacular name: *Natiyasag*.

English name: Purple amaranth.

Tall, erect, succulent herb. Leaves ovate-oblong or rounded. Inflorescence of axillary clusters and terminal, simple or branched spikes, usually greenish. Fruit an utricle, broadly ovate with a blunt apex, indehiscent. *Flowering and fruiting*: October - November. *Chromosome number*: $2n = 16, 34$ (Fedorov, 1969). *Waste places and damp localities*.

Distribution: India, Sri Lanka and warm regions of the world.

Status of occurrence: Cultivated.

Uses: Used as vegetable.

Specimen examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 777 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1450 (DUSH); Tongi, Roklal, 19.08.2013, R. Tabassum, 2803 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3710 (DUSH).

69. **Amaranthus graecizans** L., Sp. Pl.: 990 (1753). *Amaranthus blitum* L. var. *polygonoides* Moq. (1849), *Amaranthus polygamus* (non L.) Hook. f. (1885), *Amaranthus thellungianus* Nevski (1937).

English name: Prostrate pigweed.

Annual herb. Leaves linear-lanceolate to rhomboid-spathulate. Flowers in axillary cymose clusters, male and female flowers intermixed, greenish. Fruit an ovoid utricle. *Flowering and fruiting*: July - November. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Roadsides and waste places*.

Distribution: Throughout India, Sri Lanka, Africa and America.

Status of occurrence: Common.

Uses: Sometimes used as a leafy vegetable associated with other leafy vegetables.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 46 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1042 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2033 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3360 (DUSH).

70. **Amaranthus lividus** L. subsp. **polygonoides** (Moq.) Probst., Wolladventivfl. Mitteleur.: 74 (1949). *Euxolus viridis* (L.) Moq. var. *polygonoides* Moq. (1849), *Amaranthus lividus* L. var. *polygonoides* (Moq.) Thell. (1920).

Vernacular name: *Gobura notey*.

English name: Livid amaranth.

Annual herb. Stem striate, pinkish. Leaves ovoid to rhomboid-ovate. Inflorescence in clusters, lower axillary, higher ones in terminal spikes or panicles, male and female flowers intermixed, reddish. Fruit an utricle, globose to broadly ellipsoid. *Flowering and fruiting:* January - April. *Chromosome number:* $2n = 34$ (Fedorov, 1969). *Roadsides, waste lands, forest streams and ditches.*

Distribution: Widespread in the warmer temperate regions and tropics of both Old and New Worlds.

Status of occurrence: Common.

Uses: Sometimes used as a leafy vegetable.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 47 (DUSH); Kaliakoir, Konabari (Vogora), 08.01.2010, R. Tabassum, 600 (DUSH); Kaliganj, Kalehat, 23.08.2010, R. Tabassum, 1560 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2032 (DUSH).

71. **Amaranthus spinosus** L., Sp. Pl. 1: 991 (1753); Hook. f., Fl. Brit. Ind. 4: 718 (1885); Prain, Beng. Pl. 2: 650 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956).

Vernacular names: *Kanta-nutia*, *Kanta miris*, *Upurdoga* (Santal).

English name: Spiny amaranth.

Annual, spinescent herb. Leaves ovate, oblong or elliptic. Inflorescence of axillary clusters and long dense or lax-fid pseudo-spikes. Flowers small, green. Utricles rugose. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 32, 34$ (Fedorov, 1969). *Waste lands, roadsides, fields and gardens.*

Distribution: Throughout India, Sri Lanka and common in all tropical countries of the world.

Status of occurrence: Common.

Uses: Medicinal palnt.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 48 (DUSH); Kaligonj, Meghdubi, 05.03.2010, R. Tabassum, 696 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1043 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2409 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2947 (DUSH).

72. **Amaranthus tricolor** L., Sp. Pl. 1: 989 (1753); Prain, Beng. Pl. 2: 650 (1903, reprint 1963). *Amaranthus tristis* L. (1753), *Amaranthus melancholicus* L. (1753), *Amaranthus polygamus* L. (1755), *Amaranthus gangeticus* L. (1759); Hook. f., Fl. Brit. Ind. 4: 719 (1885); R. L. Heinig, List Chittagong: 54 (1925).

Vernacular names: *Lalshak, Kankanotey, Denga.* English name: Joseph's coat.

Annual, ascending or erect herb. Leaves very variable in size, broadly ovate, rhomboid-ovate or broadly elliptic to lanceolate-oblong, green or variably purplish. Inflorescence a head, axillary and terminal, green to crimson. Flowers increasingly distant, male and female flowers intermixed. Fruit circumscissile below the middle, ovoid. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 34$ (Fedorov, 1969). *Dry grassy places and roadsides.*

Distribution: Widespread in the tropics of both Old and New Worlds.

Status of occurrence: Cultivated.

Uses: Used as cooked vegetable.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1262 (DUSH); Tongi, Chyadana, 19.08.2013, R. Tabassum, 2850 (DUSH); Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3691 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3867 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3933 (DUSH).

73. **Amaranthus viridis** L., Sp. Pl. ed. 2: 1405 (1763); Hook. f., Fl. Brit. Ind. 4: 720 (1885); Prain, Beng. Pl. 2: 651 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956). *Amaranthus gracilis* Desf. (1804), *Amaranthus polystactyus* Willd. (1805).

Vernacular names: *Notay, Notay sak, Pora* English name: Green amaranth, Slender amaranth.

Annual herb. Leaves ovate or elliptic. Inflorescence terminal or in the axils of upper leaves, pseudo-spikes, solitary or forming a sparsely branched panicle. Flowers clusters dense, green. Utricles ellipsoidal, indehiscent. *Flowering and fruiting*: from end of the monsoon to mid summer. *Chromosome number*: $2n = 34$ (Fedorov, 1969). *Wide range of habitats except water stagnated places, waste and disturbed grounds, along roadsides and gardens.*

Distribution: Throughout India, Sri Lanka and all other tropical and warmer countries of the world.

Status of occurrence: Common.

Uses: It is used as vegetable and as medicinal.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 32 (DUSH); Kaligonj, Meghdubi, 05.03.2010, 698 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1339 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2930 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3678 (DUSH).

Genus 43. **Celosia** L., Sp. Pl. 1: 205 (1753).

Key to species:

- | | |
|---|-------------------------|
| 1. Spikes long cylindric, not branched; perianth white or pink | Celosia argentea |
| - Spikes cristate or feathery, much branched; perianth red, purple, or yellow | Celosia cristata |

74. **Celosia argentea** L., Sp. Pl. 1: 205 (1753); Hook. f., Fl. Brit. Ind. 4: 714 (1885); Prain, Beng. Pl. 2: 648 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956).

Vernacular names: *Sada morogphul*, English names: Cock's comb, Quail grass. *Shet morgan, Shet morogphul.*

Annual erect herb. Stem and branches strongly ribbed and often sulcate. Leaves linear, linear-lanceolate or lanceolate-oblong, rarely ovate. Inflorescence a white or light pink spike. Flowers solitary, white or light pink. Fruit a circumscissile capsule. *Flowering and fruiting*: September - January. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Gardens, homesteads and pots.*

Distribution: Throughout India and Sri Lanka, introduced in most of the tropical countries of the world.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant also used as medicinal.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 342 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 699 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1237 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2579 (DUSH); Kaliakoir, Simultoli Ataboho, 01.11.2013, R. Tabassum, 3368 (DUSH).

75. **Celosia cristata** L., Sp. Pl. 1: 235 (1753); Hook. f., Fl. Brit. Ind. 4: 715 (1885); Prain, Beng. Pl. 2: 648 (1903, reprint 1963); R. L. Heinig, List Chittagong: 54 (1925).

Vernacular name: *Morogphul*.

English name: Crested cock's comb.

Much-branched annual herb or sub-shrub. Leaves linear to ovate. Inflorescence variously branched, cock-comb like terminal and axillary spikes. Flowers red or yellow, glistening. Fruit a circumscissile capsule. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 36$ (Fedorov, 1969). *Gardens.*

Distribution: Throughout India, tropical Asia, Africa and America.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant also used as medicinal.

Specimens examined: Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1034 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1874 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2453 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3290 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3820 (DUSH).

Genus 44. **Cyathula** Blume, Bijdr.: 548 (1825).

76. **Cyathula prostrata** (L.) Blume, Bijdr.: 549 (1825); Hook. f., Fl. Brit. Ind. 4: 723 (1885); Prain, Beng. Pl. 2: 652 (1903, reprint 1963). *Achyranthes prostrata* L. (1762), *Desmochaeta prostrata* (L.) DC. (1813), *Pupalia prostrata* (L.) Mart. (1826).

English name: Pasture Weed.

Slender annual herb, often gregarious, rooting at the nodes. Leaves mostly rhomboid to rhomboid-obovate, sometimes rhomboid-elliptic to shortly oval. Inflorescence a spike, spikes terminal, densely clustered. Flowers dull pale green. Fruit an ovoid utricle, enclosed in the perianth surmounted by the remains of the style. *Flowering and fruiting:* September - November. *Chromosome number:* $2n = 48$ (Fedorov, 1969). *Settled areas, shaded localities, roadsides, forest borders and dry grassy places.*

Distribution: Tropical Asia, Africa to China and Australia, introduced in Central America and Malaysia.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2689 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3695 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3868 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3934 (DUSH).

Genus 45. **Gomphrena** L., Sp. Pl.: 224 (1753).

77. **Gomphrena celosioides** Mart. in Nova Acta Nat. Cur. 13: 301 (1826). *Gomphrena decumbens* sensu Gamble (1925).

English name: Prostrate globe amaranth.

Perennial, prostrate to ascending herb. Leaves narrowly oblong to oblong-elliptic, oblanceolate or spatulate. Inflorescence a pedunculate, globose head. Flowers white. Fruit a capsule. *Flowering and fruiting:* June - October. *Chromosome number:* $2n = 26$ (Fedorov, 1969). *Waste lands, roadsides and gardens.*

Distribution: A native of South America, introduced in South Africa, Malaysia, Australia and India.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 49 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 885 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1353 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3711 (DUSH).

Family 21. **PORTULACACEAE** A. L. de Jussieu (1789)

Herbs, rarely shrubs, often somewhat succulent. Leaves simple, entire, stipules when present scarious, or modified into tufts of hairs. Flowers solitary or more often in various sorts of cymose or racemose to head-like inflorescence, bisexual, rarely unisexual. Sepals 2, sometimes up to 9. Petals 2-6, sometimes up to 18. Stamens usually as many as and opposite to the petals, anthers dithecal and opening lengthwise. Carpels 2-9, united, ovary with as many locule as carpels at the early stages, but soon becoming unilocular with a free-central placentation bearing 2-many ovules. Fruit a capsule.

The family Portulacaceae comprises of about 20 genera and 500 species of cosmopolitan distribution. In Bangladesh, this family is represented by 2 genera and 4 species.

In the present study area the family is represented by a single genus with 2 species.

Genus 46. **Portulaca** L., Sp. Pl.: 445 (1753).

Key to species

- | | |
|---|-----------------------------|
| 1. Leaves opposite; flowers solitary terminal; petals 4 | Portulaca quadrifida |
| - Leaves alternate or subopposite; flowers in terminal clusters; petals 5 or more | Portulaca oleracea |

78. **Portulaca oleracea** L., Sp. Pl. 1: 445 (1753); Hook. f., Fl. Brit. Ind. 1: 246 (1874); Prain, Beng. Pl. 1: 161 (1903, reprint 1963); R. L. Heinig, List. Chittagong : 4 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 10 (1953). *Portulaca officinarum* Crantz. (1766), *Portulaca oleracea* Pall. (1776), *Portulaca suffruticosa* Thw. (1858).

Vernacular names: *Bara lunia*, *Munia*, *Lunia* English names: Common purselane, *shak*. Garden purselane, Pot purselane.

Annual herb. Leaves closely crowded below the flowers, spatulate or obovate-oblong to linear-oblong, thick, fleshy. Inflorescence usually in the forks of branches, cymose, with clusters of 2-8 flowers. Flowers yellow. Capsules ovoid. *Flowering and fruiting*: throughout the year, peak *flowering*: May - August. *Chromosome number*: 2n = 14, 18, 36, 54 (Fedorov, 1969). *Along roadsides, field, open grassland and bushlands*.

Distribution: Sri Lanka, India, tropical Asia, Africa, the Pacific coast and South America.

Status of occurrence: Common.

Uses: It is used as vegetable and medicinal plant.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 335 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 648 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1759 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2217 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2242 (DUSH).

79. **Portulaca quadrifida** L., Mant. Pl. 1: 73 (1767); Hook. f., Fl. Brit. Ind. 1: 247 (1874); Prain, Beng. Pl. 1: 161 (1903, reprint 1963). *Portulaca linifolia* Forssk. (1775), *Portulaca meridiana* L. f. (1781), *Meridiana quadrifolia* Poir. (1824).

Vernacular names: *Chhoto lunia*, English names: Purselane, Singled flowered *Chhoto nunia*, *Munia shak.* purselane, Ten O'clock plant.

Small, diffuse, prostrate, annual herb, rooting at nodes. Leaves simple, opposite, ovate-oblong to elliptic-oblong, fleshy. Flowers solitary, terminal, bisexual, actinomorphic, calyx of 4 purplish sepals, corolla of 4 yellow petals. Capsules obovoid. *Flowering and fruiting*: throughout the year, peak period: May - August. *Chromosome number*: $2n = 36, 48$ (Fedorov, 1969). *Grows in sandy or loamy soils, crop fields and flower-beds in garden.*

Distribution: Sri Lanka, India and Africa.

Status of occurrence: Common.

Uses: It is used as a vegetable and medicinal plant.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 580 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1760 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2374 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3305 (DUSH).

Family 22. **BASELLACEAE** Moquin-Tandon (1840)

Annual or perennial herbs with fleshy, twining stem, sometimes conspicuously coloured. Leaves fleshy, simple, alternate, exstipulate. Inflorescence a spike, raceme or panicle. Flowers regular, bisexual, often coloured. Bracts and sometimes 2 bracteoles present, small, deciduous. Perianth fleshy, 2-seriate, persistent, forming a cup-like structure. Stamens 5, adnate to mouth of perianth-tube, anthers bilocular, versatile. Carpels 3, syncarpous, ovary superior. Fruit indehiscent. Seed 1, with a crustaceous testa.

The family Basellaceae comprises of 4 genera and 15-20 species, all tropical or subtropical, most of them in New world. In Bangladesh, this family is represented by a single species.

Genus 47. **Basella** L. [Diss. Dass.: 12 (1747);
Amoen. Acad. 1: 122 (1749)] Sp. Pl.: 272 (1753).

80. **Basella rubra** L., Sp. Pl.: 272 (1753). Roxb., Fl. Ind. ed. Carey 2: 105 (1832)-sub *Basella alba*; Hook. F., Fl. Brit. Ind. 5: 20 (1886); Prain, Beng. Pl. 2: 659 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 4: 11 (1940); Khan & Huq in Khan (Ed.), Fl. Bangl. 2: 6 (1973). *Basella alba* L., Sp. Pl.: 272 (1753).

Vernacular names: *Poi*, *Poi-shak*. English names: Sri Lankan spinach, Indian spinach.

Much branched, fleshy twiner. Stem green or coloured. Leaves fleshy, simple, alternate, lamina cordate or ovate. Inflorescence of racemes or spikes on long peduncles. Flowers sessile, regular, bisexual, white, red or greenish, often violet. Fruits berry-like due to the fleshy persistent lobes, black when ripe with red or purplish juice. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 44$ (Fedorov, 1969). *Kitchen garden where the plant is cultivated*.

Distribution: In the tropics of the Old World.

Status of occurrence: Cultivated.

Uses: It is a cooked vegetable.

Specimens examined: Sripur, Gorgoria, 21.06.2011, R. Tabassum, 1301 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2770 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3273 (DUSH).

Family 23. **MOLLUGINACEAE** Hutchinson (1926)

Herbs. Leaves opposite to subopposite or pseudo-verticillate or alternate or radical and rosulate, stipules membranous, caducous. Flowers small, axillary, bisexual or often unisexual, regular, hypogynous, in terminal cymes which often end in pseudo-racemes or in stalked umbels or in few-flowered clusters or fascicles. Tepals 4-5, mostly free, very often united at the base to form a perianth tube. Stamens 3-10, the inner whorl partly or wholly reduced, numerous by duplication, filaments filiform, anthers bilocular. Carpels 2-5, ovarly superior. Fruit a nut or a septicidal or loculicidal capsule. Seeds several in each cell, reniform.

The family Molluginaceae consists of 13 genera and about 100 species, found mainly tropical and subtropical region, especially in Africa. In Bangladesh, it is represented by 2 genera and 3 species only.

In the present study area the family is represented by 2 genera and 3 species.

Key to genera:

- | | |
|--|----------------|
| 1. Plant parts stellately hairy; leaves opposite; flowers in axillary clusters; 5staminodes present; stigmas | Glinus |
| - Plants not stellately hairy; leaves pseudo-verticillate, alternate or basal; flowers in racemose or cymose; staminodes usually absent; stigmas 3 | Mollugo |

Genus 48. **Glinus** L., Sp. Pl.: 463 (1753).*Key to species:*

1. Leaves margin entire; tepals 4-6(-10) mm; stamens usually 3-15; capsule ovoid, as long as persistent tepals, 5-valved **Glinus lotoides**
- Leaves margin with sparse teeth; stamens 3-5; capsule ellipsoid, slightly shorter than persistent tepals, 3-4 valved **Glinus oppositifolius**

81. **Glinus lotoides** L., Sp. Pl.: 463 (1753). Backer in Van Steenis, Fl. Males. Ser. 1, 4(3): 269 (1951); *Mollugo hirta* Thunb., Prodr. Fl. Cap. 1: 24 (1794); Clarke in Hook. f., Fl. Brit. Ind. 2: 662 (1879); Prain, Beng. Pl. 1: 389 (1903, reprint 1963); *Pharnaceum pentagynum* Roxb., Fl. Ind. ed. Carey 2: 103 (1832); Khan, Fl. Bangladesh 17: 2 (1981).

Vernacular name: *Alugash*.

English name: Lotus sweetjuice.

Procumbent or ascending annual herb. Plant densely or sparsely stellately wooly, the older plants greish-green to brownish. Leaves opposite or pseudo-vericillate, obovate to rotund. Flowers in axillary clusters. Tepals green, persistent. Fruits subglobose, 5-valved, enclosed in the persistent tepals. Seeds tuberculate, closely packed. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Waste and fallow lands under dry to wet situations*.

Distribution: From America and South Europe extending through North and tropical Africa and South and South-east Asia up to Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Torgao, 16.05.2010, R. Tabassum, 1025 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1452 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2754 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3110 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3819 (DUSH).

82. **Glinus oppositifolius** (L.) A. DC., Bull. Herb. Boiss. 2(1): 522 (1901). Backer in Van Steenis, Fl. Males. Ser. 1, 4(3): 270 (1951); *Mollugo oppositifolia* L., Sp. Pl.: 89 (1753); Sinclair, Bull. Bot. Soc. Bengal 9(2): 96 (1955); *Mollugo spergula* L., Syst. ed. 10: 881 (1759); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 662 (1879); Prain, Beng. Pl. 1: 389 (1903, reprint 1963); Khan, Fl. Bangladesh 17: 3 (1981).

Vernacular name: *Gimashak*.

Diffusely branched annual herb. Leaves pseudo-verticillate, spatulate, oblanceolate or elliptic. Flowers pedicellate. Fruits closely packed, reniform, reddish-brown. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Moist fallow and cultivated fields and walls*.

Distribution: From tropical Africa, the eastern Himalayas, Sri Lanka and Myanmar, extending throughout Malesia up to Australia.

Status of occurrence: Common.

Uses: It is used as a vegetable.

Specimens examined: Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 555 (DUSH); Kaligonj, Pubail, 23.08.2010, R. Tabassum, 1639 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1949 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2520 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2632 (DUSH).

Genus 49. **Mollugo** L., Sp. Pl. 1: 463 (1753).

83. **Mollugo pentaphylla** L., Sp. Pl.: 89 (1753); Backer in Van Steenis, Fl. Males. Ser. 1, 4(3): 268 (1951); *Mollugo stricta* L., Sp. Pl. ed. 2: 131 (1762); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 663 (1879); Prain, Beng. Pl. 1: 389 (1903, reprint 1963); Khan, Fl. Bangladesh 17: 4 (1981).

Vernacular name: *Khetpapra*.

English name: Mollugo.

Annual herb. Leaves in falsewhorls of 3, elliptic-lanceolate to broadly obovate. Flowers in terminal or peduncled lax cymes, the branches sometimes racemed. Tepals broadly elliptic to ovate, obtuse, white inside, green outside with white margins. Fruits broadly ellipsoid to globose, faintly 3-valved, dark chestnut-coloured. *Flowering and fruiting*: June - January. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Fallow lands mostly under wet situations*.

Distribution: Throughout the Indian subcontinent including Sri Lanka, eastwards to Malacca, China, Japan and Fiji.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 681 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1377 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2633 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3231 (DUSH); Kapasia, Voboner Chala, 03.11. 2013, R. Tabassum, 3546 (DUSH).

Family 24. **CARYOPHYLLACEAE** A. L. de Jussieu (1789)

Herbs, rarely undershrubs, branches usually jointed or thickened at the joints. Leaves usually opposite, less commonly alternate or whorled, simple, entire. Flowers usually in dichasial cymes or panicles, sometimes solitary, usually regular, bisexual or unisexual. Sepals 4-5, free or united. Petals 4-5, free, sometimes absent. Stamens 5-10, rarely fewer, anthers 2-celled. Ovary superior, unilocular or imperfectly 3-5 locular, ovules 1 to many on a basal or free-central placenta, styles 2-5, free or connate. Fruit a capsule, rarely a berry or achene. Seeds few to many, rarely single.

The family Caryophyllaceae consists of about 75 genera and 200 species, widespread but mainly of temperate or warm-temperate regions in the Northern Hemisphere. In Bangladesh, this family is represented by 5 genera and 6 species.

In the present study area the family is represented by 2 genera with 2 species.

Key to genera:

1. Sepals centrally ridged abaxially, hyaline at margin; style apex 3-lobed; leaves obovate or spatulate **Polycarpon**
- Sepals not ridged, hyaline throughout; style apex entire; leaves linear or oblong **Polycarpaea**

Genus 50. **Polycarpaea** Lamk., Journ. Hist. Nat. Par. 2: 8, t. 25 (1792).

84. **Polycarpaea corymbosa** (L.) Lamk., Tabl. Encycl. 2: 129 (1798); Hook. f., Fl. Brit. Ind. 1: 245 (1874); Prain, Beng. Pl. 1: 160 (1903, reprint 1963); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 87 (1956). *Achyranthes corymbosa* L. (1753).

English name: Oldman's cap.

Erect to ascending annual herb. Leaves linear-lanceolate, stipules fimbriate. Inflorescence much-branched, terminal cyme. Flowers numerous, white. Fruit an oblong capsule, dark brown, 3-valved. *Flowering and fruiting*: July - November. *Cultivated lands, roadsides, sandy and lateritic soils where it grows as weed.*

Distribution: India, Sri Lanka, Australia and Africa.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1311 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1886 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2316 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3027 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3655 (DUSH).

Genus 51. **Polycarpon** L., Syst. ed. 10: 881 (1759).

85. **Polycarpon prostratum** (Forssk.) Aschers. & Schweinf., Oesterr. Bot. Zeitscher. 39: 128 (1889); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 87 (1956). *Alsine prostrata* Forssk. (1775), *Polycarpon loeflingiae* (Wight & Arn.) Benth. & Hook. f. (1862); Hook. f., Fl. Brit. Ind. 1: 245 (1874); Prain, Beng. Pl. 1: 160 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 4 (1925).

Vernacular name: *Ghima*.

Prostrate or suberect herb. Leaves apparently in whorls, leaf blade linear-oblong, obovate or spatulate. Inflorescence axillary, congested cymes. Flowers greenish-white. Fruit an ovoid or subglobose capsule, dehiscing by 3 valves. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 18, 36$ (Kumar and Subramaniam, 1986). *Damp and marshy places and sandy river banks*.

Distribution: India, Nepal, Sri Lanka, Pakistan, Tropical Asia and Africa.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 16 (DUSH); Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 875 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1325 (DUSH); Kapasia, Kanduni village, 03.11.2013, R. Tabassum, 3706 (DUSH).

Family 25. **POLYGONACEAE** A. L. de Jussieu (1789)

Herbs, shrubs or rarely trees, sometimes twining. Stem occasionally geniculate, nodes often swollen. Leaves simple, mostly alternate, usually entire, seldom pinnately or palmately cleft, sometimes auriculate at the base, stipules ocreate, sometimes much-reduced or wanting. Inflorescence paniculate, capitate or axillary fascicles. Flowers pedicellate, commonly bisexual or sometimes unisexual, primitively trimerous, sometimes pentamerous. Tepals 2-6, basally united into a small floral tube, not clearly differentiated into sepals and petals, most commonly persistent and sometimes accrescent in fruits. Stamens 2-9, usually 6 in 2 cycles of 3, filaments distinct or basally connate, anthers tetrasporangiate, opening longitudinally. Carpels 2-4, most commonly of 3, united, ovary unilocular, ovule solitary and basal. Fruit an achene or small nut, very often triangular. Seeds starchy and oily.

The family Polygonaceae consists of about 30 genera and 1000 species, distributed mainly in temperate regions of the World. In Bangladesh, this family consists of only 8 genera and 32 species (Hassan 1989).

In the present study area the family is represented by 3 genera and 14 species.

Key to genera:

- | | | |
|----|---|-------------------|
| 1. | Tepals 6 | Rumex |
| - | Tepals 3, 4, or 5 | 2 |
| 2. | Ocreae often hyaline, silvery, glabrous, 2-lobed distally, often disintegrating into fibers or completely | Polygonum |
| - | Ocreae chartaceous, usually tan, brown, or reddish, rarely silvery, glabrous or scabrous to variously pubescent, never 2-lobed distally, often tearing with age | Persicaria |

Genus 52. **Persicaria** [Tourn.] *ex* Mill.,
Gard. Dict. Abridg.: ed. 3(1754).

Key to species:

- | | | |
|----|--|--------------------------------|
| 1. | Ochreae thick, with a herbaceous limb at the top, when young | Persicaria orientalis |
| - | Ochrea membranous without a herbaceous limb | 2 |
| 2. | Ochrea usually without cilia at the mouth | 3 |
| - | Ochrea distinctly ciliate at the mouth | 5 |
| 3. | Plants entirely glabrous | Persicaria glabra |
| - | Plants pubescent, scabrid, tomentose | 4 |
| 4. | Peduncles eglandular. Leaves with white cottony tomentum on both surfaces but more below, without yellow glands. Stem without red dots | Persicaria lanata |
| - | Peduncles scurfily glandular. Leaves either glabrous or $\pm$ tomentose below only, usually with yellow glands. Stem usually with red dots | Persicaria lapathifolia |
| 5. | Styles 2. Nuts biconvex, rarely few nuts trigonous within the same spike | Persicaria minor |
| - | Styles 3. Nuts trigonous | 6 |
| 6. | Perianth and ochreolae gland-dotted | 7 |
| - | Perianth and ochreolae eglandular | 8 |

7. Stems glabrous; perianth white or pink above;
leaves with peppery taste **Persicaria hydropiper**
- Stems sparsely hispidulous; perianth red above;
leaves without peppery taste **Persicaria flaccida**
8. Leaf blade sericeous on both surfaces; cilia of
ocrea 4-6 mm **Persicaria tomentosum**
- Leaf blade appressed hispidulous or pubescent on
both surfaces; cilia of ocrea 1-2 cm **Persicaria barbata**

86. **Persicaria barbata** (L.) Hara, Fl. East. Himal.: 70 (1966). *Polygonum barbatum* L. (1753); Hook. f., Fl. Brit. Ind. 5: 37 (1886); Prain, Beng. Pl. 2: 663 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956), *Polygonum hispidum* Hamilton ex D. Don (1825).

Vernacular names: *Bekhanjabaj*, *Bishkatali*.

English name: Knotweed.

Perennial herb. Stem erect, nodes swollen. Lamina lanceolate to linear-lanceolate. Ocrea tubular, strigosely hairy. Inflorescence a branched raceme with fairly glabrous or densely strigose peduncles. Flowers shortly pedicelled, light green outside, open white or light pink. Nut trigonous, black. *Flowering and fruiting*: August - April. *Chromosome number*: $2n = 20, 40$ (Fedorov, 1969). *Grows in marshy and aquatic places, by the sides of rivers, beels and other water bodies.*

Distribution: Afghanistan, Myanmar, China, India, Indonesia, Malaysia, the Philippines and Sri Lanka.

Status of occurrence: Common.

Uses: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 64 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 576 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 791 (DUSH).

87. **Persicaria flaccida** (Meissn.) H. Gross ex Loesen., Beih. Centralbl. 37: 112 (1919). *Polygonum flaccidum* Meissn. (1832); Hook. f., Fl. Brit. Ind. 5: 39 (1886); Prain, Beng. Pl. 2: 664 (1903, reprint 1963).

Vernacular name: *Lal-bishkatali*.

Annual herb. Stem erect, simple or much-branched. Lamina elliptic-lanceolate to lanceolate. Ocrea tubular, red or green, strigose. Flowers on spiciform branched racemes. Tepals bright pink. Nut black, finely reticulate. *Flowering and fruiting*:

throughout the year but mostly during summer months. *Chromosome number*: $2n = 44$ (Fedorov, 1969). *Grows on banks of ponds, ditches and canals.*

Distribution: Afghanistan, Myanmar, Bhutan, China, India, Japan, Malaysia, Pakistan, the Philippines and Sri Lanka.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 894 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2292 (DUSH); Gazipur Sadar, Dighir Chala, 19.08.2013, R. Tabassum, 2740 (DUSH).

88. **Persicaria glabra** (Willd.) Gomez de la Maza, Ann. Inst. Segunda Ensenanza Habana 2: 278 (1896). *Polygonum glabrum* Willd. (1799); Hook. f., Fl. Brit. Ind. 5: 34 (1886); Prain, Beng. Pl. 2: 663 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925), *Polygonum persicaria* Wall. (1828).

Vernacular names: Lal-kukri, Bihogni.

English name: Smooth smartweed.

Perennial herb. Stem erect, usually reddish-tinged below. Lamina lanceolate to elliptic-lanceolate. Ocrea tubular, flowers heterostylous, in branched racemes. Tepals pink. Nut usually biconvex, black. *Flowering and fruiting*: June - February. *Chromosome number*: $2n = 60, 66$ (Fedorov, 1969). *Grows on riverbanks, beels, jheels, ditches and similar other inland water bodies.*

Distribution: Afghanistan, Africa, Myanmar, China, Japan, Malaysia, the Philippines, Sri Lanka, Taiwan, Nepal and throughout India.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 785 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1019 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1669 (DUSH); Tongi, Khataldi, 19.08.2013, R. Tabassum, 2727 (DUSH).

89. **Persicaria hydropiper** (L.) Spach, Hist. Veg. 10: 536 (1841). *Polygonum hydropiper* L., Sp. Pl. 361 (1753); Hook. f., Fl. Brit. Ind. 5: 39 (1886); Prain, Beng. Pl. 2: 664 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 7 (1953).

Vernacular names: Bishkatali, Panimarich.

English name: Pepperwort.

Annual herb. Leaves lanceolate. Ocrea tubular, glabrous or with small strigose hairs. Inflorescence terminal or lateral racemes. Tepals white or very light pink. Nut biconvex or trigonous occurring in the same plant, black. *Flowering and fruiting*: August - April. *Chromosome number*: $2n = 20, 22$ (Fedorov, 1969). *Grows in sandy areas along the banks of rivers and other water bodies*.

Distribution: Afghanistan, China, India, Indonesia, Japan, the Philippines and Sri Lanka.

Status of occurrence: Common.

Uses: Medicinal plant. It is poisonous also.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 83 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1063 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2328 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2712 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3127 (DUSH).

90. **Persicaria lanata** (Roxb.) Hassan, Bangladesh J. Plant Taxon. 3(1): 81 (1996). *Polygonum lanatum* Roxb. (1832), *Persicaria lapathifolia* (L.) S. D. Gray var. *lanata* (Roxb.) Hara (1982).

Vernacular name: *Shet-panimarich*.

English name: Silver knotweed.

Aquatic or semi-aquatic herb. Stem covered with white cottony tomentum. Leaves lanceolate to elliptic-lanceolate. Ocrea tubular, sometimes completely covering the internodes. Inflorescence usually a densely-flowered branched raceme, often divaricate. Flowers white. Nut biconcave, flat, circular, black. *Flowering and fruiting*: April - September. *Grows in aquatic habitats such as beels, jheels and marshy rice fields*.

Distribution: Mayanmar, Eastern India, Indonesia, Nepal, the Philippines and tropical and subtropical Africa.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 425 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 851 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1062 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3803 (DUSH).

91. **Persicaria lapathifolia** (L.) S.F. Gray, Nat. Arr. Br. Pl. 2: 270 (1821). *Polygonum lapathifolium* L. (1753); Hook. f., Fl. Brit. Ind. 5: 35 (1886); Prain, Beng. Pl. 2: 663 (1903, reprint 1963), *Polygonum nodosum* Pers. (1805), *Polygonum glutinosum* Wall. ex Meissn. (1832).

Vernacular names: *Panimorich*, English names: Willow weed, Pale *Bishkatali*. smartweed, Green smartweed.

Annual herb. Leaves lanceolate. Inflorescence a densely-flowered raceme. Flowers short pedicelled, tepals mostly 4, very rarely 5, greenish-white, sometimes reddish, with many multicellular yellow scale-like glands on outer surface. Nuts biconcave, flat, black to dark brown. *Flowering and fruiting*: February to May, but flowering may start as early as December and continue up to June; occasional flowering may be observed in October-November. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Grows in marshy areas, occasionally cultivated fields*.

Distribution: Africa, America, Asia and Europe. It is regarded as a native of Europe and Asia, and a naturalized alien of America and Australia.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant. It is poisonous also.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3869 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3935 (DUSH).

92. ***Persicaria minor*** (Huds.) Opiz, Seenam, Rosplin, Kbeteny, Ceske: 72 (1852). *Polygonum minus* Huds. (1762); Hook. f., Fl. Brit. Ind. 5: 36 (1886); Prain, Beng. Pl. 2: 663 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925), *Polygonum kawagoeanum* Mak. (1914), *Persicaria kawagoeana* (Mak.) Nakai (1926).

Vernacular name: *Chhoto-bishkatali*.

English name: Small water pepper.

Small glabrous herb. Leaves subsessile, lamina lanceolate to linear-lanceolate. Ocrea tubular, strigosely hairy. Racemes erect, simple or branched. Flowers red, rarely white. Nut black, shining, glabrous, strongly biconvex to orbicular. *Flowering and fruiting*: November - April, but sometimes flowering occur as early as October and extend up to June. *Chromosome number*: $2n = 40$ (Fedorov, 1969). *Grows in shallow ditches, banks of beels, jheels and rivers, lowlands and cultivated fields*.

Distribution: Britain, China, India, Indonesia, Japan, Nepal, the Philippines, Siberia, Sri Lanka and Vietnam.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 334 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2246 (DUSH); Tongi, Khataldi, 19.08.2013, R. Tabassum, 2730 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3345 (DUSH).

93. **Persicaria orientalis** (L.) Spach, Veg. 10: 537 (1841). *Polygonum orientale* L., Sp. Pl. 362 (1753); Hook. f., Fl. Brit. Ind. 5: 30 (1886); Prain, Beng. Pl. 2: 663 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 7 (1953), *Polygonum pilosum* Roxb. ((1832).

Vernacular name: *Bara panimorich*.

English name: Prince's feather.

Annual herb with all young parts pubescent or silky villous. Leaves ovate-cordate or ovate-lanceolate. Ocrea tubular, silky villous. Inflorescence of racemes. Flowers greenish-white. Nuts plano-convex to concavo-convex. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 22, 24, 44$ (Fedorov, 1969). *Grows in marshy places, on the bank of rivers, ponds, canals, ditches and similar other water bodies; rarely in agricultural lands*.

Distribution: India, Myanmar, China, Japan, Korea, Indonesia, the Philippines to Australia.

Status of occurrence: Very common.

Uses: Medicinal plant.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 85 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 577 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 610 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1377 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2875 (DUSH); Kaligonj, Banglahaola, 02.12. 2013, R. Tabassum, 3783 (DUSH).

94. **Persicaria tomentosa** (Willd.) Sasaki, List Pl. Form.: 170 (1928). *Polygonum tomentosum* Willd., Sp. Pl. 2: 447 (1799); Hook. f., Fl. Brit. Ind. 5: 30 (1886); Prain, Beng. Pl. 2: 663 (1903, reprint 1963); R. L. Heinig, List Chittagong: 55 (1925), *Persicaria attenuata* (R. Br.) Sojak (1974).

Vernacular name: *Pani-bishkatali*. English names: Hairy knotweed, Water smartweed.

Perennial aquatic herb. Leaves elliptic-lanceolate. Racemes branched, stout, erect. Flowers white. Nuts broadly biconvex, apparently orbicular, black. *Flowering and fruiting*: November - January. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Grows in beels, jheels and large stagnant water bodies*.

Distribution: Tropical and South Africa, Sri Lanka, India, Myanmar, Indonesia, the Philippines, and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1370 (DUSH); Kaligonj, Pubail, 23.08.2010, R. Tabassum, 1647 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3186 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3759 (DUSH).

Genus 53. **Polygonum** [Tourn.] L. *sensu stricto*, Sp. Pl. ed. 1: 359 (1753).

Key to species:

1. Flowers distinctly pedicellate, exserted from the
ochreae. All tepals almost equal in size **Polygonum effusum**
- Flowers sessile to subpedicellate, mostly sunken
among the ochreae, rarely exserted. Outer tepals
slightly longer **Polygonum plebeium**

95. **Polygonum effusum** Meissn. in DC., Prodr. 14: 93 (1857). *Polygonum plebeium* R. Br. var. *effusum* Hook. f. (1886).

Vernacular names: *Raniphul, Chemtisag.*

English name: Knotweed.

Much-branched, prostrate, annual herb. Stem channeled, ridges corrugate. Leaves linear-oblong. Ocrea white, lacerate. Flowers in axillary clusters, 2-3 per clusters, rose-red, eventually turning white. Nuts trigonous, black and shining. *Flowering and fruiting:* February - May. *Grows in sandy river banks and chars.*

Distribution: All over the world.

Status of occurrence: Common.

Uses: It is used as vegetable.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 322 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 636 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1208 (DUSH); Gazipur Sadar, Rajendropur Senanibash, 04.02.2011, R. Tabassum, 1695 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3823 (DUSH).

96. **Polygonum plebeium** R. Br., Prodr. Fl. Nov. Holl.: 420 (1810); Hook. f., Fl. Brit. Ind. 5: 27 (1886); Prain, Beng. Pl. 2: 662 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 7 (1953). *Polygonum roxburghii* Meissn. (1856).

Vernacular names: *Khudi-bishkatali, Mechhua shak.*

English: Small knotweed.

Much-branched, prostrate, annual herb. Leaves elliptic-oblong. Flowers axillary, greenish-white or light pink inside. Nuts trigonous, black, shining. *Flowering and fruiting*: January - April. *Chromosome number*: $2n = 20, 22, 40$ (Kumar and Subramaniam, 1986). *Common in dried up ponds, ditches, riverbanks, cultivated fields and fallow lands.*

Distribution: Africa, Australia, the Philippines, Taiwan, South and South East Asia.

Status of occurrence: Common.

Uses: It is used as vegetable.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 360 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 986 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1247 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2295 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2745 (DUSH).

Genus 54. **Rumex** L., Sp. Pl. 1: 333 (1753).

Key to species:

- | | |
|---|-------------------------|
| 1. Leaves hastate or sagittate. Flowers dioecious or polygamous | Rumex vesicarius |
| - Leaves never hastate or sagittate. Flowers normally androgynous | 2 |
| 2. Stem branched above; valves narrowly triangular, margin long dentate | Rumex maritimus |
| - Stem branched from base; valves triangular, margin dentate or denticulate | Rumex dentatus |

97. **Rumex dentatus** L., Mant. Pl. 2: 226 (1771); Hook. f., Fl. Brit. Ind. 5: 59 (1886); Prain, Beng. Pl. 2: 665 (1903, reprint 1963). *Rumex klotzschianus* Meissn. (1856).

Vernacular name: *Bon-palong*.

English names: Toothed dock, Indian sorrel.

Annual herb. Leaves simple, alternate, lower leaves distinctly petiolate, lamina oblong. Inflorescence racemose, panicle-like. Flowers aggregated in axillary clusters or in whorls. Tepals 6, sepaloid, outer tepals elliptic, inner tepals enlarged in fruit. Fruit a nut, enclosed in the enlarged inner tepals. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 40$ (Fedorov, 1969). *Wet places on the banks of beels, jheels, canals and rivers.*

Distribution: Afghanistan, China, India, Kazakhstan, Kyrgyzstan, Nepal, Russia, North Africa and South East Europe.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 27 (DUSH); Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 287 (DUSH); Kaliakoia, Fulbari, 01.10.2013, R. Tabassum, 334 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1208 (DUSH); Sripur, Gorgoria, 21.06.2011, R. Tabassum, 1301 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1818 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3233 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3563 (DUSH).

98. **Rumex maritimus** L., Sp. Pl. 1: 335 (1753); Hook. f., Fl. Brit. Ind. 5: 59 (1886); Prain, Beng. Pl. 2: 665 (1903, reprint 1963).

Vernacular name: *Bon-palong*.

English name: Golden dock.

Annual semi-aquatic herb. Leaves simple, alternate, lower leaves petiolate, lamina oblong-lanceolate to lanceolate. Inflorescence racemose. Flowers pedicellate, bisexual, arranged in axillary clusters. Tepals 6, outer 3 elliptic, inner 3 enlarged in fruits. Fruit a nut, enclosed in the enlarged inner tepals. *Flowering and fruiting:* January - May. *Chromosome number:* $2n = 40$ (Fedorov, 1969). *Grows on the banks of stagnant water bodies and along banks of streams, and in wet places.*

Distribution: China, India, Kazakhstan, Mongolia, Myanmar, Russia and Europe.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 757 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2233 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2458 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2611 (DUSH); Kaliakoir, Voboner Chala, 03.11.2013, R. Tabassum, 3596 (DUSH).

99. **Rumex vesicarius** L., Sp. Pl. 1: 336 (1753); Hook. f., Fl. Brit. Ind. 5: 51 (1886); Prain, Beng. Pl. 2: 665 (1903, reprint 1963).

Vernacular names: *Tak palong*, English names: Sorrel, Bladder dock, Rosy dock. *Chuka palong*.

Annual herb. Leaves simple, alternate, ocreate, lamina triangular, elliptic, ovate or oblong. Inflorescence a dense axillary or terminal raceme or panicle. Flowers pedicellate, male and female flowers on the same plant, tepals 6, inner 3 cordate. Fruit a nut, trigonous, brown, covered with enlarged reticulate inner sepals. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 18, 20$ (Kumar and Subramaniam, 1986). *Cultivated in highlands also spreads as an escape*.

Distribution: Asia, Africa and Australia.

Status of occurrence: Cultivated.

Uses: It is used as leafy vegetable.

Specimen examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3870 (DUSH).

Family 26. **PLUMBAGINACEAE** A. L. de Jussieu (1789)

Perennial herbs or shrubs, sometimes climbers. Leaves simple, alternate, rarely opposite or radical and rosulate, exstipulate. Flowers in terminal raceme or panicle, bracteoles 2. Sepals 5, gamosepalous, tubular, often conspicuously 5-10 ribbed. Petals 5, free or connate at the base into a short tube or salver-shaped, contorted or imbricate. Stamens 5, opposite the corolla lobes, filaments usually epipetalous, anthers oblong, dorsifixed, dehiscence longitudinal. Ovary superior, unilocular, ovule solitary, pendulous from a basal funicle, styles 5, stigmas subcapitate. Fruit a membranous or coriaceous capsule, apex 5-valve. Seeds cylindric, embryo straight.

The family Plumbaginaceae consists of about 12 genera and 400 species world wide. In Bangladesh, this family is represented by 2 genera and 4 species.

In the present study the family is represented by a single genus with a single species.

Genus 55. **Plumbago** L., Sp. Pl.: 151 (1753).

100. **Plumbago capensis** Thunb., Prodr. Fl. Ca.: 33 (1794). Kanjilal *et al.*, Fl. Assam 3: 159 (1939); Van Steenis in Fl. Mal. Ser. 1, 4(2): 111 (1949); Khan and Khan in Khan & Rahman (Eds.), Fl. Bangladesh 42: 3 (1989). *Plumbago auriculata* Lamk. (1786).

Vernacular name: *Nalchita*.

English name: The Cape leadwort.

Erect or semi-climbing shrub. Leaves elliptic to elliptic-obovate or oblong-lanceolate, crowded in the upper axils. Flowers in racemes mostly combined to form leafy corymbs, bluish-purple or occasionally white. Fruit a capsule, contained in the glandular persistent calyx. *Flowering and fruiting*: September - November.

Chromosome number: $2n = 14, 16$ (Fedorov, 1969). *Cultivated as an ornamental plant in dry places.*

Distribution: Native of South Africa.

Status of occurrence: Cultivated.

Uses: An ornamental plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 398 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1048 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2528 (DUSH).

Family 27. **DILLENIACEAE** Salisbury (1897)

Evergreen trees, shrubs or lianas. Leaves alternate, opposite, simple, entire or toothed. Flowers solitary or in cymose or racemose inflorescence, yellow or white, perfect or rarely unisexual, hypogynous, regular. Sepals 3-20, spirally imbricate, persistent. Petals 2-5, imbricate, deciduous. Stamens numerous, sometimes reduced to few or only one, anthers tetrasporangiate and dithecal, opening by longitudinal slits or distal pores. Carpels 1 to many or sometimes numerous, ovary hypogynous, plurilocular with distinct styles, styles slender, elongate with terminal, often capitate stigma, ovules 1 to many in each carpel. Fruits indehiscent berry-like or dehiscent follicular. Seeds with very small, straight embryo and 2 cotyledones.

The family Dilleniaceae consists of 10 genera and about 350 species, largely confined tropical and subtropical countries, best developed in the Australian region. In Bangladesh, this family is represented by 2 genera and 5 species.

In the present study area the family is represented by a single genus with 3 species.

Genus 56. **Dillenia** L., Sp. Pl. 1: 535 (1753).

Key to species:

- | | |
|--|---------------------------|
| 1. Flowers solitary; flower buds and fruits more than 5 cm in diam.; anthers dehiscing with pores; carpels 16-20 | Dillenia indica |
| - Flowers 2-7 in fascicles or racemes; flower buds and fruits less than 5 cm in diam.; anthers dehiscing with pores or longitudinal slits; carpels 5-9 | 2 |
| 2. Leaf blade obovate to long obovate; flower buds 4-5 cm in diam.; anthers dehiscing with pores; carpels 8 or 9 | Dillenia scabrella |

- Leaf blade oblong to obovate-oblong; flower buds less than 2 cm in diam.; anthers dehiscing with longitudinal slits; carpels 5 or 6

Dillenia pentagyna

101. **Dillenia indica** L., Sp. Pl.: 535 (1753); Hook. f. & Thoms., Fl. Brit. Ind. 1: 36 (1872); Prain, Beng. Pl. 1: 126 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 1 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 86 (1956). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2):20 (1953). *Dillenia speciosa* Thunb. (1791).

Vernacular name: *Chalta*.

English: Elephant Apple.

Medium-sized to large evergreen tree. Leaves simple, alternate, lanceolate to oblong-lanceolate, slightly to distinctly dentate. Flowers large, solitary, white. Fruits globose, indehiscent, enclosed by enlarged fleshy sepals, yellowish-green, pleasant acid taste. *Flowering and fruiting*: May - February. *Chromosome number*: $2n = 54, 56$ (Kumar and Subramaniam, 1986). *Forests, also cultivated in gardens, parks and homesteads*.

Distribution: Native of tropical Asia and is found in India, Sri Lanka, Myanmar, Thailand, Cambodia, Southern China, Vietnam and Malaysia.

Status of occurrence: Common.

Uses: Fruits are eaten either raw or cooked and also used in preparing chutney.

Specimens examined: Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 919 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1495 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2019 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2272 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2591 (DUSH).

102. **Dillenia pentagyna** Roxb., Pl. Corom. 1: 21, t. 20 (1795); Hook. f. & Thoms., Fl. Brit. Ind. 1: 38 (1872); Prain, Beng. Pl. 1: 126 (1903, reprint 1963). *Dillenia baillonii* Pierre ex Lanessan (1886).

Vernacular name: *Banchalta*.

Medium-sized deciduous tree. Leaves large, simple, alternate, oblong-lanceolate to oblong-obovate, margin entire or dentate. Flowers in umbellate on short leafless shoots, bright yellow, fragrant. Fruits subglobose, drooping, indehiscent, fleshy, 1-2 seeded. *Flowering and fruiting*: January - June. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Moist deciduous forests*.

Distribution: India, Myanmar, Indonesia, Thailand, Southern China, the Andaman Islands, Celebes and lesser Sunda Islands.

Status of occurrence: Common.

Uses: Timber yielding plant, also used in medicine.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 824 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1744 (DUSH).

103. **Dillenia scabrella** Roxb. *ex* Wall., Pl. As. Rar. 1: 20, t. 22 (1830); Hook. f. & Thoms., Fl. Brit. Ind. 1: 38 (1872); Prain, Beng. Pl. 1: 126 (1903, reprint 1963).

Vernacular names: *Hargeza*, *Hargenza*.

Medium-sized deciduous tree. Leaves simple, alternate, ovate to narrowly obovate, obtuse or acute, more or less dentate. Flowers 3-5, borne together, bright yellow. Fruits enclosed by sepals, orange. *Flowering and fruiting:* January - July. *Deciduous forests.*

Distribution: Native of Asia and is commonly found in India, Nepal, Myanmar, Laos, Cambodia and Vietnam.

Status of occurrence: Seems to be rare.

Uses: Timber yielding plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 400 (DUSH); Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 471 (DUSH).

Family 28. **OCHNACEAE** A. P. de Candolle (1811)

Low tree or shrubs with watery juice. Leaves simple (rarely pinnate), mostly alternate, stipulate. Flowers in axillary racemes or in panicles, sometimes in axillary dichasia, occasionally umbellate or in fascicles, regular, hermaphrodite. Sepals 5 (sometimes 5-10), imbricate or contorted, distinct or basally connate. Petals usually 5 (rarely 4 or 10), contorted or imbricate, disc present, often enlarged in the fruiting stage. Stamens 4-10 or numerous, shorter than petals, free, inserted on the disc, occasionally some reduced to staminodes, filaments persistent, anthers basifixed, dehiscence longitudinal or by pores. Carpels 1-10, sometimes up to 15, ovary 1-10 locular, occasionally 15 locular, or carpels free below with a common style, stigmas 1-15, ovules 1-many on axile or parietal, often intrusive placentae. Fruits drupaceous or baccate usually borne on enlarged disc, carpels separating into 1-4 seeded fruitlets, or fruit 1-5 celled capsule with septicidal dehiscence. Seeds solitary to numerous in each fruit or fruitlet, embryo usually straight.

The family Ochnaceae consists of about 30 genera and 400 species, widespread in tropical regions, especially in Brazil. In Bangladesh, this family is represented by a single genus with 3 species.

In the present study area the family is represented by a single species.

Genus 57. **Ochna** L., Sp. Pl.: 732 (1753).

104. **Ochna squarrosa** L., Sp. Pl.: 732 (1753); Hook. f., Fl. Brit. Ind. 1: 523 (1875); Prain, Beng. Pl. 1: 215 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 1: 219 (1936); Khan & Huq in Khan, Fl. Bangl. 3: 2 (1975).

Vernacular names: *Kanak champā*, *Ote champā*.

English: Golden champak.

Small tree. Leaves lanceolate or oblanceolate or elliptic. Flowers in axillary panicles, sometimes in racemes, rarely solitary, fragrant, orange-yellow. Fruit of 5-10 drupes oblong to subspherical, brownish, seated on the succulent enlarged disc and surrounded by persistent calyx. *Flowering and fruiting*: February - May. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Scrubs and deciduous forests*.

Distribution: A native of Peninsular India, distributed in Myanmar and Sri Lanka.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Tongi, 30.01.2001, R. Tabassum, 72 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1052 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1365 (DUSH).

Family 29. **DIPTEROCARPACEAE** Blume (1825)

Tall, resiniferous trees, rarely shrubs. Leaves simple, alternate, stipulate. Flowers in axillary or terminal panicles or racemes. Sepals 5, united to form a tube. Petals 5, free or united below, contorted. Stamens 15 or reduced to 10 or 5, sometimes numerous, free. Ovary 3-locular, rarely reduced to 2- or 1-locular with 2 anatropous ovules. Fruit a nut, sometimes dehiscent, supported by the persistent, thickened calyx, 2 or more sepals developing into small or large wings. Seed 1, filling the entire fruit cavity with well developed cotyledons.

The family Dipterocarpaceae consists of about 16 genera and nearly 600 species, all tropical, especially abundant in the rain forests of Malaysia. In Bangladesh, this family is represented by 5 genera and 9 species.

In the present study area it is represented by 3 genera with 3 species.

Key to genera:

- | | |
|---|----------------------|
| 1. Calyx in fruit with a distinct tube, free; leaf venation plicate | Dipterocarpus |
| - Calyx in fruit without a tube; leaf venation not plicate | 2 |
| 2. Ovary with distinct stylopodium; 2 calyx segments enlarged | Hopea |

into wings or all calyx segments not enlarged into wings

- Ovary without distinct stylopodium; 3 or all calyx segments enlarged into wings

Shorea

Genus 58. **Dipterocarpus** Gaertn. f., De Fruct. 3 : 50 (1805).

105. **Dipterocarpus turbinatus** Gaertn., De Fruct. 3 : 51, t. 188, f. 1 (1805). Thiselton-Dyer in Hook. f., Fl. Brit. Ind. 1: 295 (1874); Prain, Beng. Pl.: 252 (1903, reprint 1963); Heinig, Pl. Chitt. Coll. Hill-Tr.: 5 (1925); Kanjilal *et al.*, Fl. Assam 1(1): 134 (1934); *Dipterocarpus laevis* Buch.-Ham., Mem. Wern. Soc. 6: 299 (1832).

Vernacular names: *Tellya garjan*, *Teli garjan*, *Kali garjan* English name: Garjan-oil tree.

Very large, semi-deciduous, lofty tree. Leaves simple, ovate to ovate-lanceolate or elliptic-oblong. Flowers white or pinkish, very fragrant, petals tomentose, more densely on outsides. Fruit a nut. *Flowering*: March - April and *fruiting*: May - June. *Chromosome number*: $2n = 20$ (Tixier, 1960). *Dry lands*.

Distribution: India, Myanmar, Thailand, Cambodia and Indonesia.

Status of occurrence: Common.

Uses: The wood is used in construction of temporary buildings, lorry bodies, boat buildings and packing cases. The timber is a source of popular and commercial plywood.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 205 (DUSH); Sripur, Veramtoly Sal forest, 17.02.2012, R. Tabassum, 1989 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2148 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3160 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3794 (DUSH).

Genus 59. **Hopea** Roxb., Fl. Corom. 3 : 7 (1819).

106. **Hopea odorata** Roxb., Pl. Corom. 3: 7, t. 210 (1819). Thiselton-Dyer in Hook. f., Fl. Brit. Ind. 1: 308 (1874); Kurz, For. Fl. Brit. Burm. 1: 120 (1877); Brandis, Journ. Linn. Soc. 31: 59 (1895).

Vernacular name: *Telsur*.

Evergreen, medium-sized tree. Leaves ovate to ovate-lanceolate, entire to undulate, acute to obtusely acuminate. Flowers creamy to brownish-white, sepals 5, ovate-

obtuse, petals 5, ovate-oblong, yellowish. Fruit a nut. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 14$ (Roy and Jha, 1965). *Highlands*.

Distribution: South East Asia and Thailand.

Status of occurrence: Common.

Uses: The timber is valued for general constructions, house-posts, boat as well as ship building, and for cartwheels.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 604 (DUSH); Sripur, Veramtoli Sal forest, 17.02.2012, R. Tabassum, 1988 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2303 (DUSH); Gazipur Sadar, Etahata Borboike, 19.12.2013, R. Tabassum, 3426 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3769 (DUSH).

Genus 60. **Shorea** Roxb. ex Gaertn. f., De Fruct. 3: 48 (1805).

107. **Shorea robusta** Roxb. ex Gaertn. f., Suppl. Carp. 3: 48, t. 186 (1805); Thiselton-Dyer in Hook. f., Fl. Brit. Ind. 1: 306 (1874); Prain, Beng. Pl. 1: 254 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assa 1(1): 135 (1934).

Vernacular names: *Sal*, *Gazari*.

English name: Sal Tree, Indian Dammar.

Tall deciduous tree but never completely defoliated. Leaves ovate-oblong, shortly acuminate. Flowers unilateral in velvety-pubescent panicles, calyx tomentose, petals pale yellow to creamcoloured. Nut enclosed by the accrescent calyx lobes. *Flowering and fruiting*: February - July. *Chromosome number*: $2n = 14$ (Kumar and Subramaniam, 1986). *Grows in dry high lands*.

Distribution: India and Nepal.

Status of occurrence: Common.

Uses: The wood is valued for general construction such as beams, scantlings, rafters, floor boards, piles, girders, electric poles, house posts, dugouts, wheel hubs, railway sleepers, wagon flooring, turnable tables, buffers, break blocks, and even ladders.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 12.02.2000, R. Tabassum, 20 (DUSH); Kaliganj, Noapara, 05.03.2010, R. Tabassum, 687 (DUSH); Kapasia, Chala, 06.05.2010, R. Tabassum, 1055 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1888 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1964 (DUSH).

Family 30. **THEACEAE** D. Don (1825)

Trees or shrubs, rarely climbers. Leaves evergreen or seldom deciduous, simple, alternate, rarely opposite, entire or often serrate. Flowers axillary or extra axillary,

rarely lateral or terminal, solitary or in fascicles, regular, bisexual, rarely unisexual. Sepals 5, rarely 4-7, free or connate, persistent. Petals 5, rarely 4-9, free or often slightly connate below. Stamens many, free or shortly connate at the base, rarely alternate, adnate to the petals, anthers basifixed or versatile. Ovary superior, usually 3-5 or rarely 1-10 loculed, ovules 2 to many in each locule. Fruit a capsule or berry, rarely pome-like. Seeds few or many, small.

The family Theaceae consists of about 40 genera and 600 species widespread in tropical and subtropical regions. In Bangladesh, it is represented by 5 genera and 7 species.

In the present study area the family is represented by a single species.

Genus 61. **Schima** Reinw. ex Blume, Bijdr.: 129 (1825).

108. **Schima wallichii** (DC.) Korth. in Temminch, Verh. Nat. Gesch. Bot. 3: 143 (1840). *Gordonia wallichii* DC. (1524), *Schima noronhae* Reinw. ex Blume (1825), *Schima crenata* Korth. (1840); Hook. f., Fl. Brit. Ind. 1: 289 (1874).

Vernacular names: *Kanak, Mon champa.*

English names: Needle wood tree, Schima.

Evergreen tree. Leaves alternate, elliptic-lanceolate. Flowers solitary, axillary, white, fragrant, sepals 5, suborbicular, persistent, petals 5, obovate. Capsule subglobose, silky when young, glabrous when old, with 2-6 winged seeded in each cell. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 30, 36$ (Kumar and Subramaniam, 1986). *Forests*.

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

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3997 (DUSH).

Family 31. **CLUSIACEAE** Lindley (1826)

Usually trees, rarely shrubs, sometimes lianas or herbs. Leaves simple, opposite, decussate, rarely whorled, entire, usually exstipulate. Inflorescence axillary to terminal, few-flowered cymes, very rarely racemose or paniced, often reduced to solitary flower or fascicled. Flowers regular, dioecious, white, yellow or red, hermaphrodite or polygamous. Sepals 4-6, concave, contorted, imbricate or in decussate pairs. Petals 4-8, sometimes more, rarely absent, much imbricate or

contorted. Male flowers: stamens numerous, filaments more or less free or variously united into 1-6 adelphous bundles, or as many as or twice as many as the petals, reduced to staminodes in female flowers, anthers various. In bisexual or female flowers staminodes variously or stamens exist surrounding the ovary. Ovary 1 to many celled, ovules 1-4, style 1, stigma as many as the cells of the ovary. Fruits usually baccate or drupaceous, rarely a capsule with septicidally dehiscent valves, indehiscent. Seeds large.

The family Clusiaceae consists of about 50 genera and 1,200 species, widespread in moist tropical regions of the world. In Bangladesh, it is represented by 4 genera and 18 species.

In the present study area the family is represented by 2 genera and 3 species.

Key to genera:

- | | |
|--|-----------------|
| 1. Fruit indehiscent | Garcinia |
| - Fruit completely dehiscent, capsular | Mesua |

Genus 62. **Garcinia** L., Sp. Pl.: 443 (1753).

Key to species:

- | | |
|---|------------------------------|
| 1. Sepals and petals 5; stamen fascicles and fascicleds 5, free | Garcinia xanthochymus |
| - Sepals and petals 4; stamen fascicles and fascicleds 4, free or $\pm$ united, or absent | Garcinia cowa |

109. **Garcinia cowa** Roxb. ex DC., Prodr. 1: 561 (1824); Anderson in Hook., Fl. Brit. Ind. 1: 262 (1874); Prain, Beng. Pl. 1: 166 (1903, reprint 1963); R. L. Heinig, List Chittagong: 5 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 87 (1956). *Oxycarpus gangetica* Buch.-Ham. (1826), *Garcinia roxburghii* Wight, Ill. Ind. Bot. 1: 125 (1840).

Vernacular names: *Kau*, *Kao-gola*, English names: The cowa fruit, The cowa *Kawa*, *Kaglichu*. moangosteen.

Deciduous tree, bark exuding yellow gum. Leaves simple, opposite, broadly elliptic-lanceolate, apex acute to acuminate. Flowers tetramerous, in small clusters, yellow flushed pink. Berries globose to pyriform, yellow or reddish. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 76$ (Krishnaswamy and Raman, 1949). *Forest and near homestead*.

Distribution: Native of India, distributed in China, Myanmar and Thailand.

Status of occurrence: Common.

Uses: Fruit yielding plant and also used as fuel.

Specimens examined: Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1086 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1150 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2869 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3203 (DUSH).

110. **Garcinia xanthochymus** Hook. f. ex T. Anders. in Hook. f., Fl. Brit. Ind. 1: 269 (1874); Prain, Beng. Pl. 1: 167 (1903, reprint 1963). *Xanthochymus pictorius* Roxb. (1805), *Xanthochymus tinctorius* DC. (1824), *Garcinia tinctoria* (DC.) Wight (1909).

Vernacular names: *Tamal*, *Dephal*, *Dem-gola*, *Dam-bel*. English name: Mysore gamboge.

Small to medium-sized, deciduous tree, bark exuding milky juice which turns yellowish or pale green gum. Leaves thickly coriaceous, linear-oblong or oblong-lanceolate, rarely ovate, apex acute. Flowers dull white, fasciculate in cluster of 4-8, from the axils of fallen leaves. Fruit a berry, size of an apple, pointed, crowned by the persistent stigmatic lobes, golden yellow when ripe. *Flowering and fruiting*: March - February. *Chromosome number*: $2n = 80$ (Krishnaswamy *et al.*, 1954 as *Garcinia tinctoria*). *Moist deciduous forest*.

Distribution: China, India, Myanmar, Malay Peninsula, Sri Lanka and Thailand.

Status of occurrence: Common.

Uses: Timber yielding plant and also used as medicine.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1867 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3028 (DUSH).

Genus 63. **Mesua** L., Sp. Pl.: 515 (1753).

111. **Mesua ferrea** L., Sp. Pl.: 515 (1753); Anderson in Hook., Fl. Brit. Ind. 1: 277 (1874); Prain, Beng. Pl. 1: 165 (1903, reprint 1963). *Calophyllum nagassarium* Burm. f. (1768), *Mesua roxburghii* Wight (1840), *Mesua nagassarium* (Burm. f.) Kosterm. (1976).

Vernacular names: *Nageshwar*, English names: Ironwood, Indian rose chestnut, *Nagchampa*. Ceylon ironwood.

Medium to large evergreen tree, young shoots brilliant red at first, then pink and gradually dark green. Leaves simple, decussate, opposite, very variable, linear-

lanceolate or elliptic-oblong, acute to acuminate, coppery-reddish when young. Flowers solitary, rarely paired, in the axils of the upper leaves, white, fragrant. Berries globose, with a conical tip, dark brown, surrounded by the enlarged, persistent sepals at the base. *Flowering and fruiting*: February - October. *Chromosome number*: $2n = 32$ (Tixier, 1953). *Well-drained soils with admixture of red clay, with heavy rainfall and humid atmosphere*.

Distribution: Cambodia, India, Indonesia, Malay Peninsula, Myanmar, Sri Lanka, Thailand and Vietnam.

Status of occurrence: Common.

Uses: The species is important for its multipurpose uses.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 483 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1294 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1888 (DUSH).

Family 32. **ELAEOCARPACEAE** A. P. de Candolle (1824)

Small to large-sized trees, occasionally buttressed at the base. Leaves simple, alternate or sometimes opposite. Inflorescence a raceme, panicle or dichasial cyme. Flowers regular, perfect or seldom unisexual, hypogynous. Sepals (3-) 4-5 (-11), distinct, sometimes shortly connate at the base, valvate or sometimes imbricate. Petals (3-) 4-5, free or seldom connate at the base, valvate or seldom imbricate, sometimes sepaloïd or absent. Stamens numerous, distinct, originating centrifugally, filaments free, anthers tetrasporangiate and dithecal, opening by a transverse apical slit. Ovary superior, as many locules as carpels, styles glabrous or hairy at the base, stigmas simple, 2 to many ovules in each locule, placentation axile. Fruit a capsule or less often a drupe, smooth or wrinkled. Seeds smooth, rugose or tubercled.

The family Elaeocarpaceae consists of about 10 genera and 400 species, widespread in tropical and subtropical regions. In Bangladesh, this family is represented by 2 genera and 13 species.

In the present study area this family is represented by a single genus with 2 species.

Genus 54. **Elaeocarpus** L., Sp. Pl.: 515 (1753).

Key to species:

- | | |
|---|--------------------------------|
| 1. Flower small, petals glabrous; anthers blunt at the apex | Elaeocarpus floribundus |
| - Flower medium, petals silky; anthers aristate at the apex | Elaeocarpus rugosus |

112. **Elaeocarpus floribundus** Blume, Bijdr.: 120 (1825); Hook. f., Fl. Brit. Ind. 1: 401 (1874); Prain, Beng. Pl. 1: 198 (1903, reprint 1963); R. L. Heinig, List Chittagong: 8 (1925). *Elaeocarpus rigidus* Ridley (1910), *Elaeocarpus ramsoii* Kunth (1938).

Vernacular names: *Jalpai*, English names: Indian olive, Rugged oil-fruit. *Belploi*.

Medium-sized to large, evergreen tree. Leaves alternate, ovate to elliptic-ovate. Racemes 20-25 flowered. Flowers white. Drupe ellipsoid to obovoid, smooth, 1-seeded, light green, resembling an olive, fleshy, pleasantly acid taste, edible. *Flowering and fruiting*: March - December. *Forests, also cultivated in the village grooves for its edible fruits*.

Distribution: India, Bhutan and Myanmar.

Status of occurrence: Cultivated.

Uses: Fruit is edible, also a timber yielding plant.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 289 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1390 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2622 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3038 (DUSH).

113. **Elaeocarpus rugosus** Roxb. ex G. Don, Gen. Hist. 1 : 559 (1831); Hook. f., Fl. Brit. Ind. 1: 405 (1874); Prain, Beng. Pl. 1: 198 (1903, reprint 1963). *Elaeocarpus epiculatus* Masters (1874).

Large tree, old trees buttressed at the base. Leaves large, usually crowded at the ends of branchlets, lamina obovate, oblong or oblanceolate. Inflorescence an axillary raceme. Flowers pale white. Drupe obovoid or oblong, greenish-yellow, pyrenes sharp-edged, strongly rugose, 1-seeded. *Flowering and fruiting*: February - October. *Moist deciduous forests*.

Distribution: India, Myanmar and Malaysia.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3958 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 3998 (DUSH).

Family 33. **TILIACEAE** A. L. de Jussieu (1789)

Trees, shrubs or rarely herbs, with simple or more often stellate hairs or peltate scales. Leaves alternate, rarely opposite, simple but often toothed or lobed, usually palmately

veined. Flowers in various sorts of cymose inflorescence, sometimes paired or solitary. Petals as many as the sepals. Stamens c 10, anthers tetrasporangiate and dithecal, filaments opening by longitudinal slits or sometimes by apical pores. Carpels 2-many, united to form a compound ovary with a single style and a capitate or lobed, dry stigma, ovary with as many locules as carpels.

The family Tiliaceae consists of about 50 genera and 450 species, widespread in tropical and subtropical regions. In Bangladesh, the family is represented by 7 genera and 28 species.

In the present study area this family is represented by 3 genera and 8 species.

Key to genera:

- | | | |
|----|--|-------------------|
| 1. | Basal serrations of lamina mostly glandular; ovary with uncinat hairs; capsule covered with uncinat spines | Triumfetta |
| - | Basal serrations of lamina eglandular; ovary glabrous or with simple or stellate hairs; capsule or drupe without spines | 2 |
| 2. | Tree or shrubs; petals clawed, thick, pitted or glandular at the base; fruit entire or lobed, 1-4-pyrened drupe | Grewia |
| - | Herbs, rarely undershrubs; petals not clawed, neither pitted nor glandular at the base; fruit an elongated or subglobose-globose capsule | Corchorus |

Genus 65. **Corchorus** L., Sp. Pl. ed. 1: 529 (1753).

Key to species:

- | | | |
|----|--|-----------------------------|
| 1. | Leaf blade without setose or filiform appendages at the base | Corchorus aestuans |
| - | Leaf blade with setose or filiform appendages at the base | 2 |
| 2. | Capsule subglobose-globose, beakless and depressed at the apex | Corchorus capsularis |
| - | Capsule elongated, beaked at the apex | Corchorus olitorius |

114. **Corchorus aestuans** L., Syst. Nat. ed. 10, 2: 1079 (1759). *Corchorus acutangulus* auct. non Forssk. (1755); Masters in Hook. f., Fl. Brit. Ind. 1: 398 (1874); Prain, Beng. Pl. 1: 196 (1903, reprint 1963); R. L. Heinig, List Chittagong: 8 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 21 (1953).

Vernacular names: *Jongli pat*, *Bonpat*, *Titapat*.

English name: Jute.

Annual herb. Leaves lanceolate to ovate. Inflorescence of cymes. Flowers 2-3 in leaf-opposed, shortly pedunculate cymes, yellow. Capsules cylindric, beaked, 3-loculed. *Flowering and fruiting*: August - February. *Chromosome number*: $2n = 14$ (Kumar and Subramaniam, 1986). *Grows in cultivated land, roadsides and waste places as a weed*.

Distribution: Pantropical, but probably native of tropical Asia.

Status of occurrence: Common.

Uses: It is used as a fibre yielding plant and the young leaves are used as cooked vegetables.

Specimens examined: Kaliganj, Khoraid, 05.03.2010, R. Tabassum, 717 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2198 (DUSH); KaliaKoir, Simultoli, 01.10.2013, R. Tabassum, 3368 (DUSH).

115. **Corchorus capsularis** L., Sp. Pl.: 529 (1753); Hook. f., Fl. Brit. Ind. 1: 397 (1874); Prain, Beng. Pl. 1: 197 (1903, reprint 1963); R. L. Heinig, List Chittagong: 8 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 88 (1956).

Vernacular names: *Nalitapat*, *Deshi-pat*, *Bagi-pat*.

English name: Jute.

Annual herb. Leaves petiolate, blade narrowly ovate. Flowers oppositifolious, 2-3 fasciculate or sometimes solitary, sepals narrowly oblong-obovate, petals narrowly obovate. Capsules 3-valved, the valves with transverse septa. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 8, 14, 16, 28$ (Kumar and Subramaniam, 1986). *In the plains where it is cultivated*.

Distribution: India, Sri Lanka and most of the tropical countries.

Status of occurrence: Cultivated.

Uses: Jute fibre is obtained from the plant.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 99 (DUSH); Kaliganj, Khoraid, 05.03.2010, R. Tabassum, 716 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2840 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3145 (DUSH); Kapasia, Kandunia villlage, 03.11.2013, R. Tabassum, 3718 (DUSH).

116. **Corchorus olitorius** L., Sp. Pl.: 529 (1753); Hook. f., Fl. Brit. Ind. 1: 397 (1874); Prain, Beng. Pl. 1: 197 (1903, reprint 1963); R. L. Heinig, List Chittagong: 8 (1925). *Corchorus tridens* L. (1771); *Corchorus trilocularis* L. (1771), *Corchorus catharticus* Blanco (1837).

Vernacular names: *Tosha pat*, *Lalita pat*.

English name: Tossa jute.

Annual herb. Leaves oblong to lanceolate, leaf base with a pair of filiform appendages. Inflorescence solitary or in pairs, opposite the leaf. Sepals lanceolate. Petals obovate, hairy. Fruits cylindrical, slightly narrowed towards acuminate apex, apex three-pointed. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 14$ (Khatoon and Ali, 1993). *High lands where it is cultivated*.

Distribution: India, China, Myanmar, Pakistan, Indo-China, Australia and the Philippines.

Status of occurrence: Cultivated.

Uses: The bark produces good fibres of commerce known as jute.

Specimens examined: Kaliganj, Memberbari, 26.03.2008, R. Tabassum, 266 (DUSH); Kapasia, Baoraid, 06.05.2010, R. Tabassum, 1499 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2184 (DUSH); Kaliakor, Boraichuti, 13.09.2013, R. Tabassum, 2918 (DUSH).

Genus 66. **Grewia** L., Sp. Pl.: 964 (1753).

Key to species:

1. Cymes axillary or leaf-opposed or flowers solitary;
peduncles solitary or several together in clusters 2
 - Cymes arranged in terminal or axillary, 8-15 cm long
panicles **Grewia nervosa**
2. Leaves elliptic, coarsely yellow-brown tomentose, slightly 3-
lobed towards acuminate apex; stipules linear. Sepals 6-8
mm long **Grewia hirsuta**
 - Leaves broadly ovate to almost orbicular, pubescent, never
lobed, acute to obtuse at apex; stipules obliquely lanceolate
or falcate; sepals c. 1.2 cm long **Grewia asiatica**

117. **Grewia asiatica** L., Mant. Pl.: 122 (1767); Hook. f., Fl. Brit. Ind. 1: 386 (1874); Prain, Beng. Pl. 1: 194 (1903, reprint 1963). *Grewia subinaequalis* DC. (1824), *Grewia hainesiana* Hole (1917).

Vernacular name: *Pholsa*.

English name: Phalsa.

Shrub or small tree. Leaves broadly ovate or suborbicular. Inflorescence axillary, umbellate cymes. Sepals 5. Petals 5, yellow. Fruit a subglobose drupe, red or purple. *Flowering and fruiting*: November - January. *Chromosome number*: $2n = 27, 36$ (Fedorov, 1969). *Deciduous and semi-evergreen forests and plain*.

Distribution: India and Sri Lanka.

Status of occurrence: Common.

Uses: Fibre and edible fruit yielding plant.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 330 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 383 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 770 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2389 (DUSH).

118. **Grewia hirsuta** Vahl, Symb. 1: 32 (1790); Hook. f., Fl. Brit. Ind. 1: 391 (1874); Prain, Beng. Pl. 1: 195 (1903, reprint 1963); *Grewia tomentosa* auct. non Juss. (1804), *Grewia roxburghii* G. Don (1831).

Vernacular name: *Kukurbicha*.

Shrub. Leaves ovate, lanceolate, ovate-lanceolate or ovate-elliptic. Inflorescence axillary, umbellate cymes. Flowers polygamous. Fruit a subglobose drupe, fleshy, densely hirsute or hispid. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 18$ (Kumar and Subramaniam, 1986). *Scrub forests and grasslands.*

Distribution: India, Sri Lanka and Myanmar.

Status of occurrence: Common.

Uses: Fruit is edible; also a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 06.11.2008, R. Tabassum, 480 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1490 (DUSH); Kaliakoir, Nabinagar, 12.02.2011, R. Tabassum, 1986 (DUSH).

119. **Grewia nervosa** (Lour.) Panigr., Taxon 34: 702 (1985). *Microcos paniculata* L. (1753), *Grewia microcos* L. (1767); Hook. f., Fl. Brit. Ind. 1: 392 (1874); Prain, Beng. Pl. 1: 194 (1903, reprint 1963). *Fallopia nervosa* Lour. (1790).

Vernacular names: *Pichandi, Asar*.

Semi-deciduous tree. Leaves elliptic-oblong, lanceolate or ovate-lanceolate. Inflorescence terminal panicles. Flowers pale yellow, involucre, sepals 5, cream-coloured, petals 5, yellowish. Fruit a globose drupe, wrinkled. *Flowering and fruiting:* March - December. *Scrub forests.*

Distribution: China, Myanmar and Indo-Malaysia.

Status of occurrence: Common.

Uses: Wood is used as fuel.

Specimens examined: Sripur, Garabon, 21.09.2012, R. Tabassum, 2153 (DUSH); Gazaipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2556 (DUSH).

Genus 67. **Triumfetta** L., Sp. Pl.: ed. 1: 444 (1753).

Key to species:

- | | |
|---|------------------------------|
| 1. Leaf blade deeply 3-lobed; lower surface thickly tomentose; stamens 10; fruits globose, gray-yellow puberulent | Triumfetta rhomboidea |
| - Leaf blade not 3-lobed, lower surface hispid; stamens 5; fruits ovoid, glabrous | Triumfetta pentandra |

120. **Triumfetta pentandra** A. Rich. in Guill. & Perr., Fl. Senegamb. Tent. 1: 93, t. 19 (1831). *Triumfetta neglecta* Wight & Arn. (1834); Hook. f., Fl. Brit. Ind. 1: 396 (1874); Prain, Beng. Pl. 1: 196 (1903, reprint 1963). *Triumfetta rhomboidea* Jacq. var. *pentandra* (A. Rich.) J. L. Ellis (1983).

Annual herb. Leaves rhomboid-ovate, slightly 3-lobed, terminal ones unlobed. Flowers yellow, sepals 5, cucullate and awned at the apex, petals 5, spatulate. Fruit an ovoid capsule, uncinat spines with a line of spreading hairs on the upper side. *Flowering and fruiting:* November - March. *Grows in cultivated fields and fallow lands as a weed.*

Distribution: Pakistan, India, Sri Lanka and tropical Africa.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1393 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2256 (DUSH); Kaliakior, Simultoli Ataboho, 01.10.2013, R. Tabassum, 3269 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3582 (DUSH).

121. **Triumfetta rhomboidea** Jacq., Enum. Syst. Pl. Carib.: 22 (1760); Master in Hook. f., Fl. Brit. Ind. 1: 395 (1874); Prain, Beng. Pl. 1: 196 (1903, reprint 1963); R. L. Heinig, List Chittagong: 8 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 21 (1953). *Triumfetta bartramia* L., Syst. Nat. ed. 10, 2: 1044 (1759); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 88 (1956).

Vernacular name: Ban okra.

Herb or undershrub. Leaves 3-7 costate, broadly ovate or suborbicular, sometimes obovate. Flowers golden yellow, sepals 5, lorate, strongly cucullate and awned at the apex, petals 5, usually notched. Fruits capsule, globose or subglobose, indehiscent. *Flowering and fruiting*: August - January. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in open waste places and along roadsides*.

Distribution: South East Asia, tropical and subtropical India, Sri Lanka, Malay Peninsula, China, Africa and America.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Khudabon, 26.03.2008, R. Tabassum, 276 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1199 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1468 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2696 (DUSH).

Family 34. STERCULIACEAE Bartling (1830)

Trees or shrubs, rarely climbing or sometimes lianas or even herbs, often stellate-haired. Leaves alternate, simple, palmate or digitately compound, alternate or spirally arranged, stipules free, rarely absent. Flowers unisexual or bisexual, 3-5 merous, actinomorphic, rarely zygomorphic. Sepals 3-5, valvate. Petals 5 or absent, contorted in bud, often persistent. Stamens many, anthers 2-locular, opening lengthwise by slits. Carpels usually 5, syncarpous or sometimes partly to completely apocarpous, ovary superior, locule as many as carpels, ovules 2-many in each locule, anatropous, styles and stigmas simple. Fruits fleshy to leathery or even woody, often separating into mericarps. Seeds sometimes arillate, with usually leafy cotyledons.

The family Sterculiaceae consists of about 65 genera and 1000 species, mainly confined to tropical and subtropical regions. In Bangladesh, the family is represented by 13 genera and 25 species.

In the present study area this family is represented by 5 genera with 6 species.

Key to genera:

- | | |
|---|------------------|
| 1. Flowers without petals, unisexual or polygamous; fruit apocarpous with separate follicles | Pterogota |
| - Flowers with petals, bisexual; fruit usually syncarpous, sometimes dividing into separate mericarps | 2 |
| 2. Flowers without staminodes | Melochia |

- Flowers with staminodes 3
- 3. Herbs **Pentapetes**
- Trees or shrubs, rarely woody climbing lianas 4
- 4. Seeds with long membranous wing; staminodes filiform **Pterospermum**
- Seeds wingless; staminodes tongue-shaped or broadly spatulate **Abroma**

Genus 68. **Abroma** Jacq., Hort. Vind.3: t. 1 (1776).

122. **Abroma augusta** (L.) L. f., Suppl.: 341 (1781). Hook. F., Fl. Brit. Ind. 1: 375 (1874); Prain, Beng. Pl. 1: 191 (1903, reprint 1963); R. L. Heinig, List Chittagong: 7 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2):24 (1953). *Theobroma augusta* L. (1776), *Abroma mollis* DC. (1824).

Vernacular names: *Ulatkambal*, *Tambol*.

English name: Devil's cotton.

Shrub or small tree. Leaves simple, alternate, cordate, upper ones smaller and narrower. Flowers solitary, dark red, sepals 5, green, petals 5, imbricate in bud. Capsules obpyramidal, 5-angled, winged, dehiscing septicidally. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 16, 20, 22$ (Fedorov, 1969). *Homesteads*.

Distribution: India, warmer parts of China, Indonesia, Pakistan, the Philippines and adjacent countries.

Status of occurrence: Common.

Uses: Valuable medicinal plant.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 302 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 865 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1491 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2388 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2583 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3197 (DUSH);.

Genus 69. **Melochia** L., Sp. Pl.: 674 (1753).

123. **Melochia corchorifolia** L., Sp. Pl.: 675 (1753). Hook. F., Fl. Brit. Ind. 1: 374 (1874); Prain, Beng. Pl. 1: 190 (1903, reprint 1963); R. L. Heinig, List Chittagong: 7 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 88 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 25 (1953). *Melochia concatenata* L. (1753), *Riedleia corchorifolia* DC. (1824).

Vernacular name: *Tiki-okra*.

English name: Chocolate-weed.

Annual herb. Leaves variable in shape, ovate, ovate-lanceolate, oblong-ovate or suborbicular. Flowers on densely crowded head-like clusters, sepals 5, cup-shaped, petals 5, opposite to the calyx segments. Capsules globose or subglobose, loculicidally 5-valved. *Flowering and fruiting*: March - June. *Chromosome number*: $2n = 46$ (Kumar and Subramaniam, 1986). *Grows in marshy lands*.

Distribution: India, China, Myanmar, Vietnam, Taiwan, Japan, Indonesia, Thailand, the Philippines, Australia and Polynesia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 216 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 573 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 941 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1152 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2829 (DUSH).

Genus 70. **Pentapetes** L., Sp. Pl.: 698 (1753).

124. **Pentapetes phoenicea** L., Sp. Pl. 2: 698 (1762); Hook. f., Fl. Brit. Ind. 1: 371 (1874); Prain, Beng. Pl. 1: 190 (1903, reprint 1963); R. L. Heinig, List Chittagong: 7 (1925). *Pentapetes angustifolia* Blume (1825).

Vernacular names: *Dupurmoni*, English names: Noon flower, Mid day flower, *Shurjamoni*. Scarlet mallow, Copper cup.

Annual herb. Leaves simple, alternate, linear-lanceolate. Flowers red, 1-3 in axillary fascicles, open around noon and close the following dawn. Fruit a capsule, subglobose, 5-valved, loculicidally dehiscent. *Flowering and fruiting*: August - January. *Chromosome number*: $2n = 76$ (Kumar and Subramaniam, 1986). *Moist locations and gardens*.

Distribution: Sri Lanka, India, Australia, the Philippines, Myanmar, Thailand, China, Japan, the USA and Cuba.

Status of occurrence: Cultivated.

Uses: It is grown as an ornamental plant and has medicinal value.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1768 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2177 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3144 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3680 (DUSH).

Genus 71. **Pterospermum** LSchreber, Gen. 2 : 461 (1791).*Key to species:*

1. Leaf blade ovoid, 24-34 × 14-29 cm, base peltate; sepals to 9 cm **Pterospermum acerifolium**
- Leaf blade lanceolate, 4.5-18 × 1.5-11 cm, base unequally segittate; sepals 1.5-6.5 cm **Pterospermum semisagittatum**

125. **Pterospermum acerifolium** (L.) Willd., Sp. Pl. 3: 729 (1800); Hook. f., Fl. Brit. Ind. 1: 368 (1874); Prain, Beng. Pl. 1: 189 (1903, reprint 1963). *Pentapetes acerifolia* L. (1753).

Vernacular names: *Muskanda*, English names: Mapple-leaved bayur, Dinnerplate *Kanak-champa*. tree.

Large evergreen tree. Leaves large, polymorphic, peltate with a cordate base, lobed or remotely toothed. Flowers large, white, solitary or in 2-3 flowered cymes, sepals 5, reflexed, deciduous, petals 5, reflexed. Fruit a capsule, 5-valved. *Flowering and fruiting*: March - April. *Chromosome number*: $2n = 38$ (Kumar and Subramaniam, 1986). *Forests*.

Distribution: India and Continental Asia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 388 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 774 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1259 (DUSH).

126. **Pterospermum semisagittatum** Buch.-Ham. ex Roxb., Fl. Ind. 3 : 160 (1832); Hook. f., Fl. Brit. Ind. 1: 368 (1874); Prain, Beng. Pl. 1: 189 (1903, reprint 1963).

Vernacular names: *Bara assar*, *Laona assar*.

Small to medium-sized evergreen tree. Leaves simple, alternate, lanceolate. Flowers large, white, usually solitary, terminal or axillary on short drooping brownish tomentose peduncles. Fruit a woody capsule, elliptic-ovoid, loculicidally 5-celled. *Flowering and fruiting*: April - October. *Deciduous forests*.

Distribution: India, Nepal, Thailand, Indonesia, China and Myanmar.

Status of occurrence: Seems to be rare.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3999 (DUSH).

Genus 72. **Pterygota** Schott & Endl., Melet.: 32 (1832).

127. **Pterygota alata** (Roxb.) R. Br. in Bennett & R. Br., Pl. Java Rar.: 234 (1844). *Sterculia alata* Roxb. (1820); Hook. f., Fl. Brit. Ind. 1: 360 (1874); Prain, Beng. Pl. 1: 187 (1903, reprint 1963). *Pterygoata roxburghii* Schott & Endl. (1832).

Vernacular name: *Buddha-narikel*.

English name: The Buddha's coconut tree.

Large deciduous tree. Leaves simple, usually clustered at the end of branches, broadly ovate with a cordate base. Flowers brownish-yellow, unisexual, calyx 5-6 lobed, densely stellate hairy outside, petals absent. Fruit a large, woody follicle, obliquely globose. *Flowering and fruiting*: December - July. *Chromosome number*: $2n = 40$ (Kumar and Subramaniam, 1986). *Highlands*.

Distribution: India, Myanmar, Bhutan and Pakistan.

Status of occurrence: Seems to be rare.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 4000 (DUSH).

Family 35. **BOMBACACEAE** Kunth (1822)

Deciduous large trees with soft and light wood. Leaves alternate, simple or palmately compound, stipules deciduous. Flowers perfect, usually large and showy, solitary or in cymose clusters. Sepals 5, free or connate at the base. Petals 5, distinct. Stamens 5 to numerous, anthers monothecal, opening by longitudinal slits. Carpels 2-5, united to form a compound ovary, style terminal, placentation axile. Fruit a loculicidal capsule, or seldom fleshy and indehiscent. Seeds embedded in pithy or hairy tissue derived from the inner wall of the fruit.

The family Bombacaceae consists of about 30 genera and about 200 species, mostly distributed in tropical countries. In Bangladesh, this family is represented by 3 genera and 4 species.

In the present study area this family is represented by a single species.

Genus 73. **Bombax** L., Sp. Pl.: 1: 511 (1753).

128. **Bombax ceiba** L., Sp. Pl.: 511 (1753). *Bombax malabaricum* DC., Prodr. 1: 479 (1824); Hook. F., Fl. Brit. Ind. 1: 349 (1874); Prain, Beng. Pl. 1: 185 (1903, reprint 1963); R. L. Heinig, List Chittagong: 7 (1925). *Salmaalina malabarica* (DC.) Schott. et Endl., Melet. Bot. 35 (1832); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 88 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 23 (1953).

Vernacular names: *Simul*, *Tula gachh*. English name: Red silk Cotton tree.

Large-sized, fast growing tree with stout conical prickles. Leaves digitately compound, long-petioled, leaflets 5-7, unequal, elliptic, apex acute to acuminate, margin entire. Flowers solitary on the defoliate branchlets, red, orange or yellow. Fruit an oblong capsule, dehiscent, forming cotton from inner walls. *Flowering and fruiting*: January - April. *Chromosome number*: $2n = 72, 92, 96$ (Kumar and Subramaniam, 1986). *Forest and village thickets, mostly cultivated*.

Distribution: India, Myanmar, Thailand, South China, Malaysia and Indonesia.

Status of occurrence: Common.

Uses: Silk cotton is extensively used for stuffing mattresses and pillows. Soft wood is used for toys, packing boxes and match boxes.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 183 (DUSH); Kapasia, Borun, 24.04.2008, R. Tabassum, 328 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 978 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1129 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2539 (DUSH).

Family 36. **MALVACEAE** A. L. de Jussieu (1789)

Herbs, shrubs or rarely small trees. Stem and leaves usually beset with stellate hairs. Leaves simple, petiolate, ovate or orbicular, entire, lobed, parted or variously dissected, stipules free, mostly caducous. Flowers solitary and axillary, or more often in compound cymose inflorescence, bisexual, 5-merous, hypogynous. Epicalyx 3-16 or more, free or connate, sometimes absent. Calyx usually campanulate with apical teeth, sepals usually 5. Corolla convolute, campanulate or rotate, petals usually 5. Stamens numerous, monadelphous, filaments equal in size or unequal, anthers unilocular, reniform, dorsifixed. Carpels usually 5 in a single whorl. Ovary superior, 3-many locular, ovules 1 to many in each locule. Fruit a schizocarp, consisting of 5 to many mericarps or a loculicidal capsule, capsules 3 to many-seeded. Seeds reniform, ovoid or globose.

The family Malvaceae consists of about 75 genera and 1000 to 1500 species, which are essentially cosmopolitan in distribution, but best developed in the tropics. In Bangladesh, this family is represented by 14 genera and 44 species.

In the present study area this family is represented by 10 genera and 18 species.

Key to genera:

1. Fruit a loculicidal capsule; ovary with 3-5(or 10) fused carpels; style branches as many as ovary locules; filament tube with

2

anthers inserted along length, apex 5-toothed or truncate, very rarely with anthers	
- Fruit a schizocarp, sometimes berrylike, carpels separating into separate mericarps; filament tube with anthers inserted along length or only at apex	6
2. Style branched; epicalyx 5-12(-20)-lobed, rarely absent; seeds reniform, rarely globose	3
- Style not branched; epicalyx 3-5-lobed; seeds obovoid or angular	5
3. Calyx 2-3 lobed, irregular, caducous, spathaceous	Abelmoschus
- Calyx 5 toothed or lobed, regular, persistent, not spathaceous	4
4. Capsule not winged	Hibiscus
- Capsule winged	Fioria
5. Trees or shrubs, not gland-dotted; epicalyx lobes 0.2-1 cm, subulate to lanceolate, caducous	Thespesia
- Herbs or shrubs, usually conspicuously gland-dotted; epicalyx lobes 2-5 cm, triangular to ovate-cordate in outline, persistent	Gossypium
6. Filament tube with anthers inserted along sides, apex 5-dentate or truncate; style branches ca. 2 × as many as carpels	7
- Filament tube with anthers inserted at apex; style branches as many as carpels	8
7. Epicalyx 5-lobed; petals 1-2.5(-3.5) cm, pink or white; mature mericarps usually with barbed spines	Urena
- Epicalyx 7-12-lobed; petals 2.5-5 cm, crimson red; mature fruit smooth, berrylike, breaking up into mericarps when dry	Malvaviscus
8. Epicalyx absent; corollas yellow, orange, or red; usually herbs or shrubs, to 3 m	9
- Epicalyx present, 3-9-lobed; corollas often not yellow	Alcea
9. Ovules 1 per locule; mericarps often indehiscent	Sida
- Ovules 2 or more per locule; mericarps eventually dehiscent	Abutilon

Genus 74. **Abelmoschus** Medik., Malv.: 46 (1787).*Key to species:*

1. Epicalyx lobes 4 or 5, oblong-lanceolate, 4-5 mm wide **Abelmoschus manihot**
- Epicalyx lobes 6-20, filiform to linear, 1-3 mm wide **Abelmoschus esculentus**

129. **Abelmoschus esculentus** (L.) Moench, Meth. Pl.: 617 (1794). Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 25 (1979); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 5 (2003); *Hibiscus esculentus* L., Sp. Pl.: 696 (1753); Hook. f., Fl. Brit. Ind. 1: 343 (1874); Prain, Beng. Pl. 1: 180 (1903, reprint 1963); *Hibiscus longifolius* Willd., Sp. Pl. 3: 827 (1800); Roxb., Fl. Ind. ed. Carey 3: 210 (1832).

Vernacular names: *Dheros*, *Bhendi*. English names: Lady's finger, Common okra, Okra.

Erect, annual herb. Leaves petiolate, lamina as long as petioles, 5-7 lobed or parted, cordate at base. Flowers solitary, axillary, epicalyx segments 7-12, free, calyx spathaceous, split to one side, corolla with 5 obovate petals, twisted, campanulate, pale yellow with a dark purple centre. Fruit a cylindrical to pyramidal capsule, with white bristle throughout at maturity, particularly along ridges. *Flowering and fruiting*: throughout the year under cultivation. *Chromosome number*: $2n = 72, 130, 132$ (Fedorov, 1969). *It grows in a wide variety of soils but prefers well-drained sandy loamy soil.*

Distribution: It is probably of African origin. Naturalized or cultivated in all tropical countries including Bangladesh.

Status of occurrence: Cultivated.

Uses: Vegetable yielding plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1812 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2126 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2250 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2514 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3096 (DUSH).

130. **Abelmoschus manihot** (L.) Medik., Malv.: 46 (1787). Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 74 (1988); *Hibiscus manihot* L., Sp. Pl.: 636 (1753); Mast. in Hook. f., Fl. Brit. Ind. 1: 343 (1874); Prain, Beng. Pl. 1: 181 (1903, reprint 1963); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 7 (2003).

Vernacular name: *Manihot*.

English: Sunset Hibiscus.

Annual herb or undershrub with hispid stem; leaves petiolate, as long as broad, 3-5 lobed or paired; flowers axillary, bell-shaped, epicalyx segments 4, calyx spathaceous, corolla of 5 large petals, pale yellow with small purple centre; capsules oblong-ovoid, 5-ridged with stiff hairs. *Flowering and fruiting*: September-December. *Chromosome number*: $2n = 60, 66$ (Fedorov, 1969). *Fallow lands of different types of soils, sensitive to waterlogging and prefers well-drained loamy soil.*

Distribution: South Asia, South East Asia and South China.

Status of occurrence: Apparantly rare.

Specimens examined: Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1557 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1721 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2357 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3082 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3831 (DUSH).

Genus 75. **Abutilon** Mill., Gard. Dict. ed. 4: 1(1754).

Key to species:

1. Stems, petioles, and pedicels with 3 hair types; pedicel shorter than petiole; petals orange with purple bases **Abutilon hirtum**
- Stems, petioles, and pedicels with 1 or 2 hair types; pedicel longer than petiole; petals uniformly yellow or orange **Abutilon indicum**

131. **Abutilon hirtum** (Lamk.) Sweet, Hort. Brit. ed. 1: 53 (1826). Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 67 (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 85 (1988); *Sida hirta* Lamk., Encycl. 1: 7 (1783); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 9 (2003). *Abutilon graveolens* (Roxb. ex Hornem.) Wight & Arn. ex Wight, Cat.: 13 (1833); Mast. in Hook. f., Fl. Brit. Ind. 1: 327 (1874).

Vernacular names: *Petari*, *Potari*.

English names: Indian mallow, Moon flower.

Woody herb with an unpleasant smell, hirsute. Leaves orbicular to broadly ovate, base cordate, crenulate-dentate. Flowers open during the day between 2-4 P.M., calyx campanulate, 5-fid, corolla orange yellow with or without a purple centre. Fruit a schizocarp, globular. *Flowering and fruiting*: October - April. *Chromosome number*: $2n = 14$ (Fedorov, 1969). *Moist places, mostly near the banks of ditches, canals and roadsides.*

Distribution: Drier tropical regions of the Old World.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 143 (DUSH); Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 264 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2377 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3083 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3725 (DUSH).

132. **Abutilon indicum** (L.) Sweet, Hort. Brit. ed. 1: 54 (1826); Mast. in Hook. f., Fl. Brit. Ind. 1: 326 (1874); Prain, Beng. Pl. 1: 176 (1903, reprint 1963); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 69 (1979); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 10 (2003); *Sida indica* L., Cent. Pl. 2: 26 (1756).

Vernacular names: *Petari, Jhampi*. English names: Indian mallow, Moon flower.

Annual or perennial herb or undershrub. Stem, leaves, petioles and pedicels are velutinous with minute stellate hairs intermingled with simple hairs. Leaves petiolate, lamina mostly ovate, sometimes suborbicular. Calyx slightly accrescent, 5-lobed. Corolla yellow. Fruit a schizocarp, truncate, blackish at maturity. *Flowering and fruiting:* July - April. *Chromosome number:* $2n = 36$ (Fedorov, 1969). *Moist places, among lowlands and scrub by the roadside ditches and canals.*

Distribution: Tropical and warm temperate countries throughout the world.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 147 (DUSH); Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 421 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1103 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2076 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3791 (DUSH).

Genus 76. **Alcea** L., Sp. Pl.: 687 (1753).

133. **Alcea rosea** L., Sp. Pl.: 687 (1753). Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 49 (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 98 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 14 (2003); *Althaea rosea* (L.) Cav., Diss. 2: 91, t. 28, f. 1 (1786); Mast. in Hook. f., Fl. Brit. Ind. 1: 319 (1874).

Vernacular name: *Hollyhock*.

English name: Hollyhock.

Annual erect herb. Leaves orbicular-cordate, entire or shallowly 3-5 lobed. Flowers axillary, solitary or and in terminal racemes, variously coloured, usually rose, pink, red or white. Schizocarp spherical, enclosed by the calyx lobes. *Flowering and fruiting:*

December - June. *Chromosome number*: $2n = 42$ (Skovsted as cited by Paul and Nayar, 1988). *Grown in the gardens*.

Distribution: This species is believed to be indigenous to the Aegean Islands and the Balkan Peninsula.

Status of occurrence: Cultivated.

Use: Ornamental garden plant.

Specimens examined: Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1100 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3169 (DUSH).

Genus 77. **Fioria** Mattei, Bol. R. Orto. Bot. Palermo 2: 71 (1916).

134. **Fioria vitifolia** (L.) Mattei, Bol. R. Orto. Bot. Palermo 2: 71 (1916). Kundu and Biswas in Bull. Bot. Surv. Ind. 16 (1-4): 125 (1974); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 5 (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 109 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 15 (2003). *Hibiscus vitifloius* L., Sp. Pl.: 696 (1753); Mast. in Hook. f., Fl. Brit. Ind. 1: 338 (1874); Prain, Beng. Pl. 1: 182 (1903, reprint 1963).

Vernacular name: *Bon-karpus*.

English name: Vine-leaved hibiscus.

Annual or biennial herb. Stem much-branched, woody at the base. Lower leaves palmatilobed, upper ones smaller, ovate, cordate. Flowers solitary, axillary, white with a chocolate centre. Capsule split longitudinally along the wings into 5 valves. *Flowering and fruiting*: March - January. *Chromosome number*: $2n = 34 + 1B$, 66 (Fedorov, 1969). *Waste places, palins, forest edges and in the scrub*.

Distribution: From Africa, Pakistan, India, Sri Lanka and extending eastwards through Myanmar up to Malesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 98 (DUSH); Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 148 (DUSH); Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 914 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1104 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2263 (DUSH).

Genus 78. **Gossypium** L., Sp. Pl.: 693 (1753).

Key to species:

1. Epicalyx lobes connate at base; calyx shallowly cup-shaped

Gossypium arboratum

- Epicalyx lobes free; calyx 5-toothed, sometimes lobed or truncate

Gossypium hirsutum

135. **Gossypium arboreum** L., Sp. Pl.: 693 (1753); Mast. in Hook. f., Fl. Brit. Ind. 1: 347 (1874); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 30 (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 112 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 17 (2003). *Gossypium indicum* Medic. (1784), *Gossypium obtusifolium* Roxb. ex G. Don (1831)

Vernacular names: *Karpas tula*, *Rui*. English names: Tree cotton, Comilla cotton.

Annual or perennial shrub, young branches, petioles and pedicels stellately and simple hairy, glabrescent later. Leaves petiolate, lamina ovate to orbicular, 3-5 lobed or partite with an extra tooth in the sinus. Flowers solitary, axillary, pale yellow, rarely red or purple. Capsule ovoid to globose, 3-5 loculed. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 26, 52$ (Fedorov, 1969). *Dry, sandy loamy soil in fields and gardens*.

Distribution: Throughout the tropics and subtropics of the world.

Status of occurrence: Cultivated.

Uses: Cotton is obtained from the plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1396 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2350 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2775 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3097 (DUSH); Kapasia, kandunia village, 03.11.2013, R. Tabassum, 3661 (DUSH).

136. **Gossypium hirsutum** L., Sp. Pl.: 975 (1753); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 31 (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 115 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 19 (2003). *Gossypium religiosum* L. (1767), *Gossypium latifolium* Murray (1776).

Vernacular name: *Karpas tula*. English names: American cotton, Upland cotton.

Annual herb or undershrub, all parts densely pubescent with simple spreading hairs, later glabrescent. Leaves more or less orbicular in outline, cordate, mostly palmately 3-lobed, lower ones sometimes 5-lobed. Flowers solitary, axillary, usually pale yellow to white, rarely with a purplish centre. Capsules ovoid or rarely globular, 3-5 loculed. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 52$ (Fedorov, 1969). *Cultivated in the plain lands, occasionally planted in the gardens*.

Distribution: Tropical north and Central America, introduced in most tropical countries of the Old World.

Status of occurrence: Cultivated.

Uses: Cotton is obtained from the plant.

Specimens examined: Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1481 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1824 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2181 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2351 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3184 (DUSH).

Genus 79. **Hibiscus** L., Sp. Pl.: 693 (1753).

Key to species:

- | | |
|--|-------------------------------|
| 1. Herbs, annual or perennial, sometimes ± scandent | 2 |
| - Shrubs or trees | Hibiscus rosa-sinensis |
| 2. Stems with reflexed or retrorsely curved prickles; epicalyx lobes with foliaceous appendage at or above middle | Hibiscus surattensis |
| - Stems usually without prickles; epicalyx lobes with or without appendages | 3 |
| 3. Stems not spiny; epicalyx lobes lanceolate, with spiny appendage near apex, connate at base; calyx and epicalyx lobes red, thick and fleshy | Hibiscus sabdariffa |
| - Stems sparsely prickly; epicalyx lobes filiform, spiny, without appendage, free; calyx and epicalyx lobes green, not thickened | Hibiscus cannabinus |

137. **Hibiscus cannabinus** L., Syst. Nat. ed. 10, 2: 1149 (1759); Roxb., Fl. Ind. 1: 339 (1874); Prain, Beng. Pl. 1: 182 (1903-reprint 1963); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 127 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 23 (2003). *Hibiscus cannabinus* L. var. *genuinus* Hochr. (1900).

Vernacular name: *Mesta pat.*

English names: Kenaf hemp, Decan hemp.

Annual herb, unbranched or scarcely branched. Stem with short prickles. Leaves with minute prickles, lamina undivided, ovate to ovate-lanceolate, base truncate to cuneate, acute to acuminate or deeply divided up to base into 3-5 linear to lanceolate segments, each segment serrate to serrulate. Flowers solitary, axillary and in terminal racemes, corolla yellow with a dark crimson centre. Capsule ovoid, split loculicidally into 5 valves, densely covered with long white bristles outside. *Flowering and fruiting:* January - December. *Chromosome number:* 2n = 36, 72 (Fedorov, 1969). *Cultivated on highlands and in plains.*

Distribution: A native of tropical and subtropical regions of Africa. Largely cultivated in most tropical countries.

Status of occurrence: Cultivated.

Uses: Fibre yielding plant.

Specimens examined: Kaliganj, Kolafat, 05.03.2010, R. Tabassum, 672 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1813 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2127 (DUSH); kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3230 (DUSH).

138. **Hibiscus rosa-sinensis** L., Sp. Pl.: 694 (1753); Hook. f., Fl. Brit. Ind. 1: 344 (1874); Prain, Beng. Pl. 1: 182 (1903-reprint 1963); R. L. Heinig, List Chittagong: 7 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 88 (1956); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 28 (2003).

Vernacular names: *Joba, Raktajaba.*

English names: China rose, Shoe flower.

Shrub. Stem profusely branched. Leaves petiolate, lamina ovate to ovate-lanceolate or elliptic, serrate to dentate. Flowers solitary, axillary, erect or subpendent, usually red, rose-yellow. Fruit not set in Bangladesh. *Flowering:* January - December. *Chromosome number:* $2n = 36, 42, 72, 92$ (Fedorov, 1969). *Home gardens and parks.*

Distribution: Probably a native of China, planted as an ornamental throughout the tropical and subtropical regions of the world.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant. It is also used as medicine.

Specimens examined: Sripur, Gorzaria, 21.06.2010, R. Tabassum, 1428 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2355 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2884 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3098 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3598 (DUSH).

139. **Hibiscus sabdariffa** L., Sp. Pl.: 695 (1753); Mast. in Hook. f., Fl. Brit. Ind. 1: 340 (1874); Prain, Beng. Pl. 1: 182 (1903, reprint 1963); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 10 (1979). R. L. Heinig, List Chittagong: 6 (1925); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 29 (2003). *Hibiscus digitatus* Cav. (1787).

Vernacular names: *Mestapat,* English names: Roselle, Siam jute, Red sorrel. *Chukair.*

Erect, annual herb. Stem green or reddish-purple. Leaves petiolate, lamina variable in shape, lower ones elliptic to suborbicular, upper ones slightly to deeply digitately 3-7

lobed or deeply 3-7 palmatisect. Flowers solitary, axillary, or in raceme or panicle, bisexual, 5-merous, yellow or purplish-yellow with a dark purple centre. Capsules ovoid, deeply embedded within calyx, densely covered with strigose hairs or bristles. *Flowering and fruiting*: November - February. *Chromosome number*: $2n = 36, 72$ (Fedorov, 1969). *Highland in the plains*.

Distribution: Probably of African origin and cultivated in tropical and subtropical countries of the world.

Status of occurrence: Cultivated.

Uses: Medicinal and fibre yielding plant, also used as cooked vegetable.

Specimens examined: Kaliganj, Memberbari, 26.03.2008, R. Tabassum, 267 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1191 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1814 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2128 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3330 (DUSH).

140. **Hibiscus surattensis** L., Sp. Pl.: 696 (1753); Mast. in Hook. f., Fl. Brit. Ind. 1: 334 (1874); Prain, Beng. Pl. 1: 182 (1903, reprint 1963).

English names: Wild sour, Shrub altheca.

Weak-stemmed annual herb, erect at first, trailing later. Stem, petioles, pedicels and veins of leaves covered with soft simple hairs and recurved prickles. Leaves aculeate, lower ones ovate to orbicular or palmately 3-lobed, upper ones 3-5 palmatipartite, shallowly cordate to truncate. Flowers solitary, axillary, calyx persistent, campanulate, deeply partite, corolla yellow with a dark purple centre. Capsules ovoid, covered with bristly shining white or yellowish hairs. *Flowering and fruiting*: September - February. *Chromosome number*: $2n = 36, 72$ (Fedorov, 1969). *Bushes in the plains*.

Distribution: Widely distributed in the tropical regions of South Africa, Asia and Australia.

Status of occurrence: Common.

Uses: Fibre yielding plant, also used as medicine.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 257 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1189 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2847 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3109 (DUSH).

Genus 80. **Malvaviscus** Fabr., Enum.: 155 (1759).

141. **Malvaviscus arboreus** Cav., Diss. 3: 131, t. 48, fig. 1 (1787); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 90 (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 179 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 40 (2003). *Hibiscus malvaviscus* L. (1753).

Vernacular name: *Lanka joba*.

English name: Tree malvaviscus.

Small tree. Leaves ovate-orbicular, rounded to shallowly cordate, serrate to crenate. Flower and fruit not seen. *Gardens*.

Distribution: Peru and northern Brazil to south tropical Africa and the West Indies, cultivated throughout the world.

Status of occurrence: Cultivated.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1249 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1489 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3103 (DUSH); Gazipur Sadar, Etahata Borboika, 30.10.2013, R. Tabassum, 3427 (DUSH).

Genus 81. **Sida** L., Sp. Pl.: 683 (1753).

Key to species:

- | | |
|--|------------------------|
| 1. Calyx adaxially with long simple hairs at least along veins;
mericarps smooth, thin-walled, not dehiscent | Sida cordata |
| - Calyx adaxially stellate pubescent or glabrous, sometimes
with ciliate margins; mericarps smooth, vertically grooved or
reticulately wrinkled, sometimes dehiscent | 2 |
| 2. Mericarp awns conspicuous, 3-8 mm | Sida cordifolia |
| - Mericarp awns absent or less than 2 mm | Sida acuta |

142. **Sida acuta** Burm. f., Fl. Ind.: 147 (1768); Roxb., Fl. Ind. ed. Carey 3: 171 (1832); Prain, Beng. Pl. 1: 176 (1903-reprint 1963); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 202 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 42 (2003). *Sida lanceolata* Retz., Obs. 4: 28 (1786); *Sida carpinifolia sensu* Mast. in Hook. f., Fl. Brit. Ind. 1: 323 (1874-reprint 1973) *non* L. (1781)

Vernacular names: *Kureta*, *Pilabarela-shikar*. English name: Broom weed, Spinyhead sida.

Annual woody herb or undershrub. Leaves lanceolate to linear, elliptic-lanceolate or ovate-oblong. Flowers axillary, solitary or in clusters of 2-3, light yellow. Fruit a schizocarp, mericarps 6-9. *Flowering and fruiting*: September - May. *Chromosome number*: $2n = 14, 18, 28$ (Fedorov, 1969). *Waste places, roadsides, daps, fields and fallow lands*.

Distribution: Throughout the tropics of the world.

Status of occurrence: Common.

Uses: Medicinal and fibre yielding plant.

Specimens examined: Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 709 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1391 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1714 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3151 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3547 (DUSH).

143. ***Sida cordata*** (Burm. f.) Borss., Blumea 14: 182 (1966); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 77, f. 21, E (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 206, f. 50 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 43 (2003). *Sida veronicifolia* Lamk., Encycl. 1: 5 (1753); Prain, Beng. Pl. 1: 175 (1903, reprint 1963); *Melochia cordata* Burm. f., Fl. Ind. 143 (1768); *Sida humilis* Cav., Diss.: 5, t. 132, f. 2 (1788); *Sida humilis* Cav. var. *veronicifolia* (Lamk.) Mast. in Hook. f., Fl. Brit. Ind. 1: 322 (1874).

Vernacular names: *Junka, Suntal*.

English name: Cordate-leaved sida.

Annual herb, profusely branched throughout, lower branches trailing. Leaves petiolate, lamina ovate-orbicular, cordate, serrate or serrate to dentate. Flowers axillary, solitary or in short loose racemes, yellow. Schizocarp rhomboidal to globose, enclosed within the persistent calyx. *Flowering and fruiting*: throughout the year but mostly during August - December. *Chromosome number*: $2n = 14, 16, 18, 28, 34, 56$ (Fedorov, 1969). *Waste palces, roadsides, fallow lands and banks of water bodies*.

Distribution: Tropical and subtropical regions of the World.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 408 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 06.12.2009, R. Tabassum, 478 (DUSH), Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1267 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3343 (DUSH).

144. **Sida cordifolia** L., Sp. Pl.: 684 (1753); Roxb., Fl. Ind. ed. Carey 3: 177 (1832); Mast. in Hook. f., Fl. Brit. Ind. 1: 324 (1874); Prain, Beng. Pl. 1: 175 (1903, reprint 1963); Abedin in Nasir and Ali (Eds.), Fl. W. Pak. 130: 80, f. 19, C-E (1979); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 207 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 45 (2003). *Sida herbacea* Cav. ((1785), *Sida holosericea* Willd. ex Spreng. (1826).

Vernacular name: *Borela*.

English name: Flannel weed.

Annual or perennial, hirsute, erect herb or undershrub, with an unpleasant smell. Leaves petiolate, lamina ovate-oblong or orbicular, base shallowly cordate. Flowers axillary, solitary or in the axillary short racemes with terminal clusters of 2-5 or more flowers, occasionally in the axillary clusters, pale yellow to whitish. Schizocarp globose with prominent apical beak. *Flowering and fruiting*: throughout the year, but mostly during September - December. *Chromosome number*: $2n = 28$ (Fedorov, 1969). *Scrub jungles in high lands*.

Distribution: Widely distributed throughout the tropical and subtropical regions of the world.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 548 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 639 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1385 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2335 (DUSH).

Genus 82. **Thespesia** Sol. ex Corr., Ann. Mus. Hist.

Nat. Paris 9: 290, 291, t. 8, fig. 1 (1807).

145. **Thespesia lampas** (Cav.) Dalz. & Gibs., Bombay Fl.: 19 (1861); Mast. in Hook. f., Fl. Brit. Ind. 1: 345 (1874); Prain, Beng. Pl. 1: 184 (1903, reprint 1963); R. L. Heinig, List Chittagong: 7 (1925); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 49 (2003). *Hibiscus lampas* Cav., Diss. 3: 154, t. 56, f. 2 (1787); *Hibiscus callosus* Blume (1825).

Vernacular names: *Bon karpus*, *Kahi*,
Baghachong (Garó).

English name: Callose hibiscus.

Erect, slightly branched shrub. Leaves petiolate, lamina palmately 3-5 lobed, lobes ovate, acute to acuminate, cordate. Flowers solitary, axillary or in terminal clusters of 2-5, yellow with dark purple centre. Capsules globose to ovoid, black. *Flowering and*

fruiting: August - December. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Deciduous Sal forests among the secondary vegetations*.

Distribution: Tropical East Africa, throughout India, and Myanmar extending southwards and eastwards up to Sri Lanka and Indonesia.

Status of occurrence: Seems to be rare.

Uses: Fibre yielding plant. Fruits are used in skin disease by Garo.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 04.02.2011, R. Tabassum, 1724 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1950 (DUSH).

Genus 83. *Urena* L., Sp. Pl.: 692 (1753).

146. *Urena lobata* L., Sp. Pl.: 692 (1753); Mast. in Hook. f., Fl. Brit. Ind. 1: 329 (1874-reprint 1973); Prain, Beng. Pl. 1: 178 (1903-reprint 1963); Kanjilal *et al.*, Fl. Assam 1: 141 (1934-reprint 1982); Paul and Nayar in Nayar *et al.* (Eds.), Fasc. Fl. Ind. 19: 228 (1988); Khan and Hossain in Rahman (Ed.), Fl. Bangl. 54: 52 (2003). *Urena palmata* Roxb. (1832).

Vernacular names: *Congo-pat*, *Bon-* English names: Congo jute, Aramian fibre. *okra*.

Highly variable annual or perennial undershrub. Leaves petiolate, lamina angular to shallowly lobed or deeply irregularly incised of which the bases narrower and dilated towards the apex, sometimes upper ones unlobed, ovate, shallowly cordate or truncate at the base. Flowers 5-merous, campanulate, axillary, solitary or in clusters of 2-3, rose-pink. Schizocarp subglobular. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 28, 56$ (Fedorov, 1969). *Roadsides and waste places, fallow lands, edges forests, near rivers and ponds*.

Distribution: Throughout the tropics.

Status of occurrence: Common.

Uses: Medicinal and fibre yielding plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 3 (DUSH); Kaligonj, Nagoric, 05.03.2002, R. Tabassum, 181 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 550 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 640 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2017 (DUSH).

Family 37. **LECYTHIDACEAE** Poiteau (1825)

Trees or shrubs. Leaves simple, alternate, petiolate, entire or toothed, usually crowded at the tip of the twigs. Inflorescence in racemes or spikes. Flowers usually large and showy, bisexual, epigynous or seldom half-epigynous. Calyx of 4-6 sepals, valvate or imbricate. Corolla of 4-6 petals, imbricate. Stamens numerous, united at base into several whorls, filaments often connate below forming a staminal ring which may be curved over the ovary as a hood. Carpels 2-6, united to form inferior or subinferior ovary, styles terminal, simple, stigmas capitate or lobed, ovules 1 or more in each locule. Fruit a capsule, indehiscent. Seeds exalbuminous.

The family Lecythidaceae consists of about 20 genera and 400 species, mostly confined to tropical regions. In Bangladesh, this family is represented by 3 genera and 6 species.

In the present study area this family is represented by 3 genera with 3 species.

Key to genera:

- | | |
|---|---------------------|
| 1. Stamens partly imperfect | Careya |
| - Stamens all perfect | 2 |
| 2. Racemes simple; calyx 24-lobed; stamens fused at the base into a short thick tube; fruit not globose, 1-seeded | Barringtonia |
| - Racemes branched; calyx 6-lobed; stamens fused into an androphore; fruit globose, many-seeded | Couroupita |

Genus 84. **Barringtonia** J. R. & G. Forst., Char. Gen.: 75 (1776).

147. **Barringtonia acutangula** (L.) Gaertn., Fruct. 2: 97, t. 101 (1791). Roxb., Fl. Ind. 2: 635 (1832); Clarke in Hook. f., Fl. Brit. Ind. 2: 508 (1879); Prain, Beng. Pl. 1: 358 (1903, reprint 1963); R. L. Heinig, List Chittagong: 29 (1925). *Eugenia acutangula* L., Sp. Pl. 471 (1753), *Stravadium acutangulum* (L.) Miers., Trans. Linn. Soc. London II. Bot. 1: 80 (1875), *Michelia acutangula* (L.) O. Kuntze, Rev. Gen. Pl. 1: 240 (1891); Ara and Hassan in Ara & Khan (Eds.), Fl. Bangladesh 60: 3 (2009).

Vernacular names: *Hijal, Kumia*.

English name: Indian oak.

Small to medium-sized evergreen tree. Leaves usually crowded at the end of branchlets, elliptic, obovate-oblong. Flowers fragrant, on slender drooping raceme, red, bisexual. Fruit a fibrous berry, crowned by persistent calyx, oblong, 4-angled throughout. *Flowering and fruiting*: May - September. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Marsh lands and besides waterbodies*.

Distribution: Throughout India from Himalaya to Sri Lanka, Malay and North West Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Chamundi, 29.04.2005, R. Tabassum, 233 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 505 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 629 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2176 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2698 (DUSH).

Genus 85. **Careya** Roxb., Hort. Beng.: 52 (1814).

148. **Careya arborea** Roxb., Pl. Corom. 3: 14 (1811); Roxb., Fl. Ind. 2: 638 (1832); Clarke in Hook. f., Fl. Brit. Ind. 2: 511 (1879); Prain, Beng. Pl. 1: 357 (1903, reprint 1963); R. L. Heinig, List Chittagong: 29 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7(1 & 2): 48 (1953); Ara and Hassan in Ara & Khan (Eds.), Fl. Bangladesh 60: 6 (2009).

Vernacular names: *Bidi-pata*, *Kumvi*, English names: Slow-match tree, Wild *Gadila pata* (*Santal*). guava.

Small to medium-sized tree. Leaves simple, alternate, crowded at the end of branches, lamina obovate. Flowers very large, arranged on a few-flowered spike, white or pink, flowers appear when the tree leafless. Fruit a fleshy berry, globose or ovoid, crowned by persistent calyx. *Flowering and fruiting:* May - July. *Chromosome number:* $2n = 26$ (Fedorov, 1969). *Forests.*

Distribution: Throughout India from.

Status of occurrence: Common.

Uses: Once upon a time the leaves were used for wrapping *bidi*. Fruits are used in diarrhoea by *Santal*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 188 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 543 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 935 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1998 (DUSH).

Genus 86. **Couroupita** Aubl., Hist. Pl. Gui. 708, t. 282 (1775).

149. **Couroupita guianensis** Aubl., Pl. Gui. 2: 708, t. 282 (1775). Kanjilal *et. al.*, Fl. Assam 2: 290 (1938); Qaiser in Nasir & Ali (Eds.), Fl. Pak. 160: 3 (1984); Ara and Hassan in Ara & Khan (Eds.), Fl. Bangladesh 60: 9 (2009).

Vernacular name: *Naglingom*.

English name: Cannonball tree.

Tall, evergreen, fast growing tree. Leaves oblong, obovate, elliptic or broadly lanceolate. Racemes branched, from the lower part of the trunk and larger branches. Flowers rather large, extremely showy with combination of white, yellow, pink, deep pink and crimson, fragrant. Fruits large, globular berries, hard outside, pulpy inside, brownish. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Grows in plainlands*.

Distribution: Native of Guiana and planted elsewhere.

Status of occurrence: Common.

Uses: Ornamental garden plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1389 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2668 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3253 (DUSH).

Family 38. **FLACOURTIACEAE** A. P. de Candolle (1824)

Trees or shrubs, sometimes spinous. Leaves simple, alternate, entire or toothed, stipules small, often deciduous. Flowers hermaphrodite or bisexual or sometimes unisexual, axillary or on lateral appendages of various shapes. Sepals 4 to many, free, usually hypogynous, sometimes connate in bud. Petals 3-8, rarely more. Stamens 4 to numerous, opposite the petals, filaments free or rarely united into a tube, anthers 2-locular, opening lengthwise by slits. Ovary superior, half-inferior or rarely completely inferior, 1-locular with 1 or more parietal placentas, ovules 2 or more on each placenta, styles and stigmas as many as placentas. Fruit a berry, drupe or loculicidal capsule, sometimes dry and indehiscent, occasionally winged, horned or prickly. Seeds often arillate, usually with copious endosperm.

The family Flacourtiaceae consists of 88 genera with about 1300 species, predominantly in the tropics, rapidly decreasing in number towards the sub-tropics. In Bangladesh, this family is represented by 5 genera and 12 species.

In the present study area this family is represented by a single genus with 2 species.

Genus 87. **Flacourtia** Commers. ex L'Her., Strip. Nov. 3: 59, t. 30/B (1786).

Key to species:

1. Styles completely united to form a distinct column with stigmas slightly spreading at apex

Flacourtia jangomas

- Styles free, or joined only at base

Flacourtia indica

150. **Flacourtia indica** (Burm. f.) Merr., Interp. Rumph. Herb. Amb.: 377 (1917). *Gmelina indica* Burm. f., Fl. Ind. 132, t. 39, f. 5 (1768). *Flacourtia ramontchi* L.'Hérit., Stirp. t. 30-31 (1785); Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 193 (1872); Prain, Beng. Pl. 1: 154 (1903, reprint 1963). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2):16 (1953). *Flacourtia obcordata* Roxb. (1832).

Vernacular names: *Beuchi, Boichi, Katai, Tambat*. English name: Madagascar plum.

Much-branched, deciduous, thorny shrub. Leaves usually fascicled, red or pink when young, variable in size and shape, ovate or elliptic, apex obtuse or rounded. Inflorescence of axillary racemes or flowers solitary. Flowers unisexual or occasionally bisexual, greenish. Berries globular, reddish to reddish-black or purple when ripe. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 18, 22$ (Kumar and Subramaniam, 1986). *Scrub jungles and grassy roadsides*.

Distribution: Asia, tropical and subtropical Africa, Madagascar, Mascarene; also cultivated elsewhere.

Status of occurrence: Common.

Uses: Ornamental and fruit yielding plant.

Specimens examined: Gazipur Sadar, Simultoli, 30.01.2001, R. Tabassum, 65 (DUSH); Kapasia, Borun, 24.04.2008, R. Tabassum, 332 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 624 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2058 (DUSH).

151. **Flacourtia jangomas** (Lour.) Raeusch., Nom. Bot. ed. 3: 290 (1797); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 87 (1956). *Stigmarota jangomas* Lour., Fl. Cochinch. 2: 634 (1790). *Flacourtia cataphracta* Roxb. ex Willd., Sp. Pl. 4: 830 (1806); Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 193 (1872); Prain, Beng. Pl. 1: 154 (1903, reprint 1963); R. L. Heinig, List. Chittagong : 4 (1925).

Vernacular names: *Lukluki, Paniala*.

English name: Indian plum.

Small evergreen tree. Leaves ovate or ovate-lanceolate, acuminate, crenate, serrate. Inflorescence axillary, sub-corymbose racemes. Flowers unisexual, greenish. Berries globose, dark purple when ripe. *Flowering and fruiting*: March - October. *Forests, forest edges, also found in shrubberies*.

Distribution: Throughout tropical countries, especially East Africa, India and South East Asia.

Status of occurrence: Common.

Uses: Fruit yielding plant, also used as medicinally.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 321 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1651 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1954 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2500 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2892 (DUSH).

Family 39. **BIXACEAE** Link (1831)

Trees, shrubs, or sometimes rhizomatous herbs or sunshbrusb. Leaves simple, alternate, entire, palmately-veined to palmately-lobed, sometimes palmately-compound, stipules well-developed. Flowers in panicles or racemes, hermaphrodite, regular or slightly irregular, hypogynous. Sepals 5, free, imbricate, deciduous. Petals 5, free, imbricate or convolute. Stamens many, often bundled, anthers dithecal, bursting by pores or short slits. Carpels 2-5, united to form a compound oary, style solitary, ovules numerous. Fruit a loculicidal capsule. Seeds many.

The family Bixaceae consists of 3 genera and about 22 species, widespread in tropical regions of the world. In Bangladesh, this family is represented by a single species.

Genus 88. **Bixa** L., Sp. Pl.: 512 (1753).

152. **Bixa orellana** L., Sp. Pl.: 512 (1753); Hook. f., Fl. Brit. Ind. 1: 190 (1872); Prain, Beng. Pl. 1: 153 (1903, reprint 1963). *Bixa katagensis* Delpierre (1970).

Vernacular names: *Belati haldi*, *Latkan*.

English name: Lipstick tree.

Large shrub or small tree. Leaves long-petioled, lamina cordate-ovate or triangular-ovate, palmately 5-veined. Inflorescence terminal panicles. Flowers mauve or white. Capsules subglobose or ovoid, slightly laterally compressed, loculicidally 2-valved, usually densely purple-brown spiny. *Flowering and fruiting:* October - June. *Chromosome number:* $2n = 14, 16$ (Fedorov, 1969). *Gardens.*

Distribution: A native of tropical America, widely naturalized pantropically but not indigenous.

Status of occurrence: Cultivated.

Uses: Ornamental and dye yielding plant.

Specimens examined: Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1480 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1884 (DUSH); Sripur, Bagher

Bazar, 18.02.2013, R. Tabassum, 2489 (DUSH); Kaliakoir, Simultoli Ataboho, 13.09.2013, R. Tabassum, 3259 (DUSH).

Family 40. **PASSIFLORACEAE** A. L. de Jussieu *ex* Kunth (1817)

Herbs or shrubs, usually climbing by tendrils. Leaves alternate, simple or compound, entire or lobed. Flowers regular, uni- or bisexual, axillary, solitary, racemose or cymose-paniculate, bracteoles ternate, minute and scattered or foliaceous, forming an epicalyx, rarely absent. Sepals 4-5 (-6), imbricate, free or partially connate, often persistent. Petals (3-) 4-5 (-6), imbricate, free or connate. Corona in one or more series of thread-like filaments or scales or annular, sometimes absent. Stamens (4) 5 to numerous, anthers 2-celled, basifixed or versatile, introrsely dehiscent. Ovary superior, 1-locular, ovules many, styles 1 or 3, stigmas capitate or subglobose, sometimes much divided. Fruit a berry or loculicidally 3-5 valved capsule. Seeds numerous, anatropous.

The family Passifloraceae consists of about 15 genera and 650 species, widespread in tropical and warm temperate regions of the world. In Bangladesh, this family is represented by 2 genera and 6 species.

In the present study area this family is represented by a single species.

Genus 89. **Passiflora** L., Sp. Pl. :955 (1753).

153. **Passiflora foetida** L., Sp. Pl.: 959 (1753); Hook. f., Fl. Brit. Ind. 2: 599 (1879); Prain, Beng. Pl. 1: 373 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 95 (1956). Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2):16 (1953). *Passiflora hirsuta* Lodd. (1818), *Passiflora polyaden* Vell. (1835), *Dysomia foetida* M. Roem. (1846).

Vernacular names: *Jhumka-lata*, English names: Passion-flower, Wild *Gorakphal*. passion fruit, Love-in-a-mist.

Climbing or trailing herb with foetid smell. Leaves suborbicular-ovate, usually 3-5 lobed to half way down, sometimes entire. Flowers pink, lilac or purplish, sometimes white. Berries ovoid, yellowish to red. *Flowering and fruiting*: May - December. *Chromosome number*: $2n = 18, 20$ (Kumar and Subramaniam, 1986). *Well-drained soil under full sun or light shade*.

Distribution: Probably originated from South America, now cultivated and often naturalized in most tropical countries.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 339 (DUSH); Gazipur Sadar, Nayanpur, 04.04.2011, R. Tabassum, 1849 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3123 (DUSH).

Family 41. **CARICACEAE** Dumortier (1829)

Dioecious or monoecious, soft-wooded trees or shrubs with trunks rarely branched, sap milky. Leaves in a terminal crown, palmately lobed, long petioled, exstipulate. Flowers unisexual, rarely bisexual. Staminate flowers sessile on male plant in clusters on long pendent inflorescence, petals 5, united into a slender tube, stamens 10 in 2 series, inserted on corolla, pistil rudimentary, rarely functional. Pistillate flowers sessile on female plants, solitary or in few-flowered corymbs in the leaf axils, corolla gamopetalous, ovary large, globose, syncarpous with numerous ovules on parietal placentation, style short, stigmas 5, sepals 5, small in both the sexes. Fruit a pulpy berry. Seeds with fleshy endosperm and straight embryo

The family Caricaceae is represented by 4 genera and 55 species, distributed tropical Africa and America. In Bangladesh, the family is represented by a single species.

Genus 90. **Carica** L., Sp. Pl.: 1036 (1753).

154. **Carica papaya** L., Sp. Pl.: 1036 (1753); Hook. f., Fl. Brit. Ind. 2: 599 (1879); Prain, Beng. Pl. 1: 374 (1903, reprint 1963); Khan and Huq in Khan (Ed.), Fl. Bangladesh 1: 7 (1972).

Vernacular name: *Pepe*.

English name: Papaya.

Tree with milky latex. Stem greyish, marked with scars of leaf bases. Leaves large, palmately 7-9 lobed, clustered at the top of the trunk, petioles very long, leaf segments oblong, acute, deeply toothed. Generally male and female flowers on different plants but sometimes on the same plant. Fruit a pulpy berry, green, turning to yellow or orange-yellow when ripe. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Kitchen gardens and fields*.

Distribution: Mexico and Costa Rica.

Status of occurrence: Cultivated.

Uses: Fruits are edible both green and ripe.

Specimens examined: Kapasia, Boariod, 14.12.2009, R. Tabassum, 537 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 707 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1715 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3017 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3389 (DUSH).

Family 42. **CUCURBITACEAE** A. L. de Jussieu (1789)

Herbs or weakly woody shrubs, scandent or prostrate, annual or perennial. Leaves alternate, exstipulate, simple, palminerved, palmately or pedately lobed or compound, rarely pinnately divided or pinnately compound, lamina variable in the same species or even in the same plant. Tendrils solitary, lateral, spirally coiled. Inflorescence axillary, racemose, umbellate or solitary, clustered or paniculate. Flowers unisexual, very rarely bisexual. Sepals 5, tubular or campanulate. Petals 5, white, yellow, greenish or rarely blue or red. Stamens usually 5 or 3, sometimes 4, 2 or even 1, filaments separate or variously united into a column, anthers erect. Ovary inferior or nearly completely so, mostly composed of 3 carpels, 3-locular, rarely 1-2 or spuriously 4-6 locular, style terminal, stigmas as many as the carpels. Fruit a pepo, dehiscent or indehiscent, berry or capsule. Seeds usually many.

The family Cucurbitaceae consists of about 110 genera and 700 species, widespread in tropical and subtropical regions. In Bangladesh, this family is represented by 20 genera and 38 species.

In the present study area this family is represented by 12 genera and 18 species.

Key to genera:

- | | |
|---|----------------------|
| 1. Corolla segments fimbriate at margin | Trichosanthes |
| - Corolla segments not fimbriate | 2 |
| 2. Flowers less than 10 mm in diam | 3 |
| - Flowers more than 10 mm in diam | 4 |
| 3. Male flowers in sessile or subsessile fascicles; ovary hispid | Mukia |
| - Male flowers in pedunculate cymes, racemes, or umbels, or solitary; ovary glabrous or with fine hairs | Zehneria |
| 4. Corolla campanulate | 5 |
| - Corolla rotate or rarely campanulate but then segments almost free | 6 |
| 5. Leaf blade hirsute, eglandular at base; flowers yellow; fruit large | Cucurbita |
| - Leaf blade glabrous, with a few glands at base; flowers white; fruit ca. 5 cm | Coccinia |
| 6. Calyx tube in male flower elongate, tubular or funnellform | 7 |

- Calyx rotate	8
7. Flowers white; petiole apex 2-glandular	Lagenaria
- Flowers yellow; leaf blade eglandular at base	Gymnopetalum
8. Flowers with leaflike bract on pedicel; fruit usually muriculate, often 3-valved when mature	Momordica
- Flowers without bract on pedicel	9
9. Male inflorescence racemose or subumbellate	Luffa
- Flowers solitary or fascicled	10
10. Calyx segments subleaflike, dentate, reflexed	Benincasa
- Calyx segments subulate, entire, not reflexed	11
11. Tendrils 2- or 3-fid; connective not produced	Citrullus
- Tendrils simple; connective produced beyond anther cells	Cucumis

Genus 91. **Benincasa** Savi, Bibl. Ital. 9: 158 (1818).

155. **Benincasa hispida** (Thunb.) Cogn. in DC., Monog. Phan. 3: 513 (1881). *Cucurbita hispida* Thunb. (1784), *Benincasa cerifera* Savi (1818); Hook. f., Fl. Brit. Ind. 2: 616 (1879); Prain, Beng. Pl. 1: 379 (1903, reprint 1963); R. L. Heinig, List Chittagong : 31 (1925).

Vernacular name: *Chalkumra*.

English names: Wax gourd, White gourd.

Robust, annual, hispid, climbing herb. Tendrils slender. Leaves reniform-rounded, deeply cordate, 5-7 lobed. Plants monoecious. Flowers solitary, corolla yellow. Fruits baccate, fleshy, hairy when young, waxy bloom when mature. *Flowering and fruiting*: May - November. *Chromosome number*: $2n = 24$ (McKay, 1930). *Grows well in moderately dry areas with soil containing high organic matter*.

Distribution: Tropical and subtropical countries of the world. Laos, Vietnam, Cambodia and India are the centres of greatest diversity of this species.

Status of occurrence: Cultivated, sometimes escape.

Uses: The young and mature fruits are eaten as vegetable.

Specimens examined: Kapasia, 30.01.2001, R. Tabassum, 71 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1206 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1791 (DUSH); Kaliakior, Boroichuti, 13.09.2013, R. Tabassum, 2916 (DUSH); Sripur, Boherar Chala, 21.12. 2013, R. Tabassum, 3377 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3780 (DUSH).

Genus 92. **Citrullus** Schrad. in Ecklon *et* Zeyher,
Enum. Pl. Afr. Austr. 2: 279 (1836).

Key to species:

1. Perennials with scabrid stem. Tendrils not robust, simple, rarely 2-fid. Fruit up to 7 cm in diameter **Citrullus colocynthis**
- Annuals with softly villous stem. Tendrils robust, 2-3-fid. Fruit up to 30 cm in diameter **Citrullus lanatus**

156. **Citrullus colocynthis** (L.) Schrad., Linnaea 12: 414 (1838). *Cucumis colocynthis* L. (1753), *Colocynthis vulgaris* Schrad. (1950).

Vernacular names: *Indrayan*, English names: Bitter apple, Wild watermelon. *Makal*.

Perennial, climbing herb. Tendrils slender, short, sparsely hirsute, bifid or simple. Leaves ovate, cordate, very scabrid, palmately 5-lobed or deeply 3-lobed, lobes obtuse or acute, sinuate-pinnatifid, terminal lobe large, margin crisped. Plants monoecious. Flowers solitary, pale yellow. Fruits globose, slightly depressed, variegated green and white, yellowish-white when ripe, pulp spongy and very bitter. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 22$ (Shimotsuma, 1961). *Sandy soil*.

Distribution: Afghanistan, Africa, India, Iran, Iraq, Myanmar and Sri Lanka.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2483 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2570 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3242 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3504 (DUSH).

157. **Citrullus lanatus** (Thunb.) Matsumura & Nakai, Cat. Sem. Spor. Hort. Bot. Univ. Imp. Tokyo 1920: 30 (1920). *Cucurbita citrullus* L. (1753), *Momordica lanata* Thunb. (1800), *Citrullus vulgaris* Schrad. (1936); Hook. f., Fl. Brit. Ind. 2: 621 (1879); Prain, Beng. Pl. 1: 381 (1903, reprint 1963); R. L. Heinig, List Chittagong : 31 (1925).

Vernacular name: *Tormuj*.

English name: Watermelon.

Spreading, annual, climbing herb. Tendrils puberulous, bifid. Leaves ovate, cordate, triangular, more or less scabrid, deeply trifid, lobes pinnatifid, obovate, oblong,

lanceolate or linear, terminal lobe acute, others round. Plants monoecious. Flowers solitary, pale yellow. Fruits large, subglobose or ellipsoid, smooth, green or variegated, pulp sweet, red or yellow. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 22$ (Matsubayashi, 1954). *Sunny and dry climate in well-drained, fertile loamy sandy soils*.

Distribution: Widespread in all tropical and subtropical countries of the world. It originated from the drier parts of tropical and subtropical Africa.

Status of occurrence: Cultivated.

Uses: The fruit is widely used as a sweet cooling repast during summer.

Specimens examined: Kaligonj, Merua, 07.06.2002, R. Tabassum, 101 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1538 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2193 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2665 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3157 (DUSH).

Genus 93. **Coccinia** Wight *et* Arn., Prod. Fl. Ind. 1: 347 (1834).

158. **Coccinia grandis** (L.) Voigt, Hort. Suburb. Calc.: 59 (1845). *Bryonia grandis* L., Mant. Pl. 1: 126 (1767). *Cephalandra indica* Naud. Ann. Sci. Nat. Ser. 5, 5: 16 (1859); Clarke in Hook. f., Fl. Brit. Ind. 2: 621 (1879); Prain, Beng. Pl. 1: 381 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925). *Coccinia cordifolia* Cogn. in DC., Monog. Phan. 3: 529 (1881); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 95 (1956).

Vernacular name: *Telakucha*.

English names: Ivy gourd, Scarlet fruited gourd.

Perennial, climbing herb. Tendrils filiform, simple. Leaves ovate, entire to palmately lobed. Plants dioecious. Flowers solitary, white. Fruits cylindrical, red when ripe, juicy. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 24$ (Chakravorti, 1948). *Grasslands, roadsides, hedges and forests*.

Distribution: Native of Central Africa and distributed in Africa, China, India, Japan, Malaysia and Pakistan.

Status of occurrence: Common.

Uses: Tender shoots and fruits are used as vegetables. It has also medicinal value.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 33 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 858 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1154 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1455 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1916 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2095 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3044 (DUSH); Kaligonj, Banglahaola,

02.12.2013, R. Tabassum, 3777 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3840 (DUSH).

Genus 94. **Cucumis** L., Sp. Pl. ed. 1: 1011 (1753).

Key to species:

1. Fruit smooth; ovary hairy **Cucumis melo**
- Fruit and ovary muriculate or verrucose or sparsely tuberculate, not hairy **Cucumis sativus**

159. **Cucumis melo** L., Sp. Pl. ed. 1: 1011 (1753); Hook. f., Fl. Brit. Ind. 2: 620 (1879); Prain, Beng. Pl. 1: 381 (1903, reprint 1963); R. L. Heinig, List Chittagong : 31 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 95 (1956). *Cucumis acidus* Jacq. (1771), *Cucumis utilissimus* Roxb. (1832).

Vernacular names: *Bangi, Futi*. English names: Melon, Musk melon, Cantaloupe.

Robust, annual, climbing herb. Tendrils filiform, puberulous. Leaves suborbicular, 5-angled or moderately 3-7 lobed. Flowers solitary, yellow. Fruits very variable in size, shape, colour, odour and taste, young fruits not tuberculate. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 24$ (Whitaker, 1930). *Well-drained fertile loamy soils in dry weather and plenty of sunshine*.

Distribution: Cultivated all over the tropical and temperate regions of the world.

Status of occurrence: Cultivated.

Uses: Fruit yielding plant. It has also medicinal value.

Specimens examined: Kaligonj, Tumulia, 23.08.2010, R. Tabassum, 1680 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1702 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2108 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2194 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3058 (DUSH).

160. **Cucumis sativus** L., Sp. Pl. ed. 1: 1012 (1753); Hook. f., Fl. Brit. Ind. 2: 620 (1879); Prain, Beng. Pl. 1: 381 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925). *Cucumis hardwickii* Royle (1835), *Cucumis sativus* L. var. *sikkimensis* Hook. f. (1876), *Cucumis setosus* Cogn. (1881).

Vernacular names: *Khira, Shasha*. English name: Garden cucumber.

Annual, climbing herb. Tendrils slender, simple. Leaves broadly cordate-ovate, villose-hispid, palmately 3-5 lobed, lobes triangular, dentate. Plants monoecious.

Flowers fasciculate or solitary, yellow-white. Fruits oblong, obscurely trigonous or cylindric, yellowish-green, young fruits tuberculate. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 14$ (Whitaker, 1930). *Fertile and well-drained soil*.

Distribution: Cultivated in all tropical and sub-tropical regions of the world. It is believed that Cucumber originated from the foothills of the Himalayas, and in India it was brought under cultivation 3000 years ago.

Status of occurrence: Cultivated.

Uses: The immature fruits are used as a salad vegetable, large and mature one is used in curries.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 498 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1926 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2074 (DUSH); Kaligon, Gudara Ghat, 02.01.2013, R. Tabassum, 2235 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3052 (DUSH).

Genus 95. **Cucurbita** L., Sp. Pl. ed. 1: 1010 (1753).

161. **Cucurbita maxima** Duch. ex Lamk., Encycl. 2: 151 (1786); Hook. f., Fl. Brit. Ind. 2: 622 (1879); Prain, Beng. Pl. 1: 382 (1903, reprint 1963); R. L. Heinig, List Chittagong : 31 (1925).

Vernacular names: *Mistikumra*, English names: Pumpkin, Winter squash. *Mithakumra*.

Annual, climbing herb. Tendrils 2-6 fid, slightly setose. Leaves more or less reniform with 5-rounded shallow lobes. Plants monoecious. Flowers solitary, yellow. Fruits large, variable in shape, size and colour, pulp more or less fibrous. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 40$ (Whitaker, 1930). *Open, sunny areas*.

Distribution: Cultivated in all tropical and temperate regions of the world. The pumpkin originated from Bolivia, Southern Peru and Northern Argentina.

Status of occurrence: Cultivated.

Uses: The leaves, flowers and fruits are used as vegetables.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 655 (DUSH); Sripur, Borkul, 16.05.2010, R. Tabassum, 1183 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1919 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2304 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3750 (DUSH).

Genus 96. **Gymnopetalum** Arn. in Hook., Journ. Bot. 3: 278 (1841).

162. **Gymnopetalum cochinchinense** (Lour.) Kurz, J. As. Soc. Beng. 40: 57 (1871); Hook. f., Fl. Brit. Ind. 2: 611 (1879); Prain, Beng. Pl. 1: 377 (1903, reprint 1963). *Bryonia cochinchinensis* Lour. (1790), *Momordica tubiflora* Roxb. (1832).

Vernacular name: *Takjahangir* (Garó).

Perennial, climbing herb. Tendrils filiform, usually simple. Leaves ovate, undivided or lobed up to the middle. Plants monoecious. Flowers solitary or in raceme of 3-8 flowers, white. Fruits oblong-ovate, acute at both ends, 10-ribbed, orange. *Flowering and fruiting*: July - December. *Chromosome number*: $2n = 22$ (Islam and Saha, 1951). *Scrubs, forests and thickets*.

Distribution: India, Indo-China, Malaysia, Myanmar, the Philippines and Sri Lanka.

Status of occurrence: Common.

Uses: Leaves are used in dysentery by Garó.

Specimens examined: Sripur, Garabon, 21.09.2012, R. Tabassum, 2165 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2237 (DUSH); Gazipur Sadar, Shalikechura, 19.08.2013, R. Tabassum, 2581 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3250 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3679 (DUSH).

Genus 97. **Lagenaria** Seringe, Mem. Soc. Phys. Geneve. 3(1): 25, t. 2 (1825).

163. **Lagenaria siceraria** (Molina) Standl., Publ. Field Mus. Nat. Hist. Chicago, B. Ser. 3: 435 (1930). *Cucurbita siceraria* Molina (1782), *Lagenaria vulgaris* Seringe (1825); Hook. f., Fl. Brit. Ind. 2: 613 (1879); Prain, Beng. Pl. 1: 378 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925).

Vernacular names: *Lau*, *Kodu*, English names: Bottle gourd, Club gourd, *Panilau*. White-flowered gourd.

Large, annual, climbing herb. Tendrils filiform, puberulous, bifid. Leaves ovate-cordate or reniform-ovate, undivided or 3-5 lobed. Plants monoecious. Flowers solitary, yellow or white. Fruits variously shaped, greenish-yellow. *Flowering and fruiting*: almost throughout the year but mostly from February - May. *Chromosome number*: $2n = 22$ (Whitaker, 1930). *Sunny places and well-drained soil*.

Distribution: Bottle gourd is probably originated in tropical Africa, now is distributed in Africa, China, India, Japan, Malaysia, Myanmar, Nepal and Pakistan.

Status of occurrence: Cultivated.

Uses: Young and tender fruits and leaves are used as cooked vegetable.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 121 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 522 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 656 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1704 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3785 (DUSH).

Genus 98. **Luffa** Miller, Gard. Dict. ed. 4: 806 (1754).

Key to species:

1. Stamens often 5, anther cells all 1-celled; fruit smooth, ecostate **Luffa cylindrica**
- Stamens 3, anthers: one 1-celled, others 2-celled; fruit with 8-10 acute ribs **Luffa acutangula**

164. **Luffa acutangula** (L.) Roxb., Fl. Ind. 3: 713 (1832). C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 615 (1879); Prain, Beng. Pl. 1: 379 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925). *Cucumis acutangula* L. Sp. Pl. 1: 1011 (1753). *Cucurbita umbellata* Klein ex Willd. (1805).

Vernacular names: *Jhinga*, English names: Angled loofah, Ridged gourd, *Ghosalata*. Sinkwa towelsponge.

Annual, climbing herb. Tendrils robust, often 3-fid, puberulous. Leaves suborbicular, often palmately 5-7 lobed. Plants monoecious. Flowers pale yellow. Fruits clavate-oblong, acutely 10-angled, apex obtuse or slightly acute. *Flowering and fruiting:* April - October. *Chromosome number:* $2n = 26$ (McKay, 1930). *Rich soils with high organic matter content and good drainage.*

Distribution: China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Russia, South Africa, Sri Lanka and tropical America.

Status of occurrence: Cultivated.

Uses: Young and tender fruits are used as cooked vegetable, also used as medicine.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 132 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 657 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1543 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2305 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2391 (DUSH).

165. **Luffa cylindrica** (L.) Roem., Fam. Syn. 2: 63 (1846); J. Sinclair in Bull. Bot. Soc. 9 (2): 95 (1956). *Momordica cylindrica* L., Sp. Pl. ed. 1: 1009 (1753). *Luffa aegyptiaca* Mill. Dict. ed. 4: 500 (1785); Hook. f., Fl. Brit. Ind. 2: 614 (1879); Prain, Beng. Pl. 1: 379 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925).

Vernacular names: *Dhundul*, *Titpola*. English names: Smooth loofah, Sponge gourd.

Extensive climbing herb. Tendrils rather robust, usually 2-4 fid. Leaves palmately 5-7 lobed. Plants monoecious. Flowers yellow. Fruits cylindric, straight or slightly curved, strongly fibrous inside when mature. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 26$ (Whitaker, 1933). *Grows in soil rich with high organic matter content*.

Distribution: It is tropical in origin and cultivated and wild in tropical countries.

Status of occurrence: Cultivated.

Uses: Immature fruits are used as cooked vegetable.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1307 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1706 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2111 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3182 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3829 (DUSH).

Genus 99. **Momordica** L., Sp. Pl. ed. 1: 1009 (1753).

Key to species:

1. Plants monoecious; bract on middle of male pedicel; leaf blade 5-7-partite; stamens 3; fruit fusiform or cylindric, verrucose **Momordica charantia**
- Plants dioecious; bract at apex of male pedicel **Momordica cochinchinensis**

Key to variety: (**Momordica charantia** L.)

1. Leaves prominently nerved; fruits large, not tapering at both ends **var. charantia**
- Leaves faintly nerved; fruits small, tapering at both ends **var. muricata**

166. **Momordica charantia** L. var. **charantia** C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 616 (1879); R. L. Heinig, List Chittagong: 31 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 95 (1956). *Momordica indica* L. (1754), *Momordica elegans* Salisb. (1796).

Vernacular name: *Karala*.

English name: Bitter melon.

Annual, climbing herb. Tendrils puberulous, simple. Leaves reniform or suborbicular, 5-7 lobed. Plants monoecious. Flowers solitary, yellow. Fruits large, not tapering at both ends, muricate-tuberculate, oblong, 3-valved. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 22$ (McKay, 1930). *Sandy loam soil rich in organic matter*.

Distribution: The plant is both wild and is cultivated in tropical countries but it is abundant in the Indo-Malayan regions. It was domesticated first possibly in Eastern India and Southern China.

Status of occurrence: Cultivated.

Uses: The fruit is used as cooked vegetable.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1709 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2113 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3054 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3059 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3830 (DUSH).

167. **Momordica charantia** L. var. **muricata** (Willd.) Chakravarty, Fasc. Fl. Ind. 2: 92 (1982). *Momordica muricata* Willd., Sp. Pl. 4: 605 (1805); Prain, Beng. Pl. 1: 380 (1903, reprint 1963).

Vernacular name: *Uchchhe*.

Annual climbing herb. Leaves suborbicular, lobed, lobes ovate-oblong. Plants monoecious. Flowers solitary, yellow. Fruits rather small, tapering at both ends, muricate-tuberculate, trivalved. *Flowering and fruiting*: July - October. *Grows in loamy sandy soil rich in organic matter*.

Distribution: Tropical countries of the World.

Status of occurrence: Cultivated.

Uses: Fruit is used as vegetable, also used as medicine.

Specimens examined: Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 994 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1235 (DUSH); Kaligonj, Pubail, 23.08.2010, R. Tabassum, 1578 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1801 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2114 (DUSH).

168. **Momordica cochinchinensis** (Lour.) Spreng., Syst. Veg. 3: 14 (1826); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 618 (1879); Prain, Beng. Pl. 1: 380 (1903, reprint 1963); R. L. Heinig, List Chittagong: 31 (1925); Kanjilal *et al.*, Fl. Assam 2: 330 (1938); J. Sinclair in Bull. Bot. Soc. 9 (2): 95 (1956). *Muricia cochinchinensis* Lour., Fl. Cochinch. 2: 596 (1790).

Vernacular names: *Golkak, Kakrol*. English names: Sweet gourd, Giant spine gourd, Spiny bitter cucumber.

Perennial climbing herb. Tendrils robust, simple. Leaves broadly suborbicular, divided to the middle or almost to the base into 3 (rarely 5) lobes, lobes ovate or oblong, lanceolate, divergent. Plants dioecious. Flowers whitish-yellow. Fruits ovoid, densely aculeate, orange when ripe. *Flowering and fruiting*: July - November. *Chromosome number*: $2n = 28$ (Sen and Dutta, 1975). *Forests and thickets, and fertile, well-drained sandy loam soils*.

Distribution: India, Myanmar, Malaysia, the Philippines, China, Formosa, Indo-Malaya and Australia.

Status of occurrence: Common.

Uses: Immature fruit is used as cooked vegetable, also used as medicine.

Specimens examined: Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1624 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1707 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2112 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3053 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3382 (DUSH).

Genus 100. **Mukia** Arn., Mad. Journ. Lit. Sc. 12: 50 (1840).

169. **Mukia maderaspatana** (L.) M. Roem., Syn. Monogr. 2: 47 (1846). *Cucumis maderaspatana* L. (1753). *Bryonia scabrella* L. f., Suppl. 424 (1781). *Mukia scabrella* (L. f.) Arn. in Hook. J. Bot. 3: 276 (1841).

Vernacular names: *Agmukhi, Bilari*.

Perennial climbing herb. Tendrils slender, elongate. Leaves ovate or ovate-cordate, entire, angulate or 3-5 lobed. Plants monoecious. Flowers yellow. Fruits globose, brownish-yellow, juicy, echinate. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Grows in grasslands, river margins and forests*.

Distribution: Africa, India, Myanmar, Malaysia, the Philippines, New Zealand and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 52 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1044 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1230 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3315 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3778 (DUSH).

Genus 101. **Trichosanthes** L., Sp. Pl. ed. 1: 1008 (1753).

Key to species:

1. Male flowers solitary. Leaves neither lobed nor broadly ovate or oblong **Trichosanthes dioica**
- Male flowers racemose. Leaves lobed, broadly ovate and orbicular-reniform **Trichosanthes anguina**

170. **Trichosanthes anguina** L., Sp. Pl. ed. 1: 1008 (1753); Hook. f., Fl. Brit. Ind. 2: 610 (1879); Prain, Beng. Pl. 1: 377 (1903, reprint 1963); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 95 (1956). *Cucumis anguina* L. (1759).

Vernacular name: *Chichinga*.

English name: Snake gourd.

Annual, climbing herb. Tendrils 2-3 fid. Leaves cordate, suborbicular or orbicular-reniform, more or less deeply 5- (rarely 3-7) lobed. Plants monoecious. Flowers white. Fruits very long, cylindric, smooth, twisted with 6-8 white stripes along with the length. *Flowering and fruiting:* April - August. *Chromosome number:* $2n = 22$ (McKay, 1931). *Open, sunny places.*

Distribution: Africa, India, Malaysia, Nepal and Pakistan.

Status of occurrence: Cultivated.

Uses: Immature fruit is used as cooked vegetable.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1802 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2115 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2485 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3036 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3805 (DUSH).

171. **Trichosanthes dioica** Roxb., Fl. Ind. 3: 701 (1831); Hook. f., Fl. Brit. Ind. 2: 609 (1879); Prain, Beng. Pl. 1: 377 (1903, reprint 1963); R. L. Heinig, List Chittagong : 31 (1925).

Vernacular name: *Patal*.

English name: Pointed gourd.

Annual, climbing herb. Tendrils slender, short, 2-4 fid. Leaves cordate, ovate-oblong, sinuate-dentate. Plants dioecious. Flowers white. Fruits oblong, smooth. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 22$ (Patel, 1952). *Sunny places in well-drained soils rich in organic matter*.

Distribution: Cultivated in the tropics.

Status of occurrence: Cultivated.

Uses: The fruits are used as vegetable.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1803 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2020 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2117 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2244 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3048 (DUSH).

Genus 102. **Zehneria** Endl., Prodr. Fl. Norf. Isl.: 69 (1833).

172. **Zehneria japonica** (Thunb.) H. Y. Liu, Bull. Nat. Mus. Nat. (Taiwan) 1: 40 (1989). *Bryonia japonica* Thunb. (1784), *Melothria indica* Lour. (1790); Hook. f., Fl. Brit. Ind. 2: 626 (1879); Prain, Beng. Pl. 1: 384 (1903, reprint 1963); R. L. Heinig, List Chittagong: 32 (1925), *Bryonia leucocarpa* Blume (1826), *Melothria leucocarpa* (Blume) Cogn. (1881), *Zehneria indica* (Lour.) Keraudren (1975).

Annual, scandent, climbing herb. Tendrils short, simple. Leaves ovate-deltoid or cordiform, undivided or tri-lobed. Plants monoecious. Flowers solitary or fasciculate, rarely in short racemes, white. Fruits ovoid, both ends obtuse, finely reticulate, brownish. *Flowering and fruiting*: May - November. *Grows in forests*.

Distribution: China, India, Japan, Korea, Indonesia, Malaysia, the Philippines and Vietnam.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2484 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2545 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3046 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3690 (DUSH).

Family 43. **CAPPARACEAE** A. L. de Jussieu (1789)

Herbs, shrubs or trees, erect, scandent or climbing. Leaves alternate, subopposite or digitately 1-several foliolate, entire, stipules 1-2. Inflorescence axillary or terminal racemose, corymbose or paniculate, sometimes solitary or fascicled. Flowers mostly bisexual, regular or often somewhat irregular, hypogynous or rarely slightly perigynous. Sepals usually 4, sometimes 6 or reduced to 3, biseriate, free or connate below. Petals 4 (rarely absent, 2 or 8), mostly distinct and alternate with the sepals, often with a basal claw. Stamens 4-many, filaments free, anthers tetrasporangiate and ditheous, basifixed, opening by longitudinal slits. Ovary superior, unilocular, ovules few to many, on 2-6 parietal placentae, style short or absent, stigma simple or capitate. Fruit a berry or capsule, stipitate, 1 to many-seeded. Seeds orbicular to reniform.

The family Capparaceae consists of about 45 genera and 800 species, most of them distributed in tropical and subtropical regions. In Bangladesh, this family is represented by 4 genera and 13 species.

In the present study area this family is represented by 3 genera and 4 species.

Key to genera:

- | | |
|---|-----------------|
| 1. Fruits indehiscent, globose, long or short, cylindrical; seeds usually surrounded by at least a little pulp; generally shrubs or trees | 2 |
| - Fruit capsular, dehiscent, without any pulp; generally herbs | Cleome |
| 2. Sepals distant, inserted on the edges of a distinct disk; a deciduous tree; leaves trifoliolate | Crataeva |
| - Sepals biseriate or imbricate; mostly shrubs with persistent leaves | Capparis |

Genus 103. **Capparis** L., Sp. Pl. 1: 503 (1753).

173. **Capparis zeylanica** L., Sp. Pl. ed. 2: 720 (1762); Hook. f., Fl. Brit. Ind. 1: 174 (1872); Prain, Beng. Pl. 1: 150 (1903, reprint 1963); Jafri in Nasir & Ali (Eds.), Fl. W. Pak. 34: 10 (1973); *Capparis horrida* L. f., Suppl.: 264 (1781); R. L. Heinig, List. Chittagong: 3 (1925); Kanjilal *et al.*, Fl. Assam 1: 77 (1934); Mia *et al.* in Khanam & Ara (Eds.), Fl. Bangl. 57: 6 (2007).

English names: Ceylon caper, Indian caper.

Shrub, climbing or straggling, densely armed with recurved stipular thorns. Leaves ovate, elliptic, lanceolate or obovate. Flowers arranged in supra axillary rows, white

with reddish spot within fading to purple. Fruit a berry, ellipsoidal or globose. *Flowering and fruiting*: February - October. *Chromosome number*: $2n = 40$ (Kumar and Subramaniam, 1986). *Grows in village thickets*.

Distribution: India, Nepal, Sri Lanka, Myanmar and China to Malesia.

Status of occurrence: Common.

Uses: Ripe fruits are eaten. Root bark is used as medicinally.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 258 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 959 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1198 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1467 (DUSH).

Genus 105. **Cleome** L., Sp. Pl. 2: 671 (1753).

Key to species:

1. Flowers whitish or yellowish

Cleome viscosa

- Flowers violet

Cleome rutidosperma

174. **Cleome rutidosperma** DC., Prodr. 1: 241 (1824). Jacobs, Fl. Males. 1(6): 104 (1960); Khan *et al.*, J. Asiat. Soc. (Sc.) 4(1&2): 75-77 (1978); *Cleome ciliata* Schum. & Thonn., Dansk. Vid. Selsk. Afh. 4: 67 (1828); Mia *et al.* in Khanam & Ara (Eds.), Fl. Bangl. 57: 10 (2007).

Vernacular name: *Begune hurhure*.

English name: Fringed spider flower.

Annual herb. Leaflets 3, middle leaflet larger, the lateral ones smaller, alternate, exstipulate, ovate-rhomboid to elliptic. Racemes with reduced leaves, bracteate, bracts leaf-like. Flowers bisexual, hypogynous, violet. Fruit a siliqua, linear, cylindrical; seeds many, deep reddish-brown. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 20$ (Kumar and Subramaniam, 1986). *Waste places where it grows as waysides weed*.

Distribution: Native to Southeast Asia or west tropical Africa, distributed in Central America, the Philippines and Indonesia, also introduced to Myanmar and Malesia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 955 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1454 (DUSH); Kaligonj, Tumulia, 23.08.2010, R. Tabassum, 1677 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2097 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2753 (DUSH).

175. **Cleome viscosa** L., Sp. Pl. 2: 672 (1753); Hook. f., Fl. Brit. Ind. 1: 170 (1872); Prain, Beng. Pl. 1: 149 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 3 (1925); Kanjilal *et al.*, Fl. Assam 1: 72 (1934); Jafri in Nasir & Ali (Eds.), Fl. W. Pak. 34: 23 (1973); *Polanisia viscosa* DC., Prod. 1: 242 (1824); Mia *et al.* in Khanam & Ara (Eds.), Fl. Bangl. 57: 11 (2007).

Vernacular name: *Holde hthurhure*.

English name: Asian spider flower.

Erect annual herb. Leaves 3 or 5 foliolate, obovate or ovate. Racemes lax, few-flowered, corymbose. Flowers yellow. Capsule cylindric, striate. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Waste places, roadsides and other open and shady places*.

Distribution: Native to tropical and warmer parts of India and distributed throughout the world.

Status of occurrence: Very common.

Specimens examined: Kaliganj, Kolafata, 29.04.2005, R. Tabassum, 229 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1166 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2906 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3029 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3616 (DUSH).

Genus 106. **Crataeva** L., Sp. Pl. 1: 444 (1753)

176. **Crataeva magna** (Lour) DC., Prodr. 1: 243 (1824). *Capparis magna* Lour., Fl. Cochinch. 1: 331 (1790). *Crataeva nurvala* Buch.-Ham. in Trans. Linn. Soc. 15: 121 (1827); *Capparis lophosperma* Jurz, J. Bot. 12: 195 (1874); *Crataeva religiosa* var. *nurvala* (Buch.-Ham.) Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 172 (1872); Prain, Beng. Pl. 1: 151 (1903); R. L. Heinig, List Chittagong: 4 (1925); Mia *et al.* in Khanam & Ara (Eds.), Fl. Bangl. 57: 13 (2007).

Vernacular names: *Barun, Bonnya*.

English: Three-leaved caper.

Tree. Leaves tri-foliate, leaflets 2-3 times as long as wide, central leaflet elliptic-lanceolate or lanceolate or oblanceolate, laterals ones ovate-elliptic or rhomboidal. Corymbs terminal, many-flowered. Flowers creamy, polygamous, faintly fragrant. Berries oblong-ellipsoid or oblong-ovate, pericarp woody, yellowish-grey, with a powdery crest. *Flowering and fruiting*: January - September. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Grows along riversides, in evergreen and mixed deciduous forests*.

Distribution: India, Myanmar, China and Sri Lanka, extending to Malaysia and Indonesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 385 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 523 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 772 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1255 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2274 (DUSH).

Family 44. **BRASSICACEAE** Burnett (1835)

Herbs, sometimes subshrubs or shrubs. Leaves simple, entire or variously pinnately dissected, rarely trifoliolate or pinnately, bipinnately or palmately compound, exstipulate. Inflorescence bracteate or ebracteate racemes, corymbs or panicles, sometimes flowers solitary. Flowers hypogynous, mostly actinomorphic. Sepals 4, in 2 decussate pairs, free or rarely united. Petals 4, alternate with sepals, arranged in the form of a cross (cruciform, hence the earlier family name Cruciferae). Stamens 6, in 2 whorls, tetradynamous, sometimes stamens 2 or 4, very rarely 8-24, filaments slender, winged or appendaged, anthers dithecal, dehiscing by longitudinal slits. Ovary superior, mostly 2-locular, placentation parietal, rarely apical, ovules 1-many per locule, anatropous or campylotropous, style 1, distinct, obsolete or absent, stigma capitate or conical. Fruit a capsule, siliqua or silicula, sometimes schizocarpic, nutlet-like, lomentaceous, or samaroid. Seeds without endosperm, uniseriately or biseriately arranged in each locule.

The family Brassicaceae consists of about 350 genera and 3,000 species, found mainly in temperate and warm temperate parts of both the Northern and Southern Hemispheres. In Bangladesh, this family is represented by 12 genera and 24 species.

In the present study area this family is represented by 3 genera and 8 species.

Key to genera:

- | | |
|--|-----------------|
| 1. Plants glabrous | 2 |
| - Plants pilose or hairy | Raphanus |
| 2. Fruits less than 3 times as long as broad | Rorippa |
| - Fruits 4 times or more as long as broad | Brassica |

Genus 107. **Brassica** L., Sp. Pl. 2: 666 (1753).

Key to species:

- | | |
|--|----------|
| 1. Upper leaves amplexicaul, rounded or deeply cordate at the base | 2 |
|--|----------|

- Upper leaves stalked or narrowed at the base 4
- 2. All leaves glabrous; middle and upper leaves never clasping more than 1/3 of the stem; filaments of all stamens erect **Brassica oleracea**
- Lowest leaves always bristly or ciliate hairy; middle and upper leaves at least clasping 1/2 of the stem; filaments of outer stamens curved at the base 3
- 3. All leaves glaucous; buds slightly overtopping the open flowers; petals pale yellow or buff **Brassica napus**
- At least the lowest leaves green; open flowers overtopping the buds; petals bright yellow **Brassica rapa**
- 4. Pedicel usually equal or shorter than the sepals; beak of siliquae 3-4(-5) mm long **Brassica nigra**
- Pedicel longer than the sepals; beak of siliquae (5-) 10-16 mm long **Brassica juncea**

177. **Brassica juncea** (L.) Czern., Consp. Fl. Chark.: 8 (1859); Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 157 (1872); Prain, Beng. Pl. 1: 145 (1903-reprint 1963), *Sinapis juncea* L. (1753), *Sinapis timoriana* DC. (1821), *Brassica integrifolia* (West) Rupr. (1860).

Vernacular name: *Raisarisha*. English names: Indian mustard, Chinese mustard.

Annual herb. Basal and lowermost cauline leaves ovate, oblong or lanceolate, lyrate-pinnatifid or pinnatisect, upper cauline leaves oblong to oblanceolate or linear. Racemes 20-40 flowered, lax. Flowers yellow. Fruit a silique, linear, 2-locular, terete or slightly 4-angled, valves with a prominent midvein, narrowed into a seedless beak, yellowish. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 36$ (Kamala, 1978). *Cultivated, also naturalized in waste places, fields and roadsides*.

Distribution: From India to northern Africa, Central Asia, Europe and North America, cultivated extensively and introduced in most parts of the world.

Status of occurrence: Cultivated.

Uses: Edible oil yielding plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1783 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2098 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2439 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3296 (DUSH).

178. **Brassica napus** L., Sp. Pl. 2: 666 (1753). *Brassica campestris* DC. *non* L. (1753), *Brassica campestris* L. subsp. *napus* (L.) Hook. f. & T. Anders. (1872).

Vernacular names: *Magi*, *Sarisha*.

English names: Colza, Cole seed, Rape.

Annual herb. Lower leaves ovate, oblong or lanceolate, pinnately lobed or lyrate, sometimes undivided, petiolate, upper leaves sessile, lanceolate, clasping the stem. Racemes 15-40 flowered, laxly corymbose. Flowers pale yellow. Fruit a siliqua, 2-locular, linear, terete or slightly 4-angled, sessile, divaricate or ascending, valves with a prominent midvein, beak seedless or 1-seeded. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 38$ (Kamala, 1978). *Cultivated, also naturalized elsewhere*.

Distribution: Native to Europe. Widespread throughout the temperate regions of the world. It is widely cultivated and introduced in many countries.

Status of occurrence: Cultivated.

Uses: This species is one of the most important sources of edible seed vegetable oil.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 415 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1367 (DUSH); Kaligonj, Pubail, 23.08.2010, R. Tabassum, 1573 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1784 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2099 (DUSH).

179. **Brassica nigra** (L.) Koch in Röhl. Deutsch. Fl. ed. 3, 4: 713 (1833). *Sinapsis nigra* L. (1753), *Sinapsis erysimoides* Roxb. (1832), *Sisymbrium nigrum* (L.) Prantl (1884).

Vernacular name: *Kalosisarishah*.

English names: Black mustard, True mustard.

Annual herb. Lower leaves lyrate, deeply pinnatifid or pinnatisect, upper leaves much smaller, narrowly elliptic to lanceolate. Racemes 40-60 flowered. Flowers bright yellow. Fruit a siliqua, linear or narrowly oblong, 4-angled, sessile, valves with a prominent midvein. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 16$ (Kamala, 1978). *Sandy-loamy and clay-loamy soil*.

Distribution: Afghanistan, China, Europe, India, Nepal, North Africa, Pakistan, South West Asia and Vietnam, cultivated and naturalized elsewhere.

Status of occurrence: Cultivated.

Uses: Edible oil yielding plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 431 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1483

(DUSH); Kaligonj, Gudara Ghat, 02.01.2013, R. Tabassum, 2246 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2451 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3003 (DUSH).

Brassica oleracea L.

1. Racemes congested, fleshy and abbreviated, covered with leaves **Brassica oleracea** var. **botrytis**
- Racemes elongated, neither fleshy nor covered with leaves **Brassica oleracea** var. **capitata**

180. **Brassica oleracea** L. var. **botrytis** L., Sp. Pl. 2: 667 (1753). *Brassica cauliflora* Gars. (1764), *Brassica botrytis* (L.) Mill. (1768).

Vernacular name: *Phulkapi*.

English name: Cauliflower.

Annual or biennial herb. Leaves in a rosette of 15-25, large, oblong to ovate, more or less erect, surrounding the compact terminal flower head (curd). The curd consists of a dome of proliferated floral meristems, white to cream or yellow, on many short and fleshy peduncles. Racemes congested, fleshy and abbreviated, more or less covered with leaves, often globose. Flowers bisexual, tetramerous, succulent, yellow, sometimes white. Fruit a silique, 10-30 seeded, valves with a prominent midvein. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 18$ (Hussein and Abobakr, 1975). *Well-drained fertile soil with having good moisture retaining capacity and high organic matter content*.

Distribution: Native to West Europe, cultivated worldwide.

Status of occurrence: Cultivated.

Uses: Cauliflower is a very important cooked vegetable.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 341 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1290 (DUSH); Kaligonj, Taltia, 23.08.2010, R. Tabassum, 1606 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1786 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3342 (DUSH).

181. **Brassica oleracea** L. var. **capitata** L., Sp. Pl. 2: 667 (1753).

Vernacular name: *Bandhakapi*.

English names: Cabbage, Headed cabbage.

Annual or biennial (in cold areas) herb. Stem unbranched, erect with a dense head of leaves before flowering. Basal (and outer) leaves in a rosette of 7-15, sessile, upper leaves in a compact flattened globose head, leaves grey to blue-green in the rosette and light-green to creamy-white inside the head, sometimes red-purple. Raceme elongated, neither fleshy, nor covered with leaves. Flowers bisexual, tetramerous, yellow. Fruit a

siliqua. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 18$ (Hussein and Abobakr, 1975). *Well-drained fertile soil with high organic matter content*.

Distribution: Throughout the world, mainly in the temperate regions.

Status of occurrence: Cultivated.

Uses: Cabbage is mostly used as cooked or fried vegetable, also eaten fresh in mixed salads.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 658 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1355 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1787 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2102 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2252 (DUSH).

182. **Brassica rapa** L., Sp. Pl.: 666 (1753). *Brassica campastris* L. var. *rapa* (L.) Hartm. (1854), *Brassica capastris* L. subsp. *rapa* (L.) Hook. f. & Anders. (1875).

Vernacular name: *Shalgam*.

English names: Turnip, Neep crop.

Annual or biennial herb with tuberous taproot. Leaves variable, lower leaves bright green, lyrate-pinnatifid, usually 5-jugate, middle and upper leaves oblong-lanceolate, at least half clasping the stem with broadened cordate base. Inflorescence a loosely corymbiform raceme, 30-40 flowered, with open flowers overlapping the buds. Flowers dull to golden-yellow. Fruit a siliqua, linear, beaked, yellowish. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Cultivated in highlands*.

Distribution: Widely cultivated throughout the world. The centers of origin of Turnip are probably the Mediterranean regions and Central Asia.

Status of occurrence: Cultivated.

Uses: It is used as cooked vegetable.

Specimens examined: Kaliganj, Kalehat, 23.08.2010, R. Tabassum, 1563 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1788 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2007 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2102 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3023 (DUSH).

Genus 108. **Raphanus** L., Sp. Pl. 2: 669 (1753).

183. **Raphanus sativus** L., Sp. Pl. 2: 669 (1753); Hook. f., Fl. Brit. Ind. 1: 166 (1872); Prain, Beng. Pl. 1: 148 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 3 (1925). *Raphanus caudatus* L. (1767).

Vernacular name: *Mula*.

English names: Radish, Cultivated radish.

Annual herb. Roots usually fleshy, white, pink, red or black, linear, fusiform, oblong or globose. Stem very short, simple or branched. Basal leaves petiolate, leaf blade oblong, obovate, oblanceolate or spatulate, lyrate or pinnatisect, sometimes undivided, uppermost cauline leaves subsessile, often undivided, dentate. Racemes 10-30 (-50)-flowered. Flowers white, purple or pink. Fruit a silique, fusiform or lanceolate, sometimes ovoid or cylindric. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 18$ (Sikka and Sharma, 1979). *Sandy-loamy soil*.

Distribution: Native to the Mediterranean region, cultivated worldwide.

Status of occurrence: Cultivated.

Uses: Leaves and roots are used as cooked vegetable.

Specimens examined: Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3281 (DUSH); Kapasia, Voboner chala, 03.11.2013, R. Tabassum, 3473 (DUSH); Gazipur Sadar, Etahata, 30.10.2013, R. Tabassum, 3464 (DUSH).

Genus 109. **Rorippa** Scop., Fl. Carniol.: 520 (1760).

184. **Rorippa indica** (L.) Hiern, Cat. Afr. Pl. Welw. 1: 26 (1896). *Sisymbrium indicum* L. (1767), *Nasturtium indicum* (L.) DC. (1821); Hook. f., Fl. Brit. Ind. 1: 134 (1872); Prain, Beng. Pl. 1: 144 (1903, reprint 1963); R. L. Heinig, List. Chittagong: 3 (1925).

Vernacular name: *Bansarisha*. English names: Indian field cress, Variable leaf yellow cress.

Annual or biennial herb. Leaves obovate, oblong or lanceolate. Racemes terminal, elongated, many-flowered. Flowers bright yellow. Fruit a silique, linear, slender but often slightly curved upward. *Flowering and fruiting*: April - January. *Chromosome number*: $2n = 24$ (Taiyan *et al.*, 2001). *Roadsides, field margins, gardens and river banks*.

Distribution: China, India, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Thailand and Vietnam.

Status of occurrence: Very common.

Uses: This species is used medicinally.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 42 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 535 (DUSH); Kaligonj, Khoraid, 05.03.2010, R. Tabassum, 721 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1342 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1549 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2390 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3006 (DUSH); Kaliakoir, Fulbari, 1.10.2013, R. Tabassum, 3359 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3861 (DUSH).

Family 45. **MORINGACEAE** Dumortier (1829)

Deciduous to semi-deciduous trees, generally with gummy bark. Leaves stalked, alternate, 2-3 times pinnately compound, leaflets opposite. Flowers in axillary or mixed panicles, flowers bisexual, usually zygomorphic, perigynous. Sepals 5. Petals 5, unequal. Functional stamens 5, antipetalous and alternating with 5 staminodes. Carpels 3 (2-4), syncarpous, ovary unilocular, seated on a short gynophore, placentation parietal. Fruit an elongated woody capsule.

The family Moringaceae consists of a single genus *Moringa* and 10 species occurring in Africa and Madagascar and across the Middle East to India. In Bangladesh, this family is represented by 2 species.

In the present study area this family is represented by a single species.

Genus 110. **Moringa** [Burm.] Adans., Fam. Pl. 2: 318 (1763).

185. **Moringa oleifera** Lamk., Encycl. 1 (2): 398 (1785); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 90 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2):16 (1953). *Moringa pterygosperma* Gaertn. (1791); Hook. f., Fl. Brit. Ind. 2: 45 (1876); Prain, Beng. Pl. 1: 252 (1903, reprint 1963), *Moringa zeylanica* Pers. (1830).

Vernacular names: *Sajna*, *Sojne*. English names: Drumstick tree, Horseradish tree.

Small deciduous tree. Leaves compound, tripinnate, exstipulate, alternate, pinnae 4-7 pairs, opposite, elliptic, oblong, ovate or obovate. Inflorescence a spreading many-flowered panicle. Flowers white, pentamerous. Capsules cylindrical, 9-ribbed, pendulous. *Flowering and fruiting:* October - March, some plant types of the species produce flowers and fruits throughout the year. *Chromosome number:* $2n = 14, 28$ (Kumar and Subramaniam, 1986). *It is drought tolerant. Fertile, well-drained soils are suitable for this plant.*

Distribution: Indigenous to Indian subcontinent and naturalized in many African countries.

Status of occurrence: Cultivated.

Uses: Young fruits and leaves are cooked as vegetables.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 487 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2155 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2344 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2532 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3353 (DUSH).

Family 46. **SAPOTACEAE** A. L. de Jussieu (1789)

Trees, shrubs or rarely climbers, usually with milky latex. Leaves simple, alternate, petiolate, lamina entire and coriaceous. Flowers solitary or in cymose clusters usually in the leaf axils, actinomorphic and bisexual. Calyx usually of 4-6 (-12) sepals, arranged in 2-whorls, persistent. Corolla with petals as many as or twice as many as the sepals, gamopetalous. Stamens epipetalous, as many as the petals and opposite to them, anthers oblong-lanceolate. Carpels 2-14, united, with 1-14 loculed superior ovary, ovule 1 to more in each locule, style 1, stigmas minute. Fruit a berry. Seeds 1 or few, ellipsoidal.

The family Sapotaceae consists of about 70 genera and 800 species, distributed mainly in tropical and subtropical regions of the World. In Bangladesh, the family is represented by 5 genera and 6 species.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

- | | |
|---------------------|------------------|
| 1. Sepals usually 4 | Madhuca |
| - Sepals usually 6 | Manilkara |

Genus 111. **Madhuca** J. F. Gmel., Syst.: 799 (1791).

186. **Madhuca longifolia** (Koenig) MacBride, Contr. Gray Herb. Harv. Uni. Ns. 53: 17 (1918). *Bassia longifolia* Koenig (1771). *Madhuca indica* Gmel., Syst. 799 (1791), *Madhuca latifolia* (Roxb.) MacBride (1918).

Vernacular names: *Mohua*, *Moa*.

English names: Butter tree, The Mahua tree.

Medium-sized to large deciduous tree with milky latex. Leaves simple, alternate, elliptic-oblong, clustered at the end of branches, leaves fall off in spring for flowers to bloom soon thereafter. Flowers in clusters, off-white, fragrant, always directed downwards, sepals rusty tomentose, persistent, corolla succulent. Berries egg-shaped, greenish. *Flowering and fruiting:* March - August. *Chromosome number:* 2n = 22 (Fedorov, 1969). *Planted in gardens and along avenues or elsewhere.*

Distribution: India, Myanmar, Sri Lanka and Pakistan.

Status of occurrence: Cultivated.

Uses: It is a garden plant as well as a medicinal plant. The wood is used for making furniture.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 368 (DUSH); Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 812 (DUSH).

Genus 112. **Manilkara** Adans., Fam. Pl. 2: 166 (1763).

187. **Manilkara zapota** (L.) P. van Royen, Blumea 7: 410 (1953). *Achras zapota* L. (1753); Hook. f., Fl. Brit. Ind. 3: 534 (1882); Prain, Beng. Pl. 1: 477 (1903, reprint 1963), *Achras zapotilla* (Jacq.) Corille (1905), *Manilkara zapotilla* (Jacq.) Gilly (1943), *Manilkara achras* (Mill.) Fosberg (1964).

Vernacular name: *Sofeda*.

English names: Sapodilla, Naseberry, Sapota.

Small evergreen tree with milky latex. Leaves simple, alternate, crowded at the end of branchlets, ovate-elliptic to elliptic-lanceolate. Flowers in leaf axils, bisexual, white. Fruit a fleshy berry, usually globose, rusty-brown. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 26$ (Fedorov, 1969). *Highlands, cultivated as fruit crop.*

Distribution: The plant is a native of the West Indies and tropical America. Now it is cultivated in the tropical lowlands of both hemispheres of the globe (Coronel, 1992).

Status of occurrence: Cultivated.

Uses: It is valued for its sweet and delicious edible fruits.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 432 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 565 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1613 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2469 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3346 (DUSH).

Family 47. **EBENACEAE** Gurke (1891)

Trees or shrubs. Leaves simple, alternate or rarely opposite, entire, usually coriaceous, exstipulate. Flowers axillary, solitary or in small cymes, usually unisexual, tri- to heptamerous. Calyx 3-7 lobed, persistent. Corolla sympetalous, 3-7 lobed, regular. Stamens attached to the base of the corolla tube or sometimes directly to the

receptacle, usually twice as many as the corolla lobes and in 2 cycles, but sometimes up to 4 or even 5 times as many as the corolla lobes, anthers tetrasporangiate and dithecal, opening by longitudinal slits or rarely by apical pores. Staminodes usually present in female flowers. Ovary superior, rarely inferior, 2-16 locular, locule with 1-2 anatropous ovules, styles 1-8, free or united below. Fruit usually a juicy to somewhat leathery berry, rarely capsular. Seeds with thin testa and abundant, hard, often ruminate endosperm.

The family Ebenaceae consists of 5 genera and about 450 species, widespread in tropical and subtropical regions of both the Old and New Worlds. In Bangladesh, this family is represented by only one genus and 10 species.

In the present study area this family is represented by 2 species.

Genus 113. **Diospyros** L., Sp. Pl.: 1057 (1753).

Key to species:

1. Calyx irregularly cleft; stamens usually more than 24 **Diospyros malabarica**
- Calyx regularly and deeply cleft; stamens usually fewer than 24 **Diospyros blankoi**

188. **Diospyros blancoi** A. DC., Prodr. 8: 237 (1844). *Diospyros philippinensis* A. DC (1844), *Diospyros philippensis* (Desr.) Guerke (1891), *Diospyros discolor* Willd. nom illeg. Verheij and Coronel, (1992); Hook. f., Fl. Brit. Ind. 3: 569 (1882); Prain, Beng. Pl. 1: 482 (1903, reprint 1963); R. L. Heinig, List Chittagong: 40 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956).

Vernacular name: *Belati gab*. English names: Velvet apple, Butter fruit tree, Peach bloom.

Medium-sized evergreen tree. Leaves alternate, oblong. Flowers solitary or in axillary cymes, unisexual, 4-merous, cream-white. Fruit a globose berry, covered with brown velvety bloom, reddish or purplish when ripe. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 30$ (Kumar and Subramaniam, 1986). *Grows in primary and secondary forests, also cultivated*.

Distribution: The tree is indigenous to the Philippines but now widely introduced and cultivated in tropical countries.

Status of occurrence: Common.

Uses: Ripe fruit is edible. The wood is used for cabinetwork, turnery, pianos, rulers, musical instruments, walking sticks, umbrella handles, furniture and fancy articles.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 291 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1050 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2766 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3335 (DUSH).

189. **Diospyros malabarica** (Desr.) Kostel., Allg. Med.-Pharm. Fl. 3: 1099 (1834). *Diospyros embryopteris* Pers. Syn. Plant. 2: 624 (1807); Hook. f., Fl. Brit. Ind. 3: 556 (1882); Prain, Beng. Pl. 1: 481 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956). *Diospyros peregrina* Gurke in Pfamilien. 4(1): 164 (1897); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 52(1953).

Vernacular names: *Gab, Deshi* English names: Indian persimmon, River ebony, *gab*. Malabar ebony.

Small to medium-sized, evergreen tree. Leaves simple, alternately, narrowly oblong. Flowers in short axillary cymes, unisexual, 4-merous, whitish. Fruit a globose berry, yellowish when ripe. *Flowering and fruiting:* May - August. *Chromosome number:* $2n = 30$ (Kumar and Subramaniam, 1986). *Moist shady places along edges of water bodies.*

Distribution: India, Sri Lanka, Myanmar, Thailand, Malaysia and Indonesia.

Status of occurrence: Very common.

Uses: Ripe fruit is edible. The unripe fruit is rich in tannin and is used for dyeing fishing nets and boats. The wood is used for building construction and masts of country boats.

Specimens examined: Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2234 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2435 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2618 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3172 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3502 (DUSH).

Family 48. **MYRSINACEAE** R. Brown (1810)

Trees, shrubs or undershrubs, sometimes climbing. Leaves simple, usually alternate, rarely opposite or subverticillate, exstipulate. Inflorescence axillary or terminal, paniculate, racemose or fasciculate. Flowers actinomorphic, whitish to reddish, usually tetra- or pentamerous, rarely hexamerous. Calyx lobes imbricate, convolute or valvate, persistent. Corolla usually gamopetalous, rarely free. Stamens as many as corolla and opposite to stamens, anthers dorsally attached. Ovary superior or semi-superior, unilocular, ovules few or many on a free-central placenta, styles simple, stigmas

single. Fruit usually a globose drupe or berry, sometimes elongated capsule, 1-seeded in all Asian genera except genus *Maesa*, embryo transverse.

The family Myrsinaceae consists of about 39 genera and 1250 species distributed in tropical or subtropical regions in both hemisphere. In Bangladesh, this family is represented by 8 genera and 22 species.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

1. Corolla campanulate; stamens inserted in the corolla tube **Maesa**
- Corolla shortly united at the base; stamens opposite to corolla lobes **Ardisia**

Genus 114. **Ardisia** Sw., Prod. Veg. Ind. Occ. 3: 48 (1788).

190. **Ardisia solanacea** (Poir.) Roxb., Pl. Corom. 1: 27, t. 27 (1795). *Ardisia humilis* Vahl, Symb. Bot. 3: 40 (1851); C. B. Clarke in Hook. f., Fl. Brit. Ind. 3: 529 (1881); Prain, Beng. Pl. 1: 475 (1903, reprint 1963); R. L. Heinig, List Chittagong: 39 (1925). *Anguillaria solanacea* Poir., Encycl. 7: 688 (1806); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2):52(1953).

Vernacular name: *Bon-jam*.

English name: Wild berry.

Evergreen shrub. Leaves obovate, oblong or elliptic. Inflorescence extra-axillary, corymbose-racemose or umbellate. Flowers pinkish. Berries depressed globose, black when ripe. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 46$ (Fedorov, 1969). *Wet zones in shady areas of forests*.

Distribution: Sri Lanka, throughout India to tropical Himalaya, Pakistan, Myanmar, China and Malaysia.

Status of occurrence: Common.

Uses: Roots are used as medicinally.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3960 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4001 (DUSH).

Genus 115. **Maesa** Forssk., Fl. Aegypt.-Arab.: 66 (1775).

191. **Maesa ramentacea** (Roxb.) A. DC. in DC., Prodr. 8: 77 (1844); C. B. Clarke in Hook. f., Fl. Brit. Ind. 3: 508 (1882); Prain, Beng. Pl. 1: 473 (1903, reprint 1963); R. L. Heinig, List Chittagong: 39 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 99 (1956). *Baeobotrys ramentacea* Roxb. (1824).

Vernacular name: *Noa-maricha*.

Large shrub or small tree. Leaves petiolate, lamina ovate-lanceolate to elliptic-lanceolate to elliptic-lanceolate. Inflorescence in axillary compound racemes. Flowers small, whitish. Fruits succulent, dull brownish-white. *Flowering and fruiting*: January - November. *Moist shady places in forests as undergrowth*.

Distribution: China to the East India, Myanmar and Thailand.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 396 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 621 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1383 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3529 (DUSH).

Family 49. **CRASSULACEAE** A. P. de Candolle (1805)

Herbs or undershrubs, usually succulent. Leaves alternate, opposite or sometimes whorled, simple or compound, exstipulate. Inflorescence cymose. Flowers bisexual, rarely unisexual, regular. Sepals 4-5, commonly distinct or connate below. Petals as many as the sepals, distinct or connate below forming a corolla tube. Stamens mostly twice as many as the petals, in 2-series, sometimes isomerous and alternate with the petals. Carpels as many as the sepals or petals, distinct or connate below, unilocular. Fruit a follicle or capsule. Seeds small.

The family Crassulaceae consists of about 25 genera and 900 species. In Bangladesh, this family is represented by 2 genera and 5 species, mostly cultivated.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

1. Filaments inserted basally on corolla tube; flowers usually pendulous **Bryophyllum**
- Filaments inserted near or above middle of corolla tube; flowers erect **Kalanchoe**

Genus 116. **Bryophyllum** A. R. Salisbury, Parad. Lond. t. 3 (1805).

192. **Bryophyllum pinnatum** (Lamk.) Oken, Allg. Naturgesch. Vol. 111(3): 1966 (1841). *Cotyledon pinnata* Lamk. (1786), *Bryophyllum calycinum* Salisb. (1805); Hook. f., Fl. Brit. Ind. 2: 413 (1878); Prain, Beng. Pl. 1: 340 (1903, reprint 1963); R. L. Heinig, List Chittagong : 26 (1925), *Kalanchoe pinnata* (Lamk.) Pers. (1805); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 94 (1956).

Vernacular names: *Pathorkuchi*, *Kaphpata*, English names: Life plant, *Gatrapuri*, Floppers.

Erect, tall, perennial herb. Leaves simple, opposite-decussate, sometimes bi- or trifoliate, upper ones sometimes up to 7-foliate, fleshy, ovate, elliptic to elliptic-oblong, crenate. Inflorescence a very long, paniculate cyme. Flowers pendulous, pedicellate, bisexual, actinomorphic, pinkish-red. Fruit a follicle. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 34, 40$ (Fedorov, 1969). *Gardens*.

Distribution: Pantropical in distribution. Almost all species of *Bryophyllum* are restricted to or originated from Madagascar.

Status of occurrence: Cultivated and sometimes escape in homestead.

Uses: The species has medicinal value, also used as an garden plant.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1051 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1134 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1626 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1933 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2960 (DUSH).

Genus 117. **Kalanchoe** Adans., Fam. 2: 248 (1763).

193. **Kalanchoe blossfeldiana** v. Poelln. Fedde Repert. 35: 159 (1934). *Kalanchoe coccinea* var. *blossfeldiana* Welw (1995).

Vernacular name: *Lal pathorkuchi*. English names: Christmas kalanchoe, Kalanchoe.

Succulent, erect, perennial herb. Leaves simple, opposite-decussate, petiolate, exstipulate, ovate, crenate, apex round. Inflorescence a paniculate cyme. Flowers erect, pedicellate, bracteate, actinomorphic, bisexual, hypogynous, red. Fruit a follicle. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 34, 68$ (Fedorov, 1969). *Gardens in plenty of sunshine*.

Distribution: Cosmopolitan in distribution.

Status of occurrence: Cultivated.

Uses: It is an ornamental garden plant.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1937 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2434 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3037 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3674 (DUSH).

Family 50. **ROSACEAE** A. L. de Jussieu (1789)

Herbs, shrubs, climbing or trees. Leaves simple or compound, alternate, rarely opposite. Flowers usually bisexual and regular. Calyx tube free or adnate to the ovary, limb usually 5-lobed. Petals 5, rarely absent, inserted under the margin of the disk, deciduous, usually imbricate. Stamens perigynous, numerous in one or many series. Carpels 1 or more, stigmas simple, capitate or penicillate, ovules 1 or more in each carpel. Fruits variable, of achenes or berries or drupes, rarely capsular. Seeds erect or pendulous.

The family Rosaceae consists of about 100 genera and 3000 species, nearly cosmopolitan in distribution, but most common in temperate and subtropical parts of the northern Hemisphere. In Bangladesh, this family is represented by 8 genera and 13 species.

In the study area this family is represented by a single species.

Genus 118. **Rosa** L., Sp. Pl.: 491 (1753).

194. **Rosa chinensis** Jacq., Obs. Bot. 3: 7 (1768). *Rosa indica* L. (1853); Hook. f., Fl. Brit. Ind. 2: 364 (1878); Prain, Beng. Pl. 1: 337 (1903, reprint 1963).

Vernacular names: *Golap*, *Kanta golap*.

English name: Tea rose.

Evergreen, small, spreading shrub, prickles equal and not mixed with bristles. Leaves imparipinnate, leaflets serrate, stipules very narrow. Flowers large, rose, purple, white or yellow on long pedicels, strongly scented, calyx segments reflexed in flowers, petals double, rarely single. Fruit a achene. Seeds small. *Flowering and fruiting*: November - March, sometimes throughout the year. *Chromosome number*: $2n = 14$ (Kumar and Subramaniam, 1986). *Gardens where it is cultivated*.

Distribution: China (native) and India.

Status of occurrence: Cultivated.

Uses: Ornamental plant.

Specimens examined: Sripur, Topobari, 21.09.2012, R. Tabassum, 2187 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2779 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3164 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3492 (DUSH).

Family 51. **MIMOSACEAE** R. Brown (1814)

Trees, shrubs or climbers, very rarely herbs. Branches unarmed or armed with stipular thorns, rarely axillary thorns or scattered prickles on the internodes. Leaves usually bipinnately compound, alternate, rarely unipinnate, stipules usually caducous.

Inflorescence bracteate, simple or compound racemes, pedunculate heads or spikes or spike-like racemes, aggregated into axillary or terminal panicles. Flowers actinomorphic, usually small, white, yellow or greenish-yellow. Stamens free or united into a tube, the latter sometimes united with the corolla tube at the base. Anthers dorsifixed. Ovary superior, 1-celled, styles filiform, stigma terminal, ovules anatropous. Fruit a pod. Seeds usually in two rows from the single placenta, inserted transversely, mostly ovate-orbicular in outline, often compressed.

The family Mimosaceae consists of about 60 genera and some 3000 species distributed mainly in the tropics and subtropics. In Bangladesh, this family is represented by 14 genera and 44 species.

In the present study area this family is represented by 9 genera and 18 species.

Key to genera:

- | | | |
|--|---|--------------------|
| 1. Stamens 10 or fewer | 2 | |
| - Stamens numerous, usually more than 10 | 4 | |
| 2. Legume dehiscent into 2 valves | | Calliandra |
| - Legume indehiscent or late dehiscent | 3 | |
| 3. Legume septate between seeds, thick, fleshy | | Samanea |
| - Legume not septate between seeds, flat, thin | | Albizia |
| 4. Filaments free or only connate at base | | Acacia |
| - Filaments connate into a tube | 5 | |
| 5. Extensive woody climbers or herb; pod large | 6 | |
| - Trees or shrubs; pod not large | 7 | |
| 6. Woody climbers, or trailing or scandent shrubs; leaves with pinnae in 2 pairs, tendrils present; legume jointed | | Entada |
| - Perennial herbs; leaves with pinnae in 4-10 pairs, without tendrils; legume not jointed | | Neptunia |
| 7. Tall trees, 6-30 m tall | | Adenanthera |
| - Small trees, shrubs, or subshrubs, 0.5-6 m tall | 8 | |
| 8. Armed plant; legume dehiscent in several segments separating from persistent sutures; leaflets sensitive | | Mimosa |
| - Unarmed plant; legume not dehiscent in several segments separating from persistent sutures; leaflets not sensitive | | Leucaena |

Genus 119. **Acacia** Mill., Gard. Dic. Abridg. ed.: 4 (1754).*Key to species:*

- | | | |
|----|--|------------------------------|
| 1. | Leaves reduced to phyllodes | 2 |
| - | Leaves bipinnate | 3 |
| 2. | Phyllodes curved, 1.5-2 cm broad, nerves inconspicuous | Acacia auriculiformis |
| - | Phyllodes not curved, 3-8 cm broad, nerves distinct | Acacia mangium |
| 3. | Inflorescence a spike | 4 |
| - | Inflorescence a head | Acacia nilotica |
| 4. | Flowers in racemes or spikes | Acacia catechu |
| - | Flowers in heads, then rearranged in panicles | 5 |
| 5. | Midvein of leaflets starting centrally or subcentrally | Acacia caesia |
| - | Midvein starting marginally | Acacia concinna |

195. **Acacia auriculiformis** A. Cunn. ex Benth. & Hook., Lond. J. Bot. 1: 377 (1842).
Acacia moniliformis Griseb. in Goett. Abh. 19: 136 (1874).

Vernacular names: *Akashmoni*, English names: Darwin black wattle, Ear-pod *Sonajhuri*. wattle.

Unarmed, fast growing, evergreen tree. Phyllodes alternate, variable in size, straight to falcate, curved. Inflorescence axillary, pedunculate, cylindrical spike. Flowers golden-yellow, sweet-scented. Pods straight at first, but becomes very much irregularly coiled and spirally twisted on maturity, black when dry, dehiscent. *Flowering and fruiting*: June - February. *Chromosome number*: $2n = 26$ (Datta, 1971) . *Grows in a wide range of habitats*.

Distribution: A native of Australia, introduced and widely cultivated in the Tropics.

Status of occurrence: Cultivated.

Uses: The plant is used for shade, ornamental aspect and wood.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 634 (DUSH); Kaligonj, Meghdubi, 05.03.2010, R. Tabassum, 700 (DUSH); Gazipur Sadar, Rajendropur Senanibaash, 04.02.2011, R. Tabassum, 1703 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2044 (DUSH).

196. **Acacia caesia** (L.) Willd., Sp. Pl. 4: 1090 (1806). *Mimosa torta* Roxb. (1832), *Acacia oxyphylla* Grah. (1842).

Scandent or straggling shrub or woody climber, spine straight to hooked, scattered. Leaves pinnately compound, pinnae 3-18 pairs, leaflets oblong to subfalcate or sometimes obliquely obovate. Inflorescence of terminal panicles, pedunculate heads. Flowers creamy-white or yellowish. Pods flat, strap-shaped, thin-walled, reddish-brown to blackish-brown when dry. *Flowering and fruiting*: April - February. *Chromosome number*: $2n = 26$ (Bir and Kumari, 1978). *Dry deciduous forests*.

Distribution: Throughout India, Bhutan, Sri Lanka, Pakistan, Myanmar, Cambodia, Vietnam, Laos and Thailand.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2925 (DUSH).

197. **Acacia catechu** (L. f.) Willd., Sp. Pl. 4: 1079 (1806); Hook. f., Fl. Brit. Ind. 2: 295 (1878); Prain, Beng. Pl. 1: 330 (1903, reprint 1963). *Mimosa catechu* L. f. (1781), *Mimosa catechuides* Roxb. (1832).

Vernacular names: *Khair, Khair babul*. English names: Cutch tree, Black cutch.

Medium-sized deciduous tree. Leaves bipinnate, alternate with 2 interpetiolar spines at the base, pinnae 4-24 pairs, sometimes reduced to 2 pairs only, leaflets 20-50 pairs, opposite, linear-oblong. Inflorescence of axillary cylindrical spike. Flowers creamy-white. Pods flattened, dark chocolate-brown to reddish-brown or blackish when dry. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 26$ (Atchinson, 1948). *Waste places, along roadsides, land margin and sandy river banks*.

Distribution: Sub-Himalayan tracts from Punjab to Sikkim, Sri Lanka, Pakistan to South East Asia, including Myanmar and Southern China.

Status of occurrence: Common.

Specimens examined: Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3771 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3871 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3936 (DUSH).

198. **Acacia concinna** (Willd.) DC., Prodr. 2: 464 (1825); Hook. f., Fl. Brit. Ind. 2: 296 (1878); Prain, Beng. Pl. 1: 331 (1903, reprint 1963). *Mimosa catechu* L. f. (1781), *Mimosa catechuides* Roxb. (1832).

Vernacular names: *Khair, Khair babul*. English names: Cutch tree, Black cutch.

Medium-sized deciduous tree. Leaves bipinnate, alternate with 2 interpetiolar spines at the base, pinnae 4-24 pairs, sometimes reduced to 2 pairs only, leaflets 20-50 pairs, opposite, linear-oblong. Inflorescence of axillary cylindrical spike. Flowers creamy-white. Pods flattened, dark chocolate-brown to reddish-brown or blackish when dry. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 26$ (Atchinson, 1948). *Waste places, along roadsides, land margin and sandy river banks*.

Distribution: Sub-Himalayan tracts from Punjab to Sikkim, Sri Lanka, Pakistan to South East Asia, including Myanmar and Southern China.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 819 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2551 (DUSH).

199. **Acacia mangium** Willd., Sp. Pl. ed. 4, 4: 1053 (1806). *Mangium montanum* Rumph. (1750), *Acacia glaucescens* auct. non Willd. (1942), *Racosperma mangium* (Willd.) Pedley (1987).

Vernacular name: *Mangium*.

English names: Forest mangrove, Wattle.

Fast growing evergreen tree. Mature phyllodes exceptionally large, yellowish-green, elliptic to lanceolate. Inflorescence axillary pedunculate spike. Flowers white or creamy-white, greenish-yellow to light yellow. Pods initially straight, depressed between the seeds, become twisted into a spirally coiled clusters, blackish-brown, dehiscent. *Flowering and fruiting*: May - December. *Well-drained, acid soils with shallow sandy-loam overlaying heavy clay, even poorly drained flood plain*.

Distribution: Native of Australia, Papua New Guinea and Indonesia, Iran, and Maluku.

Status of occurrence: Cultivated.

Uses: The species is suitable for quick reforestation, it is useful for furniture and cabinet making.

Specimens examined: Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 810 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1407 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2663 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3662 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3828 (DUSH).

200. **Acacia nilotica** (L.) Delile subsp. **indica** (Benth.) Brenan, Kew Bull. 12: 84 (1957). *Mimosa nilotica* L. (1753), *Acacia arabica* (Lamk.) Willd. (1806); Hook. f., Fl. Brit. Ind. 2: 293 (1878); Prain, Beng. Pl. 1: 330 (1903, reprint 1963), *Acacia arabica* (Lamk.) Willd. var. *indica* Benth. (1842), *Acacia nilotica* L. var. *indica* (Benth.) A.F. Hill. (1940).

Vernacular name: *Babla*. English names: Indian gum arabic tree, Prickly acacia.

Fast growing tree. Leaves pinnately compound, pinnae 3-12 pairs, leaflets 10-30 pairs, linear-oblong. Inflorescence of axillary pedunculate heads. Flowers bright yellow, fragrant, sessile. Pods strap-shaped, flattened, straight to slightly curved, deeply constricted between seeds, bullate over seeds, densely grey-felted, greyish-green, turning black on drying. *Flowering and fruiting*: May - April *Occurs in diversified habitats, particularly in scrubs, waste places, deciduous forests and roadsides*.

Distribution: India, Pakistan, Sri Lanka, Nepal, Bhutan, Egypt, Arabia, Tropical Africa and Indonesia, cultivated in Malaysia.

Status of occurrence: Common.

Uses: The tree is important for multipurpose uses. The bark and pod are used as sources of tannin. The wood is suitable for making agricultural implements, tool handles, carts and oars, boat building, house posts or beams.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 346 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1240 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1615 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1916 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1948 (DUSH).

201. **Adenanthera pavonina** L. Sp. Pl. 1: 384 (1753); Hook. f., Fl. Brit. Ind. 2: 287 (1878); Prain, Beng. Pl. 1: 326 (1903, reprint 1963).

Vernacular name: *Raktachandan*. English names: Red wood, Red bead tree.

Fast growing, medium to large deciduous tree. Leaves bipinnate, pinnae 3-6 pairs, leaflets 6-16, evenly alternate, oblong to ovate-oblong or elliptic-oblong. Inflorescence simple, axillary spike or terminal paniced racemes. Flowers pale yellow, cream or dull white, small, light fragrant. Pods linear, strap-shaped, dehiscent, two valves of the pod become curved to spirally twisted after dehiscing. Seeds suborbicular, convex on either side, bright scarlet-red. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 26$ (Mehra and Hans, 1969). *Village thickets and forest areas*.

Distribution: Widely cultivated throughout the tropics but naturally grows in India, Sri Lanka and Myanmar.

Status of occurrence: Common.

Uses: Medicinal palnt.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1137 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2333 (DUSH); Tongi, Raklal, 19.08.2013,

R. Tabassum, 2809 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3088 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3759 (DUSH).

Genus 120. **Albizia** Durazzini, Mag. Tosc. 3: 11 (1772).

Key to species:

- | | |
|--|----------------------------|
| 1. Pinnae 6-20 pairs, leaflets with the midrib close to the upper edge | 2 |
| - Pinnae 1-6 pairs, leaflets usually with the midrib near the centre | 3 |
| 2. Leaflets scarcely 2.5 mm broad | Albizia chinensis |
| - Leaflets 3-8 mm broad | Albizia julibrissin |
| 3. Flowers pedicellate; pod pale straw coloured | Albizia lebbeck |
| - Flowers sessile; pod brown | Albizia procera |

202. **Albizia chinensis** (Osborne) Merr., Amer. J. Bot. 3: 575 (1916). *Mimosa chinensis* Osb. (1757), *Mimosa stipulata* Roxb. (1832), *Albizia stipulata* (DC.) Boiv. (1834); Hook. f., Fl. Brit. Ind. 2: 300 (1878); Prain, Beng. Pl. 1: 332 (1903, reprint 1963).

Vernacular name: *Chakua koroi*.

English name: Chinese albizia.

Moderately fast growing tree. Leaves bipinnately compound, pinnae 6-18 pairs, leaflets 20-44 pairs, opposite, narrow, linear-oblong to somewhat falcate. Inflorescence of terminal panicles or racemes. Flowers dimorphic, bisexual, pentamerous, yellowish-white in globose pedunculate heads. Pods linear-oblong, straight, very flat, tapering at the base, tip often mucronate, yellowish-brown, turgidly dehiscent. *Flowering and fruiting*: June - March. *Chromosome number*: $2n = 26$ (Mehra and Hans, 1969). *Secondary forests, monsoon forests, scrubs and grasslands*.

Distribution: South and South East Asia.

Status of occurrence: Cultivated.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 193 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 825 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2360 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3608 (DUSH).

203. **Albizia julibrissin** Durazz, Mag. Tosc. 3(4): 13 (1772). *Acacia julibrissin* (Durazz) Willd. (1806), *Albizia molis* (Wall.) Boiv. (1838).

Vernacular names: *Golapi siris*, *Kalkora*.

English names: Pink siris, Silk tree.

Medium-sized deciduous tree. Leaves bipinnately compound, alternate, pinnae 4-8 pairs, sometimes up to 15 pairs, leaflets 10-20 pairs, falcately oblong. Inflorescence of panicle heads, terminal or from lowest leaf axils, solitary or in fascicle of 2-3 peduncles together. Flowers rose-coloured, fragrant. Pods oblong, flattened, pale brown or yellowish. *Flowering and fruiting*: May - August. *Chromosome number*: $2n = 26$ (Senn, 1938). *Usually along roadsides*.

Distribution: South and Central Asia, China, Japan, Abyssinia and tropical to warm temperate Africa and Russia.

Status of occurrence: Cultivated.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 947 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1421 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1913 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2334 (DUSH); Kapasia, Khandunia village, 03.11.2013, R. Tabassum, 3757 (DUSH).

204. **Albizia lebbeck** (L.) Benth. & Hook., Lond. J. Bot. 3: 87 (1844); Baker in Hook. f., Fl. Brit. Ind. 2: 298 (1878); Prain, Beng. Pl. 1: 332 (1903); C. Nielsen in T. Smitinand & K. Larsen, Fl. Thailand 4 (2): 186 (1985). *Mimosa lebbeck* L., Sp. Pl.: 516 (1753).

Vernacular names: *Kala-koroi*, English names: Siris tree, Frywood tree, Parrot *Siris*. tree.

Large deciduous tree. Leaves pinnately compound, pinnae 2-5 pairs, leaflets 3-9 pairs, linear-oblong, terminal pair obovate-oblong. Inflorescence axillary to terminal pedunculate heads. Flowers greenish to yellowish-white, slightly fragrant. Pods linear-oblong, compressed, firm, strap-shaped, straw-coloured or shiny brown when ripe, alternately depressed on either side over the seeds, dehiscent lengthwise along the lower suture, long persistent on the tree and creates frying sound in the air. *Flowering and fruiting*: May - December. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Grows in dry soil*.

Distribution: Native to tropical Asia, Africa and northern Australia and one of the best known trees of India, Myanmar, Pakistan, Sri Lanka, China and Malaysia.

Status of occurrence: Cultivated.

Uses: Timber yielding plant.

Specimens examined: Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 554 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2015 (DUSH); Kaliganj, Bartula,

02.01.2013, R. Tabassum, 2346 (DUSH); Tongi, Khataldi, 19.08.2013, R. Tabassum, 2732 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3189 (DUSH).

205. **Albizia procera** (Roxb.) Benth., Lond. J. Bot. 3. 89 (1844); Baker in Hook. f., Fl. Brit. Ind. 2: 299 (1878); Prain, Beng. Pl. 1: 332 (1903, reprint 1963); R. L. Heinig, List Chittagong: 25 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 94 (1956); C. Nielsen in T. Smitinand & K. Larsen, Fl. Thailand 4 (2): 189 (1985). *Mimosa procera* Roxb., Pl. Corom. 2: 12, t. 121 (1799).

Vernacular names: *Shil-koroi*, *Jat koroi*, *Sada koroi*. English name: White siris.

Large deciduous tree. Leaves bipinnately compound, pinnae 1-6 pairs, leaflets 3-10 pairs, opposite to subopposite, obliquely oblong-ovate to rhomboid-oblong or trapezoid. Inflorescence large, terminal copious panicles and pedunculate heads. Flowers yellowish-white. Pods flat, linear-oblong, shiny reddish-brown with distinct marks over the seeds. *Flowering and fruiting*: May - January. *Chromosome number*: $2n = 26$ (Mehra and Hans, 1971). *Grows in dry soil, cultivated along roadsides and near homestead*.

Distribution: Native of Central India; distributed throughout tropical Asia including Myanmar, Bhutan, Nepal, Pakistan, Thailand, New Guinea, Indo-China, South China, Indonesia and the Philippines except the Malaya Peninsula.

Status of occurrence: Cultivated.

Uses: Timber yielding plant.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 173 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1109 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1451 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1696 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1947 (DUSH).

Genus 121. **Calliandra** Benth., Lond. J. Bot. 2: 138 (1840).

206. **Calliandra portoricensis** (Jacq.) Benth. in Hook., Lond. J. Bot. 3: 99 (1841). *Mmosa portoricensis* Jacq. (1841).

Vernacular name: *Sada calliandra*.

Much-branched shrub. Leaves bipinnately compound, pinnae 2 pairs, leaflets 3-4 pairs, obliquely ovate or oblong. Inflorescence axillary, pedunculate heads, consisting of 20-30 flowers. Flowers small, white. Pods linear-oblong, strap-shaped, flattened, black when ripe. *Flowering and fruiting*: January - June. *Plain lands*.

Distribution: Native of Central America, introduced in India and Bangladesh.

Status of occurrence: Cultivated.

Uses: The species is important for its ornamental value.

Specimens examined: Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3772 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3872 (DUSH).

Genus 122. **Entada** Adans., Fam. 2: 318 (1763).

207. **Entada rheedii** Spreng., Syst. Veg. 2: 325 (1825). *Mimosa entada* L. (1753), *Entada monostachya* DC. (1825), *Entada scandens* auct non Benth. (1842); Hook. f., Fl. Brit. Ind. 2: 287 (1878); Prain, Beng. Pl. 1: 325 (1903, reprint 1963), *Entada phaseoloides* auct non (L.) Merr. (1918).

Vernacular names: *Gila*, English names: Sea bean, Matchbox bean, *Gilagach*, Mackay bean, Lady nut, Sword bean, West Indian filbert.

Vigorous woody climber, overtopping tallest trees. Leaves pinnately compound, pinnae 2 pairs, leaflets 3-4 pairs, obovate to elliptic-lanceolate. Inflorescence axillary spike. Flowers pentamerous, male or bisexual, calyx green, petals white. Pod up to 2 m long, straight or slightly curved, exocarp woody, endocarp rigid and woody. Seeds large, subcircular, flat with thick, smooth and dark reddish-brown testa. *Flowering and fruiting:* May - November. *Grows in primary and secondary forests.*

Distribution: Africa, Tropical Asia, Australia and a small part of the Pacific, Malay Peninsula, Indonesia, the Philippines and New guinea.

Status of occurrence: Seems to be rare.

Uses: The species is important for its pod, known as the longest bean in the bean family in the world. Medicinally the bark, leaves, pods and seeds are important.

Specimen examined: Gazipur Sadar, Rajendropur, 06.11.2008, R. Tabassum, 459 (DUSH).

Genus 123. **Leucaena** Benth. In Hook., J. Bot. 4: 416 (1842).

208. **Leucaena leucocephala** (Lamk.) de Wit., Taxon. 10: 53 (1961). *Mimosa glauca* L. (1763), *Mimosa leucocephala* Lamk. (1783), *Leucaena glauca* (Willd.) Benth. (1842); Hook. f., Fl. Brit. Ind. 2: 290 (1878); Prain, Beng. Pl. 1: 328 (1903, reprint 1963).

Vernacular name: *Ipil-Ipil*. English names: Horse tamarind, Wild tamarind, West Indian lead tree.

Low to medium-sized, deciduous tree. Leaves bipinnately compound, pinnae c 3-10 pairs, leaflets 5-20 pairs, small, linear to linear-oblong. Inflorescence axillary to subterminal, densely globose, pedunculate heads. Flowers small, tubular, brown or creamy-white. Fruit a pod, strap-shaped, flat, compressed, straight, reddish-brown with oblique mark on the surface between the seeds, dehiscent along both sutures. *Flowering and fruiting*: March - November (sometimes flowers and fruits throughout the year). *Chromosome number*: $2n = 56$ (Pandey and Pal, 1980). *Homesteads, roadsides, office yards, clearings, wastelands, river sides, etc.*

Distribution: Native of tropical America, introduced and naturalized in most tropical countries like India, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka, the Philippines and Malaysia.

Status of occurrence: Cultivated but very commonly naturalized.

Uses: It is very fast growing species, regenerates well and suitable for quick reforestation and agro-forestry. It has medicinal value also.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 940 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1724 (DUSH).

Genus 124. **Mimosa** L., Sp. Pl.: 516 (1753).

Key to species:

- | | |
|--------------------------------------|---------------------------|
| 1. Stems terate; pinnae 1 or 2 pairs | Mimosa pudica |
| - Stems angulate; pinnae 3-10 pairs | Mimosa diplotricha |

209. **Mimosa diplotricha** C. Wright ex Sauv. var. **diplotricha** Nielsen, Fl. Mal. Ser. 1, 11(1): 184 (1092). *Mimosa invis*a Mart. ex Colla. (1834).

English name: Giant sensitive plant.

Straggling or scrambling woody spinous herb. Leaves pinnately compound, pinnae 4-7 pairs, leaflets 12-21 pairs, oblong. Inflorescence pedunculate heads, solitary or in pairs in the axil of the distal leaves. Flowers small, bisexual, pinkish. Pods oblong, slightly curved with short prickly bristles on the margin and the surface of the valves. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 24$ (Fedorov, 1969 under *Mimosa invis*a). *Grows in village thickets, roadsides, grasslands, wastelands and other disturbed habitats.*

Distribution: A native of tropical America and introduced all over the tropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 732 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1549 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2390 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2600 (DUSH).

210. **Mimosa pudica** L., Sp. Pl.: 518 (1753); Baker in Hook. f., Fl. Brit. Ind. 2: 291 (1878); Prain, Beng. Pl. 1: 329 (1903, reprint 1963); R. L. Heinig, List Chittagong: 25 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 93 (1956); C. Nielsen in T. Smitinand & K. Larsen, Fl. Thailand 4 (2): 152 (1985); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 41 (1953). *Mimosa aspirata* Blanco (1837).

Vernacular names: *Lajjaboti, Sarmina*.

English name: Sensitive plant.

Spreading and prostrate spinous undershrub. Leaves subdigitately pinnately compound, very sensitive to touch, pinnae 1-2 pairs, leaflets 12-25 pairs, linear-oblong to subfalcate. Inflorescence of axillary pedunculate globose heads, solitary or paired. Flowers pinkish. Pods oblong, straight or recurved wavy margin on both sides, dark brown with bright brown prickly bristle margin when dry. *Flowering and fruiting:* September - December (sometimes throughout the year). *Chromosome number:* $2n = 48$ (Sinha *et al.*, 1972). *Grows in dry waste places, roadsides and forest openings.*

Distribution: Pantropical weed of South American origin, distributed to all the tropical countries of the world.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1071 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1806 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2042 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3323 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3729 (DUSH).

Genus 125. **Neptunia** Lour., Fl. Cochinch. 2: 653 (1790).

211. **Neptunia oleracea** Lour., Fl. Cochinch.: 654 (1790). Prain, Beng. Pl. 1: 327 (1903, reprint 1963); Baker in Hook. f., Fl. Brit. Ind. 2: 285 (1878). *Mimosa natans* sensu L. f. (1781), *Desmanthus natans* (L.) Willd. (1806), *Neptunia nayanans* auct. Bennet. (1979).

Vernacular names: *Paninajak, Panilajak*.

English name: Water sensitive plant.

Widely creeping, perennial aquatic, slender floating herb, rooting at the nodes. Leaves pinnately compound, stipulate, leaflets 8-18 pairs, asymmetrically oblong. Inflorescence pedunculate spike or oblong head consisting of 30-50 flowers. Upper flowers bisexual and lower ones sterile, calyx cup-shaped, petals green, staminodes yellow, petal-like, stamens white with yellow anthers. Fruit a pod, broadly oblong, flat, brown, dehiscent along both sutures. *Flowering and fruiting*: September - July. *Chromosome number*: $2n = 54$ (Ruman and Kasavan, 1963). *Edges of water ponds, ditches, swamps and canals*.

Distribution: Widely distributed mainly in Tropics of both hemispheres including India, Myanmar, Vietnam and Sri Lanka.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 304 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1138 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1492 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2544 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3338 (DUSH).

Genus 126. **Samanea** (Benth.) Merr. J. Wash. Acad. Sci. 6: 47 (1916).

212. **Samanea saman** (Jacq.) Merr., J. Wash. Acad. Sci. 6: 47 (1916). *Pithecellobium saman* Benth. (1844), *Enterolobium saman* (Jacq.) Prain (1897); Prain, Beng. Pl. 1: 334 (1903, reprint 1963); R. L. Heinig, List Chittagong : 26 (1925).

Vernacular names: *Raintree*, *Rende*, English names: Rain tree, Cow tamarind, *Randi-koroi*, *Ful-koroi*. Mankey pod, East Indian walnut.

Large, much-branched, beautiful tree. Leaves paripinnate compound, decurrently alternate, pinnae 6-9 pairs, leaflets 6-10 pairs, obliquely ovate-oblong to obovate-elliptic or rhomboid. Inflorescence terminal, pedunculate heads. Flowers dimorphic, rosy-pink, central flower of each heads are larger; fruit a pod, oblong, smooth with thickened at the margin, septet within, semi-succulent. Ripe pods turned blackish-brown, indehiscent. *Flowering and fruiting*: July - April. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *A wide variety of soil receiving plants of light, riverbanks, sandy coastal areas*.

Distribution: Native of Central America, introduced and cultivated all over the tropics.

Status of occurrence: Cultivated but escape.

Uses: The plant is one of the best-known shade and avenue trees. It is a very fast growing tree that can resist strong wind and thrives well in moist climate. Wood is suitable for platters, split post, planks, furniture, general construction, boxes, crates, veneer, plywood, paneling and fuel wood. The pods have a smell of honey when

broken and are nutritious and relished by cattle, pigs, goats and also by children. It is also a good honey plant.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 215 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1151 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1535 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1855 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3364 (DUSH).

Family 52. CAESALPINIACEAE R. Brown (1814)

Trees, shrubs, climbers, very rarely herbs. Leaves mostly compound, pinnate or bipinnate, rarely simple or unifoliate, stipules paired, minute to large, foliaceous, mostly caducous. Inflorescence of axillary or terminal panicles, rarely leaf-opposed racemes. Flowers zygomorphic, rarely actinomorphic, mostly bisexual. Sepals 5 or 4, free or partly united, imbricate, rarely valvate. Petals 5 or fewer, rarely absent, imbricate. Stamens 10 or fewer, rarely numerous, free to variously connate. Carpel 1, ovary unilocular, ovules 1-many, style single, undivided. Fruit a legume or indehiscent drupaceous and samaroid. Seeds sometimes arillate, embryo large.

The family Caesalpiniaceae consists of 150 genera and 2200 species, distributed mainly in tropical and subtropical regions, but only few species occur in temperate regions. In Bangladesh, this family is represented by 19 genera and 69 species.

In the present study area this family is represented by 8 genera and 21 species.

Key to genera:

- | | | |
|--|---|-------------------|
| 1. Petals present | 2 | |
| - Petals absent | | Saraca |
| 2. Leaves simple or unipinnate | 3 | |
| - Leaves bipinnate | 6 | |
| 3. Leaves simple, variously deeply bilobed | | Bauhinia |
| - Leaves compound | 4 | |
| 4. Anthers opening by terminal pores, the loculi attached at or near the base | 5 | |
| - Anthers opening lengthwise by slits, often attached near the middle and more or less versatile | | Tamarindus |
| 5. Petioles and rachis of leaves without glands; stamens 10, filaments of 3 abaxial antisepalous stamens sigmoidally curved, usually longer than anthers; legume indehiscent | | Cassia |

- Petioles and rachis of leaves with or without glands; stamens 10 or 5 fertile, filaments straight; legume dehiscent or indehiscent **Senna**
- 6. Calyx lobes or teeth imbricate **7**
- Calyx lobes valvate **Delonix**
- 7. Branchlets and leaf rachis prickly **Caesalpinia**
- Branchlets and leaf rachis not prickly **Peltophorum**

Genus 127. **Bauhinia** L., Sp. Pl.: 374 (1753).

Key to species:

1. Fertile stamens 10; petals white; leaf blade ovate-cordate to cordate **2**
 - Fertile stamens 3 or 5; petals pink, purple, or white with pink spots, occasionally all white; leaf blade orbicular, suborbicular, or broadly ovate **3**
2. Young shoots glabrous; leaf bifid to 1/3-2/5; legume sharply ridged near suture **Bauhinia acuminata**
 - Young shoots brownish pubescent or hirsute; leaf bifid to 1/4; legume not ridged near suture **Bauhinia vahlii**
3. Fertile stamens 3, staminodes 5 or 6; leaf bifid to 1/3-1/2, lobes slightly acute or rarely rounded at apex **Bauhinia purpurea**
 - Fertile stamens 5, staminodes 1-5, sometimes absent; leaf bilobed to 1/4-1/3, lobes rounded or narrowly rounded **Bauhinia variegata**

213. **Bauhinia acuminata** L., Sp. Pl.: 375 (1753) ; Hook. f., Fl. Brit. Ind. 2: 276 (1878); Prain, Beng. Pl. 1: 316 (1903, reprint 1963); R. L. Heinig, List Chittagong : 24 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Bauhinia candida* auct. non Ait. (1825), *Bauhinia grandiflora* auct. non Blanco (1907).

Vernacular name: *Shada-kanchon*- English names: White bauhinia, Nountain ebony.

Much-branched shrub, branches zigzag and low spreading. Leaves simple, leaflets ovate to rounded, bifid with broad sinus. Inflorescence branched, lateral and terminal,

short racemes, consisting of 3-10 flowers. Flowers snow-white. Fruit a pod, linear, apiculate, dehiscent. *Flowering and fruiting*: May - July, sometimes throughout the year. *Chromosome number*: $2n = 26, 28$ (Kumar and Subramaniam, 1986). *Well-drained dry and sunny places and plains*.

Distribution: India, Myanmar, Thailand, China, Laos, Malaysia, Pakistan, Sri Lanka, Indonesia, the Philippines and Vietnam.

Status of occurrence: Common.

Uses: Ornamental plant.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2192 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2661 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3007 (DUSH); Kapasia, Sanmania, 14.12.2013, R. Tabassum, 3908 (DUSH).

214. **Bauhinia purpurea** L., Sp. Pl. 1: 375 (1753); Hook. f., Fl. Brit. Ind. 2: 284 (1878); Prain, Beng. Pl. 1: 317 (1903, reprint 1963), *Bauhinia coromandeliana* DC. (1825), *Bauhinia triandra* Roxb. (1832), *Phanera purpurea* (L.) Benth. (1852).

Vernacular names: *Devakanchan*, English names: Purple bauhinia, Butterfly tree, *Raktakanchan*, *Kadwari*. Camel's foot tree, Purple orchid tree.

Evergreen shrub to medium-sized tree. Leaves simple, alternate, lamina broadly elliptic, half way down into 2 sub-acute or rounded lobes. Inflorescence axillary to terminal panicles, 10-12 flowered. Flowers deep pink or mauve, showy. Pod linear-oblong or sword-shaped, dehiscent with twisted valves. *Flowering and fruiting*: November - May. *Chromosome number*: $2n = 26, 28$ (Kumar and Subramaniam, 1986). *Sunny and dry places, village thickets, gardens and deciduous forests*.

Distribution: Bhutan, India, Myanmar, Nepal, Pakistan, Sri Lanka and Thailand.

Status of occurrence: Common.

Uses: Ornamental garden plant.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 123 (DUSH); Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 731 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1622 (DUSH).

215. **Bauhinia vahlii** Wight & Arn., Prodr. Fl. Pen. Ind. Or.: 297 (1834); Hook. f., Fl. Brit. Ind. 2: 278 (1878); Prain, Beng. Pl. 1: 317 (1903, reprint 1963), *Bauhinia racemosa* Vahl (1794), *Phanera vahlii* (Wight & Arn.) Benth. (1852).

Vernacular names: *Chehul*, *Chehur*, *Kanchan-lata*. English name: Camel's foot climber.

Extensive woody climber, scrambles over the tallest tree, young shoot bearing tendrils in opposite pairs. Leaves simple, alternate, lamina sub-rrbicular, cordate at the base, lobed at the apex, bifid. Inflorescence long pedunculate, sub-corymbose, terminal raceme. Flowers small, cream-white. Pod oblong, woody, pendulous, rusty brown, velvety. *Flowering and fruiting*: November - February. *Sal forests*.

Distribution: Bhutan, Cambodia, India, Laos, Malaysia, Nepal, Pakistan, South-eastern Pacific, Sri Lanka, Thailand and Vietnam.

Status of occurrence: Common.

Uses: Bark is used to make rope.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 485 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1909 (DUSH); Kaliakoir, Nabinagar, 12.02.2011, R. Tabassum, 1981 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2156 (DUSH).

216. **Bauhinia variegata** L., Sp. Pl. 1: 375 (1753); Hook. f., Fl. Brit. Ind. 2: 284 (1878); Prain, Beng. Pl. 1: 317 (1903, reprint 1963), *Bauhinia candida* Ait. (1789), *Phanera variegata* (L.) Benth. (1852).

Vernacular names: *Rakta kanchan* English names: Camel's foot, Mountain ebony, *kanchan*, *Lal-kanchan*. Variegated bauhinia.

Medium-sized deciduous tree. Leaves simple, alternate, petiolate, lamina as broad as or rather broader than long, with a medium cleft reaching one-fourth to one-third the way down. Inflorescence terminal or axillary, ferw-flowered raceme. Flowers large, purple, pink or white, showy, fragrant, bloom in leafless condition. Pod oblong, flat, slightly curved, dehiscent. *Flowering and fruiting*: February - April. *Chromosome number*: $2n = 28$ (Kumar and Subramaniam, 1986). *Sunny dry habitats and forests*.

Distribution: Bhutan, China, India, Myanmar, Nepal, Pakistan and Sri Lanka; widely cultivated in the tropics.

Status of occurrence: Common.

Uses: Ornamental garden plant.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2441 (DUSH); Gazipur Sadar, Cherag Ali, 19.08.2013, R. Tabassum, 2714 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2956 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3689 (DUSH).

Genus 128. **Caesalpinia** L., Sp. Pl.1: 380 (1753).*Key to species:*

1. Pedicels 4.5-7 cm; filaments 5-6 cm **Caesalpinia pulcherrima**
- Pedicels less than 4 cm; filaments less than 2 cm **2**
2. Leaflets 4-15 × 2.5-7 cm **Caesalpinia cucullata**
- Leaflets usually much smaller **3**
3. Stipules large, leaflike, lobed, lobes up to 2 cm, leaflets pubescent on both surfaces **Caesalpinia bonduc**
- Stipules much smaller, not lobed, or absent **4**
4. Pinnae 8-16 pairs; leaflets usually ovate-lanceolate, 1.2-2.5 cm × 6-12 mm, abaxially sparsely velutinous, apex acute **Caesalpinia cacalaco**
- Pinnae 2 or 3(or 4) pairs; leaflets ovate or elliptic, 3-6 × 1.5-3 cm, glabrous, apex obtuse-rounded **Caesalpinia crista**

217. **Caesalpinia bonduc** (L.) Roxb., Fl. Ind. 2(2): 362 (1832); R. L. Heinig, List Chittagong: 23 (1925). *Guilandinia bonduc* L. (1753), *Guilandinia bonducella* L. (1762), *Caesalpinia bonducella* (L.) Fleming (1810); Hook. f., Fl. Brit. Ind. 2: 254 (1878); Prain, Beng. Pl. 1: 323 (1903, reprint 1963).

Vernacular names: *Nata*, English names: The fever nut, Benzoar nut, Indian *Jhagragota*, *Lalkanta*. nut, Nickar bean, Physic nut.

Vigorous climber or scrambling bush or shrubby tree, armed with numerous, strong, straight and recurved prickles. Leaves compound, paripinnate, stipulate, pinnae 3-9 (-11) pairs, leaflets 7-12 pairs, ovate-oblong to elliptic-lanceolate. Inflorescence supra-axillary, simple or paniced racemes. Flowers yellow. Pod oblong, stipitate, covered with sharp prickles, dehiscent. *Flowering and fruiting*: July - March. *Chromosome number*: 2n = 24 (Kumar and Subramaniam, 1986). *Scrub jungles, roadsides, ditches and sometimes forming thickets on vacant lots*.

Distribution: China, Hong Kong, India, Malay Peninsula, Myanmar, Nepal, Singapore, Sri Lanka and Taiwan. It is widely distributed near oceans in warmer regions and tropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1008 (DUSH); Gazipur Sadar, Rajendropur Sal Forest, 04.02.2011, R. Tabassum, 1756 (DUSH).

218. **Caesalpinia cacalaco** Humdb. & Bonpl., Pl. Aeqninoct. 2: 173, t. 137 (1809).

English names: Cascalote tree, Mexican bashbird.

Unarmed, low spreading shrubby tree. Leaves compound, bipinnate, pinnae 3-6 pairs, leaflets 3-5 pairs, obovate, often retuse. Inflorescence of terminal panicles. Flowers yellow or orange, red striped. Pod cylindrical, many-seeded. *Flowering and fruiting:* January - April. *Sunny and dry habitats.*

Distribution: Native of Mexico, introduced and cultivated in many tropical countries.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1742 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2416 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3280 (DUSH).

219. **Caesalpinia crista** L., Sp. Pl. 1: 380 (1753); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Guilandia nuga* L. (1762), *Caesalpinia nuga* (L.) Ait. (1811); Hook. f., Fl. Brit. Ind. 2: 255 (1878); Prain, Beng. Pl. 1: 323 (1903, reprint 1963); R. L. Heinig, List Chittagong: 23 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956); *Caesalpinia chinensis* Roxb. (1832), *Caesalpinia paniculata* (Lamk.) Roxb. (1832).

Vernacular name: *Letkanta*.

Scandent, prickly shrub or small tree. Mature stem covered by triangular woody knobs, with recurved prickles set at the centre. Leaves bipinnately compound, stipulate, rachis armed with short, stout, hooked or recurved spine beneath, pinnae 6-8 pairs, often reduced, leaflets 2-3 (-5) pairs, ovate-elliptic to lanceolate-ovate. Inflorescence axillary to terminal large panicle. Flowers yellow, fragrant. Pod sub-elliptic or rhombic in outline, sharply beaked, indehiscent, turned blackish-brown when dry. *Flowering and fruiting:* August - March. *Chromosome number:* $2n = 24$ (Kumar and Subramaniam, 1986). *Village thickets along streams and river banks.*

Distribution: Australia, Cambodia, China, India, Malay Peninsula, Myanmar, Singapore, Sri Lanka, Taiwan and Vietnam.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 526 (DUSH); Gazipur Sadar, Murkun, 04.02.2011, R. Tabassum, 1930 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, R. Tabassum, 3158 (DUSH).

220. **Caesalpinia cucullata** Roxb., Fl. Ind. ed. 2, 2: 358 (1832). *Mezoneuron cucullatum* (Roxb.) Wight. & Arn. (1834); Hook. f., Fl. Brit. Ind. 2: 258 (1878); Prain, Beng. Pl. 1: 322 (1903, reprint 1963); *Mezoneuron cucullatum* Wight. & Arn. var. *robustum* Craib (1928).

Vernacular names: *Bogaserra kanta*, *Bishkoprah*.

Large straggling, scandent shrub or low tree, strongly armed with recurved prickles. Leaves compound, exstipulate, pinnae 2-5 pairs, distant, leaflets 4-5 pairs, opposite, ovate-elliptic, bluntly acuminate. Inflorescence of simple or axillary to terminal panicles, often developed from old wood. Flowers bright yellow. Pod stipitate, reddish-brown. *Flowering and fruiting:* January - March. *Chromosome number:* $2n = 22$ (Kumar and Subramaniam, 1986). *Evergreen forests, sides of streams and near canals.*

Distribution: Bhutan, Cambodia, China, India, Indonesia, Laos, Myanmar, Malay Peninsula, Nepal, the Philippines, Thailand and Vietnam.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 607 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1861 (DUSH).

221. **Caesalpinia pulcherrima** (L.) Swartz, Obs. Bot. Ind. Occ.: 166 (1791); Hook. f., Fl. Brit. Ind. 2: 255 (1878); Prain, Beng. Pl. 1: 323 (1903, reprint 1963); R. L. Heinig, List Chittagong: 23 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Poinciana pulcherrima* L. (1753).

Vernacular name: *Radhachura*. English names: Peacock flower, Paradise flower, Flower-fence.

Unarmed handsome shrub, prickles few, scattered. Leaves abruptly bipinnately compound, pinnae 6-12 pairs, opposite, leaflets 5-13 pairs, oblong, rounded or emarginated. Inflorescence axillary to terminal racemes. Flowers variously coloured, orange-yellow, red to rosy-red, center of limb crimson, red or golden-red. Pod purple to dark brown, oblong, compressed, dehiscent. *Flowering and fruiting:* throughout the year, but profusely in spring (February-April) and in Autumn (September - November). *Chromosome number:* $2n = 24$ (Atchison, 1951). *Dry and sunny places, generally gardens, parks and private houses.*

Distribution: Native of South America and cultivated throughout the tropical countries.

Status of occurrence: Cultivated.

Uses: It is an ornamental garden plant.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 609 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1268 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1572 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1853 (DUSH); Kapasia, Voboner Chala, 03. 11.2013, R. Tabassum, 3542 (DUSH).

Genus 129. **Cassia** L., Sp. Pl.: 376 (1753).

222. **Cassia fistula** L., Sp. Pl. 1: 377 (1753); Hook. f., Fl. Brit. Ind. 2: 261 (1878); Prain, Beng. Pl. 1: 314 (1903, reprint 1963); R. L. Heinig, List Chittagong: 23 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Cathartocarpus fistula* (L.) Pwrs. (1805), *Cassia rhombifolia* Roxb. (1832).

Vernacular names: *Sonalu, Bandar* English names: Golden shower tree, *lathi*. Pudding pipe tree.

Deciduous tree. Leaves compound, leaflets 2-8 pairs, ovate-elliptic, acute or shortly acuminate. Inflorescence of large, pendulous racemes. Flowers bright yellow, showy, bloom in large profusion. Pods cylindrical-oblong, woodysmooth and chambered within, filled by dark brown to black sweetish pulp, become black when ripe, long persistent on the tree to the next flowering season. *Flowering and fruiting:* March - June. *Chromosome number:* $2n = 24, 28$ (Irwin and Turner, 1960). *Generally dry lands, roadsides and gardens, backyards of houses in villages, fallowlands and margin of cultivated lands.*

Distribution: Native of tropical Asia including India, Sri Lanka, Pakistan, Bhutan, Malaysia, Thailand and spread throughout the tropics. Cultivated in New Guinea, China and Egypt.

Status of occurrence: Common.

Uses: Wood is used for making posts, construction and agricultural implements.

Specimens examined: Kaliganj, Nimtoli, 29.04.2005, R. Tabassum, 224 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 945 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1737 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2143 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2447 (DUSH).

Genus 130. **Delonix** Rafin., Fl. Tellur. 2: 92 (1836).

223. **Delonix regia** Rafin., Fl. Tellur. 2: 92 (1836); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Poinciana regia* Boj. ex Hook. (1826); Prain, Beng. Pl. 1: 321 (1903, reprint 1963); R. L. Heinig, List Chittagong: 23 (1925).

Vernacular names: *Krishnachura*, English names: Flame tree, Peacock *Golmohar*. flowers.

Medium-sized, handsome deciduous tree, trunk often buttressed at the base. Leaves bipinnately compound, pinnae 11-18 pairs, leaflets 15-30 pairs, almost sessile, linear-oblong. Inflorescence of corymbose racemes, at the end of branchlets, large and spreading. Flowers showy, large, scarlet, orange, or brown and white variegated. Pod linear-oblong, flattened, slightly curved, pendulous, woody, blackish when dry, dehiscent into 2 valves. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 24$ (Atchison, 1951). *Well-drained sunny and dry places*.

Distribution: A native of Madagascar, distributed in Bhutan, India, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Cultivated but sometimes escape.

Uses: This is used as one of the most common excellent ornamental and shade tree.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 51 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1312 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2278 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2957 (DUSH); Kapshia, kandunia village, 03.11.2013, R. Tabassum, 3683 (DUSH).

Genus 131. **Peltophorum** (Vogel) Benth., J. Bot. 2: 75 (1840).

224. **Peltophorum pterocarpum** (DC.) K. Heyne, Nutt. Pl. Ned. Ind. ed. 2: 755 (1927); *Inga pterocarpa* DC. (1825), *Caesalpinia inermis* Roxb. (1832), *Peltophorum inerme* Roxb. (1832), *Peltophorum roxburghii* G. Don (1832), *Peltophorum ferrugineum* (Decne.) Benth. (1864); Hook. f., Fl. Brit. Ind. 2: 257 (1878).

Vernacular names: *Halud* English names: Yellow gold mohor, Yellow flame *krishnachura*, *Aurunjyoti*. tree, May flowers, Copper pod.

Large, handsome, semi-evergreen tree. Leaves compound, bipinnate, stipulate, pinnae 8-24 pairs, leaflets 12-30 pairs, opposite, obliquely oblong or somewhat falcate-oblong. Inflorescence much-branched, stiff, terminal panicles, rusty tomentose. Flowers golden-yellow, sweet-scented. Pod shield-shaped, flat, reddish-brown, indehiscent. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 26$ (Bir and Kumari, 1975). *Roadsides, gardens and parks*.

Distribution: Native of Andaman's Coast. It is distributed in Australia, Cambodia, Indonesia, Malaysia, Singapore, Sri Lanka, Thailand and Vietnam.

Status of occurrence: Cultivated.

Uses: This is planted as an ornamental tree. The heart wood is used for making cabinet, boats and planks.

Specimen examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3961 (DUSH).

Genus 132. **Saraca** L., Mant. Pl. 1: 98 (1767).

225. **Saraca indica** L., Mant. Pl. 1: 98 (1767); R. L. Heinig, List Chittagong : 24 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Saraca bijuga* Prain (1897); Hook. f., Fl. Brit. Ind. 2: 271 (1878); Prain, Beng. Pl. 1: 319 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 42 (1953).

Vernacular names: *Ashok, Asoka*.

English names: Asoka tree, Yellow saraca.

Tree. Leaves large, paripinately compound, alternate, leaflets 2-7 pairs, elliptic-ovate to lanceolate-oblong. Inflorescence of compact corymbs. Flowers apetalous, tubular, orange-coloured. Pod oval to oblong-lanceolate. *Flowering and fruiting:* February - June, sometimes throughout the year. *Chromosome number:* $2n = 24$ (Fedorov, 1969). *Grows along the edges of forests, riverbanks or along streams and roadsides.*

Distribution: South Asia including India, Laos, Myanmar, Thailand, China, Malaysia, Sri Lanka, Indonesia and Vietnam.

Status of occurrence: Cultivated.

Uses: It is an ornamental tree, also is economically important for wood, medicine and miscellaneous purposes.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 508 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1611 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2008 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2904 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3311 (DUSH).

Genus 133. **Senna** Mill., Gard. Dict. Abr. ed. 4 (1954).

Key to species:

- | | |
|--|---|
| 1. Petiole and rachis of leaves without glands | 2 |
| - Petiole and rachis of leaves with glands | 3 |

- | | | |
|----|--|---------------------------|
| 2. | Petiole and rachis of leaves with 2 longitudinal ribs, narrowly winged; legume with a membranous wing at middle downward to base of each valve | Senna alata |
| - | Petiole and rachis of leaves without wings | Senna siamea |
| 3. | Glands on petiole only | 4 |
| - | Glands only present on rachis between leaflets | 6 |
| 4. | Young branchlets, petiole, and rachis of leaves densely yellowish brown villous; leaflets villous on both surfaces; legume densely hirsute on surfaces of valves | Senna obtusifolia |
| - | Plants glabrous or subglabrous throughout; legume glabrous | 5 |
| 5. | Petiolar gland sessile, globose or ovoid, at basal joint; legume flattened, 10-13 cm | Senna occidentalis |
| - | Petiolar gland narrow, clavate to subulate, above basal joint; legume terete, 5-10 cm, with light-colored suture | Senna sophora |
| 6. | Fertile stamens 10 | Senna surattensis |
| - | Fertile stamens 7 | Senna tora |

226. **Senna alata** (L.) Roxb., Fl. Ind. 2: 349 (1832). *Cassia alata* L., Sp. Pl. 378 (1753); Hook. f., Fl. Brit. Ind. 2: 264 (1878); Prain, Beng. Pl. 1: 315 (1903, reprint 1963); R. L. Heinig, List Chittagong: 24 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 93 (1956).

Vernacular name: *Dadmardan*. English names: Ringworm bush, Ringworm senna.

Fast growing, soft wooded shrubby plant. Stem marked with leaf scars and persistent stipules. Leaves paripinnately compound, leaflets 8-14 pairs, oblong from an oblique base. Inflorescence of racemes, spiciform, stout and upwardly directed. Flowers bright yellow. Pods oblong, flat, winged, turned black when ripe, dehiscent. *Flowering and fruiting*: September - January. *Chromosome number*: $2n = 12$ (Senn, 1938). *Gardens, sometimes in wastelands, often along ditches between rice fields and fallowlands*.

Distribution: Pantropical.

Status of occurrence: Common.

Uses: It is used as an medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 411 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1372 (DUSH); Gazipur Sadar,

Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1738 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2896 (DUSH); Kaliakoir, Srinail, 1.10.2013, R. Tabassum, 3205 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3766 (DUSH).

227. **Senna obtusifolia** (L.) Irwin & Barneby, Mem. N. Y. Bot. Gard. 35: 252 (1982). *Cassia obtusifolia* L. (1753); Prain, Beng. Pl. 1: 314 (1903, reprint 1963), *Cassia tora* L. var. *obtusifolia* (L.) Haines (1922).

Vernacular name: *Chakunda*.

English names: Sicklepod, Java bean.

Herb or undershrub. Leaves paripinnately compound, stipulate, leaflets 3 pairs, obovate. Inflorescence short pedunculate axillary racemes, 1 to 2-flowered. Flowers yellow. Pods oblong, septate within, dehiscent. *Flowering and fruiting*: August - February. *Chromosome number*: $2n = 26, 28$ (Irwin and Turner, 1960). *Open waste places and fallowlands, sporadically along roadsides of village thickets, and bank of ponds*.

Distribution: Native of South America and distributed in the tropical regions of the world including Africa, Bhutan, China, India, Nepal, Pakistan, Thailand, except Polynesia and Australia.

Status of occurrence: Common.

Uses: It is used as an medicinal plant.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 256 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 590 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1746 (DUSH); Sripur, Piruzili, 17.02.2012, R. Tabassum, 2054 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2972 (DUSH).

228. **Senna occidentalis** Roxb., Fl. Ind. 2: 343 (1832). *Cassia occidentalis* L., Sp. Pl. 377 (1753); Hook. f., Fl. Brit. Ind. 2: 262 (1878); Prain, Beng. Pl. 1: 314 (1903, reprint 1963); R. L. Heinig, List Chittagong: 23 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956); *Cassia foetida* Pers. (1806).

Vernacular names: *Bara-kalkesunda*, English names: Coffee senna, Foetid cassia, *Eski*.
Small senna, Rubbish cassia.

Erect, branched, suffrutescent herb, often shrubby. Leaves pinnately compound, stipulate, leaflets 4-6 pairs, ovate-oblong to lanceolate, acuminate. Inflorescence axillary or terminal corymbs, closely crowded, 2-4 flowered. Flowers yellow. Pod oblong, flattened. *Flowering and fruiting*: May - October, sometimes throughout the year. *Chromosome number*: $2n = 28$ (Bir and Kumari, 1980). *Open waste places, fallowlands and sporadically roadsides of village thickets*.

Distribution: Native of South America, now pantropical weed throughout the tropics and temperate regions.

Status of occurrence: Common.

Uses: It is used as an medicinal plant.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 211 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1147 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1711 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2089 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2922 (DUSH).

229. **Senna siamea** (Lamk.) Irwin & Barneby, Mem. N. Y. Bot. Gard. 35: 98 (1982). *Cassia siamea* Lamk., Enc. 1: 48 (1785); Backer in Hook. f., Fl. Brit. Ind. 2: 264 (1878); Prain, Beng. Pl. 1: 315 (1903, reprint 1963). *Senna sumatrana* Roxb. (1832).

Vernacular name: *Minjiri*.

English names: Thailand cassia, Kassod tree.

Fast growing evergreen tree. Leaves paripinnately compound, leaflets 5-10 pairs, oblong to slightly obovate-oblong. Inflorescence axillary or terminal, pyramidal-shaped corymbs. Flowers yellow. Pods linear-oblong, flat, velvety-brown, dehiscent. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 28$ (Jacob, 1940). *Roadsides, gardens, plains and dry lands.*

Distribution: Native of Myanmar, distributed in Cambodia, India, Indonesia, Malaysia, New Guinea, Laos, the Philippines, Sri Lanka, Thailand and Vietnam.

Status of occurrence: Common.

Uses: It is used as ornamental plant. The heart wood is suitable for construction work, and making rulers and small articles.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 581 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1352 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1741 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2986 (DUSH).

230. **Senna sophora** (L.) Roxb., Fl. Ind. 2: 347 (1832). *Cassia sophora* L. (1753). Hook. f., Fl. Brit. Ind. 2: 262 (1878); Prain, Beng. Pl. 1: 314 (1903, reprint 1963); R. L. Heinig, List Chittagong: 23 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 41 (1953). *Senna esculenta* Roxb. (1832).

Vernacular names: *Kalkashunda*,
Kasundi.

English name: Pepper-leaved senna.

Much-branched shrub or undershrub. Leaves paripinnately compound, leaflets 4-10 pairs, narrowly lanceolate, acute to sharply acuminate. Inflorescence axillary to terminal, few-flowered corymbs. Flowers yellow. Pod linear-oblong, dehiscent. *Flowering and fruiting*: September - July. *Chromosome number*: $2n = 28$ (Irwin and Turner, 1960). *Waste fallo lands, along railway tracks and banks of ponds*.

Distribution: Native of tropical Asia or America, distributed throughout the tropics as pantropical weed in Africa, Brazil, Bhutan, Ethiopia, Ghana, India, Indonesia, Ivory Coast, Nepal, New Guinea, Nigeria, Somalia, Thailand and Vietnam.

Status of occurrence: Common.

Uses: The plant is used as medicine.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 133 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1091 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1414 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1610 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3025 (DUSH).

231. ***Senna surattensis*** (Burm. f.) Irwin & Barneby, Mem. N. Y. Bot. Gard. 35: 81 (1982). *Cassia surattensis* Burm. f. (1768), *Cassia glauca* Lamk. (1785); Backer in Hook. f., Fl. Brit. Ind. 2: 265 (1878); Prain, Beng. Pl. 1: 314 (1903, reprint 1963).

English names: Glauous cassia, Pale primerose.

Fast growing shrub or small tree. Leaves paripinnately compound, stipulate, leaflets 6-9 pairs, ovate to ovate-oblong, rounded at the apex. Inflorescence corymbose from upper leaf axils, consisting of 10-15 flowers. Flowers bright yellow. Pods oblong, flat, apiculate, thinly valved, reddish-brown or black when ripe. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 56$ (Pantula, 1947). *Plain dry lands, mainly gardens*.

Distribution: Native of South East Asia, mainly in Peninsular Malaysia, distributed in Australia, China, Formosa, Indonesia, India, Iran, Myanmar, New Guinea, Pakistan, the Philippines and Sri Lanka.

Status of occurrence: Cultivated.

Uses: It is widely used as an ornamental garden plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1870 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3162 (DUSH).

232. **Senna tora** (L.) Roxb., Fl. Ind. 2: 340 (1832). *Cassia tora* L., Sp. Pl. 376 (1753); Hook. f., Fl. Brit. Ind. 2: 263 (1878); Prain, Beng. Pl. 1: 314 (1903, reprint 1963); R. L. Heinig, List Chittagong: 24 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 93 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 41(1953). *Cassia humilis* Colladon (1816).

Vernacular names: *Teraj*, English names: Foetid cassia, Sickie senna, *Chakunda*, *Kalkasham*. Metal seed.

Perennial, foetid, profusely branched herb or undershrub. leaves paripinnately compound, stipulate, leaflets 3 pairs, obovate-oblong. Inflorescence of axillary racemes, with a pair of flowers or solitary. Flowers yellow. Pods linear-oblong, dehiscent. *Flowering and fruiting*: July - December. *Chromosome number*: $2n = 28$ (Sareen and Pratap, 1975). *Fallowlands, roadsides, village thickets and sides of railway tracks*.

Distribution: Bhutan, India, Malaysia, Nepal, Pakistan, the Philippines and Thailand.

Status of occurrence: Very common.

Uses: It is used as medicine.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 88 (DUSH); Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 442 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1068 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1612 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2958 (DUSH).

Genus 134. **Tamarindus** L., Sp. Pl. 1: 34 (1753).

233. **Tamarindus indica** L., Sp. Pl. 1: 34 (1753); Hook. f., Fl. Brit. Ind. 2: 273 (1878); Prain, Beng. Pl. 1: 320 (1903, reprint 1963); R. L. Heinig, List Chittagong : 24 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Tamarindus occidentalis* Gaertn. (1878), *Tamarindus officinalis* Hook. f. (1878).

Vernacular names: *Ambli*, *Tentul*, *Tentuli*. English name: Tamarind.

Large tree. Leaves paripinnately compound, stipulate, leaflets 10-20 pairs, linear-oblong. Inflorescence a terminal raceme. Flowers pale or golden-yellow. Pod oblong, slightly incurved, thick, light brown, pulpy and septate within, sour in taste, indehiscent. *Flowering and fruiting*: April - December. *Chromosome number*: $2n = 24$ (Atchison, 1951). *Usually wastelands, backyards of houses, roadsides and edges of forests*.

Distribution: Probably the native of tropical Africa, widely cultivated in different parts of the world.

Status of occurrence: Common.

Uses: This is a very important tree for multi-purpose uses including shade, food, fuel, wood and medicine.

Specimens examined: Kaligonj, Meghdobi, 05.03.2010, R. Tabassum, 669 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1079 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2024 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2683 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3026 (DUSH).

Family 53. **FABACEAE** Lindley (1836)

Herbs (often twining or climbing by tendrils), shrubs or trees. Leaves simple, digitately or pinnately compound, very rarely 2-pinnate, alternate, often stipulate. Inflorescence axillary, leaf-opposed or terminal, bracts and bracteoles usually present. Flowers irregular, rarely regular, hermaphrodite. Sepals 5, united above the middle and beyond the disk in a campanulate or tubular calyx, with truncate, 5-toothed or 5-lobed limb. Petals 5, imbricate, the upper (standard) outermost, free or adnate to stamens, the lower (keel) innermost, usually connate by their adjacent margins, the 2 laterals (wings) intermediate, often attached to the keel. Stamens usually 10, free, or more often 2-adelphous, the 9 lower connate in a sheath, the upper solitary, free, rarely 2-adelphous in lateral bundles of 5 each or stamens alternately imperfect and perfect, dehiscence longitudinal. Carpel 1, free, styles simple, stigmas capitate. Fruit usually a dry pod, splitting along both sutures, sometimes indehiscent and separated into 1-seeded joints. Seeds usually exalbuminous.

The family Fabaceae consists of about 440 genera and 12,000 species, widespread in temperate and cold as well as tropical regions. In Bangladesh, this family is represented by 69 genera and 254 species.

In the present study area this family is represented by 33 genera and 58 species.

Key to genera:

1. Anthers dimorphic, alternately dorsifixed and basifixed, either all equal or alternately longer and shorter 2
- Anthers uniform in size and shape or nearly so, or 5 sterile (Teramnus), not alternately basifixed and dorsifixed, also not alternately longer and shorter 19
2. Upper part of filaments swollen or expanded; perennial shrublets, often spiny and glandular **Meliolotus**

- Upper part of filaments neither swollen nor expanded 3
- 3. Legumes transversely septate and breaking up into 1-seeded joints **Arachis**
- Legumes not transversely septate, or if so then not breaking up into separate joints 4
- 4. Erect plants; legumes turgid or inflated **Crotolaria**
- Climbing plants; legumes thick, often clothed with stinging hairs 5
- 5. Leaflets abaxially and calyx generally with colored sessile glands; bracteoles absent; inflorescence nodes not swollen, 1-flowered 6
- Leaflets and calyx without glands; bracteoles often present; inflorescence nodes often swollen, bearing more than 1 flower 7
- 6. Legumes 3- or more seeded **Cajanus**
- Legumes 1- or 2-seeded **Flemingia**
- 7. Style flattened, thickened or twisted, mostly bearded, if not bearded and terete, then standard and keels with minute appendages; hilum usually covered with spongy strophiole 8
- Style generally terete and unbearded, occasionally coiled, sometimes bearded or flattened; hilum rarely covered with spongy tissue 10
- 8. Style flattened laterally **Lablab**
- Style terete or flattened dorsiventrally 9
- 9. Hooked hairs present on vegetative parts **Phaseolus**
- Hooked hairs absent **Vigna**
- 10. Flowers generally resupinate; calyx naked inside; style narrowed, penicillate or bearded distally; corolla often hairy; leaflets 1, 3, or 5-9, with minute hooked hairs 11
- Flowers not resupinate, or if resupinate then differing from above in other respects 12
- 11. Standard without spur on back **Clitoria**
- Standard with a conspicuous spur on back **Centrosema**
- 12. Flowers mostly adapted to birds or bats for pollination, petals 13

- generally unequal in length, sometimes with small bee-type flowers but then either coiled (*Apios*, *Cochlianthus*) or flowers in extensive panicles and legume samaroid
- Flowers mostly adapted to bees for pollination, or if bird-type flowers then petals subequal in length 16
 - 13. Trees or shrubs; stems with prickles; keels much shorter than standard **Erythrina**
 - Climbers, rarely trees; stems without prickles; keels usually largest petals 14
 - 14. Legume with many seeds, 2-valved; irritant hairs usually present **Mucuna**
 - Legume samaroid with 1 apical seed, empty below; irritant hairs absent 15
 - 15. Flowers purple, rose, or white, 0.5-1 cm **Spatholobus**
 - Flowers yellow to scarlet, 1.5-8 cm **Butea**
 - 16. Inflorescences generally with nodes swollen; seeds diverse, with short to long hilum 17
 - Inflorescences with nodes not or only slightly swollen; seeds smooth or granular, with short hilum 18
 - 17. Stigma lateral to subterminal; ovary hirsute, hairs extending up style, forming a false beard **Pachyrhizus**
 - Stigma terminal; style naked **Canavalia**
 - 18. Flowers 2 or more per node of inflorescence **Pueraria**
 - Flowers 1 per node of inflorescence **Glycine**
 - 19. Free upper part of all or half of filaments dilated or expanded upward **Cicer**
 - Free upper part of filaments $\pm$ filiform, not dilated upward 20
 - 20. Legumes breaking up into 1-seeded segments when ripe 21
 - Legumes not breaking up into separate segments when mature; seeds 1 to several 23
 - 21. Calyx glumelike, lobes dry and hard, striate **Alysicarpus**
 - Calyx not glumelike, lobes herbaceous, not striate 22

22. Joints of legume plicate-retrofracted	Uraria
- Joints of legume not plicate-retrofracted	Desmodium
23. Stamens monadelphous and filaments partly connate into a single $\pm$ closed tube, sometimes adaxial filament free at base but connate higher up with remainder	24
- Stamens diadelphous, mostly vexillary filament free or partly adnate to remainder, or if monadelphous then free at upper part or top	26
24. Leaflet secondary veins numerous, straight, closely parallel, few or not anastomosing, extending to margins; legumes not woody; shrubs or herbs with woody bases	Tephrosia
- Leaflet secondary veins relatively few, curved, usually anastomosing, not extending to margins; shrubs, trees, or lianas	25
25. Flowers borne on slight protuberances of floral axis, mixed occasionally with solitary flowers	Pongamia
- Flowers borne on distinct projections of floral axis	Derris
26. Legumes indehiscent; stipels absent; leaves imparipinnate	Dalbergia
- Legumes dehiscent, sometimes only so at apex	27
27. Rachis of leaves ending in a tendril or bristle	28
- Rachis of leaves not ending in a tendril or bristle	29
28. Leaves imparipinnate; leaflets 2-12 pairs	Glirichidia
- Leaves paripinnate; leaflets 10-30 pairs	Sesbania
29. Stamens 10; flowers solitary, fasciculate or racemose in leaf axils; claw of standard free from staminal sheath	30
- Stamens 9; flowers in terminal or subterminal racemes; claw of standard $\pm$ adnate to staminal sheath	Abrus
30. Staminal tube oblique at apex; filaments filiform	31
- Staminal tube not oblique at apex; filaments filiform or distally dilated	32
31. Style terete; seeds 2-8	Vicia
- Style dorsally compressed; seeds 1 or 2.	Lens

32. Style distally dilated, upper side hairy; filaments filiform or distally dilated; stipules sagittate or semisagittate, usually smaller than leaflets

Lathyrus

- Style distally dilated and margin recurved forming a laterally compressed body, upper side hairy; filaments distally slightly dilated; stipules cordate, larger than leaflets

Pisum

Genus 135. **Abrus** L., Hurt. Chif.: 488 (1737).

234. **Abrus precatorius** L., Syst. Nat. ed. 12: 472 (1767); Baker in Hook. f., Fl. Brit. Ind. 2: 175 (1876); Prain, Beng. Pl. 1: 262 (1903, reprint 1963); R. L. Heinig, List Chittagong: 19 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 92 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 42 (1953). *Glycine abrus* L. (1753).

Vernacular names: *Kunch, Ratti, Kais.* English names: Indian liquorice, Rosary pea.

Perennia, dextrorse climber. Leaves paripinnate, leaflets 10-20 pairs, opposite, linear or linear-rounded at both ends. Flowers in racemes, crowded, pink or white. Pods oblong, 3-5 seeded with a sharp beak. Seeds ovoid, scarlet with a black spot at the hilum. *Flowering and fruiting*: July - September. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Forests and village thickets*.

Distribution: Cosmopolitan in the tropics, often planted.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 417 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 551 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2236 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2358 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2798 (DUSH).

Genus 136. **Alysicarpus** Desv., J. Bot. Desvaux, Ser. 2(1): 120 (1813).

235. **Alysicarpus heterophyllus** (Baker) Jafri & Ali, Biologia 12: 33 (1966). *Alysicarpus vaginalis* (L.) DC. var. *heterophyllus* Baker (1876), *Alysicarpus heterophyllus* Benth. (1876), *Alysicarpus trifoliatus* Stocks (1876).

Erect or ascending robust plant, diffusely branched. Leaves intermixed, uni- or trifoliate, leaflets lanceolate or oblong-lanceolate, middle one larger than the laterals. Racemes elongated, 6-20 flowered. Flowers in distant pairs in axillary racemes. Fruits

3-5 seeded, constricted between the seeds, each 1-seeded, reticulately veined with minute hairs. *Flowering and fruiting*: July - August. *Waste lands or grasslands*.

Distribution: Eastern part of India, Afghanistan.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3962 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4003 (DUSH).

Genus 137. **Arachis** L., Sp. Pl.: 741 (1753).

236. **Arachis hypogaea** L., Sp. Pl. 2: 741 (1753); Hook. f., Fl. Brit. Ind. 2: 161 (1876); Prain, Beng. Pl. 1: 297 (1903, reprint 1963).

Vernacular names: *Cheena badam*, English names: Groundnut, Peanut, *Badam*. Monkeynut.

Erect, trailing or prostrate, sparsely hairy annual herb, with usually root nodules. Leaves alternate with 2-opposite pairs of obovate leaflets. Flowers borne on compressed spike in the axils of foliage leaves, yellow. Fruit a pod, oblong to cylindric, reticulate, indehiscent, torulose but not jointed, 1-3 seeded. Seeds obovoid. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 40$ (Fedorov, 1969). *Sandy loamy soils*.

Distribution: Originated in South America in very ancient time. Now found in all tropical and subtropical countries.

Status of occurrence: Cultivated, sometimes escape.

Uses: The nuts are eaten raw or after roasting.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1113 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1509 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1794 (DUSH); Kaliakoir, Fulbari, 01. 10.2013, R. Tabassum, 3299 (DUSH).

Genus 138. **Butea** Koen. ex Roxb., Pl. Corom. 1: 22, t. 21 (1795).

237. **Butea monosperma** (Lamk.) Taub. in Engl. & Prantl, Nat. Pflanz. 3(3): 366 (1894); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Erythrina monosperma* Lamk. (1788), *Butea frondosa* Roxb. (1795); Hook. f., Fl. Brit. Ind. 2: 194 (1876); Prain, Beng. Pl. 1: 286 (1903, reprint 1963); R. L. Heinig, List Chittagong: 20 (1925).

Vernacular names: *Palash*, English names: Bengal kino tree, Flame of the forest. *Kingshuk*, *Dhak*.

Small to medium-sized deciduous tree, often with crooked bole. Leaves pinnately trifoliolate, terminal leaflet largest, rhomboid or obovate, 2 lateral leaflets smaller, obliquely ovate. Flowers large, reddish-orange, in rigid axillary raceme, crowded at the ends of leafless branchlets. Fruit a pod, pendulous, borne in large cluster in leafless branches, yellowish-brown when ripe, indehiscent, 1-seeded. *Flowering and fruiting*: February - April. *Chromosome number*: $2n = 18, 32$ (Kumar and Subramaniam, 1986). *Forests and dry open fields*.

Distribution: India, Pakistan, Sri Lanka, Nepal, Myanmar, Indonesia, Thailand, Indo-China and introduced in New Guinea.

Status of occurrence: Common.

Uses: Ornamental plant, also used as medicinally.

Specimens examined: Kapasia, Junglebari, 14.12.2009, R. Tabassum, 571 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2302 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2491 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2648 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3194 (DUSH).

Genus 139. **Cajanus** DC., Cat. Hort. Monsp.: 85 (1813).

238. **Cajanus cajan** (L.) Millsp., Publ. Field. Mus. Nat. Hist. Bot. Ser. 2: 53 (1900); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Cytisus cajan* L. (1753), *Cajanus indicus* Spreng. (1826); Hook. f., Fl. Brit. Ind. 2: 217 (1876); Prain, Beng. Pl. 1: 272 (1903, reprint 1963); R. L. Heinig, List Chittagong: 21 (1925).

Vernacular names: *Arhor, Arual*. English names: Pigeon pea, Red gram, Congo pea.

Much-branched erect shrub. Leaves pinnately trifoliolate, leaflets elliptic to lanceolate, acute. Inflorescence a terminal panicle. Flowers bright yellow with reddish-brown lines. Pod linear-oblong, inflated, beaked, yellow or green, striped with maroon or purplish-black, dehiscent, 3-6 seeded. Seeds rounded. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 22, 44, 66$ (Bir and Kumari, 1980). *Plain lands, along the margin of crop fields, grasslands, roadsides and gardens*.

Distribution: Native of tropical Africa, widely distributed in India, Pakistan, New Guinea and other tropical countries.

Status of occurrence: Cultivated, sometimes escape on waste land.

Uses: It is cultivated as a pulse crop, and the leaves are used in jaundice by *Koch*.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 381 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 900 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1275 (DUSH); Kapasia, VobonerChala,

03.11.2013, R. Tabassum, 3526 (DUSH); Kaliagonj, Baglahaola, 02.12.2013, R. Tabassum, 3783 (DUSH).

Genus 140. **Canavalia** DC., Prodr. 2: 403 (1825).

239. **Canavalia ensiformis** (L.) DC., Prodr. 2: 404 (1825); Hook. f., Fl. Brit. Ind. 2: 195 (1876); Prain, Beng. Pl. 1: 281 (1903, reprint 1963); R. L. Heinig, List Chittagong: 20 (1925). *Dolichos ensiformis* L. (1753).

Vernacular names: *Katra shim*, *Makhan* English names: Jack bean, Horse *shim*, *Mou shim*, *Bara shim*. bean, Sword bean.

Annual woody climber. Leaves trifoliolate, leaflets long petioled, elliptic to ovate, terminal leaflets long petioled, side leaflets short petioled with unequal base. Inflorescence a curved raceme, 5-50 flowered. Flowers rose or violet. Pod pendent, ribbed near upper suture, straw coloured when ripe, 8-20 seeded. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Kitchen gardens and cultivated lands*.

Distribution: Native of Central America and West Indies, widely introduced throughout the tropics.

Status of occurrence: Cultivated, occasionally self-sown.

Uses: Immature pods and seeds are edible. Also used as fodder.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1382 (DUSH); Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3773 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3359 (DUSH); Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3873 (DUSH).

Genus 141. **Centrosema** (DC.) Benth., Comm. Leg. Gen.: 53 (1837).

240. **Centrosema pubescens** Benth., Comm. Legum. Gen.: 55 (1837). *Centrosema molle* Mastices ex Benth. (1837).

English names: Butterfly pea, Centro.

Perennial, vigorous twining herb, forming dense masses on nearby bushes or on small trees or even on old wall. Leaves trifoliolate, leaflets elliptic or ovate-elliptic. Inflorescence an axillary raceme, many-flowered. Flowers cleistogamous, pale violet to purplish-white with purple line in the center. Pod linear-oblong, ridged along both sutures, dehiscent. *Flowering and fruiting*: November - February. *Chromosome number*: $2n = 20$ (Frahm-Leliveld, 1953). *Roadsides, waste places, secondary forests and sometimes in gardens as weed*.

Distribution: Native of tropical America, now widely cultivated throughout the tropics and often naturalized in India, New Guinea, Sri Lanka and Taiwan.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 424 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1274 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1970 (DUSH).

Genus 142. **Cicer** L., Sp. Pl.: 738 (1753).

241. **Cicer arietinum** L., Sp. Pl. 2: 738 (1753); Hook. f., Fl. Brit. Ind. 2: 176 (1876); Prain, Beng. Pl. 1: 259 (1903, reprint 1963).

Vernacular names: *Boot, Chhola, Boot kalai*. English names: Chickpea, Bengal gram.

Erect or spreading, much-branched annual herb, all parts covered with clavate glandular hairs. Leaves imparipinnate, leaflets ovate, elliptic, serrate. Flowers solitary, axillary, white, greenish, pink or blue. Pod swollen, oblong, 1-4 seeded. Seeds angular with pointed beak and small hilum. *Flowering and fruiting:* November - January. *Chromosome number:* $2n = 14, 16, 24, 32, 33$ (Fedorov, 1969). *Moist loamy soil.*

Distribution: Chickpea was originated in Turkey and carried to the Indian subcontinent before 200 BC. Now cultivated in many parts of the tropics.

Status of occurrence: Cultivated.

Uses: Chickpea is the most important pulse.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2183 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3056 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3697 (DUSH).

Genus 143. **Clitoria** L., Sp. Pl.: 753 (1753).

242. **Clitoria ternatea** L., Sp. Pl. 2: 753 (1753). Hook. f., Fl. Brit. Ind. 2: 208 (1876); Prain, Beng. Pl. 1: 287 (1903, reprint 1963).

Vernacular name: *Aparajita*.

English name: Butterfly pea.

Perennial twining herb. Leaves imparipinnate, leaflets 5-7, elliptic-oblong, stipules long, linear, stipules filiform. Flowers axillary, solitary, bright blue or white. Pod flattened, nearly straight, sharply beaked. *Flowering and fruiting:* June - March. *Chromosome number:* $2n = 14, 15, 16$ (Kumar and Subramaniam, 1986). *Homesteads, sometimes escape.*

Distribution: Distributed in tropical countries.

Status of occurrence: Cultivated.

Uses: It is an ornamental as well as a medicinal plant.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 134 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1092 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1415 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3057 (DUSH).

Genus 144. **Crotalaria** Dill. ex., L., Gen. ed. 1: 218 (1737).

Key to species:

- | | | |
|--|---|-------------------------------|
| 1. Leaves 3-foliolate; calyx subcampanulate | 2 | |
| - Leaves simple; calyx subcampanulate or 2-lipped | 3 | |
| 2. Legume densely pubescent, not glabrescent; corolla only slightly longer than calyx | | Crotalaria incana |
| - Legume thinly pubescent when young, later glabrous; corolla ca. 2 × as long as calyx | | Crotalaria pallida |
| 3. Legume ovoid-globose, 0.4-0.7 cm, 6-12-seeded | | Crotalaria dubia |
| - Legume cylindric, 1-4(-6) cm, 10-30-seeded | 4 | |
| 4. Stipules 5-30 mm | | Crotalaria spectabilis |
| - Stipules 1-3 mm | 5 | |
| 5. Leaf blade linear-lanceolate to oblong-linear, 0.5-2 cm wide | | Crotalaria juncea |
| - Leaf blade oblanceolate or narrowly elliptic, 2-4 cm wide | | Crotalaria retusa |

243. **Crotalaria dubia** Grah. ex Benth., Lond. J. Bot. 2: 568 (1843); Hook. f., Fl. Brit. Ind. 2: 73 1876); Prain, Beng. Pl. 1: 266 (1903, reprint 1963).

Erect, much-branched annual herb. Leaves simple, subsessile, obovate-oblong, appressed pilose on both surfaces. Inflorescence of very dense racemes, terminal, head-like. Flowers pale yellow. Pod sessile, oblong, black when mature. *Flowering and fruiting:* November - January. *Open grasslands, in mixed deciduous and evergreen forests.*

Distribution: India, Myanmar and Thailand.

Status of occurrence: Seems to be rare.

Specimen examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1124 (DUSH); Kaliganj, Bhulta, 02.02.2013, R. Tabassum, 2332 (DUSH).

244. **Crotalaria incana** L., Sp. Pl.: 716 (1753); Hook. f., Fl. Brit. Ind. 2: 83 (1876); Prain, Beng. Pl. 1: 64 (1903, reprint 1963).

Vernacular name: *Choto jhunjhuni*.

English name: Wooly rattlepod.

Erect annual herb. Leaves trifoliate, leaflets obovate to elliptic-obovate. Inflorescence of racemes, rather dense, terminal and often leaf-opposed. Flowers yellow. Pod sessile, fusiform-clavate, slightly curved, pilose, brown when mature. *Flowering and fruiting:* October - February. *Chromosome number:* $2n = 14$ (Kumar and Subramaniam, 1986). *Open grasslands and open areas in deciduous forest.*

Distribution: Pantropical.

Status of occurrence: Apparently rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 06.11.2008, R. Tabassum, 435 (DUSSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2492 (DUSH).

245. **Crotalaria juncea** L., Sp. Pl.: 714 (1753); Hook. f., Fl. Brit. Ind. 2: 79 (1876); Prain, Beng. Pl. 1: 265 (1903, reprint 1963); R. L. Heinig, List Chittagong: 17 (1925). *Crotalaria benghalensis* Lamk. (1786), *Crotalaria fenestrata* Sims (1817), *Crotalaria tenuifolia* Roxb. (1832).

Vernacular names: *Shonpat, Shon*.

English name: Sunn hemp.

Erect, annual herb. Leaves simple, subsessile, oblong or oblong-lanceolate, apex rounded to acute, base obtuse. Inflorescence of racemes, lax, terminal and often lateral, 12-20 flowered. Flowers bright yellow. Pod sessile, oblong, 10-15 seeded. *Flowering and fruiting:* February - May. *Chromosome number:* $2n = 16, 32, 64, 128$ (Kumar and Subramaniam, 1986). *Plain and high lands.*

Distribution: Pantropical.

Status of occurrence: Cultivated and escape.

Uses: Ornamental garden plant, also used as green manure and in medicine.

Specimens examined: Kaligonj, Kalafata, 05.03.2010, R. Tabassum, 673 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 900 (DUSH); Sripur, Gorgoria,

21.06.2010, R. Tabassum, 1426 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1548 (DUSH).

246. **Crotalaria pallida** Ait., Hort. Kew. 3: 20 (1789). *Crotalaria saltiana* auct. non Andr., Bot. Rep. t. 648 (1811); Hook. f., Fl. Brit. Ind. 2: 84 (1876); Prain, Beng. Pl. 1: 264 (1903, reprint 1963); R. L. Heinig, List Chittagong: 17 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 43 (1953). *Crotalaria striata* DC. (1825).

Vernacular names: *Jhun-jhuni, Jhunjhuna.*

English name: Streaked rattlepod.

Erect, annual herb. Leaves trifoliolate, leaflets elliptic to elliptic-obovate, apex rounded or retuse, base cuneate. Inflorescence of racemes, terminal and often leaf-opposite, elongated, lax. Flowers yellow with reddish-brown lines along the veins on the outer sides of corolla. Pod shortly stipitate, subcylindrical. *Flowering and fruiting:* May - December. *Chromosome number:* $2n = 16$ (Kumar and Subramaniam, 1986). *Grasslands, along roadsides, cultivated land, also in deciduous and evergreen forests.*

Distribution: Pantropical.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 178 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 924 (DUSH); Sripur, Gorgoria, 23.06.2010, R. Tabassum, 1458 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3604 (DUSH).

247. **Crotalaria retusa** L., Sp. Pl.: 715 (1753); Hook. f., Fl. Brit. Ind. 2: 75 (1876); Prain, Beng. Pl. 1: 265 (1903, reprint 1963); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 92 (1956).

Vernacular names: *Atasi, Biljhunjhuni.*

English name: Rattleweed.

Robust undershrub. Leaves simple, ovate to oblanceolate. Inflorescence of racemes, terminal, elongated, lax to rather dense, 10-20 flowered. Flowers yellow tinged with purple. Pod subcylindrical-clavate. *Flowering and fruiting:* September - March. *Chromosome number:* $2n = 16$ (Kumar and Subramaniam, 1986). *Open grasslands and near the streams.*

Distribution: Pantropical.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1770 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2191 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3294 (DUSH).

248. **Crotalaria spectabilis** Roth., Nov. Pl. Sp.: 341 (1821). *Crotalaria sericea* Retz. (1789); Hook. f., Fl. Brit. Ind. 2: 75 (1876); Prain, Beng. Pl. 1: 265 (1903, reprint 1963).

Vernacular names: *Pipli-jhunjan, Jhunjhuni-ghati*. English name: Showy rattlebox.

Erect, much-branched, robust annual undershrub. Leaves simple, sessile, obovate or oblanceolate. Inflorescence of racemes, terminal, elongated, lax, 20-40 flowered. Flowers yellow. Pod stipitate, broadly clavate-oblong, inflated, with upward projected beak, brown when mature. *Flowering and fruiting:* August - February. *Chromosome number:* $2n = 16$ (Kumar and Subramaniam, 1986). *Open grasslands, mixed deciduous and mixed evergreen forests, and sides of streams.*

Distribution: Pantropical.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1816 (DUSH); Sripur, Piruzili, 17.02.2012, R. Tabassum, 1995 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2130 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3115 (DUSH).

Genus 145. **Dalbergia** L. f., Suppl.: 52 (1781).

249. **Dalbergia sissoo** Roxb., Fl. Ind. 3: 223 (1832); Hook. f., Fl. Brit. Ind. 2: 231 (1876); Prain, Beng. Pl. 1: 294 (1903, reprint 1963); R. L. Heinig, List Chittagong: 21 (1925). *Amerimnon sissoo* (Roxb.) O. Kuntze (1891).

Vernacular name: *Sissoo gachh*. English names: Sissoo, South Indian red wood.

Medium-sized to large, deciduous tree, often with curved or crooked bole. Leaves alternate, imparipinnate, leaflets 3-5, obovate-orbicular or rhomboid, the terminal one largest, lowest smallest. Flowers sessile in axillary panicles, yellowish-white, densely hairy. Pod strap-shaped, narrowed at the base with a long stalk. *Flowering and fruiting:* March - June. *Chromosome number:* $2n = 20$ (Fedorov, 1969). *High lands.*

Distribution: Indian, Bhutan, Myanmar, Pakistan, Afghanistan, Iran and Iraq.

Status of occurrence: Cultivated.

Uses: Timber yielding plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 393 (DUSH); Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 418 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1459 (DUSH).

Genus 146. **Derris** Lour., Fl. Cochinch. 432 (1790).

250. **Derris scandens** (Roxb.) Benth. in J. Linn. Soc. 4. Suppl. 103 (1860); Baker in Hook. f., Fl. Brit. Ind. 2: 240 (1876); Prain, Beng. Pl. 1: 291 (1903, reprint 1963); R. L. Heinig, List Chittagong: 22 (1925). *Dalbergia scandens* Roxb., Pl. Corom. 2: 49, t. 192 (1798).

Vernacular names: *Amkurchi, Kalilata*.

English name: Hog creeper.

Woody climbers. Leaves imparipinnate, leaflets 5-19, elliptic-oblong or obovate-oblong. Inflorescence of racemes. Flowers white to pink. Pods elliptic, glabrous, 1-4-seeded. *Flowering and fruiting:* June - December. *Chromosome number:* 2n = 20, 26 (Fedorov, 1969). *Grows in forest*.

Distribution: India, Sri Lanka, Pakistan, Southeast Asia, China and Australia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3963 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4005 (DUSH).

Genus 147. **Desmodium** Desv., Journ. Bot. 1: 122, t. 5 (1818).

Key to species:

- | | |
|--|--------------------------------|
| 1. Pods distinctly divided into several 1-seeded joints | 2 |
| - Pods indistinctly jointed | Desmodium gyroides |
| 2. Leaves tri-foliolate | 3 |
| - Leaves unifoliolate | 6 |
| 3. Stem diffuse and prostrate | 4 |
| - Stem erect or suberect | 5 |
| 4. Terminal leaflet broadly elliptic or broadly obovate; flowering pedicel 10-25 mm; articles of legume 3.5-4 mm | Desmodium heterophyllum |
| - Terminal leaflet obcordate, obtriangular, or obovate; flowering pedicel 3-8 mm; articles of legume shorter than 2.5 mm | Desmodium triflorum |
| 5. Bracts large, 2-foliolate, persistent | Desmodium pulchellum |

- Bracts small, simple, deciduous **Desmodium laxiflorum**
- 6. Petiole not winged
- Petiole broadly winged **Desmodium triquetrum**
- 7. Bracts minute, not concealing the flower bud; flower 3.8-4.5 mm long. Fruit 1.2-2.5 cm long, c. 2.5 mm broad, upper suture slightly , lower deeply indented between the seeds **Desmodium gangeticum**
- Bracts large, concealing the flower bud; flower 7.5-8.5 mm long. Fruit 3-4.4 cm long, 5-6.5 mm broad, upper suture curved not indented, lower suture slightly indented **Desmodium motorium**

251. **Desmodium gangeticum** (L.) DC., Prodr. 2: 327 (1825); Baker in Hook. f., Fl. Brit. Ind. 2: 168 (1876); Prain, Beng. Pl. 1: 304 (1903, reprint 1963); R. L. Heinig, List Chittagong: 19 (1925). *Desmodium maculatum* L. (1753); *Hedysarum gangeticum* L., Sp. Pl. 746 (1753); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 44 (1953); *Desmodium gangeticum* (L.) DC. var. *maculatum* (L.) Baker in Hook. f., Fl. Brit. Ind. 2: 168 (1876).

Vernacular names: *Chalani*, *Salpani*.

Undershrub. Leaves unifoliolate, leaflets oblong, narrowed gradually to an acute point. Inflorescence a raceme, copious, lateral and terminal. Flowers violet or white. Pods falcate, 6-8 jointed. *Flowering and fruiting*: April - November. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Shady places as undergrowth*.

Distribution: India, Pakistan, Sri Lanka, Nepal, Bhutan, Myanmar, Taiwan, Australia, Thailand, Vietnam, tropical Africa and China.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 135 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1093 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2077 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3063 (DUSH).

252. **Desmodium gyroides** (Roxb. ex Link) DC., Prodr. 2: 326 (1825); Baker in Hook. f., Fl. Brit. Ind. 2: 175 (1876); Prain, Beng. Pl. 1: 305 (1903, reprint 1963). *Hedysarum gyroides* Roxb. ex Link (1822).

Long shrub. Leaves oblong or obovate-oblong, obtuse. Racemes short, the terminal ones not so copiously paniced. Flowers purple. Pods falcate, 6-10 jointed. *Flowering and fruiting*: August - January. *Chromosome number*: $2n = 20, 22$ (Kumar and Subramaniam, 1986). *Forests*.

Distribution: India, Nepal, Bhutan, Myanmar, Thailand, Vietnam, China, Malesia and Sri Lanka.

Status of occurrence: Apparently rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 427 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 837 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1409 (DUSH).

253. **Desmodium heterophyllum** (Willd.), DC., Prodr. 2: 334 (1825). Hook. f., Fl. Brit. Ind. 2: 173 (1876); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 92 (1956); Prain, Beng. Pl. 1: 303 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 44 (1953). *Hedysarum heterophyllum* Willd., Sp. Pl. 3: 1201 (1803), *Meibomia heterophylla* (Willd.) O. Kuntze (1891).

English name: Greater clover-leaved desmodium.

Small herb. Leaves trifoliolate, leaflets oblong or obovate-oblong. Flowers solitary or geminate in leaf axils or raceme, light violet. Pod 4-5 jointed. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Shady waste places, roadsides and rice fields*.

Distribution: India, Sri Lanka, Nepal, Myanmar, China, Thailand and Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Junglebari, 14.12.2009, R. Tabassum, 572 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1965 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2442 (DUSH).

254. **Desmodium laxiflorum** DC., Ann. Sci. Nat. Paris Ser. 1, 4: 100 (1825); Hook. f., Fl. Brit. Ind. 2: 164 (1876); Prain, Beng. Pl. 1: 304 (1903, reprint 1963). *Desmodium diffusum* DC. (1825), *Meibomia laxiflora* (DC.) O. Kuntze (1891).

English name: Loose flowered desmodium.

Erect undershrub. Leaves trifoliolate, leaflets ovate, elliptic, broadly lanceolate or oblong. Racemes copious, axillary and terminal. Flowers several, white to violet. Pod 6-10 jointed, clothed with minute hairs. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Forests*.

Distribution: India, Pakistan, Nepal, Bhutan, Myanmar, Thailand, Vietnam, China, the Philippines, Indonesia and Malaysia.

Status of occurrence: Common.

Specimens examined: Sripur, Garabon, 21.09.2012, R. Tabassum, 2157 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2992 (DUSH).

255. **Desmodium motorium** (Houtt.) Merr., J. Arn. Arb. 19: 345 (1938). *Hedysarum motorium* Houtt. (1779), *Desmodium gyrans* (L. f.) DC. (1825); Hook. f., Fl. Brit. Ind. 2: 174 (1876); Prain, Beng. Pl. 1: 305 (1903, reprint 1963); *Codariocalyx gyrans* (L. f.) Hassk. (1842).

Vernacular names: *Gorachan*, *Turut* English name: Indian telegraph plant. *chandal*.

Undershrub. Leaves 1-3 foliolate, leaflets oblong-lanceolate. Racemes axillary and terminal, the latter copiously paniced. Flowers pink. Pod slightly falcate, 6-10 jointed. *Flowering and fruiting:* September - February. *Chromosome number:* $2n = 20, 22$ (Kumar and Subramaniam, 1986). *Village thickets and forests.*

Distribution: India, Sri Lanka, Pakistan, Nepal, Myanmar, the Philippines and Malaysia.

Status of occurrence: Common.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1125 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2876 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3086 (DUSH).

256. **Desmodium pulchellum** (L.) Benth., Fl. Hongk.: 83 (1861); Hook. f., Fl. Brit. Ind. 2: 162 (1876); Prain, Beng. Pl. 1: 304 (1903, reprint 1963). *Hedysarum pulchellum* L. (1753), *Phyllodium pulchellum* (L.) Desb. (1813), *Dicerma pulchellum* (L.) DC. (1825).

Vernacular name: *Jatsalpani*.

English name: Showy desmodium.

Shrub, branches finely grey-downy. Leaflets oblong, terminal one the largest. Racemes 12-50 flowered. Flowers pale yellow. Fruits a pod, joints rarely 1 or 3. *Flowering and fruiting:* March - July. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Forests.*

Distribution: India, Sri Lanka, Myanmar, China, Thailand, Vietnam and Malaysia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 883 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1723 (DUSH).

257. **Desmodium triflorum** (L.) DC., Prodr. 2: 334 (1825); Hook. f., Fl. Brit. Ind. 2: 173 (1876); Prain, Beng. Pl. 1: 303 (1903, reprint 1963); R. L. Heinig, List Chittagong: 19 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 92 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 44 (1953). *Hedysarum triflorum* L., SP. Pl. 749 (1753), *Nicolsonia triflora* (L.) Griseb. (1857).

Vernacular names: *Kulalia, Kodalia*. English name: Lesser clover-leafed desmodium.

Small herb, stem caespitose, trailing. Leaflets obovate, truncate or emarginated. Flowers solitary or 2 or 3 in leaf axils, violet. Pod 3-5 jointed. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 18, 22$ (Kumar and Subramaniam, 1986). *Fallow lands, grasslands, and waste places cultivated lands.*

Distribution: India, Sri Lanka, Pakistan, Bhutan, Myanmar, Thailand, Vietnam, Malesia, China, Taiwan, Australia, Africa and America.

Status of occurrence: Very common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 44 (DUSH); Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 126 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 528 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 745 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3786 (DUSH).

258. **Desmodium triquetrum** (L.) DC., Prodr. 2: 326 (1825); Hook. f., Fl. Brit. Ind. 2: 163 (1876); Prain, Beng. Pl. 1: 305 (1903, reprint 1963); R. L. Heinig, List Chittagong: 18 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 92 (1956). *Hedysarum triquetrum* L. (1753), *Hedysarum alatum* Roxb. (1814), *Pteroloma triquetrum* (L.) Benth. (1852).

Shrub, branches triquetrous. Leaflets ovate-lanceolate, acute. Raceme axillary and terminal. Flowers light violet. Pod 6-8 jointed, joints nearly square. *Flowering and fruiting:* July - March. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Forest and village thickets.*

Distribution: India.

Status of occurrence: Common.

Specimens examined: Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1040 (DUSH); Gazipur Sadar, Rajendropur Sal Forest, 04.02.2011, R. Tabassum, 1725 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1952 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2379 (DUSH).

Genus 148. **Erythrina** L., Sp. Pl.: 706 (1753).

Key to species:

1. Keels and wings subequal; stem prickles minute, usually black **Erythrina variegata**
- Keels much longer than wings; stem prickles whitish **Erythrina stricta**

259. **Erythrina stricta** Roxb., Fl. Ind. 3: 251 (1832); Hook. f., Fl. Brit. Ind. 2: 189 (1876); Prain, Beng. Pl. 1: 284 (1903, reprint 1963). *Micropteryx stricta* (Roxb.) Duchass. & Walp. (1974).

Vernacular names: *Mandar, Teliemandar.*

English name: Corky coral tree.

Fairly large, deciduous tree, armed with sharp conical prickles. Leaflets 3, sometimes broader than long, rhomboid-orbicular or ovate. Racemes horizontal, crowded at the ends of branchlets. Flowers scarlet-red, showy. Pod spindle-shaped, sharply pointed, white silky inside. *Flowering and fruiting:* January - May. *Chromosome number:* $2n = 42$ (Mehra and Hans, 1969). *Forests areas, sometimes planted.*

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

Status of occurrence: Common.

Uses: Hedge plant, also used in medicine.

Specimens examined: Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 318 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2493 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3066 (DUSH).

260. **Erythrina variegata** L., Diss. Herb. Amb. Amoen. Acad. 4: 122 (1754). *Erythrina picta* L. (1753); *Erythrina indica* Lamk., Encycl. 2: 391 (1786); Baker in Hook. f., Fl. Brit. Ind. 2: 188 (1876); Prain, Beng. Pl. 1: 284 (1903, reprint 1963); R. L. Heinig, List Chittagong: 20 (1925).

Vernacular names: *Mandar, Madar, Paltemadar, Parijat.* English name: Indian coral tree.

Small to medium-sized tree, armed with small, conical, dark-coloured prickles. Leaves 3-foliate, leaflets rhomboid, orbicular, broader than long, terminal one largest. Flowers in dense raceme, borne at the ends of branchlet, appearing before the leaf, bright red. Pod stalked, sub-cylindrical with constrictions, sharply pointed, silky inside. *Flowering and fruiting*: February - May. *Chromosome number*: $2n = 42, 44$ (Kumar and Subramaniam, 1986). *Village swamp areas, sodes of cultivated fields and village thickets*.

Distribution: India, Sri Lanka, Myanmar, Malesia and Polynesia.

Status of occurrence: Common.

Uses: It is used as a hedge, medicinal and an ornamental plant.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 645 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1231 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2301 (DUSH); Gazipur sadar, Shuib Road, 19.08.2013, R. Tabassum, 2912 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3764 (DUSH).

Genus 149. **Flemingia** Roxb. ex Ait., Hort. Kew. ed. 2, 4: 349 (1812).

Key to species:

- | | |
|-------------------------------|-------------------------------|
| 1. Leaves simple | Flemingia strobilifera |
| - Leaves digitately 3-foliate | Flemingia macrophylla |

261. **Flemingia macrophylla** (Willd.) O. Kuntze ex Merr., Philipp. J. Sci. Bot. 5: 130 (1910). *Crotalaria macrophylla* Willd. (1803), *Flemingia congesta* Roxb. ex Ait. (1812); Baker in Hook. f., Fl. Brit. Ind. 2: 228 (1876); Prain, Beng. Pl. 1: 268 (1903, reprint 1963), *Flemingia angustifolia* Roxb. (1832), *Flemingia prostrata* Roxb. (1832).

Vernacular name: *Bara-salphan*.

English name: Flemingia.

Suffrutescent perennial. Leaves trifoliate, terminal leaflet obovate, narrowed, the lateral obliquely elliptic, rounded at the base. Flowers solitary or fascicled, numerous in axillary, elongated racemes, greenish-pink with darker stripes. Pod oblong, turgid, clothed with greenish-grey tomentum. *Flowering and fruiting*: January - March. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Forests, village thickets and plain lands*.

Distribution: India, Sri Lanka, Pakistan, Nepal, Bhutan, Myanmar, China, Malesia, Australia and Africa.

Status of occurrence: Apparently rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3964 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4006 (DUSH).

262. **Flemingia strobilifera** (L.) R. Br. in Ait. Hort. Kew. ed. 2(4): 350 (1812); Baker in Hook. f., Fl. Brit. Ind. 2: 227 (1876); Prain, Beng. Pl. 1: 268 (1903, reprint 1963); R. L. Heinig, List Chittagong: 21 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 93 (1956). *Hedysarum strobiliferum* L., Sp. Pl. 746 (1753), *Hedysarum bracteatum* Roxb. (1832).

Vernacular name: *Sim busak*.

English name: Wildhops.

Erect, much-branched shrub. Leaves unifoliate, leaflets ovate-oblong. Inflorescence an axillary and terminal, simple or branched raceme. Flowers white. Pods oblong, densely pubescent, 2-seeded. *Flowering and fruiting:* October - February. *Chromosome number:* $2n = 22$ (Kumar and Subramaniam, 1986). *Village thickets*.

Distribution: Pakistan, India, Sri Lanka, Nepal, Bhutan, Myanmar, Thailand, China and Malesia.

Status of occurrence: Apparently rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3965 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4009 (DUSH).

Genus 150. **Gliricidia** H. B. & K., Nov. Gen. et Sp. 6: 393 (1823).

263. **Gliricidia sepium** (Jacq.) Kunth ex Walp., Repert. 1: 679 (18420. *Robonia sepium* Jacq. (1760), *Gliricidia maculata* H. B. & K. (1824).

Vernacular names: *Gliricidia*, *Bashanta* English names: Mexican lilac, *manjuri*. Nicaraguan coffee shade.

Small to medium-sized tree. Leaves imparipinnate, leaflets 7-17, oblong or elliptic-oblong, often oblique, bluntly acute at the apex. Inflorescence simple racemes, on older twigs. Flowers pinkish-white, showy. Pod linear-oblong, leathery, dehiscent. *Flowering and fruiting:* January - May. *Chromosome number:* $2n = 20$ (Atchison, 1951); $2n = 22$ (Rao, 1972). *Plain lands*.

Distribution: Native of South America, distributed in India, Bhutan, Myanmar, Pakistan and Sri Lanka.

Status of occurrence: Common.

Uses: Planted as ornamental purposes.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4020 (DUSH).

Genus 151. **Glycine** L., Sp. Pl. 3(2): 1053 (1802).

264. **Glycine max** (L.) Merr., Inter. Rumph. Herb. Amb.: 274 (1917). *Phaseolus max* L. (1753), *Glycine hispida* (Moench) Maxim. (1873); Prain, Beng. Pl. 1: 279 (1903, reprint 1963), *Soja max* (L.) Piper (1914).

Vernacular names: *Gari kalai*, *Soya bean*.

English names: Soya bean, Soybean.

Annual herb. Stem densely covered with fine rusty hairs. Leaves trifoliate, leaflets ovate. Flowers in short, clustered, axillary raceme of 3-15 flowers, white or lilac. Pod linear-oblong, recurved, densely pubescent, 3-4 seeded. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 20, 40, 60, 80$ (Kumar and Subramaniam, 1986). *Plain lands*.

Distribution: India, Pakistan, Nepal. Myanmar, China and East Asia.

Status of occurrence: Common.

Uses: Oil yielding plant.

Specimens examined: Sripur, Gargoria, 21.06.2010, R. Tabassum, 1364 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1804 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2118 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3067 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3832 (DUSH).

Genus 152. **Lablab** Adans., Fam. Pl. 2: 325 (1763).

265. **Lablab purpureus** (L.) Sweet, Hort. Brit. ed. 1: 481 (1827). *Dolichos lablab* L. (1753); Hook. f., Fl. Brit. Ind. 2: 209 (1876); Prain, Beng. Pl. 1: 278 (1903, reprint 1963); R. L. Heinig, List Chittagong: 21 (1925), *Lablab niger* Medic. (1787).

Vernacular names: *Sheem*, *Urshi*, *Ushi*.

English names: Hyacinth bean, Lablab.

Tall, twining perennial or annual herb. Leaves alternate, trifoliate, leaflets ovate. Inflorescence a raceme, axillary, erect, long-stalked. Flowers white or purple. Pod obliquely oblong, often curved and flattened. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 22, 24$ (Fedorov, 1969). *Dry soil in plenty of sunshine*.

Distribution: Throughout the tropics.

Status of occurrence: Cultivated.

Uses: The young pod is a popular vegetable. The ripe and splitted seed is used as pulse. It is also grown as green manure and cover crop.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1808 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2122 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2495 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3073 (DUSH).

Genus 153. **Lathyrus** L., Sp. Pl.: 729 (1753).

266. **Lathyrus sativus** L., Sp. Pl. 2: 730 (1753); Hook. f., Fl. Brit. Ind. 2: 179 (1876); Prain, Beng. Pl. 1: 259 (1903, reprint 1963); R. L. Heinig, List Chittagong: 19 (1925).

Vernacular name: *Khesari*.

English names: Grass pea, Chickling pea.

Procumbent, slender herb. Stem winged. Leaves alternate, even pinnate, rachis ending in 1-3 delicate tendrils, leaflets 2-4, linear-lanceolate, entire. Flowers axillary, solitary, blue or purple with white keel. Pod oblong, retuse, flattened, dorsally winged, 3-5 seeded. *Flowering and fruiting:* February - September. *Chromosome number:* $2n = 14$, 28 (Kumar and Subramaniam, 1986). *Lowlands.*

Distribution: Native of Southern Europe and Western Asia. Distributed throughout Europe, Asia and Africa.

Status of occurrence: Cultivated.

Uses: Grass pea is one the cheapest pulses. It is grown as fodder. The leaves are also eaten as vegetable.

Specimens examined: Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1479 (DUSH); Kaligonj, Tumulia, 23.08.2010, R. Tabassum, 1691 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1807 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2166 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3071 (DUSH).

Genus 154. **Lens** Mill., Gard. Dict. Abridg. ed. 4 (1754).

267. **Lens culinaris** Medic. in Vor., Churp. Phys. Gese. 2: 361 (1787). *Lens esculenta* Moench (1794); Hook. f., Fl. Brit. Ind. 2: 179 (1876); Prain, Beng. Pl. 1: 259 (1903, reprint 1963); R. L. Heinig, List Chittagong: 19 (1925).

Vernacular name: *Masur*.

English name: Lentil.

Small, erect annual herb. Stem much branched, softly hairy. Leaves pinnately compound, usually ending in a tendril or bristle, leaflets 4-7 pairs, lanceolate, often mucronate. Inflorescence axillary, 1-4 flowered. Flowers pale blue, white or pink. Pod rhomboid or oblong, compressed, 1-2 seeded. Seeds biconvex. *Flowering and fruiting:*

December - March. *Chromosome number*: $2n = 14$ (Fedorov, 1969). *Prefers sandy loamy soil*.

Distribution: Distributed throughout India, South East Europe and temperate West Asia.

Status of occurrence: Cultivated.

Uses: Lentil is very nutritious. The husk, bran and dry haulms are good fodder. The young pod is used as vegetable.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1729 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2116 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2494 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3170 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3833 (DUSH).

Genus 155. **Melilotus** Mill., Gard. Dict. Abr. ed. 4 (1754).

Key to species:

- | | |
|------------------|-------------------------|
| 1. Flowers white | Melilotus alba |
| - Flowers yellow | Melilotus indica |

268. **Melilotus alba** Desr. in Lamk., Encycl. 4: 63 (1796); Hook. f., Fl. Brit. Ind. 2: 89 (1876); Prain, Beng. Pl. 1: 295 (1903, reprint 1963); R. L. Heinig, List Chittagong: 17 (1925). *Melilotus leucantha* (Koch. ex DC.) Wight & Arn. (1834).

Vernacular names: *Sada methi*, *Sadaba methi*. *English name*: White melilot.

Annual herb. Leaves trifoliolate, leaflets ovate or oblong, lateral leaflets nearly sessile, terminal one stalked. Inflorescence a peduncled raceme. Flowers white. Pod ovoid, indehiscent, 1-2 seeded. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 16, 24, 32, 36$ (Fedorov, 1969). *Crop fields where it occurs as weed*.

Distribution: India, Myanmar, Bhutan, Pakistan, Afghanistan, Saudi Arabia, Iran, Turkey, Europe, Central Asia, USSR, Malaysia and Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 325 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1722 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3010 (DUSH).

269. **Melilotus indica** (L.) All., Fl. Pedem. 1: 308 (1785). *Trifolium melilotus-indica* L. (1753), *Melilotus parviflora* Desf. (1799); Hook. f., Fl. Brit. Ind. 2: 89 (1876); Prain, Beng. Pl. 1: 295 (1903, reprint 1963).

Vernacular name: *Bon methi*.

English name: Indian sweet clover.

Erect, annual herb. Leaves trifoliolate, leaflets oblong, oblanceolate or obovate-cuneate, toothed. Flowers small, in spicate raceme, yellow. Pod ellipsoid, compressed, tapering at both ends, 1-seeded. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 16$ (Fedorov, 1969). *Waste and fallow lands*.

Distribution: India, Nepal, Bhutan, Pakistan, Mediterranean region, Africa and South Europe.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3774 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3874 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3937 (DUSH).

Genus 156. **Mucuna** Adans., Fam. 2: 325 (1763).

270. **Mucuna pruriens** (L.) DC., Prodr. 2: 405 (1825); Baker in Hook. f., Fl. Brit. Ind. 2: 187 (1876); Prain, Beng. Pl. 1: 285 (1903, reprint 1963); R. L. Heinig, List Chittagong: 20 (1925). *Dolichos pruriens* L., in Stickm. Herb. Amboin. 23 (1754); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 45(1953); *Mucuna prurita* Hook. (1831).

Vernacular names: *Al-kushi*, English names: Cow-witch plant, Velvet bean *Langurialot (Santal)* plant.

Annual or perennial, large climber. Leaves trifoliolate, leaflets ovate, rhomboid. Racemes drooping, the axis finely grey silky. Flowers purplish. Pod thickly leathery, oblong, beset with stinging hairs, septate within. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Deciduous forests and village thickets*.

Distribution: India, Pakistan, Myanmar, Laos, Sri Lanka, Indonesia and the Philippines.

Status of occurrence: Apparently common.

Uses: Roots are used in dysentery by *Santal*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 433 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 734 (DUSH); Sripur, Veramtoli Sal forest, 17.02.2012, R. Tabassum, 1987 (DUSH).

Genus 157. **Pachyrhizus** Rich. ex DC., Mem. Leg.: 379 (1825).

271. **Pachyrhizus erosus** (L.) Urban, Symb. Antill. 4: 311 (1905). *Dolichos erosus* L. (1753), *Pachyrhizus angulatus* Rich. ex DC. (1825); Hook. f., Fl. Brit. Ind. 2: 207 (1876); Prain, Beng. Pl. 1: 277 (1903, reprint 1963).

Vernacular names: *Kesur, Shak-alu, Kesur-alu.*

English name: Yam bean.

Twining, climbing or trailing herb, with a large tuber. Stem with tawny hair. Leaves trifoliate, alternate, leaflets ovate or rhomboid, coarsely dentate or 5-lobed. Flowers in axillary racemes, 1-5 flowers borne in dense clusters or short pedicels at each node of peduncle, violet or white. Pod flattened, constricted, 4-12 seeded. *Flowering and fruiting:* October - January. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Plain dry lands.*

Distribution: Originated in Mexico and Central America, now cultivated in the tropics.

Status of occurrence: Cultivated.

Uses: The tubers are mostly consumed fresh in salads or lightly fried, also eaten raw.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3966 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4008 (DUSH).

Genus 158. **Phaseolus** [Tourn.] L., Syst. ed. 1 (1735).

272. **Phaseolus vulgaris** L., Sp. Pl. 1: 723 (1753); Hook. f., Fl. Brit. Ind. 2: 200 (1876); Prain, Beng. Pl. 1: 275 (1903, reprint 1963). *Phaseolus esculentus* Salisb. (1796).

Vernacular name: *Farash* English names: Common bean, French bean, Kidney bean.

Climber or suberect annual herb. Leaves alternate, trifoliate, often hairy, leaflets ovate, entire, lateral leaflets asymmetric. Inflorescence axillary, lax, raceme, usually shorter than leaf. Flowers white, yellowish, pink or violet. Pod slender, straight or slightly curved, 4-6 seeded, beak prominent. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 22, 24$ (Kumar and Subramaniam, 1986). *Dry land.*

Distribution: Originated in the America and domesticated in Mexico, Peru and Columbia some 8000 years ago. Before Columbus it was unknown to the Old World, later it has become a major crop in Europe and Africa. Now it is cultivated throughout tropical and temperate countries.

Status of occurrence: Cultivated.

Uses: It is one of the best known and widely cultivated edible phaseolus plant. Immature fruits are used as vegetable. Dry ripe seeds are also edible.

Specimens examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3876 (DUSH); Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3967 (DUSH); .

Genus 159. **Pisum** L., Sp. Pl.: 727 (1753).

273. **Pisum sativum** L., Sp. Pl. 1: 727 (1753); Hook. f., Fl. Brit. Ind. 2: 181 (1876); Prain, Beng. Pl. 1: 261 (1903, reprint 1963).

Vernacular names: *Motor, Motos-shuti.*

English names: Garden pea, Pea.

Short-lived, climbing, annual herb. Stem weak. Leaves pinnately compound, with terminal branched tendril, leaflets 2-8, ovate or elliptic, entire or with undulate margin. Inflorescence axillary, solitary or 2-3 flowered racemes. Flowers usually white, pink and purple. Pod tumid or compressed, straight or curved, 2-valved, dehiscent. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 14$, 28, 30 (Fedorov, 1969). *Plain lands.*

Distribution: Cosmopolitan.

Status of occurrence: Cultivated as a winter crop.

Uses: Fresh green seeds are eaten as cooked vegetable and ripe dried seeds are used as pulse.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1805 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2061 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2119 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3069 (DUSH); Kaligonj, Banglahaola, 02.12. 2013, R. Tabassum, 3834 (DUSH).

Genus 160. **Pongamia** Vent., Jard. Malm.: t. 28 (1803).

274. **Pongamia pinnata** (L.) Pierre, For. Fl. Coch. 385 (1899); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 93 (1956). *Cytisus pinnatus* L. (1753), *Pongamia glabra* Vent. (1803); Hook. f., Fl. Brit. Ind. 2: 240 (1876); Prain, Beng. Pl. 1: 291 (1903, reprint 1963); R. L. Heinig, List Chittagong: 22 (1925).

Vernacular names: *Karanja, Karach*. English names: Indian beach, Poongan oil plant.

Small to medium-sized, evergreen tree. Leaves alternate, imparipinnate, leaflets 5-9, opposite, ovate-oblong or elliptic, terminal one largest. Flowers in lax axillary racemes, yellow. Pod flattened, obliquely oblong, beaked, indehiscent, 1-seeded. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 20, 22$ (Fedorov, 1969). *Village thickets, marshy lands and forests, also planted in gardens, roadsides and parks*.

Distribution: India, Pakistan, Sri Lanka, Myanmar, North Australia, Polynesia and Mascarene Island.

Status of occurrence: Common.

Uses: It is used as a roadside tree.

Specimens examined: Kaliganj, Nimtoli, 29.04.2005, R. Tabassum, 222 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1943 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2064 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3325 (DUFH).

Genus 161. **Pueraria** DC., Ann. Sci. Nat. Paris 4: 97 (1825).

275. **Pueraria phaseoloides** (Roxb.) Benth., J. Linn. Soc. Bot. 9: 125 (1867); Hook. f., Fl. Brit. Ind. 2: 199 (1876); Prain, Beng. Pl. 1: 282 (1903, reprint 1963). *Dolichos phaseoloides* Roxb. (1832), *Dolichos viridis* Buch.-Ham. ex Wall. (1831-1832).

English name: Tropical kudzu.

Much-branched, twining, woody climber. Leaves pinnately trifoliolate, terminal leaflets roundish, broadly ovate or rhomboidal, entire or deeply 3-lobed. Flowers in copious, long-peduncled racemes, reddish. Pod subcylindric. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Forests*.

Distribution: India, Nepal, Myanmar, China, Indonesia, Malaysia, Thailand, Vietnam and New Guinea.

Status of occurrence: Rare.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4010 (DUSH).

Genus 162. **Sesbania** Adans., Fam. 2: 326 (1763).*Key to species:*

1. Trees; leaflet blades 8-16 mm wide; flowers 7-10 cm, falcately curved in bud; legume 7-8 mm wide **Sesbania grandiflora**
- Herbs or shrub, annual or perennial and suffrutescent; leaflet blades 2-4(-7) mm wide; flowers usually less than 2 cm, not or only slightly falcately curved in bud; legume 2.5-4 mm wide **2**
2. Leaves 20-40-foliolate; leaf rachis 4-10 cm, internodes often less than 3 cm, node often gibbous; corolla standard 1.1-1.3 cm **3**
- Leaves 40-80-foliolate; leaf rachis 13-30 cm, internodes often more than 3 cm, node not gibbous; corolla standard 0.9-1 cm **4**
3. Inflorescence 15 cm long; corolla yellow, tinged with purple; pod 15-30 cm long and 5 mm wide, 20-40-seeded. **Sesbania sesban**
- Inflorescence 10 cm long; corolla yellow, finely spotted with brown; pod 18-20 cm long and 4 mm wide; seeds numerous. **Sesbania javanica**
4. Branchlets, leaf rachises, and flower rachises without prickles; leaflet blades adaxially $\pm$ villous when young, glabrescent; standard wider than long **Sesbania cannabina**
- Branchlets, leaf rachises, and flower rachises with $\pm$ projected prickles; leaflet blades usually glabrous; standard longer than wide **Sesbania bispinosa**

276. **Sesbania bispinosa** (Jacq.) Wight, U. S. Dept. Bur. Pl. Ind. Bull. no. 137: 15 (1909); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 92 (1956). *Aeschynomene aculeata* Schreb. (1770), *Aeschynomene bispinosa* Jacq. (1792), *Sesbania aculeata* (Willd.) Poir. (1806); Hook. f., Fl. Brit. Ind. 2: 114 (1876); Prain, Beng. Pl. 1: 288 (1903, reprint 1963).

Vernacular name: *Dhaincha*.

English name: Prickly sesban.

Sparingly branched, annual or biennial. Stem semi-woody. Leaves abruptly pinnate, leaflets 40-110, linear-oblong. Flowers in lax axillary, 3-12 flowered, drooping

racemes, yellow. Pod long, not twisted, slightly falcate, beaked. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 12, 24$ (Fedorov, 1969). *Village thickets and marshy lands*.

Distribution: Cosmopolitan in the tropics of the Old World.

Status of occurrence: Cultivated.

Uses: The green leaves are good fodder. The plant is used as green manure, also used in medicine.

Specimens examined: Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1507 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2161 (DUSH).

277. **Sesbania cannabina** (Retz.) Poir., *Encycl. Meth. Bot.* 7: 130 (1806). *Sesbania aculeata* (Willd.) Poir. var. *cannabina* (Retz.) Baker (1876); Hook. f., *Fl. Brit. Ind.* 2: 115 (1876); Prain, *Beng. Pl.* 1: 288 (1903, reprint 1963). *Aeschynomene cannabina* Retz. (1965).

English names: Yellow pea bush, Sesbania pea.

Tall annual herb or subshrub. Leaves sensitive, leaflets 11-45 pairs or more, narrowly oblong, rounded or truncate. Inflorescence consisting up to 12 flowers. Flowers yellow, finely mottled or speckled with reddish-brown or purple. Pod linear, very slightly constricted between the seeds. *Flowering and fruiting*: June - December. *Sandy soils in roadsides and river banks*.

Distribution: Native of Australia and Pacific Island but widespread from India to Indo-China and Malesia, tropical Africa and Mascarene Islands. It is cultivated and naturalized in Gujrat in India.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1011 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1478 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1667 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2496 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2628 (DUSH).

278. **Sesbania grandiflora** (L.) Poir. in Lamk., *Encycl. Met.* 7: 127 (1806); Hook. f., *Fl. Brit. Ind.* 2: 115 (1876); Prain, *Beng. Pl.* 1: 288 (1903, reprint 1963); R. L. Heinig, *List Chittagong*: 18 (1925); J. Sinclair, *Bull. Bot. Soc. Beng.* 9(2): 92 (1956). *Aeschynomene grandiflora* (L.) L. (1753), *Agati grandiflora* (L.) Desv. (1813).

Vernacular names: *Bakful*, English names: Agathi, Agati sesbania, August Agusti.
flower, Australian corkwood tree, Swamp pea.

Small, fast growing, deciduous, soft wooded tree. Leaves paripinnate, leaflets 20-60, oblong. Inflorescence an axillary raceme, 2-4 flowered. Flowers large, white or tinged with red. Pod falcate, firm. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 14, 24$ (Fedorov, 1969). *Highland where it is cultivated*.

Distribution: Widely distributed in the tropics of the Old and New World.

Status of occurrence: Cultivated.

Uses: The flowers and young pods are used as vegetable. Leaves are used as good fodder.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 827 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1405 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1945 (DUSH).

279. **Sesbania javanica** Miq., Fl. Ind. Bat. 1: 288 (1855). *Aeschynomene paludosa* Roxb. (18320, *Sesbania aculeata* Poir. var. *paludosa* (Roxb.) Baker (1876); Hook. f., Fl. Brit. Ind. 2: 115 (1876); Prain, Beng. Pl. 1: 288 (1903, reprint 1963), *Sesbania roxburghii* Merr. (1909).

Vernacular name: *Kathsola*.

English name: Marsh sesbania.

Tall, unarmed, soft wooded annual herb. Leaves paripinnate, abruptly pinnate, leaflets opposite, 10-30 pairs, linear-oblong, entire, obtuse. Inflorescence an axillary racemose. Flowers bright yellow. Pod pendulous, long, depressed between the seeds. *Flowering and fruiting*: January - May. *Wet land and flooded areas*.

Distribution: South Asia, Myanmar, India, Eastern Asia, Laos, Cambodia, Vietnam, Malesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1373 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1845 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3090 (DUSH).

280. **Sesbania sesban** (L.) Merr., Philippine J. Sci. Bot. 7: 235 (1912). *Aeschynomene sesban* L. (1763), *Sesbania aegyptica* Poir. (1806), *Sesbania aegyptica* Poir. var. *bicolor* Wight & Arn. (1834); Prain, Beng. Pl. 1: 288 (1903, reprint 1963), *Sesbania aegyptica* Poir. var. *picta* Prain (1897).

Vernacular name: *Jyonti*.

English name: Egyptian rattle pod.

Small, soft wooded tree. Leaves paripinnate, leaflets opposite, 9-25 pairs, linear-oblong, entire, obtuse. Inflorescence an axillary raceme, 3-20 flowered. Flowers bright

yellow. Pod pendulous, twisted, flexible, septate between the seeds. *Flowering and fruiting*: April - July. *Chromosome number*: $2n = 12$ (Fedorov, 1969). *Cultivated and sometimes naturalized in wastelands, roadsides, riversides and streamsides*.

Distribution: Throughout the tropics.

Status of occurrence: Common.

Uses: It is a hedge plant, also used in medicine.

Specimens examined: Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2264 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2810 (DUSH); Kalialoir, Fulbari, 01.10.2013, R. Tabassum, 3240 (DUSH).

Genus 163. **Spatholobus** Hassk., Flora Biebl. 25(2): 52 (1842).

281. **Spatholobus parviflorus** (Roxb. ex DC.) O. Kuntze, Rev. Gen. Pl.: 205 (1891). *Butea parviflora* Roxb. ex DC. (1825), *Butea roxburghii* Benth. (1852), *Spatholobus roxburghii* Benth. (1852); Hook. f., Fl. Brit. Ind. 2: 193 (1876); Prain, Beng. Pl. 1: 286 (1903, reprint 1963).

Vernacular names: *Goalia lata*, *Sal lata*, *Pan lata*.

Extensive evergreen climber. Stem exudes a red gum when cut young shoots. Leaves trifoliolate, leaflets broadly ovate to rhomboid or obovate, lateral ones strongly asymmetric, very oblique. Inflorescence a terminal raceme, paniced, elongating in fruits. Flowers white, creamy-white or pink. Pod obliquely oblong, 2-valved, 1-seeded, narrower towards the seed bearing end. *Flowering and fruiting*: September - March. *Secondary forests*.

Distribution: India, Bhutan, Cambodia, Indonesia, Laos, Myanmar, Nepal, Sri Lanka and Thailand.

Status of occurrence: Seems to be rare.

Uses: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1773 (DUSH); Kaliakoir, Chandra, 12.02.2011, R. Tabassum, 1983 (DUSH).

Genus 164. **Tephrosia** Pers., Syn. 2: 328 (1807).

Key to species:

- | | |
|---|--------------------------|
| 1. Flowers 1-2.5 cm; legume 5.5-13 cm × 5.5-14 mm | Tephrosia candida |
|---|--------------------------|

- Flowers ca. 1 cm; legume 2-5 cm × 3.5-5(-6) mm **Tephrosia purpurea**

282. **Tephrosia candida** DC., Prodr. 2: 249 (1825); Baker in Hook. f., Fl. Brit. Ind. 2: 111 (1876); Prain, Beng. Pl. 1: 289 (1903, reprint 1963); R. L. Heinig, List Chittagong: 18 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 92 (1956). *Robinia candida* Roxb

Vernacular names: *Bilakshani*, *Bilokhoni*, English name: White hoary pea. *Mangara*.

Much-branched shrub. Leaves imparipinnate, leaflets narrowly oblong to obovate-oblong, ligulate. Raceme simple, terminal with often a few shorter ones from the axils of the upper leaves. Flowers creamy-white to white. Pods linear-oblong, densely covered with brown silky hairs, dehiscent. *Flowering and fruiting*: August - February. *Chromosome number*: $2n = 22$ (Rao, 1979); $2n = 24$ (Datta and Maiti, 1968). *Village thickets and roadsides*.

Distribution: India, Nepal, Bhutan, Myanmar, Malesia, New Zealand, West Indies and Hawai Islands.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1854 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3075 (DUSH).

283. **Tephrosia purpurea** (L.) Pers., Syn. Pl. 2: 329 (1807); Baker in Hook. f., Fl. Brit. Ind. 2: 112 (1876); Prain, Beng. Pl. 1: 289 (1903, reprint 1963); R. L. Heinig, List Chittagong: 18 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 92 (1956). *Galega purpurea* L. (1753); *Cracca purpurea* L., Sp. Pl. 752 (1753); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2):46(1953); *Tephrosia hamiltonii* Drumm. ex Gamble (1918).

Vernacular name: *Ban-neel*.

English name: Wild indigo.

Annual or short-lived perennial herb. Leaves imparipinnate, leaflets elliptic-oblong, clothed with fine silky hairs beneath. Flowers in leaf-opposed lax raceme, reddish-purple or bright pink. Pods linear, slightly curved, mucronate. *Flowering and fruiting*: September - March. *Chromosome number*: $2n = 16, 22, 24, 44$ (Kumar and Subramaniam, 1986). *Village thickets and forests*.

Distribution: South Asia, tropical Africa and Australia.

Status of occurrence: Common.

Uses: The plant is used as medicinally.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 333 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1972 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2182 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2617 (DUSH).

Genus 165. **Uraria** Desv., Journ. Bot. 1: 122, t. 5 (1813).

284. **Uraria lagopus** DC. var. **neglecta** (Prain) Ohashi, Fl. E. Himal. 3: 70 (1975). *Uraria neglecta* Prain (1897); Hook. f., Fl. Brit. Ind. 2: 156 (1876); Prain, Beng. Pl. 1: 301 (1903, reprint 1963).

English name: Neglected uraria.

Erect herb or undershrub. Leaves usually bifoliate, sometimes 1-3 foliolate, leaflets oblong, obtuse at the apex. Inflorescence both axillary and terminal, cylindrical, densely-flowered. Flowers purple. Pod 2-6 jointed, and folded, mostly enclosed by the persistent calyx. *Flowering and fruiting:* August - November. *Undergrowth of the forest, sometimes in grassy ravines in Sal forest.*

Distribution: India and Nepal.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3968 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4011 (DUSH).

Genus 166. **Vicia** L., Sp. Pl.: 734 (1753).

Key to species:

- | | |
|--|---------------------------|
| 1. Leaf rachis terminating in a leaflet, bristle, or mucro | Vicia faba |
| - Leaf rachis terminating in a tendril | 2 |
| 2. Corolla white or yellow-white; plants densely yellow to brown villous; legume densely brown villous | Vicia angustifolia |
| - Corolla blue-purple or purple to red; plants puberulent to pubescent; legume glabrous to pubescent | Vicia sativa |

285. **Vicia angustifolia** L., Amoen. Acad. 4: 105 (1759). *Vicia sativa* L. var. *angustifolia* (L.) Wahlenb. (1814); Prain, Beng. Pl. 1: 259 (1903, reprint 1963).

Vernacular name: *Ankari*.

English name: Common vetch.

Annual or perennial diffusely branched dwarf herb. Leaves paripinnately compound, leaflets 3-8 pairs, linear, elliptic or oblanceolate. Flowers solitary, purplish-red. Pods leathery, 2-6 seeded. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 12, 14$ (Kumar and Subramaniam, 1986). *Plain lands and cultivated fields where it grows as weed*.

Distribution: Naturalized in Australia, distributed in India and Europe.

Status of occurrence: Common.

Uses: It is a good fodder.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1810 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2124 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2499 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3240 (DUSH).

286. ***Vicia faba* L.**, Sp. Pl. 2: 737 (1753); Hook. f., Fl. Brit. Ind. 2: 179 (1876); Prain, Beng. Pl. 1: 260 (1903, reprint 1963).

Vernacular names: *Barashim, Bakla*.

English names: Broad bean, Faba bean.

Erect, annual, robust herb. Stem hollow, square, winged at angles. Leaves pinnately compound, leaflets 2-6, subopposite or alternate, ovate to elliptic. Inflorescence short, axillary racemes, 1-6 flowered. Flowers white. Pod sub-cylindrical or flattened, pubescent. *Flowering and fruiting*: July - March. *Chromosome number*: $2n = 12, 14, 16, 18, 21, 24, 32, 42, 48$ (Kumar and Subramaniam, 1986). *High lands*.

Distribution: It is originated in Mediterranean region, now cultivated throughout the world.

Status of occurrence: Common.

Uses: Seeds are used as food for human and cattle.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1809 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2123 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3091 (DUSH).

287. ***Vicia sativa* L.**, Sp. Pl.: 736 (1753); Hook. f., Fl. Brit. Ind. 2: 178 (1876); Prain, Beng. Pl. 1: 259 (1903, reprint 1963).

Vernacular names: *Ankari, Hatka*.

English name: The tare.

Annual, procumbent herb. Leaves pinnately compound, rachis ending in a tendril, leaflets 4-18, linear to lanceolate or obovate. Flowers 1-2, rarely 3, axillary, pale pink, crimson or purplish-violet, rarely white. Pod compressed, narrowly oblong, continuous within. *Flowering and fruiting*: July - November. *Chromosome number*: $2n = 10, 12, 14$ (Kumar and Subramaniam, 1986). *Cultivated land where it grows as weed*.

Distribution: North West India, Pakistan, Bhutan, Russia, Far East, Orient and Europe.

Status of occurrence: Common.

Uses: It is a fodder plant.

Specimens examined: Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2890 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3195 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3575 (DUSH).

Genus 167. **Vigna** Savi, Pisa Nuov. Gior. Lett. 8: 113 (1824).

Key to species:

- | | |
|---|--------------------------|
| 1. Stipules 2-lobed or cordate at base | 2 |
| - Stipules spurred at base, or peltate | 3 |
| 2. Keel prolonged into a conspicuous beak incurved through 180° | Vigna pilosa |
| - Keel without conspicuous incurved beak | Vigna mungo |
| 3. Stipules spurred at base; keel without a pocket | Vigna unguiculata |
| - Stipules peltate; keel with a distinct pocket on left-hand side | Vigna radiata |

288. **Vigna mungo** (L.) Hepper, Kew Bull. 11: 128 (1956). *Phaseolus mungo* L. (1767); Prain, Beng. Pl. 1: 275 (1903, reprint 1963); R. L. Heinig, List Chittagong: 21 (1925), *Phaseolus radiatus* Roxb. (1832), *non* L. (1753), *Phaseolus roxburghii* Wight & Arn. (1834).

Vernacular name: *Mashkalai*.

English name: Blackgram.

Erect or suberect, much-branched, hairy annual herb. Leaves alternate, trifoliate, long-petioled, leaflets ovate. Inflorescence an axillary raceme. Flowers yellow. Pod grey or brownish when mature, slender, reflexed with short hairs. *Flowering and fruiting*: November - January. *Chromosome number*: $2n = 22, 24, 33, 36$ (Kumar and Subramaniam, 1986). *Highlands where it is cultivated*.

Distribution: India, Pakistan, Malaysia, the Philippines, Thailand, Myanmar, Nepal, Afghanistan, Iran, Kenya and Malawi.

Status of occurrence: Cultivated.

Uses: Pulse yielding plant.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 510 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1726 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2380 (DUSH); Kaliakoir, 01.10.2013, R. Tabassum, 3308 (DUSH).

289. **Vigna pilosa** (Willd.) Baker in Hook. f., Fl. Brit. Ind. 2: 207 (1879); Prain, Beng. Pl. 1: 276 (1903, reprint 1963). *Dolichos pilosum* Willd. (1777).

Vernacular name: *Jikhrai*.

Annual herb. Stem woody, finely frey downy. Leaflets twice as many as broad, narrowed gradually to a point. Racemes many-flowered. Flowers reddish. Pod 10-12 seeded, hairy. *Flowering and fruiting:* November - March. *Forests*.

Distribution: India, Nepal, Bhutan, Myanmar, Thailand, Vietnam, Taiwan and the Philippines.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3877 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4012 (DUSH).

290. **Vigna radiata** (L.) Wilczek, Fl. Cong. Belge. 6: 386 (1954). *Phaseolus radiatus* L. (1753); Prain, Beng. Pl. 1: 276 (1903, reprint 1963); R. L. Heinig, List Chittagong: 21 (1925), *Phaseolus aureus* Roxb. (1832); *Phaseolus aureus* Roxb. (1832).

Vernacular names: *Moog*, *Sunamoog*. English names: Green gram, Golden gram.

Erect or suberect, diffusely branched annual herb. Leaves 3-foliolate, leaflets ovate to lanceolate. Inflorescence axillary, sometimes many-flowered, branched. Flowers pale yellow. Pod erect or suberect, rounded, densely hairy, 6-14 seeded. *Flowering and fruiting:* February - April. *Chromosome number:* $2n = 22, 24$ (Kumar and Subramaniam, 1986). *Plainlands where it is cultivated*.

Distribution: India, Thailand and Indonesia, now widely cultivated throughout the tropics and subtropics.

Status of occurrence: Cultivated.

Uses: It is one of the most highly prized pulses.

Specimens examined: Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1009 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1161 (DUSH).

291. **Vigna unguiculata** (L.) Walp., Repert. Bot. Sys. 1: 779 (1842). *Dolichos unguiculatus* L. (1753), *Dolichos biflorus* L. (1753); Hook. f., Fl. Brit. Ind. 2: 210 (1876); Prain, Beng. Pl. 1: 278 (1903, reprint 1963), *Dolichos sinensis* L. (1754), *Phaseolus cylindricus* L. (1754), *Dolichos sesquipedalis* L. (1763), *Vigna sinensis* (L.) Hassk. (1854).

Vernacular names: *Borboti*, *China* English names: Yard-long bean, Cow-pea, *borboti*. Black-eye bean.

Climbing annual herb. Leaves trifoliolate, leaflets entire or slightly lobed, broadly or narrowly ovate, the lateral ones oblique. Flowers few in subcapitate racemes, reddish. Pod slightly depressed between the seeds. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Dry lands.*

Distribution: Originated in Africa, now widely cultivated in the tropics.

Status of occurrence: Cultivated.

Uses: The dried seeds are important for pulse. Immature pods and seeds are eaten as vegetable.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1130 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1811 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2125 (DUSH).

Family 54. **LYTHRACEAE** Jaume St.-Hilaire (1805)

Herbs, shrubs or trees. Leaves opposite, often decussate or whorled, sometimes alternate, simple, entire, pinnately veined. Inflorescence axillary or terminal racemes, cymes or panicles. Flowers bisexual, radially or bilaterally symmetrical. Sepals 4-6, united below into tube, persistent. Petals 4-6, or rarely absent, alternating with sepals, frequently caducous. Stamens usually as many or twice as many as the calyx lobes, rarely more or less, anthers versatile, rarely basifixed. Ovary superior, half-inferior or inferior, 2 to 6-locular, ovules many in each locule, styles simple, stigmas capitate. Fruit a capsule, dehiscent, infrequently indehiscent, leathery or berry-like. Seeds usually numerous, without endosperm.

The family Lythraceae consists of about 27 genera and nearly 575 species, distributed mainly in tropical countries. In Bangladesh, this family is represented by 6 genera and 24 species.

In the present study area this family is represented by 4 genera and 7 species.

Key to genera:

1. Shrubs or trees, not hygrophilous
- Herbs, hygrophilous 3
2. Bracteoles absent. Hypanthium peltate in fruit. Flowers 4-merous. Stamens 8. Stigma simple **Lawsonia**
- Bracteoles present. Hypanthium cupular in fruit. Flowers 6-merous. Stamens (10-) 12 or numerous. Stigma capitate **Lagerstroemia**
3. Inflorescence cymose. Bracts scale-like. Bracteoles shorter than flower. Capsule irregularly circumscissile **Ammannia**
- Inflorescence spicate or solitary. Bracts leaf-like. Bracteoles equalling the flower. Capsule valvular **Rotala**

Genus 168. **Ammannia** L., Sp. Pl. 1: 119 (1753).

292. **Ammannia baccifera** L., Sp. Pl. 1: 120 (1753); Hook. f., Fl. Brit. Ind. 2: 569 (1879); Prain, Beng. Pl. 1: 363 (1903, reprint 1963); R. L. Heinig, List Chittagong: 30 (1925). *Ammannia aegyptiaca* Willd. (1803), *Ammannia vesicatoria* Roxb. (1832).

Vernacular names: *Dadmari*, *Janglimehedi*. English names: Blistering ammannia, Monarch red stem.

Annual, hygrophilous herb, much-branched. Leaves horizontal or drooping, opposite on basal part of stem, opposite or alternate towards the stem apex, linear-lanceolate to oblanceolate. Inflorescence axillary cymes, compact, globose. Flowers reddish-purple. Capsules globose. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 26$ (Guha, 1972). *Wet places, marshes, river banks and paddy fields*.

Distribution: Afghanistan, Australia, Bhutan, Caribbean Islands, China, India, Malaysia, Nepal, Pakistan, the Philippines, tropical Africa and Vietnam.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1221 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1671 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1866 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3093 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabssum, 3509 (DUSH).

Genus 169. **Lagerstroemia** L., Syst. Nat. ed. 10, 2: 1068 (1759).*Key to species:*

1. Flowers small, fragrant, white; calyx tube broadly cupular **Lagerstroemia parviflora**
- Flowers large, showy, mauve-purple; calyx tube turbinate **2**
2. Petiole c. 0.4 mm. Hypanthium not ribbed. Calyx erect in fruit, herbaceous. Petals 16-25 mm long. Capsule 10-12 mm in diameter **Lagerstroemia indica**
- Petiole 5-9 mm. Hypanthium 12-ribbed. Calyx spreading in fruit, woody. Petals 32-35 mm long. Capsule 17-20 mm in diameter **Lagerstroemia speciosa**

293. **Lagerstroemia indica** L., Sp. Pl. ed. 2, 1: 734 (1762); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 575 (1879); Prain, Beng. Pl. 1: 366 (1903, reprint 1963). *Lagerstroemia chinensis* Lamk. (1789), *Murtughas indica* O. Kuntze (1891).

Vernacular name: *Choto jarul*.

English names: China privet, Indian lilac.

Large shrub or small tree. Leaves sessile or shortly petiolate, leaf blade elliptic, oblong, obovate or suborbicular, typically at least some suborbicular to obovate and mucronate. Panicles subpyramidal, dense-flowered. Flowers purple, pink or white. Capsules globose or ellipsoidal, 4-6 valved. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 16, 48, 50$ (Guha, 1972). *Semi-shaded places, wild or cultivated*.

Distribution: China, India, Indo-China and Japan, widely cultivated throughout warm regions of the world.

Status of occurrence: Cultivated.

Uses: Ornamental avenue plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 413 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 546 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2070 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2899 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3801 (DUSH).

294. **Lagerstroemia parviflora** Roxb. var. **benghalensis** C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 576 (1879).

Vernacular names: *Baturi*, *Ghugra*, *Sidha jarul*, *Tilla jarul*.

Medium-sized to tall deciduous tree, branches reddish, sharply 4-angled. Leaves elliptic-oblong, acuminate or acute at the apex. Inflorescence much-branched axillary or terminal panicles of cymes, cymes 2-5 flowered. Flowers small, fragrant, white. Capsules ovoid or ellipsoid, brown or blackish. *Flowering and fruiting*: April - December. *Chromosome number*: $2n = 50$ (Singhal *et al.*, 1980). *Deciduous dry forests*.

Distribution: India, Myanmar and Nepal.

Status of occurrence: Common.

Uses: Wood is used for various purposes.

Specimens examined: Kaliganj, Chamundi, 29.04.2005, R. Tabassum, 232 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2518 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2839 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3095 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3618 (DUSH).

295. ***Lagerstroemia speciosa*** (L.) Pers., Syn. 2: 72 (1807); J. Sinclair in Bull. Bot. Soc. 9 (2): 95 (1956). *Munchausia speciosa* L., Mant. 2: 243 (1771). *Lagerstroemia flos-reginae* auct. non Retz.: C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 577 (1879); Prain, Beng. Pl. 1: 366 (1903, reprint 1963); R. L. Heinig, List Chittagong: 30 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 47 (1953).

Vernacular names: *Jarul*, *Kanta jarul*, *Pannya* English names: Pride of India, *jarul*. Queen flower, Crepe flower

Medium-sized, much-branched deciduous tree. Leaves opposite, elliptic or oblong-lanceolate. Inflorescence a terminal panicle, ultimate branches 1-3 flowered. Flowers showy, mauve-purple. Capsules ellipsoid or subglobose, seated on accrescent woody, ribbed calyx tube. *Flowering and fruiting*: April - August. *Chromosome number*: $2n = 48$ (Kumar and Subramaniam, 1986). *Forests, edges of forest streams, swamps, ditches and river banks, also planted in roadsides, gardens and parks*.

Distribution: India, Indonesia, Malay Peninsula, Myanmar, Pakistan and Sri Lanka, also cultivated elsewhere.

Status of occurrence: Common.

Uses: An ornamental avenue plant, also a timber yielding plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1841 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1992 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3094 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3762 (DUSH).

Genus 170. **Lawsonia** L., Sp. Pl.: 349 (1753).

296. **Lawsonia inermis** L., Sp. Pl.: 349 (1753); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 95 (1956). *Lawsonia spinosa* L. (1753), *Lawsonia alba* Lamk. (1789); Hook. f., Fl. Brit. Ind. 2: 573 (1879); Prain, Beng. Pl. 1: 365 (1903, reprint 1963); R. L. Heinig, List Chittagong : 30 (1925).

Vernacular names: *Mendi*, English names: Henna, Indian privet, Mignonette tree.
Mehedi.

Leaf-sheathing shrub, sometimes small tree. Leaves opposite, elliptic, ovate or obovate. Inflorescence a terminal panicle. Flowers greenish-yellow or white, fragrant. Fruit a capsule green and shining at first, but soon turning reddish, ultimately becoming hard, dry and brown. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *High lands*.

Distribution: India, Pakistan, Sri Lanka, Africa, Arabia and Egypt

Status of occurrence: Cultivated.

Uses: Henna is widely cultivated as an ornamental or as a hedge plant, leaves are used to colour the fingernails, to decorate the palms of the hands and the soles of the feet, and to dye hairs.

Specimens examined: Tongi, Khainukar, 19.08.2013, R. Tabassum, 2870 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3195 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3572 (DUSH).

Genus 171. **Rotala** L., Mant. 2: 143 (1771).

Key to species:

1. Leaf margin translucent to opaque white cartilaginous; **Rotala indica**
capsules 2-valved
- Leaf margin green, membranous; capsules 3- or 4-valved **Rotala densiflora**

297. **Rotala densiflora** (Roth. ex Roem. & Schult.) Koehne, Bot. Jahrb. 1: 164 (1880). *Ammannia densiflora* Roth. ex Roem. & Schult. (1818), *Rotala roxburghiana* Wight (1840).

Terrestrial or amphibious herb. Leaves decussate, lanceolate, entire, acute. Flowers solitary in the axils of bracts, small, reddish. Fruit a capsule, opening by 3 valves. *Flowering and fruiting*: October - December. *Edges of forests and also rice fields*.

Distribution: North Italy, India, Sri Lanka and extending to Indonesia and Australia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1675 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1799 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2512 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3171 (DUSH); Kapasia, Kandunia, 03. 11.2013, R. Tabassum, 3669 (DUSH).

298. ***Rotala indica*** (Willd.) Koehne, Bot. Jahrb. 1: 172 (1880). *Peplis indica* Willd. (1799), *Ammannia nana* Roxb. (1820), *Ammannia peploides* Spreng. (1824); Hook. f., Fl. Brit. Ind. 2: 566 (1879); Prain, Beng. Pl. 1: 363 (1903, reprint 1963); R. L. Heinig, List Chittagong: 30 (1925).

Amphibious or terrestrial herb. Leaves obovate, narrowly oblong or sub-orbicular, entire. Flowers solitary, sessile in the axils of reduced floral leaves and in many terminal and axillary spikes, reddish. Fruit a capsule, ellipsoidal, opening by 2 valves. *Flowering and fruiting:* October - April. *Moist places and rice fields.*

Distribution: India, Sri Lanka, South East Asia to North Korea and southwards to Indonesia.

Status of occurrence: Common.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 545 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 631 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1285 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1891 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2352 (DUSH).

Family 55. **TRAPACEAE** Dumortier (1828)

Floating, aquatic, annual herbs. Leaves dimorphic, floating leaves rosette, arranged in mosaic, having rhombic blades, the submerged ones pinnatipartite, opposite, with root-like filiform segments, the petioles with a swelling composed of spongy aerenchymatous cells near its apex. Flowers peduncled, axillary, bisexual, projecting above the water surface but after pollination the pedicel bends down so that the flower submerged and fruit formation takes place in this condition. Sepals 4-partite, adnate to the lower part of the ovary, lobes 4, 2 or all becoming spines on the fruit. Petals 4, milky white or pale lilac. Stamens 4, anthers dorsifixed. Ovary semi-inferior, 2-celled, ovule solitary in each cell, anatropous, pendulous, stigmas capitate. Fruit a nut, 4-angled, 2 or all of which spinous, indehiscent, with a short cylindric beak at the top through which the radical protrudes. Seed 1, cotyledons unequal, endosperm absent.

The family Trapaceae consists of single genus and about 15 species native to tropical and subtropical Africa and Eurasia. In Bangladesh, it is represented by 2 species.

In the present study area this family is represented by a single species.

Genus 172. **Trapa** L., Sp. Pl.: 120 (1753).

299. **Trapa bispinosa** Roxb., Fl. Ind. 1: 449 (1820); Hook. f., Fl. Brit. Ind. 2: 590 (1879); Prain, Beng. Pl. 1: 369 (1903, reprint 1963). *Trapa quadripinosa* Wall. (1832).

Vernacular names: *Paniphal*, *Singara*.

English name: Water chest nut.

Floating, aquatic, annual herb, primary root absent. Submerged stoloniferous stem bears two types of adventitious roots, those near the base of the stem fix the plant to the muddy substrate, the rest free floating, feather-like. Leaves floating on the surface of water, densely villous beneath. Sepals 4-partite. Petals 4, milky white. Fruits glabrous or hairy, the two opposite angles with an often retrosely scabrous spine each, the other two angles sometimes obsolete. *Flowering and fruiting*: during rainy season. *Chromosome number*: $2n = 48, 56$ (Kumar and Subramaniam, 1986). *Fresh water tanks, beels and ditches*.

Distribution: Throughout Africa, the Indian subcontinent, Sri Lanka, southeastern Asia and Malaysia.

Status of occurrence: Common.

Uses: The fruit is rich with starch and is eaten raw or cooked.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 301 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1200 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3146 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3627 (DUSH).

Family 56. **MYRTACEAE** A. L. de Jussieu (1789)

Shrubs or small to large trees. Leaves opposite, rarely alternate, simple, entire, exstipulate. Inflorescence axillary or terminal or both, sometimes lateral, in paniced, spikes or corymbose cymes, rarely flower solitary. Bracteoles usually 2, minute or absent. Flowers bisexual, 4- or 5-merous, actinomorphic, white, cream or red in colour. Calyx tube campanulate or urceolate, rarely subglobose, persistent, lobes 4 or 5, rarely unlobed. Petals 4 or 5, rarely 6, usually free, sometimes fused into a calyptrate lid. Stamens many, epigynous, filaments free or basally connate or in bundles, anthers 2-celled, dehiscing longitudinally. Ovary inferior, 2-5 celled, ovules many on axil placentae, style 1, simple, stigmas capitate or apiculatus. Fruit a fleshy

berry and crowned with the calyx limb, or a woody capsule, dehiscent into 3-7 valves, 1 to few or many-seeded.

The family Myrtaceae consists of about 150 genera and 3600 or more species, distributed in tropical and subtropical regions of the World. In Bangladesh, it is represented by 8 genera and 37 species.

In the present study area this family is represented by 3 genera and 9 species.

Key to genera:

- | | |
|---|-------------------|
| 1. Fruit a capsule | Eucalyptus |
| - Fruit a berry, drupaceous berry, or drupe | 2 |
| 2. Plants usually glabrous; seeds usually 1; cotyledons massive relative to hypocotyl | Syzygium |
| - Plants with 1- or few-celled trichomes; seeds usually numerous; cotyledons usually small to hypocotyl | Psidium |

Genus 173. **Eucalyptus** L'Her., Sert. Ang. 18 (1788).

Key to species:

- | | |
|---|-----------------------------|
| 1. Valves of capsule included in hypanthium rim; inflorescences terminal, paniculate | Eucalyptus citridora |
| - Valves of capsule exerted or equaling hypanthium rim; inflorescences axillary, simple | Eucalyptus alba |

300. **Eucalyptus alba** Reinw., Fl. Ned. Indie: 1101 (1826). *Eucalyptus leucodendron* Reinw. ex de Vriese (1856).

Vernacular name: *Eucalyptus*.

English name: Timor white gum.

Medium-sized tree. Mature leaves alternate, petiolate, lamina broadly lanceolate. Inflorescence a 5-7 flowered axillary umbel. Flower buds clavate to ovoid, operculum hemispherical, calyx tube obconical. Fruits hemispherical to campanulate, valves 4-5, slightly exerted. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Grown in low lands and lower slopes of forests*.

Distribution: A native of Australia, and is now cultivated in many countries of the world.

Status of occurrence: Cultivated.

Uses: Cultivated as a shade tree, as an ornamental tree and source of fire wood.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2219 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2345 (DUSH); Gazipur Sadar,

Shalikchura, 19.08.2013, R. Tabassum, 2602 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3114 (DUSH); Kapasia, Voboner Chala, 03.11. 2013, R. Tabassum, 3497 (DUSH).

301. **Eucalyptus citriodora** Hook. in Mitch., J. Trop. Aust. 235 (1848).

Vernacular name: *Eucalyptus*.

English name: Lemon-scented spotted gum.

Tall, evergreen tree. Mature leaves petiolate, alternate, lamina linear-lanceolate, strongly lemon-scented. Flowers small, whitish, in 3-flowered umbels, arranged in panicles on short leafless branches, flower buds ovoid, operculum hemispherical. Fruits urceolate, contracted into a short thick neck, valves 3, enclosed. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Commonly cultivated in parks, gardens, road sides, river banks and other places*.

Distribution: A native of Queensland of Australia. Planted in India and Sri Lanka.

Status of occurrence: Cultivated.

Uses: Cultivated as a shade tree, as an ornamental tree and source of fire wood. The timber is valued for light furniture.

Specimens examined: Kapasia, Junglebari, 14.12.2009, R. Tabassum, 564 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1959 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2524 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2624 (DUSH); Sripur, Boherar, 21.10.2013, R. Tabassum, 3388 (DUSH).

Genus 174. **Psidium** L., Gen. Pl. 615 (1772).

302. **Psidium guajava** L., Sp. Pl. 1: 470 (1753); Hook. f., Fl. Brit. Ind. 2: 468 (1879); Prain, Beng. Pl. 1: 353 (1903, reprint 1963); R. L. Heinig, List Chittagong: 28 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 48 (1953); J. Sinclair in Bull. Bot. Soc. 9 (2): 94 (1956). *Psidium pyrifera* L., Sp. Pl. ed. 2, 1: 672 (1762).

Vernacular names: *Piyara*, *Sabri aam*.

English name: Guava.

Small tree, bark prominently scroll-marked. Leaves shortly petioled, young leaves opposite-decussate and old ones opposite-superposed, oblong-lanceolate to elliptic. Flowers solitary or in cluster from leaf axil, white. Fruits globose or pyriform, yellow when ripe. *Flowering and fruiting*: almost throughout the year but flowers mainly in the hot season and fruits in the rainy season. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Homesteads, roadsides and forests*.

Distribution: India, Myanmar and other tropical countries.

Status of occurrence: Cultivated.

Uses: Ripe fruits are eaten. Wood is used for making handles of small agricultural tools. Leaves used medicinally in dysentery and diarrhoea.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 659 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1627 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1815 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2129 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3387 (DUSH).

Genus 175. **Syzygium** Gaertn., Fruct. Sem. Pl. 1: 166, t. 33 (1788).

Key to species:

- | | | |
|----|---|------------------------------|
| 1. | Petals coherent, falling as a cap at anthesis | 2 |
| - | Petals distinct | 3 |
| 2. | Flowers arise from leafy branchlets, greenish white; fruit edible | Syzygium cumini |
| - | Flowers arise from bole, pink; fruits not edible | Syzygium cymosum |
| 3. | Leaf blade apex obtuse, rounded, or acute | 4 |
| - | Leaf blade apex acuminate | 5 |
| 4. | Leaf blade secondary veins more than 6 mm apart | Syzygium samarangense |
| - | Leaf blade secondary veins to 5 mm apart | Syzygium malaccense |
| 5. | Petals 8-15 mm | Syzygium jambos |
| - | Petals 1-6 mm | Syzygium fruticosum |

303. **Syzygium cumini** (L.) Skeels in USDA Bur. Pl. Industr. Bull. 248: 25 (1912). *Eugenia cuminii* (L.) Druce in Rep. Bot. Exch. Cl. Brit. Isles 3: 418 (1914); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 49 (1953); J. Sinclair in Bull. Bot. Soc. 9 (2): 94 (1956). *Myrtus cumini* L., Sp. Pl. : 471 (1753), *Zyzygium jambolanum* (Lamk.) DC. (1828).

Vernacular name: *Kala-jam*. English names: Black plum, Black nerry, Java plum.

Large, semi-evergreen tree. Leaves opposite, superposed, lamina elliptic-oblong, elliptic-lanceolate, ovate or ovate-oblong. Flowers whitish, calyx tube turbinate, limb truncate or obscurely 4-lobed, petals united into a thin membranous calyptras. Berries usually ovoid, oblong or globose, often somewhat curved, black, juicy and shining

when thoroughly ripe. *Flowering and fruiting*: March - June. *Chromosome number*: $2n = 33, 44, 46, 55$ (Fedorov, 1969). *Grown in villages, gardens, parks, roadsides and other places*.

Distribution: A native of India and extending to Sri Lanka.

Status of occurrence: Common.

Uses: Ripe fruit is eaten. Wood is used for making furniture and other construction works.

304. **Syzygium cymosum** DC., Prodr. 3: 259 (1828). *Eugenia cymosa* Lamk. (1789).

Vernacular names: *Khudijam, Jonkijam*.

Small to medium-sized tree. Leaves elliptic to ovate-lanceolate. Cymes peduncled, arranged in terminal or with axillary subcorymbose panicles. Flowers white. Berries globose, crowned by the calyx limb, purple black when ripe. *Flowering and fruiting*: March - May. *Grows in forests*.

Distribution: India, Singapore, Myanmar and Malacca.

Status of occurrence: Seems to be rare.

Uses: Ripe fruit is eaten. Wood is used for posts, fuel etc.

Specimens examined: Kaliakoir, Nabinager, 12.02.2011, R. Tabassum, 1982 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2849 (DUSH).

305. **Syzygium fruticosum** DC., Prodr. 3: 260 (1828). *Eugenia fruticosa* Roxb., [Hort. Bengal. 37 (1814) *nom. nud.*] Fl. Ind. ed. 2, 2: 487 (1832); Duthie in Hook. f., Fl. Brit. Ind. 2: 499 (1879); Prain, Beng. Pl. 1: 356 (1903, reprint 1963); R. L. Heinig, List Chittagong: 29 (1925).

Vernacular names: *Bon-jam, Khudi-jam, Kak-jam*.

Small tree. Leaves elliptic, elliptic-oblong to oblong-lanceolate. Cymes panicled, usually trichotomous. Flowers minute, white. Berries globose or ellipsoid, crowned by the cup-shaped limb, black when ripe. *Flowering and fruiting*: April - July. *Chromosome number*: $2n = 44$ (Fedorov, 1969). *Grows in wet to semi-dry soil, villages, gardens, parks and roadsides, and naturalized along the forest margins*.

Distribution: India, Myanmar, China and Thailand.

Status of occurrence: Common.

Uses: Ripe fruit is eaten. Wood is used for making furniture and other construction works.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 331 (DUSH); Gazipur Sadar, Rajendropur sal forest, 16.05.2008, R. Tabassum, 362 (DUSH), Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 830 (DUSH).

306. **Syzygium jambos** (L.) Alston in Trimen, Handb. Fl. Ceylon 6: 115 (1931). *Eugenia jambos* L. (1753); Hook. f., Fl. Brit. Ind. 2: 474 (1878); Prain, Beng. Pl. 1: 355 (1903, reprint 1963), *Jambosa vulgaris* DC. (1828), *Jambosa jambos* Millsp. (1900).

Vernacular name: *Gulap-jam*.

English names: Rose apple, Malabar plum.

Small or medium-sized evergreen tree. Leaves opposite, superposed, lamina narrowly oblong-lanceolate to lanceolate or elliptic. Cymes terminal, branches trichotomously divaricate. Flowers white. Fruit a berry, globose or pyriform, white or yellowish when ripe, prominently crowned by a ring of persisting sepals, delicately rose-scented and sweet but rather dry. *Flowering and fruiting:* March - June. *Chromosome number:* $2n = 28$ (Fedorov, 1969). *Usually grows in moist places, mainly cultivated in home gardens.*

Distribution: A native to Indo-Malayan regions, but now is cultivated in many tropical countries.

Status of occurrence: Cultivated.

Uses: Fruits are edible. Wood is used for handles of many agricultural instruments and fuel.

Specimen examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3969 (DUSH).

307. **Syzygium malaccense** (L.) Merr. & Perry, J. Arn. Arb. 19: 215 (1938). *Eugenia malaccense* L. (1753); Hook. f., Fl. Brit. Ind. 2: 471 (1878); Prain, Beng. Pl. 1: 355 (1903, reprint 1963). *Jambosa malaccense* DC. (1828), *Jambosa domestica* Blume (1849).

Vernacular name: *Jamrul*.

English names: Malay rose apple, Malay apple.

Medium-sized evergreen tree. Leaves opposite, lamina oblanceolate, obovate-lanceolate or elliptic-oblong. Flowers handsome, solitary or in short peduncled cymes from the axils of fallen leaves, usually in 3-flowered cymes. Fruit a berry, obovoid or orbicular, succulent, pale pinkish-white. *Flowering and fruiting:* February - May. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Cultivated.*

Distribution: A native to Indo-Malayan regions and is now cultivated in different parts of the world.

Status of occurrence: Cultivated.

Uses: Fruits are edible.

Specimen examined: Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1817 (DUSH).

308. **Syzygium samarangense** (Blume) Merr. & Perry, J. Arn. Arb. 19: 115 (1938). *Eugenia javanica* Lamk. (1789), *Myrtus samarangensis* Blume (1826), *Jambosa samarangensis* DC. (1828).

Vernacular name: Jamrul.

English names: Wax jambu, Java apple.

Small to medium-sized tree. Leaves elliptic-oblong. Flowers white, in slender lax terminal cymes. Berries obturbinate, almost flat, with terminal ring of persistent sepals. *Flowering and fruiting:* March - July. *Chromosome number:* $2n = 33, 44, 66, 88$ (Fedorov, 1969). *Home gardens.*

Distribution: A native to the Andamans, the Nicobars and Malacca. Now it is cultivated throughout South Asia.

Status of occurrence: Cultivated.

Uses: Fruits are edible.

Specimen examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3970 (DUSH).

Family 57. **PUNICACEAE** Horaninow (1834)

Large shrubs or small deciduous trees, often spiny. Leaves simple, opposite or nearly so, entire, exstipulate. Flowers bisexual, showy, solitary or clustered in the axils. Calyx of 5 to 7 lobes, thick and leathery, turbinate. Corolla 5-8 lobed, crumpled in the bud. Stamens numerous in many series on the calyx tube, filaments filiform, anthers versatile. Carpels 8-12, arranged in one or more series, ovary divided into as many chambers as carpels, ovules numerous, styles united, stigmas slightly lobed. Fruit a many-celled berry with a leathery coat and crowned with the calyx. Seeds many, angular, outer coat of testa pulpy edible and inner horny.

The family Punicaceae consists of a single genus and about 2 species. In Bangladesh, it is represented by a single species.

Genus 176. **Punica** L., Sp. Pl.: 472 (1753).

309. **Punica granatum** L., Sp. Pl.: 472 (1753); Hook. f., Fl. Brit. Ind. 2: 581 (1879); Prain, Beng. Pl. 1: 367 (1903, reprint 1963); R. L. Heinig, List Chittagong : 30 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 95 (1956).

Vernacular name: *Dalim*.

English name: Pomegranate.

Shrub or low tree. Leaves opposite, subopposite or clustered, oval, elliptic or oblong. Flowers terminal on short side twigs and often in pairs, sepals 4-7, thickly leathery, connate below in a wide calyx-tube adnate to the ovary, petals 4-7, scarlet, their blades suborbicular or orbicular-obovate, shortly clawed, wrinkled. Fruit yellowish, often red flushed roundish with the calyx lobes adhering at the top. Seeds many, angular, ellipsoid, testa coriaceous with a juicy outer coat. *Flowering and fruiting*: January - December. *Cultivated in homestead*.

Distribution: Balkans to Himalayas. Cultivated elsewhere in the tropics and subtropics.

Status of occurrence: Cultivated.

Uses: It is fruit yielding and medicinal plant.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 662 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1822 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2134 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2260 (DUSH); Tongi, Chaydana, 19.08.2013, R. Tabassum, 2860 (DUSH); Sripur, 21.10.2013, R. Tabassum, 3386 (DUSH).

Family 58. **ONAGRACEAE** A. L. de Jussieu (1789)

Perennial herbs or shrubs, often of aquatic or swampy places. Leaves simple, alternate or spirally arranged, entire or toothed, exstipulate or with deciduous stipules. Flowers actinomorphic, rarely zygomorphic, bisexual, often solitary. Calyx and corolla usually with 4-5 lobed, rarely 6-lobed. Stamens as many or twice as many as the sepals, anthers 2-celled, dehiscence longitudinal. Ovary inferior, epigynous, rarely subinferior, 4-loculed, rarely 2- or 5-loculed, sometimes each locules divided into 1-several false cells by transverse plates, ovules 1-many, anatropous, style 1, slender, stigmas usually capitate. Fruit a loculicidal capsule or berry or a 1-2 seeded nut. Seeds glabrous, variously ribbed or comose.

The family Onagraceae consists of 17 genera and about 650 species, distributed world wide. In Bangladesh, this family is represented by only one genus and 6 species.

In the present study area this family is represented by 4 species.

Genus 177. **Ludwigia** L., Sp. Pl.: 118 (1753).*Key to species:*

- | | | |
|----|---|------------------------------|
| 1. | Sepals 5-12 mm; petals 6-18 mm | 2 |
| - | Sepals 1-4 mm; petals 1-3 mm or absent | 3 |
| 2. | Sepals 4; pedicels 1-10 mm; seeds free | Ludwigia octovalvis |
| - | Sepals 5; pedicels 15-65 mm; seeds embedded in endocarp | Ludwigia adscendens |
| 3. | Stamens twice as many as sepals | Ludwigia hyssopifolia |
| - | Stamens as many as sepals | Ludwigia perennis |

310. **Ludwigia adscendens** (L.) Hara, J. Jap. Bot. 28: 290 (1953). *Jussiaea adscendens* L., Mantissa 1: 69 (1767). *Jussiaea repens* L., Sp. Pl.: 388 (1753); Clarke in Hook. f., Fl. Brit. Ind. 2: 587 (1879); Prain, Beng. Pl.: 368 (1903, reprint 1963); R. L. Heinig, List Chittagong: 30 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 47 J. Sinclair in Bull. Bot. Soc. 9(2): 95 (1956).

Vernacular names: *Kesar dam, Malcha.*

English name: Water primrose.

Rarely creeping to floating herb, rooting at the nodes and with conspicuous, white, spindle-shaped, mucronate, pneumatophores arising in clusters at the floating stem. Leaves alternate, broadly oblong-elliptic. Flowers solitary, white. Capsule cylindric-oblong, irregularly dehiscent. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 16$ (Kumar and Subramaniam, 1986). *Grows in stagnant ditches, ponds and ricefields.*

Distribution: Indian subcontinent from Panajb southwards to Sri Lanka, spreading up to China and Malesia to North Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 91 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 568 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 622 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2704 (DUSH).

311. **Ludwigia hyssopifolia** (G. Don) Exell apud A. & R. Fernandes, Garcia de Orta 5: 471 & 474, t. 2 (1957). *Jussiaea hyssopifolia* G. Don Gen. Syst. 2: 693 (1832). *Jussiaea linifolia* Vahl, Ecolog. America 2: 32 (1798); J. Sinclair in Bull. Bot. Soc. 9(2): 95 (1956).

English name: Seedbox.

Erect herb. Stem angled and narrowly winged. Leaves linear to lanceolate. Flowers solitary, axillary, yellow. Capsules linear. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 16$ (Gadella and Kliphuis, 1968). *Grows in waste places, marshy fields, roadsides, fallow lands, also banks of fresh water ponds and streams.*

Distribution: West tropical Africa, South East Asia, South West in Peninsular India East to Taiwan, throughout Malaysia and Northern Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 338 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2604 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3341 (DUSH).

312. **Ludwigia octovalvis** (Jacq.) Raven, Kew Bull. 15: 476 (1962). *Oenothera octovalvis* Jacq. (1760). *Jussiaea suffruticosa* sensu C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 587 (1879), non L. (1753); Prain, Beng. Pl.: 368 (1903, reprint 1963); R. L. Heinig, List Chittagong: 30 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 47 J. Sinclair in Bull. Bot. Soc. 9 (2): 95 (1956).

Vernacular names: *Bhuikura, Bonlong.*

English name: Willow primrose.

Much-branched herb, sometimes woody at the base, densely tomentose. Leaves lanceolate. Flowers axillary, solitary, large, yellow. Capsules cylindric-oblong, brown with 8 darker ribs. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 16$ (Mitra and Datta, 1967). *Grows in marshy places, damp grasslands, often near moist cultivated fields, sides of ditches and water courses.*

Distribution: South America, South-eastern Africa, throughout Indian subcontinent, eastwards up to Taiwan, throughout Malesia to Northern and eastern Australia, and scattered throughout the Pacific.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1097 (DUSH); Sripur, Bagher Bazar,, 18.02.2013, R. Tabassum, 2361 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2686 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3298 (DUSH).

313. **Ludwigia perennis** L., Sp. Pl.: 119 (1753). *Jussiaea parviflora* Roxb., Fl. Ind. 1: 440 (1820); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 588 (1879); Prain, Beng. Pl. 1: 369 (1903, reprint 1963).

Erect or unbranched annual herb. Leaves narrowly elliptic to lanceolate, sometimes linear. Flowers yellow. Fruit a capsule, pale brown, readily and irregularly loculicidal. *Flowering and fruiting*: February - December. *Chromosome number*: $2n = 16$ (Shetty and Subramanyam, 1971). *Grows in sunny and wet places in fallow lands as well as in rice, jute and sugarcane fields, sometimes occurs along ditches, river and water courses, on dry river beds and on heavy clay.*

Distribution: Tropical Africa, North-western Madagascar, tropical and subtropical Asia, China, Afghanistan, tropical Australia, East to South Japan, through Malaysia to New Caledonia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 756 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1029 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1683 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2218 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2536 (DUSH).

Family 59. **MELASTOMATACEAE** A. L. de Jussieu (1789)

Herbs, shrubs, trees or climbers, or rarely epiphyte. Leaves simple, usually opposite and decussate with one of a pair slightly smaller than other, rarely verticillate or alternate. Inflorescence cymose, umbellate, corymbose, in paniculate clusters, fascicled or born on a spike, rarely flowers solitary, bracts sometimes absent, or conspicuous and persistent. Flowers bisexual, actinomorphic, 3-5 merous, bracteols opposite, generally caducous. Hypanthium funnel-shaped, campanulate, cyathiform or urceolate, with various emergences or hairs or glabrous. Calyx lobes 3-5 (or 6), triangular, valvate. Petals equal to number of sepals, distinct, imbricate, with a short claw, often showy. Stamens usually twice as many as petals, in 2 whorls, rarely as many as petals by loss of 1 whorl, filaments distinct, often geniculate, inflexed in buds, anthers typically 2-celled, introrse, dehiscent by one or two apical pores or by short longitudinal slits. Ovary usually inferior or semi-inferior, 3-5 celled, sometimes 1-celled, ovules numerous, anatropous, style 1, stigmas minute, capitate or truncate. Fruit a dry or fleshy capsule, berry or drupe, loculicidally dehiscent or indehiscent. Seeds numerous, small, ovoid or cochleate.

The family Melastomataceae consists of about 200 genera and 4000 species, distributed in tropical and subtropical regions, best developed in South America. In Bangladesh, this family is represented by 6 genera and 19 species.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

- | | |
|---|------------------|
| 1. Stamen whorls equal or subequal in length and shape, connective not lengthened; fruit a dry capsule | Osbeckia |
| - Stamen whorls unequal in length and shape, connective of longer stamen lengthened below anthers and slightly curved; fruit a fleshy capsule, bursting irregularly, rarely a berry | Melastoma |

Genus 178. **Melastoma** L., Sp. Pl. 1: 389 (1753).

314. **Melastoma malabathricum** L., Sp. Pl. 1: 390 (1753); Hook. f., Fl. Brit. Ind. 2: 523 (1879); Prain, Beng. Pl. 1: 360 (1903, reprint 1963). *Melastoma affine* D. Don (1823), *Melastoma polyanthum* Blume (1831), *Melastoma scabrum* Ridl. (1918).

Vernacular names: *Ban-tezpata*, *Datranga*, English name: Indian rhododendron. *Lutki*, *Curli* (Koch).

Shrub with quadrangular branches densely covered with appressed to spreading, fimbriate, brownish scales. Leaves elliptic to lanceolate. Inflorescence compact or loose cymes of 3-7 flowers, terminal or in the upper leaf axile. Hypanthium more or less densely covered with appressed, narrowly triangular, silvery to yellowish-brown scales. Flowers 5-merous, pink to mauve or purple. Capsule dark purple. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 24$ (Gill *et al.*, 1979). *Open places, disturbed grounds, roadsides, thickets and river banks*.

Distribution: South East Asia and across Malesia to New Guinea, the Philippines and North Australia.

Status of occurrence: Common.

Uses: Leaves are used in tonsil by Koch.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 4 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 547 (DUSH); Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 815 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1672 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2057 (DUSH).

Genus 179. **Osbeckia** L., Sp. Pl. 1: 345 (1753).

315. **Osbeckia stellata** Buch.-Ham. ex Ker-Gawl., Bot. Reg. 8: 674 (1822); Hook. f., Fl. Brit. Ind. 2: 517 (1879); Prain, Beng. Pl. 1: 359 (1903, reprint 1963). *Osbeckia*

crinita Benth. ex Naud. (1850), *Osbeckia marginulata* C. B. Clarke (1879), *Osbeckia racemosa* Craib (1911), *Osbeckia sikkimensis* Craib (1917).

Vernacular name: *Gaichi*.

English name: Starry osbeckia.

Sparsely branched shrub. Leaves opposite or verticillate, oblong-lanceolate, ovate-lanceolate or elliptic, stiffly papery. Inflorescence terminal racemes or paniculate cymes. Hypanthium usually purple to dark purple. Flowers 4-merous, bracteate, pink to purple. Capsule urceolate, with rows of setiform stellate trichomes on stalks. *Flowering and fruiting*: July - January. *Open areas, also evergreen or deciduous forests, and marshy ground*.

Distribution: Bhutan, Cambodia, India, Myanmar, southern China, Taiwan, Laos, Nepal and Thailand, naturalized in Mauritius.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 06.12.2009, R. Tabassum, 463 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 511 (DUSH).

Family 60. **COMBRETACEAE** R. Brown (1810)

Trees, shrubs, climbers or lianas. Leaves opposite, subopposite, verticillate or spiral, sometimes ternate or rarely alternate, simple, almost entire, exstipulate. Flowers bisexual or female and male flowers in the same inflorescence, usually actinomorphic, in axillary or extra-axillary elongated or subcapitate spikes or racemes or in terminal and sometimes axillary panicles, flowers small, bracteolate. Calyx 4- or 5-lobed, valvate. Petals 4-5 or absent, conspicuous or sometimes very small, inserted near the mouth of the receptacle between the calyx lobes. Stamens 4-5 or twice as many as the petals, anthers dorsifixed. Ovary inferior, 1-celled with a few ovules. Fruits coriaceous or drupaceous, generally indehiscent, angular or commonly winged, sometimes crowned by an accrescent calyx. Seed single, albumen absent.

The family Combretaceae consists of about 20 genera and nearly 400 species, widespread in tropics of the World. In Bangladesh, this family is represented by 6 genera and 21 species.

In the present study area this family is represented by 2 genera and 6 species.

Key to genera:

- | | |
|---------------------------------|-------------------|
| 1. Trees or non-climbing shrubs | Terminalia |
| - Woody lianas | Quisqualis |

Genus 180. **Quisqualis** L., Sp. Pl. ed. 2, 1 : 556 (1762).

316. **Quisqualis indica** L., Sp. Pl. 2, 1: 556 (1762). Siam in Curt. Bot. Mag. 46: t. 2033 (1819); Bl., Bijdr.: 642 (1825); Clarke in Hook. f., Fl. Brit. Ind. 2: 459 (1878); Prain, Beng. Pl. 1: 350 (1903, reprint 1963); Exell in Fl. Males. 1, 4: 547 (1954); Mia in Khan & Rahman (Eds.), Fl. Bangl. 50: 16 (1996).

Vernacular name: *Madhuri*- English names: Rangoon creeper, Chinese honey *lata*. suckle.

Subscandent climbing shrub. Leaves papyraceous, elliptic or elliptic-oblong. Inflorescence of terminal or axillary spikes. Flowers pleasantly scented, white, turning dark red. Fruit dark brown, ovate-elliptic in outline. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 22, 24, 26$ (Fedorov, 1969). *Usually planted in gardens and homesteads*.

Distribution: India, Bhutan, Thailand, Cambodia, Vietnam, Malaysia and Indonesia.

Status of occurrence: Common.

Uses: The plant is of ornamental value.

Specimens examined: Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3775 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3878 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3938 (DUSH).

Genus 181. **Terminalia** L., Syst. Nat. ed. 12, 2: 674 (1767).

Key to species:

- | | |
|---|-----------------------------|
| 1. Petiole without glands at the summit; calyx lobes pubescent | Terminalia bellirica |
| - Petiole with 2 glands at the summit; calyx lobes glabrous | 2 |
| 2. Fruit winged | 3 |
| - Fruit not winged | 4 |
| 3. Fruit 2-winged | Terminalia catappa |
| - Fruit 5-winged | Terminalia arjuna |
| 4. Leaves acute, base rounded; fruit ellipsoid or obovoid, not ridged | Terminalia chebula |
| - Leaves acuminate, base cuneate; fruit oblong-lanceolate, slightly five ridged | Terminalia citrina |

317. **Terminalia arjuna** (Roxb. ex DC.) Wight & Arn., Prodr.: 314 (1834). Maheshwari, Fl. Delhi: 156 (1963); Mia in Khan & Rahman (Eds.), Fl. Bangl. 50: 19 (1996); *Pentaptera arjuna* Roxb., [Hort. Beng.: 28 (1814). *nom. nud.*] ex DC., Prodr. 3: 14 (1828); Clarke in Hook. f., Fl. Brit. Ind. 2: 447 (1878); Prain, Beng. Pl. 1: 348 (1903, reprint 1963); Heinig, Chitt. Coll. H. T.: 71 (1925); *Terminalia urjan* Royle, Illustr. Bot. Himal. Mounts.: 209 (1835).

Vernacular names: *Arjun*, English names: The Arjuna myrobalan, White *Arjuna*.
murdah.

Medium to large tree. Leaves opposite or subopposite, oblong to obovate-oblong. Inflorescence of spikes, axillary or in panicles. Flowers yellowish-white or pale yellow. Nut ovoid or obovoid-oblong, 5-winged. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 24, 26$ (Fedorov, 1969). *Usually planted along the roadsides, gardens and lawns around bungalows.*

Distribution: India, Sri Lanka and Malay Peninsula.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 317 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2154 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2908 (DUSH); Kaliakoir, Simultoli Ataboho, 1.10.2013, R. Tabassum, 3366 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3740 (DUSH).

318. **Terminalia bellirica** (Gaertn.) Roxb., Pl. Corom. 2: 54, t. 198 (1798); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 445 (1878); Prain, Beng. Pl. 1: 348 (1903, reprint 1963); Exell in Fl. Males. 1, 4: 569 (1954); Mia in Khan & Rahman (Eds.), Fl. Bangl. 50: 19 (1996); *Myrobalanus bellirica* Gaertn., De Fruct. Semi. 2: 90, t. 97 (1791).

Vernacular names: *Bohera*, English names: Belleric myrobalan, Bastard *Boyra*. myrobalan.

Deciduous tree. Leaves spirally arranged along the branchlets or crowded at the ends of the branchlets, sometimes whorled, broadly obovate-elliptic to obovate-oblong, sometimes narrowly oblanceolate. Inflorescence of axillary spikes. Flowers yellowish. Drupes subglobose to broadly ellipsoid, very hard when dry. *Flowering and fruiting*: March - November. *Chromosome number*: $2n = 26, 48$ (Fedorov, 1969). *Moist deciduous forests also cultivated.*

Distribution: South East Asia and North Australia.

Status of occurrence: Common.

Uses: Leaves are used in anaemia by *Santal*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 194 (DUSH); Kaliakior, Shohag Polly, 09.05.2010, R. Tabassum, 740 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2006 (DUSH).

319. ***Terminalia catappa*** L., Syst. Nat. ed. 12: 674 (1767) & Mant. 1: 128 (1767); Kurz, For. Fl. Brit. Burma 1: 454 (1877); C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 444 (1878); Prain, Beng. Pl. 1: 481 (1903, reprint 1963); Heinig, Chitt. Coll. H. T.: 70 (1925); Mia in Khan & Rahman, Fl. Bangladesh 50: 21 (1996). *Terminalia procera* Roxb., Fl. Ind. ed. Carey.: 429 (1832).

Vernacular names: *Kathbadam*, English names: The Indian almond, *Deshibadam*. Malabar almond.

Medium to large deciduous tree. Leaves spirally arranged, and crowded at the ends of the branches, obovate, sometimes elliptic-obovate. Inflorescence of axillary spikes. Flowers whitish. Drupes ovoid to ellipsoid, greenish-yellow or reddish. *Flowering and fruiting:* March - December. *Avenues where it is planted as shade tree.*

Distribution: Madagascar, along the coast of tropical Asia, from India to Malay Peninsula to Northern Australia.

Status of occurrence: Common in cultivation.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 299 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 968 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1488 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1793 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2461 (DUSH).

320. ***Terminalia chebula*** Retz., Obs. Bot. 5: 31 (1788); Clarke in Hook. f., Fl. Brit. Ind. 2: 446 (1878); Prain, Beng. Pl. 1: 348 (1903, reprint 1963); Heinig, Chitt. Coll. H. T.: 26 (1925); Kanjilal *et. al.*, Fl. Assam 2: 244 (1938); Mia in Khan & Rahman, Fl. Bangladesh 50: 22 (1996); *Myrobalanus chebula* Gaertn., De Fruct. 2: 91 (1790); *Terminalia tomentella* Kurz, J. As. Soc. Beng. 42: 80 (1873).

Vernacular names: *Haritoki*, *Gol* English names: Chebulic myrobalan, Black *haritaki*. myrobalan.

Deciduous tree. Leaves opposite or subopposite, broadly oblong or oblong-elliptic. Inflorescence of axillary or terminal panicles. Flowers dull white to yellowish. Drupes subglobe to ellipsoid or obovoid, pale greenish-yellow, turning blackish when dry.

Flowering and fruiting: April - October. *Chromosome number:* $2n = 14, 24, 48$ (Fedorov, 1969). *Grows in moist deciduous forests also cultivated.*

Distribution: Sri Lanka, India, Myanmar, Thailand and Malaysia.

Status of occurrence: Common.

Uses: The species is of medicinal value.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 516 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2011 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2888 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3013 (DUSH).

321. **Terminalia citrina** (Gaertn.) Roxb. ex Fleming in As. Res. 11: 183 (1810); Kurz, For. Fl. Brit. Burma 1: 456 (1877); Clarke in Hook. f., Fl. Brit. Ind. 2: 446 (1878); Prain, Beng. Pl. 1: 348 (1903, reprint 1963); Heinig, Chitt. Coll. H. T.: 26 (1925); Mia in Khan & Rahman, Fl. Bangladesh 50: 22 (1996); *Myrobalanus citrina* Gaertn., de Fruct. 2: 91, t. 97 (1791).

Vernacular names: *Hatiyal, Haritaki, Harra.*

English name: Black myrobalan.

Tall deciduous tree. Leaves opposite or subopposite, elliptic or oblong-elliptic or narrowly elliptic. Inflorescence of axillary or terminal panicles. Flowers dull yellow. Drupes ellipsoid, rarely subglobose. *Flowering and fruiting:* March - November. *Grows in deciduous forests.*

Distribution: India, East Himalaya, Myanmar, Thailand, Malay Peninsula, the Philippines and New Guinea.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 4013 (DUSH).

Family 61. **RHIZOPHORACEAE** R. Brown (1814)

Evergreen trees or shrubs, mostly mangrove species with buttress roots, stilt roots or pneumatophores. Leaves simple, opposite, rarely alternate, entire, mostly mucronate, stipules inter-petiolar, caducous. Inflorescence axillary, usually of cymes, sometimes racemes or fascicles. Flowers usually bisexual, plants monoecious or polygamous. Calyx 3-16 lobed, persistent. Corolla lobes equal in number to the calyx lobes, caducous. Stamens usually twice the number of petals, anthers dorsifixed. Ovary 2-12 locular, styles simple, stigmas simple or lobed, ovules 1 to indefinite in each locule,

anatropous. Fruit a softy berry or a drupe or rarely a capsule. Seeds 1-many, germinating viviparously in mangrove species.

The Rhizophoraceae is a small family comprising 16 genera and c 120 species distributed in tropical regions, mainly in the Old World and forming part of the mangrove vegetation of muddy coasts. In Bangladesh, this family is represented by 5 genera and 10 species.

In the present study area this family is represented by a single species.

Genus 182. **Carallia** Roxb., Pl. Corom. 3: 8, t. 211 (1811).

322. **Carallia brachiata** (Lour.) Merr., Philip. Journ. Sci. 15: 249 (1919); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 94 (1956). *Diatoma brachiata* Lour. (1790), *Carallia lucida* Roxb. (1811); Hook. f., Fl. Brit. Ind. 2: 439 (1878); Prain, Beng. Pl. 1: 345 (1903, reprint 1963), *Carallia integerrima* DC. (1828).

Vernacular names: *Kierpa*, *Kiabang*.

Evergreen tree. Stem resinous, often with adventitious roots, occasionally buttressed. Leaves petiolate, leaf blade broadly elliptic, elliptic-obovate or suborbicular. Inflorescence of short peduncled trichotomous cymes. Flowers with short pedicel or sessile, calyx tube minutely bracteate at the base, petals white or greenish, equal to the number of calyx lobes, suborbicular, clawed. Fruits globose, 1-celled, pink to red when ripe, crowned by calyx tube. *Flowering and fruiting*: January - May. *Grows in moist shady areas*.

Distribution: Australia, South and South East Asia, Indo-China, China, the Philippines, Pacific Islands and Madagascar.

Status of occurrence: Apparently rare.

Uses: Wood is used for making furniture, picture frames, staircases, cabinet, knife and brush handles, rice ponders, veneered panels and musical instruments. It is also used in building construction.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1443 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2708 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3306 (DUSH).

Family 62. **ALANGIACEAE** A.P.de Candolle (1828)

Trees or less often shrubs or woody vines. Leaves simple, alternate, exstipulate, entire or lobed. Inflorescence cymose, axillary. Flowers usually bisexual, seldom unisexual, epigynous. Calyx with 4-10 lobes or obsolete. Corolla with 4-10 petals, petals broadly linear, valvate, sometimes connate at the base, reflexed after anthesis. Stamens as

many as or 2-4 times as many as the petals, filaments hairy, free or slightly connate at the base, anthers opening by longitudinal slit. Carpels 1-3, united to form a compound bilocular or unilocular ovary, style terminal, stigma capitate, ovule solitary and pendulous in each locule, sometimes one locule empty. Fruit a drupe, crowned by the sepals. Seeds large, endosperm copious.

The family Alangiaceae consists of the single genus *Alangium*, with about 20 species, native to eastern and tropical Asia, eastern Australia, the Pacific Islands, Madagascar and western Africa. In Bangladesh, this family is represented by 3 species.

In the present study area this family is represented by 2 species.

Genus 183. **Alangium** Lamk., Encycl. Meth. Bot. 1: 174 (1783).

Key to species:

1. Stamens not less than 10; leaf blade broadly ovate to cordate or orbicular, membranous to subleathery **Alangium salviifolium**
- Stamens not more than 10; leaf blade ovate or orbicular, rarely linear-lanceolate, papery, rarely leathery **Alangium chinense**

323. **Alangium chinense** (Lour.) Harms in Ber. Deuts. Bot. Ges. 15: 24 (1897). *Stylidium chinense* Lour. (1790), *Marlea begonifolia* Roxb. (1814).

Vernacular name: *Marleza gachh*.

English name: Marlia.

Small-sized deciduous tree. Leaves simple, alternate, petiolate, lamina ovate to ovate-cordate. Inflorescence of axillary cymes. Flowers white. Fruit a berry. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 66$ (Kumar and Subramaniam, 1986). *Grows in plain lands*.

Distribution: Tropical Africa, India, Nepal, Bhutan, eastern China, Myanmar and Malaysia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 839 (DUSH); Kapashi, Pakundia, 09.03.2012, R. Tabassum, 2140 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2467 (DUSH).

324. **Alangium salviifolium** (L. f.) Wangerin in Engl., Pflanzenr. 4 (220b): 9 (1910). *Grewia salvifolia* L. f. (1781), *Alangium decapetalum* Lamk. (1783), *Alangium hexapetalum* Roxb. (1832), *Alangium lamarckii* Thw. (1859); Hook. f., Fl. Br. Ind. 2: 741 (1879); Prain, Beng. Pl. 1: 399 (1903, reprint 1963).

Vernacular names: *Ankora*, English name: Sedge-leaved alangium.
Akarkanta.

Small to medium-sized tree. Leaves simple, lamina oblong-lanceolate. Inflorescence in axillary cymes clusters. Flowers white, sweet-scented. Fruit a 1-seeded berry, globose, red to black when ripe. *Flowering and fruiting*: February - May. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Plain lands and deciduous forests*.

Distribution: Africa, India, Sri Lanka, China, Thailand, the Philippines and Malaysia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Khudabon, 26.03.2008, R. Tabassum, 279 (DUSH); Kaliakoir, Konabari (Vogora), 08.01.2010, R. Tabassum, 602 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1201 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2088 (DUSH); Gazipur Sadar, Etahata Borboika, 19.12.2013, R. Tabassum, 3412 (DUSH).

Family 63. LORANTHACEAE A. L. de Jussieu (1808)

Plants woody, parasitic or hemi-parasitic on trees or very rarely terrestrial trees or shrubs. Leaves usually opposite, less often alternate or whorled, simple, entire, sometimes reduced to scales, exstipulate. Inflorescence a raceme or cyme, rarely a spike, flowers often in heads or fascicles. Flowers zygomorphic, hermaphrodite or unisexual and monoecious, often very brightly coloured. Calyx adnate to the ovary. Petals free or united into a tube, often split down on one side. Stamens as many as the petals and inserted on them or at their base, anthers normally 2-locular, sometimes 1-locular. Ovary inferior, 1-locular, ovules mostly not distinct, styles simple or absent. Fruit a berry or drupe. Seed solitary.

The family Loranthaceae consists of about 70 genera and perhaps 700 species, largely tropical and subtropical distribution, especially in the Southern Hemisphere. In Bangladesh, this family is represented by 7 genera and 15 species.

In the present study area this family is represented by 3 genera with 3 species.

Key to genera:

1. Each flower subtended by 1 bract and 2 bracteoles; flowers 6-merous, corolla lobes connate more than 1/2 length; ovary incompletely 3-loculed **Macrosolen**
- Each flower subtended by 1 bract; flowers 4-6-merous, if 6-merous then corolla lobes free; ovary 1-loculed **2**

2. Bracts 12-27 mm, broader than flowers, forming an involucre around the inflorescence **Viscum**
- Bracts 1-1.5 mm, shorter than calyx, not forming an involucre **Dendrophthoe**

Genus 184. **Dendrophthoe** Mart., Flora 1: 109 (1830).

325. **Dendrophthoe falcata** (L. f.) Etting., Denkschr. Akad. Wissensch. Wien. Mathem-Naturwiss. Cl. 32: 52 (1872). Danser, Bull. Jard. Bot. Buitenzorg Ser. 3, 2 (3-4): 403 (1931); *Loranthus falcatus* L. f., Suppl. Sp. Pl.: 221 (1781). *Loranthus longiflorus* Desr. in Lamk., Encyl. Meth. Bot. 3: 598 (1781); Hook. f., Fl. Br. Ind. 5: 214 (1886); Prain, Beng. Pl. 2: 682 (1903, reprint 1963); Brandis, Ind. Trees: 549 (1906).

Vernacular names: *Bajrangi, Bandha, Phorolla*.

Semi-parasitic shrub. Leaves opposite or subopposite, sometimes alternate, very variable in shape, ovate, obovate, ovate-oblong or elliptic, sometimes oblique. Inflorescence axillary or supra axillary unilateral racemes. Flowers orange, yellow or scarlet. Fruits oblong, brownish-black when ripe, crowned with cupular calyx. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 18$ (Barlow, 1971). *On a wide range of shrubs and trees*.

Distribution: From the Himalayas to Sri Lanka, up to Malay Archipelago and tropical Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 544 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1778 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1968 (DUSH).

Genus 185. **Macrosolen** (Blume) Reichenb., Report. Herb: 73 (1841).

326. **Macrosolen cochinchinensis** (Lour.) Van Tiegh., Bull. Soc. Bot. Fr. 41: 122 (1894). Danser, Bull. Jard. Bot. Buitenzorg Ser. 3, 10: 343 (1929); *Loranthus cochinchinensis* Lour., Fl. Coch. 1: 195 (1790). *Loranthus ampullaceus* Roxb., Fl. Ind. (ed. Carey) 2: 189 (1832); Hook. f., Fl. Br. Ind. 5: 220 (1886); Prain, Beng. Pl. 2: 683 (1903, reprint 1963); Brandis, Ind. Trees: 551 (1906).

Vernacular names: *Chota banda, Rema, Renda*.

Much-branched, parasitic shrub. Leaves elliptic, elliptic-lanceolate or ovate. Flowers greenish-yellow in axillary racemes, solitary or in pairs. Fruits slightly tubercled, successively green, yellow and dark violet, supported by the bracteole cup and

crowned by the base of the style. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $n = 12$ (Barlow, 1971). *Grows on shrubs and trees*.

Distribution: From Sikkim Himalayas, west and south westwards up to South China, Malay Peninsula, the Philippines and Indonesia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 300 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 969 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1219 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2599 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3665 (DUSH).

Genus 186. **Viscum** L., Sp. Pl. 2: 1023 (1753).

327. **Viscum monoicum** Roxb. ex DC., Prodr. 4: 278 (1830). Roxb., Fl. Ind. (ed. Carey) 3: 763 (1832); Hook. f., Fl. Br. Ind. 5: 224 (1886); Prain, Beng. Pl. 2: 683 (1903, reprint 1963); Brandis, Ind. Trees: 552, 716 (1906); Danser, Blumea 4: 305 (1941) *excl. Viscum verruculosum* Talb.; Rao, Jour. Ind. Bot. Soc. 36(2): 160 (1957); *Viscum edgeworthii* Brandis, l.c.: 552 (1906).

Vernacular names: *Bhanda, Porgachha*.

English name: Mistletoe.

Much-branched, parasitic shrub, branches decussate in lower parts, dichotomous towards apices. Leaves opposite, elliptic to lanceolate, usually somewhat falcate. Inflorescence usually lateral, at first in axils, later up to 6 cymes at each node. Flowers usually 5, more often 3 or 7 in each cup, outer ones male, the rest female. Fruits usually oblong, green, shining, sometimes wrinkled on drying. *Flowering and fruiting*: November - February. *Grows on woody angiosperms*.

Distribution: Peninsular India and Sri Lanka, to the eastern Himalayas, extending up to Thailand through Myanmar.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 620 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2065 (DUSH).

Family 64. **EUPHORBIACEAE** A. L. de Jussieu (1789)

Dioecious or monoecious, prostrate, erect or scandent annual herbs to trees, often with milky juice, spiny or unarmed. Leaves simple or compound, alternate, rarely opposite. Inflorescence terminal, axillary, lateral or leaf-opposed, cymes, panicle, racemose, spicate, cyathial or with the flowers fasciculated or solitary. Flowers small, unisexual,

perianth sepaloid, rarely petaloid, sometimes distinguishable as calyx and corolla, occasionally wanting in one or both the sexes. Calyx in both sexes usually of 3-6. Corolla in one or both sexes of 3-6, free, rarely united, sub-valvate or imbricate, petals sometimes united. Male flowers with stamens usually as many or twice as many as petals or reduced to one, sometimes very many, distinct or monadelphous, anthers 2-celled, pistillode sometimes present. Female flowers with or without staminodes, usually pedicelled. Ovary superior, 3-locular with 1 or 2 pendulous ovules in each locule, in axile placentas, styles 3. Fruit a capsule or drupe. Seeds often with a caruncle and copious fleshy endosperm.

The family Euphorbiaceae consists of about 300 genera and 7,500 species, cosmopolitan but with the strongest representation in the humid tropics of both hemispheres. In Bangladesh, this family is represented by 47 genera and 141 species.

In the present study area this family is represented by 19 genera and 32 species.

Key to genera:

- | | | | |
|----|--|---|------------------|
| 1. | Plants deciduous, flowering and fruiting while leafless | 2 | |
| - | Plants deciduous or not, flowering and fruiting while (just) in leaf | 3 | |
| 2. | Cactus-like tree or shrubs; white latex present | | Euphorbia |
| - | Shrubs to trees, not cactus-like. White latex present or abstent | | Croton |
| 3. | Leaves palmate divided into leaflets) or palmatifid for at least the upper third of the lamina; basal nerves palmate, supporting lobes or leaflets | 4 | |
| - | Lamina not palmate or palmatifid for more than the upper third; nerves usually pinnate (to palmate) | 8 | |
| 4. | Leaves 3-foliolate, leaflets completely free | | Bischofia |
| - | Leaves palmatifid, leaflets at least basally united (3-9 nerves) | 5 | |
| 5. | Leaf margins entire or serrate (sometimes only vein endings extruding); if entire then leaves peltate | 6 | |
| - | Leaf margins entire; leaves not peltate | 7 | |
| 6. | Leaves with 7 or 9 lobes. Stipule opposite leaf, encircling stem. Stamens united in branching groups | | Ricinus |
| - | Leaves with 2, 3 or 5 lobes. Stipules beside petiole base, | | Macaranga |

- not united, not encircling stem. Stamens not branching
7. Leaves divided to two-thirds only, either peltate (> 2 mm) and without glandular hairs or basally attached and with glandular hairs **Jatropha**
 - Leaves almost completely divided, basally attached or slightly (2 mm) peltate, without glandular hairs. Usually cultivated for edible roots **Manihot**
 8. Leaves all opposite **9**
 - Leaves alternate, in pseudo-whorls or partly but never all opposite **10**
 9. Leaves alternate; fruit dehiscent, covered with dark red powdery granules **Mallotus**
 - Leaves opposite; fruit usually drupaceous, sometimes dehiscent **Trewia**
 10. Leaves and/or inflorescences with stellate hairs, lepidote hairs, glandular scales and/or scale hairs **Chrozophora**
 - Leaves and/or inflorescences glabrous or with simple hairs only **11**
 11. Flowers and fruits single per leaf axil or in axillary fascicles (no inflorescence axis present); fruits without rows of short spines **12**
 - Flowers and fruits in racemes, spikes, thyrses or panicles; fruits with or without rows of short spines **16**
 12. Petals present **Bridelia**
 - Petals absent **13**
 13. Disc present **Phyllanthus**
 - Disc absent **14**
 14. Sepals without scales. Stamens with triangular appendages on the connectives **15**
 - Sepals with scales inside, or 3 sepal lobes folded inwards and grown together. Stamens without connective appendages **Breynia**
 15. Styles completely fused into a column **Glochidion**

- Styles connate only at the base **Putranjiva**
- 16. Leaves with 2 glands near or at blade insertion **Aporosa**
- Leaves without basal glands at insertion **17**
- 17. Leaves with entire (or somewhat wavy) margin, sometimes lobed **18**
- Leaves with crenate, serrate or dentate margin **Acalypha**
- 18. Leaves lobed or not, variegated (conspicuously yellow or purplish venation, or purplish leaves), sometimes apex of leaf separate from rest of blade **Codiaeum**
- Leaves not lobed, not variegated, apex always part of rest of blade **Antidesma**

Genus 187. **Acalypha** L., Sp. Pl.: 1003 (1753).

Key to species:

- 1. Small to medium annual herbs **Acalypha indica**
- Large shrubs **Acalypha hispida**

328. **Acalypha hispida** Burm. f., Fl. Ind.: 203 (1768).

Vernacular names: *Bara hatisur*, *Lal hatisur*. English names: Chenile plant, Red-hot capital, Foxtail.

Much-branched, dioecious shrub. Leaves broadly rhombic-ovate. Inflorescence axillary, solitary, spicate, very densely-flowered. Flowers bright red on account of masses of style. Fruits capsule. *Flowering and fruiting*: December - February. *Chromosome number*: $2n = 112$ (Fedorov, 1969). *Gardens*.

Distribution: India, Sri Lanka and Myanmar.

Status of occurrence: Cultivated.

Uses: The plant is of ornamental value.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 111 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1081 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1641 (DUSH); Gazipur Sadar, Rajendropur Sal Forest, 04. 02.2011, R. Tabassum, 1728 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3047 (DUSH).

329. **Acalypha indica** L., Sp. Pl.: 1003 (1753). Hook. f., Fl. Brit. Ind. 5: 416 (1887); Prain, Beng. Pl 2: 710 (1903, reprint 1963); R. L. Heinig, List Chittagong: 61 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2):27(1953). *Cupaments indica* Rafin. (1838), *Ricinocarpus indicus* O. Kuntze (1891).

Vernacular name: *Muktajhuri*.

English name: Indian nettle.

Small herb. Leaves long-petioled, mosaically arranged, ovate to rhombic-ovate. Inflorescence axillary spicate. Flowers androgynous, greenish. Capsules trilobate. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 14, 20$ (Fedorov, 1969). *Waste, moist and shady places*.

Distribution: Throughout the hotter parts of India, Sri Lanka, Africa and the Philippines.

Status of occurrence: Common.

Uses: Whole plant paste is used in ear boil (*Koch*).

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 31 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 533 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 880 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1338 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1642 (DUSH).

Genus 188. **Antidesma** L., Sp. Pl.: 1027 (1753).

Key to species:

1. Sepals free, pubescent outside; petiole 0.7-1 mm wide; fruiting pedicel 0-1 mm; male disk consisting of free pubescent lobes; leaf base cordate to rounded, rarely obtuse; ovary pubescent **Antidesma ghaesembilla**
- Sepals fused for at least 2/3 of their length, glabrous or pubescent outside; petiole 1-2 mm wide; fruiting pedicel 1.5-3(-9) mm; male disk various but never consisting of free pubescent lobes; leaf base acute to rounded; ovary glabrous or pubescent **Antidesma acidum**

330. **Antidesma acidum** Retz., Obs. Bot. 5: 30 (1788). *Stilago diandra* Roxb. (1802), *Antidesma diandrum* (Roxb.) Roth (1887); Hook. f., Fl. Brit. Ind. 5: 361 (1887); Prain, Beng. Pl. 2: 703 (1903, reprint 1963).

Vernacular name: *Multa*.

English name: Indian laurel.

Large deciduous shrub or small tree. Leaves turning deep red before falling, variable, oblong to lanceolate, entire, acute or acuminate. Flowers dioecious, minute in lax terminal and lateral racemes, greenish. Fruit subglobose when fresh, ovoid when dried, reddish-purple, coarsely reticulate. *Flowering and fruiting*: almost throughout the year. *Forests*.

Distribution: Tropical Himalayas, Sri Lanka, China and Malaysia.

Status of occurrence: Common.

Uses: Fruits are edible.

Specimens examined: Kaliganj, Kolafata, 04.04.2008, R. Tabassum, 303 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 793 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1505 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1934 (DUSH).

331. ***Antidesma ghaesembilla*** Gaertn., Fruct. 1: 189 (1788); Hook. f., Fl. Brit. Ind. 5: 357 (1887); Prain, Beng. Pl. 2: 703 (1903, reprint 1963). *Antidesma paniculatum* Blume (1806), *Antidesma pubescence* Roxb. (1809).

Vernacular name: *Khudijam*.

Deciduous shrub or small tree. Leaves broadly oblong. Spikes much-branched, densely rusty tomentose. Flowers minute, greenish. Fruits subglobose, deep purplish-black when ripe, 1-seeded. *Flowering and fruiting*: January - May. *Forests*.

Distribution: Cambodia, Malaya and India.

Status of occurrence: Common.

Uses: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 200 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1141 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3060 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3730 (DUSH).

Genus 189. ***Aporosa*** Blume, Bijdr.: 514 (1826).

332. ***Aporosa dioica*** (Roxb.) Muell.-Arg. in DC., Prodr. 15(2): 472 (1866). *Alnus dioica* Roxb. (1832), *Aporosa roxburghii* Baill. (1866); Hook. f., Fl. Brit. Ind. 5: 347 (1887); Prain, Beng. Pl. 2: 966 (1903, reprint 1963).

Vernacular name: *Pat kharalla*.

English name: Common aporosa.

Evergreen small tree, usually shrubby. Leaves elliptic or elliptic-oblong. Flowers minute, in spike, greenish-white. Fruits obovoid-oblong, with a peak at the end, orange when ripe. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 52$ (Kumar and Subramaniam, 1986). *Grows in forests*.

Forests.

Distribution: China, India, Malaysia, Myanmar and Vietnam.

Status of occurrence: Seems to be rare.

Uses: Fruits are edible.

Specimens examined: Gazipur Sadar, Rajendropur Sal Forest, 16.05.2008, R. Tabassum, 385 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2488 (DUSH).

Genus 190. **Bischofia** Blume, Bijdr.: 1168 (1826).

333. **Bischofia javanica** Blume, Bijdr.: 1168 (1826); Hook. f., Fl. Brit. Ind. 5: 345 (1887); Prain, Beng. Pl. 2: 693 (1903, reprint 1963); R. L. Heinig, List Chittagong: 60 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 106 (1956). *Stylodiscus trifolius* (Roxb.) Benn & R. Br. (1840), *Bischofia oblongifolia* Decne. (1844).

Vernacular name: *Kainjal*.

English name: Javanese bishop wood.

Large deciduous tree. Leaves alternate, trifoliate, leaflets elliptic or ovate-oblong, terminal one much longer. Plants dioecious. Inflorescence axillary, paniculate. Flowers greenish. Fruit a globose baccate, brown when fully ripe. *Flowering and fruiting*: March - July. *Grows along the forest margin*.

Distribution: India, Myanmar and Western Peninsula.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 59 (DUSH); Kaliakoir, Chandra, Sal Forest, 09.05.2010, R. Tabassum, 747 (DUSH).

Genus 191. **Breynia** J. R. et G. Forst., Char. Gen. Pl.: 145 (1776).

334. **Breynia retusa** (Dennst.) Alston, Ann. Roy. Bot. Gard (Peradeniya) 11 : 204 (1929). *Phyllanthus retusus* Dennst. (1818), *Breynia patens* (Roxb.) Benth. (1832); Hook. f., Fl. Brit. Ind. 5: 329 (1887); Prain, Beng. Pl. 2: 699 (1903, reprint 1963).

Vernacular name: *Silpati*.

Shrub or small tree, much-branched, branches arching outwards. Leaves distichous, broadly elliptic, drying brown. Flowers 1 to few in proximal leaf axils or solitary. Fruit a capsule, depressed-globose, faintly 3-lobed, orange-red, dehiscent. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 52$ (Kumar and Subramaniam, 1986). *Grows along roadsides or clearings in sunny places.*

Grows in wastelands and scrub jungles.

Distribution: India, Myanmar and Sri Lanka.

Status of occurrence: Seems to be rare.

Uses: It is used in medicine.

Specimen examined: Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1732 (DUSH).

Genus 192. **Bridelia** Willd., Sp. Pl. 4 : 978 (1805).

Key to species:

1. Woody lianas or scandent shrubs; calyx usually more than 6 mm in diam. **Bridelia stipularis**
- Shrubs or trees; calyx usually less than 6 mm in diam. **Bridelia retusa**

335. **Bridelia retusa** (L.) A. Juss., Euphorb. Gen.: 109, t. f. 22 (1824); Hook. f., Fl. Brit. Ind. 5: 268 (1887); Prain, Beng. Pl. 2: 694 (1903, reprint 1963). *Clutia retusa* L. (1753), *Bridelia spinosa* Willd. (1805).

Vernacular names: *Kata kushui*, *Kata koi*.

English name: Spinous kino tree.

Small or moderate-sized deciduous tree, spinous when young. Leaves rigidly coriaceous, elliptic-oblong. Flowers arranged in axillary fascicles, on leafless terminal and supra-axillary spikes, yellowish-green to reddish-brown. Fruit a drupe, ovoid or depressed globose, fleshy, black, 2-celled. *Flowering and fruiting*: May - January. *Chromosome number*: $2n = 28$ (Fedorov, 1969). *Grows in forests.*

Distribution: India, Malaya, Myanmar, Sri Lanka and Thailand.

Status of occurrence: Common.

Uses: Fruits are edible, also used in medicine.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 58 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 887 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1047 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1357 (DUSH).

336. **Bridelia stipularis** (L.) Blume, Bijdr.: 597 (1826); Hook. f., Fl. Brit. Ind. 5: 270 (1887); Prain, Beng. Pl. 2: 694 (1903, reprint 1963). *Clutia stipularis* L. (1767).

Vernacular name: *Pat khowi*.

English name: Climbing bridelia.

Large, more or less climbing shrub. Leaves large on vegetative shoots, elliptic-oblong or obovate. Inflorescence often spike-like, leafless or with small leaves. Flowers yellowish-white. Fruit a drupe, broadly ellipsoid, seated on the enlarged calyx, reddish, turning bluish-black when ripe, 2-seeded. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Waste places in sunny habitat*.

Distribution: India and Myanmar.

Status of occurrence: Seems to be rare.

Uses: Fruits are edible.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1931 (DUSH); Kaliakoir, Chandra, 13.09.2013, R. Tabassum, 3243 (DUSH).

Genus 193. **Chrozophora** Neck., Elem. 2: 337 (1790).

337. **Chrozophora rottleri** (Geiseler) A. Juss. ex Spreng., Syst. Veg. 3: 850 (1826). *Croton plicatus* Vahl (1790), *Chrozophora plicata* (Vahl) A. Juss. ex Spreng., Syst. Veg. 3: 850 (1826); Hook. f., Fl. Brit. Ind. 5: 409 (1887); Prain, Beng. Pl. 2: 708 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 28 (1953).

Vernacular name: *Khudi okra*.

English name: Turnsole.

Prostrate or ascending annual, stellately wooly herb. Leaves triangle-ovate or ovate, sometimes shallowly trilobate. Inflorescence short, few-flowered, axillary racemes. Flowers yellowish-green. Capsules tri-lobed. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Grows in waste places and roadsides*.

Distribution: Afghanistan and thence to the Mediterranean regions.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 06.12.2009, R. Tabassum, 479 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1066 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1292 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3351 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3858 (DUSH).

Genus 194. **Codiaeum** Rumph. ex A. Juss., Euph. Tent.: 33, t. 9 (1824).

338. **Codiaeum variegatum** (L.) A. Juss., Euph. Tent.: 33, t. 9 (1824); Hook. f., Fl. Brit. Ind. 5: 399 (1887); Prain, Beng. Pl. 2: 707 (1903, reprint 1963). *Croton variegatus* L. (1753), *Codiaeum chrysosticton* Spreng. (1826).

Vernacular name: *Patabahar*.

English name: Golden ring croton.

Much-branched, evergreen shrub. Leaves variable, ovate-lanceolate to linear, marked with white, yellow or red. Flowers white. Fruit a trilobate or subglobose capsule, reddish-brown. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 120$ (Kumar and Subramaniam, 1986). *Gardens and homesteads*.

Distribution: Pantropical.

Status of occurrence: Cultivated.

Uses: Used as an ornamental plant.

Specimens examined: Kapasia, Kendunia, 03.11.2013, R. Tabassum, 3776 (DUSH); Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3879 (DUSH).

Genus 195. **Croton** L., Sp. Pl. 2: 1004 (1762).

Key to species:

- | | |
|---|-----------------------------|
| 1. Shrub; leaves ovate-cordate; stamens 18-30;
capsule scabridly rusty-pubescent | Croton caudatum |
| - Herb; leaves lanceolate; stamens 13-16; capsule
sparingly stellate-lepidote | Croton bonplandianus |

339. **Croton bonplandianus** Baill., Adansonia 4: 339 (1863-64). *Croton sparsiflorus* Morong (1832).

Vernacular name: *Bondhone*.

English name: Bonplant's croton.

Much-branched woody herb. Leaves alternate or sub-opposite, narrowly ovate-lanceolate, minutely serrate. Inflorescence terminal. Flowers creamy-white. Fruit a capsule, oblong-ellipsoid, shallowly 3-lobed, pale brown. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 20$ (Bir and Sidhu, 1980). *Grows in sry and sandy exposed areas*.

Distribution: Native of South America and distributed in tropical and subtropical regions of the world.

Status of occurrence: Common.

Uses: The plant is used as antiseptic.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 86 (DUSH); Kaliganj, 23.08.2010, R. Tabassum, 1640 (DUSH); Tongi, Kathaldi, 19.08.2013, R. Tabassum, 2722 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3035 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3594 (DUSH).

340. ***Croton caudatus*** Geisel., *Croton Monogr.*: 73 (1807); Hook. f., *Fl. Brit. Ind.* 5: 388 (1887); Prain, *Beng. Pl.* 2: 707 (1903, reprint 1963). *Croton drupaceous* Roxb. (1832), *Croton caudatus* Geisel. var. *malaccanus* Hook. f. (1887).

Vernacular names: *Nanbhantui*, English name: Caudated croton.
Nanbhantur.

Subscandent shrub. Leaves alternate to subopposite towards the ends of the branchlets, densely stellately-hairy, lamina narrowly to broadly ovate, irregularly dentate or crenate-dentate. Inflorescence densely stellate-hairy. Flowers greenish-white. Fruit a globose capsule, bluntly 3- or 6-angled. *Flowering and fruiting:* April - October. *Chromosome number:* $2n = 20$ (Mehra and Hans, 1969). *Stream sides and edges of forests.*

Distribution: Cambodia, China, India, Indonesia, Laos, Malaysia, the Philippines, Sri Lanka, Thailand and Vietnam.

Status of occurrence: Seems to be rare.

Uses: The plant is of medicinal value.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 319 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 974 (DUSH).

Genus 196. ***Euphorbia*** L. Sp. Pl.: 450 (1753).

Key to species:

- | | |
|---|-------------------------------------|
| 1. Plants succulent | <i>Euphorbia nivulia</i> |
| - Plants woody or herbaceous | 2 |
| 2. Leaves all opposite, asymmetrical at the base; stipules scarious, persistent; glands usually appendiculate | 3 |
| - Leaves mostly opposite or else alternate, whorled and opposite, symmetrical at the base; stipules subulate, persistent or fugacious, or sessile and glandular; glands usually exappendiculate | <i>Euphorbia pulcherrima</i> |

3. Cyathia aggregated together into clusters **Euphorbia hirta**
- Cyathia axillary, solitary, often borne on pecialized lateral shoots **4**
4. Fruits glabrous except on the keels; seeds sharply transversely-ridged **Euphorbia prostrata**
- Fruits adpressed-pubescent; seeds shallowly transversely-ridged **Euphorbia thymifolia**

341. **Euphorbia hirta** L., Sp. Pl.: 454 (1753); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956). *Euphorbia capitata* Lamk. (1785), *Euphorbia pilulifera* L., Sp. Pl.: 454 (1753); Hook.f., Fl. Brit. Ind. 5: 250 (1887); Prain, Beng. Pl. 2: 692 (1903, reprint 1963); R. L. Heinig, List Chittagong: 58 (1925).

Vernacular names: *Bara dudhi*, English names: Australian asthma weed, Snake *Dudhia*. weed.

Annual, erect or ascending herb. Leaves opposite, elliptic-oblong, obovate or oblong-lanceolate. Inflorescence of many male florets surrounding a solitary female, enclosed within involucre, involucre in axillary and terminal, dense-flowered, cup-like. Flowers greenish. Capsules minute, globose-trigonous, pale reddish. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 12, 20$ (Fedorov, 1969). *Grows in waste places, fallo lands and paddy fields*.

Distribution: Afghanistan, Japan and Pakistan.

Status of occurrence: Very common.

Uses: The plant is medicinally important.

Specimens examined: Kaligonj, Kolafata, 05.03.2010, R. Tabassum, 677 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1487 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2075 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2549 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3040 (DUSH).

342. **Euphorbia nivulia** F. Ham., Trans. Linn. Soc. 14: 286 (1825); Hook. f., Fl. Brit. Ind. 5: 255 (1887); Prain, Beng. Pl. 2: 691 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956). *Euphorbia varians* Haw. (1812).

Vernacular name: *Sij*.

English name: Leafy milk hedge.

Deciduous tree with pairs of sharp stipular spines. Leaves sessile, linear-oblongate or spatulate, obtuse, fleshy. Cyathia in axillary pedunculate cymes, towards the tip of

the branches, reddish. Involucre yellow. Fruits triradiate, the lobes laterally compressed, smooth. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 60$ (Kumar and Subramaniam, 1986). *Homestead*.

Distribution: Western India.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1544 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2619 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3327 (DUSH).

343. **Euphorbia prostrata** Ait., Hort. Kew. 2: 139 (1789). *Chamaesyce prostrata* (Ait.) Small (1903).

Vernacular name: *Sij*.

English name: Prostrate sandmat.

Prostrate annual herb. Leaves oblong or slightly oblong-ovate, obtuse. Cyathia axillary, solitary or in a group, glands with narrow whitish appendages. Fruit a capsule, sharply trigonous, acutely keeled, with stiff hairs at the angles of the cocci only. *Flowering and fruiting*: January - October. *Grows in wastelands as well as cultivated lands*.

Distribution: A native to tropical America but now spread on other parts of the world.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 778 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2490 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2565 (DUSH); Kaliakoir, Voboner Chala, 03.11.2013, R. Tabassum, 3519 (DUSH); Kaliagonj, Banglahaola, 02.12.2013, R. Tabassum, 3815 (DUSH).

344. **Euphorbia pulcherrima** Willd. ex Klotz., Neue Allg. Deutsche Garten-Blumenzeit. 2: 27 (1834). *Poinsettia pulcherrima* (Willd. ex Klotz.) Grah. (1836).

Vernacular name: *Lal pata*.

English names: Flaming sphere, Poinsettia.

Softly woody shrub. Stem leaves alternate, long petiolate, lamina elliptic-ovate, leaves of the pseudo-pleiochasium clustered, blades elliptic-oblongate, bright red or creamy. Cyathia aggregated together in dense terminal, basically triradiate pseudo-pleiochasia, yellowish. Fruits rounded-trilobate, smooth. *Flowering and fruiting*:

December - March. *Chromosome number*: $2n = 28, 56$ (Fedorov, 1969). *Gardens and parks*.

Distribution: A native to tropical America but now spread on other parts of the world.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3880 (DUSH); Kapasia, Sanmania, 14.12.2013, R. Tabassum, 3908 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3939 (DUSH).

345. **Euphorbia thymifolia** L., Sp. Pl.: 454 (1753); Hook. f., Fl. Brit. Ind. 5: 252 (1887); Prain, Beng. Pl. 2: 692 (1903, reprint 1963); R. L. Heinig, List Chittagong: 58 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 105 (1956). *Chamaesyce thymifolia* (L.) Millsp. (1916).

Vernacular names: *Dudhiya, Swetkan*.

English name: Gulf sandmat.

Prostrate annual herb. Stem divaricately branched. Leaves opposite, very small, obliquely oblong or elliptic-oblong, apex rounded. Involucres axillary, solitary or 2-3 in an axil, campanulate, glands sub-orbicular, purplish. Fruit a capsule, trigonous, obscurely keeled. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Grows as an weed, preferring rough open ground*.

Distribution: Throughout India and Sri Lanka.

Status of occurrence: Common.

Uses: Used in medicine.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1939 (DUSH); Sripur, Gorabon, 21.09.2012, R. Tabassum, 2160 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3049 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3763 (DUSH).

Genus 197. **Glochidion** J.R. & G. Forst., Char. Gen. Pl.: 113, t. 57 (1776).

346. **Glochidion multiloculare** (Roxb. ex Willd.) Muell.-Arg., Linnaea 32: 59 (1863); Hook. f., Fl. Brit. Ind. 5: 307 (1887); Prain, Beng. Pl. 2: 696 (1903, reprint 1963); R. L. Heinig, List Chittagong: 59 (1925). *Agyneia multilocularis* Roxb. ex Willd. in Ges. Naturf. Freunde Neue Schr. 4: 206 (1803). *Phyllanthus multilocularis* (Roxb. ex

Willd.) Muell.-Arg. in Flora 158: 370 (1865); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 29 (1953).

Vernacular names: *Aniatori*, *Keotomi*, *Keoura*, *Paniatori*.

Evergreen shrub or small tree, sometimes prickly with thickened stipules. Leaves stipulate, leaf blade elliptic, elliptic-oblong or oblanceolate. Flowers small, greenish-yellow, clustered in the leaf axils. Capsules strongly depressed-globose, 10-15 lobed. *Flowering and fruiting*: July - January. *Grows in scrub forests*.

Distribution: Bhutan, India, Myanmar and Nepal.

Status of occurrence: Common.

Uses: Wood is used for making agricultural implements.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 324 (DUSH); Gazipur Sadar, Rajendropur Sal Forest, 06.12.2009, R. Tabassum, 478 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1233 (DUSH); Kaliakoir, Simultoly Ataboho, 01.10.2013, R. Tabassum, 3741 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3779 (DUSH).

Genus 198. **Jatropha** L., Sp. Pl. 2: 1006 (1753).

Key to species:

1. Petioles with gland-tipped hairs along their length **Jatropha gossypifolia**
- Petioles not beset with gland-tipped hairs **Jatropha curcas**

347. **Jatropha curcas** L., Sp. Pl. 2: 1006 (1762); Hook. f., Fl. Brit. Ind. 5: 338 (1887); Prain, Beng. Pl. 2: 705 (1903, reprint 1963).

Vernacular names: *Baghverenda*, English names: Barbados nut, Physic *Banverenda*. nut, Purging nut.

Soft-wooded shrub or small tree. Leaves stipulate, long petioled, blade cordate. Inflorescence usually lateral, often paired, subcorymbiform. Flowers greenish-yellow. Fruit a capsule, ellipsoid to globose, loculicidally dehiscent or subdrupaceous, green, yellowish or black. *Flowering and fruiting*: September - December. *Chromosome number*: $2n = 44$ (Mehra and Hans, 1969). *Village thickets, homesteads and gardens*.

Distribution: Native of tropical America and distributed in Bhutan, China, Hong Kong, India, Malay Peninsula, Pakistan, Thailand and Taiwan.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 405 (DUSH); Sripur, Gorzaria, 21.06.2010, R. Tabassum, 1265 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2761 (DUSH).

348. **Jatropha gossypifolia** L., Sp. Pl.: 1066 (1753); Hook. f., Fl. Brit. Ind. 5: 383 (1887); Prain, Beng. Pl. 2: 705 (1903, reprint 1963); R. L. Heinig, List Chittagong: 61 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 29 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 106 (1956). *Adenoropium elegans* (Pohl) Muell.-Arg. (1826), *Jatropha gossypifolia* L. var. *elegans* (Pohl) Muell.-Arg. (1866).

Vernacular names: *Lalbherenda*, *Laljeol*. English name: Bellyache nettlespurge.

Soft-woded erect shrub. Leaves stipulate, petiolate, blade 3-5-palmitifid or palmitipartite, lobes obovate. Inflorescence leaf-opposed, paniculate. Flowers reddish-purple. Fruits rounded-trilobate, septicidally or loculicidally dehiscent. *Flowering and fruiting:* April - August. *Chromosome number:* $2n = 22$ (Sanjappa, 1979). *Grows in open sunny places near roadsides.*

Distribution: A native of South America, also found in India, Myanmar, Pakistan and the West Indies.

Status of occurrence: Common.

Uses: The leaves are used in medicine.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 84 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 635 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1064 (DUSH); Kaligonj, Nagorick, 05.03.2002, R. Tabassum, 1741 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1910 (DUSH).

Genus 199. **Macaranga** Thouars, Gen. Nov. Mad.: 26 (1806).

Key to species:

1. Twigs strongly angled and ridged, densely fawn-furfuraceous; stipules lanceolate, 7-8 mm **Macaranga denticulata**
- Twigs terete, furfuraceous, glabrescent; stipules ovate to broadly ovate or triangular, 1.5-3 mm **Macaranga peltata**

349. **Macaranga denticulata** (Blume) Muell.-Arg. in DC., Prodr. 15, 2: 1000 (1866); Hook. f., Fl. Brit. Ind. 5: 446 (1887); Prain, Beng. Pl. 2: 713 (1903, reprint 1963). *Mappa denticulata* Blume (1825), *Mappa gummiflua* Miq. (1858), *Macaranga gummiflua* (Miq.) Muell.-Arg. (1866).

Vernacular names: *Bura*, *Burakochi*, English name: Blister macaranga.
Shukun gach (Koch).

Small to medium-sized evergreen tree, young shoots, leaves and inflorescence rusty tomentose. Leaves stipulate, petiolate, leaf blade broadly ovate-deltoid, shortly acuminate, base peltate. Inflorescence axillary panicles. Flowers minute, yellowish. Fruit a capsule, 2- or by abortion 1-coccus, yellowish. *Flowering and fruiting*: February - July. *Chromosome number*: $2n = 22$ (Mehra and Hans, 1969). *Forests*.

Distribution: Bhutan, Cambodia, Peninsular Malaysia and Vietnam.

Status of occurrence: Common.

Uses: Leaves are used in dysentery by Koch.

Specimens examined: Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1516 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2266 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2834 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3185 (DUSH).

350. **Macaranga peltata** (Roxb.) Muell.-Arg. in DC., Prodr. 15, 2: 1010 (1866); *Osyris peltata* Roxb. (1832). *Macaranga roxburghii* Wight (1852); Hook. f., Fl. Brit. Ind. 5: 448 (1887); Prain, Beng. Pl. 2: 713 (1903, reprint 1963). *Macaranga tomentosa* Eight (1852).

Small evergreen tree, younger parts rusty tomentose. Leaves stipulate, petiolate, leaf blade broadly ovate. Inflorescence densely pubescent. Flowers greyish-yellow. Fruit spherical, with persistent stigma on one side, black-granular. *Flowering and fruiting*: February - July. *Chromosome number*: $2n = 22$ (Mehra and Hans, 1969). *Forests*.

Distribution: Bhutan, Cambodia, India, Indonesia, Laos, Malay Peninsula, Myanmar, Thailand and Sri Lanka.

Status of occurrence: Common.

Uses: Used in medicine.

Specimens examined: Kaliganj, Kolafata, 05.03.2002, R. Tabassum, 165 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 637 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1270 (DUSH); Kapasia, Borhor, 09.03.2012, R. Tabassum, 2084 (DUSH); Tongi, Kathaldi, 19.08.2013, R. Tabassum, 2734 (DUSH).

Genus 200. **Mallotus** Lour., Fl. Cochinch.: 635 (1790).

351. **Mallotus repandus** (Willd.) Muell.-Arg., Linnaea 34: 197 (1865); Hook. f., Fl. Brit. Ind. 5: 442 (1887); Prain, Beng. Pl. 2: 712 (1903, reprint 1963). *Croton repandus*

Willd. (1803), *Rottlera dicocca* Roxb. (1832), *Rottlera rhombifolia* (Willd.) Thw. (1864), *Mallotus scandens* (Span.) Muell.-Arg. (1866).

Vernacular names: *Gunti, Jhante*.

Scandent shrub or small tree. Leaves alternate, stipulate, petiolate, leaf blade rhombic-ovate to broadly deltoid. Inflorescence axillary paniculate. Flowers greenish. Fruits subglobose, 2-carpelate, yellowish. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 22$ (Datta, 1967). *Forests, shrubberies and open scrub lands*.

Distribution: China, Hong Kong, India, Malaysia, Myanmar, New Caledonia, New Guinea, North Eastern Australia, Sri Lanka and Thailand.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 414 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1218 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3802 (DUSH).

Genus 201. **Manihot** Mill., Gard. Dict. ed. 4 (1754).

352. **Manihot esculenta** Crantz., Inst. 1: 167 (1766). *Jatropha manihot* L. (1753). *Janipha manihot* (L.) Kunth (1817). *Manihot utilissima* Pohl (1827); Hook. f., Fl. Brit. Ind. 5: 239 (1887); Prain, Beng. Pl. 2: 704 (1903, reprint 1963). *Manihot edule* A. Rich. (1853).

Vernacular names: *Kasava, Simul-alu*. English names: Bitter cassava, Cassava.

Shrub with tuberous root. Leaves stipulate, long petioled, blade palmately 3-9 lobed, lobes oblanceolate to narrowly elliptic. Inflorescence terminal or axillary racemes. Flowers greenish. Fruit an ellipsoid capsule. *Flowering and fruiting*: September - January. *Chromosome number*: $2n = 36$ (Jos and Nair, 1979). *Well-drained soil*.

Distribution: Cassava is native to tropical Brazil and widely cultivated in the tropics of both hemispheres.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 196 (DUSH); Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 298 (DUSH); Kalioakoir, Fulbari, 01.10.2013, R. Tabassum, 3337 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3626 (DUSH).

Genus 202. **Phyllanthus** L., Sp. Pl. 2: 981 (1753).*Key to species:*

- | | |
|--|--------------------------------|
| 1. Herbs | Phyllanthus niruri |
| - Trees or shrubs | 2 |
| 2. Fruit less than 1 cm diam., baccate, 3.pluri-lobate, black | Phyllanthus reticulatus |
| - Fruit more than 1 cm diam., drupaceous, 1-3-lobate, greenish; yellowish or whitish | 3 |
| 3. Leaves up to 40 per shoot, lax; leaf-blades ovate to ovate-lanceolate, up to 9 x 4.5 cm | Phyllanthus acidus |
| - Leaves up to 150 per shoot, dense; leaf blades linear-oblong, 0.5-1.6 cm x 1-3 mm | Phyllanthus emblica |

353. **Phyllanthus acidus** (L.) Skeels, U.S. Dept. Agric. Bur. Pl. Ind. Bull. 148: 17 (1909). *Averrhoa acida* L. (1753), *Cicca disticha* L. (1767), *Cicca acidissima* Blanco (1837), *Phyllanthus acidissimus* (Blanco) Muell.-Arg. (1863), *Phyllanthus distichus* (L.) Muell.-Arg. (1866); Hook. f., Fl. Brit. Ind. 5: 304 (1887); Prain, Beng. Pl. 2: 701 (1903, reprint 1963), *Cicca acida* (L.) Merr. (1917).

Vernacular names: *Amla*, English names: Star gooseberry, The country *Harbari*, *Hariphul*, *Orbori*. gooseberry.

Deciduous small tree. Leaves alternate, stipulate, leaf blade ovate to ovate-lanceolate. Flowers minute, red, in dense clusters forming slender, interrupted racemes in the axils of the leaves or more usually arising along the stem and branches. Fruit a drupe, depressed-globose, 6-8 lobed, greenish-yellow to whitish. *Flowering and fruiting*: March - June. *Chromosome number*: $2n = 28$ (Thombre, 1959 described under *Phyllanthus distichus*). *Homesteads*.

Distribution: Probably native to Brazil and found in India, Madagascar, Myanmar and Pakistan.

Status of occurrence: Cultivated.

Uses: Fruits are edible, also a medicinal plant.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 782 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1940 (DUSH); Sripur, Veramtoli, 17. 02.2012, R. Tabassum, 2080 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2249 (DUSH).

354. **Phyllanthus emblica** L., Sp. Pl.: 982 (1753); Hook. f., Fl. Brit. Ind. 5: 289 (1887); Prain, Beng. Pl. 2: 700 (1903, reprint 1963); R. L. Heinig, List Chittagong: 59 (1925). *Emblica officinalis* Gaertn., Fruct. 2: 122 (1791); J. Sinclair in Bull. Bot. Soc. 9 (2): 106 (1956). *Dichelactina nodicaulis* Hance (1852).

Vernacular names: *Amloki*, English names: Emblic myrobalan, Indian *Amla*.
gooseberry.

Monoecious, deciduous tree. Leaves oblong or linear-oblong. Flowers in axillary cymes, yellowish-green. Fruits subglobose, greenish or yellowish-white, succulent. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 28$ (Perry, 1943). *Grows in village grooves, scrub and dry sparse forests*.

Distribution: Cambodia, China, Hong Kong, India, Indonesia, Laos, Malaysia, the Philippines, Sri Lanka and Southern America.

Status of occurrence: Cultivated.

Uses: Ripe fruit is edible, also used in medicine.

Specimens examined: Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 682 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1116 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2805 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3055 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3544 (DUSH).

355. **Phyllanthus niruri** L., Sp. Pl.: 981 (1753); Hook. f., Fl. Brit. Ind. 5: 298 (1887); Prain, Beng. Pl. 2: 701 (1903, reprint 1963).

Vernacular name: *Bhuiamla*.

Monoecious, erect annual herb. Leaves stipulate, leaf blade elliptic-oblong to elliptic-oblongate. Flowers yellowish, very numerous, axillary. Fruits trilobate-subglobose, smooth. *Flowering and fruiting*: August - October. *Sandy clay soil in moist habitat*.

Distribution: Africa, India, Pakistan, Saudi Arabia and the West Indies.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 29 (DUSH); Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 879 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1022 (DUSH); Kaligonj, Taltia, 23.08.2010, R. Tabassum, 1609 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2046 (DUSH).

356. **Phyllanthus reticulatus** Poir., Encycl. Méth. 5: 298 (1804); Hook. f., Fl. Brit. Ind. 5: 288 (1887); Prain, Beng. Pl. 2: 700 (1903, reprint 1963); R. L. Heinig, List

Chittagong: 59 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 29 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 106 (1956). *Phyllanthus multiflorus* Willd. (1805), *Cicca reticulata* (Poir.) Kurz, Forest Fl. Burma 2: 354 (1877).

Vernacular names: *Chitki*, *Pankushi*, *Panjuli*, English name: Reticulated leaf-flaver.
Panseuli.

Much-branched shrub or small tree. Leaves stipulate, leaf blade varying in shape, mostly elliptic to ovate. Flowers bisexual, yellowish-green. Fruits globose to oblate, baccate, black with dark purplish at maturity. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 26$ (Lemmens and Wulijarni-Soetjpto, 1991). *Grows near water courses and in scrub and hedges, waste places and in mixed forests*.

Distribution: Africa, Sri Lanka, India, Thailand, China, Vietnam, Cambodia, Laos, Indonesia, Malaysia, the Philippines and Australia.

Status of occurrence: Common.

Uses: It is used in medicine.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 89 (DUSH); Kaliganj, Khoraid, 05.03.2010, R. Tabassum, 720 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1515 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1846 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2961 (DUSH).

Genus 203. **Putranjiva** Wall., Tent. Fl. Nep. 2: 61 (1826).

357. **Putranjiva roxburghii** Wall., Tent. Fl. Nep. 2: 61 (1826). Hook. f., Fl. Brit. Ind. 5: 336 (1887); Prain, Beng. Pl. 2: 701 (1903, reprint 1963). *Drypetes roxburghii* (Wall.) Hurusawa (1954).

Vernacular name: *Jiapura*.

Evergreen tree. Leaves stipulate, petiolate, leaf blade elliptic to oblong-elliptic or elliptic-lanceolate. Flowers small, yellow, male flowers in dense, axillary fascicles, female ones solitary or up to 3 in axils, sometimes many on short, leafless branches. Fruits globose or ovoid, tapering towards the apex when ovoid, white-tomentose. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 38$ (Sarkar and Datta, 1980). *Shrubberies and dry areas*.

Distribution: Native from West Himalaya to Sri Lanka, and Myanmar, Laos, Cambodia, Hong Kong, Indonesia and New Guinea.

Status of occurrence: Seems to be rare.

Uses: It is a medicinal plant.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3810 (DUSH); Kapasia, Sanmania, 14.12.2013, R. Tabassum, 3909 (DUSH).

Genus 204. **Ricinus** L., Sp. Pl.: 1007 (1753).

358. **Ricinus communis** L., Sp. Pl.: 1007 (1753); Hook. f., Fl. Brit. Ind. 5: 457 (1887); Prain, Beng. Pl. 2: 714 (1903, reprint 1963); R. L. Heinig, List Chittagong: 62 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 30 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 106 (1956).

Vernacular names: *Bherenda*, *Reri*, English names: Castor, Castor bean, Castor-oil plant.
Venna.

Erect, single-stemmed or much-branched shrubby or tree-like. Leaves stipulate, long petioled, leaf blade usually 7-9 lobed, lobes lanceolate, acutely acuminate, coarsely glandular-serrate or biserrate. Inflorescence of racemes. Flowers greenish-yellow. Fruits smooth or covered with bristle-tipped fleshy processes. Seeds shiny, greyish or silvery, usually streaked and flecked. *Flowering and fruiting:* almost throughout the year, but mostly flowers in the winter. *Chromosome number:* $2n = 20$ (Bir and Sidhu, 1980). *Grows in waste places, village grooves and shrubberies.*

Distribution: Native to Northern tropical Africa and widely cultivated throughout the tropics, subtropics and temperate regions of the world.

Status of occurrence: Common.

Uses: It is a medicinal plant.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 210 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 633 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1146 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2813 (DUSH); Kapshia, Kandunia, 03.11.2013, R. Tabassum, 3734 (DUSH).

Genus 205. **Trewia** L., Sp. Pl.: 1193 (1753).

359. **Trewia nudiflora** L., Sp. Pl.: 1193 (1753); Hook. f., Fl. Brit. Ind. 5: 423 (1887); Prain, Beng. Pl. 2: 711 (1903, reprint 1963); R. L. Heinig, List Chittagong: 61 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 30 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 106 (1956). *Rottlera indica* Willd. (1797), *Trewia macrophylla* Roxb. (1821), *Mallotus cardiophyllus* Merr. (1912).

Vernacular names: *Bhatam*, *Latim*, *Lattu*, English name: False white teak.
Medda, *Pithapura*, *Pitali*.

Medium-sized dioecious tree, young shoots, petioles, leaves and inflorescence grayish-tomentose. Leaves stipulate, petiolate, leaf blade triangular-ovate to ovate-suborbicular, acuminate, cordate to truncate at the base. Flowers in racemes, greenish-yellow. Fruits globose, reddish when ripe. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 22$ (Mehra and Hans, 1969). *Grows in forests and near waterbodies*.

Distribution: Sri Lanka, Bhutan, India, Thailand, Cambodia, Vietnam, Laos, China and Malaysia.

Status of occurrence: Common.

Uses: Timber is used for making toys, such as cricket bat, stamp, etc; also a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 380 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 632 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 712 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1253 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3677 (DUSH).

Family 65. **RHAMNACEAE** A. L. de Jussieu (1789)

Trees or shrubs, sometimes scrambling or twining, often thorny. Leaves simple, alternate, sometimes opposite, stipules generally present. Flowers in terminal or axillary cymes or mixed panicles or in axillary fascicles, bisexual or rarely unisexual, usually pentamerous or sometimes tetramerous, shortly perigynous to essentially epigynous. Calyx of 4 or 5 sepals, lobes triangular. Corolla with 4-5 petals, petals concave or hooded, often clawed. Stamens 4-5, distinct, alternate with the sepals, filaments adnate to the base of the petals. Carpels 2-3 (-5), syncarpous, ovary multilocular, ovule usually solitary in each locule. Fruits usually drupaceous.

The family Rhamnaceae consists of about 55 genera and c. 900 species, distributed in tropical and subtropical regions of the World. In Bangladesh, the family is represented by 4 genera and 9 species.

In the present study area this family is represented by a single genus with 3 species.

Genus 206. **Ziziphus** Mill., Gard. Dict. Abridg. ed. 4 (1754).

Key to species:

- | | |
|---|------------------------|
| 1. Cymose racemes or terminal cymose panicles formed by cymes; drupe hairy, endocarp thin, early broken | Ziziphus rugosa |
| - Axillary cymes; drupe glabrous, endocarp thick, stiffly | 2 |

cartilaginous, difficult to break

2. Scandent or erect shrubs; leaf blade ovate-oblong or ovate-lanceolate, broadest at lower part, apex acute or acuminate, adaxially ferruginous; drupe 5-6 mm in diam.

Ziziphus oenoplia

- Trees or shrubs; leaf blade oblong or elliptic, rarely suborbicular, broadest at middle, apex rounded, rarely acute, adaxially densely yellow or gray-white tomentose; drupe ca. 10 mm in diam.

Ziziphus mauritiana

360. **Ziziphus mauritiana** Lamk., *Encycl. Method. Bot.* 3: 319 (1789); J. Sinclair in *Bull. Bot. Soc. Beng.* 9 (2): 89 (1956). *Rhamnus jujuba* L., *Sp. Pl.* 194 (1753). *Ziziphus jujuba* (L.) Gaertn., *Fruct.* 1: 203 (1788); Lawson in *Hook. f., Fl. Brit. Ind.* 1: 632 (1875); Prain, *Beng. Pl.* 1: 234 (1903, reprint 1963); R. L. Heinig, *List Chittagong*: 13 (1925).

Vernacular names: *Kul, Boroi.*

English names: Indian jujube, Indian plum.

Tree. Leaves simple, alternate, elliptic-ovate to oblong-elliptic, entire or slightly crenate. Inflorescence axillary cymose. Flowers bisexual, greenish-yellow, calyx of 5 deltoid sepals, corolla of 5 subspathulate reflexed petals. Drupes globose to ovoid, green when young, yellowish to reddish when ripe. *Flowering and fruiting*: September - March. *Chromosome number*: $2n = 48$ (Kumar and Subramaniam, 1986). *Grows in plain lands to highlands.*

Distribution: Perhaps originated in the Middle East or in the Indian subcontinent. Now Widely cultivated throughout the tropics and subtropics.

Status of occurrence: Common.

Uses: Fruit is edible. It is also used as medicinally.

Specimens examined: Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 915 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1823 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2315 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2412 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3555 (DUSH).

361. **Ziziphus oenoplia** (L.) Mill., *Gard. Dict.* ed. 8. n. 3 (1768); Lawson in *Hook. f., Fl. Brit. Ind.* 1: 634 (1875); Prain, *Beng. Pl.* 1: 234 (1903, reprint 1963); R. L. Heinig, *List Chittagong*: 13 (1925); J. Sinclair in *Bull. Bot. Soc. Beng.* 9 (2): 89 (1956). *Rhamnus oenoplia* L., *Sp. Pl.* 194 (1753).

Vernacular names: *Bon boroi*, *Jangal boroi*, English names: Indian jujube, *Gotboroi*. Indian cherry.

Thorny straggling shrub, often with climbing branches. Leaves simple, alternate, ovate to ovate-lanceolate, crenate-serrate, acute or subacute. Inflorescence axillary cymes. Flowers bisexual, greenish-yellow, sepals 5, hairy outside, petals 5, orbicular, cucullate. Drupes globose or obovoid, black and shining. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 20, 48$ (Fedorov, 1969). *Grows in village thickets and secondary forests*.

Distribution: Tropical Asia and Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 363 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 840 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1318 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1768 (DUSH).

362. ***Ziziphus rugosa*** Lamk., Encycl. 3: 319 (1789); Hook. f., Fl. Brit. Ind. 1: 636 (18754); Prain, Beng. Pl. 1: 234 (1903, reprint 1963). *Ziziphus tomentosa* Roxb. (1820).

Vernacular name: *Jangli boroi*.

Straggling evergreen large shrub or small tree, often climbing, young branches densely tomentose. Leaves simple, alternate, suborbicular to elliptic, denticulate, apex almost rounded. Flowers densely pubescent, arranged in long peduncled cymes, forming on the usually leafless branches of long terminal panicles, sepals 5, tomentose, petal absent. Drupes obovoid or globose. *Flowering and fruiting*: December - April. *Grows in village thickets and forests*.

Distribution: India, Sri Lanka and Myanmar.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1761 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1969 (DUSH).

Family 66. **LEEACEAE** Dumortier (1829)

Erect herbs or shrubs, branches occasionally prickly. Leaves pinnate to tripinnate, rarely ternate or simple, alternate (very rarely opposite), usually dentate, exstipulate (but petioles usually with 2 auricles or sheathing expansions near the base). Inflorescence usually corymbose cymes, many-flowered, terminal (very rarely pendent

or axillary). Flowers hermaphroditic, (4 or)5-merous. Sepals 4-5, connate, copular, shortly toothed. Petals 4-5, connate at the base, and adhering to the staminal tube, valvate, reflexed. Stamens 4-5, connate at the base, opposite to petals, anthers extrorse. Ovary superior, 3-8 celled, style simple, ovule 1, axillary per locule. Fruit a more or less depressed 3 to 8 locular berry. Seeds with ruminant endosperm.

The family Leeaceae consists of a single genus *Leea* with about 70 species, mostly in the southern and eastern Asia. In Bangladesh, this family is represented by 8 species.

In the present study area this family is represented by 4 species.

Genus 207. **Leea** Royen ex L., Mant. 1: 17, 124 (1767).

Key to species:

- | | |
|---|-------------------------|
| 1. Flower red | Leea alata |
| - Flowers greenish-white | 2 |
| 2. Leavea compound | 3 |
| - Leaves simple | Leea macrophylla |
| 3. Leaves all simply pinnate; leaflets with parallel nerves; margin serrate | Leea crispa |
| - Leaves bi-pinnate; leaflets without parallel nerves; margin dentate | Leea indica |

363. **Leea alata** Edge., Trans. Linn. Soc. 20: 36 (1846); Hook. f., Fl. Brit. Ind. 1: 665 (1875); Prain, Beng. Pl. 1: 239 (1903, reprint 1963). *Leea rubra* Royle (1835).

Somewhat stiff undershrub. Leaves simply imparipinnate, petioles reddish, leaflets usually 5, sometimes 3, oblong or oblong-lanceolate, sharply and irregularly serrate, reddish beneath. Inflorescence corymbosely cymose, pubescent, reddish, furrowed. Flowers small, numerous, red. Fruits red, turning bluish-purple on ripening. *Flowering and fruiting*: July - November. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Forests*.

Distribution: India.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 821 (DUSH).

364. **Leea crispa** L., Mant. 1: 124 (1767); Prain, Beng. Pl. 1: 239 (1903, reprint 1963).

Gregarious undershrub, grows annually from a perennial rootstock. Stem jointed, swollen above the joints, and together with the branches, peduncles and petioles

furnished with 6-8 short crisp wings. Leaves usually simply pinnate, 3-5 foliolate, leaflets oblong, very parallel-sided, acute or shortly acuminate, coarsely serrate. Flowers greenish-white or pale yellow, in small terminal cymes. Fruit a depressed-globular berry, black when ripe. *Flowering and fruiting*: July - December. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Edges of forests*.

Distribution: India.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 379 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 733 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2383 (DUSH).

365. **Leea indica** Merr., Philipp. Journ. Sci. Bot. 14: 245 (1914). *Staphyles indica* Burm. f. (1768), *Aquilicia sambucina* L. (1771), *L. eea sambucina* Wild. (1797); Hook. f., Fl. Brit. Ind. 1: 666 (1875); Prain, Beng. Pl. 1: 239 (1903, reprint 1963).

Vernacular name: *Kukur jihwa*.

Shrub. Leaves 2- (rarely 3-) pinnate, leaflets oblong or elliptic-oblong, acuminate, coarsely and irregularly serrate. Flowers greenish-white, in large branched subterminal corymbose cymes. Berries depressed-globular, purple black. *Flowering and fruiting*: July - January. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Evergreen forests*.

Distribution: India, Sri Lanka, Malay Peninsula, Indo-China and the Philippines.

Status of occurrence: Common.

Uses: Medicinally it is valuable.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 16.05.2008, R. Tabassum, 371 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1971 (DUSH).

366. **Leea macrophylla** Roxb. ex Hornem., Hort. Hafn. 1: 231 (1813); Hook. f., Fl. Brit. Ind. 1: 664 (1875); Prain, Beng. Pl. 1: 240 (1903, reprint 1963).

Vernacular name: *Dholsamudra*.

Herbaceous perennial with switchy annual shoots. Stem deeply sulcate, root tuberous, perennial, red. Leaves simple, large, broadly ovate, cordate. Flowers polygamous, white, small in terminal much-branched puberulous corymbose cymes. Berries

depressed-globose, black. *Flowering and fruiting*: July - February. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Forest floors*.

Distribution: India, Myanmar, Thailand and Laos.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimen examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3971 (DUSH).

Family 67. **VITACEAE** A. L. de Jussieu (1789)

Large climbing shrubs, usually with leaf-opposed tendrils. Leaves alternate, simple, palmately veined and often palmately lobed, sometimes compound with trifoliate or digitately 4-7 foliate, stipules small, deciduous. Flowers hermaphrodite or unisexual, regular, actinomorphic, in leaf-opposed or pseudo-axillary cymes or in terminal panicles. Calyx cup-shaped, more or less reduced to 4-5 lobes or a collar. Corolla lobes 4-5, caducous. Stamens 4-5. Ovary superior, 2-locular, each locule with 2 anatropous ovules, stigmas discoid or lobed. Fruit a berry with 1 or 2 seeds.

The family Vitaceae consists of 11 genera and 700 species, mainly in the tropical and subtropical regions. In Bangladesh, this family is represented by 8 genera and 26 species.

In the present study area this family is represented by 4 genera and 8 species.

Key to genera:

- | | | |
|----|--|---------------------|
| 1. | Inflorescence a loose thyrse or panicle, base subtended by a tendril | Ampelocissus |
| - | Inflorescence a loose dichasium, corymbose cyme, or umbel, base without tendrils | 2 |
| 2. | Inflorescence leaf-opposed; seeds with an encircling raphe near base | Cissus |
| - | Inflorescence usually axillary or pseudo-axillary, rarely leaf-opposed; seeds with 1 or 2 conspicuous ventral cavities nearly as long as seeds | |
| 3 | Style conspicuous, stigma undivided, slightly expanded | Cayratia |
| - | Style inconspicuous or short, stigma usually 4-divided, rarely irregularly divided | Tetrastigma |

Genus 208. **Ampelocissus** Planch., Vigne Amer. 8: 374 (1884).*Key to species:*

- 1. Plant nearly glabrous; leaves 3-5 lobed; panicle without cirrhi **Ampelocissus latifolia**
- Plant woolly tomentose; leaves not lobed; panicle with cirrhi **Ampelocissus barbata**

367. **Ampelocissus barbata** (Wall.) Planch. in DC. Monogr. Phan. 5: 375 (1887). *Vitis barbata* Wall. in Roxb., Fl. Ind. 2: 478 (1824); Lawson in Hook. f., Fl. Brit. Ind. 1: 651 (1875); Prain, Beng. Pl. 1: 237 (1903, reprint 1963); R. L. Heinig, List Chittagong: 13 (1925).

Vernacular name: *Jarila-lahari*.

Large climber. Leaves shallowly 3-5 lobed, broadly ovate-cordate. Cymes laxly paniced. Flowers whitich. Berries elliptic, black. *Flowering and fruiting*: June - October. *Grows in bushy thickets*.

Distribution: Tropical regions of Asia, Australia, Africa and America.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 852 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1903 (DUSH).

368. **Ampelocissus latifolia** (Roxb.) Planch., J. Vigne. Amer.: 374 (1884). *Vitis latifolia* Roxb., Fl. Inf. 2: 474 (1824); Lawson in Hook. f., Fl. Brit. Ind. 1: 652 (1875); Prain, Beng. Pl. 1: 237 (1903, reprint 1963). *Vitis montana* Lawson in Hook. f., Fl. Brit. Ind. 1: 652 (1875).

Vernacular names: *Growalia-lata*, *Govila*.

Large twining climber with perennial rootstock. Leaves broadly orbicular-cordate, shallowly lobed. Cymes paniculate, compact. Flowers reddish-brown. Berries ellipsoid, black when ripe. *Flowering and fruiting*: May - September. *Chromosome number*: 2n = 40, 60 (Kumar and Subramaniam, 1986). *Grows in forests*.

Distribution: Restricted to India and Bangladesh.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 376 (DUSH); Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 993 (DUSH).

Genus 209. **Cayratia** Juss., Dict. Sci. Nat. 10: 103 (1818)

369. **Cayratia trifolia** (L.) Domin, Biblioth. Bot. 89: 371 (1927). *Vitis trifolia* L., Sp. Pl.: 203 (1753); Prain, Beng. Pl. 1: 238 (1903, reprint 1963); R. L. Heinig, List Chittagong: 13 (1925). *Vitis carnos*a (Lamk.) Wall. ex Lawson in Hook. f., Fl. Brit. Ind. 1: 654 (1875).

Vernacular names: *Gwali-lata*, *Gowali-kata*.

Slender climber. Leaves pinnately trifoliate, leaflets ovate or obovate. Inflorescence a corymbiform, divaricating. Flowers greenish-white. Berries obovoid-globose, black and fleshy. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 80$ (Kumar and Subramaniam, 1986). *Grows in forests and village thickets*.

Distribution: India, Myanmar and Sri Lanka.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3972 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4014 (DUSH).

Genus 210. **Cissus** L., Sp. Pl. 1: 202(1753).

Key to species:

- | | | |
|----|--|-------------------------|
| 1. | Leaf margin 5-12-toothed on each side | Cissus vitiginea |
| - | Leaf margin 15-44-toothed on each side | 2 |
| 2. | Tendrils racemosely branched; both leaf surfaces of same color when dry, margin undulate, fine teeth on curves of wavy margin; seed surface without conspicuous ridges | Cissus repanda |
| - | Tendrils 2- or 3-branched; both leaf surfaces of different colors when dry, margin serrate, teeth at ends of veins; seed surface with conspicuous ridges | 3 |
| 3 | Leaves abaxially densely brown floccose, or only veins with appressed hairs | Cissus adnata |
| - | Abaxial leaf surface or midvein $\pm$ villous with T-shaped hairs | Cissus assamica |

370. **Cissus adnata** Roxb., Fl. Ind. ed. Carey 1: 405 (1820); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 89 (1956); *Cissus vitiginea* sensu Roxb. (1820) *non* L., *Vitis pellida* Wight & Arn. (1833), *Vitis adnata* (Roxb.) Wall. ex Wight & Arn. (1834); Hook. f., Fl. Brit. Ind. 1: 647 (1875); Prain, Beng. Pl. 1: 238 (1903, reprint 1963); R. L. Heinig, List

Chittagong: 13 (1925); *Cissus assamica* (Lawson) Craib var. *pilosissima* Gagnep. (1911).

Vernacular names: *Alianga-lata*, *Bhatia-lata*.

Slender woody climber, branches, inflorescence and leaves beneath covered with orange-red tomentum. Leaves cordate, ovate to orbicular, bristly serrate. Cymes umbellate, leaf-opposed. Flowers greenish-yellow. Fruit a berry, 1-seeded. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 20, 48$ (Kumar and Subramaniam, 1986). *Primary forests and village thickets*.

Distribution: India, Sri Lanka, Myanmar, Vietnam, Indonesia and New Guinea.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendropur Sal Forest, 03.11.2000, R. Tabassum, 15 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 934 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2359 (DUSH).

371. ***Cissus assamica*** (Lawson) Craib., Kew Bull.: 30 (1931). *Vitis assamica* Lawson in Hook. f., Fl. Brit. Ind. 1: 648 (1875); Prain, Beng. Pl. 1: 238 (1903, reprint 1963); R. L. Heinig, List Chittagong: 13 (1925).

Vernacular name: *Amasha-lata*.

Large woody climber. Leaves ovate-orbicular, cordate. Inflorescence axillary, leaf-opposed, umbellate cymes. Flowers reddish. Berries ovoid to ellipsoid, blue. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 48$ (Kumar and Subramaniam, 1986). *Grows in forests*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendropur Sal forest, 19.08.2013, R. Tabassum, 2671 (DUSH); Kaliakior, Chandra, 03.09.2013, R. Tabassum, 3973 (DUSH).

372. ***Cissus rependa*** Vahl., Symb. Bot. 3: 18 (1794). *Vitis rependa* (Vahl) Wight & Arn., Prodr. 125 (1834); Lawson in Hook. f., Fl. Brit. Ind. 1: 648 (1875); Prain, Beng. Pl. 1: 238 (1903, reprint 1963).

Large woody climber. Leaves ovate-orbicular or repand, cordate. Inflorescence leaf-opposed, subcorymbose. Flowers pink. Berries pyriform, purplish-black when ripe. *Flowering and fruiting*: August - October. *Chromosome number*: $2n = 24$ (Kumar and Subramaniam, 1986). *Grows in forest margins*.

Distribution: India, Myanmar and Western Peninsula.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3973 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4015 (DUSH).

373. **Cissus vitiginea** L., Sp. Pl.: 117 (1753). *Cissus latifolia* Lamk. (1783), *Cissus glauca* Roxb. (1820), *Vitis glauca* (Roxb.) Wight & Arn. (1833).

Vernacular name: *Guali-lata*.

Large climber. Leaves lobed, cordate-ovate on main shoots, smaller and narrower on flowering ones. Inflorescence pedunculate, umbellate cyme, leaf-opposed. Flowers whitish-green. Berries ovoid. *Flowering and fruiting:* July - December. *Chromosome number:* $2n = 26$ (Kumar and Subramaniam, 1986). *Grows in forests.*

Distribution: India, Sri Lanka, Myanmar and Thailand.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3974 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4016 (DUSH).

Genus 211. **Tetrastigma** (Miq.) Planch. in DC., Monogr. Phan. 5: 423 (1887).

374. **Tetrastigma angustifolium** (Roxb.) Planch. in DC., Monogr. Phan. 5: 439 (1887). *Cissus angustifolia* Roxb., Fl. Ind. 1: 427 (1820). *Vitis angustifolia* (Roxb.) Wight, Ic. Pl. Ind. Orient. 1: 9, t. 176 (1839); Lawson in Hook. f., Fl. Brit. Ind. 1: 654 (1875); Prain, Beng. Pl. 1: 238 (1903, reprint 1963); R. L. Heinig, List Chittagong: 14 (1925).

Vernacular name: *Nekung riubi*.

Large climber. Leaves 3-foliolate, leaflets lanceolate or elliptic-lanceolate. Inflorescence an axillary cyme. Flowers almost sessile, yellowish-green. Berries spherical, bright red when ripe. *Flowering and fruiting:* March - August. *Grows in primary forests.*

Distribution: Restricted to India and Bangladesh.

Status of occurrence: Common.

Specimens examined: Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 265 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2167 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2750 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3329 (DUSH); Kapasia, Voboner chala, 03.11.2013, R. Tabassum, 3624 (DUSH).

Family 68. **LINACEAE** S. F. Gray (1821)

Mostly herbs, often undershrubs to shrubs or rarely trees. Leaves simple, entire or minutely crenate-serrate to serrulate. Inflorescence racemose, cymose, spicate or of solitary flowers. Flowers bisexual, regular, actinomorphic, usually 5-merous. Calyx of 4-5 sepals. Corolla usually of 5 petals. Androecium with stamens usually the same number of petals or double or triple, filaments slender, anthers introrse. Gynoecium of 2-5 fused with carpels, 3-5 celled, often 4-10 celled by the development of additional or of false septa, ovules 1-2 in each locule, styles 3-5, stigmas terminal. Fruit a septical capsule or drupe. Seeds compressed, cotyledons flat.

The family Linaceae is cosmopolitan and consists of about 12 genera and 290 species. In Bangladesh, this family is represented by 2 genera and 3 species.

In the present study area this family is represented by a single genus with a single species.

Genus 212. **Linum** L., Sp. Pl.: 277 (1753).

375. **Linum usitatissimum** L., Sp. Pl.: 277 (1753). Boiss., Fl. Or. 1: 860 (1867); Hook. f., Fl. Brit. Ind. 1: 410 (1874); Prain, Beng. Pl. 1: 199 (1903, reprint 1963); R. L. Heinig, List Chittagong: 8 (1925); Mia and Huq in Khan (Ed.), Fl. Bangladesh 26: 2 (2009).

Vernacular names: *Tisi, Masina*.

English names: Linseed, Flax.

Cultivated annual herb. Stem more or less cylindrical. Leaves alternate, sometimes whorled, entire. Inflorescence a corymbose raceme or cyme. Flowers blue or purple, rarely white. Fruit a subglobose capsule. Seeds ellipsoid, dark brown to reddish. *Flowering and fruiting*: January - May. *Chromosome number*: $2n = 15, 30, 60$ (Kumar and Subramaniam, 1986). *High lands where it is cultivated*.

Distribution: Widely cultivated in Europe and Asia.

Status of occurrence: Cultivated.

Uses: Oil yielding plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1836 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2149 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2515 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3175 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3837 (DUSH).

Family 69. **MALPIGHIACEAE** A. L. de Jussieu (1789)

Small tree, shrubs or woody climbers. Leaves simple, usually opposite, rarely alternate or verticillate, entire, generally stipulate. Inflorescence often terminal, sometimes axillary, racemose, corymbose or umbellate, bracts and bracteoles present. Flowers bisexual, rarely polygamous. Calyx usually 5-partite, persistent. Petals 5, sometimes unequal, mostly with a claw, fimbriate or dentate. Stamens usually 10, filaments often broadened and connate at the base. Ovary superior, usually 3-locular, ovule i in each locule, styles mostly 3, stigmas terminal or subterminal, inconspicuous. Fruit a schizocarp, splitting into samaras, more or less winged or drupaceous mericarps. Seeds without endosperm.

The family Malpighiaceae consists of about 60 genera and 1200 species, native to tropical and subtropical regions in both the Old and the New World. In Bangladesh, this family is represented by 4 genera and 9 species.

In the present study area this family is represented by a single species.

Genus 213. **Malpighia** L., Sp. Pl. 2: 436 (1753).376. **Malpighia coccigera** L., Sp. Pl. 2: 426 (1753).

Vernacular name: *Kanta malpighia*, *Kanta mehedi* English name: Miniature holly. (*Koch*).

Dwarf shrub, branches rough. Leaves simple, opposite, suborbicular to elliptic, rounded to slightly notched at the apex, margin projected into mucronate marginal teeth. Flowers bisexual, axillary, pale pink. Drupe ovoid, fleshy, red when ripe. *Flowering and fruiting*: October - December. *Chromosome number*: $2n = 20$ (Kumar and Subramaniam, 1986). *Moist but porous, well-drained soil under full sun or light shades*.

Distribution: Native to West Indies, widely cultivated elsewhere.

Status of occurrence: Cultivated.

Uses: Ornamental hedge plant and leaves are used in dysentery by *Koch*.

Specimens examined: Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2059 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2641 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3039 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3678 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3843 (DUSH).

Family 70. **POLYGALACEAE** R. Brown (1814)

Herbs, shrubs, woody vines, or even small trees, saprophytes or parasites. Leaves usually alternate, sometimes opposite or whorled, simple, sometimes scale-like. Inflorescence terminal, axillary, or rarely extra-axillary spikes, racemes, or panicles or flowers solitary. Flowers bisexual, zygomorphic, each subtended by a bract and 2 bractlets. Sepals mostly 5, distinct, the 2 inner ones mostly larger and petaloid, but sometimes all nearly alike. Petals distinct from each other but typically adnate to the stamens to form a common tube, sometimes 5, but more often the 2 lateral ones much-reduced or completely suppressed, so that there are only 3 evident petals the lowermost one keeled, boat-shaped. Stamens usually 8 in 2 cycles of 4, or sometimes 10 or only 3-7, filaments generally connate, anthers basifixed, opening by 1 or 2 apical or subapical pores or very short slits. Gynoecium of 2 or up to 5, styles terminal, simple, sometimes the style unlobed with a capitate stigma, ovule solitary in each locule, pendulous, anatropous. Fruit a loculicidal capsule, or a nut, samara, or dupe, or capsule-like but indehiscent. Seeds often hairy, embryo straight with 2 cotyledons.

The family Polygalaceae consists of about 12 genera and 750 species, nearly cosmopolitan in distribution. In Bangladesh, this family is represented by 3 genera and 7 species.

In the present study area this family is represented by a single species.

Genus 214. **Polygala** [Tourn] L., Syst. : ed. 1 (1735).

377. **Polygala chinensis** L., Sp. Pl. 2: 204 (1753); Hook. f., Fl. Brit. Ind. 1: 204 (1872); Prain, Beng. Pl. 1: 157 (1903, reprint 1963). *Polygala glomerata* Lour. (1790), *Polygala telephoides* Willd. (1802).

Vernacular names: *Meradu*, *Merau*.

English name: Indian senega.

Perennial, erect, herb or undershrub. Leaves very variable, broadly elliptic to lanceolate. Inflorescence a supra-axillary few-flowered and cluster-like raceme. Outer sepals unequal, ovate. Alae ovate or oblong. Petals 3, upper ones spatulate, white, keels more or less auriculate. Fruit a capsule, slightly asymmetrically orbicular. *Flowering and fruiting*: April - January. *Chromosome number*: $2n = 48$ (Kumar and Subramaniam, 1986). *Grows in waste places, grasslands and roadsides*.

Distribution: From India to southern China and South East Asia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Torgao, 16.05.2010, R. Tabassum, 1020 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2180 (DUSH); Kaliganj, Badarti,

02.01.2013, R. Tabassum, 2296 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2706 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3289 (DUSH).

Family 71. **SAPINDACEAE** A. L. de Jussieu (1789)

Trees, shrubs or lianas, monoecious, rarely dioecious. Leaves pinnate, trifoliate, simple or rarely palmate, spirally arranged, rarely opposite or pseudo-whorled, leaflets alternate or opposite or subopposite. Inflorescence axillary, terminal or ramiflorous, paniced racemes. Bracts and bracteoles present. Flowers usually unisexual. Sepals 4 or 5. Petals usually 4-5, occasionally absent. Stamens 5-10 (-70) but usually 8, inserted within the disc but exerted in male flowers, anthers basifixed or versatile, in female flowers staminodes present instead of anthers. Ovary superior, 1-3 (-8) celled, styles filiform, stigmas entire or 1-3 lobed, rudimentary in male flowers, ovules 1 or 2, anatropous. Fruits capsular or drupaceous consisting of 1-3 samaras but usually one developed. Seeds globose to obovoid.

The family Sapindaceae consists of about 140 genera and 1500 species, widespread in tropical and subtropical regions of the World. In Bangladesh, this family is represented by 12 genera and 20 species.

In the present study area this family is represented by 5 genera with 5 species.

Key to genera:

- | | | |
|----|---|----------------------|
| 1. | Herbaceous climbers; inflorescences with basal tendrils | Cardiospermum |
| - | Trees or shrubs; inflorescences without tendrils | 2 |
| 2. | Exocarp fleshy; arillode absent; petals with scales | 3 |
| - | Exocarp leathery or crustaceous | 4 |
| 3 | Testa osseous, hilum linear; petals 4 or 5, rarely 6, with 2 earlike scales or 1 large scale; deciduous trees | Sapindus |
| - | Testa membranous or crustaceous, hilum orbicular; evergreen trees or shrubs | Lepisanthes |
| 4. | Sepals imbricate; leaflets abaxially with naked glands in lateral vein axils, if without naked glands then inflorescences with stellate hairs | Dimocarpus |
| - | Sepals valvate; leaflets abaxially without naked glands; inflorescences tomentose | Litchi |

Genus 215. **Cardiospermum** L., Sp. Pl.: 366 (1753).

378. **Cardiospermum halicacabum** L., Sp. Pl.: 366 (1753). Hiern in Hook. f., Fl. Brit. Ind. 1: 670 (1875); Prain, Beng. Pl. 1: 241 (1903, reprint 1963); Heinig, List Chittagong: 14 (1925); Kanjilal, *et al.*, Fl. Assam 1: 313 (1936); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1&2): 35 (1953); Uddin in Ara & Khan (Eds.), Fl. Bangl. 59: 9 (2009); *Cardiospermum halicacabum* L. var. *microcarpum* (H. B. & K.) Blume, Rumphia, 3: 184 (1847).

Vernacular names: *Phutka*, English names: Balloon vine, Heart pea, *Lataphutki*, *Kopalphutki*. Blister creeper.

Annual or perennial climbing herb. Leaves 3-partite and pinnately lobed. Inflorescence of umbels. Flowers white to creamy with yellowish margin. Fruits 3-lobed, globular, green, reddish at the base. *Flowering and fruiting*: throughout the year, but the peak time is from May - November. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Sunny open places, shrubberies, roadsides, grasslands and forest edges*.

Distribution: Probably of American origin, but now a fairly common weed of the tropics and sub-tropics.

Status of occurrence: Common.

Use: The plant is medicinally important.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 365 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1121 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2959 (DUSH); Kaligonj, Baglahaola, 02.12.2013, R. Tabassum, 3795 (DUSH).

Genus 216. **Dimocarpus** Lour., Fl. Coch. 233 (1790).

379. **Dimocarpus longan** Lour., Fl. Coch. 233 (1790). *Euphorbia longan* Lamk., Encyc. 3: 574 (1792); *Nephelium longan* (Lamk.) Cambess., Mem. Mus. Nat. Hist. Paris, 18: 30 (1829); Hiern in Hook. f., Fl. Brit. Ind. 1: 688 (1875); Prain, Beng. Pl. 1: 244 (1903, reprint 1963); Uddin in Ara & Khan (Eds.), Fl. Bangl. 59: 12 (2009).

Vernacular names: *Ashphal*, *Kathlichu*. English names: Eyeball tree, Dragon's eye.

Medium-sized to large tree. Leaves 2-4 jugate, leaflets elliptic to ovate-lanceolate. Inflorescence few to several branched, branchlets bearing 3-5 flowered cymes. Flowers both male and bisexual. Fruits pendulous, forming clusters rather like grapes, broadly ellipsoid to globular, smooth or warty, containing a single large seed surrounded by a thin layer of white juicy pulp. *Flowering and fruiting*: June - January. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Lowland rain forests*.

Distribution: Native of southwestern India, distributed in continental Asia, from Sri Lanka and India to southern China, Taiwan and Malesia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 857 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1437 (DUSH); Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2561 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3515 (DUSH).

Genus 217. **Lepisanthes** Blume, Bijdr.: 237 (1825).

380. **Lepisanthes rubiginosa** (Roxb.) Leenh., Blumea, 17: 82 (1969). *Sapindus rubiginosa* Roxb., Pl. Corom. 1: 44, t. 62 (1796). *Sapindus edulis* Blume, Cat.: 64 (1823), *nom. illeg.*, non Aiton (1789). *Erioglossum edule* (Blume) Blume, Bijdr.: 229 (1825); Hiern in Hook. f., Fl. Brit. Ind. 1: 672 (1875); Prain, Beng. Pl. 1: 224 (1903, reprint 1963); Heinig, List Chittagong: 14 (1925); Uddin in Ara & Khan (Eds.), Fl. Bangl. 59: 20 (2009). *Erioglossum rubiginosum* (Roxb.) Blume, Rumphia 3: 118 (1847); Kanjilal *et al.*, Fl. Assam 1: 316 (1936).

Vernacular name: *Baraharina*.

Shrub or small tree. Leaves 3-6 jugates, often with pseudo-terminal leaflets, leaflets elliptic to lanceolate. Inflorescences of paniculate cymes, densely tomentose. Flowers sweet-scented, white to yellowish. Fruits 1-3-lobed, dark purple to nearly black when ripe. *Flowering and fruiting:* November - May. *Chromosome number:* $2n = 26$ (Kumar and Subramaniam, 1986). *Deciduous forests*

Distribution: Continental South East Asia, from northern India to Indo-China and South East China, Malesia and North West Australia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Mouchak, 09.5.2010, R. Tabassum, 946 (DUSH) ; Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1899 (DUSH).

Genus 218. **Litchi** Sonn., Voy. Ind. Or. Chine 2: 230, t. 129 (1782).

381. **Litchi chinensis** Sonn., Voy. Ind. Or. Chine 2: 230, t. 129 (1782). *Sapindus edulis* Ait., Hort. Kew. 2: 36 (1789); *Nephelium litchi* (Desfont) Cambess., Mem. Mus. Hist. Nat. Paris, 18: 30 (1829); Hiern in Hook. f., Fl. Brit. Ind. 1: 687 (1875); Prain, Beng. Pl. 1: 244 (1903, reprint 1963); R. L. Heinig, List Chittagong: 15 (1925); Uddin in Ara & Khan (Eds.), Fl. Bangl. 59: 25 (2009).

Vernacular names: *Lichu*, *Lechu*.

English name: Litchi.

Medium-sized evergreen tree. Leaves 2-4 jugate, leaflets elliptic or obovate. Inflorescence with few long erecto-patent, ferrugineous-strigose branches. Flowers greenish or yellowish, fragrant, calyx 4-merous, petals absent or very inconspicuous. Fruits globose or ovoid, juicy, bright red or purplish when ripe, variably warty or nearly smooth, 1-seeded. Seeds ellipsoid, testa shining black or dark brown, hilum basal, circular, arillode white, light yellow or pinkish, up to 5 mm thick when fresh. *Flowering and fruiting*: April - June. *Chromosome number*: $2n = 28, 30$ (Fedorov, 1969). *Grows in fertile, compact, moist soils*.

Distribution: Probably originated from the northern part of the Indo-Chinese Peninsula or from South East China, now widely cultivated in the subtropical region.

Status of occurrence: Cultivated.

Uses: Pulp of the fruit is eaten raw, different kind of drinks, jelly and pickles are also made of it. The wood is durable and takes fine polish and hence highly prized.

Specimens examined: Kaligonj, Borga Bazar, 14.03.2008, R. Tabassum, 247 (DUSH); Kaliakoir, Konabari (Vogora), 08.01.2010, R. Tabassum, 601 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1071 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1436 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1828 (DUSH).

Genus 219. **Sapindus** L., Gen. Pl. ed. 5: 171 (1754).

382. **Sapindus saponaria** L., Sp. Pl.: 367 (1753). *Sapindus mukorossi* Gaertn., Fruct. 1: 342, t. 70, f. 3g, h. (1788); Hook. f., Fl. Brit. Ind. 1: 682 (1875); Prain, Beng. Pl. 1: 242 (1903, reprint 1963); *Sapindus saponaria* L. f. var. *microcarpa* (Jardin) Radlk. in Martius, Fl. Bras. 13(3): 517 (1900); *Sapindus saponaria* L. var. *jardiniana* F. B. H. Brown, Bull. Bish. Mus. 130: 160 (1935); Uddin in Ara & Khan (Eds.), Fl. Bangl. 59: 29 (2009).

Vernacular names: *Ritha*, *Chhotoritha*.

English name: Soap nut tree.

Medium-sized deciduous tree. Leaves 1-5 jugate, leaflets subopposite, elliptic to lanceolate. Inflorescence densely fulvous tomentose panicle. Flowers regular, cream-white, sepals orbicular to broadly ovate, concave, ciliolate, petals purple, short clawed with 2 scales at the top of claw, bearded with long white wooly hairs. Drupes solitary or in pair, fleshy, subglobular. *Flowering and fruiting*: October - April. *Chromosome number*: $2n = 36$ (Kumar and Subramaniam, 1986). *Grows in open secondary forests*.

Distribution: Probably originated in tropical and subtropical America (from Florida to Argentina), widely cultivated and naturalized in tropics and subtropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 422 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1273 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2283 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2558 (DUSH).

Family 72. **ANACARDIACEAE** Lindley (1830)

Trees, shrubs or lianas, commonly with resin that causes irritation of skin. Leaves alternate (rarely opposite), usually pinnately compound, sometimes trifoliate or simple, exstipulate. Inflorescence a complex panicle. Flowers small, regular, perfect or unisexual. Sepals 5, rarely 3 or 7, connate towards the base. Petals 5, rarely 3 or 7, distinct. Stamens 5-10, rarely 1 or many, filaments distinct, rarely connate at the base, anthers opening by longitudinal slits. Pistil compound of 1-5, rarely 12 united carpels, locule 1, rarely 4 or 5, ovule usually solitary per locule, placentation axile, ovary superior or inferior, styles 1-3, stigma capitate. Fruit a berry or drupe. Seed 1, endosperm lacking.

The family Anacardiaceae consists of about 60-80 genera and about 600 species, distributed mainly pantropically, but with some species in temperate regions. In Bangladesh, this family is represented by 14 genera and 22 species.

In the present study area this family is represented by 6 genera and 7 species.

Key to genera:

- | | | |
|---|---|-------------------|
| 1. Leaves simple | 2 | |
| - Leaves pinnately compound | 4 | |
| 2. Stamens unequal | 3 | |
| - Stamens equal | | Semecarpus |
| 3. Stamens 5; fruit not seated on hypocarp, endocarp compressed | | Mangifera |
| - Stamens 7–10; fruit seated on hypocarp, endocarp reniform | | Anacardium |
| 4. Woody climbers | | Tapiria |
| - Trees or shrubs | 5 | |
| 5. Ovary with 1 style | | Spondias |
| - Ovary with 4 or 5 styles | | Lannea |

Genus 220. **Anacardium** L., Syst. ed. 1 (1735).

383. **Anacardium occidentale** L., Sp. Pl. 1: 383 (1753); Hook. f., Fl. Brit. Ind. 2: 20 (1876); Prain, Beng. Pl. 1: 250 (1903, reprint 1963); R. L. Heinig, List Chittagong: 15 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 90 (1956).

Vernacular names: *Kaju, Kajubadam*.

English name: Cashew nut.

Small to medium-sized evergreen tree, with much spreading branches which form a large crown. Leaves ovate, thickly coriaceous. Inflorescence terminal or axillary panicles. Flowers polygamous, fragrant. Fruit a kidney-shaped nut, fleshy hypocarp becomes yellow or pinkish-green when ripe. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 24, 40, 42$ (Kumar and Subramaniam, 1986). *Forests, also cultivated*.

Distribution: A native of South America.

Status of occurrence: Cultivated.

Uses: The roasted kernel is edible. Also planted as an avenue tree.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1306 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1878 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2320 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3653 (DUSH).

Genus 221. **Lannea** A. Rich. in Guill. & Perr.,
Fl. Seneg. Tent. 1: 153, t. 42 (1832).

384. **Lannea coromandelica** (Houtt.) Merr., Journ. Arn. Arb. 19: 353 (1938); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 90 (1956); *Dialium coromandelicum* Houtt. (1774), *Odina wodier* Roxb. (1832); Hook. f., Fl. Brit. Ind. 2: 29 (1876); Prain, Beng. Pl. 1: 251 (1903, reprint 1963); R. L. Heinig, List Chittagong: 16 (1925).

Vernacular names: *Jiga, Bhadi, Jial*, English name: Wodier tree, Indian ash tree. *Jialbhadi, Kamila, Kafila*.

Small to medium-sized deciduous tree. Leaves imparipinnate, crowned at the ends of branches, leaflets opposite, ovate, elliptic or lanceolate. Inflorescence long panicles, terminal or axillary. Flowers unisexual, yellowish-green. Fruit a drupe, usually red when ripe. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 30$ (Kumar and Subramaniam, 1986). *Sal forests including wet soils along the water edge, homesteads and roadsides*.

Distribution: Throughout the hotter parts of India, the Andaman Islands (India) and Sri Lanka.

Status of occurrence: Common.

Uses: Leaves and twigs are good fodder. The wood can be used for house building, packing cases, cattle yokes and for handles of toys.

Specimens examined: Kaliganj, Khoraid, 05.03.2010, R. Tabassum, 724 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 779 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1300 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2541 (DUSH); Kapasia, Kandunia village, 03.11. 2013, R. Tabassum, 3753 (DUSH).

Genus 222. **Mangifera** L., Fl. Zeyl.: 211 (1747).

385. **Mangifera indica** L., Sp. Pl.: 200 (1753). Hook. f., Fl. Brit. Ind. 2: 13 (1876); Prain, Beng. Pl. 1: 248 (1903, reprint 1963); R. L. Heinig, List Chittagong: 15 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 90 (1956).

Vernacular name: *Aam*.

English name: Mango.

Medium to large-sized evergreen tree. Leaves spirally arranged, simple, narrowly elliptic to lanceolate or oblong. Inflorescence a pyramidal panicle, pseudo-terminal or axillary. Flowers bisexual, creamish to pinkish. Fruit a drupe, varies greatly in shape and size, yellowish-green to purplish when ripe, 1-seeded. *Flowering and fruiting:* January - June. *Chromosome number:* $2n = 40$ (Fedorov, 1969). *Homesteads, roadsides, plain lands and agricultural lands.*

Distribution: Native to tropical Asia, particularly the Assam-Myanmar region, planted throughout the semi-arid to sub-humid tropics and subtropics and has become naturalized in many parts of the tropical world.

Status of occurrence: Cultivated.

Uses: Mango is cultivated for its edible fruits. It provides timber and fuel-wood.

Specimens examined: Gazipur Sadar, Nayanpur, 04.04.2011, R. Tabassum, 1768 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2000 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3249 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3715 (DUSH); Kaliganj, Banglahola, 02.12.2013, R. Tabassum, 3810 (DUSH).

Genus 223. **Semecarpus** L. f., Suppl.: 285 (1781).

386. **Semecarpus anacardium** L. f., Suppl. Pl.: 182 (1781). Hook. f., Fl. Brit. Ind. 2: 35 (1876); Prain, Beng. Pl. 1: 250 (1903, reprint 1963). *Anacrdium officinarum* Gaertn. (1788), *Anacardium latifolium* Lamk. (1789), *Semecarpus latifolius* Pers. (1805).

Vernacular names: *Bela*, *Bhela*, *Beda*. English names: Marking nut tree, Oriental cashew nut.

Small to medium to large-sized deciduous tree. Leaves large, crowded at the end of branches, lamina obovate or elliptic-oblong. Inflorescence terminal, equaling or shorter than the leaves. Flowers polygamous, small, fascicled, greenish-white. Fruit a drupe, somewhat obliquely oblong-ovoid, purplish-black when ripe. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 60$ (Fedorov, 1969). *Dry deciduous forests*.

Distribution: India and northern Australia.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 4017 (DUSH).

Genus 224. **Spondias** L., Gen. ed. 1: 365 (1737).

Key to species:

- | | |
|--|--------------------------|
| 1. Leaves 4-6 jugate, quite entire; seed surface smooth | Spondias purpurea |
| - Leaves 6-8 jugate, crenate-serrate; seed surface spinous | Spondias pinnata |

387. **Spondias pinnata** (L. f.) Kurz in Pegu Rep. A.: 44 (1875); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 90 (1956); *Mangifera pinnata* L. f. (1781), *Spondias mangifera* Willd. (1799); Hook. f., Fl. Brit. Ind. 2: 42 (1876); Prain, Beng. Pl. 1: 252 (1903, reprint 1963); R. L. Heinig, List Chittagong: 17 (1925).

Vernacular names: *Amra*, *Deshi-amra*, *Pial*. English name: Hog plum.

Medium-sized to large deciduous tree. Leaves imparipinnate, crowded at the ends of branchlets, leaflets elliptic-oblong, acuminate. Inflorescence long panicles, terminal or axillary. Flowers bisexual, yellowish-green, scented. Fruit an ovoid drupe, greenish-yellow when ripe. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 32$ (Kumar and Subramaniam, 1986). *Homesteads and Sal forests*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Uses: Fruit is acidic and edible.

Specimens examined: Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1625 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1879 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2010 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3668 (DUSH).

388. **Spondias purpurea** L., Sp. Pl. ed. 2: 613 (1762). *Spondias mombin* L. (1753), *Spondias cytherea* Sonnerat (1782), *Spondias dulcis* Blanco (1837); Hook. f., Fl. Brit. Ind. 2: 42 (1876); Prain, Beng. Pl. 1: 252 (1903, reprint 1963).

Vernacular names: *Beelati* English names: Hog plum, Spanish plum, Red amra, Amra. mombin.

Deciduous tree. Leaves alternate, usually crowded at the ends of the branches, leaflets obliquely elliptic or elliptic-oblong. Inflorescence a terminal raceme, appearing before the leaves. Flowers reddish or purplish. Fruit a fleshy drupe, with a hard, 1-5 celled stone. *Flowering and fruiting*: March - October. *Cultivated in dry lands*.

Distribution: Tropical America, India and Malaysia.

Status of occurrence: Cultivated.

Uses: The plant is cultivated for its sweet edible fruits.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2423 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2542 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2973 (DUSH).

Genus 225. **Tapiria** Juss., Gen. 372 (1737).

389. **Tapiria hirsuta** Hook. f. in Benth. & Hook. f., Gen. Pl. 1: 423 (1876); Hook. f., Fl. Brit. Ind. 2: 28 (1876); Prain, Beng. Pl. 1: 251 (1903, reprint 1963). *Pegia nitida* Coleb. (1827), *Robergia hirsuta* Roxb. (1832).

Fairly heavy scandent shrub, hirsute or villous throughout. Leaves imparipinnate, leaflets lateral opposite, ovate-oblong or lanceolate. Inflorescence axillary or subterminal panicles. Flowers polygamous, very small, white, sweet-scented. Fruit obliquely oblong, black when ripe. *Flowering and fruiting*: January - May. *Scrub forests*.

Distribution: Throughout Sri Lanka.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendropur Sal Forest, 11.04.2003, R. Tabassum, 186 (DUSH); Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 410 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2479 (DUSH).

Family 73. **MELIACEAE** A. L. de Jussieu (1789)

Trees or shrubs. Leaves usually exstipulate, spirally arranged, rarely decussate, pinnate, trifoliolate, with a single blade or rarely bipinnate, leaflets usually entire,

rarely lobed or serrate. Inflorescence thyrsoid, racemose or spicate, sometimes reduced to fascicles or solitary flowers. Flowers hermaphrodite, more usually unisexual, with well-developed rudiments of opposite sex. Calyx usually lobed, sometimes with discrete sepals, occasionally spirally arranged. Petals 3-7 (-14), in 1 whorl, green, white, cream, pink, violet or yellow. Stamens usually partially or completely united by a tube with or without lobes, anthers 3-10. Ovary 1-6 locular, ovules 1-many in each locule, stigmas discoid or capitate. Fruit a capsule, berry or drupe. Seeds with fleshy aril sarcotesta or a combination of these, endosperm usually absent.

The family Meliaceae consists of some 51 genera and about 550 species, widely distributed in tropical and subtropical areas, with relatively few species in temperate regions. In Bangladesh, this family is represented by 16 genera and 28 species.

In the present study area this family is represented by 5 genera and 6 species.

Key to genera:

- | | | |
|----|---|--------------------|
| 1. | Fruit a capsule; seeds winged | 2 |
| - | Fruit a drupe or berry; seeds not winged | 3 |
| 2. | Filaments distinct; disk shortly columnar or cylindric | Toona |
| - | Filaments connate into a staminal tube; disk cup-shaped, shallowly cup-shaped, or absent | Swietenia |
| 3. | Staminal tube cylindric; style elongate | 4 |
| - | Staminal tube subglobose, globose, urceolate, campanulate, or ovoid; style very short or absent | Aphanamixis |
| 4. | Drupe oblong, 1-seeded. Stigma trifid | Azadirachta |
| - | Drupe globose, 3-6-seeded. Stigma capitate | Melia |

Genus 226. *Aphanamixis* Blume, Bijdr.: 165 (1825).

390. ***Aphanamixis polystachya*** (Wall.) R. N. Parker, Ind. For. 57: 486 (1931); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 89 (1956). *Sphaerosacme polystachia* Wall. (1829), *Aphanamixis timorensis* A. Juss. (1830), *Amoora rohituka* (Roxb.) Wight & Arn., Cat. Indian Pl. 24 (1833); Hiern in Hook. f., Fl. Brit. Ind. 1: 559 (1875); Prain, Beng. Pl. 1: 220 (1903, reprint 1963); R. L. Heinig, List Chittagong: 11 (1925).

Vernacular names: *Baidhiraj*, *Pitraj*, *Royra*, *Tiktiraj*. English name: *Amoora*.

Medium-sized evergreen tree. Leaves 6-10 jugate, red when young, leaflets oblong to elliptic-oblong. Inflorescence more or less supra-axillary. Flowers sweet-scented, cream to yellow, sometimes tinged red. Capsules obovoid, yellowish at first, pink or

red at maturity. *Flowering and fruiting*: February - May. *Chromosome number*: $2n = 36$ (Mehra and Khosla, 1969). *Grows in lowlands including seasonally flooded forests, secondary forests and village thickets*.

Distribution: Sri Lanka, India, Nepal, Pakistan, Bhutan and Myanmar.

Status of occurrence: Common.

Uses: Timber yielding plant, also use medicinally.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 292 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 559 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1213 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2874 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3336 (DUSH).

Genus 227. **Azadirachta** A. Juss., Bull. Sc. Nat. Geol. 23: 236 (1830).

391. **Azadirachta indica** A. Juss., Mem. Mus. Hist. Nat. Paris 19: 221, t. 13 (1832). *Melia azadirachta* L., Sp. Pl. 385 (1753). Hook. f., Fl. Brit. Ind. 1: 544 (1875); Prain, Beng. Pl. 1: 218 (1903, reprint 1963); R. L. Heinig, List Chittagong: 10 (1925), *Melia indica* (A. Juss.) Brandis (1874).

Vernacular names: *Neem*, *Neem gach*, English names: Indian lilac, Margosa tree, *Nimba*, *Nimba*.

Medium-sized to large evergreen to semi-deciduous tree. Leaves alternate, imparipinnate, 4-7 jugate, reddish when young, leaflets alternate below and opposite to subopposite above, falcate, lanceolate. Inflorescence axillary, many-flowered panicles or in axils of fallen leaves. Flowers greenish-white. Fruit an ellipsoid drupe, green, turning yellow when ripe. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 30$ (Styels and Vosa, 1971). *Open places, homesteads, roadsides and thickets*.

Distribution: Native of Myanmar but widely cultivated in tropical Asia and Africa, where it has become extensively naturalized.

Status of occurrence: Common.

Uses: The species is a valuable medicinal plant.

Specimens examined: Kaliganj, Chamundi, 29.04.2005, R. Tabassum, 236 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 557 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1375 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2650 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2920 (DUSH).

Genus 228. **Melia** L., Sp. Pl. 1: 384 (1753).

392. **Melia azedarach** L., Sp. Pl. 1: 384 (1753); Hook. f., Fl. Brit. Ind. 1: 544 (1875); Prain, Beng. Pl. 1: 218 (1903, reprint 1963); R. L. Heinig, List Chittagong: 10 (1925); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 89 (1956); *Azedarach deleteria* Medik. (1787), *Melia sempervirens* (L.) Sw. (1788), *Melia dubia* Cav. (1789), *Melia composita* Willd. (1799), *Melia sambudna* Blume (1825), *Melia australis* Sweet (1830), *Melia australasica* A. Juss. (1830), *Melia superba* Roxb. (1832), *Azedarach sempervirens* (L.) Kuntze (1891).

Vernacular names: *Goranim*, *Mahanim*, English names: Barbados lilac, Persian *Kawanim*, *Paharinim*, *Poma*. lilac, Pride of China.

Moderate-sized deciduous tree. Leaves petiolate, leaflets ovate or oblong-lanceolate to elliptic. Thyrses axillary or on short shoots and in axils of rudimentary leaves thereon, bearing fascicles of scented flowers. Flowers bracteate, white to lilac or bluish. Fruit a drupe, plum-shaped, yellowish-brown when ripe. *Flowering and fruiting*: March - February. *Chromosome number*: $2n = 28$ (Datta and Samanta, 1977). *Forests, sometimes planted along the roadsides, railway tracks, parks, gardens in village shrubberies.*

Distribution: India, Pakistan, Nepal, Sri Lanka, tropical China, Malaysia, Indonesia, the Philippines, New Guinea, Australia and the Solomon Islands.

Status of occurrence: Common.

Uses: Wood is used for making furniture, veneering and sport goods. Medicinally it is important.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 490 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 780 (DUSH); Kaligonj, Tumulia, 23.08.2010, R. Tabassum, 1676 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2202 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2748 (DUSH).

Genus 229. **Swietenia** Jacq., Enum. Pl. Carib. 4: 20 (1760).

Key to species:

- | | |
|---|------------------------------|
| 1. Leaflets up to 8 cm long; fruit 12 cm long | Swietenia mahagoni |
| - Leaflets up to 14 cm long; Fruit 13 cm long | Swietenia macrophylla |

393. **Swietenia macrophylla** King in Hook. f., Ic. Pl. 16: t. 1550 (1886); Prain, Beng. Pl. 1: 213 (1903, reprint 1963); R. L. Heinig, List Chittagong: 10 (1925). *Swietenia krukovi* Gleason (1936), *Swietenia belizensis* Lundell (1941).

Vernacular name: *Bara* English names: Large-leaved mahogany, Honduras mahogani. mahogany.

Medium to large-sized evergreen to semi-deciduous tree, buttresses broad and plank-like. Leaves paripinnate, leaflets 3-8 pairs, subfalcate, ovate-lanceolate; inflorescence paniculate. Flowers pinkish or white, fragrant. Fruit a capsule, woody, inverted club-like, brown. *Flowering and fruiting*: April - February. *Chromosome number*: $2n = 54$ (Datta and Samanta, 1977). *Homesteads, also planted along the roadsides and railway lines.*

Distribution: Native of Honduras, distributed in India, Pakistan, Malaysia, Indonesia and the Philippines.

Status of occurrence: Cultivated.

Uses: Planted as an avenue tree. Wood is used for construction works and for making furniture.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1896 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2215 (DUSH); Tongi, Kathaldi, 19.08.2013, R. Tabassum, 2723 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3295 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3768 (DUSH).

394. **Swietenia mahagoni** (L.) Jacq., Enum. Syst. Pl. Carib. 4: 20 (1760); Hiern in Hook. f., Fl. Brit. Ind. 1: 540 (1875); Prain, Beng. Pl. 1: 222 (1903, reprint 1963); R. L. Heinig, List Chittagong: 10 (1925).

Vernacular name: *Mehogany, Choto mehogony.*

English name: Mahagony.

Small to medium-sized evergreen tree. Leaves alternate, leaflets 2-4 pairs, opposite to subopposite, obliquely oblong-lanceolate. Inflorescence supra-axillary panicle, spreading. Flowers greenish-white. Capsules subglobose to ovoid, woody, brown. *Flowering and fruiting*: April - November. *Chromosome number*: $2n = 48$ (Datta and Samanta, 1977). *Planted, also found in forests areas.*

Distribution: Native of the West Indies and coast of Central America, distributed in India, Pakistan, Singapore, Indonesia and the Philippines.

Status of occurrence: Cultivated.

Uses: Valuable yielding plant.

Specimens examined: Kaliganj, Mirer Bazar, 14.03.2008, R. Tabassum, 241 (DUSH); Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 558 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1976 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2175 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2707 (DUSH).

Genus 230. **Toona** (Endl.) M. Roem., Synops. Monogr. 1: 131, 139 (1846).

395. **Toona ciliata** M. Roem., Synops. Monogr. 1: 139 (1846). *Cedrela toona* Roxb. (1814); Hiern in Hook. f., Fl. Brit. Ind. 1: 568 (1875); Prain, Beng. Pl. 1: 224 (1903, reprint 1963), *Cedrela hexandra* Wall. (1824), *Toona hexandra* (Wall.) M. Roem. (1846), *Surenus toona* (Rottl. & Willd.) O. Kuntze (1891).

Vernacular names: *Toon*, *Piyatoon*, *Peo*, English names: Indian mahogany, Toon, *Kuma*, *Nandibriksha*. Australian red cedar, Singapore cedar.

Medium to large-sized tree. Leaves usually 9-15 jugate, leaflets lanceolate to ovate-lanceolate. Inflorescence pendent. Flowers white to creamy-white, fragrant. Fruit a capsule, valves reddish-brown. *Flowering and fruiting*: January - June. *Chromosome number*: $2n = 56$ (Datta and Samanta, 1977). *Evergreen and mixed evergreen forests and village thickets, sometimes planted along the roadsides*.

Distribution: From Pakistan through India, South China, Myanmar, Thailand, Malaysia, Indonesia, the Philippines, Moluccas and New Guinea, Britain and eastern Australia.

Status of occurrence: Common.

Uses: Wood is used for various purposes.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3975 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 3988 (DUSH).

Family 74. **RUTACEAE** A. L. de Jussieu (1789)

Aromatic trees or shrubs or rarely herbs, sometimes scandent or thorny. Leaves usually pinnately compound or trifoliolate, petioles cylindric, exstipulate. Inflorescence terminal, axillary, paniculate, cymose, racemose or seldom of solitary flower. Flowers bracteate, bracteolate, bisexual or functionally unisexual, usually hypogynous. Sepals 5 or less often 4, usually imbricate. Petals 4-5, alternate with the sepals, imbricate or sometimes valvate, or rarely absent. Stamens 4-5 or 8-10, sometimes 3-4 times as many as the petals, anthers tetrasporangiate and mostly dithecal, opening by longitudinal slits. Carpels more or less clearly united to form a compound, plurilocular, often apically indented ovary with a single common style, stigmas wet and dry, ovules usually 2 in each locule. Fruit a capsule, berry, drupe or schizocarp.

The family Rutaceae consists of about 150 genera and 1500 species, nearly cosmopolitan in distribution, but mostly tropical and subtropical. In Bangladesh, this family is represented by 16 genera and 28 species.

In the present study area this family is represented by 8 genera and 12 species.

Key to genera:

1. Fruit follicular; flowers male, female, or sometimes bisexual; functional stamens 3-8(-10) 2
- Fruit baccate; flowers bisexual or bisexual and male; stamens at least 2 × as many as petals 3
2. Leaves odd-pinnately compound; fruit of 1-5 distinct or basally connate follicles. **Xanthoxylum**
- Leaves digitately 3-foliolate; fruit a 4-7-loculed drupaceous berry **Triphasia**
3. Flowers bisexual or bisexual and male; stamens more than twice as many as petals; ovules 2 to many per locule; fruit with stalked or rarely sessile pulp vesicles 4
- Flowers only bisexual; stamens twice as many as petals or rarely fewer; ovules 1 or 2 per locule; fruit either without pulp vesicles or with sessile pulp vesicles 6
4. Plants evergreen; fruit with leathery exocarp and spongy mesocarp; seeds embedded in pulp vesicles **Citrus**
- Plants deciduous; fruit with thin, parenchymatous exocarp and woody mesocarp; seeds embedded in a clear glutinous substance 5
5. Leaves alternate; style short, stigma capitate or obtuse **Aegle**
- Leaves spirally arranged; style absent, stigma fusiform **Limonia**
6. Radial walls of locules in gynoecium becoming curved after anthesis; cotyledons in seed thin and flat, convolute **Micromelum**
- Radial walls of locules in gynoecium straight; cotyledons in seed plano-convex, not convolute 7
7. Terminal and axillary buds and usually young inflorescences with a rust-colored villosulous indumentum; style persistent in fruit **Glycosmis**
- Terminal and axillary buds and young inflorescences without a rust-colored villosulous indumentum; style usually deciduous in fruit **Murraya**

Genus 231. **Aegle** Corr. *ex* Koen.,
Trans. Linn. Soc. Lond. 5: 223 (1800).

396. **Aegle marmelos** (L.) Corr. *ex* Koen., Trans. Linn. Soc. London 5: 223 (1800). Hook. F., Fl. Brit. Ind. 1: 516 (1875); Prain, Beng. Pl. 1: 212 (1903, reprint 1963); R. L. Heinig, List Chittagong: 10 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 32. *Crataeva marmelos* L. (1753).

Vernacular name: *Bel*. English names: Bael fruit, Bengal quince, Wood apple.

Medium-sized deciduous tree. Older branches spiny. Leaves alternate, usually 3-foliolate, lateral leaflets ovate-elliptic, terminal one obovate. Inflorescence axillary racemes. Flowers greenish-white, honey-scented. Fruit a subglobose berry, with a woody shell of 8-20 segments, grey or yellowish. *Flowering and fruiting*: April - December. *Chromosome number*: $2n = 18, 36$ (Kumar and Subramaniam, 1986). *Swampy lands as well as dry lands*.

Distribution: It is believed to have originated from India. It is cultivated in Pakistan, Sri Lanka, Myanmar, South East Asia, tropical Africa and the United States.

Status of occurrence: Cultivated.

Uses: Fruit is edible, also has medicinal value.

Specimens examined: Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1577 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2007 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2136 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2573 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3133 (DUSH).

Genus 232. **Citrus** L., Sp. Pl.: 401 (1753).

Key to species:

- | | |
|---|----------------------------|
| 1. Petiole broadly winged; wings more than 10 mm broad; fruit more than 10 cm in diameter | Citrus grandis |
| - Petiole wings less than 10 mm broad; fruit 10 cm or less in diameter | 2 |
| 2. Spines absent or short; rind easily separable from the fruit; axis not hollow in fruit | Citrus reticulata |
| - Spines always present; rind not easily separable from the pulp vesicles; axis hollow in fruit | 3 |
| 3. Leaves small and narrow (3.5-6 x 1.5-2.8 cm), crenate; ripe fruit greenish-yellow | Citrus aurantifolia |

- Leaves elliptic to ovate (6.5-10 cm), serulate; ripe fruit yellow

Citrus limon

397. **Citrus aurantifolia** (Christm. & Panzer) Swingle, J. Wash. Acad. Sci. 3: 465 (1913). *Limonia aurantifolia* Christm. & Panz. (1777), *Citrus javanica* Blume (1825), *Citrus notissima* Blanco (1837).

Vernacular names: *Lebu, Pati lebu*. English names: Lime, Sour lime, Common lime.

Avergreen, densely and irregularly branched, small, spiny tree. Leaves alternate, elliptic-oblong. Inflorescence of short axillary racemes, 3-10 flowered. Flowers white, small, bisexual. Fruit a globose-ovoid berry, shortly mamillate, greenish-yellow when ripe. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 18, 27$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: Lime is believed to have originated from the East Indies. Now it is cultivated throughout the tropics and in warm subtropical areas.

Status of occurrence: Cultivated.

Uses: Fruit juice is taken in various ways.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1251 (DUSH); Gazipur Sadar, Kalikoir, Hijoltoli, 13.09. 2013, R. Tabassum, 1567 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2137 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3824 (DUSH).

398. **Citrus limon** (L.) Burm. f., Fl. Ind.: 173 (1768). *Citrus medica* L. var. *limon* L. (1753), *Citrus limonum* Risso (1813), *Citrus medica* L. subsp. *limonia* Hook. f. ex Engl. (1897).

Vernacular names: *Gora lebu, Karna lebu*.

English name: Lemon.

Small tree with stout stiff spines. Leaves unifoliate, lamina oblong to elliptic-ovate. Inflorescence of axillary condensed racemes, often 5-7 flowered. Flowers bisexual or staminate, purplish tinged abaxially, greenish-white adaxially. Fruits ovoid-oblong, 8-12 locular, rind thick, mamillate, yellowish when ripe, pulp-vesicles pale green to yellowish. *Flowering and fruiting*: March - November. *Chromosome number*: $2n = 18, 36$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: Lemon is presumably native to southern Asia, now widely cultivated in the subtropics and occasionally in the tropics.

Status of occurrence: Cultivated.

Uses: Fruits are used in the preparation of lemonade squashes, in culinary and multiple purposes as a flavouring and garnish. It is taken as a preventive for stomach infections, remedy for scurvy, circulatory problems and arteriosclerosis. The fruit juice is popularly used as an appetizer, stomachic and in the treatment of nausea and vomiting. The juice is also used as a component of cosmetic skin preparations.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1438 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2294 (DUSH); Kaliakoir, Simultoli, 01.10.2013, R. Tabassum, 3372 (DUSH); Kapasia, Kanduni village, 03.11.2013, R. Tabassum, 3664 (DUSH).

399. **Citrus maxima** (Burm.) Merr., Interp. Rumph. Herb. Amb.: 296 (1918); J. Sinclair, Bull. Bot. Soc. Beng. 9(2): 89 (1956). *Citrus aurantium* L. var. *grandis* L. (1753), *Citrus grandis* (L.) Osbeck (1757), *Citrus decumana* L. (1767); Hook. f., Fl. Brit. Ind. 1: 516 (1875); Prain, Beng. Pl. 1: 213 (1903, reprint 1963); R. L. Heinig, List Chittagong: 10 (1925).

Vernacular names: *Batabi lebu*, English names: Pummelo, Shaddock, Bitter *Jambura*. orange.

Small evergreen tree, spine usually blunt when present. Leaves petiolate, leaflets broadly ovate-elliptic. Inflorescence of an axillary, solitary flower or a cluster of few flowers. Flowers bisexual, cream-white. Fruits spherical, ovoid, pyriform, rind thick, usually marked with small green glands, pulp yellow or pink-crimson, vesicles of pulp loose, acid or slightly bitter. *Flowering and fruiting:* February - November. *Chromosome number:* $2n = 18, 36$ (Kumar and Subramaniam, 1986). *Roadsides and homestead gardens.*

Distribution: This species is believed to have originated from South East Asia. Now it is cultivated throughout the tropics.

Status of occurrence: Cultivated.

Uses: Fruit yielding plant. The wood is used for tool handles.

Specimens examined: Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1628 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1826 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2138 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3135 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3391 (DUSH).

400. **Citrus reticulata** Blanco, Fl. Filip.: 610 (1837). *Citrus nobilis* Andr. (1810), *Citrus deliciosa* Tenore (1840), *Citrus chrysocarpa* Lushington (1910).

Vernacular names: *Komla*, *Komla lebu*.

English names: Mandarin, Orange.

Small spiny tree. Leaves unifoliate, petioles articulated at the apex, leaflets broadly to narrowly lanceolate or elliptic. Inflorescence axillary, 2-3 nate clusters or a solitary flower. Flowers bisexual, white. Fruit a depressed-globose or subglobose berry, peel thin, loose, segments 7-14, easily separable, bright orange or scarlet-orange when ripe, juice sweetish. *Flowering and fruiting*: September - November. *Chromosome number*: $2n = 18, 36$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: Mandarin is probably a native of South East Asia. Cultivated in all tropical and subtropical regions of the world.

Status of occurrence: Cultivated.

Uses: Fruits yielding plant.

Specimen examined: Kapasia, Kandunia village, 03. 11.2013, R. Tabassum, 3699 (DUSH).

Genus 233. **Glycosmis** Corr., Ann. Mus. Nat. Hist. Nat. 6: 384 (1805).

401. **Glycosmis pentaphylla** (Retz.) A. DC., Prodr. 1: 538 (1824); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 89 (1956); V. J. Nair & Nayar in P. K. Hajra, V. J. Nair and P. Daniel, Fl. India 4: 343 (2000). *Limonia arborea* Roxb., Pl. Corom. 60, t. 85 (1788). *Limonia pentaphylla* Retz., Obs. Bot. 5: 24 (1788). *Glycosmis arborea* (Roxb.) A. DC., Prodr. 1: 538 (1824). *Glycosmis pentaphylla auct.* Non (Retz.) DC (1824); Hook. F., Fl. Brit. Ind. 1: 499 (1875); Prain, Beng. Pl. 1: 208 (1903, reprint 1963); R. L. Heinig, List Chittagong: 9 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 32.

Vernacular names: *Ash-sheora*, *Bon-jamir*, English name: Tooth-brush tree. *Datmajani*.

Evergreen shrub or small tree. Leaves usually 3-5 foliolate, leaflets oblong-elliptic or ovate to ob-lanceolate. Inflorescence axillary and terminal panicle. Flowers creamy-white. Berries sub-globose, cream to crimson-red or pinkish when ripe. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 16, 18$ (Kumar and Subramaniam, 1986). *Grows in forest margin, roadsides and village thickets*.

Distribution: South and South-East Asia, the Philippines, southern China and Australia.

Status of occurrence: Common.

Uses: It is used in medicine.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 95 (DUSH); Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 214 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1820 (DUSH); Kaliokoir, Fulbari, 01.10.2013, R. Tabassum, 3320 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3646 (DUSH).

Genus 234. **Limonia** L., Sp. Pl. ed. 2: 554 (1762).

402. **Limonia acidissima** L., Sp. Pl. ed. 2.: 554 (1762); Hook. f., Fl. Brit. Ind. 1: 507 (1875); Prain, Beng. Pl. 1: 210 (1903, reprint 1963). *Schinus limonia* L. (1753), *Feronia elephantum* Corr. (1800), *Feronia limonia* (L.) Swingle (1914).

Vernacular name: *Koethbel*. English names: Wood apple, Elephant apple, Monkey fruit.

Medium-sized, semi-deciduous tree. Leaves alternate, imparipinnate, leaflets 5-7, opposite, obovate. Inflorescence axillary or terminal, many-flowered panicles or racemes. Flowers small, bisexual, dull red or greenish-white, calyx 5-toothed, petals 5, ovate-oblong. Berries globose with hard, woody rind, pulp fleshy, chocolate-coloured when ripe, many-seeded. *Flowering and fruiting:* February - December. *Chromosome number:* $2n = 18$ (Kumar and Subramaniam, 1986). *Light soil in drought conditions, can tolerate periodic flooding or partial swampiness.*

Distribution: The plant is a native of South India and Sri Lanka. Cultivated in Myanmar, Pakistan, Indo-China, Malaysia, Indonesia and the United States.

Status of occurrence: Cultivated.

Uses: Fruit is eaten raw and made into jelly or chutney.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 735 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1439 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1633 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1827 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2139 (DUSH).

Genus 235. **Micromelum** Blume, Bijdr.: 137 (1825).

403. **Micromelum minutum** (G. Forster) Wight & Arn., Prodr. Fl. Ind. Orient.: 448, 468 (1834). *Micromelum pubescens* Blume (1825); Hook. f., Fl. Brit. Ind. 1: 501 (1875); Prain, Beng. Pl. 1: 209 (1903, reprint 1963), *Micromelum compressum* (Blanco) Merr. (1918).

Vernacular names: *Koroiphula*, *Bankunch*, *Dulia*. English name: Lime berry.

Small to medium-sized tree. Leaves alternate, imparipinnate, leaflets 9-15, ovate-lanceolate to ovate. Inflorescence terminal cymose-paniculate. Flowers bisexual, pale green to yellowish-white. Berries ellipsoid, oblong, orange or reddish when ripe. *Flowering and fruiting*: throughout the year. *Grows in primary and secondary forests*.

Distribution: India, throughout South East Asia to Australia and the Pacific.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1900 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2924 (DUSH).

Genus 236. **Murraya** J. Koenig *ex* L., Mant. Pl. 2: 544, 563 (1771).

Key to species:

1. Leaflets 5-7, margin undulate; petals 12-15 mm,
oblong to lanceolate; ripe berries deep orange to red **Murraya paniculata**
- Leaflets 9-27, margin irregularly crenulate; petals 7
mm, linear-oblong; ripe berries black **Murraya koenigii**

404. **Murraya koenigii** (L.) Spreng., Syst. Veg. 2: 315 (1825); Hook. f., Fl. Brit. Ind. 1: 503 (1875); Prain, Beng. Pl. 1: 209 (1903, reprint 1963). *Bergera koenigii* L. (1771), *Chalcas koenigii* (L.) Kurz (1875).

Vernacular name: *Currypata*, *Kariaphuli*, *Chotokamini*. English names: Curry leaf, Curry tree.

Large shrub or small tree. Leaves imparipinnate, leaflets 15-27, alternate, conspicuously asymmetric, ovate to lanceolate. Inflorescence terminal, corymbose paniculate, many-flowered. Flowers cylindric in buds, scented, calyx saucer-shaped, petals 5, greenish-white. Berries ovoid or subglobose, purplish to black when ripe. *Flowering and fruiting*: February - May. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Grows in moist deciduous forests, also in gardens*.

Distribution: It is native to India and Sri Lanka. Then it spread to Myanmar, Vietnam, Cambodia, Laos and Soth China.

Status of occurrence: Cultivated.

Uses: Fruits are edible. Leaves are used in various ways.

Specimens examined: Sripur, Merua, 7.6.2000, R. Tabassum, 108 (DUSH); Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 315 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 967 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R.

Tabassum, 2657 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3739 (DUSH).

405. **Murraya paniculata** (L.) Jack., Malay. Misc. 1: 31 (1820); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 89 (1956); V. J. Nair & Nayar in P. K. Hajra, V. J. Nair and P. Daniel, Fl. India 4: 351 (2000). *Chalcas paniculata* L., Mant. Pl. 68 (1767). *Murraya exotica* L., Mant. Pl. Atl. 563 (1771), 'as *Murraea*'; Hook. f., Fl. Brit. Ind. 1: 502 (1875); Prain, Beng. Pl. 1: 209 (1903, reprint 1963); R. L. Heinig, List Chittagong: 9 (1925).

Vernacular name: *Kamini*.

English names: Cosmetic bark, Orange jasmine.

Shrub or small tree. Leaves 3-5 (7-) foliolate, leaflets alternate, ovate, ovate-elliptic to obovate. Inflorescence terminal and axillary, few-flowered panicles. Flowers white. Berries ovoid-ellipsoid, reddish when ripe. *Flowering and fruiting*: March - January. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: South and South-east Asia, southern China, Taiwan to Australia and New Caledonia.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 500 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1575 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2562 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3307 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3376 (DUSH).

Genus 237. **Triphasia** Lour., Fl. Cochinch.: 152 (1790).

406. **Triphasia trifolia** (Burm. f.) P. Wils., Torreyia 9: 33 (1909). *Triphasia aurantiola* Lour. (1790); Prain, Beng. Pl. 1: 210 (1903, reprint 1963).

Vernacular name: *Cheeninarangi*.

English name: Lime berry.

Small tree. Leaves alternate, trifoliate, leaflets ovate-oblong. Flowers solitary, or in a group of 2 or 3, axillary, white. Berries subglobose or ellipsoid-ovoid, reddish when ripe. *Flowering and fruiting*: January - June. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Grows in forests*.

Distribution: Probably a native of South East Asia, now widespread, naturalized and cultivated in many tropical and subtropical regions.

Status of occurrence: Apparently common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 146 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 913 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1236 (DUSH).

Genus 238. **Zanthoxylum** L., Sp. Pl. 1: 270 (1753).

407. **Zanthoxylum rhetsa** (Roxb.) DC., Prodr. 1: 728 (1825). *Fagara rhetsa* Roxb. (1820), *Zanthoxylum budrunga* (Roxb.) DC. (1824); Hook. f., Fl. Brit. Ind. 1: 495 (1875); Prain, Beng. Pl. 1: 207 (1903, reprint 1963), *Zanthoxylum limonella* (Dennst.) Alston (1931).

Vernacular names: *Bazinali, Bazna, Kantahorina*. English name: Indian ivy-rue.

Medium-sized, deciduous, spiny tree. Leaves paripinnate or imparipinnate, leaflets 16-25, opposite, oblong to elliptic-oblong. Inflorescence terminal or axillary panicles. Flowers white or pale yellow. Fruit a subglobose follicle, orange or reddish-yellow when ripe. *Flowering and fruiting:* March - September. *Chromosome number:* $2n = 68$ (Kumar and Subramaniam, 1986). *Grows in mixed deciduous forests and fry to sandy loamy soils.*

Distribution: South and South East Asia, the Philippines and southern Papua New Guinea.

Status of occurrence: Common.

Uses: Fruits are used in rheumatism by Garo.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 213 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 807 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1149 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2577 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3734 (DUSH).

Family 75. **OXALIDACEAE** R. Brown (1817)

Herbs, shrubs or small trees. Leaves basal or cauline, alternate, usually palmately or pinnately compound. Inflorescence axillary panicle or umbelliform. Flowers regular, hypogynous, bisexual, pentamerous, mostly showing trimorphic heterostyly. Sepals 5, distinct. Petals 5, distinct or sometimes slightly connate at the base. Stamens usually 10, about distinctly bicyclic, outer filaments shorter and antipetalous, rarely 15 in 3 cycles, anthers opening longitudinally. Carpels 5, sometimes 3, united, ovary 3-5 angled, placentation axile. Fruit a capsule or berry.

The family Oxalidaceae consists of 7-8 genera and about 900 species, mostly distributed in the tropical and subtropical regions. In Bangladesh, the family consists of 3 genera and 7 species.

In the present study area this family is represented by 2 genera with 4 species.

Key to genera:

- | | |
|---|-----------------|
| 1. Trees or shrubs; leaves odd-pinnate; fruits fleshy, baccate | Averrhoa |
| - Herbs or shrubby at base; leaves ternate or even-pinnate; fruit a dry capsule | Oxalis |

Genus 239. **Averrhoa** L., Sp. Pl.: 428 (1753).

Key to species:

- | | |
|---|---------------------------|
| 1. Leaves alternate along branches; leaflets 3-7 pairs; petals 0.6-0.9 cm, inside puberulent; fruit stellate in cross section | Averrhoa carambola |
| - Leaves aggregated at apex of branches; leaflets 10-20 pairs; petals 1.3-1.8 cm, inside glabrous; fruit terete | Averrhoa bilimbi |

408. **Averrhoa bilimbi** L., Sp. Pl. 1: 428 (1753); Edgeworth & Hook. f. in Hook. f., Fl. Brit. Ind. 1: 439 (1874); Prain, Beng. Pl. 1: 204 (1903, reprint 1963); Begum and Huq in Khan (Ed.), Fl. Bangladesh 18: 1 (1982).

Vernacular names: *Bilimbi, Bilumbi*.

English names: Bilimbi, Cucumber tree.

Small tree. Leaves alternate, pinnately compound, imparipinnate, leaflets 7-19 jugate, subopposite, oblong or linear-lanceolate, entire. Flowers heterostylous, sepals 5, united at the base, yellowish-red purplish, persistent, petals 5, united at the base, purplish to red. Fruits ovoid to ellipsoid, faintly 5-angled, light yellow at maturity. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 22, 24$ (Fedorov, 1969). *Well-drained soil in plainland*.

Distribution: Originated in East Asia, now grown all over the humid tropics.

Status of occurrence: Cultivated.

Uses: Fruit yielding plant.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 501 (DUSH); Kapshia, Barishabo, 09.03.2012, R. Tabassum, 2107 (DUSH); Gazipur Sadar, Khatal, 19.08.2013, R. Tabassum, 2736 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3275 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3811 (DUSH).

409. **Averrhoa carambola** L., Sp. Pl. 1: 428 (1753); Edgeworth & Hook. f. in Hook. f., Fl. Brit. Ind. 1: 439 (1874); Prain, Beng. Pl. 1: 204 (1903, reprint 1963); Begum and Huq in Khan (Ed.), Fl. Bangladesh 18: 2 (1982).

Vernacular name: *Kamranga*.

English names: Carambola, Star fruit.

Medium-sized tree, usually with drooping branches. Leaves petiolate, pinnately compound, imparipinnate, leaflets ovate to ovate-lanceolate, entire. Flowers usually in the axillary panicles, bisexual, sepals 5, bright red, petals 5, purplish-pink. Fruit ovoid to ellipsoid, sharply 5-angled or lobed, grooved at both ends but more towards the apical end; seeds ovoid to elliptic, arillate. *Flowering and fruiting*: September - March. *Chromosome number*: $2n = 22, 24$ (Fedorov, 1969). *Plainland and well-drained soil*.

Distribution: A native of the hotter parts of the Indian subcontinent. At present the plant is widely cultivated in many countries of the tropics for its edible fruits.

Status of occurrence: Cultivated.

Uses: Fruit yielding plant.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 661 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1820 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2132 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2329 (DUSH); Sripur, Baghmara, 18.02.2013, R. Tabassum, 2413 (DUSH).

Genus 240. **Oxalis** L., Sp. Pl.: 433 (1753).

Key to species:

- | | |
|---|---------------------------|
| 1. Stemless bulbous perennials | Oxalis corymbosa |
| - Bulbs absent, aerial stems well developed or creeping rhizome at or just below soil surface | Oxalis corniculata |

410. **Oxalis corniculata** L., Sp. Pl.: 435 (1753); Edgeworth & Hook. f. in Hook. f., Fl. Brit. Ind. 1: 436 (1874); Prain, Beng. Pl. 1: 203 (1903, reprint 1963); Khan, Fl. Bangladesh 15: 4 (1981). *Oxalis repens* Thunb. (1781), *Oxalis javanica* Blume (1825).

Vernacular names: *Amrul*, *Amrul sak*, English names: Indian sorrel, Yellow *Amboli*. sorrel.

Perennial, procumbent herb with long, slender, creeping stem, rooting at the nodes. Leaves palmately 3-foliolate, leaflets obcordate. Peduncles puberulous, 1-5 flowered. Sepals 5, oblong. Petals 5, spatulate to oblanceolate, yellow with lighter base.

Capsules linear-oblong, 5-angled. Seeds numerous, brown, broadly ovoid. *Flowering and fruiting*: September - May. *Chromosome number*: $2n = 24, 28, 44, 48$ (Fedorov, 1969). *Grows in moist partially shaded place*.

Distribution: Pantropic.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Mirer Bazar, 14.03.2008, R. Tabassum, 245 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 834 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1179 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1467 (DUSH); Gazipur Sadar, Shalichura, 19.08.2013, R. Tabassum, 2675 (DUSH).

411. **Oxalis corymbosa** DC., Prodr. 1: 696 (1824). *Oxalis mariana* Zucc. (1823-1824), *Oxalis bipunctata* R. Grah. (1827).

Vernacular names: *Golapi amrul*.

English names: Lilac oxalis, Pinkwood sorrel.

Stemless herb. Leaves radical, petioles sparsely to densely pilose, leaflets obcordate. Cymes umbellate, 6-14 flowered. Flowers rose coloured. Fruit not produced. *Flowering*: January - April. *Grows in partially shaded places and edges of flowerbeds*.

Distribution: A native of South America, naturalized in West Europe and subtropical countries.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 786 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1359 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2330 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2580 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3520 (DUSH).

Family 76. **BALSAMINACEAE** A. Richard (1822)

Annual or perennial herbs, sometimes with a tuberous or rhizomatous rootstock, rarely shrubby, stem succulent, swollen at the nodes, rarely woody below. Leaves alternate or opposite, simple, margins crenate, dentate or serrate, petiolate or sometimes sessile, exstipulate, but often with simple or branched stipule-like structure. Flowers bisexual, zygomorphic, resupinate, solitary or binate or fascicled in racemes or umbels, bracts entire, rarely toothed. Sepals 3 or 5, often coloured, lateral sepals small, green or coloured, the lower one (lower by resupination) larger, navicular to bucciniform or

saccate, tapering or abruptly constricted into a nectariferous spur. Petals 3-5, generally coloured, sometimes white, standard (dorsal petal) resupinate, free, flat or cucullate, wings (lower 4 petals free or united into lateral pairs at or below the middle), entire or 2-3 lobed. Stamens 5, alternate with petals, filaments short and broad, anthers 2-locular. Ovary superior, 5-locular with axile placentation, ovules 5 to many, anatropous, styel 1, very short or absent, stigmas 1-5. Fruit a capsule or berry, 5-valved, loculicidal, fleshy, dehiscent. Seeds without endosperm.

The family Balsaminaceae consists of only 2 genera and about 451 species, native mainly to tropical Asia and Africa, but with a few species in temperate regions of both the Old and the New World. In Bangladesh, this family is represented by 2 genera and 7 species.

In the present study area this family is represented by a single species.

Genus 241. **Impatiens** L., Sp. Pl.: 937 (1753).

412. **Impatiens balsamina** L., Sp. Pl.: 938 (1753); Hook. f., Fl. Brit. Ind. 1: 454 (1874); Prain, Beng. Pl. 1: 205 (1903, reprint 1963). *Impatiens cornuta* L. (1753).

Vernacular name: *Dopati*.

English names: Garden balsam, Lady slipper.

Annual herb. Leaves alternate, lanceolate-elliptic, apex acute. Flowers solitary or in fascicles of 2-3, white, pink or red. Fruit a capsule, densely tomentose. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 10, 12, 14$ (Kumar and Subramaniam, 1986). *Wet, often rather open places, frequently in or near cultivated areas and gardens*.

Distribution: Probably native of India and parts of South East Asia and found throughout the tropics, subtropics and temperate zone as an ornamental.

Status of occurrence: Cultivated.

Uses: It is an ornamental garden plant.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1907 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2983 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3385 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3673 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3839 (DUSH).

Family 77. **APIACEAE** Lindley (1836)

Aromatic herbs, rarely shrubs or soft-wooded trees. Leaves alternate, rarely opposite, pinnately or ternately compound or dissected, rarely simple, petiolate, usually with a broad sheathing base. Inflorescence of compound or simple umbels, umbels and

umbellets often subtended by an involucre and involucre of distinct or connate bracts. Flowers small, bisexual, seldom unisexual. Calyx adnate to the ovary and only the 5-lobes distinct and often reduced to teeth. Corolla of 5 distinct petals, apically inflexed, valvate, white or yellow, rarely purple. Stamens 5, alternate with petals, anthers 2-celled, basi- or dorsifixed, dehiscing longitudinally. Ovary inferior, bilocular, styles 2, stigma wet, papillate, ovule solitary in each locule, anatropous, reniform, placentation axile. Fruit a schizocarp, composed of 2 dorsally or laterally compressed or hemispherical mericarps, each mericarp 1-seeded. Seeds with minute embryo, endosperm copious.

The family Apiaceae consists of about 300 genera and 3000 species, nearly cosmopolitan in distribution, mainly North Temperate regions and to a lesser extent on tropical mountains. In Bangladesh, this family is represented by 12 genera and 14 species.

In the present study area this family is represented by 4 genera with 4 species.

Key to genera:

- | | |
|---|----------------------|
| 1. Umbels apparently simple; prostrate herbs; carpophore lacking | Centella |
| - Umbels compound, rarely simple on erect plants; flowers laxly arranged or in dense heads; plants prostrate to erect | 2 |
| 2. Fruit secondary ridges well developed. Fruit spiny, setulose to bristly or pilose to hispid | Daucas |
| - Fruit secondary ridges not developed. Fruit glabrous to pubescent or setulose | 3 |
| 3. Fruit oval to ovoid, rarely cylindrical, not more than 3 times longer than broad. Inner seed face grooved or not grooved | Trachyspermum |
| - Fruit linear to cylindrical or ellipsoid; more than 4 times as long as broad. Inner seed face grooved | Coriandrum |

Genus 242. **Centella** L., Gen. Pl. ed. 6: 685 (1764).

413. **Centella asiatica** (L.) Urban in Mart., Fl. Braz. 11 (1): 187 (1879); J. Sinclair in Bull. Bot. Soc. 9(2): 96 (1956). *Hydrocotyle asiatica* L., Sp. Pl. 234 (1753); Hook. f., Fl. Brit. Ind. 2: 669 (1879); Prain, Beng. Pl. 1: 391 (1903, reprint 1963); R. L. Heinig, List Chittagong : 32 (1925).

Vernacular names: *Thankuni, Thulkuri*, English names: Indian pennywort, *Dul manik (Koch)*. Spadelleaf.

Perennial herb, rooting at the nodes with long stolons. Leaves simple, 1-4, on a short shoot at each node, lamina reniform. Inflorescence a simple umbel. Flowers white to rose-tinged. Fruit a schizocarp, sub-cylindric, ovate to orbicular. *Flowering and fruiting*: March - December. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Wet moist lands and damp places on the plain lands*.

Distribution: Tropics and subtropics of the Old and New Worlds.

Status of occurrence: Common.

Uses: Plants are eaten as salad and the leave are used in dysentery.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 100 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1075 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1958 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2665 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3856 (DUSH).

Genus 243. **Coriandrum** L., Sp. Pl. 1: 256 (1753).

414. **Coriandrum sativum** L., Sp. Pl. 1: 256 (1753); Hook. f., Fl. Brit. Ind. 2: 717 (1879); Prain, Beng. Pl. 1: 395 (1903, reprint 1963); R. L. Heinig, List Chittagong : 33 (1925). *Coriandrum majus* Gouan (1762), *Coriandrum diversifolium* Gilib. (1782), *Coriandrum globosum* Salisb. (1796), *Selinum coriandrum* E. H. Krause (1904).

Vernacular names: *Dhonay, Dhonia*.

English names: Coriander, Chinese parsley.

Erect, annual, profusely branched herb. Leaves alternate, variable in shape and size, basal 1-3 leaves usually simple, withering early, blade ovate in outline, deeply cleft or parted into usually 3 incised-dentate lobes, next ones decompound, blade ovate or elliptic in outline, usually pinnately divided into 3-11 leaflets or again pinnately divided into 3-7 leaf-like lobes. Inflorescence an indeterminate, compound umbel. Flowers white or pale pink. Fruit an ovoid to globose schizocarp, yellow-brown, often crowned by the dry persistent calyx lobes and the stylopodium with styles. *Flowering and fruiting*: December - February. *Chromosome number*: $2n = 22, 23, 24, 25, 44$ (Kumar and Subramaniam, 1986). *Plain lands*.

Distribution: Coriander is native to the Mediterranean regions. Now it is cultivated worldwide, sometimes naturalized.

Status of occurrence: Cultivated.

Uses: Fruits are commonly used as a spice, being part of a large number of dishes.

Specimens examined: Kaliakoir, Jorapukur, 09.05.2010, R. Tabassum, 765 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1281 (DUSH); Kapasia, Voboner Chala, 03.11. 2013, R. Tabassum, 3549 (DUSH).

Genus 244. **Daucus** L., Sp. Pl. 1: 242 (1753).

415. **Daucus carota** L., Sp. Pl.: 242 (1753); Hook. f., Fl. Brit. Ind. 2: 718 (1879); Prain, Beng. Pl. 1: 395 (1903, reprint 1963). *Daucus gingidium* L. (1753).

Vernacular name: *Gazor*.

English name: Carrot.

Annual or biennial erect herb. Taproot thickened, fleshy, elongate, conical to cylindrical, reddish, rarely yellowish-orange. Leaves 8-12, growing in a rosette, with long petiole often sheathed at its base, blade 2-3 pinnate, segments linear to lanceolate. Flowers small, epigynous, 5-merous, mainly bisexual in primary umbels, purple-red. Fruit an oblong-ovoid schizocarp. *Flowering and fruiting:* May - August. *Chromosome number:* $2n = 18, 22, 36, 54$ (Kumar and Subramaniam, 1986). *Plain lands.*

Distribution: Worldwide.

Status of occurrence: Cultivated.

Uses: Swollen taproot of the plant is called Carrot and is an important vegetable.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 525 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 848 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1840 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2277 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2363 (DUSH).

Genus 245. **Trachyspermum** Link., Hort. Berol. 1: 267 (1821).

416. **Trachyspermum ammi** (L.) Sprague, Bull. Misc. Inform. Kew. 1929: 228 (1929). *Sison ammi* L. (1753), *Ammi copticum* L. (1767), *Carum copticum* (L.) C. B. Clarke (1867); Hook. f., Fl. Brit. Ind. 2: 682 (1879); Prain, Beng. Pl. 1: 392 (1903, reprint 1963).

Vernacular name: *Joal*.

English names: Ajowan caraway.

Annual herb. Leaves petiolate, blade triangular-ovate, 2-3 pinnate, ultimate segments linear-filiform. Inflorescence of umbels. Fruits ovoid, densely covered with whitish minute papillate. *Flowering and fruiting:* May - September. *Chromosome number:* $2n = 18, 20$ (Kumar and Subramaniam, 1986). *Dry open ruderal areas.*

Distribution: The plant is believed to be a native of India, extensively cultivated throughout Central, South and Southeast Asia.

Status of occurrence: Common.

Uses: The fruits are used as spice.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 594 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1839 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2141 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2471 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2985 (DUSH).

Family 78. **GENTIANACEAE** A. L. de Jussieu (1789)

Annual or perennial herbs, occasionally twinnings, rarely shrubs. Leaves opposite or in rosettes, often sessile, entire, exstipulate. Flowers in 2-3 whorled, terminal, paniculate or axillary cymes, sometimes in capitate clusters, or occasionally solitary, 4-5 merous. Flowers regular, sub-regular or irregular, hermaphrodite. Calyx persistent, tube campanulate or very short, lobes imbricate. Corolla gamopetalous, rotate to infundibular, lobes contorted. Stamens as many as and alternate with corolla lobes, filaments filiform, anthers erect, the cells poricidal or longitudinally dehiscent. Ovary superior, 1-locular, occasionally 2-locular, placentation parietal or appearing axile, styles simple, stigmas entire, 2-lobed or 2-lamellate. Fruit a capsule, septicidally 2-valved or indehiscent. Seeds angular or globose, occasionally narrowly winged, with fleshy or oily endosperm.

The family Gentianaceae consists of some 75 genera and about 1000 species, cosmopolitan in distribution, but most common in temperate and subtropical regions. In Bangladesh, this family is represented by 4 genera and 6 species.

In the present study area this family is represented by a single species.

Genus 246. **Canscora** Lamk., Enc. Meth. 1: 601 (1798).

417. **Canscora decussata** (Roxb.) Schult., Mant. 3: 229 (1827); Hook. f., Fl. Brit. Ind. 4: 104 (1883); Prain, Beng. Pl. 2: 526 (1903, reprint 1963). *Pladeria decussata* Roxb. (1820).

Vernacular name: *Dhankuni*.

English name: Canscora.

Erect herb. Stem copiously branched above, 4-winged. Leaves fairly numerous, all cauline, ovate or o-lanceolate, base sub-cordate to rounded. Inflorescence lax. Flowers

white. *Flowering and fruiting*: November-December. *Chromosome number*: $2n = 64$ (Kumar and Subramaniam, 1986). *Open places, roadsides and near forests*.

Distribution: Tropical Africa, Madagascar, India, Myanmar and Sri Lanka.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 952 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1512 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2336 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2506 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2844 (DUSH).

Family 79. **APOCYNACEAE** A. L. de Jussieu (1789)

Twining shrubs, less often trees, shrubs, rarely herbs or succulents with milky latex or watery sap. Leaves simple, opposite or whorled, rarely alternate or spiral, entire, exstipulate. Inflorescence axillary or of terminal, dichasial cymes or racemes, sometimes the inflorescence reduced to one or two axillary flowers. Flowers usually pentamerous, hermaphrodite, more or less regular. Calyx inferior, usually 5-lobed, sometimes polypetalous. Corolla gamopetalous, usually salver-shaped, lobes 5. Stamens 5, filaments very short or absent, anthers 2-celled, longitudinally dehiscent. Ovary superior or sub-inferior, carpels 2, mostly unilocular or bilocular with parietal placentation, 2 to multi-ovulate. Fruits follicular, capsule, berry or drupaceous, usually 2, sometimes solitary by abortion. Seeds 1 to many, pubescent, winged or apically comose, without an aril.

The family Apocynaceae consists of about 200 genera and 2000 species, widespread in tropical and subtropical regions. In Bangladesh, it is represented by 27 genera and 46 species.

In the present study area this family is represented by 11 genera and 15 species.

Key to genera:

- | | |
|---|--------------------|
| 1. Corona present | 2 |
| - Corona absent | 3 |
| 2. Leaves whorled or opposite; anthers $\pm$ exserted | Nerium |
| - Leaves spiral or alternate; anthers included | Thevetia |
| 3. Anthers connivent with stigma | Ichnocarpus |
| - Anthers not connivent with stigma | 4 |

4.	Fruit a berry-like drupe	5
-	Fruit a follicle, or capsule	6
5.	Disc absent	Carissa
-	Disc present	Rauvolfia
6.	Herb or under-shrub	Catharanthus
-	Tree or large shrub	7
7.	Seed winged	8
-	Seed not winged	9
8.	Calyx eglandular on both sides	Allamanda
-	Calyx glandular outside, eglandular inside	Plumeria
9.	Leaves opposite; calyx glandular inside	10
-	Leaves whorled; calyx eglandular inside	Alstonia
10.	Stamen inserted near the base of the tube; corolla throat contracted	Holarrhena
-	Stamen inserted at or above the middle of the tube; corolla throat not contracted, inflated in the middle or top	Tabernaemontana

Genus 247. **Allamanda** L., Mant. Pl. 2: 214 (1771).

418. **Allamanda cathartica** L., Mant. Pl. 2: 214 (1771); Prain, Beng. Pl. 2: 493 (1903, reprint 1963); R. L. Heinig, List Chittagong : 41 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 100 (1956).

Vernacular names: *Alakananda*, English names: Common allamanda, *Harkakra*, *Kalkephul*. Golden trumpet.

Evergreen, scandent shrub. Leaves 3-5 in a whorl, lamina oblong or lanceolate. Cymes axillary, paniced. Flowers large, showy, bright yellow. Fruit a spiny capsule, almost globose. *Flowering and fruiting*: flowering almost throughout the year, fruiting more common in cold season. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: A native of tropical America, largely grown as ornamental and sometimes naturalized in the moist zone including Bangladesh, India, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Cultivated.

Uses: Ornamental plant.

Specimens examined: Kaliakoir, Konabari (Vogora), 08.01.2010, R. Tabassum, 597 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1881 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2185 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3540 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3812 (DUSH).

Genus 248. **Alstonia** R. Br., Mem. Wern. Soc. 1: 75 (1809).

Key to species:

1. Lateral leaf veins widely spaced, (3-)5-12 mm apart, ascending; corolla lobes in bud overlapping to right; seeds acuminate at 1 end **Alstonia macrophylla**
- Lateral leaf veins close together, 1-6 mm apart, horizontal or almost so; corolla lobes in bud overlapping to left; seeds obtuse or rounded at both ends **Alstonia scholaris**

419. **Alstonia macrophylla** Wall. ex G. Don, Gen. Syst. 4: 87 (1837). *Alstonia costata* Wall. (1829), *Alstonia macrophylla* Wall. (1829); Hook. f., Fl. Brit. Ind. 3: 643 (1882), *Alstonia acuminata* Miq. (1869), *Alstonia pangkorensis* King & Gamble (1970).

Vernacular name: *Chhatim*.

English name: Devil's tree.

Tall tree. Leaves 3-4 in a whorl, lamina elliptic-lanceolate. Inflorescence a terminal, many-flowered corymbose cyme. Flowers small, white. Follicles numerous, slender, pendulous. *Flowering and fruiting:* June - January. *Chromosome number:* $2n = 22$ (Kumar and Subramaniam, 1986). *Roadsides.*

Distribution: Borneo, Cambodia, Celebes, China, India, Indonesia, Malaysia, New Guinea, the Philippines and Thailand.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1076 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1775 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2472 (DUSH).

420. **Alstonia scholaris** (L.) R. Br., Mem. Wern. Nat. Hist. Soc. 1: 76 (1811); Hook. F., Fl. Brit. Ind. 3: 642 (1882); Prain, Beng. Pl. 2: 498 (1903, reprint 1963); R. L.

Heinig, List Chittagong: 41 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956). *Echites scholaris* L., Mant. Pl. 1: 53 (1767), *Nerium tinctorium* Perr. (1824).

Vernacular names: *Chatim, Chaitan*.

English name: Devil's tree.

Tall tree. Leaves 5-10 in a whorl, lamina oblong-lanceolate, elliptic-oblong. Inflorescence umbellate cymes, branched, many-flowered. Flowers greenish-white. Follicles pendulous, in pairs, linear-cylindric. *Flowering and fruiting*: November - May. *Chromosome number*: $2n = 40, 44$ (Kumar and Subramaniam, 1986). *Roadsides and homestead gardens, often occurs wild in deciduous or mixed forests*.

Distribution: Africa, Australia, Bhutan, China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Common.

Uses: Wood is used for various purposes, also a valuable medicinal plant.

Specimens examined: Kaliganj, Memberbari, 26.03.2008, R. Tabassum, 269 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 603 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1192 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1461 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2784 (DUSH).

Genus 249. **Carissa** L., Mant. 1: 7 (1767).

421. **Carissa carandas** L., Mant. 1: 52 (1767); Hook. f., Fl. Brit. Ind. 3: 630 (1882); Prain, Beng. Pl. 2: 493 (1903, reprint 1963); R. L. Heinig, List Chittagong : 41 (1925). *Carissa congesta* Wight (1848); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956), *Daminacanthus esquirolii* Lev. (1912).

Vernacular name: *Karamcha*.

English name: Christ's thorn.

Spinous, bushy shrub or small tree. Leaves sub-sessile, lamina obovate, elliptic or oblong. Cymes terminal, usually 3-flowered. Flowers white, scentless. Berries ellipsoid, reddish-purple when ripe. *Flowering and fruiting*: March - November. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: India, Malaysia, Myanmar, Pakistan, Saudi Arabia and Sri Lanka.

Status of occurrence: Cultivated.

Uses: The fruits are eaten raw and also used as pickle, also a medicinal plant.

Specimens examined: Kapasia, Ranimohol, 14.12.2009, R. Tabassum, 553 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 646 (DUSH); Kaligonj, Kolafata, 05.03.2010, R. Tabassum, 679 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1223 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2550 (DUSH).

Genus 250. **Catharanthus** G. Don, Gen. Hist. 4: 71 (1837).

422. **Catharanthus roseus** (L.) G. Don, Gen. Hist. 4: 95 (1837). *Vinca rosea* L. (1759); Hook. f., Fl. Brit. Ind. 3: 640 (1882); Prain, Beng. Pl. 2: 497 (1903, reprint 1963), *Lochnera rosea* (L.) Reichb. (1828); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956).

Vernacular name: *Nayantara*. English names: Madagascar periwinkle, Rose periwinkle.

Perennial herb or sub-shrub. Leaves obovate, oblanceolate or elliptic-lanceolate. Cymes axillary, solitary or paired. Flowers white or pink. Follicles 2, slender, cylindrical. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 16$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: A native of Madagascar, widely cultivated and naturalized in the tropics and subtropics of both hemispheres.

Status of occurrence: Cultivated.

Uses: Cultivated as an ornamental and medicinal plant.

Specimens examined: Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 667 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1277 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1734 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2976 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3751 (DUSH).

Genus 251. **Holarrhena** R. Br., Mem. Wern. Soc. 1: 62 (1811).

423. **Holarrhena antidysenterica** (L.) Wall. ex A. DC., Prod. 8: 413 (1844); Hook. F., Fl. Brit. Ind. 3: 614 (1882); Prain, Beng. Pl. 2: 499 (1903, reprint 1963); R. L. Heinig, List Chittagong: 41 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956). *Nerium antidysenterica* L. (1753), *Echites antidysenterica* Roxb. ex Flem. (1810), *Holarrhena pubescens* Wall. ex G. Don, Gen. Syst. 3: 78 (1837).

Vernacular names: *Kurchi*, *Kuruj*. English names: Kurchi tree, Bitter oleander.

Small to medium-sized tree. Leaves ovate, elliptic or elliptic-oblong. Cymes terminal, corymbose. Flowers white. Follicles linear-cylindric, pendulous. *Flowering and fruiting*: April - January. *Chromosome number*: $2n = 20$ (Kumar and Subramaniam, 1986). *Secondary forests, gardens and parks*.

Distribution: India, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Cultivated.

Uses: Bark is used in jaundice by *Santal*.

Specimens examined: Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 309 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1488 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2038 (DUSH); Tongi, Shalikchura, 19.08.2013, R. Tabassum, 2613 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3022 (DUSH).

Genus 252. **Ichnocarpus** R. Br., Mem. Wern. Soc. 1: 61 (1811).

424. **Ichnocarpus frutescens** (L.) R. Br., Mem. Wern. Soc. 1: 62 (1811); Hook. F., Fl. Brit. Ind. 3: 669 (1882); Prain, Beng. Pl. 2: 504 (1903, reprint 1963); R. L. Heinig, List Chittagong: 42 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 54; J. Sinclair in Bull. Bot. Soc. 9(2): 100 (1956). *Apocynum frutescens* L., Sp. Pl. 312 (1753), *Echites frutescens* Wall. (1829), *Ichnocarpus volubilis* Merr. (1922).

Vernacular names: *Parallia lata*, *Dudhi lata*, English name: Black creeper. *Shyamalata*.

Large, twining shrub. Leaves elliptic-oblong or lanceolate. Cymes axillary and terminal, paniculate. Flowers small, greenish-white, fragrant. Follicles solitary or in pairs, straight. *Flowering and fruiting:* April - December. *Chromosome number:* $2n = 20$ (Kumar and Subramaniam, 1986). *Moist or dry evergreen or deciduous forests.*

Distribution: Australia, China, India, Kashmir, Myanmar, Malaysia, Nepal, Sri Lanka and Pakistan.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 320 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 846 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2424 (DUSH).

Genus 253. **Nerium** L., Sp. Pl.: 209 (1753).

425. **Nerium oleander** L., Sp. Pl.: 209 (1753). *Nerium indicum* Mill. (1786), *Nerium odorum* Soland (1789); Hook. f., Fl. Brit. Ind. 3: 655 (1882); Prain, Beng. Pl. 2: 501 (1903, reprint 1963); R. L. Heinig, List Chittagong: 41 (1925), *Nerium odoratum* Lamk. (1823).

Vernacular names: *Karobi*, *Rakto karobi*. English names: Oleander, Roseberry spurge.

Rigid, evergreen shrub without milky latex. Leaves usually 3 in a whorl, lamina lanceolate. Cymes terminal or lateral between the petioles, dichasially branched. Flowers red or white, fragrant. Mericarp cylindrical, splitting and dehiscent along the ventral suture. *Flowering and fruiting*: January - July. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: China, India, Japan and Mediterranean to Persia.

Status of occurrence: Cultivated.

Uses: Though it is cultivated as an ornamental plant but medicinally it is important.

Specimens examined: Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 260 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1314 (DUSH); Gazipur Sadar, Shalikechura, 19.08.2013, R. Tabassum, 2638 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3004 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3735 (DUSH).

Genus 254. **Plumeria** L., Sp. Pl.: 209 (1753).

Key to species:

- | | |
|---|------------------------|
| 1. Flower white | Plumeria alba |
| - Flower red or yellow | 2 |
| 2. Leaf blade acute or acuminate at apex, matte adaxially, glaucous | Plumeria rubra |
| - Leaf blade rounded at apex, shiny adaxially, dark green | Plumeria obtusa |

426. **Plumeria alba** L., Sp. Pl.: 210 (1753). *Plumeria hypoleuca* Gasp. (1833).

Vernacular names: *Gorur-champa*, English names: Pagoda tree, White *Champa*. frangipani.

Small tree. Leaves simple, large, lamina linear-oblong, apex acute or acuminate. Cymes terminal. Flowers white with yellow centre, fragrant. Follicles linear, smooth. *Flowering and fruiting*: May - November. *Chromosome number*: $2n = 36$ (Kumar and Subramaniam, 1986). *Homesteads and gardens*.

Distribution: Native of tropical America, India, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Cultivated.

Uses: Ornamental and medicinal plant.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 893 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1278 (DUSH); Gazipur Sadar, Etahata, Borboika, 30.10.2013, R. Tabassum, 3420 (DUSH) Kaliganj, Banglahola, 02.12.2013, R. Tabassum, 3817 (DUSH).

427. *Plumeria obtusa* L., Sp. Pl.: 210 (1753).

Vernacular names: *Gorur-champa*, English names: Pagoda tree, Singapore *Champa*, *Gulanchin*. *plumeria*.

Small tree. Leaves obovate to obovate-oblong, apex obtuse or rounded. Cymes terminal, Flowers white with a yellow throat, tinged with red, fragrant. Follicles cylindrical. *Flowering and fruiting:* May - September. *Homesteads, gardens and parks.*

Distribution: A native of the Caribbean island, commonly planted in gardens of Bangladesh, India, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant, also have medicinal use.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3976 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3990 (DUSH).

428. *Plumeria rubra* L., Sp. Pl.: 209 (1753); *Plumeria acuminata* Ait. (1789); Prain, Beng. Pl. 1: 496 (1903-reprint 1963); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956), *Plumeria acutifolia* Poir. (1812); Hook. f., Fl. Brit. Ind. 3: 641 (1882); Prain, Beng. Pl. 2: 496 (1903, reprint 1963); R. L. Heinig, List Chittagong: 41 (1925), *Plumeria rubra* L. var. *acutifolia* (Poir.) Bailey (1953).

Vernacular names: *Gorur-champa*, English names: Temple tree, Frangipani. *Champa*, *Kathgolap*.

Small tree. Leaves obovate, acute or acuminate at the apex. Cymes terminal. Flowers dark red. Fruits follicles. *Flowering and fruiting:* May - September. *Chromosome number:* $2n = 36$ (Kumar and Subramaniam, 1986). *Gardens and homesteads.*

Distribution: A native of central America from Mexico to Panama. Also grown in India, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3977 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3991 (DUSH).

Genus 255. **Rauvolfia** L., Sp. Pl.: 208 (1753).

Key to species:

1. Leaves ovate or elliptic, tomentose when young;
corolla tube 2-3 mm; fruit entire at apex **Rauvolfia tetraphylla**
- Leaves narrowly elliptic or obovate, glabrous; corolla
tube 10-20 mm; fruit forked at apex **Rauvolfia serpentina**

429. **Rauvolfia serpentina** (L.) Benth. ex Kurz, Forest Fl. Brit. Burm. 2: 171 (1877); Hook. f., Fl. Brit. Ind. 3: 632 (1882); Prain, Beng. Pl. 2: 497 (1903, reprint 1963); R. L. Heinig, List Chittagong: 41 (1925); *Ophioxylon serpentinum* L. (1753), *Ophioxylon trifoliatum* Gaertn. (1791), *Tabernaemontana cylindracea* Wall. (1829).

Vernacular names: *Sarpagandha*, *Chandra*, *Choto chand* English name: Serpentina.

Erect perennial herb. Leaves simple, whorled, lamina elliptic-lanceolate or ovate-lanceolate. Cymes dense, axillary or terminal. Flowers white or pinkish. Follicles purplish-black when ripe. *Flowering and fruiting:* April - October. *Chromosome number:* $2n = 20, 22$ (Kumar and Subramaniam, 1986). *Grows in deciduous forests as undergrowth and gardens.*

Distribution: Bhutan, Cambodia, China, India including tropical Himalayas, Laos, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka and Vietnam.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 763 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2039 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2281 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2605 (DUSH).

430. **Rauvolfia tetraphylla** L. Sp. P.: 208 (1753). *Rauvolfia canescens* L. (1753); Prain, Beng. Pl. 2: 497 (1903, reprint 1963).

Vernacular name: *Bara chadar* English names: Be still tree, Devil pepper, Four-leaf devil pepper.

Small shrub. Leaves in whorl of 4, lamina elliptic-lanceolate or obovate. Cymes terminal or axillary. Flowers white. Fruits ovoid, red, turning shining black when ripe. *Flowering and fruiting*: April - July. *Chromosome number*: $2n = 44$ (Kumar and Subramaniam, 1986). *Undergrowth of deciduous or evergreen forests*.

Distribution: Native of West Indies, introduced and naturalized in many countries including Bangladesh, India, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 916 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1872 (DUSH).

Genus 256. **Tabernaemontana** L., Fl. Trop. Africa 4(1): 126 (1902).

431. **Tabernaemontana divaricata** (L.) R. Br. *Ex Roem & Schult.*, Syst. 4: 427 (1819). *Nerium divaricatum* L., Sp. Pl. 209 (1753). *Tabernaemontana coronaria* (Jacq.) Willd., Enum. Hort. Berol. 275 (1809); Hook. F., Fl. Brit. Ind. 3: 646 (1882); Prain, Beng. Pl. 2: 498 (1903, reprint 1963); R. L. Heinig, List Chittagong: 41 (1925).

Vernacular names: *Tagar*, *Chandni*, English names: Moon beam, Wax flower. *Bara-katwadar*, *Dudh phul*, *Rupa-tola*.

Bushy shrub, dichotomously branched. Leaves opposite, lamina elliptic-oblong. Cymes dichotomously branched. Flowers white. Follicles divaricate, fleshy, orange-red inside. *Flowering and fruiting*: May - January. *Chromosome number*: $2n = 22, 33$ (Kumar and Subramaniam, 1986). *Homesteads and gardens*.

Distribution: India, Sri Lanka, Nepal, Bhutan, Myanmar and Thailand.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Mirer Bazar, 14.03.2008, R. Tabassum, 244 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 514 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1386 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2612 (DUSH); Kaliakoir, Baroichuti, 13.09.2013, R. Tabassum, 2919 (DUSH).

Genus 257. **Thevetia** L., Adans. Fam. Pl. 2: 171 (1763).

432. **Thevetia peruviana** (Pers.) K. Schum., Pflanzenfam. 4(2): 159 (1895); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956). *Cerbera thevetia* L. (1753), *Cerbera peruviana* Pers. (1805), *Thevetia nerifolia* Juss. ex Steud. (1841); Prain, Beng. Pl. 2: 495 (1903, reprint 1963); R. L. Heinig, List Chittagong: 41 (1925).

Vernacular names: *Halde karabi*, *Kalki* English names: Lucky nut, Yellow phul, *Kanai phul*. oleander.

Large shrub or small tree. Leaves crowded, spiral or alternate, lamina linear-lanceolate, acute or shortly acuminate. Cymes few-flowered, terminal. Flowers yellow or orange, occasionally white. Fruits somewhat rhomboid, shining black. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 18, 20$ (Kumar and Subramaniam, 1986). *Gardens or near temples*.

Distribution: Native of tropical America. Cultivated and naturalized in the tropics.

Status of occurrence: Cultivated.

Uses: Ornamental plant, also used as medicinal.

Specimens examined: Kaliakoir, Konabari (Vogora), 08.01.2010, R. Tabassum, 599 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1178 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2280 (DUSH); Gazipur Sadar, Etahata Borboika, 30.10.2013, R. Tabassum, 3418 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3541 (DUSH).

Family 80. **ASCLEPIADACEAE** R. Brown (1810)

Climbing, twining or epiphytic shrubs, rarely erect herbs with milky latex or watery sap. Leaves opposite, very rarely whorled, simple, entire, pinnately veined, exstipulate. Inflorescence usually of umbellate cymes, corymbose or panicles. Flowers regular, hermaphrodite, bracteate. Calyx deeply 5-lobed. Corolla gamopetalous, campanulate or tubular, lobes 5. Stamens 5, inserted at or near the base of the corolla and alternating with the lobes, filaments very short, anthers 2- or 4-locular, laterally united forming a five sided blunt staminal column, adnate to the pistil and together forming the gynostegium. Corona of 5 scales or entire with 5 lobes, adnate to the staminal column or to the corolla. Carpels 2, superior, styles 2, stigma thickened, 5-angled. Follicles usually 2, many-seeded. Seeds compressed, usually flat, with a tuft of silky hairs at one end, without an aril.

The family Asclepiadaceae consists of about 250 genera and 2000 species, widespread in tropical and subtropical regions of the World. In Bangladesh, this family is represented by 32 genera and 67 species (Rahman 1988).

In the present study area this family is represented by 5 genera with 6 species.

Key to genera:

1. Plants erect 2
- Plants climbing or scrambling

- | | | |
|----|---|-------------------|
| 2. | Corona double or with appendages on the inner face | Cynanchum |
| - | Corona single, without appendages on the inner face | Calotropis |
| 3. | Filaments usually free; anthers acuminate or with a terminal appendage; pollen masses granular, in pairs in each cell | Hemidesmus |
| - | Filaments connate into a tube; pollen masses waxy | 4 |
| 4. | Corolla lobes twisted | Marsdenia |
| - | Corolla lobes valvate | Hoya |

Genus 258. **Calotropis** R. Br., Mem. Werner. Soc. 1: 39 (1811).

Key to species:

- | | | |
|----|---|----------------------------|
| 1. | Corona lobes glabrous, equally or exceeding staminal column | Calotropis procera |
| - | Corona lobes hairy, shorter than the staminal column | Calotropis gigantea |

433. **Calotropis gigantea** (L.) R. Br. in Ait. f., Hort. Kew. ed. 2, 2: 78 (1811); Hook. f., Fl. Brit. Ind. 4: 17 (1883); Prain, Beng. Pl. 2: 510 (1903, reprint 1963); R. L. Heinig, List Chittagong: 42 (1925), Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 55 (1953); Sinclair in Bull. Bot. Soc. Beng. 9(2): 100 (1956); Rahman & Wilcock, Fl. Bangl. 48: 9 (1995). *Asclepias gigantea* L., Sp. Pl. 1: 214 (1753).

Vernacular names: *Akand*, *Akkangas*. English names: Crown flower, Giant milkweed.

Large shrub or small tree. Leaves broadly ovate or ovate-oblong, fleshy. Inflorescence of umbellate cymes. Flowers white, lilac or purple. Follicles in pairs, ovoid, boat-shaped. *Flowering and fruiting*: almost throughout the year but abundant in the hot season. *Chromosome number*: $2n = 22$ (Sharma, 1970). *Grows in open wasteland, roadsides and sides of railway lines and in village surroundings*.

Distribution: China, India, Indonesia, Malaysia, Myanmar, Nepal and Thailand.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 963 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1023 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2254 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R.

Tabassum, 2426 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2639 (DUSH).

434. **Calotropis procera** (L.) R. Br. in Ait. f., Hort. Kew. ed. 2, 2: 78 (1811); Hook. f., Fl. Brit. Ind. 4: 18 (1883); Prain, Beng. Pl. 2: 510 (1903, reprint 1963); Pasha & Mohammad in C.U. Studies (Sc.) 1: 96 (1977); Rahman in J. Asiatic Soc. Bangladesh (Sc.) 15(2): 92 (1989); Rahman & Wilcock, Fl. Bangl. 48: 10 (1995); *Asclepias procera* Ait., Hort. Kew. 1: 305 (1789); *Calotropis hamiltonii* Wight, Contr. Bot. Ind.: 53 (1834); *Calotropis wallichii* Wight, Contr. Bot. Ind.: 53 (1834).

Vernacular name: *Akand*.

English name: Rooster tree.

Large shrub. Stem slightly woody and much branched at the base. Leaves ovate-oblong, fleshy. Inflorescence of umbellate cymes, covered with a cottony floccose tomentum. Flowers pinkish-white. Follicles not seen. *Flowering*: usually in the summer. *Chromosome number*: $2n = 22$ (Borgen, 1975). *Grows in dry lands*.

Distribution: Widely distributed in tropical and subtropical Africa, Asia including Middle East, the West Indies and Mascarene Islands.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 127 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 608 (DUSH); Kaliganj, Kalehat, 23.08.2010, R. Tabassum, 1568 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2110 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2816 (DUSH).

Genus 259. **Cynanchum** L., Sp. Pl.: 212 (1753).

435. **Cynanchum callialata** F. Ham. ex Wight, Contr. Bot. India: 56 (1834) & Icon. Pl. Ind. Orient. 4: t. 1279 (1850). Hook. f., Fl. Brit. Ind. 4: 24 (1883); Prain, Beng. Pl. 2: 512 (1903, reprint 1963); Heinig, List Chittagong: 747 (1925); Rahman in J. Asiatic Soc. Bangladesh (Sc.) 15(2): 92 (1989); Rahman & Wilcock, Fl. Bangl. 48: 15 (1995).

Vernacular name: *Chagal bati*.

Large twining undershrub. Leaves ovate to linear, acuminate. Cymes umbel-like, many-flowered. Calyx lobes lanceolate. Corolla lobes ovate-lanceolate, tips slightly rounded. Follicles dorsally compressed. *Flowering*: March - August. *Grows in moist conditions, climbing on bushes*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 12 (DUSH); Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 873 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3704 (DUSH).

Genus 260. **Hemidesmus** R. Br., Mem. Wern. Soc. 1: 56 (1811).

436. **Hemidesmus indicus** (L.) R. Br. in Ait. f., Hort. Kew. ed. 2, 2: 75 (1811); Hook. f., Fl. Brit. Ind. 4: 5 (1883); Prain, Beng. Pl. 2: 508 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 56 (1953). *Periploca indica* L., Sp. Pl.: 211 (1753).

Vernacular name: *Anantamul*.

English name: Indian sarsaparilla.

Perennial, prostrate or slightly twining undershrub with milky latex and aromatic roots. Leaves elliptic or ovate-oblong, tip minutely apiculate. Cymes opposite, many-flowered. Flowers cream-coloured. Fruit a follicle, tapering towards the apex. *Flowering and fruiting:* July - December. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Grows in shady moist areas, mostly in dry forest floors.*

Distribution: India, Malaysia, Pakistan, Sri Lanka and Myanmar.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 11 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1961 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2040 (DUSH).

Genus 261. **Hoya** R. Br., Prodr. 1: 459 (1810).

437. **Hoya parasitica** (Roxb.) Wall. ex Wight, Contr. Bot. India: 37 (1834); Hook. f., Fl. Brit. Ind. 4: 57 (1883); Prain, Beng. Pl. 2: 519 (1903, reprint 1963); Cowan in Rec. Bot. Surv. Ind. 11(2): 217 (1928); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 100 (1956); Rahman in J. Asiatic Soc. Bangladesh (Sc) 14(2): 98 (1988); Rahman & Wilcock, Fl. Bangl. 48: 32 (1995); *Asclepias parasitica* Roxb., Fl. Ind. ed. 2, 2: 42 (1832), *Hoya hookeriana* Wight, Contr. Bot. India: 37 (1834).

Vernacular name: *Pargacha*.

Epiphytic, creeping plant. Leaves petiolate, lamina variable, ovate-elliptic, lanceolate, oblong or elliptic, thick, fleshy. Cymes umbellate, many-flowered, solitary at the nodes. Calyx lobes oblong. Corolla lobes broadly ovate. Coronal scales 5, boat-shaped. Follicles 1 or 2, brown spotted. *Flowering and fruiting:* March - October.

Chromosome number: $2n = 22$ (Jash and Sharma, 1972). *Tall and old trees along the roadsides and forests.*

Distribution: India, Indo-China, Myanmar, Thailand and Malaysia.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1345 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1960 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2640 (DUSH).

Genus 262. **Marsdenia** R. Br., Mem. Wern. Soc. 1: 28 (1811).

438. **Marsdenia thyrsoflora** Hook. f., Fl. Brit. Ind. 4: 37 (1883). Ridley, Fl. Malay Penins. 2: 388 (1923); Kanjilal *et al.*, Fl. Assam 3: 291 (1939); Rahman in J. Asiatic Soc. Bangladesh (Sc) 14(2): 93 (1988); Rahman & Wilcock, Fl. Bangl. 48: 36 (1995).

Large twining shrub with profuse and milky latex. Leaves broadly ovate or deltoid-ovate, acuminate, base deeply cordate. Cymes elongated. Flowers in clusters and arranged in racemes. Follicles dagger-shaped, green when young. *Flowering and fruiting:* June - September. *Inundated plain and scrub jungles, mostly in shady places.*

Distribution: India, Thailand and Malaysia.

Status of occurrence: Common.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2444 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2644 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2979 (DUSH); Kapasia, Voboner village, 03.11.2013, R. Tabassum, 3503 (DUSH).

Family 81. **SOLANACEAE** A. L. de Jussieu (1789)

Mostly herbs, a few shrubs with branched taproots. Stem erect, sometimes with underground tubers. Leaves usually alternate, often in unequal pairs, rarely clustered or opposite near the inflorescence, simple, entire, lobed or pinnatisect to finely divided in some species, unicostate. Inflorescence axillary or extra-axillary and leaf-opposed racemes or cymes, open or closed panicles or flowers axillary and solitary, actinomorphic to zygomorphic, bisexual, pentamerous. Sepals 5. Petals 5, limbs 5-6. Stamens 5, sometimes 4, rarely 6, anthers 2-celled. Ovary superior, usually bilocular, occasionally becoming tetralocular by the formation of a false septa, with numerous ovules, styles simple, stigmas bifid or capitate. Fruit a berry, sometimes enclosed within an inflated persistent calyx or a capsule. Seeds endospermic, embryo embedded in the fleshy and semi-transparent endosperm.

The family Solanaceae consists of about 85 genera and 2800 species, nearly cosmopolitan distribution. In Bangladesh, the family is represented by 13 genera and 37 species.

In the present study area this family is represented by 8 genera and 18 species.

Key to genera:

- | | | |
|----|---|---------------------|
| 1. | Anthers connivent (forming a cone) | 2 |
| - | Anthers not connivent | 4 |
| 2. | Anther dehiscence porose | Solanum |
| - | Anther dehiscence longitudinal | 3 |
| 3 | Leaves imparipinnately compound; fruit succulent | Lycopersicon |
| - | Leaves entire; fruit dry | Capsicum |
| 4. | Fruit capsular | 5 |
| - | Fruit baccate | 7 |
| 5. | Flowers paniculate or in racemes | Nicotiana |
| - | Flowers solitary | 6 |
| 6. | Capsules ovoid to subglobose, 30-40 mm long, spiny or tuberculate | Datura |
| - | Capsule narrow ovoid, up to 10 mm long, smooth | Petunia |
| 7. | Plants shrubby, armed or unarmed | Cestrum |
| - | Plants herbaceous, unarmed | Physalis |

Genus 263. **Capsicum** [Tourn.] L., Syst. ed. 1 (1735).

Key to species:

- | | | |
|----|---|----------------------------|
| 1. | Annual or biennial; flowers solitary, erect or not; berry longer than the pedicel | Capsicum annuum |
| - | Perennial; flowers in groups of 2 or more, always erect; berry shorter than the pedicel | Capsicum frutescens |

439. **Capsicum annuum** L., Sp. Pl.: 188 (1753). Prain, Beng. Pl. 2: 556 (1903-reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 365 (1939, reprint 1982); Bailey, Stand. Cyclop.

Hort. 1 : 659 (1950) ; Purseglove, Trop. Crops 2: 525 (1968); Nasir, Fl. Pak. 168: 23 (1985); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 6 (2002).

Vernacular names: *Morich, Lanka*.

English names: Chili, Red pepper.

Erect shrubby herb. Leaves solitary or paired, very variable in size, broadly lanceolate to ovate. Flowers usually solitary, bisexual, calyx cup-shaped, persistent, corolla campanulate to rotate, widely spreading. Fruit a berry, very variable in size, colour and degree of pungency, unripe fruits green or purplish, ripening to red, orange, yellow, brown to purplish or white. *Flowering and fruiting*: generally during winter but also throughout the year. *Chromosome number*: $2n = 12, 24$ (Fedorov, 1969). *Cultivated in the fields or sometimes grown in the homesteads*.

Distribution: A native of Central America, now widely cultivated throughout various parts of the world.

Status of occurrence: Cultivated.

Uses: Spices yielding plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1829 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2142 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2204 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3138 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3835 (DUSH).

440. ***Capsicum frutescens* L.**, Sp. Pl.: 189 (1753); Clarke in Hook. f., Fl. Brit. Ind. 4: 239 (1883); Prain, Beng. Pl. 2: 557 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 365 (1939-reprint 1982); Bailey, Stand. Cyclop. Hort. 1: 659 (1950); Saldanha & Nicolson, Fl. Hassan Dist. 1: 456 (1976); Bennet, Fl. Howrah Dist.: 318 (1979); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 7 (2002).

Vernacular names: *Kacha morich, Lanka* English names: Spur pepper, *Chilloes*.

Shrubby perennial. Leaves solitary or paired, very variable in size, broadly ovate. Flowers bisexual, 2 or more together at each node, sometimes 5, calyx campanulate, persistent and embracing the base of the fruit, corolla 5-lobed, lobes spreading or reflexed, valvate, greenish-white, often with reddish markings in the throat. Fruit a berry, oblong, always erect, red or yellow. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Homestead gardens*.

Distribution: A native of tropical America, now widely grown throughout the world.

Status of occurrence: Cultivated.

Uses: Spices yielding plant.

Specimens examined: Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1102 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1830 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2207 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3137 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3821 (DUSH).

Genus 264. **Cestrum** L., Sp. Pl.: 191 (1753).

441. **Cestrum nocturnum** L., Sp. Pl.: 191 (1753). Bailey, Stand. Cyclop. Hort. 1: 726 (1950); Chittin. & Synge, Roy. Hort. Soc. Dict. Gard.: 443 (1951); Hepper in Dassanayake & Fosberg (Eds.), Rev. Handb. Fl. Ceyl. 6: 408 (1987); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 9 (2002).

Vernacular name: *Hasna-hena*.

English name: Night jasmine.

Profusely branched shrub. Leaves elliptic. Inflorescence of slender stalked racemes or panicles. Flowers tubular, greenish-white, night blooming, very fragrant. Fruit a spongy berry, ovate-oblong, creamy-white on ripening. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 16$ (Fedorov, 1969). *Planted in gardens and near homesteads.*

Distribution: A native of West Indies.

Status of occurrence: Cultivated.

Uses: Ornamental plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1831 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2144 (DUSH); Kalioakoir, Fulbari, 13.09.2013, R. Tabassum, 3241 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3836 (DUSH).

Genus 265. **Datura** L., Sp. Pl.: 179 (1753).

442. **Datura metel** L., Sp. Pl.: 179 (1753); Hepper in Dassanayake & Fosberg (Eds.), Rev. Handb. Fl. Ceyl. 6: 404 (1987); *Datura fastuosa* L., Syst. ed. 10, 2: 932 (1759); Clarke in Hook. f., Fl. Brit. Ind. 4: 242 (1883); Prain, Beng. Pl. 2: 559 (1903, reprint 1963); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 10 (2002).

Vernacular names: *Dhutura, Dhutra*.

English name: Thorn apple.

Robust herb or undershrub. Leaves ovate to angular or broad-ovate. Flowers axillary, solitary, calyx tubular, corolla funnel-shaped, creamy-white or purplish or streaked with red or mauve. Fruit a globular capsule, deflexed when mature, with numerous conical tubercles, fruit base adorned with a collar of the persisting calyx. *Flowering and fruiting:* January - December. *Chromosome number:* $2n = 24$ (Fedorov, 1969). *Waste places, roadsides and fallow lands.*

Distribution: Probably of American origin, widely cultivated and naturalized in all tropical and subtropical regions, it is naturalized in Bangladesh.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 283 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 798 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1204 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2589 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3640 (DUSH).

Genus 266. **Lycopersicon** Mill., Gard. Dict. Abr. ed.: 4 (1754).

443. **Lycopersicon esculentum** Mill., Gard. Dict. ed. 8: no. 2 (1768); *Lycopersicum lycopersicon* (L.) Britton & Brown, Illustr. Fl. 3: 137 (1898); *Lycopersicon lycopersicum* (L.) Farwell, Ann. Rep. Commissioners Park & Boulevards Detroit 11: 84 (1900); *Solanum lycopersicum* L., Sp. Pl.: 185 (1753); Clarke in Hook. f., Fl. Brit. Ind. 4: 237 (1883); Prain, Beng. Pl. 2: 553 (1903, reprint 1963); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 12 (2002).

Vernacular names: *Belati-begun, Tomato*.

English name: Tomato.

Viscidly pubescent, branched, annual herb. Stem solid but weak and trailing. Leaves arranged spirally, imparipinnate, lyrate or sometimes only lobed, ovate, pinnae unequal. Inflorescence a cyme. Flowers bisexual, pendent, calyx with short tube of 5-8 sepals, persistent and enlarging on fruits, corolla with petals campanulate, yellow. Fruit a berry, depressed-globose, smooth or furrowed, sometimes oblong, juicy, brick-red to deep red or yellowish in colour, many-seeded. *Flowering and fruiting:* during winter season. *Chromosome number:* $2n = 12, 24, 36, 48$ (Fedorov, 1969). *Grown under cultivation in fields and homestead gardens.*

Distribution: A native of Central and South America, extensively cultivated throughout the world, including Bangladesh.

Status of occurrence: Cultivated.

Uses: Vegetable yielding plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1337 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1832 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2145 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2292 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3177 (DUSH).

Genus 267. **Nicotiana** L., Sp. Pl.: 180 (1753).*Key to species:*

- 1. Leaves both radical and cauline; calyx 7-8 mm long; filaments 20 mm long; capsule 8-10 mm long **Nicotiana plumbaginifolia**
- Leaves cauline; calyx 10-12 mm long; filaments 35 mm long; capsule c. 20 mm long **Nicotiana tabacum**

444. **Nicotiana plumbaginifolia** Viv., Elench, Pl. Hort. Dinegro: 26, t. 5 (1802); Clarke in Hook. f., Fl. Brit. Ind. 4: 246 (1883); Prain, Beng. Pl. 2: 559 (1903, reprint 1963); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 14 (2002).

Vernacular name: *Ban tamak*.

Annual herb. Leaves oblong, elliptic or ovate. Inflorescences of terminal racemes. Flowers greenish to white. Capsules oblong to ellipsoid. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Grows in waste places*.

Distribution: A native of Mexico and the West Indies, now introduced as a weed in many countries.

Status of occurrence: Common.

Specimens examined: Kapsia, Junglobari, 14.12.2009, R. Tabassum, 574 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 905 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1399 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2299 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2616 (DUSH); Kapasia, Voboner chala, 03.11.2013, R. Tabassum, 3578 (DUSH).

445. **Nicotiana tabacum** L., Sp. Pl.: 180 (1753); Clarke in Hook. f., Fl. Brit. Ind. 4: 245 (1883); Prain, Beng. Pl. 2: 559 (1903, reprint 1963). *Nicotiana virginica* Agardh (1819), *Nicotiana mexicana* Schlecht. (1840), *Nicotiana pilosa* Moc. & Sesse ex Dun (1852); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 15 (2002).

Vernacular name: *Tamak*.

English name: Tobacco.

Annual herb. Leaves oblong or elliptic, acute. Flowers borne in a terminal thyrsoid panicle, calyx tube cylindric-campanulate, corolla narrowly funnel-shaped, dilated upwards to a limb, rosy-white. Capsules conical, 2-valved, the greater part enclosed by the calyx. *Flowering and fruiting*: December - July. *Chromosome number*: $2n = 24, 48, 72$ (Fedorov, 1969). *Cultivated in dry lands*.

Distribution: Probably originated in North West Argentina and was domesticated in Central and South America more than 2000 years ago, and does not appear to exist anymore in a truly wild state. Now it is widely cultivated in countries with warm climate.

Status of occurrence: Cultivated.

Uses: Cured tobacco leaves are smoked, chewed or sniffed for their taste and flavor.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 114 (DUSH); Kapasia, Kandonia, 03.07.2010, R. Tabassum, 1529 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1580 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2572 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3140 (DUSH).

Genus 268. **Petunia** Juss., Ann. Mus. Par. 2: 215, t. 47 (1803).

446. **Petunia hybrida** Hort. ex Vilm., Fl. Pl. Terre. ed. 1: 615 (1865). Bailey, Stand. Cyclop. Hort. 3: 2565 (1950); Mathew, Fl. Palni Hills, S. Ind. 2: 868 (1998); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 16 (2002).

Vernacular name: *Petunia*.

English name: Petunia.

Viscidly pubescent annual herb. Leaves ovate to ovate-elliptic. Flowers white, purple, pink or violet. Fruit a cylindric capsule. *Flowering and fruiting:* February - June. *Chromosome number:* $2n = 21, 28$ (Fedorov, 1969). *Gardens.*

Distribution: Pantropical.

Status of occurrence: Cultivated.

Uses: An ornamental plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1388 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1466 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2300 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2571 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3180 (DUSH).

Genus 269. **Physalis** L., Sp. Pl.: 182 (1753).

Key to species:

- | | |
|---|--------------------------|
| 1. Corolla yellow; fruiting pedicel 3-8 mm; berry globose, 6 mm in diameter | Physalis minima |
| - Corolla pale yellow or white; fruiting pedicel 10-25 mm; berry 1.2 cm in diameter | Physalis angulata |

447. *Physalis angulata* L., Sp. Pl.: 183 (1753).

Vernacular name: *Fotka*. English names: Gooseberry, Hogweed, Balloon cherry.

Annual herb. Stem hollow, quadrangular. Leaves simple, alternate, ovate. Inflorescence solitary, axillary. Flowers greenish-chocolate, complete, bisexual, regular, actinomorphic, sepals 5, gamosepalous, flowering calyx greenish-violet, fruiting calyx green with purple ribs, petals 5, gamopetalous, pale yellow, with or without dark spots, spots chocolate in colour. Fruit a globose berry with 10 distinct angles, enveloped in the bladder-like enlarged calyx. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 24, 48$ (Fedorov, 1969). *Sunny to somewhat shaded fields, gardens, waste lands, fallow fields and along roadsides*.

Distribution: Native to tropical America, now distributed pantropically, including Malesia.

Status of occurrence: Common.

Notes: *Physalis angulata* L. is closely related to *P. minima* L. but can easily be differentiated by plant glabrous (not hairy as in *P. minima* L.), without dark spots at the base of petal tube (not dark spotted as in *P. minima* L.).

Uses: Medicinal plant.

Specimens examined: Kaliganj, Kalafata, 05.03.2010, R. Tabassum, 691 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2522 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3158 (DUSH); Gazipur Sadar, Etahata, 30.10.2013, R. Tabassum, 3424 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3685 (DUSH).

448. *Physalis minima* L., Sp. Pl.: 183 (1753); Hook. f., Fl. Brit. Ind. 4: 238 (1883); Prain, Beng. Pl. 2: 558 (1903, reprint 1963). *Physalis hermanni* Dunal (1852), *Physalis pubescens* Dunal (1852).

Vernacular names: *Fotka*, *Buntepuria*. English name: Insipid physalis.

Annual herb. Leaves simple, elliptic or ovate to ovate-lanceolate. Flowers solitary, axillary, calyx tube 5-toothed, teeth triangular, corolla yellow, usually with purple spots on the inner corolla base. Fruit a berry, ovoid, with 5 distinct angles, fruiting calyx enlarging to form almost globular bladder. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 48$ (Fedorov, 1969). *Shady, moist waste lands, roadsides and fallow lands*.

Distribution: A widely distributed weed in tropical parts of Asia, Africa and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 115 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 671 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 856 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2588 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3600 (DUSH).

Genus 270. **Solanum** L., Syst. ed. 1 (1735).

Key to species:

- | | | |
|----|---|--------------------------------|
| 1. | Plants armed with prickles | 2 |
| - | Plants unarmed | 6 |
| 2. | Calyx enlarged, closely enveloping most of berry | Solanum sisymbriifolium |
| - | Calyx hardly or not enlarged, not enveloping berry | 3 |
| 3 | Inflorescences mostly 1-3-branched; plants mostly more than 1 m | Solanum torvum |
| - | Inflorescences unbranched; plants mostly less than 1 m | 4 |
| 4. | Fruit more than 1.4 cm across; flowers mostly andromonoecious | Solanum melongena |
| - | Fruit less than 1.4 cm across; flowers mostly bisexual | 5 |
| 5. | Leaves soon glabrescent, deeply pinnately lobed; stems with copious, compressed, bright yellow, nearly straight prickles often more than 7 mm; anthers more than 7 mm; fruit yellow | Solanum virginianum |
| - | Leaves with persistent indumentum, entire, dentate, or shallowly lobed; stems unarmed or with recurved spines less than 5 mm; anthers mostly less than 7 mm; fruit red or orange | Solanum villosum |
| 6. | Annual. Underground stem tubers absent. Leaves entire to irregular dentate. Corolla limb 5-6 mm broad | 7 |
| - | Perennial. Underground stem tubers present. Leaves imparipinnate. Corolla limb 25 mm broad | Solanum tuberosum |

7. Anthers less than 1.5 mm; fruiting calyx strongly reflexed; fruit less than 8 mm in diam., shiny; corolla less than 5 mm **Solanum americanum**
- Anthers more than 2 mm; fruiting calyx reflexed or not; fruit mostly more than 8 mm in diam., somewhat shiny or dull; corolla more than 5 mm **Solanum nigrum**

449. **Solanum americanum** Mill., Gard. Dict. ed. 8: Solanum No. 5 (1768). *Solanum nodiflorum* Jacq. (1789).

Vernacular name: *Tit-begun*.

English name: Glossy nightshade.

Annual herb. Leaves ovate-lanceolate, entire. Inflorescence a simple umbel of usually 3-6 flowers. Flowers pedicillate, bisexual, pentamerous, actinomorphic, calyx connate at the base, lobes reflexed in fruits, corolla stellate, white with green base. Fruit a globose to ellipsoid, bluish-black or purplish-black when ripe. *Flowering and fruiting*: February -August. *Chromosome number*: $2n = 24$ (Sultana and Alam, 2007). *Moist shady places or open and disturbed places*.

Distribution: Most probably ariginates from South America, now it is found throughout tropical and warm temperate regions.

Status of occurrence: Common.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1065 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2314 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2414 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2540 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3124 (DUSH).

450. **Solanum melongena** L., Sp. Pl.: 186 (1753); Clarke in Hook. f., Fl. Brit. Ind. 4: 235 (1883); Prain, Beng. Pl. 2: 555 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 370 (1939-reprint 1982); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 23 (2002). *Solanum insanum* L. (1767), *Solanum coagulans* Forssk. (1775), *Solanum esculentum* Dunal (1833), *Solanum pressum* Dunal (1852).

Vernacular names: *Begun, Baigun*. English names: Aubergine, Brinjal, Egg plant.

Woody herb or undershrub. Leaves simple, alternate, blade ovate to ovate-oblong, densely stellate hairy. Flowers usually solitary or in 2-5 flowered cymes, some being sterile, calyx tubular-campanulate, corolla campanulate with deeply 5-6 lobes, stellately spreading, purplish-violet. Fruit a large pendent berry, depressed-globose to ellipsoid, ovoid or obovoid. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 24, 36, 48$ (Fedorov, 1969). *Cultivated in fields and homesteads*.

Distribution: A native of South Asia, now cultivated in all the warmer parts of the globe, including Bangladesh.

Status of occurrence: Cultivated.

Uses: Vegetable yielding plant.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 512 (DUSH); Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 816 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2341 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2465 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2546 (DUSH).

451. ***Solanum nigrum*** L., Sp. Pl.: 186 (1753); Clarke in Hook. f., Fl. Brit. Ind. 4: 229 (1883); Prain, Beng. Pl. 2: 554 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 366 (1939-reprint 1982); *Solanum rubrum* Roxb., Fl. Ind. ed. Carey 1: 565 (1832); *Solanum villosum* Lamk., Illust. 2: 18 (1811); *Solanum nodiflorum* Jack, Ic. Rar. 2: 326 (1781-1793); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 25 (2002).

Vernacular names: *Tit-begun*, *Kakmachi*.

English name: Black nightshade.

Annual herb. Leaves ovate or elliptic, margin entire or bluntly toothed. Inflorescence racemiform. Flowers campanulate, calyx tubular, lobes imbricate in buds, corolla stellate, white or rarely tinged with purple. Fruit a globose to ellipsoid berry, dull purplish-black with sepals adhering to it when ripe. *Flowering and fruiting:* January - December. *Chromosome number:* $2n = 72$ (Schilling and Anderson, 1990). *Moist shady places or open and disturbed places.*

Distribution: Throughout India, Pakistan and Sri Lanka.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 28 (DUSH); Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 419 (DUSH); Kapasia, Chonabari, 03.07.2010, R. Tabassum, 1531 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1579 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2393 (DUSH).

452. ***Solanum sisymbriifolium*** Lamk., Illust. 2: 25 (1797); Prain, Beng. Pl. 2: 555 (1903-reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 371 (1939, reprint 1982); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 26 (2002). *Solanum balbisii* Dunal (1825).

Vernacular name: *Kanta begun*.

English name: Prickly brinjal.

Viscoid and very prickly erect herb or undershrub. Leaves sinuately lobed or deeply pinnatifid, pinnae lobed. Racemes terminal or extra-axillary, spiny. Calyx prickly. Corolla white to bluish-white. Berries globose, scarlet, covered by enlarged and reflexed calyx lobes. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Grows in fallow lands, roadsides, river banks and by the railway embankments*.

Distribution: A native of tropical America at higher elevation, but naturalized in many other tropical countries.

Status of occurrence: Common.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1173 (DUSH); Kaligonj, Pubail, 23.08.2010, R. Tabassum, 1630 (DUSH); Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2626 (DUSH); Kaliakoir, Srinail, 01.10. 2013, R. Tabassum, 3201 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3692 (DUSH).

453. ***Solanum torvum*** Swartz, Nov. Gen. Sp. Pl. Prodr.: 47 (1788); Clarke in Hook. f., Fl. Brit. Ind. 4: 243 (1883-reprint 1973); Prain, Beng. Pl. 2: 555 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 369 (1939, reprint 1982); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 27 (2002). *Solanum ferrugineum* Jacq. (1798), *Solanum largiflorum* C. T. White (1917).

Vernacular names: *Gota begun*, English names: Devil's fig, Plate brush, Pea *Tit begun*. eggplant.

Shrub. Leaves alternate, solitary or in unequal pairs, blade ovate, usually coarsely and sinuously 7-lobed. Inflorescence a compact branched, 50-100 flowered corymb. Flowers bisexual, upper ones may be male, calyx lanceolate, stellately woolly, persistent, corolla white, sparsely hairy. Berries globular, yellowish, produced in cluster of few to 10. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Grows in waste places and along roadsides*.

Distribution: A native of Central and South America, but is now a pantropical weed. Occasionally it is cultivated, especially in South, South East and East Asia.

Status of occurrence: Common.

Uses: Tender, immature fruits are eaten raw or cooked as vegetable.

Specimens examined: Kaliganj, Kolafata, 29.04.2005, R. Tabassum, 230 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 864 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1167 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R.

Tabassum, 1765 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3648 (DUSH).

454. **Solanum tuberosum** L., Sp. Pl.: 185 (1753); Hook. f., Fl. Brit. Ind. 4: 229 (1883); Prain, Beng. Pl. 2: 554 (1903, reprint 1963); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 29 (2002).. *Solanum esculentum* Neck. (1768), *Solanum cultum* (A. DC.) Berth. (1911).

Vernacular names: *Alu, Gol alu*.

English name: Potato.

Unarmed, viscid tuberous herb. Leaves alternate, pinnate, pinnae dimorphic, longer ones elliptic, smaller ones sessile. Inflorescence a many-flowered cymose panicle. Flowers white or white suffused with pink or violet, typically with greenish-yellow central star pedicel, calyx campanulate, corolla subrotate to rotate-stellate. Fruit a subglobose berry, yellowish-green, poisonous. *Flowering*: January - March. *Chromosome number*: $2n = 24, 36, 48, 72, 96$ (Fedorov, 1969). *Dry lands*.

Distribution: Potato is now cultivated throughout the world.

Status of occurrence: Cultivated.

Uses: Vegetable yielding plant.

Specimens examined: Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 996 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1324 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1694 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1833 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2146 (DUSH).

455. **Solanum villosum** Mill., Gard. Dict. ed. 8. no. 2 (1768). *Solanum rubrum* Roxb. (1832).

Vernacular name: *Tit-begun*.

English name: Orange nightshade.

Annual herb. Leaves ovate or elliptic, bluntly toothed. Inflorescence an extra-axillary cyme of usually 5-8 flowers. Flowers bisexual, calyx connate at the base, corolla stellate, white with green base. Fruit a globose to ellipsoid berry, yellow or orange-red when ripe. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 48$ (Sultana and Alam, 2007). *Moist shady places or open and disturbed places*.

Distribution: Throughout India. Commonly distributed in all temperate and tropical parts of the world.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendropur Senanibash, 16.05.2008, R. Tabassum, 377 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 906 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1402 (DUSH); Kapasia, Voboner, 03.11.2013, R. Tabassum, 3553 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3818 (DUSH).

456. ***Solanum virginianum*** L., Sp. Pl.: 187 (1753). Hepper & Jaeger, Kew Bull, 41: 434 (1986); *Solanum surattense* Burm. f., Fl. Ind.: 57 (1768), *Solanum xanthocarpum* Schrad. & Wendl., Sert. Hanov. 1: 8, t. 2 (1795); Clarke in Hook. f., Fl. Brit. Ind. 4: 236 (1883); Prain, Beng. Pl. 2: 555 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam 3: 371 (1939-reprint 1982); Khan and Mia in Khan & Rahman (Eds.), Fl. Bangl. 53: 31 (2002).

Vernacular name: *Kantakari*.

English name: *Solanum*.

Very prickly diffuse herb. Leaves elliptic, very prickly, deeply pinnately lobed with sinuous outlines to the lobes. Inflorescence a lax, few-flowered cyme. Flowers very prickly, calyx prickly, stellate pubescent, not enlarged in fruits, corolla purplish-blue to violet. Fruit a spherical berry, white with green markings when young but light yellow or whitish when ripe. *Flowering and fruiting:* January - February. *Chromosome number:* $2n = 24$ (Fedorov, 1969). *Dry sunny places, on waste lands.*

Distribution: Throughout India, Pakistan, Sri Lanka, Myanmar and extending to South East Asia and tropical Australia.

Status of occurrence: Very common.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 284 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1296 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2837 (DUSH); Kaliakoir, Fulbari, 01.10.2013, 3365 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3625 (DUSH).

Family 82. **CONVOLVULACEAE** A. L. de Jussieu (1789)

Herbs, usually with creeping or twining stem, often with milky juice, sometimes woody, rarely shrubs or small trees. Leaves alternate, exstipulate, usually petiolate, entire or lobed and dissected. Inflorescence mostly cymose, usually bracteate and bracts often forming involucre. Flowers mostly actinomorphic, hermaphrodite, usually 5-merous, rarely 4-merous, often showy. Sepals 5, usually free, imbricate, often persistent, sometimes accrescent. Petals 5, in a gamopetalous corolla, campanulate or funnel-shaped, urceolate, salver-shaped or rarely rotate. Stamens 5, epipetalous, alternating with the corolla lobes, filaments often included or exserted, anthers oblong with usually longitudinal dehiscence. Ovary superior, mostly bicarpellary, 1-4 celled, rarely 3-celled, ovules usually 2 in each carpel, style 1, rarely 2, stigmas 2-4. Fruit a

capsule, sometimes a berry or baccate. Seeds with cartilaginous endosperm, cotyledons folded or crumpled.

The family Convolvulaceae consists of about 50 genera and 1,500 species, widespread in tropical and subtropical regions of the World. In Bangladesh, this family is represented by 15 genera and 55 species.

In the present study area this family is represented by 5 genera and 13 species.

Key to genera:

- | | |
|--|------------------|
| 1. Pollen pantoporate, finely spiny | 2 |
| - Pollen grains with various aperture types, never finely spiny | 3 |
| 2. Fruit dehiscent by 4 (or more) valves, sometimes tardily so | Ipomoea |
| - Fruit indehiscent, or at length eroding or irregularly breaking open | Argyreia |
| 3. Styles 2, free or united basally | Evolvulus |
| - Style 1, entire or with 2 minute branches concealed by stigmas | 4 |
| 4. Stigmas globular; calyx enlarged in fruit, often enclosing it | Merremia |
| - Stigmas elliptic, ovate-oblong, oblong, ovate, or linear, usually flattened; calyx not enlarged in fruit or outer 3 sepals somewhat enlarged, inner sepals less so | Hewittia |

Genus 271. **Argyreia** Lour., Fl. Cochinc.: 134 (1790).

457. **Argyreia nervosa** (Burm. f.) Boj., Hort. Maurit.: 224 (1837). *Convolvulus nervosus* Burm. f., Fl. Ind.: 48, t. 20, f. 1 (1768). *Argyreia speciosa* Sweet, Hort. Brit.: 289 (1827); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 185 (1883); Prain, Beng. Pl. 2: 551 (1903, reprint 1963); Kanjilal *et. al.*, Fl. Assam 3: 342 (1939).

Vernacular names: *Bara dudhi*, *Hris gandha*.

English name: Elephant creeper.

Large twiner, woody at the base. Stem densely whitish or fulvous-pubescent or tomentose. Leaves ovate to orbicular, base cordate. Inflorescence of axillary subcapitate cymes. Flowers pinkish purple to lavender with darker throat. Berries globose, yellowish-brown. *Flowering and fruiting*: May - December. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Grows in scrub jungles*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3978 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3989 (DUSH).

Genus 272. **Evolvulus** L., Sp. Pl. ed. 2 : 391 (1762).

458. **Evolvulus nummularis** (L.) L., Sp. Pl. ed. 2: 391 (1762); Prain, Beng. Pl. 2: 539 (1903, reprint 1963). *Convolvulus nummularis* L. (1753).

Prostrate perennial herb. Leaves broadly ovate to orbicular, apex rounded to slightly emarginated. Flowers 1-2 in axils, rarely more, white. Fruit a globose capsule, often reflexed at maturity. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 24$ (Fedorov, 1969). *Edges of fields, roadsides and embankments.*

Distribution: Africa, Malaysia and Myanmar.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 680 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 750 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2050 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2667 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3545 (DUSH).

Genus 273. **Hewittia** Wight & Arn., Madr. J. Sc. 1(5) : 22 (1837).

459. **Hewittia sublobata** (L. f.) O. Kuntze, Rev. Gen. Pl.: 441 (1891). *Convolvulus sublobatus* L. f. (1781), *Shuteria bicolor* Choisy (1833).

Slender, prostrate or twining perennial herb. Leaves ovate, margin often angular or lobed, base cordate or truncate. Flowers in leaf axils, pale yellow to white. Fruit a capsule, depressed globose. *Flowering and fruiting:* October - January. *Chromosome number:* $2n = 30$ (Fedorov, 1969). *Grows in secondary forests.*

Distribution: Tropical Africa, tropical Asia extending from the Indian subcontinent to Thailand, Malaysia, up to Northern China and Polynesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 150 (DUSH); Kaliganj, Khoraid, 05.03.2010, R. Tabassum, 718 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1106 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1430 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3014 (DUSH).

Genus 274. ***Ipomoea* L., Sp. Pl.: 159 (1753).***Key to species:*

- | | | |
|----|--|------------------------------------|
| 1. | Leaves not segmented | 2 |
| - | Leaf segments more numerous, linear or filiform | <i>Ipomoea quamoclit</i> |
| 2. | Sepals distinctly awned at or below apex; corolla salverform with a long narrow tube; stamens and pistil mostly exserted | <i>Ipomoea alba</i> |
| - | Sepals rounded to acuminate, emarginate, or mucronulate but never awned at or near apex; corolla mostly funnelform, or campanulate, sometimes salverform; stamens and pistil mostly included, sometimes exserted | 3 |
| 3. | Sepals hairy abaxially or with fimbriate or ciliate margin | 4 |
| - | Sepals glabrous, sometimes muricate or dentate on veins | 6 |
| 4. | Flowers clustered at peduncle apex (capitate), subtended by 1 or more involucre bracts | <i>Ipomoea pes-tigridis</i> |
| - | Flowers clustered at apex of peduncle or not, not distinctly involucre | 5 |
| 5. | Sepals long attenuate, or long and linear-acuminate apically, herbaceous; corolla bluish aging to pinkish | <i>Ipomoea nil</i> |
| - | Sepals acute, acuminate, or obtuse apically, mucronulate or not, not long attenuate, herbaceous, membranous, or leathery; corolla reddish, purplish, lilac to pink, or white | <i>Ipomoea batatas</i> |
| 6. | Plants of marshy places or aquatic; stems usually twining or repent | <i>Ipomoea aquatica</i> |
| - | Plants terrestrial or along the aquatic habitat; stems erect | <i>Ipomoea fistulosa</i> |

460. ***Ipomoea alba* L., Sp. Pl.: 161 (1753); J. Sinclair in Bull. Bot. Soc. 9(2): 101 (1956). *Ipomoea bona-nox* L. (1762), *Calonyction speciosum* Choisy (1883).**

Vernacular name: *Dudhkolmi*. English names: The moon flower, Tropical white morning-glory.

Twiner with milky juice. Leaves long petioled, lamina ovate to oblong or orbicular, entire or 3-lobed, base cordate. Flowers one to several in axillary cymes, white. Fruit a capsule, ovoid, 4-valved with a persisting stylar base. *Flowering and fruiting:*

throughout the year. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Gardens and forests where it is naturalized*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 11.04.2003, R. Tabassum, 203 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 669 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1476 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2481 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3229 (DUSH).

461. ***Ipomoea aquatica*** Forssk., Fl. Aeg.-Arab.: 44 (1755); Clarke in Hook. f., Fl. Brit. Ind. 4: 210 (1883); J. Sinclair in Bull. Bot. Soc. 9(2): 101 (1956). *Ipomoea reptans* Poir. in Lamk., Encycl. Suppl. 3: 460 (1814); Prain, Beng. Pl. 2: 547 (1903, reprint 1963); R. L. Heinig, List Chittagong: 45 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 58 (1953).

Vernacular name: *Kalmi shak*. English names: Swamp cabbage, Water spinach, Swamp morning-glory.

Perennial, trailer on mud or floating on water, branchlets succulent; stem usually hollow, rooting at the nodes. Leaves ovate, ovate-oblong, deltoid, lanceolate or linear, base cordate, sagittate or hastate. Flowers 1 to few, in axillary cymes, pink or pale lilac with deeper throats, rarely white. Fruit a capsule, ovoid to globose, persistent, calyx embracing the fruit. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Wet lowlands, ponds, tanks or ditches*.

Distribution: Circumtropical.

Status of occurrence: Common.

Uses: Leaves and young shoots constitute a good vegetable.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 286 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1207 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2745 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3333 (DUSH).

462. ***Ipomoea batatas*** (L.) Lamk., Tabl. Encycl. 1: 465 (1791); Hook. f., Fl. Brit. Ind. 4: 202 (1883); Prain, Beng. Pl. 2: 547 (1903, reprint 1963); R. L. Heinig, List Chittagong: 45 (1925). *Convolvulus batatus* L. (1753).

Vernacular names: *Misti aloo, Lomba aloo, Ranga aloo*. English name: Sweet potato.

Trailer. Root tuberous, white or pink. Leaves pedately 3-5 lobed, ovate to orbicular, entire, angular or lobed, base cordate or truncate. Flowers 1 to several in axillary cymes, pale violet with deeper throats. Fruit a capsule, ovoid, rarely formed. *Flowering and fruiting*: December - May. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Prefer to grow in sandy-loamy soil*.

Distribution: A native of America, now cultivated throughout the tropics and subtropics.

Status of occurrence: Cultivated.

Uses: The root tubers are edible and leaves are taken as cooked vegetable.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 513 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2307 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2462 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2790 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3356 (DUSH).

463. ***Ipomoea fistulosa*** Mart. ex Choisy in DC., Prodr. 9: 349 (1845). *Batatas crassicaulis* Benth. (1845), *Ipomoea crassicaulis* (Benth.) B. L. Robinson (1916).

Vernacular name: *Dhol kolmi*.

Shrub with milky juice. Leaves ovate to ovate-oblong, base cordate to truncate, acuminate. Flowers few to many in axillary and terminal cymes, pink or pale lilac, dark purple inside towards the base. Fruit not seen. *Flowering*: throughout the year. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Fallow lands, roadsides and sides of water bodies*.

Distribution: Tropical Africa and Asia, elsewhere cultivated for flowers or naturalized.

Status of occurrence: Very common.

Uses: Cultivated as hedge plant.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1073 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1911 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2221 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2285 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3020 (DUSH).

464. ***Ipomoea nil*** (L.) Roth, Cat. Bot. 1: 36 (1797); Prain, Beng. Pl. 2: 546 (1903, reprint 1963). *Convolvulus nil* L. (1762), *Ipomoea hederacea* sensu C. B. Clarke (1888).

Vernacular name: *Nil kalmi*. English names: Indian jalap, White-edge morning glory.

Twiner. Leaves broadly ovate to orbicular, entire to 3-lobed, base cordate, apex acuminate. Flowers 1 to several in axillary umbellate cymes, pale or bright blue, gradually turning red or reddish-purple with age, rarely white. Capsule globose, 3-valved. *Flowering and fruiting*: October - December. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Gardens*.

Distribution: Circumtropical distribution.

Status of occurrence: Cultivated.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 917 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1699 (DUSH).

465. ***Ipomoea pes-tigridis*** L., Sp. Pl.: 162 (1753); Hook. f., Fl. Brit. Ind. 4: 204 (1883); Prain, Beng. Pl. 2: 546 (1903, reprint 1963).

Vernacular name: *Languli lata*. English name: Tiger's foot morning glory.

Annual twiner. Leaves palmately divided up to the base with 5-9 segments, segments elliptic to elliptic-oblong. Flowers few in head-like involucre axillary cymes, white. Capsule ovoid. *Flowering and fruiting*: May - August. *Chromosome number*: $2n = 28, 30$ (Fedorov, 1969). *Secondary forests*.

Distribution: From East tropical Africa and Mascarene Islands through Asia up to Malaysia.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimen examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 409 (DUSH).

466. ***Ipomoea quamoclit*** L., Sp. Pl.: 159 (1753); Hook. f., Fl. Brit. Ind. 4: 199 (1883); Prain, Beng. Pl. 2: 548 (1903, reprint 1963). *Quamoclit vulgaris* Choisy (1834), *Quamoclit pinnata* Boj. (1837).

Vernacular names: *Taru lata*, English names: Cypress vine, Cardinal vine,
Kunja lata, *Gate phul*. Star glory.

Annual twiner. Leaves pinnately cut up to the midrib into many pairs of linear to filiform patent segments. Flowers 1 to few in axillary cymes with long peduncles, red. Capsule with longitudinally splitting valves. *Flowering and fruiting*: July - September.

Chromosome number: $2n = 30$ (Fedorov, 1969). *Gardens, also runs wild near hedges and waste places.*

Distribution: Circumtropical.

Status of occurrence: Common.

Uses: Ornamental garden plant, also used as medicine.

Specimens examined: Tongi, Dighir chala, 19.08.13, R. Tabassum, 2752 (DUSH); Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3979 (DUSH).

Genus 275. **Merremia** Dennst., Sch. Hort. Malab.: 34 (1818).

Key to species:

- | | |
|--|---------------------------|
| 1. Sepal margins purplish; leaves linear, oblong-lanceolate, ovate-oblong, or ovate, entire, base truncate, rounded, auriculate, or hastate | Merremia hirta |
| - Sepal margins not colored; leaves ovate or ovate-cordate, entire, coarsely crenate, or 3-lobed, base cordate or broadly cordate | 2 |
| 2. Outer sepals glabrous, all sepals broadly obovate to spatulate or oblong, apex emarginate and distinctly mucronate, mucro directed outward; corolla 0.6-1 cm; stems, petioles, and pedicels tuberculate | Merremia hederacea |
| - Outer sepals usually pilose abaxially, all sepals broadly obovate to circular, apex emarginate, not or only slightly mucronulate; corolla 1.5-2 cm; stems, petioles, and pedicels without tubercles | Merremia umbellata |

467. **Merremia hederacea** (Burm. f.) Haillier f., Bot. Jahrb. 18: 118 (1894); Prain, Beng. Pl. 2: 543 (1903, reprint 1963); R. L. Heinig, List Chittagong: 45 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 101 (1956). *Evolvulus hederaceus* Burm f., Fl. Ind.: 77, t. 30, f. 2 (1768). *Ipomoea chryseides* Ker-Gawl., Bot. Reg.: t. 270 (1818); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 206 (1883).

Vernacular name: *Kaladana*.

Twiner, sometimes prostrate. Leaves ovate, entire or crenate to shallowly or deeply 3-lobed. Flowers 1 to several in axillary dichasial or monochasial cymes, yellow. Capsules broadly conical to depressed-globular, slightly 4-angled, 4-valved. *Flowering*

and fruiting: October - January. *Chromosome number:* $2n = 30$ (Kumar and Subramaniam, 1986). *Grows in secondary forests.*

Distribution: From tropical Africa and Mascarene Islands to tropical Asia from the Himalayas southwards to Sri Lanka and eastwards through Myanmar, Southern China, Thailand and Malaysia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 336 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 641 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 713 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1123 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 19.08.2013, R. Tabassum, 2909 (DUSH).

468. **Merremia hirta** (L.) Merr., Philip. J. Sc. 7: 244 (1912). *Convolvulus hirtus* L. (1753), *Convolvulus caespitosus* Roxb. (1824), *Ipomoea linifolia* Blume (1825); Hook. f., Fl. Brit. Ind. 4: 205 (1883); Prain, Beng. Pl. 2: 543 (1903, reprint 1963).

Slender twiner, rarely prostrate. Leaves very variable in shape, linear, linear-oblong, oblong-lanceolate, oblong, ovate to ovate-oblong, or even sometimes orbicular to subquadrate. Flowers 1 to few in axillary cymes, pale yellow or whitish. Capsules more or less globular, 4-valved. *Flowering and fruiting:* September - November. *Grows in secondary forests.*

Distribution: From the Indian subcontinent eastwards to China, Thailand, Malaysia, and extending up to Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 456 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 739 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2053 (DUSH).

469. **Merremia umbellata** (L.) Hallier f., Bot. Jahrb. 16: 552 (1893); Prain, Beng. Pl. 2: 542 (1903, reprint 1963); R. L. Heinig, List Chittagong: 45 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 101 (1956). *Convolvulus umbellatus* L. (1753), *Ipomoea cymosa* (Desr.) R. Br. & Sch. (1819); Hook. f., Fl. Brit. Ind. 4: 211 (1883).

Vernacular names: *Sada kalmi*, *Kali pata* (Santal).

Herbaceous or woody twiner, sometimes prostrate. Leaves oblong or lanceolate. Flowers few to many in axillary, umbelliform cymes, white. Capsule 4-valved,

splitting from the base. *Flowering and fruiting*: February - May. *Edges of forests and village thickets*.

Distribution: From tropical East Africa and Seychelles through the Indian subcontinent and extending to China, Thailand and Malaysia.

Status of occurrence: Common.

Uses: Roots are used in fever by *Santal*.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 803 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2071 (DUSH); Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2552 (DUSH).

Family 83. CUSCUTACEAE Dumortier (1829)

Plants parasite, rootless with thread-like herbaceous stems, stem twining on host plant which they obtain nourishment by means of haustoria. Leaves reduced to small functionless scales. Flowers more or less cymosely clustered, mostly gamopetalous, ebracteate. Calyx lobes 4-5, imbricate. Corolla lobes 4-5, subglobose, imbricate. Stamens 4-5, epipetalous and inserted in the throat of corolla, alternate with petals. Gynoecium 2, styles distinct or united, stigmas capitate, ovary 2-locular. Fruit a dry or fleshy dehiscent capsule.

The family Cuscutaceae consists of a single genus *Cuscuta* with about 150 species, best developed in the warmer regions of the New world. In Bangladesh, this family is represented by 6 species.

In the present study area the family is represented by 2 species.

Genus 276. *Cuscuta* L., Sp. Pl.: 124 (1753).

Key to species:

- | | |
|------------------------|----------------------------------|
| 1. Style 1 or obsolete | <i>Cuscuta reflexa</i> |
| - Styles 2 | <i>Cuscuta campestris</i> |

470. ***Cuscuta campestris*** Yuncker, Mem. Torrey Bot. Club: 138 (1932). Khan & Halim in Bang. J. Bot. 19(2): 103-105 (1990); Khan and Khanam in Rahman & Khanam (Eds.), Fl. Bangladesh 55: 2 (2003).

Vernacular name: *Swarnalata*.

English name: Western field dodder.

Herbaceous twining parasite with slender, filiform, greenish-yellow stem. Leaves reduced to minute scales. Flowers creamy-white, arranged in compact cymose clusters.

Fruit a capsule, with the withered corolla at its base, not circumscissile. *Flowering and fruiting*: April - September. *Herbs and associated climbers where it grows as parasite*.

Distribution: Native to the United States and India

Status of occurrence: Seems to be rare.

Specimen examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3883 (DUSH).

471. **Cuscuta reflexa** Roxb., Cor. Pl. 2: 3, t. 104 (1798); Hook. f., Fl. Brit. Ind. 4: 225 (1883-reprint 1973); Prain, Beng. Pl. 2: 537 (1903, reprint 1963); Yuncker, Mem. Torrey Bot. Club: 259 (1932); Khan and Khanam in Rahman & Khanam (Eds.), Fl. Bangladesh 55: 4 (2003).

Vernacular name: *Swarnalata*.

English name: Giant dodder.

Branches stout, fleshy, forming dense yellow masses on low trees and shrubs. Flowers 5-merous, in lax racemes, subracemose, also clustered or subspicate, white. Capsules circumscissile near the base, 4-seeded. *Flowering and fruiting*: August - March. *Chromosome number*: $2n = 28, 32$ (Kumar and Subramaniam, 1986). *Grows on low trees and shrubs as parasite*.

Distribution: Throughout India, Sri Lanka and Malaysia

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaligonj Kolafata, 05.03.2010, R. Tabassum, 663 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1074 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1697 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2073 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3032 (DUSH).

Family 84. **MENYANTHACEAE** Dumortier (1829)

Perennials or annuals with rootstocks or horizontal creeping rhizomes. Leaves simple, alternate, linear to orbicular or trifoliate, with sheathing petioles, exstipulate. Flowers solitary or in racemes, branched cymes or in dense heads or clusters, unisexual or bisexual, regular. Sepals 5 or 4, united to the base, persistent in fruits. Petals 5 or 4, yellow, white or pink. Stamens 5 or 4, united to the base of the corolla tube and alternate with the corolla lobes. Carpels 2, united, ovary superior. Fruit a capsule.

The family Menyanthaceae consists of 5 genera and about 35 species, distributed in the warmer regions of the New world. In Bangladesh, this family is represented by a single genus with 4 species.

In the present study area this family is represented by 2 species.

Genus 277. **Nymphoides** Seguiet, Pl. Veron 3: 121 (1754).

Key to species:

1. Leaves densely glandular and abaxially scabrous;
corolla white with a yellow center **Nymphoides indica**
- Leaves glabrous on both surfaces; corolla pure
white **Nymphoides hydrophylla**

472. **Nymphoides hydrophylla** (Lour.) O. Kuntze, Rev. Gen. Pl. 2: 429 (1891). *Menyanthes hydrophylla* Lour., Fl. Coch. 1: 129 (1790); *Nymphoides cristatum* (Roxb.) O. Kuntze, Rev. Gen. Pl. 2: 429 (1891); Khan & Halim, Aqua. Angios. Bangl.: 28 (1987); *Menyanthes cristata* Roxb., Pl. Cor. 2: 3, t. 105 (1798); *Limnanthemum cristatum* Griseb., Gen. & Sp. Gent.: 342 (1839); Clarke in Hook. f., Fl. Brit. Ind. 4: 131 (1883); Prain, Beng. Pl. 2: 527 (1903, reprint 1963).

Floating annual herb. Leaves orbicular, deeply cordate, purplish with green veins. Sepals 5, divided almost to the base. Petals 5, glabrous, with a broad longitudinal crest down the middle of each lobe. Capsule broadly ovoid or subglobose. *Flowering and fruiting:* October - February. *Chromosome number:* $2n = 18, 36$ (Fedorov, 1969). *Generally along the margins of lakes, ponds, beels, haors and jheels.*

Distribution: From India to China.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Sitpara, 01.12.2000, R. Tabassum, 23 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 511 (DUSH); Kaliakoir, Chandra, 05.03.2010, R. Tabassum, 800 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 3040 (DUSH); Kaliganj, Bortula, 02.11.2013, R. Tabassum, 3221 (DUSH).

473. **Nymphoides indicum** (L.) O. Kuntze, Rev. Gen. Pl.: 429 (1891); Khan & Halim, Aqua. Angios. Bangl.: 28 (1987); *Menyanthes indica* L., Sp. Pl.: 145 (1753); *Limnanthemum indicum* (L.) Griseb. *emend.* Thw., Enum. Pl. Zeyl.: 205 (1860); Clarke in Hook. f., Fl. Brit. Ind. 4: 131 (1883); Prain, Beng. Pl. 2: 527 (1903, reprint 1963).

Vernacular names: *Panchuli, Chandmalla.*

English name: Water snowflake.

Floating annual herb. Leaves orbicular, deeply cordate, with obtuse basal lobes and a triangular sinus and with somewhat sinuate margin. Flowers appearing above the water between the basal lobes of leaf, sepals 5, divided at the base, petals 5, densely clothed with long cottony papillose hairs, not crested down the middle. Fruits subglobose. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 16, 18$ (Kumar and Subramaniam, 1986). *Margins of tanks, lakes, pools, rivers, beels and jheels*.

Distribution: From Mascarene Islands, Afghanistan, throughout India, Sri Lanka, extending up to Malaysia, Australia and Fiji Isles.

Status of occurrence: Common.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 180 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 781 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1126 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3727 (DUSH).

Family 85. **HYDROPHYLLACEAE** R. Brown (1817)

Annual or perennial herbs, rarely shrubs. Leaves alternate or opposite, often radical, entire or pinnately, rarely palmately divided. Flowers regular, bisexual, usually pentamerous, in cymose, often helicoid inflorescence, sometimes flowers solitary and axillary. Sepals 5. Petals 5, tubular or funnel-shaped. Stamens usually 5, mostly epipetalous, alternate with petals, often with scale-like appendages at the bases, anthers 2-celled. Carpels 1 or 2, ovary superior, rarely sub-inferior, 1-locular with 2 parietal placentae, styles 1 or 2, stigmas more or less capitate. Fruits mostly loculicidal or septicidal capsules. Seeds minute, often carunculate, variously sculptured, with fleshy endosperm.

The family Hydrophyllaceae is represented by about 20 genera and 265 species, distributed throughout the World except Australia. In Bangladesh, this family is represented by a single genus with a single species.

Genus 278. **Hydrolea** L., Sp. Pl. ed. 2: 328 (1762).

474. **Hydrolea zeylanica** (L.) Vahl, Symb. Bot. 2: 46 (1791). Hook. f., Fl. Brit. Ind. 4: 133 (1883); Prain, Beng. Pl. 2: 528 (1903, reprint 1963); Khan and Huq in Khan (Ed.), Fl. Bangladesh 1: 4 (1972). *Nama zeylanica* L., Sp. Pl.: 226 (1753).

Vernacular names: *Kasschara*, *Ishalanguli*.

English name: Waterleaf.

Annual, prostrate to semierect herb. Leaves lanceolate, entire. Inflorescence of axillary cymes. Flowers regular, 5-merous, blue. Fruit a septicidal capsule, globose. *Flowering*

and fruiting: October - March. *Chromosome number:* $2n = 18, 24$ (Kumar and Subramaniam, 1986). *Shallow water, near ditches or moist muddy places.*

Distribution: Widely distributed in Africa, Malaysia, India and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 922 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1427 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1772 (DUSH); Kaligonj, Gudara Ghat 02.01.2013, R. Tabassum, 2259 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3557 (DUSH).

Family 86. **BORAGINACEAE** A. L. de Jussieu (1789)

Usually herbs, less often shrublets or trees, usually bristly or scabrous hairy with tubercled base. Leaves simple, alternate or very rarely opposite, exstipulate. Inflorescence usually in scorpioid cymes, rarely solitary. Flowers bisexual, actinomorphic, rarely zygomorphic. Calyx 5-lobed, imbricate, rarely valvate, persistent. Corolla 5-lobed, gamopetalous, salver-shaped, funneliform or campanulate. Stamens as many as the corolla lobes and alternate with them, anthers opening by longitudinal slits. Ovary superior, 4-locular by false septum, ovules nearly anatropous or semi-anatropous, style terminal or gynobasic. Fruit drupe or nutlet, 1-4 seeded. Seeds erect or oblique, cotyledons flat, fleshy.

The family Boraginaceae consists of about 100 genera and about 2,000 species, of cosmopolitan distribution, but especially well-developed in Western North America and in the Mediterranean region, eastward into Asia. In Bangladesh, it is represented by 9 genera and 20 species.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

- | | | |
|----|--|---------------------|
| 1. | Herb; style divided into a basal sterile terete portion and an upper conical portion; stigma 1 | Heliotropium |
| - | Tree; style usually 2-cleft, rarely entire; stigmas 2 | Ehretia |

Genus 279. **Ehretia** L., Syst. ed. 10: 936 (1759).

475. **Ehretia serrata** Roxb., Fl. Ind. ed. 2: 340 (1824); Hook. f., Fl. Brit. Ind. 4: 141 (1883); Prain, Beng. Pl. 2: 533 (1903, reprint 1963). *Ehretia pyrifolia* D. Don (1825), *Ehretia ovalifolia* Hassk. (1844), *Cordia thyrsoiflora* Sieb. & Zucc. (1889).

Vernacular names: *Kulaja, Kala-huja, Kiat-goa.*

Medium-sized, semi-evergreen to deciduous tree. Leaves simple, alternate, lamina elliptic or elliptic-oblong, margin sharply serrate. Inflorescence axillary or terminal panicles, dense, pyramidal. Flowers small, numerous, white, fragrant. Fruit a drupe or berry, very small, globose to ellipsoid, yellow to orange-red or nearly black when ripe. *Flowering and fruiting:* February - July. *Village thickets and forests.*

Distribution: A native of India, distributed in Myanmar to Japan and Pakistan.

Status of occurrence: Seems to be rare.

Uses: Timber is used for light furniture.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3884 (DUSH); Kapasia, Sanmania, 14.12.2013, R. Tabassum, 3910 (DUSH).

Genus 280. **Heliotropium** L., Sp. Pl. 1: 130 (1753).

476. **Heliotropium indicum** L., Sp. Pl. 1: 130 (1753); Hook. f., Fl. Brit. Ind. 4: 152 (1883); Prain, Beng. Pl. 2: 532 (1903, reprint 1963); R. L. Heinig, List Chittagong: 44 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 100 (1956). *Heliotropium velutinum* DC. ()1845.

Vernacular names: *Hatisur, Hatisura.*

English name: Indian heliotrope.

Erect, annual herb. Stem woody at the base, densely scabrous hairy. Leaves simple, lower opposite and upper sub-opposite to alternate, lamina ovate or ovate-oblong, margin slightly undulate, hirsute above and densely pubescent beneath. Inflorescence curved, terminal or leaf-opposed, scorpioid, spike-like, monochasial or one-sided cymes, the lower flowers opening first. Flowers white or pale violet-blue, mauve. Fruits of 2 oboid, deeply lobed and beaked cocci or nutlets. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 22, 24, 64$ (Kumar and Subramaniam, 1986). *Open waste places, sandy river banks, sides of canals, drains, ditches or the bank of streams, roadsides of village thickets, and sometimes in harvested rice fields.*

Distribution: A native of tropical America, now widespread in all tropical regions of the world.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 476 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1291 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1574 (DUSH); Kaliakoir, Hijoltoli,

13.09.2013, R. Tabassum, 2990 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3749 (DUSH).

Family 87. **VERBENACEAE** Jaume St.-Hilaire (1805)

Herb, shrubs and woody climbers, sometimes trees without pneumatophores, often with extensive buttresses at the base. Leaves mostly decussate-opposite, sometimes whorled, alternate, exstipulate. Inflorescence of axillary to terminal, rarely cauliflorous or epigeous, racemes or cymes. Flowers hypogynous. Calyx campanulate, tubular to salver-form, persistent, sepals usually 4, gamosepalous. Corolla funnel or salver-shaped, petals 4 or 5, gamopetalous. Stamens mostly 4, sometimes 5, staminodes often present. Gynoecium mostly bi-carpellate, sometimes 4- or 5-carpellate, syncarpous, one carpel sometimes aborted, ovary mostly somewhat 4-lobed. Fruits drupaceous with 2 or 4 stones or very often of 1-seeded, separating nutlets or sometimes a 2-valved or 4-valved capsules. Seeds with a straight, oily embryo.

The family Verbenaceae consists of about 100 genera and 2600 species, mostly pantropical, a few are limited to temperate regions. In Bangladesh, this family is represented by 19 genera and 68 species.

In the present study area this family is represented by 10 genera and 14 species.

Key to genera:

- | | | |
|----|---|----------------|
| 1. | Leaves digitately compound (rarely 1- foliolate) | Vitex |
| - | Leaves simple, rarely deeply pinnatisect | 2 |
| 2. | Inflorescence indefinite and centripetal, spicate or racemiform, rarely capitate | 3 |
| - | Inflorescence indefinite and centrifugal, cymes mostly congested, paniced, umbellate, thyrsoid or a head, rarely reduced to a single flower when axillary | 6 |
| 3 | Inflorescence spicate or subcapitate, elongating in fruit; flowers sessile or subsessile | 4 |
| - | Inflorescence racemiform, elongated; flowers pedicellate | Duranta |
| 4. | Pyrenes 1-loculed, 1-seeded, separating | 5 |
| - | Pyrenes 2-loculed, 2-seeded, not separating | Lantana |
| 5. | Herbs trailing and rooting at nodes, not odorous | Phyla |
| - | Erect under shrub, not rooting at nodes, odorous | Lippia |

6.	Corolla regular. Stamens 4-6, equal	7
-	Corolla irregular. Stamens 4, didynamous	8
7.	Fruiting calyx not inflated; drupe usually composed of four or five 1-celled, 1-seeded pyrenes	Callicarpa
-	Fruiting calyx usually conspicuously inflated; drupe composed of one 4-celled pyrene	Tectona
8.	Drupe composed of one 4-celled pyrene	9
-	Drupe composed of four 1-celled pyrenes	Clerodendrum
9.	Corolla-tube usually short, cylindrical	Vitex
-	Corolla-tube large mostly infundibuliform and greatly enlarged above	Gmelina

Genus 281. **Callicarpa** L., Sp. Pl. ed. 1(1): 111 (1753).

477. **Callicarpa arborea** Roxb., Fl. Ind. 1: 405 (1820). Hook. f., Fl. Brit. Ind. 4: 570 (1885); Prain, Beng. Pl. 2: 618 (1903, reprint 1963).

Vernacular names: *Bormala*, *Khoja*, *Makanchi*.

Small to medium-sized, evergreen or deciduous tree. Leaves simple, ovate to narrowly oblong or elliptic-lanceolate. Inflorescence axillary peduncled cymes. Flowers small, pale purple or lilac, calyx sub-truncate, corolla pale purple. Drupes 1-seeded pyrenes, purple when ripe. *Flowering and fruiting*: May - November. *Plai lands, roadside jungles and village thickets*.

Distribution: India, Myanmar, South China, Indo-China and Malaysia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 760 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1780 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2392 (DUSH).

Genus 282. **Clerodendrum** Burm. ex L., Gen. Pl. ed. 1: 186 (1737).

Key to species:

1.	Leaves tri-lobed, base hastate	Clerodendrum hastatum
----	--------------------------------	------------------------------

- Leaves not lobed, base not hastate 2
- 2. Corolla tube 5 cm or longer; leaves in whorls of 3-5 **Clerodendrum indicum**
- Corolla tube less than 5 cm; leaves opposite 3
- 3. Leaves elliptic-oblong or spatulate, not more than 7 cm long; inflorescences 3-10-flowered **Clerodendrum inerme**
- Leaves cordate-ovate, more than 10 cm long; inflorescences more than 10-flowered **Clerodendrum viscosum**

478. **Clerodendrum hastatum** C. B. Clarke in Hook. f., Flora Brit. Ind. 4: 595 (1885). *Siphonanthum hastata* Roxb. (1814).

Large shrub. Leaves simple, opposite, often in very unequal pairs, hastate, ovate or oblong, lobed or angled. Inflorescence terminal, corymbiform panicles. Flowers bracteates, calyx dull greenish-white to pinkish, corolla white. Fruit a drupem purplish-black, succulent, seated on the much accrescent red calyx. *Flowering and fruiting*: May - February. *Margins of forests*.

Distribution: India.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3980 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3992 (DUSH).

479. **Clerodendrum indicum** (L.) O. Kuntze, Revis. Gen. Pl. 2: 506 (1891); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956). *Siphonanthum indica* L., Sp. Pl. 109 (1753).

Vernacular names: *Bamunhatti*, English names: Indian tube flower, Indian glory *Bonchat*. bower.

Annual shrub. Leaves simple, sessile, whorls, narrowly lanceolate or oblong-lanceolate. Inflorescence terminal panicles, consisting of few-flowered verticillate cymes. Flowers white to creamy-white, calyx campanulate, corolla tubular. Fruit a drupe, purple, become bluish-black, enclosed partly by the enlarged calyx. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 48$ (Kumar and Subramaniam, 1986). *Fallow and waste lands, roadsides and village thickets*.

Distribution: India, Nepal and Myanmar extending to Malaya, Indo-China, north to southern China and Indonesia, naturalized to Madagascar, West Indies to the New Guines.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1096 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1419 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2837 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3153 (DUSH).

480. **Clerodendrum inerme** (L.) Gaertn., Fruct. Sem. Pl. 1: 271 (1788); Hook. f., Fl. Brit. Ind. 4: 589 (1885); Prain, Beng. Pl. 2: 623 (1903, reprint 1963); R. L. Heinig, List Chittagong: 52 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 104 (1956). *Volkameria inermis* L. (1753), *Clerodendron inerme* R. Br. ex Spreng. (1825).

Vernacular names: *Banjui, Batraj, Bakri.*

English name: Glory bower.

Erect to scandent or sometimes trailing shrub. Leaves simple, opposite, elliptic-ovate or ovate-lanceolate. Inflorescence of axillary, trichotomous cymes. Flowers white, calyx copular, corolla tubular. Fruit a drupe, pear-shaped. *Flowering and fruiting:* almost throughout the year but mainly from July - November. *Chromosome number:* $2n = 46$ (Raman and Kesavan, 1963). *Planted.*

Distribution: Indigenous to the sea coasts of India extending to Polynesia, introduced and naturalized along sea shores of Myanmar, Australia and China.

Status of occurrence: Common.

Uses: Hedge and medicinal plant.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3981 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3993 (DUSH).

481. **Clerodendrum viscosum** Vent., Jard. Malm. 1: 25, Pl. 25 (1803); J. Sinclair in Bull. Bot. Soc. 9 (2): 104 (1956). *Clerodendron infortunatum* Gaertn., Fruct. 1: 271, t. 57, f. 1 (1788); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 594 (1885); Prain, Beng. Pl. 2: 623 (1903, reprint 1963); R. L. Heinig, List Chittagong: 52 (1925).

Vernacular names: *Bhat, Ghetuphul, Chetu, Bhetu (Koch).*

Shrub. Leaves simple, decussate-opposite, ovate. Inflorescence terminal, trichotomous, pyramid-shaped panicle. Flowers white, calyx bright green, tubular, corolla white, tubular. Drupes globular, at first green, become bluish-black when mature with red

persistent calyx. *Flowering and fruiting*: January - July. *Chromosome number*: $2n = 48$ (Gajapathy, 1961). *Fallow lands, roadsides and village thickets*.

Distribution: India, Myanmar, Thailand, China, Indonesia, Sri Lanka and the Philippines.

Status of occurrence: Common.

Uses: Leaves are used in ulcer by *Koch*.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 138 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 665 (DUSH); Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 813 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2025 (DUSH).

Genus 283. **Duranta** L., Sp. Pl. ed. 1: 637 (1753).

482. **Duranta repens** L., Sp. Pl. 1: 637 (1753). *Duranta erecta* L. (1753), *Duranta plumieri* Jacq. (1763); Prain, Beng. Pl. 2: 617 (1903, reprint 1963); R. L. Heinig, List Chittagong: 51 (1925), *Duranta dentata* Rich. ex Pers. (1806).

Vernacular names: *Kantamehedi*, English names: Golden dewdrop, Heliotrope bush.

Extremely variable and polymorphic, erect to subscandent shrub to small tree. Leaves simple, decussate-opposite, very variable in shape, size and texture. Inflorescence of axillary to terminal raceme. Flowers blue, lilac, violet, light violet to lavender or purple. Fruit a globose drupe, orange or orange-yellow, enclosed by the accrescent, beaked, persistent calyx. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 16$ (Kumar and Subramaniam, 1986). *Along the roads and margins of the garden, even everywhere as planted*.

Distribution: A native of South America and West Indies, naturalized in many parts of tropical Africa, Asia and Australia.

Status of occurrence: Common.

Uses: In general, planted as hedge and outdoor ornamental plant in gardens, roadsides, boundary margin of the house and vegetable garden of private houses for protection.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 106 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 903 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1782 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3084 (DUSH).

Genus 284. **Gmelina** L., Sp. Pl.: 226 (1753).

483. **Gmelina arborea** Roxb., Pl. Corom. 3: 41 (1819); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 581 (1885); Prain, Beng. Pl. 2: 619 (1903, reprint 1963); R. L. Heinig, List Chittagong: 51 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 103 (1956). *Premna arborea* (Roxb.) Roth (1825), *Gmelina tomentosa* Wall. (1831), *Gmelina rheedii* Hook. (1848).

Vernacular names: *Gamari*, English names: Candahar tree, Comb tree, Snapdragon tree, White teak.

Deciduous tree. Leaves simple, opposite, decussately arranged, broadly ovate. Inflorescence of terminal panicles of decussate cymes. Flowers yellowish-brown, calyx 5-toothed, corolla brownish-yellow. Fruit a drupe, eggs ovoid, black. *Flowering and fruiting*: February - July. *Chromosome number*: $2n = 36, 38$ (Kumar and Subramaniam, 1986). *Grows in mixed deciduous forests*.

Distribution: Native of Pakistan, Bhutan and India, distributed in Myanmar, Thailand to Indo-china, Malaya, Indonesia, introduced in many parts of Africa and South America.

Status of occurrence: Cultivated.

Uses: Timber yielding plant.

Specimens examined: Kaligonj, Nagorick, 05.03.2002, R. Tabassum, 175 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 361 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1115 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3154 (DUSH); Kapasia, Kandunia, 03.11.2014, R. Tabassum, 3743 (DUSH).

Genus 285. **Lantana** L., Sp. Pl. 2: 628 (1762).

484. **Lantana camara** L., Sp. Pl. 2: 625 (1753); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 562 (1885); Prain, Beng. Pl. 2: 615 (1903, reprint 1963); R. L. Heinig, List Chittagong: 51 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 61 (1953). *Lantana aculeata* L. (173), *Lantana scabrida* Soland ex Ait. (1789).

Vernacular names: *Guiagonda*, English names: Lilac lantana, English sagebush. *Lantana*.

Prickly evergreen, rambling or straggling shrub. Leaves simple, opposite-decussate, ovate to ovate-oblong. Inflorescence axillary to terminal umbellate or peduncled heads. Flowers mostly yellow, turning to red, later on scarlet. Fruits berry-like drupe, shining dark green but nearly black when ripe. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 22, 28, 32, 34, 36, 38, 44, 66$ (Kumar and Subramaniam, 1986). *Grows in waste places, roadsides and margins of forests*.

Distribution: Native of tropical America and naturalized in many tropical and subtropical regions.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2182 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2547 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3155 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3682 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3845 (DUSH).

Genus 286. **Lippia** L., Sp. Pl. 2: 633 (1762).

485. **Lippia alba** (Mill.) Briton *et* Wilson, Sci. Surv. Puerto Rico. Vergin 6: 141 (1925). *Lantana alba* Mill. (1768), *Lippia geminata* H. B. & K. (1818); Hook. f., Fl. Brit. Ind. 4: 563 (1885); Prain, Beng. Pl. 2: 616 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9(2): 103 (1956).

Vernacular names: *Pichas-lakri*, *Pichas-bon*.

Strongly aromatic shrub or undershrub. Leaves simple, opposite, ovate-lanceolate or lanceolate. Inflorescence axillary, cylindric, sub-capitate spikes. Flowers light to rosy-pink, calyx ovoid-campanulate, corolla light violet with yellow throat. Fruits globose, with a dry epicarp. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 30$ (Bose and Choudhury, 1960). *Mostly low-laying areas along the banks of the rivers, canals and ponds, sometimes fallow lands of village thickets.*

Distribution: India and Myanmar.

Status of occurrence: Common.

Uses: Flood resistant shrub, it may be used in embankment to protect soil erosion.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 80 (DUSH); Kaliganj, Kolafata, 29.04.2005, R. Tabassum, 227 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 337 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2717 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3592 (DUSH).

Genus 287. **Nyctanthes** L., Gen. ed. 1: 333 (1737).

486. **Nyctanthes arbor-tristis** L., Sp. Pl.: 6 (1753); Hook. f., Fl. Brit. Ind. 3: 603 (1882); Prain, Beng. Pl. 1: 486 (1903, reprint 1963); R. L. Heinig, List Chittagong : 40 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956).

Vernacular names: *Sheuli*, English names: Night-flowering jasmine, Sorrowful tree. *Shefali*.

Large shrub. Leaves opposite, ovate to ovate-oblong. Inflorescence cymose-paniculate, on hairy quadrangular peduncles. Flowers very fragrant, opening during night, calyx narrowly campanulate, corolla tube cylindrical, orange-red, lobes white. Fruit a capsule, obovate. *Flowering and fruiting*: August - January. *Cultivated in gardens and homesteads*.

Distribution: Subtropical Himalaya, India, Pakistan and Myanmar.

Status of occurrence: Cultivated.

Uses: It is used as a garden plant but also medicinally important.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2410 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2746 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3156 (DUSH); Sripur, Boherar chala, 21.10.2013, R. Tabassum, 3381 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3696 (DUSH); Sripur, Banglahola, 02.12.2013, R. Tabassum, 3860 (DUSH).

Genus 288. **Phyla** Lour., Fl. Cochinch. ed. 1: 66 (1790).

487. **Phyla nodiflora** (L.) Greene, Pittonia 4: 46 (1899). *Verbena nodiflora* L. (1753), *Verbena capitata* Forssk. (1775), *Lippia nodiflora* (L.) Rich. (1803); Hook. f., Fl. Brit. Ind. 4: 563 (1885); Prain, Beng. Pl. 2: 616 (1903, reprint 1963); R. L. Heinig, List Chittagong: 51 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 103 (1956).

Vernacular names: *Bhuiokra*, English names: Cape-weed, Fog fruit, Link weed. *Bakkam*.

Perennial, creeping herb. Leaves simple, decussate-opposite, variable, obovate. Inflorescence axillary, cylindric spike. Flowers small, white, rarely pinkish. Fruits ovate, sub-compressed, enclosed by the persistent calyx. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 34, 36$ (Kumar and Subramaniam, 1986). *Open wastelands in moist and damp soils, lawns, beaches, dry riverbeds, edge of ponds and Jheels, village thickets, fellow waste lands, especially in poorly drained soil*.

Distribution: Tropical and subtropical regions of the world.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 529 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 854 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1594 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R.

Tabassum, 2487 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2637 (DUSH).

Genus 289. **Tectona** L. f., Suppl.: 151 (1781).

488. **Tectona grandis** L. f., Suppl.: 151 (1781); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 570 (1885); Prain, Beng. Pl. 2: 618 (1903, reprint 1963); R. L. Heinig, List Chittagong: 51 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 61; J. Sinclair in Bull. Bot. Soc. 9 (2): 103 (1956).

Vernacular names: *Shegun, Teak*.

English: The teak tree.

Large deciduous tree. Leaves opposite, broadly elliptic. Inflorescence large, terminal panicles. Flowers small, white. Drupes subglobose to tetragonally flattened, 1-4 seeded. *Flowering and fruiting*: July - November. *Chromosome number*: $2n = 24, 36$ (Kumar and Subramaniam, 1986). *Planted along roadsides, parks and gardens*.

Distribution: Native of Myanmar and India, distributed to Thailand, Malaya, widely cultivated almost in all tropical countries of Africa and Asia.

Status of occurrence: Common.

Uses: Timber yielding plant.

Specimens examined: Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 814 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1674 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1763 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2012 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3552 (DUSH).

Genus 290. **Vitex** [Tourn.] L., Sp. Pl. ed. 1: 635 (1753).

Key to species:

- | | |
|--|---------------------------|
| 1. Large tree; inflorescences axillary, subtended by normal leaves; flowers white | Vitex peduncularis |
| - Shrub or small tree; inflorescences terminal, not subtended by normal leaves; flowers blue | Vitex negundo |

489. **Vitex negundo** L., Sp. Pl.: 638 (1753); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 583 (1885); Prain, Beng. Pl. 2: 622 (1903, reprint 1963); R. L. Heinig, List Chittagong: 52 (1925). *Vitex paniculata* Lamk. (1788).

Vernacular names: *Nishinda*, *Bara-* English name: Indian privet, Chinese *nishinad*. chaste tree.

Large shrub to small tree. Leaves digitately 3-5 foliolate, leaflets lanceolate. Inflorescence elongated terminal panicles. Flowers purplish-blue or bluish. Drupes ovoid, purplish-black when ripe. *Flowering and fruiting*: April - February. *Chromosome number*: $2n = 24, 26, 28, 32, 34$ (Kumar and Subramaniam, 1986). *Grows open waste places, sides of streams, along the boundary margin of the dwelling houses and gardens*.

Distribution: India, Nepal. Bhutan, Indo-China, West Asia, North Africa, Malaysia and Myanmar.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Khudabon, 26.03.2008, R. Tabassum, 281 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1202 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1554 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2705 (DUSH), Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2980 (DUSH).

490. ***Vitex peduncularis*** Wall. ex Schauer in A. DC., Prodr. 11: 687 (1847). Hook. f., Fl. Brit. Ind. 4: 587 (1885); Prain, Beng. Pl. 2: 622 (1903, reprint 1963); *Vitex alata* Roxb. (1832).

Vernacular names: *Arsol*, *Awal*, *Baruna*, *Horina*.

Small tree. Leaves 3-foliate, leaflets lanceolate. Inflorescence panicles, long peduncled. Flowers greenish-white. Drupes cuboid-globose, black. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 34$ (Kumar and Subramaniam, 1986). *Grows in mixed forests*.

Distribution: Cambodia, India, Laos, Myanmar, Nepal, Thailand and Vietnam.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 117 (DUSH); Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 192 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 982 (DUSH).

Family 88. **LAMIACEAE** Lindley (1836)

Mostly herbs and undershrubs, usually covered with hairs and glands, scented. Stem quadrangular. Leaves simple, opposite, sometimes in whorls, and exstipulate. Inflorescence of fascicled cymes forming verticillasters, but in many cases compound

into spurious spicate, racemose, capitate or paniced. Flowers mostly zygomorphic, bisexual, bracteate, usually axillary, sometimes in pairs. Calyx persistent, more or less regular or unequally 4 to 5-toothed or lobed, tubular or 2-lipped. Corolla limbs 5, rarely 4, mostly 2-lipped and bilabiate. Stamens usually 4 and didynamous, filaments sometimes hairy, anthers basifixed. Ovary superior, consisting of 2 carpels, styles simple, stigmas usually 2-fid, ovule solitary in each cell. Fruits consisting of 4 dry or rarely fleshy, 1-seeded schizocarp of nutlets which remain enclosed in the persistent calyx. Seeds small, more or less exalbuminous, seed-coat usually deteriorated.

The family Lamiaceae consists of about 200 genera and 3200 species, cosmopolitan in distribution. In Bangladesh, this family is represented by 34 genera and 86 species.

In the present study area this family is represented by 8 genera and 14 species.

Key to genera:

- | | | |
|----|--|-------------------|
| 1. | Corolla 5 mm long or more | 2 |
| - | Corolla less than 5 mm long | 6 |
| 2. | Upper lip of corolla very short or absent; nutlets with a prominent oblique or lateral attachment scar | Ajuga |
| - | Upper lip of corolla present; nutlets with a basal attachment scar | 3 |
| 3 | Calyx teeth 8-10, equal or unequal | Leucas |
| - | Calyx teeth 5, subequal | 4 |
| 4 | Stamens $\pm$ clearly exserted beyond corolla lobes; staminal filaments densely villous | Anisomeles |
| - | Stamens not exserted beyond corolla lobes; staminal filaments glabrous, phase or villous | 5 |
| 5 | Thecae, when mature, unilocular | Hyptis |
| - | Thecae 2-locular | Leonurus |
| 6 | All verticillasters borne in axils of the middle and upper leaves | Mentha |
| - | Only the lowermost or none of the verticillasters borne in upper leaf axils | 7 |
| 7. | Upper lobe of calyx 1, large, entire, with decurrent margins; lower lobe of calyx with 4 teeth; stamens 4. | Ocimum |
| - | Upper lobe of calyx shortly 3-toothed, not decurrent; lower lobe of calyx with 2 teeth; stamens 2. | Salvia |

Genus 291. **Ajuga** L., Sp. Pl.: 561 (1753).

491. **Ajuga macrosperma** Wall. ex Benth. in Wall., Pl. As. Rar. 1: 58 (1830). Hook. f., Fl. Brit. Ind. 4: 704 (1885); Prain, Beng. Pl.: 643 (1903, reprint 1963); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 225 (1940); Press in Hara *et al.*, Enum. Fl. Pl. Nepal, 3: 149 (1982); Khanam & Hassan, Fl. Bangl. 58: 8 (2008); *Ajuga repens* Roxb., Fl. Ind. ed. Carey: 459 (1832-reprint 1874).

Variable herb, procumbent, rooting at the nodes. Leaves ovate-oblong or obovate, sinuate-crenate. Inflorescence in terminal spikes, whorls continuous or interrupted; flowers blue. Nutlets deeply rugosely pitted. *Flowering and fruiting*: October - December. *Chromosome number*: $2n = 16, 32$ (Kumar and Subramaniam, 1986). *Grows in dry forest floors*.

Distribution: India, Bhutan and Myanmar.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 13 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1288 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3077 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3705 (DUSH).

Genus 292. **Anisomeles** R. Br., Prodr.: 503 (1810).

492. **Anisomeles indica** (L.) O. Kuntze., Rev. Gen.: 512 (1891); Khanam & Hassan, Fl. Bangl. 58: 12 (2008). *Nepeta indica* L., Sp. Pl.: 571 (1753); *Anisomeles ovata* R. Br. in Ait., Hort. Kew. ed. 2: 3 (1811); Hook. f., Fl. Brit. Ind. 4: 672 (1885); Prain, Beng. Pl.: 637 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam, 3: 512 (1939); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 152 (1940).

Vernacular name: *Gobura*.

Erect, annual, aromatic herb. Leaves broadly ovate, acute, crenate-serrate. Inflorescence axillary, densely spicate in whorls. Flowers pink. Nutlets obovate. *Flowering and fruiting*: October - July. *Chromosome number*: $2n = 34, 40$ (Kumar and Subramaniam, 1986). *Grows in dry places, especially forest edges and along roadsides*.

Distribution: Tropical and subtropical India, Sri Lanka to Malay Peninsula, China and the Philippines.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Mirer Bazar, 14.03.2008, R. Tabassum, 242 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1176 (DUSH); Gazipur Sadar, Rajendrapur

Sal forest, 04.02.2011, R. Tabassum, 1753 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3092 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3481 (DUSH).

Genus 293. **Hyptis** Jacq., Collect. 1: 101, 103 (1787).

Key to species:

- | | |
|--|--------------------------|
| 1. Cymes (1- or) 2-5-flowered, inserted in axils of gradually reduced leaves, in racemes or panicles | Hyptis suaveolens |
| - Verticillasters many flowered, in capitula or spikes | 2 |
| 2. Capitula ca. 1.5 cm in diam.; peduncles 5-10 cm | Hyptis capitata |
| - Capitula ca. 1 cm in diam.; peduncles 0.5-1.6 cm | Hyptis brevipes |

493. **Hyptis brevipes** Poit. in Ann. Mus. Pairs 7 : 465 (1806). Hook. f., Fl. Brit. Ind. 4: 630 (1885); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 63 (1940); van Steenis (Ed.), Fl. Malesiana, 8(3): 369 (1978); Khanam & Hassan, Fl. Bangl. 58: 34 (2008).

Erect robust herb. Leaves lanceolate to oblanceolate, serrate, alternate with acute or acuminate tip. Inflorescence spurious heads, axillary or sometimes terminal heads. Flowers white. Nutlets dark brown in colour. *Flowering and fruiting*: during winter season. *Dry soil in the forests*.

Distribution: India, the Philippines, Malay Peninsula, tropical Africa and America (native).

Status of occurrence: Common.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 344 (DUSH); Kaliakoir, Shohag Polly 09.05.2010, R. Tabassum, 971 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1238 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1587 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1754 (DUSH).

494. **Hyptis capitata** Jacq., Sine Descr. et Anal. Inval. Coll. 1: 102 (1786). Prain, Beng. Pl. 2: 633 (1903, reprint 1963); Benth., Lab. Gen. et Sp.: 104 (1832); van Steenis (Ed.), Fl. Malesiana, 8(3): 369 (1978); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 63 (1940); Khanam & Hassan, Fl. Bangl. 58: 35 (2008).

Erect, annual herb. Leaves ovate-oblong, narrowed and decurrent on the petiole. Inflorescence in globose heads. Flowers white with violate dotted. Fruit nutlets.

Flowering and fruiting: November - June. *Chromosome number*: $2n = 30$ (Fedorov, 1969). *Dry soil in the open places*.

Distribution: Throughout India, the Philippines and tropical America (native).

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 367 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 539 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 692 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 792 (DUSH); Sripur, Garabon, 21.09.2013, R. Tabassum, 2152 (DUSH).

495. **Hyptis suaveolens** (L.) Poit., Ann. Mus. Par. 7: 472, t. 29 (1806); Hook. f., Fl. Brit. Ind. 4: 630 (1885); Prain, Beng. Pl.: 633 (1903, reprint 1963); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 63 (1940); Khanam & Hassan, Fl. Bangl. 58: 36 (2008). *Ballota suaveolens* L., Syst. Nat. ed. 10: 1100 (1759).

Vernacular names: *Gonged tulshi, Bilati tulsi, Tokma*.

English name: Hyptis.

Aromatic annual herb. Leaves variable in shape and size, mostly broadly ovate. Inflorescence with flowers more or less second in short umbel-like cymes, terminal or axillary, sometimes in panicles or even flowers solitary. Flowers bluish. Nutlets ovoid, blackish-brown. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 28, 32$ (Kumar and Subramaniam, 1986). *Grows in dry loose soil, occasionally moist, shady places*.

Distribution: A native of tropical America, but now naturalized in Africa, India, Myanmar, Thailand, Malaysia, Philippines and Taiwan.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2509 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2597 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3084 (DUSH).

Genus 294. **Leonurus** L., Sp. Pl.: 584 (1753).

496. **Leonurus sibiricus** L., Sp. Pl.: 584 (1753); Hook. f., Fl. Brit. Ind. 4: 678 (1885); Prain, Beng. Pl. 2: 638 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam, 3: 523 (1939); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 193 (1940); Cramer in Dassanayake & Fosberg (Eds.), Rev. Handb. Fl. Ceylon, 3: 188 (1981); Khanam & Hassan, Fl. Bangl. 58: 43 (2008).

Vernacular name: *Roktodron*.

English name: Motherwort.

Erect, stout herb. Leaves petiolate, lower lamina broadly ovate, truncate, palmatisect, upper ones narrower, lobes less divided. Inflorescence of axillary whorls, dense-flowered. Flowers dull red, often white. Nutlets smooth, triquetrous, truncate. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *A common weed growing profusely in waste places*.

Distribution: India, Myanmar, tropical Asia, Africa and America.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Chamundi, 29.04.2005, R. Tabassum, 237 (DUSH); Sripur, Bokul, 21.06.2010, R. Tabassum, 1172 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1755 (DUSH); Kaliakoir, Hijoltoli, 3.09.2013, R. Tabassum, 2980 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3620 (DUSH).

Genus 295. **Leucas** Burm. ex R. Br., Prodr.: 504 (1810).

Key to species:

1. Verticillasters 2-2.5 cm in diam., many flowered; calyx tube conspicuously ribbed adaxially **Leucas aspera**
- Verticillasters less than 1.5 cm in diam., few flowered; calyx tube not conspicuously ribbed adaxially **Leucas indica**

497. **Leucas aspera** (Willd.) Link., Enum. Hort. Berol. 2: 113 (1822); Hook. f., Fl. Brit. Ind. 4: 690 (1885); Prain, Beng. Pl.: 639 (1903, reprint 1963); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 166 (1940); Khanam & Hassan, Fl. Bangl. 58: 46 (2008); *Phlomis aspera* Willd., Enum. Hort. Berol. 2: 621 (1809).

Vernacular names: *Choto halkusa*, *Shetodron*, *Dondokalosh*, *Duba* (Koch).

Erect or diffuse, annual herb. Leaves oblong-lanceolate, often entire or slightly serrate. Inflorescence with terminal and axillary whorls, very dense and many-flowered. Flowers white. Nutlets obovoid-oblong, brownish black. *Flowering and fruiting*: throughout the year, but abundantly during the winter. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Usually grows in dry soils*.

Distribution: Throughout the Indian subcontinent extending from Punjab to Assam and southwards up to Peninsular India.

Status of occurrence: Common.

Uses: Flowers are used to treat cold in children by *Koch*.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 81 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1061 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1666 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2629 (DUSH); Kaliakoir, Ful bari, 01. 10.2013, R. Tabassum, 3318 (DUSH).

498. **Leucas indica** (L.) R. Br. ex Vatke in Oesterr., B. Zeits. 25: 95 (1875). Press in Hara *et al.* (Eds.), Enum. Fl. Pl. Nepal. 3: 156 (1982); Khanam & Hassan, Fl. Bangl. 58: 50 (2008); *Leonurus indicus* L., Syst. ed. 10: 1101 (1760); *Leucas lavandulifolia* Sm. in Recs. Cycl.: 20. n. 2 (1819); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 167 (1940); *Phlomis linifolia* Roth., Nov. Sp.: 260 (1821); *Leucas linifolia* (Roth.) Spreng., Syst. 2: 743 (1825); Hook. f., Fl. Brit. Ind. 4: 690 (1885); Prain, Beng. Pl.: 639 (1903, reprint 1963).

Vernacular names: *Dondokalosh*, *Hal-kusha*, *Shetodron*.

English name: *Leucas*.

Erect or diffuse, aromatic annual herb. Leaves linear or narrowly oblong-lanceolate or elliptic-lanceolate, acute. Inflorescence whorls terminal and axillary, very dense and many-flowered. Flowers white. Nutlets obovoid-oblong, brownish black. *Flowering and fruiting:* throughout the year, but abundantly during the winter. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Grows in cultivated lands, roadsides and waste palces.*

Distribution: India and Myanmar.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 172 (DUSH); Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 921 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1120 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2613 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3604 (DUSH).

Genus 296. **Mentha** L., Sp. Pl.:576 (1753).

499. **Mentha arvensis** L., Sp. Pl.: 577 (1753). Hook. f., Fl. Brit. Ind. 4: 648 (1885); Kanjilal *et al.*, Fl. Assam, 3: 517 (1939); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 86 (1940); Press in Hara *et al.* (Eds.), Enum. Fl. Pl. Nepal. 3: 158 (1982); Khanam & Hassan, Fl. Bangl. 58: 57 (2008).

Vernacular name: *Pudina*.

English name: Japanese mint.

Strongly scented perennial herb. Leaves petiolate, lamina elliptic-lanceolate, serrate, acute, pubescent on dorsal surface and on the nerves of the ventral surface. *Flowering*

and fruiting: not on record. *Chromosome number*: $2n = 12, 60, 72$ (Darlington and Wylie, 1955). *Grows in moist soil*.

Distribution: Widely distributed from Europe to China.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1014 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1220 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1659 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2559 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3079 (DUSH).

Genus 297. **Ocimum** L., Sp. Pl.: 597(1753).

Key to species:

- | | |
|---|---------------------------|
| 1. Posterior filaments edentate at base | Ocimum tenuifolium |
| - Posterior filaments dentate at base | 2 |
| 2. Shrubs; fruiting calyx pendulous; posterior tooth broadly obovate, with narrow, slightly decurrent marginal wings; lateral teeth narrow, slightly wider than anterior teeth, approximate, forming a 2-spinescent lower lip | Ocimum gratissimum |
| - Herbs; fruiting calyx appressed reflexed; posterior tooth circular, with marginal broad wings decurrent to middle of calyx; lateral teeth triangular to broadly obovate, apex acute; anterior teeth 2, narrow, nearly not approximate | 3 |
| 3. Leaves narrowly ovate, 1-1.7 cm × 5-10 mm, adaxially green, abaxially gray-green; corolla 3-4 mm | Ocimum americanum |
| - Leaves ovate to ovate-oblong, 2.5-5 × 1-2.5 cm, green; corolla ca. 6 mm | Ocimum basilicum |

500. **Ocimum americanum** L., Cent. Pl. 1: 15 (1755). Keng, Gard. Bull. Singapore, 24: 126 (1969) and in van Steenis (Ed.), Fl. Malesiana, 8(3): 376 (1978); Press in Hara *et al.* (Eds.), Enum. Fl. Pl. Nepal. 3: 160 (1982); Khanam & Hassan, Fl. Bangl. 58: 64 (2008); *Ocimum canum* Sims., Bot. Mag., t. 2452 (1823); Hook. f., Fl. Brit. Ind. 4: 607 (1885);

Prain, Beng. Pl. 2: 629 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam, 3: 500 (1939); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 17 (1940).

Vernacular name: *Bon tulshi*.

English name: Rosary ocimum.

Erect, aromatic, annual herb. Leaves elliptic-lanceolate. Inflorescence of terminal spiciform cymes. Flowers white. Nutlets narrowly elliptic, black. *Flowering and fruiting*: June - February. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Grows in moist places and often forming ruderal vegetation*.

Distribution: From tropical Africa, Madagascar, and western Asia to Indian subcontinent, Indonesia and China.

Status of occurrence: Common.

Uses: Medicinal plant

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 125 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 540 (DUSH); Kaligonj, Khoraid, 05.03.2010, R. Tabassum, 722 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 823 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1665 (DUSH).

501. **Ocimum basilicum** L., Sp. Pl.: 597 (1753); Hook. f., Fl. Brit. Ind. 4: 608 (1885); Prain, Beng. Pl. 2: 629 (1903, reprint 1963); Kanjilal *et al.*, Fl. Assam, 3: 500 (1939); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 18 (1940); Khanam & Hassan, Fl. Bangl. 58: 65 (2008); *Ocimum caryophyllatum* Roxb., Fl. Ind. ed. Carey : 463 (1832, reprint 1874).

Vernacular name: *Babui tulsi*.

English name: Common basil.

Herbaceous plant. Leaves petiolate, lamina elliptic-lanceolate, acuminate. Inflorescence simple or branched, whorls with 6-8 flowers. Flowers white. Nutlets elliptic, brownish-black, pitted. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 16, 48$ (Kumar and Subramaniam, 1986). *Grows in moist places*.

Distribution: Throughout South Asia reaching eastwards up to China, Formosa and Polynesia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Shahag Polly, 09.05.2010, R. Tabassum, 739 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1456 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2910 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3748 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3857 (DUSH).

502. **Ocimum gratissimum** L., Sp. Pl.: 1197 (1753); Hook. f., Fl. Brit. Ind. 4: 608 (1885); Prain, Beng. Pl. 2: 629 (1903, reprint 1963); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 20 (1940); Khanam & Hassan, Fl. Bangl. 58: 67 (2008).

Vernacular name: *Raam tulsi*.

English name: Shrubby basil.

Tall shrub. Leaves petiolate, lamina ovate, acute, coarsely crenate-serrate. Inflorescence simple or branched, whorls with 6-8 flowers. Nutlets subglobose, brown. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 40, 48, 64$ (Fedorov, 1969). *Grows in dry lands*.

Distribution: Distributed in the tropics of Africa, America and Asia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1789 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2104 (DUSH); Kaligonj, Gudara Ghat 02.01.2013, R. Tabassum, 2251 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2510 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2946 (DUSH).

503. **Ocimum tenuiflorum** L., Sp. Pl.: 597 (1753). Keng in van Steenis (Ed.), Fl. Malesiana, 8(3): 376 (1978); Press in Hara *et al.* (Eds.), Enum. Fl. Pl. Nepal. 3: 160 (1982); Khanam & Hassan, Fl. Bangl. 58: 68 (2008); *Ocimum sanctum* L., Ment. 1: 85 (1757); Hook. f., Fl. Brit. Ind. 4: 609 (1885); Prain, Beng. Pl. 2: 629 (1903, reprint 1963); *Geniosporum tenuiflorum* (L.) Merr. in Phil. Journ. Sc. 19: 379 (1921).

Vernacular names: *Kalo tulsi, Tulsi*.

English name: Sacred basil.

Aromatic perennial herb. Leaves petiolate, lamina broadly elliptic, serrate. Inflorescence branched, hirsute, whorls with 6-8 flowers. Flowers white, often purplish. Nutlets subglobose, pale brown or reddish with small markings. *Flowering and fruiting*: throughout the year, but flowering more noticeable in winter. *Chromosome number*: $2n = 64$ (Fedorov, 1969). *Gardens, especially near temples and dwellings*.

Distribution: Throughout the Old tropics, extending from Arabia to Malay Peninsula, China and Japan up to Pacific Islands and Australia.

Status of occurrence: Common.

Uses: Leaves are used in cold.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 282 (DUSH); Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 457 (DUSH); Kapasia,

Torgao, 14.12.2009, R. Tabassum, 541 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1203 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3332 (DUSH).

Genus 298. **Salvia** L., Sp. Pl.: 23 (1753).

504. **Salvia plebeia** R. Br., Prodr. Fl. Nov. Holl.: 500 (1810); Hook. f., Fl. Brit. Ind. 4: 655 (1885); Prain, Beng. Pl. 2: 642 (1903, reprint 1963); Mukerjee, Rec. Bot. Surv. Ind. 14(1): 111 (1940); Khanam & Hassan, Fl. Bangl. 58: 92 (2008).

Vernacular name: *Bhui-tulsi*.

Aromatic herb. Leaves elliptic, lanceolate, crenate to serrate. Inflorescence with whorls in panicles of slender spicate racemes. Flowers white. Nutlets minute, ovoid, brown. *Flowering and fruiting*: March - June. *Chromosome number*: $2n = 16, 20$ (Kumar and Subramaniam, 1986). *Waste places, sometimes sandy soil along the bank of rivers*.

Distribution: Afghanistan, India, and extending eastwards up to Malaysia, China and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 954 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2406 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2893 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3693 (DUSH).

Family 89. **OLEACEAE** Hoffman. & Link (1813-1820)

Evergreen or deciduous trees, shrubs or woody climbers. Leaves opposite or rarely alternate, simple or pinnately compound, trifoliate or unifoliate. Inflorescence terminal or axillary, cymose, paniculate, racemose-decussate, subumbellate or fasciculate, sometimes flowers solitary. Flowers perfect, regular, small, hermaphrodite, unisexual or androdioecious. Calyx usually 4-lobed, rarely the calyx absent. Corolla 4-lobed, rarely up to 12-lobed. Stamens usually 2, rarely 4. Ovary superior, 2-locular, most commonly 2 ovules in each locule, sometimes 1-4, borne on axile placentas, styles terminal, stigmas 2-lobed or subcapitate. Fruit a capsule, drupe, berry or samara, loculicidal or circumscissile, often 1-seeded. Seeds with a straight, spathulate embryo.

The family Oleaceae consists of some 30 genera and about 600 species, mostly distributed in Asia but also found cosmopolitan in distribution. In Bangladesh, it is represented by 6 genera and 20 species.

In the present study area this family is represented by a single genus with 4 species.

Genus 299. **Jasminum** L., Sp.Pl. 1: 7 (1753).

Key to species:

- | | | |
|----|--|------------------------------|
| 1. | Leaves compound, trifoliolate or pinnate | 2 |
| - | Leaves simple | 3 |
| 2. | Calyx teeth 1 mm long | Jasminum auriculatum |
| - | Calyx teeth nearly as long as the corolla tube, 5-15 mm long | Jasminum grandiflorum |
| 3. | Flowers in terminal cymes, glabrous, often double | Jasminum sambac |
| - | Flowers in terminal or axillary cymes, pubescens, often single | Jasminum scandens |

505. **Jasminum auriculatum** Vahl., Sym. Bot. 3: 30 (1794); Hook. f., Fl. Brit. Ind. 3: 600 (1882); Prain, Beng. Pl. 1: 486 (1903, reprint 1963).

Vernacular names: *Jui, Juthi*.

English name: Jasmine.

Scandent shrub or vine. Leaves opposite, unifoliolate or trifoliolate, leaflets narrowly elliptic to ovate or broadly ovate. Inflorescence terminal or with subsidiary axillary shoots from the axils of the uppermost leaves, cymose paniculate, subcorymbose, 12 to many-flowered. Calyx tube tomentose or pubescent, lobes 4-5. Corolla hypocrateriform, white. *Flowering and fruiting*: not on record. *Chromosome number*: $2n = 26$ (Mukherjee, 1981). *Grows in forests, scrublands and grasslands, also planted*.

Distribution: Peninsular India and Thailand.

Status of occurrence: Cultivated.

Uses: Ornamental and also medicinal plant.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 660 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1180 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1819 (DUSH); Kapasia, Amrayid, 09.03.2012, R. Tabassum, 2131 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3814 (DUSH).

506. **Jasminum grandiflorum** L., Sp. Pl.: ed. 2, 9 (1762). *Jasminum officinale* L. var. *grandiflorum* (L.) Kobuski (1932).

Vernacular names: *Chameli*, English names: Spanish jasmine, Catalanian jasmine. *Chamelica*.

Scandent or subscandent shrub. Leaves opposite, pinnatipartite or compound, leaflets 6-11, the terminal one larger than the rest, rhomboid-ovate or ovate-lanceolate, the lateral ovate. Inflorescence in lax, axillary or terminal cymes, 2-9 flowered. Flowers white, often tinged with pink, fragrant, calyx 5-lobed, corolla salver-shaped. Fruit an ovoid berry. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 26$ (Fedorov, 1969). *Grown plain lands*.

Distribution: Native of Arabia, distributed in India and Myanmar, also cultivated in tropical countries.

Status of occurrence: Cultivated.

Uses: Ornamental and also medicinal plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1331 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2787 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3118 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3660 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3825 (DUSH).

507. **Jasminum sambac** (L.) Ait., Hort. Kew. 1: 8 (1789); Hook. f., Fl. Brit. Ind. 3: 591 (1882); Prain, Beng. Pl. 1: 486 (1903, reprint 1963). *Nyctanthes sambac* L. (1753).

Vernacular names: *Beli*, *Ban mallika*.

English name: Arabian jasmine.

Shrub. Leaves unifoliolate, ovate. Inflorescence a 3-flowered cyme or a many-flowered compact cluster. Flowers single or double (in cultivated varieties), calyx 7-10 segmented, corolla tube with 5-many lobes, mostly white, heavily fragrant. Fruit a black berry, surrounded by the calyx. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 26, 39$ (Kumar and Subramaniam, 1986). *Gardens and village shrubberies*.

Distribution: Probably originated in India and was brought to Malaysia and Indonesia around the 3rd Century; since then widely cultivated throughout the Malesian region for its heavily scented flowers.

Status of occurrence: Cultivated.

Uses: Ornamental and also medicinal plant.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1069 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1360 (DUSH); Kaligonj, Kolafata, 23.08.2010, R. Tabassum, 1565 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1795 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3119 (DUSH).

508. **Jasminum scandens** Vahl, Symb. Bot. 3: 2 (1851); C. B. Clarke in Hook. f., Fl. Brit. Ind. 3: 595 (1882); Prain, Beng. Pl. 1: 486 (1903, reprint 1963); R. L. Heinig, List Chittagong: 40 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 99 (1956).

English name: Jasmine.

Scandent shrub, climbing by means of its recurved petioles, sometimes trailing on grass. Leaves simple, ovate to lanceolate. Inflorescence a terminal, compound trichotomous or subcapitate cyme, often flowers in short axillary branchlets. Flowers white, tinged with red, fragrant, calyx pubescent, tube turbinate, segments usually 6, recurved, corolla lobes 6-8. Drupes ellipsoid. *Flowering and fruiting:* October - May. *Grows in forest areas.*

Distribution: India.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 03.11.2000, R. Tabassum, 5 (DUSH); Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 246 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 948 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2372 (DUSH); Kaliakoir, Mouchak, 01.10.2013, R. Tabassum, 3313 (DUSH).

Family 90. **SCROPHULARIACEAE** A. L. de Jussieu (1789)

Herbs or shrubs, rarely trees, sometimes root parasites. Leaves usually opposite, rarely verticillate or alternate, simple or pinnately dissected. Flowers solitary or in axillary or in terminal spikes, racemes or cymes, often bracteate, usually zygomorphic. Calyx tubular or campanulate, 4-5 lobed. Corolla sympetalous, 4-5 lobed, limb often 2-lipped. Stamens mostly 4, didynamous, anthers free. Ovary superior, 2-loculed, ovules numerous, stigmas capitate. Fruit usually a capsule, dehiscent, rarely a berry. Seeds minute or rarely conspicuous, sometimes winged.

The family Scrophulariaceae consists of 220 genera and c 3000 species, with cosmopolitan distribution. In Bangladesh, the family is represented by 23 genera and 60 species.

In the present study area this family is represented by 6 genera and 9 species.

Key to genera:

- | | | |
|----|--|---------------------|
| 1. | Leaves abaxially glandular punctate | 2 |
| - | Leaves not glandular punctate | 4 |
| 2. | Aquatic or marsh herbs | Limnophila |
| - | Terrestrial herbs | 3 |
| 3 | Corolla tube inconspicuous; stamens subequal | Scoparia |
| - | Corolla tubular; stamens didynamous | Adenosma |
| 4. | Sepals free, 4 or 5, imbricate, unequal in width | Bacopa |
| - | Sepals connate to almost free, not imbricate at least after flowering, equal in width | 5 |
| 5. | Calyx parted almost to base, sometimes less so; capsule often elongated; filaments often appendiculate | Lindernia |
| - | Calyx parted to about middle; capsule short; filaments not appendiculate | Lindenbergia |

Genus 300. **Adenosma** R. Br., Prodr.: 442 (1810).

509. **Adenosma indianum** (Lour.) Merr., Trans. Amer. Philos. Soc. 24(2): 351 (1935). *Manulea Indiana* Lour. (1790), *Adenosma capitatum* (Benth.) Hance (1873); Hook. f., Fl. Brit. Ind. 4: 364 (1884); Prain, Beng. Pl. 2: 566 (1903, reprint 1963).

Vernacular name: *Barakesuti*.

Annual herb. Stem branched, densely villous. Leaves sessile, in verticils of 3-4, oblong-lanceolate to ovate-oblong, scabrid on both surfaces. Flowers in dense heads, calyx dotted with pale yellow sessile glands, corolla pale purple to dark blue. Capsules ovoid, enclosed by longer calyx. *Flowering and fruiting*: July - January. *Chromosome number*: $2n = 72$ (Mehra and Vasudevan, 1972). *Grows in open sandy places, margins of paddy fields and wet lowlands*.

Distribution: India, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Thailand and Vietnam.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 17 (DUSH); Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 219 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 861 (DUSH); Sripur, Bagher Bazar,

18.02.2013, R. Tabassum, 2382 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3589 (DUSH).

Genus 301. **Bacopa** Aubl., Hist. Pl. Guiane. 1: 128, t. 49 (1775).

510. **Bacopa monnieri** (L.) Pennell, Proc. Acad. Nat. Sci. Philadelphia 98: 94 (1946); J. Sinclair in Bull. Bot. Soc. 9(2): 102 (1956). *Lysimachia monnieri* L. (1756), *Gratiola monnieri* L. (1759), *Herpestis monnieri* Benth. (1835); Hook. f., Fl. Brit. Ind. 4: 272 (1884); Prain, Beng. Pl. 2: 569 (1903, reprint 1963); R. L. Heinig, List Chittagong: 47 (1925), *Bacopa monnieri* (L.) Wettst. (1891).

Vernacular names: *Brammi*, *Brammi* English names: Dwarf bacopa, Indian pennywort.

Annual herb. Leaves sessile, oblong-ob lanceolate. Flowers solitary in leaf axils, sepals 5, divided up to the base, corolla white, purple or blue. Capsules narrowly ovoid, enveloped in persistent calyx. *Flowering and fruiting*: May - December. *Chromosome number*: $2n = 64$ (Lewis *et al.*, 1962). *Marshy areas, banks of ponds and in lowlands*.

Distribution: Widespread in tropics and subtropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 386 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 773 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1026 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1256 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2275 (DUSH).

Genus 302. **Limnophila** R. Br., Prodr.: 442 (1810).

Key to species:

- | | |
|---|--------------------------------|
| 1. Plants with both submerged and aerial leaves | Limnophila sessiliflora |
| - Plants with aerial leaves only | Limnophila aromatica |

511. **Limnophila aromatica** (Lamk.) Merr., Interpr. Herb. Amboin.: 466 (1917). *Ambulia aromatica* Lamk. (1783), *Limnophila gratissima* Blume (1826); Hook. f., Fl. Brit. Ind. 4: 268 (1884); Prain, Beng. Pl. 2: 568 (1903, reprint 1963), *Limnophila punctata* Blume (1826).

Vernacular name: *Pani karpur*.

English name: Asian limno.

Annual, aromatic, aquatic herb. Stem simple or branched, copiously rooting at the lower nodes. Leaves linear-lanceolate to oblong-lanceolate, semi-amplexicaul. Flowers solitary in leaf axils or in terminal racemes, calyx glandular-pubescent outside, corolla mauve-purple to pale violet. Capsules broadly ellipsoid, enclosed by longer calyx lobes. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 68$ (Borgmann, 1964). *Paddy fields, ditches and marshy places of the wet low-lying areas*.

Distribution: Australia, Bhutan, China, India, Indonesia, Japan, Korea, Laos, Malaysia, the Philippines and Vietnam.

Status of occurrence: Common.

Specimens examined: Sripur, Piruzali, 17.02.2012, R. Tabassum, 2055 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2658 (DUSH); Kaliakoir, Hijoltoly, 13.09.2013, R. Tabassum, 2946 (DUSH).

512. ***Limnophila sessiliflora*** (Vahl) Blume, Bijdr.: 749 (1826); Hook. f., Fl. Brit. Ind. 4: 270 (1884); Prain, Beng. Pl. 2: 569 (1903, reprint 1963). *Hottonia sessiliflora* Vahl (1791), *Ambulia sessiliflora* (Vahl) Baillon ex Wettstein (1891).

English names: Asian marsh weed, Dwarf ambulia.

Perennial aquatic herb. Upper leaves on aerial flowering stem in verticils of 38, often pinnately divided, submerged ones in verticils of 10-11, pinnatisect. Flowers solitary in axils of submerged and aerial leaves, calyx lobes ovate-lanceolate, corolla pale mauvish-pink. Capsules globose, copnpessed, pale brown. *Flowering and fruiting*: April - October. *Grows in ponds, swamps, rice fields, wet places along streams and lowlands*.

Distribution: Bhutan, China, India, Indonesia, Japan, Korea, Malaysia, Myanmar, Nepal, the Philippines, Sri Lanka and Vietnam.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 895 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1361 (DUSH); Tongi, Dighir chala, 19.08.2013, R. Tabassum, 2742 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3068 (DUSH).

Genus 303. ***Lindenbergia*** Lehm. in Link & Otto, Icon. Pl. Rar.: 95 (1828).

513. ***Lindenbergia indica*** (L.) Vatke, Oesterr. B. Zeits. 25: 10 (1875); Hook. f., Fl. Brit. Ind. 4: 262 (1884); Prain, Beng. Pl. 2: 566 (1903, reprint 1963). *Dodartia indica* L. (1753), *Lindenbergia polyantha* Royle ex Benth. (1835).

Local names: *Basonti*, *Haldibasonti*.

Annual herb. Stem sparsely glandular-villous. Leaves ovate. Flowers solitary or 2-nate in the axils of leaves, sometimes in terminal raceme, calyx densely glandular-villous, divided to one-third way down, corolla yellow. Capsules oblong, upper half hairy. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 28$ (Bhattacharya, 1967). *Grows in dilapidated walls and surrounding areas of buildings*.

Distribution: Afghanistan, China, India, Malaysia, Myanmar and Nepal.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1326 (DUSH); Gazipur Sadar, 04.02.2011, R. Tabassum, 1896 (DUSH); Kaliakoir, Simultoli, 01.10.2013, R. Tabassum, 3371 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3657 (DUSH).

Genus 304. **Lindernia** All., Misc. Taur. 3: 178, t. 5 (1766).

Key to species:

- | | |
|--|-----------------------------|
| 1. Leaf veins parallel | Lindernia procumbens |
| - Leaf veins pinnate | 2 |
| 2. Leaf base amplexicaul, margin densely aristate-serrate | Lindernia ciliata |
| - Leaf base cuneate and decurrent, margin not densely aristate-serrate | Lindernia antipoda |

514. **Lindernia antipoda** (L.) Alston in Trimen, Handb. Fl. Ceylon. 6: 214 (1931). *Ruellia antipoda* L., Sp. Pl.: 635 (1753). *Gratiola veronicifolia* Retz., Obs. Bot. 4: 8 (1786). *Bonnaya veronicifolia* (Retz.) Spreng., Syst. Veg. 1: 41 (1824); Hook. f., Fl. Brit. Ind. 4: 285 (1884); Prain, Beng. Pl. 2: 574 (1903, reprint 1963). *Bonnaya veronicifolia* (Retz.) Spreng. var. *grandiflora* (Retz.) Hook. f., Fl. Brit. Ind. 4: 285 (1884); Prain, Beng. Pl. 2: 574 (1903); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 68 (1953).

English name: Sparrow false pimpernel.

Annual prostrate herb. Leaves ovate-oblong, obovate-oblong, oblanceolate or linear-elliptic. Flowers in terminal or axillary racemes, calyx cleft to the base, 5-lobed, serrulate at the margin towards the apex, corolla pale violet or violet-blue to pale blue or white. Capsules linear-cylindric or subulate-cylindric. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 18$ (Philcox, 1968). *Grows in banks of rivers, tanks and ponds, rice fields and moist places*.

Distribution: Sri Lanka, India, Bhutan, Nepal, Myanmar, Thailand, Cambodia, Vietnam, Laos, Japan, Malaysia, the Philippines and Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 204 (DUSH); Kaliakoir, Kamalpara, 09.05.2010, R. Tabassum, 808 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1143 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2282 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3732 (DUSH).

515. **Lindernia ciliata** (Colsm.) Pennell, Brittonia 2: 182 (1936); J. Sinclair in Bull. Bot. Soc. 9(2): 102 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 68 (1953); *Gratiola ciliata* Colsm. (1793), *Bonnaya brachiata* Link & Otto (1820); Hook. f., Fl. Brit. Ind. 4: 284 (1884); Prain, Beng. Pl. 2: 573 (1903, reprint 1963).

Vernacular name: *Bhui*.

English name: Fringed false pimpernel.

Very small, annual herb. Leaves oblong-lanceolate or oblong-oval. Inflorescence of racemes. Flowers pale mauve to white. Capsules linear-cylindric. *Flowering and fruiting:* May - August. *Chromosome number:* $2n = 18$ (Bhattacharya, 1967). *Banks of post-monsoon streams, rice fields, moist ground, slopes and wet grasslands.*

Distribution: India, Myanmar, Cambodia, China, Japan, Laos, Malaysia, the Philippines, Vietnam and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 107 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 904 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1080 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2557 (DUSH); Kaligonj, Banglahaola, 02.12. 2013, R. Tabassum, 3826 (DUSH).

516. **Lindernia procumbens** (Krocker) Philcox, Taxon 14: 30 (1965). *Anagalloides procumbens* Krocker (1790), *Vandellia erecta* Benth. (1835), *Vandellia pyxidaria* (L.) Maxim. (1875); Hook. f., Fl. Brit. Ind. 4: 281 (1884); Prain, Beng. Pl. 2: 572 (1903, reprint 1963), R. L. Heinig, List Chittagong: 48 (1925).

Vernacular name: *Bakpuspa*.

English name: Prostrate false pimpernel.

Small annual herb. Leaves elliptic to oblong, somewhat rhomboid. Flowers axillary, solitary, calyx deeply 5-lobed, corolla white, pink to purple. Capsules globose to ovoid-globose, as long as or slightly longer than persistent calyx. *Flowering and fruiting:* July - December. *Chromosome number:* $2n = 30$ (Bhattacharya, 1969). *Paddy fields, marshy places, wet lowlands and riversides.*

Distribution: Afghanistan, China, India, Indonesia, Japan, Kazakhstan, Laos, Nepal, Pakistan, Russia, South Europe, Tajikistan, Thailand and Vietnam.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 96 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1690 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2573 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2985 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3597 (DUSH).

Genus 305. **Scoparia** L., Sp. Pl.: 116 (1753).

517. **Scoparia dulcis** L., Sp. Pl.: 116 (1753); Hook. f., Fl. Brit. Ind. 4: 289 (1884); Prain, Beng. Pl. 2: 575 (1903, reprint 1963); R. L. Heinig, List Chittagong: 48 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 68 (1953); J. Sinclair in Bull. Bot. Soc. 9 (2): 102 (1956). *Gratiola micrantha* Nutt. (1822), *Scoparia grandiflora* Nash (1896).

Vernacular names: *Bondhone*, English name: Sweet broom, Broom weed, Goat
Misridana. weed.

Perennial herb. Leaves ternately whorled, obovate-oblong to oblanceolate. Flowers usually axillary, (1 or) 2 per node, calyx lobes divided to the base, corolla white. Capsules subglobose, plae brown. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 20$ (Lewis *et al.*, 1962). *Grows in waste places, besides trails, along roadsides and dried rice fields.*

Distribution: Throughout the tropics and subtropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 87 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum 670 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1067 (DUSH); Gazipur Sadar, Rajendropur Senanibash, 04.02.2011, R. Tabassum, 1712 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3319 (DUSH).

Family 91. **OROBANCHACEAE** Ventenat (1799)

Annual or perennial leafless root parasites, reddish-brown, purplish to white in colour. Stem or scapes usually simple, sometimes branched, often bulbous at the base. Leaves scale-like, distantly arranged or often imbricated at the base. Inflorescence racemes or spikes or flowers solitary. Flowers bracteate, zygomorphic, hypogynous, variously

coloured. Sepals 2-5, united or cleft, lobed or toothed, cylindric or campanulate below, more or less persistent. Petals 5, unequal to subequal or bilabiate, base tubular, sometimes throat with villous folds. Stamens 4, subequal or didynamousepipetalous, filaments filiform, anthers 1-2 celled or one cell imperfect, sometimes cell spurred, mostly connivent, dehiscence by longitudinal slits or by apical pores. Carpels 2 or rarely 3, united, ovary unilocular, or sometimes 2-loculed, ovules numerous on parietal placentae, styles simple, often long with curved tip, more or less 2-lobed or rarely capitate stigmas. Fruit an ovoid to oblong capsule, 1-celled, sometimes imperfectly or perfectly 2-celled, opening loculicidally. Seeds numerous, rarely few, minute.

The family Orobanchaceae consists of about 17 genera and 150 species, widespread in the Northern Hemisphere, best developed in subtropical and temperate parts of the Old World. In Bangladesh, this family is represented by 2 genera and 4 species.

In the present study area the family is represented by a single species.

Genus 306. **Aeginetia** L., Sp. Pl.: 632 (1753).

518. **Aeginetia indica** L., Sp. Pl.: 632 (1753); Hook. f., Fl. Brit. Ind. 4: 320 (1884); Prain, Beng. Pl. 2: 580 (1903, reprint 1963). *Orobanche aeginetia* L. (1753).

Leafless herb. Scape purplish-red with 1-few brownish scales near the base. Flowers solitary, ebracteate, calyx spathaceous, connate near the base but split on the upper side, light yellowish pinkish, corolla subequally 5-lobed, bent towards, purple with fine darker venation. Fruit a partially 2-valved capsule, enclosed by more or less persistent calyx and permanent stylobase, surface longitudinally ribbed. *Flowering and fruiting*: July - December. *Grows on the floors of Sal forests*.

Distribution: Indian Peninsula, Pakistan, Sri Lanka, Malaysia, the Philippines and Australia.

Status of occurrence: Seems to be rare.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 437 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 775 (DUSH).

Family 92. **ACANTHACEAE** A. L. de Jussieu (1789)

Perennial, sometimes annual, suffrutescent, herbs or shrubs, sometimes climbers, stem usually with swollen nodes. Leaves exstipulate, usually simple, opposite-decussate, entire or undulate-dentate, rarely crenate-dentate. Inflorescence most commonly dichasial cymes, becoming monochasial, often in spikes, racemes, panicles,

sometimes fasciculate or verticillate, occasionally flowers solitary, bracts and bracteoles generally well-developed and often coloured and showy, persistent or rarely absent. Flowers bisexual, hypogynous, zygomorphic, usually with nectariferous disc below the ovary. Calyx usually gamosepalous, persistent, deeply 4-5 lobed. Corolla gamopetalous, typically 5-lobed, more usually bilabiate. Stamens 4, didynamous or sometimes 2, rarely 5, alternate to the petals, usually exserted, anthers dorsifixed, usually unequal. Carpels 2, syncarpous, ovary superior, bilocular, style simple, filiform, stigma bifid. Fruit a bilocular stipitate and dehiscent capsule, rarely drupaceous. Seeds non-endospermous, mostly flattened and lenticular or discoid.

The family Acanthaceae consists of 250 genera and 2500 species, widespread in tropical regions, with only a few species in temperate climates. In Bangladesh, this family is represented by 39 genera and 107 species (Begum 1995).

In the present study area the family is represented by 15 genera and 18 species.

Key to genera:

- | | | |
|----|---|-----------------------|
| 1. | Vines; calyx cupular with 10-20 lobes or reduced to an entire ring; capsule with a prominent apical sterile beak | Thunbergia |
| - | Prostrate or erect herbs, shrubs, or rarely small trees; calyx 4- or 5-lobed; capsule lacking a prominent apical sterile beak | 2 |
| 2. | Cystoliths absent; retinacula absent | 3 |
| - | Cystoliths present; retinacula present, hooklike | 5 |
| 3. | Seeds laterally compressed, borne on hooklike retinacula; corolla 1-lipped (upper lip absent), lobes not with descending cochlear aestivation; anthers 1-theous | Dipteracanthus |
| - | Seeds subspherical or blocky, not borne on hooklike retinacula; corolla 2-lipped, lobes with descending cochlear aestivation; anthers 2-theous | 4 |
| 4. | Prostrate herbs; bracteoles absent; calyx 4-lobed, anterior lobe 2-cleft at apex; stamens 2 | Nelsonia |
| - | Erect herbs; bracteoles present; calyx 5-lobed; stamens 2 or 4 | Staurogyne |
| 5. | Calyx lobes heteromorphic; corolla lobe aestivation quincuncial | Lepidagathis |
| - | Calyx lobes homomorphic; corolla lobe aestivation not quincuncial | 6 |
| 6. | Corolla lobes contorted in bud; stamens 4 | 7 |

- Corolla lobes ascending cochlear in bud; stamens 2, staminodes 0 or 2 10
- 7. Style held in place by trichomes on one side of corolla tube; stamens monadelphous (by a sheath) at base **Strobilanthes**
- Style not held in place by trichomes on one side of corolla tube; stamens not monadelphous at base 8
- 8. Inflorescence secund strobilate spikes with orbicular to reniform bracts; ovules 2 per locule; seeds to 4 per capsule; corolla ca. 0.6 cm; septa with attached retinacula separating from inner wall of mature capsule **Phaulopsis**
- Inflorescence not as described above; ovules 4 to many per locule; seeds 4 or more per capsule; corolla 0.6-5.5 cm; septa with attached retinacula not separating from inner wall of mature capsule 9
- 9. Corolla limb distinctly 2-lipped, lobes usually not equal; calyx tube often rupturing in weak hyaline regions between lobes; pollen 4-colporate, interapertural regions multistriate with pseudocolpi **Hygrophila**
- Corolla limb nearly regular, lobes equal to subequal; mature calyx tube not rupturing in weak hyaline regions between lobes; pollen otherwise **Ruellia**
- 10. Ovules 3 to many per locule; seeds 6 to many per capsule; pollen with apertural margins conspicuously thickened **Andrographis**
- Ovules 2 per locule; seeds 4 per capsule; pollen with apertural margins not thickened 11
- 11. Flowers subtended by involucre of 2 or more pairs of floral bracteoles; corolla resupinate 180° 12
- Flowers subtended by a single pair of bracteoles (or bracteoles rarely lacking); corolla not resupinate 180° 14
- 12. Septa with attached retinacula separating from inner wall of mature capsule 13
- Septa with attached retinacula remaining attached to inner wall of mature capsule **Peristrophe**
- 13. Bracts partially united at the base, Capsule elastically dehiscent **Dicliptera**

- Bracts free at the base. Capsules not elastically dehiscent **Ecbolium**
- 14. Septa with attached retinacula separating from inner wall of mature capsule; inflorescence often dense with imbricate bracts 2- or 4-ranked **Rungia**
- Septa with attached retinacula remaining attached to inner wall of mature capsule; inflorescence not as above **Justicia**

Genus 307. **Andrographis** Wall. ex Nees in Wall.,
Pl. As. Rar. 3: 77, 116 (1832).

519. **Andrographis paniculata** (Burm. f.) Wall. ex Nees in Wall., Pl. As. Rar. 3: 116 (1832). Hook. f., Fl. Brit. Ind. 4: 501 (1884); Prain, Beng. Pl. 2: 603 (1903, reprint 1963); R. L. Heinig, List Chittagong: 50 (1925). *Justicia paniculata* Burm. f. (1768).

Vernacular names: *Kalomegh*, English name: Creat, The great king of bitters. *Kalmegh*, *Chirota* (Garó).

Erect or suberect, annual herb with articulated shoots. Leaves petiolate, lamina lanceolate, entire. Flowers in lax panicles, sepals linear-lanceolate, corolla white or pale with deep pink or deep purplish-violet markings inside at the base of the lower lip. Fruit a capsule, linear-oblong. *Flowering and fruiting*: November - May. *Chromosome number*: $2n = 28, 50$ (Kumar and Subramaniam, 1986). *Waste lands*.

Distribution: India, Sri Lanka and the West Indies.

Status of occurrence: Seems to be rare.

Uses: Leaves are used in dysentery by Garó.

Specimen examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1308 (DUSH).

Genus 308. **Dicliptera** A. L. Juss. in Ann. Mus. Hist. Nat. Par. 9: 267 (1807).

520. **Dicliptera bupleuroides** Nees in Wall., Pl. As. Rar. 3 : 111 (1832); Hook. f., Fl. Brit. Ind. 4: 544 (1885); Prain, Beng. Pl. 2: 613 (1903, reprint 1963). *Justicia chinensis* auct. non L. (1830), *Dicliptera roxburghiana* auct. non Nees (1867).

Erect herb. Leaves elliptic-ovate to lanceolate, entire. Flowers in axillary and terminal clustered cymes, pink with purplish ting. Fruit a capsule, clavate. *Flowering and fruiting*: June - October. *Chromosome number*: $2n = 26, 52$ (Kumar and Subramaniam, 1986). *Waste places*.

Distribution: South Asia to Indo-China and West China.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 156 (DUSH); Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 290 (DUSH); Kapasia, Torgao, 06.05.2010, R. Tabassum, 1080 (DUSH); Sripur, Borkul, 16.05.2010, R. Tabassum, 1183 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2918 (DUSH).

Genus 309. **Dipteracanthus** Nees in Wall., Pl. As. Rar. 3: 75, 81 (1832).

521. **Dipteracanthus prostratus** (Poir.) Nees in Wall., Pl. As. Rar. 3: 81 (1832). *Ruellia prostrata* Poir. (1804); Hook. f., Fl. Brit. Ind. 4: 411 (1884); Prain, Beng. Pl. 2: 598 (1903, reprint 1963); *Dipteracanthus dejectus* Nees (1832).

Much branched, prostrate to procumbent herb. Stem 4-angled. Leaves ovate-elliptic to deltoid, entire. Flowers solitary, axillary, sometimes 2-3 in number, purplish-white. Capsules oblong, with a basal, solid beak. *Flowering and fruiting:* May - August (less abundant throughout the rest of the year). *Chromosome number:* $2n = 44$ (Kumar and Subramaniam, 1986). *Grows in wastelands and forest floors.*

Distribution: Endemic to the Indian subcontinent.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2012, R. Tabassum, 145 (DUSH); Kaliakoir, Nabinagar, 05.03.2010, R. Tabassum, 882 (DUSH); Kapasia, Bajnakandi, 18.12.2013, R. Tabassum, 1072 (DUSH); Sripur, Bagher Bazar, 18.12.2013, R. Tabassum, 3282 (DUSH).

Genus 310. **Ecbolium** Kurz, J. Asiat. Soc. Beng. 40: 75 (1871).

522. **Ecbolium ligustrinum** (Vahl) Vollesen, Kew Bull. 44 (4): 651 (1989). *Justicia ecbolium* L. (1753); Prain, Beng. Pl. 2: 609 (1903, reprint 1963); *Justicia viridis* Forssk. (1775); *Justicia ligustrina* Vahl, Enum. 1: 118 (1804); *Ecbolium linneanum* Kurz in J. As. Soc. Beng. 40: 75 (1871); Hook. f., Fl. Brit. Ind. 4: 544 (1885).

Vernacular name: *Udujati*.

Shrub, nodes swollen. Leaves elliptic-ovate to obovate. Flowers in terminal spikes, light bluish-green. Capsules ovoid, tip pointed, 2-seeded. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 36$ (Fedorov, 1969). *Grows in shady places and gardens.*

Distribution: India, Sri Lanka, Malaysia, Arabia, Africa and Madagascar.

Status of occurrence: Apparently common.

Use: Medicinal plant.

Specimens examined: Kapasia, Torgao, 14.12.2000, R. Tabassum, 493 (DUSH); Kaliakoir, Chandra, 05.03.2010, R. Tabassum, 896 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1127 (DUSH).

Genus 311. **Hygrophila** R. Br., Prodr.: 479 (1810).

Key to species:

- | | |
|---|------------------------------|
| 1. Herb with spines; leaves in pseudo-whorls of 6; calyx 4-lobed | Hygrophila phlomoides |
| - Herb without spines; leaves opposite or pseudo-whorls of 4; calyx 5-lobed | Hygrophila schulli |

523. **Hygrophila phlomoides** Nees in Wall., Pl. As. Rar. 3: 80 (1832); Hook. f., Fl. Brit. Ind. 4: 408 (1884); Prain, Beng. Pl. 2: 598 (1903, reprint 1963); R. L. Heinig, List Chittagong: 49 (1925); J. Sinclair, Bull. Soc. Beng. 9(2):103(1956).

Erect herb with decumbent branches. Leaves subsessile, obovate. Whorls of flowers dense, villous, flowers light bluish-purple. Capsule 10-12 seeded. *Flowering and fruiting:* October - December. *Marshy places, canals with very slow running water and ditches.*

Distribution: India (Sikkim, Assam and Cachar) and Myanmar.

Status of occurrence: Common.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 593 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 836 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1194 (DUSH); Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2535 (DUSH).

524. **Hygrophila schulli** (Buch.-Ham.) M. R. & S. N. Almeida, Journ. Bomb. Nat. Hist. Soc. 83 (Suppl.): 221 (1986). *Bahel schulli* Buch.-Ham. (1824), *Barleria auriculata* Schum. (1827), *Hygrophila spinosa* T. Anders. (1860); Hook. f., Fl. Brit. Ind. 4: 408 (1884); Prain, Beng. Pl. 2: 598 (1903, reprint 1963); R. L. Heinig, List Chittagong: 49 (1925). *Hygrophila auriculata* (Schum.) Heine (1962).

Vernacular names: *Kanta kalika, Kulekhara, Talmakhna.* English name: Starthorn.

Annual, erect unbranched herb. Stem 4-gonous with 6 axillary thorns and leaves at nodes. Flowers in axillary whorls, purplish-blue. Fruit a capsule, linear-oblong, apex pointed. *Flowering and fruiting:* October - January. *Chromosome number:* 2n = 32

(Kumar and Subramaniam, 1986). *Moist places, on banks of ponds, ditches and paddy fields.*

Distribution: Indo-China, Myanmar, India, Nepal, Sri Lanka, Pakistan and Tropical Africa.

Status of occurrence: Seems to be rare.

Use: Medicinal plant.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1747 (DUSH).

Genus 312. **Justicia** L., Sp. Pl. 1: 15 (1753).

Key to species:

- | | |
|--|----------------------------|
| 1. Leaves elliptic-lanceolate; flowers more than 2.5 cm long | Justicia adhatoda |
| - Leaves narrowly linear-lanceolate; flowers less than 2.5 cm long | Justicia gendarussa |

525. **Justicia adhatoda** L., Sp. Pl.: 15 (1753). *Adhatoda zeylanica* Medikus (1790), *Adhatoda vasica* Nees (1832); Hook. f., Fl. Brit. Ind. 4: 540 (1885); Prain, Beng. Pl. 2: 611 (1903, reprint 1963); R. L. Heinig, List Chittagong: 50 (1925); J. Sinclair, Bull. Soc. Beng. 9(2):103 (1956).

Vernacular names: *Vasak, Bashak, Alok-bizak* English names: White dragon's head, Malabar nut.

Much branched, evergreen shrub. Leaves large, elliptic or oblanceolate. Flowers white or faint bluish-white in dense axillary leafy bracts. Capsule clavate, contracted below in a long solid stipe. *Flowering and fruiting:* January - April. *Chromosome number:* 2n = 34 (Kumar and Subramaniam, 1986). *Village thickets, homestead and gardens.*

Distribution: India, Pakistan, Sri Lanka, Cambodia, Laos, Vietnam and Malaysia.

Status of occurrence: Common.

Uses: Leaves are used in cold and fever.

Specimens examined: Kaliganj, Mirer Bazar, 14.03.2008, R. Tabassum, 240 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1175 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1776 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1953 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3735 (DUSH).

526. **Justicia gendarussa** Burm. f., Fl. Ind.: 10 (1768); Hook. f., Fl. Brit. Ind. 4: 532 (1885); Prain, Beng. Pl. 2: 610 (1903, reprint 1963); R. L. Heinig, List Chittagong: 50 (1925); J. Sinclair, Bull. Soc. Beng. 9(2):103 (1956). *Gendarussa vulgaris* Nees (1832).

Vernacular names: *Jagatmadan*, English name: Gendarussa.
Jugmadan, Bishalla, Bishdalani.

Undershrub, branches dark purple. Leaves linear-lanceolate. Inflorescence terminal or axillary spikes or panicle of spikes. Flowers white with purple streaks and spots inside. Fruit a capsule. *Flowering and fruiting*: December - May. *Chromosome number*: $2n = 28, 30, 32$ (Kumar and Subramaniam, 1986). *Waste places and also planted as a hedge plant*.

Distribution: China, India, Sri Lanka, Pakistan, Malaysia and the Philippines.

Status of occurrence: Common.

Use: Medicinal and hedge plant.

Specimens examined: Gazipur Sadar, Simultoli, 30.01.2001, R. Tabassum, 79 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1059 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1398 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3285 (DUSH); Kaligonj, Bangalahaola, 02.12.2013, R. Tabassum, 3782 (DUSH).

Genus 313. **Lepidagathis** Willd., Sp. Pl. 3: 400 (1800).

Key to species:

1. Stem terete; leaves lanceolate-oblong; bracts 8-12 mm long; petals 6 mm long **Lepidagathis incurva**
- Stem 4-angled; leaves linear-lanceolate; bracts 6-7 mm long, petals 1.3 cm long **Lepidagathis liniaria**

527. **Lepidagathis incurva** Buch.-Ham. ex D. Don, Prodr. Fl. Nep.: 119 (1825). *Lepidagathis hyalina* Nees (1832); Hook. f., Fl. Brit. Ind. 4: 521 (1885); Prain, Beng. Pl. 2: 608 (1903, reprint 1963).

Perennial herb. Leaves lanceolate-oblong to broadly lanceolate-ovate. Inflorescence a very dense spike, axillary and terminal. Flowers white with brownish spots. Capsules oblong, 4-seeded. *Flowering and fruiting*: March - May. *Chromosome number*: $2n = 20$ under the name of *Lepidagathis hyalina* (Kumar and Subramaniam, 1986). *Moist and damp places in forests*.

Distribution: India, Pakistan, Nepal, Bhutan, southern China, Myanmar and Malaysia.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 345 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2030 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2245 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2650 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3344 (DUSH).

528. **Lepidagathis linearis** T. Anders., Journ. Linn. Soc. 9: 496 (1867); Hook. f., Fl. Brit. Ind. 4: 521 (1885).

Perennial herb. Stem 4-angled, slightly winged. Leaves linear-lanceolate-oblong to broadly lanceolate-ovate. Inflorescence a very dense spike, axillary and terminal. Flowers white with brownish spots. Capsules oblong, 4-seeded. *Flowering and fruiting:* March - May. *Chromosome number:* $2n = 20$ under the name of *Lepidagathis hyalina* (Kumar and Subramaniam, 1986). *Moist and damp places in forests.*

Distribution: India, Pakistan, Nepal, Bhutan, southern China, Myanmar and Malaysia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 938 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2082 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2670 (DUSH).

Genus 314. **Nelsonia** R. Br., Prodr.: 480 (1810).

529. **Nelsonia canescens** (Lamk.) Spreng., Syst. 1: 42 (1824); J. Sinclair in Bull. Bot. Soc. 9(2): 102 (1956). *Justicia canescens* Lamk., Tab. Encycl. 1: 41 (1791). *Nelsonia campestris* R. Br., Prodr. 481 (1810); Hook. f., Fl. Brit. Ind. 4: 394 (1884); Prain, Beng. Pl. 2: 594 (1903, reprint 1963); R. L. Heinig, List Chittagong: 49 (1925).

Vernacular name: *Paramul*.

Trailing or diffuse herb. Leaves elliptic-oblong or suborbicular, villous, lower leaves larger, upper ones smaller. Inflorescence a terminal spike. Flowers purplish. Capsules oblong, tip of the valves recurved. *Flowering and fruiting:* October - February. *Grows in plain lands.*

Distribution: Southeast Asia, Africa, America and Australia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 05.03.2002, R. Tabassum, 163 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1112 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1745 (DUSH); Kaliakoir, Mouchak,

12.02.2011, R. Tabassum, 1955 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2005 (DUSH).

Genus 315. **Peristrophe** Nees in Wall., Pl. As. Rar. 3: 112 (1832).

530. **Peristrophe paniculata** (Forssk.) R. K. Brummitt, Kew Bull. 38: 451 (1983). *Dianthera bicalyculata* Retz. (1775), *Dianthera paniculata* Forssk. (1775), *Peristrophe bicalyculata* (Retz.) Nees (1832); Hook. f., Fl. Brit. Ind. 4: 554 (1884); Prain, Beng. Pl. 2: 614 (1903, reprint 1963).

Vernacular names: *Nasabhanga*, *Pitpatra*, *Atrilal*.

Hairy herb. Stem and branches 4-angled. Leaves ovate-elliptic to lanceolate. Inflorescence a terminal or axillary lax panicle of cymes. Flowers pink or purple. Capsules basally solid. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 20, 30, 60$ (Kumar and Subramaniam, 1986). *Grows in waste lands and gardens*.

Distribution: India, Sri Lanka, Pakistan, Myanmar, Malaya and Indo-China.

Status of occurrence: Common.

Use: Medicinal plant.

Specimens examined: Kaliganj, Khudabon, 26.03.2008, R. Tabassum, 278 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 831 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1469 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2014 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2674 (DUSH).

Genus 316. **Phaulopsis** Willd., Sp. Pl. 3: 342 (1801).

531. **Phaulopsis imbricata** (Forssk.) Sweet, Hort. Brit. ed. 1: 327 (1827); J. Sinclair, Bull. Soc. Beng. 9(2):103(1956). *Ruellia imbricata* Forssk. (1775), *Ruellia dorsiflora* Retz. (1791), *Aetheilema imbricatum* (Forssk.) R. Br. (1810), *Aetheilema reniforme* Nees (1832).

Prostrate or decumbent hairy herb. Leaves very unequal, ovate or elliptic. Flowers in terminal spikes or sometimes 1-3 in clusters in lower axils, white. Capsules globose, tip pointed. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 70$ (Kaur, 1966). *Evergreen, semi-evergreen and moist deciduous forests, and waste places in rural areas*.

Distribution: India, Sri Lanka, Madagascar and Tropical Africa.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 02.11.2002, R. Tabassum, 161 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1748 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2463 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3363 (DUSH).

Genus 317. **Ruellia** L., Sp. Pl.: 634 (1753).

532. **Ruellia tuberosa** L., Sp. Pl.: 635 (1753); Prain, Beng. Pl. 2: 599 (1903, reprint 1963).

Vernacular name: *Chatpoty*.

English name: Spear pod.

Annual or perennial erect herb. Stem 4-angled, hairy. Leaves simple, lamina oblong-obovate to oblanceolate. Inflorescence a 1-3 flowered, terminal or axillary cyme or flowers solitary. Flowers bluish-violet, showy. Capsules cylindric. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* $2n = 32, 34$ (Kumar and Subramaniam, 1986). *Fallow land and moist walls.*

Distribution: A native of Tropical America, introduced and naturalized in Africa and Southeast Asia.

Status of occurrence: Common.

Use: Medicinal plant.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 606 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1340 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1873 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3708 (DUSH).

Genus 318. **Rungia** Nees in Wall., Pl. As. Rar. 3: 77 (1832).

533. **Rungia pectinata** (L.) Nees in DC., Prodr. 11: 469 (1847); Hook. f., Fl. Brit. Ind. 4: 447 (1884); *Justicia pectinata* L., Cent. Pl. 2: 3 (1759), *Rungia parviflora* var. *pectinata* (L.) C. B. Clarke Hook. f., Fl. Brit. Ind. 4: 550 (1885); Prain, Beng. Pl. 2: 613 (1903, reprint 1963); R. L. Heinig, List Chittagong: 50 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 103 (1956).

Vernacular names: *Pindi, Birlongopark, Punaka-pundu.*

Much-branched, prostrate to suberect herb. Stem quadrangular, swollen at the nodes. Leaves opposite, elliptic, elliptic-oblong, ovate, obovate or oblong. Inflorescence a terminal and axillary spike, densely-flowered. Flowers deep blue. Capsules ovoid. *Flowering and fruiting:* November - May. *Chromosome number:* $2n = 26, 50$ (Kumar and Subramaniam, 1986). *Grows in warm moist shady places.*

Distribution: India and Sri Lanka.

Status of occurrence: Common.

Use: Medicinal plant.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 155 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 843 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1432 (DUSH); Kapasia, Amrayil, 09.03.2012, R. Tabassum 2135 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2267 (DUSH).

Genus 319. **Staurogyne** Wall., Pl. As. Rar. 2: 80. t. 186 (1831).

534. **Staurogyne polybotrya** (Nees) O. Kuntze, Rev. Gen. Pl.: 496 (1891). *Ebermaiera polybotrya* Nees (1847); Hook. f., Fl. Brit. Ind. 4: 396 (1884); Prain, Beng. Pl. 2: 595 (1903, reprint 1963).

Diffuse herb. Stem erect. Leaves opposite, oblong to oblong-elliptic. Flowers few, axillary but mostly in spikes, purple. Capsules narrowly oblong, grooved on 2 sides. *Flowering and fruiting:* October - March. *Plain lands and forests.*

Distribution: India.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 187 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 847 (DUSH).

Genus 320. **Strobilanthes** Blume, Bijdr.: 781, 796 (1826).

535. **Strobilanthes scaber** Nees in Wall., Pl. As. Rar. 3: 84 (1832); Hook. f., Fl. Brit. Ind. 4: 446 (1884); Prain, Beng. Pl. 2: 603 (1903, reprint 1963); R. L. Heinig, List Chittagong: 50 (1925). *Ruellia scabra* Wall. (1830), *Ruellia aspera* Nees (1832).

Pubescent herb, rootstock woody. Leaves elliptic. Inflorescence of dense spikes. Flowers yellow. Capsules 4-seeded. *Flowering and fruiting:* January - April. *Grows in plain lands.*

Distribution: India, Myanmar and Sri Lanka.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 972 (DUSH).

Genus 321. **Thunbergia** Retz., Phys. Sallsk. Handl. 1: 163 (1776).

536. **Thunbergia grandiflora** (Roxb. ex Rottler) Roxb., Bot. Reg. 6: t. 495 (1820); Hook. f., Fl. Brit. Ind. 4: 392 (1884); Prain, Beng. Pl. 2: 593 (1903, reprint 1963). *Flemingia grandiflora* Roxb. ex Rottler (1803), *Thunbergia cordifolia* Nees (1847).

Vernacular names: *Nallata*, English names: Black clock vine, Blue trumpet vine.

Large climber or twiner with quadrangular twigs. Leaves opposite, lamina often angular, sometimes ovate, uppermost lanceolate or lanceolate-ovate. Flowers usually in axillary or terminal pendulous racemes, but sometimes solitary in axils of ordinary leaves, bluish, inside yellow. Capsules 4-seeded. *Flowering and fruiting*: November - January. *Grows on hedge and trees*.

Distribution: Native of India, introduced and naturalized in China, Indo-China, Myanmar and in many tropical countries of Africa and the New World.

Status of occurrence: Common.

Uses: Medicinal as well as ornamental plant.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 343 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 959 (DUSH); Kaligonj, Gudara Ghat, 02.01.2013, R. Tabassum, 2231 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2421 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2573 (DUSH).

Family 93. **PEDALIACEAE** R. Brown (1810)

Herbs. Leaves opposite or alternate, exstipulate. Flowers in terminal racemes, bisexual, zygomorphic. Sepals 5. Corolla of 5 united petals, more or less bilabiate, tube gradually expanded from the base. Stamens 2-4, epipetalous, the fifth one often represented as a staminode, anthers 2-celled. Carpels 2, united to form a superior ovary, ovules few to many on parietal placentation, style 1, with 2 stigmas. Fruit a beaked or horned capsule, loculicidally dehiscent, exocarp fleshy, viscid-hairy, deciduous, endocarp woody, style single, persistent, splitting at maturity into 2 horn processes. Seeds few to many, more or less compressed.

The family Pedaliaceae consists of about 20 genera and 80 species distributed throughout the world. In Bangladesh, it is represented by 2 genera and 2 species.

In the present study area this family is represented by a single species.

Genus 322. **Sesamum** L., Sp. Pl.: 634 (1753).

537. **Sesamum indicum** L., Sp. Pl.: 634 (1753); Hook. f., Fl. Brit. Ind. 4: 387 (1884); R. L. Heinig, List Chittagong: 49 (1925). *Sesamum orientale* L. (1753); Prain, Beng. Pl. 2: 590 (1903, reprint 1963).

Vernacular name: *Til*.

English name: Sesame.

Erect herb. Leaves petiolate, lower ones opposite, upper ones alternate, lamina of upper ones narrowly oblong or linear, subentire, middle ones ovate, incised or parted, lower ones often pedatisect. Flowers solitary, axillary, complete, zygomorphic, white to cream-coloured. Fruit capsular, oblong, sometimes obovate, brown or purple. seeds many, ovate, ventrally somewhat compressed, black or brown. *Flowering and fruiting*: February - October. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Dry soil*.

Distribution: It has been in cultivation since ancient times. It was first grown as a crop in Africa and was later taken at a very early date to India. It appears to have first reached China in the 1st century.

Status of occurrence: Cultivated.

Uses: Sesame is grown for its edible seeds, which are the source of sesame oil used in salad and as cooking oil. The oil cake which is rich in protein is an excellent food for livestock. The seeds, after removal of testa, are often scattered on the top of cakes, breads, pastry and other confectionery items.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3885 (DUSH); Kapasia, Sanmania, 14.12.2013, R. Tabassum, 3911 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3940 (DUSH).

Family 94. **BIGNONIACEAE** A. L. de Jussieu (1789)

Trees, shrubs or very often woody vines, rarely herbs. Leaves opposite or sometimes whorled, rarely alternate, simple or compound, terminal leaflet sometimes modified into tendril. Flowers usually large and showy, bisexual, mostly in inflorescence, rarely solitary, bract and bracteole present. Calyx gamosepalous, campanulate. Corolla gamopetalous, more or less irregular, campanulate or tubular, usually 5-lobed. Stamens usually 4, didynamous, the fifth one small staminodal or absent, rarely stamens 5, anthers opening longitudinally. Carpels 2, syncarpous, ovary superior, placentation axile or sometimes parietal. Fruit a bivalved, septicidal or loculicidal capsule, sometimes fleshy and indehiscent. Seeds mostly winged.

The family Bignoniaceae consists of more than 100 genera and about 800 species, mainly tropical in distribution. In Bangladesh, this family is represented by 15 genera and 17 species.

In the present study area this family is represented by 3 genera with 3 species.

Key to genera:

- | | |
|---|-------------------|
| 1. Trees | 2 |
| - Climbers | Pyrostegia |
| 2. Leaves subopposite; capsule indehiscent, globose, pulpy inside; seeds not winged | Crescentia |
| - Leaves opposite; capsule flat-linear, dehiscent, dry inside; seeds winged | Oroxylum |

Genus 323. **Crescentia** L., Syst. ed.: 1 (1753).

538. **Crescentia cujete** L., Sp. Pl.: 626 (1753). *Crescentia ovata* Burm. f. (1768).

Vernacular names: *Dhaki bel*, *Pagla* English names: Calabash tree, Gourd tree. *bel*, *Setara phal*.

Small crooked tree. Leaves simple, in scattered fascicle, almost sessile, narrowly obovate to obovate-spathulate. Flowers solitary or in pairs, of a musty odour, dirty white to creamy-white. Fruits large, globular, indehiscent with a hard shell, smooth. *Flowering and fruiting*: March - Novemebr. *Chromosome number*: $2n = 40$ (Kumar and Subramaniam, 1986). *Roadsides and homesteads*.

Distribution: Native to Central America, very widely distributed in the American and other tropics.

Status of occurrence: Cultivated.

Uses: The species has an ornamental value. The hard shell are used to make local musical instruments.

Specimen examined: Gazipur Sadar, Porabari, 09.08.2014, R. Tabassum, 3994 (DUSH).

Genus 324. **Oroxylum** Vent., Dec. Gen. Nov.: 8 (1808).

539. **Oroxylum indicum** (L.) Kurz, Fl. Brit. Ind. Burm. 2: 237 (1877); Hook. f., Fl. Brit. Ind. 4: 378 (1884); Prain, Beng. Pl. 2: 587 (1903, reprint 1963); R. L. Heinig, List Chittagong: 48 (1925). *Bignonia indica* L. (1753), *Bignonia pentandra* Lour. (1790), *Calosanthes indica* (L.) Blume (1826).

Vernacular names: *Thona*, *Kanaidingi*, *Sonapata*, *Shona*. English names: Midnight horror, Broken bones plant, Indian trumpet flower.

Small to medium-sized deciduous tree. Stem with prominent leaf scars. Leaves opposite, bi- or tripinnately compound, leaflets broadly ovate. Inflorescence long terminal raceme. Flowers bisexual, complete, zygomorphic, purple-red. Capsule flat, boat-shaped, sword-like. *Flowering and fruiting*: June - March. *Chromosome number*: $2n = 28, 30, 38$ (Kumar and Subramaniam, 1986). *Dhaka plant* $2n = 28$. *Secondary forests and village thickets, also planted in gardens and parks.*

Distribution: India, Myanmar, Thailand, China, Cambodia, Malaysia, Indonesia and the Philippines.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 322 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 975 (DUSH); Kaliganj, Kalehat, 23.08.2010, R. Tabassum, 1564 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2478 (DUSH); Gazipur Sadar, Rajendropur Sal forest 19.08.2013, R. Tabassum, 2584 (DUSH).

Genus 325. **Pyrostegia** Presl, Bot. Werk.: 93 (1844).

540. **Pyrostegia venusta** (Ker-Gawl.) Miers, Proc. R. Hort. Soc. 3: 188 (1863). *Bignonia venusta* Ker-Gawl. (1818), *Tecoma venusta* Lem. (1834), *Pyrostegia ignea* (Vell.) Presl (1845).

Vernacular name: *Solani lata*. English names: Golden shower, Orange trumpet, Flame flower.

Climbing shrub. Leaves 2- or 3-foliolate, leaflets ovate to ovate-lanceolate. Inflorescence many-flowered thyrses. Flowers bisexual, complete, bright orange. Fruit not seen. *Flowering*: December - March. *Chromosome number*: $2n = 50, 60$ (Kumar and Subramaniam, 1986). *Gardens and parks.*

Distribution: Native of Brazil, Paraguay and Bolivia, cultivated throughout the tropics and also in the subtropics.

Status of occurrence: Cultivated.

Uses: Ornamental plant.

Specimens examined: Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 976 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1366 (DUSH).

Family 95. **LENTIBULARIACEAE** L. C. Richard (1808)

Annual or perennial herbs, aquatic or of wet places, rooted in the substrate, or rootless, often free-floating, predominantly insectivorous. Leaves simple, entire, alternate, sometimes arranged in rosettes, covered with glandular hairs or with bladders. Trap, a hollow bag, borne at end of stalk, with small entrance near or opposite the stalk. Inflorescence a raceme or a spike. Flowers irregular. Calyx 2-5 lobed, 2-lipped corolla, the lower lip more or less spurred. Corolla gamopetalous, limb 2-lipped or equally 5-lobed, lower lip entire or 2- or 3(-6)-lobed, lobes imbricate; upper lip entire or 2- or 3-lobed, spur subulate, cylindric. Stamens 2, borne on petals. Carpels 2, united, ovary superior, ovules 1 to numerous, placentation free central. Fruit a capsule, indehiscent or open by valves. Seeds lack of endosperm.

The family Lentibulariaceae consists of 4 genera and about 280 species, and is of cosmopolitan distribution. In Bangladesh, this family is represented by a single genus and 8 species.

In the present study area this family is represented by 2 species.

Genus 326. **Utricularia** L., Sp. Pl.: 18 (1753).*Key to species:*

- | | |
|---|------------------------------|
| 1. Scales not present on peduncle; persistent style often equaling or exceeding capsule | Utricularia aurea |
| - Scales present on peduncle; persistent style much less than 1/2 as long as capsule | Utricularia stellaris |

541. **Utricularia aurea** Lour., Fl. Cochinch. 1: 26 (1790). *Utricularia flexuosa* Vahl (1804); Hook. f., Fl. Brit. Ind. 4: 329 (1884); Prain, Beng. Pl. 2: 582 (1903, reprint 1963); R. L. Heinig, List Chittagong: 48 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 102 (1956), *Utricularia fasciculata* Roxb. (1914).

Vernacular name: *Jhangi*.

English name: Golden bladderwort.

Medium-sized to large, perennial, suspended aquatic carnivorous herb. Leaves very numerous, semicircular in outline, divided from the base into 3-5 semiverticillate, filiform or somewhat inflated segments, the secondary segments pinnate, alternate, each pinna dichotomously divided into numerous further segments, the ultimate segments capillary. Traps dimorphic, obliquely ovoid. Flowers bright yellow. Capsules globose with a long beak, circumscissile. *Flowering and fruiting*: July - April with a peak during October - January. *Chromosome number*: $2n = 80$ (Tanaka and Uchiyama,

1988). *Ditches, Beels, lakes, pools, ponds, river backwaters, swamps and in still or slowly flowing water, and rice fields.*

Distribution: Australia, China, Hong Kong, India, Indo-China, Indonesia, Japan, Korea, Malaysia, Myanmar, Nepal, New Guinea, Pakistan, the Philippines and Thailand.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 191 (DUSH); Kaliakoir, Konabari (Vogora), 08.01.2010, R. Tabassum, 595 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1135 (DUSH).

542. ***Utricularia stellaris*** L. f., Suppl. Pl.: 86 (1781); C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 328 (1884); Prain, Beng. Pl. 2: 581 (1903, reprint 1963). *Utricularia macrocarpa* Wall. ex C. B. Clarke (1884), *Utricularia inflexa* Forssk. var. *stellaris* (L. f.) Taylor (1961).

Vernacular names: *Jhangi, Hijala, Hejla.*

English name: Star bladderwort.

Annual or perennial, aquatic, carnivorous herb. Rhizoids absent. Leaves dissected, primary segments 3-5, semi-verticillate, filiform, secondary segments 2 per point and repeatedly divided, ultimate segments capillary; traps obliquely ovoid, shortly stalked, mouth lateral. Racemes held above water level by floats, up to 12-flowered, simple or branched, floats globose, ellipsoid to cylindrical. Flowers yellow. Capsules globose, circumscissile. *Flowering and fruiting:* July - April with a peak during October - February. *Chromosome number:* $2n = 42$ (Fedorov, 1969). *Still or slow running water, in ponds, tanks, lakes and rice fields.*

Distribution: Afghanistan, Africa, Australia, Bhutan, Europe, India, Vietnam, Laos, Cambodia, Indonesia, Malaysia, Myanmar, Nepal, Pakistan and Sri Lanka.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Kolafata, 05.03.2002, R. Tabassum, 168 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 929 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1188 (DUSH).

Family 96. **CAMPANULACEAE** A. L. de Jussieu (1789)

Annual or perennial herbs, rarely shrubs, sometimes lactiferous, roots and rhizomes often thickened and tuberous. Leaves simple, usually alternate, sometimes opposite, exstipulate, entire, serrulate or lobed. Flowers usually hermaphrodite, actinomorphic, solitary or in racemes or panicles, bracts small, bracteole absent. Calyx persistent, lobes 5, valvate. Corolla lobes 4-5, valvate. Stamens 5, epigynous, alternating with

corolla lobes, anthers 2-celled. Ovary inferior, 3-5 locular, ovules numerous, style thick with 3 or sometimes 2 stigmas. Fruit a capsule or berry, capsule papery. Seeds numerous, small, endospermous.

The family Campanulaceae consists of c 35 genera and c 600 species, cosmopolitan in distribution. In Bangladesh, the family is represented by 4 genera and 15 species.

In the present study area this family is represented by a single species.

Genus 327. **Lobelia** L., Sp. Pl. 2: 929 (1753).

543. **Lobelia zeylanica** L., Sp. Pl.: 932 (1753). *Lobelia succulenta* Blume (1826); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956), *Lobelia affinis* Wall. (1834); Hook. f., Fl. Brit. Ind. 3: 424 (1881); Prain, Beng. Pl. 1: 466 (1903, reprint 1963); R. L. Heinig, List Chittagong : 38 (1925).

Sparsely hairy to subglabrous herb. Leaves ovate or broadly ovate. Flowers solitary, axillary, calyx teeth linear-lanceolate, subulate, corolla violet to purple. Fruit a capsule, obconical to obovoid, sparsely pilose. *Flowering and fruiting*: throughout the year. *Open or shady moist soils, riverbanks, edges of rice fields*.

Distribution: India, Sri Lanka, China, Laos, Vietnam, Thailand, Malaysia, Singapore, Indonesia, Papua New Guinea and the Fiji Islands.

Status of occurrence: Common.

Specimens examined: Sripur, Veramtoli, 17.02. 2012, R. Tabassum, 2060 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2580 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3158 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3670 (DUSH).

Family 97. **RUBIACEAE** A. L. de Jussieu (1789)

Trees, shrubs, herbs and sometimes woody or herbaceous lianas. Leaves opposite, sometimes verticillate, simple, entire, stipulate. Inflorescence mostly terminal, sometimes axillary, usually dichasial cyme, rarely umbellate, capitate or solitary. Flowers 5-merous, rarely 4-merous, hermaphrodite, actinomorphic, rarely zygomorphic. Calyx adnate to the ovary. Corolla campanulate, infundibular or salver-shaped, 4-5 lobed. Stamens as many as corolla lobes, adnate to the throat of corolla tube, filaments connate, anthers dorsifixed or basifixed, longitudinally dehiscent. Pistil syncarpous. Ovary inferior, 2 or more locular, styles slender, stigmas bilobed. Fruit usually a capsule. Seeds usually with copious endosperm, sometimes winged.

The family Rubiaceae consists of about 450 genera and 6500 species, distributed mainly in tropical and subtropical regions of the World. In Bangladesh, the family is represented by 56 genera and 170 species.

In the present study area this family is represented by 16 genera and 30 species.

Key to genera:

1. Acaulescent to caulescent herbs, soft subshrubs, or herbaceous vines or clambering plants, if tall subshrubs then stems annual. 2
- Low to tall woody shrubs, trees, or lianas with well-developed secondary growth and perennial stems. 6
2. Ovary and fruit densely covered by well-developed, unusual, flattened or curved and glandular trichomes or projections **Dentella**
- Ovary and fruit smooth and glabrous to variously pubescent but trichomes neither regularly glandular nor markedly flattened 3
3. Plants extensively twining, climbing, or clambering, with stems slender and herbaceous or suffrutescent and flexuous 4
- Plants weak to erect, creeping on ground, self-supporting or weakly shortly clambering 5
4. Plants not fetid when bruised; fruit capsular with several to numerous small angled seeds; corollas with 4 or 5 valvate lobes **Hedyotis**
- Plants usually with fetid odor when bruised; fruit schizocarpous, dry, inflated, with 2 flattened winged pyrenes; corollas with 4-6 valvate-induplicate lobes **Paederia**
5. Flowers solitary and sessile, or several and sessile in sessile heads or glomerules **Mitracarpus**
- Flowers solitary to numerous, sessile to pedicellate or pedunculate in fascicles or cymes, if flowers sessile then borne severally in cymes or in pedunculate heads or glomerules **Spermococce**
6. Flowers fused together by their ovaries, at least shortly at their bases; fruit multiple **Morinda**

- Flowers free, sometimes tightly packed on a common supporting structure but not actually fused; fruit free 7
- 7. Flowers in 1 to several symmetrical, globose heads, heads sessile to pedunculate, terminal or axillary, flowers sessile to pedicellate **Neolamarckia**
- Flowers variously arranged in heads, cymes, panicles, or other types of groups, these groups sometimes umbelliform but heads then not symmetrically globose, terminal, axillary, pseudoaxillary, or in other positions 8
- 8. Inflorescences not borne at stem apex 9
- Inflorescences terminal, or pseudoaxillary 12
- 9. Inflorescence borne on regular paired axillary short shoots 10
- Inflorescences borne on peduncles directly from main stems 13
- 10. Flowers with 4 calyx lobes, corolla lobes, and stamens **Ixora**
- Flowers with 5 calyx lobes, corolla lobes, and stamens 11
- 11. Shrubs or small trees; leaf and thorns in ternate arrangement **Catunaregam**
- Trees; leaves and thorns in decussate arrangement **Tamilnadia**
- 12. Inflorescences racemiform or spiciform, with well-developed primary axes directly bearing numerous pedicels **Hymenodictyon**
- Inflorescences capitate to cymose, without well-developed primary axes with few to numerous pedicels **Canthium**
- 13. Corolla lobes convolute in bud 14
- Corolla lobes valvate or imbricate in bud 15
- 14. Fruit and usually ovary portion of calyx 5-8-ridged or -winged, ridges continuous with midrib of each calyx lobe **Gardenia**
- Fruit and ovary portion of calyx smooth to tuberculate **Aidia**
- 15. Unarmed shrubs; corollas red, orange, or yellow **Mussaenda**
- Armed trees; corollas white **Meyna**

Genus 328. **Aidia** Lour., Fl. Cochin.: 143 (1790).

544. **Aidia oppositifolia** (Roxb.) Rahman & Das *comb. nov.* *Webera oppositifolia* Roxb. (1824), *Webera densiflora* Wall. *ex* Roxb. ((1824), *Randia densiflora* (Wall. *ex* Roxb.) Benth. (1861), *Aidia densiflora* (Wall. *ex* Roxb.) Masam (1955).

Vernacular names: *Rapta bhadi*, *Adalya phul*.

Small to large tree. Leaves stipulate, lamina narrowly elliptic. Inflorescence leaf-opposed dichasial cyme. Flowers 5-merous, calyx campanulate, corolla lobes reflexed. Fruits globose, yellow to red then black when ripe. *Flowering and fruiting*: January - June. *Forest areas*.

Distribution: India, Myanmar, Thailand, Malay Peninsula and Indonesia.

Status of occurrence: Seems to be rare.

Specimen examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 19 (DUSH).

Genus 329. **Canthium** Lamk., Encycl. 1: 602 (1785).

545. **Canthium parvifolium** Roxb., Fl. Ind. 2: 170 (1824); Hook. f., Fl. Brit. Ind. 3: 135 (1880); Prain, Beng. Pl. 1: 421 (1903, reprint 1963); Hara & Gold in Enum, Fl. Pl. Nepal 2: 200 (1979); Kanjilal, Fl. Assam 3: 66 (reprint 1982); *Gardenia rigida* Wall. Cat. No. 8288b (1828).

Vernacular name: *Bish-moin*.

Spiny bushy shrub, branchlets slender, hispid-pubescent, spines straight and sharp. Leaves subsessile, ovate-elliptic, pubescent. Flowers minute, greenish-white. Fruits globose, pyrenes more or less tubercled, rounded on the back. *Flowering and fruiting*: July - January. *Scrub jungles in village areas*.

Distribution: India, Nepal, China, Indo-China, Malaysia and Indo-Malaysia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 197 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 626 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2384 (DUSH).

Genus 330. **Catunaregam** Wolf, Gen. Pl. Vocab. Char. Def.75 (1776).

546. **Catunaregam spinosa** (Thunb.) Tirveng., Bull. Mus. Hist. Nat. (Paris) Ser. 35: 13 (1978). *Gardenia spinosa* Thunb. (1780), *Gardenia spinosa* L. f. (1781), *Randia spinosa* (Thunb.) Blume (1826), *Xeromphis spinosa* (Thunb.) Keay (1958).

Vernacular names: *Monkanta*, *Monphal*.

English name: Common emetic nut.

Spiny shrub. Leaves variable, generally obovate-spathulate to orbicular. Flowers 5-merous, calyx copular, corolla funnel-shaped. Fruits crowned with persistent calyx lobes. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 27$ (Kumar and Subramaniam, 1986 under *Xeromphis spinosa*). *Forests*.

Distribution: Tropical East Africa, India and Malaysia.

Status of occurrence: Common.

Uses: Bark is used in diarrhea in children by *Santal*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 202 (DUSH); Kaliakoir, Mouchak, 01.10.2013, R. Tabassum, 3313 (DUSH).

Genus 331. **Dentella** J. R. & G. Forst.,
Char. Gen. Pl. Ins. Mar. Austr.: 13 (1775).

Key to species:

- | | |
|---|-------------------------------|
| 1. Corolla 8-10 mm long; Calyx and fruit glabrous | Dentella serpyllifolia |
| - Corolla 3-8 mm long; Calyx and fruit densely papillose-villous with flattened trichomes | Dentella repens |

547. **Dentella repens** (L.) J. R. & G. Forst., Char. Gen. Pl. Ins. Mar. Austr.: 26, t. 13 (1776); Hook. f., Fl. Brit. Ind. 3: 42 (1880); Prain, Beng. Pl. 1: 406 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 74 (1953). *Oldenlandia repens* L.(1768).

Vernacular name: *Bhuiapat*.

Annual prostrate herb. Leaves opposite, obovate-oblongate or oblong-elliptic. Flowers axillary, in the fork of branches, solitary, white. Capsules globose, covered with thick hyaline blunt setae. *Flowering and fruiting*: December - July. *Chromosome number*: $2n = 36$ (Kumar and Subramaniam, 1986). *Wet places*.

Distribution: India, Sri Lanka, Malaysia, Taiwan, Micronesia and Polynesia.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 102 (DUSH); Gazipur, Sadar, Kamalpara, 02.11.2002, R. Tabassum, 156 (DUSH); Kaliakoir, Mouchak,

08.01.2010, R. Tabassum, 618 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2297 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3718 (DUSH).

548. **Dentella serpyllifolia** Wall. ex Craib, Fl. Siam. Enum. 2: 27 (1932). *Dentella repens* (L.) J. R. & G. Forst. var. *serpyllifolia* (Wall. ex Airy Shaw) Verdc. (1983).

Vernacular name: *Bhuiapat*.

Annual dichotomously branched prostrate herb. Leaves opposite, oblanceolate. Flowers small, axillary, in the fork of branches, solitary, white. Hypanthium glabrous. Capsules globose, smooth; seeds reticulate. *Flowering and fruiting*: December - July. *Grows in moist places*.

Distribution: India, Myanmar and Thailand.

Status of occurrence: Common.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 531 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 901 (DUSH).

Genus 332. **Gardenia** Ellis, Phil. Trans. Linn. Soc. 2: 935 (1761).

549. **Gardenia augusta** (L.) Merr., Interpr. Rumph. Herb. Amboin. 50: 485 (1917). *Varneria augusta* L. (1759), *Gardenia jasminoides* Ellis (1761), *Gardenia florida* L. (1762); Hook. f., Fl. Brit. Ind. 3: 115 (1880); Prain, Beng. Pl. 1: 413 (1903, reprint 1963); R. L. Heinig, List Chittagong: 35 (1925), *Jasminum capense* Mill. (1768).

Vernacular name: *Gondhoraj*.

English names: Cape jasmine, Gardenia.

Large shrub. Leaves decussate or occasionally in whorls of 3. Flowers solitary, terminal, white, fragrant. Fruits berry-like, ovoid, crowned with persistent calyx, longitudinally ribbed, bright orange-red. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Plain lands*.

Distribution: Native of China and Japan, pantropic in cultivation.

Status of occurrence: Cultivated.

Uses: Garden plant.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 644 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2298 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2529 (DUSH); Gazipur Sadar, Shuib Road, 19.08.2013, R. Tabassum, 2905 (DUSH); Kaliakoir, Kandunia village, 03.11.2013, R. Tabassum, 3683 (DUSH).

Genus 333. **Hedyotis** L., Sp. Pl.: 101 (1753).*Key to species:*

1. Inflorescences mostly or all axillary or pseudoaxillary;
stem apices generally vegetative 2
- Inflorescences terminal, or terminal and in uppermost
leaf axils 3
2. Stems quadrate to flattened with angles thickened to
winged and usually pubescent to scaberulous; flowers
1-5 per peduncle, all pedicellate; stigmas and anthers
included **Hedyotis corymbosa**
- Stems terete to flattened or 4-angled when young,
glabrous to rather evenly scaberulous or pubescent;
flowers 1 or 2 in each stem axil, subsessile to
pedicellate; stigmas and anthers exerted **Hedyotis diffusa**
3. Flowers 5-merous; calyx lobes 3-3.5 mm **Hedyotis hainanensis**
- Flowers 4-merous; calyx lobes 0.1-35 mm **Hedyotis scandens**

550. **Hedyotis corymbosa** (L.) Lamk., Tab. Encycl. 1: 272 (1791). *Oldenlandia corymbosa* L. (1753); Hook. f., Fl. Brit. Ind. 3: 64 (1885); Prain, Beng. Pl. 1: 409(1903, reprint 1963); R. L. Heinig, List Chittagong : 34 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 96 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 75 (1953).

Vernacular names: *Khet papra*, *Panki*.

Diffuse or prostrate herb. Leaves linear or narrowly elliptic. Inflorescence an axillary cyme of 2-5 flowered corymbs, umbels or racemes. Flowers white. Capsules globose to ovoid. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Waste lands, grass fields, along railway tracts, floor of scrub jungles on thin layer of soils.*

Distribution: India and Malaysia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 358 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 585 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 850 (DUSH); Sripur, Borkul,

21.06.2010, R. Tabassum, 1246 (DUSH); Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2325 (DUSH).

551. **Hedyotis diffusa** Willd., Sp. Pl. 1: 566 (1797). *Oldenlandia diffusa* (Willd.) Roxb., Fl. Ind. ed. 1: 423 (1832); Hook. f., Fl. Brit. Ind. 3: 65 (1880); Prain, Beng. Pl. 1: 409 (1903, reprint 1963); R. L. Heinig, List Chittagong: 34 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 75 (1953).

Annual herb. Leaves linear or linear-lanceolate. Inflorescence an axillary cyme. Flowers solitary, white. Capsules subglobose. *Flowering and fruiting*: July - December. *Chromosome number*: $2n = 54$ (Kumar and Subramaniam, 1986). *Grows in moist humus covered clayey or sandy soils*.

Distribution: Sri Lanka, India, Nepal, Bhutan, Indonesia and Malaysia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 711 (DUSH); Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 992 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1759 (DUSH).

552. **Hedyotis hermaniana** Dutta, J. Econ. Tax. Bot. 23(3): 734 (1999). *Oldenlandia biflora* R. Br. ex Wight & Arn. (1834) *non* Lamk. (1792).

Erect herb. Leaves ovate-oblong or elliptic. Inflorescence 1-5 flowered, terminal or axillary cyme. Flowers white or pink. Capsules oblong-ellipsoid, crown enclosed within calyx segments. *Flowering and fruiting*: June - February. *Grows in moist sandy soils*.

Distribution: Sri Lanka and India.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3887 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3913 (DUSH).

553. **Hedyotis scandens** Roxb., Fl. Ind. 1: 369 (1820); Hook. f., Fl. Brit. Ind. 3: 57 (1880); Prain, Beng. Pl. 1: 407 (1903, reprint 1963); R. L. Heinig, List Chittagong: 34 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 96 (1956). *Hedyotis volubilis* Wall. (1820), *Hedyotis polycarpa* R. Br. ex G. Don (1834), *Oldenlandia scandens* (Roxb.) O. Kuntze (1891).

Vernacular names: *Bish lata*, *Guji*, *Kannya bata*, *Lataguji*.

Perennial climbing herb. Leaves lanceolate or elliptic-oblong. Inflorescence terminal and axillary trichotomously branched cyme. Flowers yellowish-white, heterostylous. Capsules globose or obscurely 2-lobed at the top. *Flowering and fruiting*: almost throughout the year. *Grows in forests and grasslands*.

Distribution: India, Nepal, Bhutan, Myanmar, Thailand, Indo-China, Vietnam and the Philippines.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 619 (DUSH).

Genus 334. **Hymenodictyon** Wall. in Roxb., Fl. Ind. 2: 148 (1824).

554. **Hymenodictyon orixensis** (Roxb.) Mabb., Taxon 31: 66 (1982). *Cinchona orixensis* Roxb. ((1793), *Hymenodictyon excelsum* (Roxb.) Wall. (1824); Hook. f., Fl. Brit. Ind. 3: 35 (1880); Prain, Beng. Pl. 1: 406 (1903, reprint 1963); R. L. Heinig, List Chittagong: 34 (1925).

Vernacular names: *Bhutum*, *Bhuikadam*, *Gomria gamar*.

Large deciduous tree. Leaves ovate, elliptic-lanceolate or oblong-lanceolate. Inflorescence panicle raceme. Flowers pedicellate, calyx 5-lobed, rarely 6-lobed, corolla villous outside. Fruits ellipsoid-oblong capsules, on recurved pedicels, reddish-brown, reflexed. *Flowering and fruiting*: July - February. *Chromosome number*: $2n = 22, 66$ (Kumar and Subramaniam, 1986 under *Hymenodictyon excelsum*). *Grown in plain lands*.

Distribution: India, Myanmar, Vietnam, Thailand and Malaysia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 356 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 932 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2056 (DUSH).

Genus 335. **Ixora** L., Sp. Pl.: 110 (1753).

Key to species:

- | | |
|---|---|
| 1. Corolla tube larger than 20 mm; corolla red, yellow or white | 2 |
| - Corolla tube up to 13 mm; corolla white | 3 |

- | | | |
|----|--|---------------------|
| 2. | Stigma curved; leaf margin undulate | undulata |
| - | Stigma not curved; leaf margin not undulate | chinensis |
| 3. | Lateral nerves 11-14 pairs | pavetta |
| - | Lateral nerves 8-10 pairs | 4 |
| 4. | Leaves oblong to oblong-lanceolate, apex shortly acuminate | cuneifolia |
| - | Leaves elliptic-oblong, apex acute | finlaysonian |

555. ***Ixora chinensis*** Lamk., Encycl. 3: 344 (1789). *Ixora coccinea* Curtis (1792) *non* L. (1753), *Ixora incarnata* Roxb. *ex* Smith (1811), *Ixora stricta* Roxb. (1820); Hook. f., Fl. Brit. Ind. 3: 145 (1880); Prain, Beng. Pl. 1: 418 (1903, reprint 1963)0, *Ixora dubia* Schult. ((1827).

Shrub. Leaves ovate or obovate-oblong. Inflorescence trichotmously branched cyme or corymb. Flowers with a pair of small bracteols, not fragrant, calyx teeth shorter than the ovary, pubescent, corolla lobes elliptic, yellow-turning to brick red, tip pointed. Fruits globose. *Flowering and fruiting*: July - December. *Chromosome number*: 2n = 22 (Kumar and Subramaniam, 1986). *Gardens*.

Distribution: Native to Malaya, distributed in South China, Indo-China, Moluccas and cultivated in India and Pakistan.

Status of occurrence: Cultivated.

Uses: The plant has a horticultural value.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 923 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2871 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R.Tabassum, 3558 (DUSH).

556. ***Ixora cuneifolia*** Roxb., Fl. Ind. 1: 380 (1820); Hook. f., Fl. Brit. Ind. 3: 144 (1880); Prain, Beng. Pl. 1: 418 (1903, reprint 1963); R. L. Heinig, List Chittagong: 36 (1925); J. Simclair in Bull. Bot. Soc. 9(2): 97 (1956).

Vernacular names: *Beophul*, *Kesua gach*.

Shrub. Leaves oblong or oblong-lanceolate or oblanceolate. Inflorescence short peduncled cymes. Flowers white, calyx teeth as long as the tube, corolla lobes elliptic-oblong. Fruits pea-sized, red. *Flowering and fruiting*: March - July. *Grows in forest areas*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 177 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 800 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1142 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3605 (DUSH).

557. ***Ixora finlaysoniana*** Wall. ex G. Don, Gen. Syst. 3: 572 (1834). *Ixora finlaysoniana* Wall. (1828) *ined.*, *Ixora capituliflora* Bremek. (1937).

Vernacular name: *Sada rangon*.

Small tree or shrub. Leaves elliptic-obovate. Inflorescence terminal corymbs. Flowers white, calyx lobes short, corolla lobes narrowly elliptic to oblanceolate. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Gardens.*

Distribution: India and Malaysia.

Status of occurrence: Cultivated.

Uses: The plant has a horticultural value.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 198 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 651 (DUSH).

558. ***Ixora pavetta*** Andr., Bot. Rep.: t. 78 (1799). *Ixora parviflora* Vahl, Symb. Bot. 3: 11, t. 52 (1794); Hook. f., Fl. Brit. Ind. 3: 142 (1880); Prain, Beng. Pl. 1: 418 (1903, reprint 1963); R. L. Heinig, List Chittagong : 35 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 75 (1953), *Ixora arborea* Roxb. ex Smith (1811), *Ixora decipiens* DC. (1830).

Vernacular names: *Gandhalrangan*, *Swetrangan*. English name: The torch tree.

Shrub or small tree. Leaves ovate to obovate. Inflorescence corymbiform terminal panicles. Flowers sessile, 4-merous, white or scarlet, odorous. Fruits pea-sized, globose, 2-seeded. *Flowering and fruiting:* March - June. *Chromosome number:* $2n = 22$ (Kumar and Subramaniam, 1986). *Scrub jungles.*

Distribution: India, Sri Lanka, Pakistan and Myanmar.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 61 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1328 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3061 (DUSH).

559. ***Ixora undulata*** Roxb., Fl. ed. 1: 395 (1820); Hook. f., Fl. Brit. Ind. 3: 147 (1880); Prain, Beng. Pl. 1: 418 (1903, reprint 1963). *Ixora camjia* Wall. (1828).

Vernacular names: *Palkajui*, *Paluka jui*.

Large shrub or small tree. Leaves broadly lanceolate to elliptic-lanceolate with wavy margin. Inflorescence lax corymbose. Flowers white, scented, calyx teeth triangular, corolla lobe oblong. Fruits globose to ellipsoid berry. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Forests*.

Distribution: Sri Lanka, India and Nepal.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Memberbari, 26.03.2008, R. Tabassum, 268 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 795 (DUSH).

Genus 336. ***Meyna*** Roxb. ex Link, Jahrb. Gewachsk. 1(3): 32 (1820).

560. ***Meyna pubescens*** (Kurz) Robyns, Bull. Jard. Bot. Brux. 11: 235 (1928). *Vangueria spinosa* Roxb. var. *mollis* Wall. (1828); Hook. f., Fl. Brit. Ind. 3: 136 (1880); Prain, Beng. Pl. 1: 421 (1903, reprint 1963), *Vangueria pubescens* Kurz (1872).

Vernacular name: *Moina kata*.

Armed shrub. Leaves stipulate and petiolate, lamina ovate-elliptic, ovate-lanceolate. Cymes axillary, fascicled. Flowers small, hypanthium broader than long, calyx linear, corolla tube prominently ribbed within, throat villous. Berries small, thick, smooth, pyrenes 1-seeded. *Flowering and fruiting*: March - July. *Plain lands*.

Distribution: India, Myanmar, Indo-China and Indonesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 373 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 962 (DUSH).

Genus 337. ***Mitracarpus*** Schult., Mant. Pl. 3: 210 (1827).

561. ***Mitracarpus hirtus*** (L.) DC., Prodr. 4: 527 (1830). *Spermacoce hirta* L., Sp. Pl. ed. 2, 148 (1762).

Erect or decumbent annual herb. Leaves elliptic. Cymes terminal and axillary, semi-globose heads. Flowers white, hypanthium short, calyx persistent, corolla infundibular.

Fruits 2-locular, each locule with one seed. *Flowering and fruiting*: September - March. *Grows in open waste places*.

Distribution: Sri Lanka, India, Bhutan and native of West Indies.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1327 (DUSH); Kaliganj, Gudara Ghat 02.01.2013, R. Tabassum, 2258 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2676 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3130 (DUSH); Kapasia, kandunia village, 03.11.2013, R. Tabassum, 3658 (DUSH).

Genus 338. **Morinda** L., Sp. Pl.: 176 (1753).

Key to species:

- | | |
|---|-----------------------------|
| 1. Erect trees or shrubs; inflorescences terminal, axillary, or leaf-opposed, 1 or 2 per node | 2 |
| - Lianas, twiners, or subshrubs; inflorescences terminal, with heads solitary or in groups of 2-11 | Morinda umbellata |
| 2. Peduncle 1-1.5 cm; bracteoles absent; calyx limb 0.2-0.5 mm; corolla funneliform, densely villous in throat; drupes not distinguishable individually | Morinda citrifolia |
| - Peduncle 1.5-4 cm; bracteoles subulate; calyx limb ca. 1 mm; corolla salveriform inside glabrous; drupes partially fused to nearly separate | Morinda angustifolia |

562. **Morinda angustifolia** Roxb., Fl. Ind. 1: 547 (1820); Hook. f., Fl. Brit. Ind. 3: 156 (1880); Prain, Beng. Pl. 1: 420 (1903, reprint 1963).

Vernacular names: *Banamali, Bansak, Baroful, Daru haridra, Harinar phul, Holdiruk, Pan-dogi, Pandusi, Rong gachh, Shalimaricha*.

Avergreen shrub or small tree. Leaves narrowly lanceolate or oblanceolate. Cymes terminal, lateral and leaf-opposed. Flowers 5-merous, sweet-scented, heterostylous, arranged on globose heads which gradually elongates as a small compound fruit, calyx truncate, corolla white. Fruits turbinate, few fruits set in each head, black when dry. *Flowering and fruiting*: December - September. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Along the edge of forests*.

Distribution: India, Nepal and Myanmar.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 801 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1453 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1553 (DUSH).

563. **Morinda citrifolia** L., Sp. Pl.: 176 (1753); Hook. f., Fl. Brit. Ind. 3: 155 (1880); Prain, Beng. Pl. 1: 420 (1903, reprint 1963); R. L. Heinig, List Chittagong: 249 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 97 (1956). *Morinda bracteata* Roxb. (1824), *Morinda citrifolia* L. var. *bracteata* (Roxb.) Hook. f. (1880).

Vernacular names: *Ach*, *Barachand*, *Haldi kachu*, *Haldi-kunch*, *Shutarangi* (Koch).

Shrub or small tree. Leaves elliptic to obovate. Inflorescence in dichasial cymes, condensed and aggregated into heads. Flowers 5-merous, calyx tube or hypanthium urceolate, corolla infundibular, white. Fruits compound, smooth and glossy on fleshy heads. *Flowering and fruiting:* May - November. *Chromosome number:* $2n = 22, 44$ (Kumar and Subramaniam, 1986). *Grows in plain lands.*

Distribution: Sri Lanka, India, Pakistan, Myanmar, Malaysia, China, Australia and Pacific islands.

Status of occurrence: Common.

Uses: Leaves are used in jaundice by Koch.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1440 (DUSH); Kapasia, Borhor, 09.03.2012, R. Tabassum, 2085 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2635 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3236 (DUSH).

564. **Morinda umbellata** L., Sp. Pl.: 176 (1753). *Morinda pada-vara* Juss. ex Schult. (1819), *Morinda scandens* Roxb. (1824).

Vernacular name: *Gacha lata*.

Climbing shrub. Leaves elliptic to elliptic-lanceolate. Inflorescence a terminal umbel. Flowers 4-merous, calyx limb short, truncate, corolla tube very short, inside villous in the throat. Fruits pyriform drupe, irregularly lobed. *Flowering and fruiting:* June - September. *Chromosome number:* $2n = 22$ (Kumar and Subramaniam, 1986). *Grows in scrub jungles.*

Distribution: Sri Lanka, India, Myanmar, Indo-Malaysia and Australia.

Status of occurrence: Seems to be rare.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1431 (DUSH); Gazipur Sadar, Rajendropur Sal forest, 04.02.2011, R. Tabassum, 1750 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3132 (DUSH).

Genus 339. **Mussaenda** L., Sp. Pl. 1: 177 (1753).

Key to species:

1. Calyx lobes subleaflike, 1.5-5 mm wide, lanceolate, oblanceolate, oblong-lanceolate, ligulate, or broadly triangular **Mussaenda roxburghii**
- Calyx lobes less than 1.5 mm wide, linear to narrowly triangular, not at all leaflike **2**
2. Cultivated plants; leaves strigose, strigillose, or glabrescent abaxially **Mussaenda frondosa**
- Native plants; leaves hirsute, subappressed villous, pilose, or strigose abaxially **Mussaenda erythrophylla**

565. **Mussaenda erythrophylla** Schum. & Thonn., Beskr. Guin. Pl.: 116 (1827).

Vernacular name: *Macchenda*.

Scandent or climbing shrub. Leaves elliptic to ovate. Cymes several-flowered, axes densely covered with long, red hairs. Flowers 5-merous, calyx lobes small, narrowly lanceolate, densely red-hairy, corolla tube densely red-hairy on the outside, lobes white to creamy-white. Fruits usually not developed in cultivated plants. *Flowering:* throughout the year. *Chromosome number:* $2n = 22$ (Kumar and Subramaniam, 1986). *Cultivated in gardens.*

Distribution: Grown as ornamental plant in many countries.

Status of occurrence: Cultivated.

Uses: Planted as an ornamental.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3888 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3914 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3943 (DUSH).

566. **Mussaenda frondosa** L., Sp. Pl. 177 (1753). *Mussaenda macrophylla* sensu Kurz. (1877) *non* Wall., *Mussaenda ingrata* Wall. ex Hook. f. (1880).

Vernacular name: *Mussanda*.

Scandent shrub. Leaves ovate to lanceolate, elliptic to orbicular or obovate. Inflorescence a few-flowered cyme. Calyx lobes narrowly linear, petaloid sepal creamy-white. Corolla tube densely hairy. Fruits globose, sparsely hirsute. *Flowering*: throughout the year. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Grows in secondary forests*.

Distribution: Sri Lanka, India, Nepal and Myanmar.

Status of occurrence: Common.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1133 (DUSH); Tongi, Chaydana, 19.08.2013, R. Tabassum, 2854 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3087 (DUSH); Kaliakoir, Simultoli, 01.10.2013, R. Tabassum, 3373 (DUSH).

567. **Mussaenda roxburghii** Hook. f., Fl. Brit. Ind. 3: 87 (1880); Prain, Beng. Pl. 1: 411 (1903-reprint 1963). *Mussaenda corymbosa* Kurz. (1974) *non* Roxb. (1824).

Vernacular names: *Chauri-chaonri*, *Silchaonri*, *Raniratak*.

Erect or suberect shrub. Leaves elliptic or oblong-lanceolate. Inflorescence a dense terminal head, many-flowered. Flowers with calyx teeth persistent till the fruit is ripe, calyx lobes tapering from the base, densely covered with long silky hairs, corolla tube silky adpressed pubescent outside. Fruits oblong or ellipsoid berry, crowned in a head-like mass. *Flowering and fruiting*: May - February. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Grows in primary forests*.

Distribution: Sri Lanka, India, Nepal, Bhutan and Myanmar.

Status of occurrence: Seems to be rare.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2216 (DUSH); Kaliakior, Hijoltoli, 13.09.2013, R. Tabassum, 2954 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3496 (DUSH).

Genus 340. **Neolamarckia** Bosser,

Bull. Mus. Hist. Nat. Paris ser. 6 (B), Adans. 3: 247 (1984).

568. **Neolamarckia cadamba** (Roxb.) Bosser, Bull. Mus. Hist. Nat. Paris ser. 6, sect. B, Adans. 3: 247 (1984). *Nauclea cadamba* Roxb., Fl. Ind. 2: 121 (1824). *Anthocephalus chinensis* (Lamk.) A. Rich. ex Walp., Rep. 2: 491 (1843). *Anthocephalus cadamba* (Roxb.) Miq., Fl. Ind. Bat. 2: 135 (1856); Hook. f., Fl. Brit. Ind. 3: 23 (1880); Prain, Beng. Pl. 1: 403 (1903, reprint 1963); R. L. Heinig, List Chittagong: 33 (1925).

Vernacular names: *Kadam*, *Bul-kadam*.

Tree. Leaves ovate to elliptic-oblong or obovate. Inflorescence terminal, a solitary head. Flowers subsessile, corolla salver-shaped. Fruiting heads globose, fruitlets indehiscent, capped by the persistent calyx. Seeds very small. *Flowering and fruiting*: July - December. *Grows in swamp lands as well as high lands also*.

Distribution: Sri Lanka, Nepal, India, Myanmar, Malaysia and New Guinea.

Status of occurrence: Cultivated.

Uses: Used as an ornamental plant.

Specimens examined: Kaliganj, Chamundi, 29.04.2005, R. Tabassum, 234 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1404 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1774 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3181 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3760 (DUSH).

Genus 341. **Paederia** L., Mant. Pl. 7: 52 (1767).

569. **Paederia foetida** L., Mant. 1: 52 (1767); Hook. f., Fl. Brit. Ind. 3: 195 (1880); Prain, Beng. Pl. 1: 423 (1903, reprint 1963); R. L. Heinig, List Chittagong: 36 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 97 (1956). *Convolvulus joetidus* Rumph. (1750), *Apocynum foetidum* Burm. f. (1768), *Paederia tomentosa* Blume (1826).

Vernacular names: *Gandha Bhadali*, *Gondha Beduli*, *Gondhal*.

Large foetid twining vine. Leaves ovate-lanceolate, elliptic or oblong. Inflorescence paniced, axillary. Flowers pink or blue, calyx teeth ovate, corolla lobes valvate with inflexed edges. Fruits globose, yellow to reddish-brown. *Flowering and fruiting*: June - January. *Chromosome number*: $2n = 44$ (Kiehn, 1991). *Grows in forest openings and village thickets sometimes cultivated*.

Distribution: Nepal, India, Myanmar, Indo-China, Malaya, Thailand and Indonesia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 496 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2222 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3355 (DUSH).

Genus 342. **Spermacoce** L., Sp. Pl.: 102 (1753).

Key to species:

1. Corolla tube shorter than or equal to calyx lobes;
calyx lobes 2 or 4; mature fruit $0.6-1.1 \times 0.3-1$ mm **Spermacoce latifolia**

- Corollas tube 0.5-10 mm and longer than calyx lobes; calyx lobes 4; mature fruit 1-5 × 1-3.5 mm 2
- 2. Mature seeds 2-2.5 mm, oblong to elliptic-oblong in outline, brown; corolla tube slender, 6.5-10 mm **Spermacoce articularis**
- Mature seeds 2.2-3 mm, elliptic to elliptic-oblong in outline, black; corolla tube funnelform, 2.5-4.5 mm **Spermacoce stricta**

570. **Spermacoce articularis** L. f., Suppl. Pl.: 119 (1782). *Spermacoce hispida* auct. non L.: Trimen (1894), *Borreria articularis* (L. f.) Williams (1905), *Borreria hispida* auct. non (L.) Schum.: Gamble (1921).

Perennial, prostrate or mat formatting herb. Stem 4-angled, densely covered with rusty brown hairs. Leaves stipulate and petiolate, lamina elliptic to elliptic-oblong or obovate. Flowers in axillary clusters, calyx lobes 4, ciliate on the margin, corolla salver-form, pink. Capsules obovoid, hispid, splitting into 2-valves. *Flowering and fruiting*: August - December. *Chromosome number*: 2n = 56 (Kumar and Subramaniam, 1986 under *Borreria articularis*). *Damps, open areas*.

Distribution: Sri Lanka, India, Malaysia and tropical Africa.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1358 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1892 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2312 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3148 (DUSH).

571. **Spermacoce latifolia** Aublet, Hist. Pl. Guiane Frtan. 1: 55, t. 19, f. 1 (1775). *Borreria latifolia* (Aublet) K. Schum. in Mart. Fl. Bras. 4: 61 (1888).

Vernacular name: *Ghuijhil shak*.

Prostrate herb. Leaves elliptic or broadly ovate. Inflorescence of clustered cymes. Flowers minute, calyx lobes 4, corolla light purplish-pink. Capsules obovoid, finely reticulate-warty. *Flowering and fruiting*: December - April. *Grows in open lands along roadsides*.

Distribution: Sri Lanka, India, Bhutan, Malay Peninsula and tropical Africa.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 372 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 863 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2028 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3513 (DUSH).

572. **Spermacoce stricta** L. f., Suppl. Pl.: 120 (1781); Hook. f., Fl. Brit. Ind. 3: 200 (1881); Prain, Beng. Pl. 1: 425 (1903, reprint 1963). *Spermacoce pusilla* (Wall.) Roxb. (1820), *Borreria stricta* (L. f.) K. Schum. (1891).

Vernacular names: *Bishmijal*, *Narikeljhuri shak*.

Erect or rarely prostrate annual herb. Stem 4-angled, grooved; leaves linear-lanceolate. Flowers in dense compact spherical clusters, calyx lobes 4, scabrid, corolla white or pink. Capsules ellipsoid. *Flowering and fruiting*: December - May. *Chromosome number*: $2n = 56$ (Kumar and Subramaniam, 1986). *Grows in damp grass lands, bush lands, roadsides, stream banks and cleared ground mostly on sands*.

Distribution: Widespread in tropical Africa, tropical Asia to Japan and the Philippines.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1441 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3234 (DUSH).

Genus 343. **Tamilnadia** Tirveng. & Sastre, Mauritius Inst. Bull. 8(4): 84 (1979).

573. **Tamilnadia uliginosa** (Retz.) Tirveng. & Sastre, Mauritius Inst. Bull. 8(4): 85 (1979). *Gardenia uliginosa* Retz. (1781), *Randia uliginosa* (Retz.) DC. (1830); Hook. f., Fl. Brit. Ind. 3: 110 (1880); Prain, Beng. Pl. 1: 415 (1903, reprint 1963), *Xeromphis uliginosa* (Retz.) Maheswari (1962).

Vernacular names: *Piralu* (Garó), *Pedalu*.

Medium-sized deciduous tree. Leaves elliptic, obovate-oblongate. Flowers solitary, calyx lobes rounded, corolla white, campanulate. Fruits ovoidal, yellowish. *Flowering and fruiting*: June - February. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Grows in secondary forests*.

Distribution: India, Bhutan and Myanmar.

Status of occurrence: Seems to be rare.

Uses: Fruits are used in dysentery by Garó.

Specimen examined: Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 467 (DUSH).

Family 98. **ASTERACEAE** Dumortier (1822)

Annual or perennial herbs, sometimes shrubs or climbers, rarely arborescent. Leaves alternate or opposite, sometimes whorled, simple or sometimes 2 to many foliate, entire or toothed or variously dissected, exstipulate. Flowers hermaphrodite, unisexual

or neuter, 1 to many, aggregated on a common receptacle, enclosed by a involucre of bracts forming the heads or capitula. Capitula variously arranged spikes, corymbs, panicles or rarely in glomerules, discoid, ligulate, disciform or radiate. Receptacle flat. Calyx absent or reduced to pappus of bristles, awns or scales. Corolla sympetalous, petals 4-5, tubular, ligulate or bilabiate. Stamens 5, rarely 4, epipetalous, anthers 2-celled, syngenesious, forming a tube around the style, dehiscent longitudinally. Ovary inferior, unilocular, ovule solitary, styles 2. Fruit an achene or cypsela, crowned by the persistent pappus, or pappus sometimes deciduous or absent. Seeds exalbuminous.

The family Asteraceae consists of more than 1100 genera and c 20,000 species, cosmopolitan in distribution, but well represented in temperate or subtropical regions. In Bangladesh, this family is represented by 71 genera and 130 species.

In the present study area this family is represented by 26 genera and 32 species.

Key to genera:

- | | | | |
|----|---|----|-------------------|
| 1. | Capitula of 2 kinds, either with only functionally male florets or with only female florets; flowering not precocious | 2 | |
| - | Capitula all alike, homogamous or heterogamous, rarely plants subdioecious and then flowering precocious | 10 | |
| 2. | Plants monoecious, with male and female capitula on same plant | 3 | |
| - | Plants dioecious, with male and female capitula on different plants | | Gnapalium |
| 3. | Plant generally wind-pollinated or self-pollinated, capitula small and not showy; all florets unisexual, or if bisexual then capitula aggregated into glomerules; ray florets absent | | Xanthium |
| - | Plant generally adapted for attracting pollinating insects, capitula colorful and attractive; some or all florets bisexual; ray florets present, sometimes inconspicuous, rarely absent | 4 | |
| 4. | Only ray florets fertile, ray achenes much longer than those of sterile disk florets | | Parthenium |
| - | Disk florets fertile; ray florets present and fertile or sterile or absent | 5 | |
| 5. | Pappus of subulate to acerose scales, or spatulate | | Tridax |
| - | Pappus absent, or awned | 6 | |
| 6. | Achenes compressed | | Synedrella |

- Achenes all relatively plump, or 3-5-angled in ray florets and compressed in disk florets 7
- 7. Achenes enclosed by inner phyllaries or outer paleae **Enhydra**
- Achenes not enclosed by inner phyllaries 8
- 8. Paleae narrow, long, flat; ray florets 2-seriate, lamina small; pappus absent or of 2 short awns **Eclipta**
- Paleae concave or folded, $\pm$ enclosing florets 9
- 9. Achenes in ray florets broadly ovate or elliptic, 3-angled; disk achenes ellipsoid, strongly compressed; pappus absent or of up to 10 awnlike bristles **Spilanthes**
- Achenes in bisexual florets 4- or 5-angled, or compressed **Helianthus**
- 10. Capitula homogamous and all florets ligulate, i.e., corollas with an expanded abaxial, apically 5-toothed, 5-lobed, or 5-cleft limb; latex present 11
- Capitula heterogamous, or if homogamous then corollas tubular and 5-lobed or zygomorphic and pseudoligulate; plants without or rarely with latex 13
- 11. Pappus white, of numerous fine cottony outer bristles intermixed with some thicker inner ones **Sonchus**
- Pappus white or grayish, yellowish, straw-colored, brownish, or reddish brown, of bristles $\pm$ equal in diam. and stiffness 12
- 12. Achene compressed with dominating or broadened lateral ribs **Lactuca**
- Achene isodiametric or compressed but not with dominating or broadened lateral ribs **Launaea**
- 13. Capitula homogamous; corollas pseudoligulate, 5-lobed and zygomorphic 14
- Capitula heterogamous or homogamous and corollas 3-5-lobed, actinomorphic 16
- 14. Capitula densely clustered into compound synflorescences subtended by (1-)3 leaflike bracts, each involucre with 1-4 florets and ca. 8 phyllaries 15
- Capitula in lax panicles, rarely in sessile clusters and then each involucre with more than 4 florets and always with many phyllaries **Vernonia**

- | | | |
|-----|--|--------------------------|
| 15. | Capitula (1-)10-40 per cluster, clusters terminal, solitary or in flat-topped synflorescences, each subtended by (2 or) 3 triangular bracts; pappus with many straight, scabrid-barbellate, basally widened awns | Elephantopus |
| - | Capitula 1-5-per cluster, clusters axillary in long spikelike synflorescences, each subtended by 1 or 2 lanceolate to spatulate or linear bracts; pappus with 2 very long, bent or curved awns | Pseudelephantopus |
| 16. | Leaves at least below synflorescence opposite or mostly so | 17 |
| - | Leaves all alternate | 19 |
| 17. | Phyllaries and florets 4 per capitulum | Mikania |
| - | Phyllaries and florets not of equal number, or if florets 4 then phyllaries more numerous | 18 |
| 18. | Pappus of scales or awns, rarely absent; receptacle paleaceous | Ageratum |
| - | Pappus of capillary setae; receptacle epaleate | Chromolaena |
| 19. | Disk corollas 3- or 4-merous | 20 |
| - | Disk corollas or all corollas 5-merous | 23 |
| 20. | Achenes dorsiventrally compressed, elliptic in cross section | 21 |
| - | Achenes subterete, broadly ribbed | Centipeda |
| 21. | Capitula radiate; ray florets often conspicuous, but sometimes not so | Chrysanthemum |
| - | Capitula discoid with all florets bisexual, tubular, or capitula disciform with marginal florets inconspicuous, corollas narrowly tubular to filiform or absent | 22 |
| 22. | Marginal female florets in many rows | Cotula |
| - | Marginal female florets in 1 row | Artemisia |
| 23. | Phyllaries rather dry, either with distinct scarious margin or papery, brownish, yellowish, or whitish, never herbaceous and green throughout | Gnaphalium |
| - | Phyllaries herbaceous, all or at least outer ones green throughout, except at very apex | 24 |
| 24. | Receptacle paleate | 25 |

- Receptacle epaleate 26
- 25. Capitula radiate, disciform, or discoid, florets yellow; marginal florets when present female, radiate (rarely miniradiate or tubular); disk florets bisexual; phyllaries herbaceous or leathery, sometimes leafy; achenes with large oxalate crystals in epidermis cells **Blumea**
- Capitula disciform, heterogamous or homogamous; marginal florets filiform or tubular; achenes without large epidermis crystals **Sphaeranthus**
- 26. Phyllaries uniseriate, but sometimes with an outer series of much shorter bracts; involucre cylindric **Emilia**
- Phyllaries 2- to several seriate, if subuniseriate then involucre saucer-shaped to subglobose **Grangea**

Genus 344. **Ageratum** L., Sp. Pl.: 839 (1753).

574. **Ageratum conyzoides** L., Sp. Pl.: 839 (1753); Hook. f., Fl. Brit. Ind. 3: 243 (1881); Prain, Beng. Pl. 1: 433 (1903, reprint 1963); R. L. Heinig, List Chittagong: 36 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 97 (1956).

Vernacular names: *Ochunti*, English names: Billy goat weed, Tropical white weed.
Fulkuri.

Annual, aromatic herb. Stem hispidly hairy. Leaves ovate. Inflorescence a capitulum in dense terminal corymbs. Flowers white, light pink or whitish-blue. Cypsela narrowly oblong, black, pappus paleaceous. *Flowering and fruiting*: November - June. *Chromosome number*: $2n = 20, 40$ (Fedorov, 1969). *Grows in open fields, roadsides, secondary forests and forest clearings*.

Distribution: A native of South America, now widely spread throughout warm countries of the world.

Status of occurrence: Very common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 43 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 702 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 882 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1039 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2041 (DUSH).

Genus 345. **Artemisia** L., Gen. Pl. ed. 5: 367 (1754).

575. **Artemisia caruifolia** Buch.-Ham. in Roxb., Fl. Ind. 2: 422 (1832); Hook. f., Fl. Brit. Ind. 3: 324 (1881); Prain, Beng. Pl. 1: 457 (1903, reprint 1963). *Artemisia riparia* Buch.-Ham. ex DC. (1836).

Vernacular name: *Nagdana* (Koch).

Annual herb. Stem branched above, densely leafy. Leaves elliptic-obovate, capillaceously multifid. Inflorescence a capitulum, hemisphere, secund and drooping in axillary leafy racemes. Flowers yellowish. Cypsela oboid. *Flowering and fruiting*: April - June. *Grows in dry soil*.

Distribution: India (Assam), Nepal. Myanmar and China.

Status of occurrence: Seems to be rare.

Uses: Leaves are used in prickly heat by *Koch*.

Specimens examined: Kapasia, Borhor, 09.03.2012, R. Tabassum, 2086 (DUSH); Gazipur Sadar, Etahata, Borboika, 30.10.2013, R. Tabassum, 3423 (DUSH).

Genus 346. **Blumea** DC. in Guill., Arch. Bot. 2 : 514 (1833).

Key to species:

- | | |
|---|---------------------------|
| 1. Pappus reddish brown, yellowish brown, or yellow | Blumea lanceolaria |
| - Pappus white | 2 |
| 2. Leaves abaxially white lanate, adaxially tomentose | Blumea lacera |
| - Leaves pubescent or subglabrous | Blumea membranacea |

576. **Blumea lacera** (Burm. f.) DC. in Wight., Contr. Bot. Ind.: 14 (1834); Hook. f., Fl. Brit. Ind. 3: 263 (1881); Prain, Beng. Pl. 1: 438 (1903, reprint 1963); R. L. Heinig, List Chittagong: 37 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 97 (1956). *Conyza lacera* Burm. f., Fl. Ind. 180, t. 59. f. 1 (1768).

Vernacular names: *Barokukshim*, *Barasaksang*, *Kukurshunga*, *Kuksung*.

Erect, annual herb. Leaves obovate-oblong or elliptic, entire. Inflorescence a capitulum, numerous in terminal panicles and on short axillary shoots from among the upper leaves, nearly corymbose. Flowers yellow. Cypselas linear or oblong, sparsely puberulous, pappus white. *Flowering and fruiting*: November - July. *Chromosome number*: $2n = 18, 22$ (Fedorov, 1969). *Grows in waste lands like roadsides, footpaths and uncultivated open fields*.

Distribution: India, Sri Lanka, China, Malaysia, Australia and tropical Africa.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 40 (DUSH); Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 184 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1038 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1276 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3104 (DUSH).

577. **Blumea lanceolaria** (Roxb.) Druce, Bot. Soc. Exch. Club Br. Isles 4: 609 (1916). *Conyza lanceolaria* Roxb. (1832), *Blumea myriocephala* DC. (1835); Hook. f., Fl. Brit. Ind. 3: 269 (1881); Prain, Beng. Pl. 1: 439 (1903, reprint 1963), *Blumea spectabilis* DC. (1836), *Blumea wallichii* C. B. Clarke (1876).

Large perennial herb. Leaves narrowly oblong to oblanceolate, serrate-dentate or denticulate. Inflorescence a capitulum, peduncled, clustered on the ascending branches of a narrowly pyramidal, elongate, tomentose and erect panicle. Flowers yellowish. Cypselas oblong-obovate or linear or oblong, puberulous, pappus hairy. *Flowering and fruiting:* November - March. *Moist soil and on sandy slopes.*

Distribution: Tropical Asia and China.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 429 (DUSH); Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1015 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1511 (DUSH); Sripur, piruzali, 17.02.2012, R. Tabassum, 2035 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2322 (DUSH).

578. **Blumea membranacea** Wall. ex DC., Prodr. 5: 440 (1836); Hook. f., Fl. Brit. Ind. 3: 265 (1881); Prain, Beng. Pl. 1: 438 (1903, reprint 1963); R. L. Heinig, List Chittagong : 37 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 79 (1953). *Conyza membranacea* Wall. (1832).

Erect annual herb. Leaves oblanceolate, upper leaves entire or irregularly 3-5 lobed or toothed, lower ones pinnatifid with 1-3 pairs of triangular segments. Inflorescence a capitulum, numerous in terminal and axillary corymbose panicles. Flowers yellow. Cypselas linear to oblong, pappus white. *Flowering and fruiting:* January - March. *Chromosome number:* $2n = 22$. (Fedorov, 1969). *Waste lands, both in shady and sunny situations.*

Distribution: India, Myanmar, Sri Lanka, Indonesia and China.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 907 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1111 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1410 (DUSH); Kaliganj, Kalehat, 23.08.2010, R. Tabassum, 1562 (DUSH); Gazipur Sadar, Hotapara, 04.02.2011, R. Tabassum, 1858 (DUSH).

Genus 347. **Centipeda** Lour., Fl. Cochinch.: 492 (1790).

579. **Centipeda minima** (L.) A. Br. & Aschers., Ind. Sem. Hort. Berol. App. 6 (1867); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956). *Artemisia minima* L. (1753), *Cotula minima* (L.) Willd. (1803).

Vernacular names: *Machitti*, *Hachuti*, *Nakchikni*. English name: Spreading sneeze weed.

Prostrate annual herb. Leaves sessile or subpetiolate and attenuate at the base, obovate-oblongate or spatulate, 2-6 toothed or lobed. Inflorescence a capitulum, usually axillary. Flowers yellowish. Cypselas linear to oblongate with apical corona. *Flowering and fruiting:* February - June. *Chromosome number:* $2n = 36$ (Fedorov, 1969). *Fallow lands, cultivated fields, open lands and riversides.*

Distribution: Afghanistan, Australia, Pacific Islands and throughout Tropical Western Asia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 706 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2446 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2649 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2938 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3633 (DUSH).

Genus 348. **Chromolaena** DC., Prod. 5.: 133 (1836).

580. **Chromolaena odorata** (L.) King & Robinson, Phytologia 20: 204 (1970). *Eupatorium odoratum* L., Syst. Nat. ed. 10: 1205 (1759); Prain, Beng. Pl. 1: 434 (1903, reprint 1963); B. M. Raizada, Indian For. 67 (5): 249 (1941); R. L. Heinig, List Chittagong: 249 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 80 (1953); J.

Sinclair in Bull. Bot. Soc. 9(2): 97 (1956). *Eupatorium conyzoides* Vahl, Symb. Bot. 3: 96 (1794); Hook. f., Fl. Brit. Ind. 3: 244 (1881).

Vernacular names: *Assam-lata*, English names: Jack in the bush, Triffid *Pishab*, *Barashialmutra*. weed, Paraffin weed.

Herb or undershrub. Leaves petiolate, lamina mostly ovate, terminal ones broadly lanceolate, sparsely dentate with few coarse teeth. Inflorescence a capitulum, in terminal corymbs. Flowers bluish-white. Cypselas hairy, pappus hairy. *Flowering and fruiting*: November - May. *Chromosome number*: $2n = 20, 58$ (Fedorov, 1969). *Open sandy places, dry exposed slopes, banks of the ponds, hedges and forest openings*.

Distribution: A native of the West Indies, now spread widely in South Asia and tropical America.

Status of occurrence: Very common.

Uses: Leaves are applied on cuts for healing.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1054 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1351 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1962 (DUSH); Gazipur Sadar, Chaydana, 19.08.2013, R. Tabassum, 2800 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3781 (DUSH).

Genus 349. **Chrysanthemum** L., Sp. Pl.: 887 (1753).

581. **Chrysanthemum coronarium** L., Sp. Pl.: 890 (1753); Hook. f., Fl. Brit. Ind. 3: 314 (1881); Prain, Beng. Pl. 1: 455 (1903, reprint 1963), *Pyrethrum indicum* Roxb. (1832).

Vernacular name: *Chandramallika*. English names: Chrysanthemum, Crown daisy.

Annual, much-branched, hairy herb. Leaves pinnatifid or dissected. Inflorescence a capitulum, solitary or loosely corymbose. Flowers yellow. Cypselas many-ribbed, pappus absent. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 18, 36$ (Fedorov, 1969). *Gardens*.

Distribution: A native of the Mediterranean region.

Status of occurrence: Cultivated.

Uses: Ornamental garden plant.

Specimens examined: Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2980 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3565 (DUSH).

Genus 350. **Cotula** L., Sp. Pl.: 891 (1753).

582. **Cotula hemispherica** (Roxb.) Wall. ex C. B. Clarke, Comp. Ind.: 150 (1876); Hook. f., Fl. Brit. Ind. 3: 316 (1881); Prain, Beng. Pl. 1: 456 (1903, reprint 1963); R. L. Heinig, List Chittagong: 38 (1925). *Artemisia hemispherica* Roxb. (1832).

Vernacular name: *Babuni*.

Erect annual herb. Leaves pinnatisect, segments very numerous, linear, rarely subulate, half-amplexicaul at the base. Inflorescence a capitulum, solitary. Female florets without corolla. Corolla of hermaphrodite florets glabrous. Cypselas of female florets obovate, that of hermaphrodite florets linear-oblong. *Flowering and fruiting*: December - March. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Dry sandy soil and wet fallow lands*.

Distribution: India and China.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 18 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 705 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1027 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2404 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2966 (DUSH).

Genus 351. **Eclipta** L., Mant. 2: 157 (1771).

583. **Eclipta alba** (L.) Hassk., Pl. Jav. Rar.: 528 (1848); *Eclipta prostrata* (L.) L., Mant. Pl. 2: 286 (1771). *Verbesina alba* L., Sp. Pl. 903 (1753), *Verbesina prostrata* L., Sp. Pl. 902 (1753); Hook. f., Fl. Brit. Ind. 3: 304 (1881); Prain, Beng. Pl. 1: 448 (1903, reprint 1963); R. L. Heinig, List Chittagong: 37 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 79 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956), *Eclipta prostrata* (L.) Mant. (1771).

Vernacular names: *Bhimraj*, *Kesuti*, *Kalokeshi*,
Madi pata (Garó).

English name: False daisy.

Diffuse or erect, usually much-branched herb. Stem reddish or brick-red. Leaves elliptic-lanceolate, ovate or obovate. Inflorescence a capitulum, subglobose. Flowers white. Cypselas compressed, pappus of a few minute, scaly teeth. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 18, 22$ (Fedorov, 1969). *Damp waste places, cultivated fields, roadsides and drains*.

Distribution: Central and South America, now common and cosmopolitan in all warm countries.

Status of occurrence: Very common.

Uses: Leaves are used in jaundice by Garo.

Specimens examined: Kapasia, 30.01.2001, R. Tabassum, 73 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 710 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1822 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2407 (DUSH); Kaliakor, Fulbari, 01.10.2013, R. Tabassum, 3360 (DUSH).

Genus 352. **Elephantopus** L., Sp. Pl.: 814 (1753).

584. **Elephantopus scaber** L., Sp. Pl.: 814 (1753); Hook. f., Fl. Brit. Ind. 3: 242 (1881); Prain, Beng. Pl. 1: 433 (1903, reprint 1963), *Elephantopus scaber* L. var. *typicus* Koster (1935).

Rhizomatous perennial herb. Stem dichotomously branched; radical leaves obovate-lanceolate to oblong, crenate, cauline ones usually shorter, sometimes large, ovate-oblong. Inflorescence a capitulum, numerous, 2-6 flowered. Flowers pinkish-red. Cypselas oblanceolate, pappus of 4-6 bristles. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Sandy and hard soils, open places, roadsides, shade of forests, slopes and clearings.*

Distribution: Cosmopolitan in the tropics.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 10 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 744 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1319 (DUSH).

Genus 353. **Emilia** Cass., Bull. Soc. Philom.: 68 (1971).

585. **Emilia sonchifolia** (L.) DC. in Wight, Contrib.: 24 (1834); Hook. f., Fl. Brit. Ind. 3: 336 (1881); Prain, Beng. Pl. 1: 444 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 79 (1953). *Cacalia sonchifolia* L., Sp. Pl. 1835 (1753).

Vernacular names: *Mechitra*, *Sadimudi*, English name: Lilac tasselflower. *Sadusi*.

Erect, annual herb. Leaves lanceolate-obovate. Inflorescence a capitulum. Flowers purple. Fruit a cypsela, pappus hairy. *Flowering and fruiting:* throughout the year.

Chromosome number: $2n = 36$ (Fedorov, 1969). *Uncultivated open fields, edges of fallow lands, loose soil and sandy moist places.*

Distribution: Asia and Tropical Africa.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 97 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1685 (DUSH).

Genus 354. **Enhydra** Lour., Fl. Cochinch.: 510 (1780).

586. **Enhydra fluctuans** Lour., Fl. Cochinch.: 511 (1790); Hook. f., Fl. Brit. Ind. 3: 304 (1881); Prain, Beng. Pl. 1: 448 (1903, reprint 1963).

Vernacular names: *Helencha, Hingcha, Harbach.*

Aquatic annual herb. Leaves elliptic, linear to oblong, margin distantly dentate. Inflorescence a capitulum. Flowers white. Fruit a cypsela. *Flowering and fruiting:* January - April. *Chromosome number:* $2n = 22$ (Fedorov, 1969). *Ditches, ponds and Beels.*

Distribution: India, tropical Africa and Asia up to Malaysia.

Status of occurrence: Common.

Uses: Leafy vegetable as well as a medicinal plant.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 131 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 611 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1413 (DUSH); Kapshia, Kandunia, 03.11.2013, R. Tabassum, 3723 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3787 (DUSH).

Genus 355. **Gnaphalium** L., Sp. Pl.: 850 (1753).

Key to species:

- | | |
|---|-------------------------------|
| 1. Capitula in racemes or spikes, rarely solitary | Gnaphalium polycarpon |
| - Capitula in dense globose or glomerulate synflorescences, or compound synflorescences | 2 |
| 2. Capitula in racemes; outer phyllaries obovate | Gnaphalium luteo-album |

- Capitula in spikes, panicles, or solitary; outer phyllaries ovate to ovate-oblong

Gnaphalium pulvinatum

587. **Gnaphalium luteo-album** L., Sp. Pl.: 851 (1753); Hook. f., Fl. Brit. Ind. 3: 288 (1881); Prain, Beng. Pl. 1: 442 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 80 (1953). *Gnaphalium affine* D. Don, Prodr. Fl. Nepal :173 (1825); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956).

Vernacular name: *Bara kamra*.

English name: Weedy cudweed.

Erect herb. Stem softly white, tomentose. Leaves linear, oblanceolate-obovate, densely white tomentose or woolly on both surfaces. Inflorescence a capitulum. Flowers golden-yellow. Cypsela oblong-obovoid, pappus white. *Flowering and fruiting*: March - August. *Chromosome number*: $2n = 14, 14 + 1B$ (Fedorov, 1969). *Moist fallow lands, roadsides, open fields and the sides of rice fields*.

Distribution: India, Indonesia, China, Japan, Laos, Cambodia, Vietnam, the Philippines and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 38 (DUSH); Kapasia, Bozna, 24.04.2008, R. Tabassum, 347 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 703 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1241 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2967 (DUSH).

588. **Gnaphalium polycaulon** Pers., Syn. Pl. 2: 421 (1807). *Gnaphalium indicum* auct. *non* L., Hook. f. (1881).

English name: Many-stem cudweed.

Erect annual herb. Leaves linear-obovate or linear-spathulate. Inflorescence a capitulum, sessile, silvery woolly in axillary clusters in the upper axils and from the terminal spike. Flowers pale yellow. Cypsela oblong, pappus white. *Flowering and fruiting*: December - May. *Chromosome number*: $2n = 14$ (Fedorov, 1969). *Shady moist soils, fallow lands and dry sandy soils*.

Distribution: India, China, Japan and Australia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Kolafata, 05.03.2002, R. Tabassum, 169 (DUSH); Sripur Borkul, 21.06.2010, R. Tabassum, 1117 (DUSH); Kapasia, Baoroid,

03.07.2010, R. Tabassum, 1532 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2586 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2981 (DUSH).

589. **Gnaphalium pulvinatum** Del., Fl. Aegypt.: 122, t. 44. f. 1 (1812); Hook. f., Fl. Brit. Ind. 3: 289 (1881); Prain, Beng. Pl. 1: 442 (1903, reprint 1963).

Decumbent, woolly annual herb. Leaves small, sessile, spatulate. Inflorescence a capitulum, minute, in rounded axillary clusters, woolly tomentose. Flowers yellow. Cypsela minutely papillose, pappus hair slender, white. *Flowering and fruiting*: February - March. *Chromosome number*: $2n = 14$ (Kumar and Subramaniam, 1986). *Dry fallow lands*.

Distribution: Egypt, Arabia, India and Pakistan.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 749 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1595 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1997 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2615 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3522 (DUSH).

Genus 356. **Grangea** Adans., Fam. 2: 121 (1763).

590. **Grangea maderaspatana** (L.) Poir., Enc. Suppl. 2: 825 (1811); Hook. f., Fl. Brit. Ind. 3: 247 (1881); Prain, Beng. Pl. 1: 435 (1903, reprint 1963); R. L. Heinig, List Chittagong: 36 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 97 (1956); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 80 (1953). *Artemisia maderaspatana* L., Sp. Pl. 849 (1753).

Vernacular names: *Nemuti*, *Namuti*.

Annual herb. Leaves sinuate-lyrate, pinnatifid or almost bipinnatifid-tripinnatifid. Inflorescence a capitulum. Flowers yellow. Fruit cypsela. *Flowering and fruiting*: December - May. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Bank of canals and ponds, moist and loose soil*.

Distribution: India, tropical Africa, Egypt and China.

Status of occurrence: Very common.

Uses: Medicinal plant.

Specimens examined: Kaliganj, Nagorik, 05.03.2002, R. Tabassum, 182 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 927 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1128 (DUSH); Gazipur Sadar, Rajendrapur Senanibash,

04.02.2011, R. Tabassum, 1717 (DUSH); Kapasia, Kanduni, 03.11. 2013, R. Tabassum, 3728 (DUSH).

Genus 357. **Helianthus** L., Sp. Pl.: 904 (1753).

591. **Helianthus annuus** L., Sp. Pl.: 904 (1753); Prain, Beng. Pl. 1: 450 (1903, reprint 1963); R. L. Heinig, List Chittagong: 37 (1925).

Vernacular name: *Surjamukhi*.

English name: Sunflower.

Tall, hairy, annual herb. Leaves petiolate, lamina cordate, toothed. Inflorescence a capitulum, very large, peduncled, solitary, terminal or axillary. Flowers yellow. Cypselas oblong, hairy. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 34$ (Fedorov, 1969). *Gardens and agricultural fields*.

Distribution: A native of North America. But now it is cultivated in France, Russia, Egypt, Turkey, Germany and Italy. In Pakistan, India and Bangladesh, it is mainly grown in the gardens for ornamental purposes, but now-a-days, it is also cultivated in the field as an edible oil-yielding plant.

Status of occurrence: Cultivated.

Uses: Ornamental as well as a medicinal plant.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3889 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3915 (DUSH).

Genus 358. **Lactuca** L., Sp. Pl.: 795 (1753).

592. **Lactuca scariola** L. var. **sativa** Hook. f., Fl. Brit. Ind. 3: 404 (1881); Prain, Beng. Pl. 1: 462 (1903, reprint 1963). *Lactuca sativa* L. (1753).

Vernacular names: *Kahu, Lettuce pata*.

English name: Garden lettuce.

Leafy annual herb. Leaves radical, toothed, compact, pinnatifid, stem-clasping, auricled. Inflorescence a capitulum, peduncled, loosely corymbose, rayed. Flowers yellow. Cypselas obovoid, beaked. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Gardens*.

Distribution: South Asia, Europe and Siberia.

Status of occurrence: Cultivated.

Uses: Medicinal plant also eaten as salad.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1349 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2587 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3179 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3580 (DUSH).

Genus 359. **Launaea** Cass., Dic. Sc. Nat. 25: 321 (1822).

593. **Launaea aspleniifolia** DC., Prodr. 7: 181 (1838); Hook. f., Fl. Brit. Ind. 3: 415 (1881); Prain, Beng. Pl. 1: 464 (1903, reprint 1963). *Prenanthes aspleniifolia* Willd. (1832).

Vernacular name: *Tik-chana*.

Biennial or perennial, rosette herb. Radical leaves sinuate-lobed or pinnatifid, cauline, few. Inflorescence a capitulum, in terminal paniculate peduncles. Flowers yellow. Fruit a cypsela, small. *Flowering and fruiting*: January - August. *Open fields and roadsides*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Use: This plant has a little medicinal use.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3890 (DUSH); Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3982 (DUSH).

Genus 360. **Mikania** Willd., Sp. Pl. 3: 1742 (1803).

594. **Mikania cordata** (Burm. f.) Robinson, Contr. Gray Herb. 104: 65 (1934). *Eupatorium cordatum* Burm. f. (1768); *Mikania volubilis* Willd. (1803); *Mikania scandens* auct. non. L. (1876); C. B. Clarke, Comp. Ind. 34 (1876); Hook. f., Fl. Brit. Ind. 3: 244 (1881); Prain, Beng. Pl. 1: 434 (1903, reprint 1963); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1 & 2): 80 (1953).

Vernacular names: *Assam-lata*, *Tarulata*, English name: Heartleaf hempvine. *Madam pata* (Santal).

Twining perennial herb. Leaves petiolate, lamina usually cordate, sometimes deltoid-ovate, acuminate or acute at the apex. Inflorescence a capitulum, cylindrical, numerous in terminal corymbose panicles on axillary branches. Flowers white. Cypselas narrowly oblong. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 36, 38$ (Fedorov, 1969). *Forest openings, roadsides, bank of ponds and bushy jungles*.

Distribution: Tropical Asia, the Philippines, Papua New Guinea and tropical Africa.

Status of occurrence: Very common.

Uses: Leaves juice is used in dysentery and jaundice by *Santal*.

Specimens examined: Sripur, Merua, 07.02.2002, R. Tabassum, 102 (DUSH); Kaliganj, Kolafata, 05.03.2002, R. Tabassum, 170 (DUSH); Kaliakoir, Vogora (Bipass), 09.05.2010, R. Tabassum, 920 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1716 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3556 (DUSH).

Genus 361. **Parthenium** L., Sp. Pl. 2: 988 (1753).

595. **Parthenium hysterophorus** L., Sp. Pl. 2: 988 (1753).

Vernacular name: *Parthenium*. English names: Parthenium weed, Bitterweed, Carrot grass, Congress grass.

Annual herb, often forming a large colony. Leaves ovate to elliptic, pinnately (1 or) 2-lobed, ultimate lobes lanceolate to linear. Inflorescence a open panicle, capitulum obscurely radiate. Capitulum, cylindrical, numerous in terminal corymbose panicles on axillary branches. Flowers white. Achenes obovoid. *Flowering and fruiting:* April - August. *Chromosome number:* $2n = 34$. *Roadsides, fallow lands and disturbed lands.*

Distribution: A native to southern United States, Mexico and Central and South America, and a common invasive species in India, Australia and parts of Africa.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3983 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3995 (DUSH).

Genus 362. **Pseudolephantopus** Rohr.,
Skrifl. Nat. Selsk. Kiobenh. 2: 214 (1792).

596. **Pseudolephantopus spicatus** (B. Juss. ex Aubl.) Gleason, North Amer. Pl. Guian. 2: 808 (1775).

English name: Dog's tongue.

Branched perennial herb. Leaves elliptic to linear-oblongate. Inflorescence a capitulum, in spikes or in the axils of leaves forming prominent dense glomeruli. Flowers white. Fruit a cypsela, narrow, oblong-obovate. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 20, 22, 26$ (Kumar and Subramaniam, 1986). *Semi-wet and partly shaded places.*

Distribution: India and tropical America.

Status of occurrence: Relatively rare.

Specimens examined: Kaligonj, Kolafata, 05.03.2010, R. Tabassum, 690 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2681 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3000 (DUSH).

Genus 363. **Sonchus** L., Sp. Pl.: 794 (1753).

Key to species:

1. Achene distinctly oblanceolate in outline, strongly or distinctly compressed, space between slender ribs much wider than main ribs; annuals 2
- Achene narrowly ellipsoid, moderately to weakly compressed, space between ribs usually narrower than ribs; perennials **Sonchus wightiana**
2. Achene strongly compressed, $\pm$ winged, smooth when fully mature; auricles of middle stem leaves rounded and appressed **Sonchus asper**
- Achene distinctly compressed, not winged, distinctly wrinkled when fully mature; auricles of middle stem leaves usually acutely prostrate **Sonchus oleraceus**

597. **Sonchus asper** (L.) Hill, Br. Herb. 1: 47, f. 2 (1756); Hook. f., Fl. Brit. Ind. 3: 414 (1881); Prain, Beng. Pl. 1: 463 (1903, reprint 1963). *Sonchus oleraceus* L. var. *asper* L. (1753).

English name: Spiny sowthistle.

Annual herb. Leaves sessile, ovate, ovate-lanceolate or elliptic-oblong, pinnati-lobed to pinnatipartite or deeply toothed, with acutely undulate and irregularly spinous-dentate lobes. Inflorescence a capitulum, subumbellate or sub-corymbose, pedicled. Flowers yellow. Cypsela obovoid. *Flowering and fruiting:* September - June. *Chromosome number:* $2n = 34$ (Fedorov, 1969). *Dry open fields.*

Distribution: Europe, Southwest Asia, North Africa, introduced in North and South Africa and Australia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1392 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2270 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2968 (DUSH); Kapasia Voboner Chala, 03.11.2013, R. Tabassum, 3581 (DUSH).

598. **Sonchus oleraceus** L., Sp. Pl.: 794 (1753); Hook. f., Fl. Brit. Ind. 3: 414 (1881); Prain, Beng. Pl. 1: 463 (1903, reprint 1963); R. L. Heinig, List Chittagong : 38 (1925).

English name: Common sowthistle.

Annual herb or shrub. Cauline leaves usually runcinate or lyrate, pinnatifid and spinous toothed with 3-4 pairs of lateral segments. Capitulum few in subumbel or corymb. Flowers yellow. Cypsela compressed, obovoid-oblongate. *Flowering and fruiting*: February - May. *Chromosome number*: $2n = 34$ (Fedorov, 1969). *Drained, loose, sandy soil and shady places*.

Distribution: Europe, Southwest Asia, North Africa, introduced in North and South Africa, India, China and Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 348 (DUSH); Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 704 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1242 (DUSH); Kaliakoir, Hijoltoly, 13.09. 2013, R. Tabassum, 2977 (DUSH).

599. **Sonchus wightianus** DC., Prodr. 7: 187 (1838). *Sonchus arvensis* auct. non L., Hook. f. (1881).

Perennial rhizomatous herb. Leaves linear-oblongate, acute or acuminate at the apex, auricles rounded. Inflorescence a capitulum, few, subumbellate to subcorymbose. Flowers yellow. Cypsela narrowly ellipsoidal-oblong. *Flowering and fruiting*: November - June. *Chromosome number*: $2n = 18, 36, 45, 54, 60, 64$ (Fedorov, 1969). *Roadsides and slopes*.

Distribution: India, China, Iran, Afghanistan, Pakistan, Sri Lanka and Southeast Asia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3891 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3941 (DUSH).

Genus 364. **Sphaeranthus** L., Sp. Pl.: 927 (1753).

600. **Sphaeranthus indicus** L., Sp. Pl. ed. 2: 1314 (1762); Hook. f., Fl. Brit. Ind. 3: 275 (1881); Prain, Beng. Pl. 1: 441 (1903, reprint 1963); R. L. Heinig, List Chittagong: 37 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956). *Sphaeranthus hirtus* Willd. (1804).

Vernacular names: *Chagul-nadi*, *Murmuri*, English name: East Indian globe-thistle. *Ghork-mundi*, *Homstar* (Koch).

Annual herb. Stem divaricately branched, 4-winged. Leaves oblanceolate-oblong to obovate or spatulate, margin coarsely serrate-dentate or toothed. Inflorescence a capitulum, ovate-globose. Flowers red to purplish or pink. Fruit a cypsela. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Moist or swampy places, dry soil and cultivated lands*.

Distribution: India, Myanmar, Malaysia, Australia and Africa.

Status of occurrence: Common.

Uses: Leaves are used in paralysis by Koch.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1720 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2013 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2288 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3183 (DUSH).

Genus 365. **Spilanthes** Jacq., Enum. Pl. Carib. 8: 28 (1760).

601. **Spilanthes calva** DC. in Wight, Contrib. Bot. Ind.: 19 (1834). *Spilanthes acmella* auct. non L., Thw. (1860); Hook. f., Fl. Brit. Ind. 3: 307 (1881); Prain, Beng. Pl. 1: 451 (1903, reprint 1963); R. L. Heinig, List Chittagong: 38 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 81 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956).

Vernacular names: *Marhata tiga*, *Surja Kannya*.

Annual herb. Leaves ovate, petiolate. Inflorescence a capitulum, peduncled. Flowers yellow. Cypselas narrowly obovate. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 14, 24, 52$ (Fedorov, 1969). *Open sunny places, dry soil, riversides, waste places and open clearings*.

Distribution: Originated from Brazil and has migrated to the West Indies, China, South Asia, Thailand, Malaysia, New Caledonia and tropical Africa.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Simultoli, 30.01.2001, R. Tabassum, 75 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 664 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 889 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1494 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2470 (DUSH).

Genus 366. **Synedrella** Gaertn., Fruct. 2: 456, t. 171 (1791).

602. **Synedrella nodiflora** (L.) Gaertn., Fruct. 2: 456, t. 171 (1791); Hook. f., Fl. Brit. Ind. 3: 308 (1881); Prain, Beng. Pl. 1: 452 (1903, reprint 1963); B. M. Raizada, Indian For. 67 (5): 250 (1941); R. L. Heinig, List Chittagong: 250 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956). *Verbesina nodiflora* L., Cent. Pl. 1: 28 (1755).

Annual herb. Leaves petiolate, lamina ovate. Inflorescence a capitulum. Flowers yellow. Cypselas heteromorphic, awned. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36, 38, 40$ (Fedorov, 1969). *Dry soil, forests, exposed places and homestead areas*.

Distribution: A native of South America and the West Indies, now occurs in India, Sri Lanka, Thailand, Malaysia and Indonesia.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 37 (DUSH); Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 872 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1302 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1599 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3591 (DUSH).

Genus 367. **Tridax** L., Sp. Pl.: 900 (1753).

603. **Tridax procumbens** L., Sp. Pl.: 900 (1753); Hook. f., Fl. Brit. Ind. 3: 311 (1881); Prain, Beng. Pl. 1: 455 (1903, reprint 1963).

Vernacular names: *Tridhara*, *Tridaksa*.

English name: Coat button.

Annual or perennial hirsute herb. Leaves ovate, lanceolate-oblongate, pinnatisect, usually tri-lobed or coarsely incised-dentate to serrate. Inflorescence a capitulum, solitary on erect, hirsute and sparsely glandular peduncles. Flowers white with yellow centre. Cypselas silky, truncate at the apex. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Dry soil, dry slopes, city pavements, moist riverbanks and roadsides*.

Distribution: India and China.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Kamalpara, 02.01.2002, R. Tabassum, 137 (DUSH); Kaligonj, Kolafata, 05.03.2002, R. Tabassum, 167 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1055 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2045 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3361 (DUSH).

Genus 368. **Vernonia** Schreb., Gen. Pl. 2: 541 (1791).

604. **Vernonia cinerea** (L.) Less., Linnaea 4(1): 291 (1829); Hook. f., Fl. Brit. Ind. 3: 233 (1881); Prain, Beng. Pl. 1: 432 (1903, reprint 1963); R. L. Heinig, List Chittagong: 36 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 81 (1953); J. Sinclair in Bull. Bot. Soc. 9(2): 97 (1956). *Conyza cinerea* L., Sp. Pl. 862 (1753).

Vernacular names: *Chhotokuksim, Dankuni, Kuksim, Shial Lata, Matamala (Santal)*. English name: Little ironweed.

More or less pubescent annual herb. Leaves slightly variable in size and shape, lamina ovate-elliptic, obovate-lanceolate. Inflorescence a capitulum, numerous or few in terminal corymbs. Flowers purplish or pinkish, sometimes violet-blue. Cypselas oblong. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 18$ (Fedorov, 1969). *Sandy soil, roadsides, dry exposed slopes, waste places, open forests and fields.*

Distribution: Tropical Asia, Africa, Arabia, the West Indies, South America, tropical Australia and Polynesia.

Status of occurrence: Very common.

Uses: Leaves are used in dysentery by *Santal*.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 45 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 884 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1041 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2279 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2398 (DUSH).

Genus 369. **Xanthium** L., Sp. Pl.: 987 (1753).

605. **Xanthium indicum** Koen. ex Roxb., Fl. Ind. 3: 601 (1832). *Xanthium orientale* L. (1753), *Xanthium strumarium* L. (1753); Hook. f., Fl. Brit. Ind. 3: 303 (1881); Prain, Beng. Pl. 1: 446 (1903, reprint 1963); R. L. Heinig, List Chittagong : 37 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 98 (1956).

Vernacular names: *Ghagra*, *Hagra*, *Khagra*, English name: Rough cocklebur. *Chhotoghagra*, *Bon-okra*, *Bichhaphal*.

Erect annual herb. Leaves broadly ovate, variously lobed. Inflorescence a capitulum, monoecious, male capitula in terminal umbels, female ones axillary. Fruit a rostra, thick, divergent, hooked at the apex. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Shady places, canal banks, fallow lands, roadsides, open fields, moist waste places and cultivated fields*.

Distribution: India, Malaysia and Indonesia.

Status of occurrence: Common.

Uses: Sometimes young shoots are eaten as cooked vegetable.

Specimens examined: Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1593 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2438 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2866 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3188 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3761 (DUSH).

3.2. LILIOPSIDA (Monocotyledons)

Plants herbaceous or less often woody, never with typical secondary growth, but sometimes with a special kind of secondary growth. Vascular bundles of the stem closed, usually scattered or in 2 or more rings. Vessels often confined to the roots, or absent. Root-system wholly adventitious; root-hairs arising from certain type of specialized epidermal cells. Leaves typically with parallel or pinnate-parallel venation, however less distinctly net veined in some member of Araceae. Flowers very often with septal or setal-derived nectaries or without nectar. Floral parts, when of definite number, typically borne in sets of 3, rarely 4 or 2, never 5 (except in some taxon of Zingiberales). Pollen grains typically uniaperturate or of uniaperturate derived type, only very rarely triaperturate. Cotyledon one and almost never two. The arrangement of monocot families found in Gazipur district have been done according to the classification of Cronquist (1981).

3.2.1. Key to the families:

- | | |
|---|----------------------|
| 1. Stem undeveloped, plant thalloid and floating | Lemnaceae |
| - Stem well-developed, plant not thalloid | 2 |
| 2. Stem triangular, leaves usually tristichous | Cyperaceae |
| - Stem not triangular, leaves not tristichous | 3 |
| 3. Plants with pseudo-stem formed by the leaf bases | Musaceae |
| - Plants with true-stem | 4 |
| 4. Stem fistular, leaves two-ranked | Poaceae |
| - Stem non-fistular, solid | 5 |
| 5. Plant grass-like | 6 |
| - Plant not grass-like | 7 |
| 6. Flowers unisexual | Eriocaulaceae |
| - Flowers bisexual | Xyridaceae |
| 7. Leaf blade with reticulate venation | Araceae |
| - Leaf blade with parallel venation | 8 |
| 8. Plants climber | 9 |
| - Plants non-climber | 10 |

9.	Stem with prickles, ovary superior	Smilacaceae
-	Stem without prickles, ovary inferior	Dioscoriaceae
10.	Leaves crowded at the base of the short stem	11
-	Leaves not crowded at the base of the stem	12
11.	Bracts brightly coloured; fruit a sorosis	Bromeliaceae
-	Bracts colourless; fruits capsule or berry	Agavaceae
12.	Plants with stilt root	Panadanaceae
-	Plants without stilt root	13
13.	Plants aquatic	14
-	Plants terrestrial	20
14.	Stamens 4	Najadaceae
-	Stamens 6 or more	15
15.	Ovary inferior	Hydrocharitaceae
-	Ovary superior	16
16.	Inflorescence subtended by spathe-like leaf-sheath	17
-	Inflorescence not subtended by spathe-like leaf-sheath	18
17.	Perianth of 6 segments, all petaloid	Pontederiaceae
-	Perianth of 3 green sepals and 3 deciduous petals	Limnocharitaceae
18.	Flowers bracteate	Alismataceae
-	Flowers ebracteate	19
19.	Pistil 2 to many ovuled	Aponogetonaceae
-	Pistil 1-ovuled	Potamogetonaceae
20.	Flowers with inferior ovary	21
-	Flowers with superior ovary	24
21.	Plants aromatic; leaves ligulate	Zingiberaceae
-	Plants not aromatic; leaves not ligulate	22

22.	Plants with gynostegium, pollinia present	Orchidaceae
-	Plants without gynostegium, pollinia absent	23
23.	Sepals persistent, petals free, fruit warty capsule	Connaraceae
-	Sepals not persistent, petals connate at the base, fruit unwarty-loculicidal capsule	Marantaceae
24.	Leaves crowded at the top of the woody unbranched stem	Arecaceae
-	Leaves not crowded at the top of the stem	25
25.	Flowers zygomorphic, leaves ligulate	Costaceae
-	Flowers actinomorphic, leaves not ligulate	26
26.	Perianth segments free	Aloaceae
-	Perianth segments connate	27
27.	Inflorescence umbel	Liliaceae
	Inflorescence not umbel	Commelinaceae

3.2.2. TAXONOMIC DESCRIPTION OF THE TAXA

Family 1. **LIMNOCHARITACEAE** Takhtajan (1954)

Perennial, aquatic herbs, free-floating or rooted in the substrate and emergent. Leaves in a close spiral (almost distichous in margin) at the tip of the rhizome or floating stolon, petiolate, with a more or less expanded blade. Scape or peduncle terminating in an involucre cymose umbel or in a solitary flower. Flowers perfect, hypogynous, trimerous. Perianth of 3 persistent green sepals and 3 larger, deciduous petals. Stamens 3-many, anthers tetrasporangiate and dithecal, opening by longitudinal slits. Gynoecium of 3, or 5-9, or 12-20 carpels in a single whorl, style terminal, stigma shortly decurrent, ovules numerous, anatropous to more or less campylotropous. Fruit follicles.

The family Limnocharitaceae consists of 3 genera and 7-12 species, distributed in tropical and subtropical regions in both Old and New World. In Bangladesh, this family is represented by 2 genera and 2 species.

In the present study area this family is represented by a single species.

Genus 1. **Limnocharis** Humb. & Bonpl., Pl. Aequinoct. 1: 116 (1807).

1. **Limnocharis flava** (L.) Buchen. in Bremen, Abh. 2: 2 (1871). *Alisma flavum* L. (1753).

English names: Yellow bur head, Yellow sawah lettuce, Sawah-flowering rush.

Perennial aquatic herb. Leaves erect, in a cluster, standing out of water, petiole thick, lamina lanceolate, oblong to broadly ovate. Inflorescence umbelliform, 2-12 flowered on a long scape. Flowers pale yellow. Fruit a follicle. *Flowering and fruiting*: March - April. *Chromosome number*: $2n = 20$ (Kumar and Subramaniam, 1986). *Grows in shallow water*.

Distribution: Native of tropical America and the Caribbean. Naturalized in India, Sri Lanka, Indonesia, Singapore, China and Australia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 643 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 685 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1309 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3494 (DUSH).

Family 2. **ALISMATACEAE** Ventenat (1799).

Aquatic or marsh herbs, plants with cauline, erect or floating leaves. Leaves basal, curvi-nerved, with sheathing petiole, sheaths open. Inflorescence a raceme of whorled flowers or a panicle. Flowers pedicelled, actinomorphic, bisexual, polygamous, bracteate. Sepals 3, imbricate, persistent. Petals 3, imbricate, caduceous. Stamens 3 to many, anthers 2-celled, basifixed or versatile. Carpels 2 to many, free, with a solitary basal ovule, style terminal or ventral, persistent. Seeds oblong or horseshoe-shaped.

The family Alismataceae consists of 11 genera and about 80 species, cosmopolitan in distribution, but best developed in the Northern Hemisphere. In Bangladesh, it is represented by 4 genera and 6 species.

In the present study area this family is represented by a single genus with 2 species.

Genus 2. **Sagittaria** L., Sp. Pl. 2: 993 (1753).

Key to species:

- | | | |
|----|--|---|
| 1. | Leaf lobes and blade obtuse; persistent sepals not reflexed after anthesis; stamens 6-15; achenes elliptic with distinctly blunt toothed dorsal wing | guayanensis
ssp. lappula |
| - | Leaf lobes and blade sharply acute; persistent sepals reflexed | sagittifolia |

after anthesis; stamens c. 20; achenes triangularly obovate with sub-crenate to entire wing

2. **Sagittaria guayanensis** H.B. & K. subsp. **lappula** (D. Don) Bogin in Mem. N.Y. Bot., Gard. 9: 192 (1955). *Sagittaria lappula* D. Don (1825), *Sagittaria guayanensis* sensu Hook. f. (1893); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 111 (1956).

English name: Guyanese arrowhead.

Annual scapigerous herb. Leaves ovate, deeply cordate, entire. Inflorescence a raceme. Flowers arranged in two whorls, upper male and lower bisexual, white. Fruit an elliptic achene. *Flowering and fruiting*: June - September. *Chromosome number*: $2n = 22$ (Fedorov, 1969). *Ditches, canals, beels and lowlands*.

Distribution: India, Myanmar and Malaysia extending up to China and tropical Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 530 (DUSH); Kaliganj, Gudara Ghat, 02.01.2013, R. Tabassum, 2230 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2436 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3002 (DUSH).

3. **Sagittaria sagittifolia** L., Sp. Pl. 2: 993 (1753); Hook. f., Fl. Brit. Ind. 6: 561 (1893); Prain, Beng. Pl. 2: 843 (1903, reprint 1963). *Sagittaria montevidensis* Cham. & Schlttdl. (1827).

Vernacular names: *Muyamuya*, English names: Arrow-head, Giant arrow-head.
Chhotokut.

Scapigerous aquatic herb. Leaves hastate, sagittate, terminal lobe acute to obtuse, basal lobes finely acuminate. Inflorescence a raceme, sometimes bearing 1-2 branches from the lower nodes. Flowers arranged in two whorls, upper whorls male and lower whorls female, white. Fruit an achene. *Flowering and fruiting*: July - August. *Chromosome number*: $2n = 16, 20, 22$ (Fedorov, 1969). *Shallow-water ditches, beels and lowlands*.

Distribution: North America and Europe, India and northern Thailand.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1863 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2213 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2273 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2915 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3747 (DUSH).

Family 3. **HYDROCHARITACEAE** A. L. de Jussieu (1789)

Annual or perennial aquatic herbs of fresh or salt water, usually submerged, sometimes floating. Leaves simple, arranged in two vertical rows on a creeping monopodial rhizome or when on an erect main shoot, spirally arranged or whorled, linear to orbicular, with or without the sheathing base. Flowers actinomorphic or faintly zygomorphic (*Vallisneria*), unisexual, polygamous or rarely hermaphrodite, enclosed in an entire or two-leaved spathe. Male flowers 1-many, female flower solitary. The perianth in one or two series of 3 (rarely 2), free segments, the inner series when present usually showy and petal-like. Stamens 1-numerous in one or more series, the inner one sometimes sterile. Ovary inferior with 2-15 united carpels containing a single locule with numerous ovules. Fruit globular to linear, dry or pulpy, ripening under water. Seeds few to numerous

The family Hydrocharitaceae consists of 15 genera and 100 species, cosmopolitan in distribution. In Bangladesh, this family is represented by 7 genera and 11 species.

In the present study area this family is represented by 5 genera and 6 species.

Key to genera:

- | | |
|---|--------------------|
| 1. Leaves all basal; stems short | 2 |
| - Leaves cauline; stems elongated | 4 |
| 2. Leaves linear, ribbonlike, sessile; fruit narrowly cylindric | 3 |
| - Leaves lanceolate to orbicular, usually petiolate | Ottelia |
| 3. Stamens 3-9; ovary attenuate into a long, filiform beak; peduncle of female flower shorter | Blyxa |
| - Stamens 1-3; ovary not as above; peduncle of female flower very long | Vallisneria |
| 4. Leaves whorled | Hydrilla |
| - Leaves alternate, opposite, or spirally arranged | Nechamandra |

Genus 3. **Blyxa** Noronha *ex* Petit-Thouars, Gen. Nov. Madag. 2: 4 (1808).*Key to species:*

- | | |
|---------------------------------|-----------------|
| 1. Flowers unisexual; stamens 9 | octandra |
| - Flowers bisexual; stamens 3 | aubertii |

4. **Blyxa auberti** Rich., Mem. Inst. Paris 12, 2: 19-23, 77, t. 4 (1812); Den Hartog in van Steenis, Fl. Males. Ser. 1, 5(4): 390 (1957); Subramanyam, Aqua. Angios.: 59 (1962); Khan and Halim in Khan (Ed.), Fl. Bangl. 28: 2 (1985); *Blyxa oryzetorum* Hook. f., Fl. Brit. Ind. 5: 661 (1888); Prain, Beng. Pl.: 748 (1903, reprint 1963).

English name: Round-leaf blyxa.

Submerged stemless herb. Leaves radical, sheathing at the base, variable in size and shape, narrow, lanceolate in shallow water, ribbon-like in deeper water. Spathe 1-flowered. Flowers bisexual, fruits linear. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 12, 24$ (Kumar and Subramaniam, 1986). *Stagnant water of ponds, canals and ditches*.

Distribution: Madagascar, India, northwards to Korea and Japan and eastwards through Malaysia to New Guinea and northern Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2220 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2898 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2952 (DUSH).

5. **Blyxa octandra** (Roxb.) Planch. ex Thw., En. Pl. Zeyl.: 332 (1864); Den Hartog in van Steenis, Fl. Males. Ser. 1, 5(4): 392 (1957); Subramanyam, Aqua. Angios.: 60 (1962); Khan and Halim in Khan (Ed.), Fl. Bangl. 28: 4 (1985); *Vallisneria octandra* Roxb., Pl. Cor. 2: 34, t. 165 (1802); *Blyxa roxburghii* Rich., Mem. Inst. Paris 12(2): 23-24, 77, t. 5 (1812); Hook. f., Fl. Brit. Ind. 5: 660 (1888); Prain, Beng. Pl.: 748 (1903, reprint 1963).

Vernacular name: *Seola*.

English name: Blyxa.

Stemless, submerged herb. Leaves radical, base narrowed and sheathing. The male spathe with 6-10 flowers, female spathe with a solitary flower. Perianth segments 6, outer 3 linear, reddish-tinged. Fruits linear. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Shallow water ditches, beels and lowlands*.

Distribution: Tropical Asia including India, Sri Lanka and Myanmar, eastwards up to south New Guinea and Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 394 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1297 (DUSH);

Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2348 (DUSH); Kapasia, Voboner Chala, 03.11.2011, R. Tabassum, 3528 (DUSH).

Genus 4. **Hydrilla** L.C. Rich., Mem. Inst.
Paris 12(2): 9, 61, 73, t. 2-upper part (1812).

6. **Hydrilla verticillata** (L. f.) Royle, Ill. Bot. Himal. t. 376 (1839); Hook. f., Fl. Brit. Ind. 5: 659 (1888); Prain, Beng. Pl. 2: 747 (1903, reprint 1963); Den Hartog in van Steenis, Fl. Males. Ser. 1, 5(4): 385, fig. 1 (1957); Subramanyam, Aqua. Angios.: 55 (1962); Khan and Halim in Khan (Ed.), Fl. Bangl. 28: 5 (1985); *Serpicula verticillia* L. f., Suppl. 416 (1781).

Vernacular names: *Jhangi, Kureli*. English name: Whorled-leaved hydrilla.

Submerged herb. Stem much-branched, slender. Leaves sessile, verticillate, linear, sharply serrate-dentate. Male flower solitary in a spathe, reddish-white. Fruit subulate. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 16, 24$ (Fedorov, 1969). *Freshwater tanks, beels, lakes, ditches, ponds and rivers*.

Distribution: From South and East Europe, Africa, South and East Asia through Malaysia up to Australia.

Status of occurrence: Very common.

Use: Eaten by fish.

Specimens examined: Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 625 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1384 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1513 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1644 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1932 (DUSH).

Genus 5. **Nechamandra** Planch. in Ann. Sc. Nat. ser. 3, 11: 78 (1849).

7. **Nechamandra alternifolia** (Roxb.) Thw., Enum. Pl. Zeyl.: 332 (1864); Subramanyam, Aqua. Angios.: 56 (1962); Khan and Halim in Khan (Ed.), Fl. Bangl. 28: 7 (1985). *Vallisneria alternifolia* Roxb., Fl. Ind. 3: 750 (1832), *Nechamandra roxburghii* Planch., Ann. Sc. Nat. Ser. 3, 11: 78 (1848), *Lagarosiphon roxburghii* (Planch.) Benth. in Benth. & Hook. f., Gen. Pl. 3: 451 (1880); Hook. f., Fl. Brit. Ind. 3: 659 (1882); Prain, Beng. Pl. 2: 747 (1903, reprint 1963).

Vernacular name: *Rasnajhangi*. English name: Nechamandra.

Submerged herb. Leaves alternate, linear-lanceolate, entire. Flowers unisexual, numerous in a long spathe. Fruit an ovoid utricle. *Flowering and fruiting*: February - October. *Chromosome number*: $2n = 100$ (Fedorov, 1969). *Common in beels, ponds, tanks, lakes, rivers and ditches*.

Distribution: Tropical Asia including India and Sri Lanka.

Status of occurrence: Common.

Specimens examined: Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 697 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1935 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2072 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3752 (DUSH).

Genus 6. **Ottelia** Pers., Syn. Pl. 1: 400 (1805).

8. **Ottelia alismoides** (L.) Pers., Syn. Pl. 1: 400 (1805); Hook. f., Fl. Brit. Ind. 5: 662 (1888); Prain, Beng. Pl. 2: 749 (1903, reprint 1963); Den Hartog in van Steenis, Fl. Males. Ser. 1, 5(4): 398 (1957); Subramanyam, Aqua. Angios.: 61 (1962); Khan and Halim in Khan (Ed.), Fl. Bangl. 28: 9 (1985). *Stratiotes alismoides* L., Sp. Pl.: 535 (1753).

Vernacular names: *Ramkarala*, English names: Water plantain, Duck Shamakola. lettuce.

Rooted submerged herb. Floating leaves broad-ovate, sub-orbicular or cordate-reniform, the submerged leaves elliptic-lanceolate. Flowers in spathe, white with yellow spots. Fruits oblong. Seeds many, with thick testa. *Flowering and fruiting:* January - December. *Chromosome number:* $2n = 22, 44, 66, 52, 72$ (Fedorov, 1969). *Shallow ponds, streams, beels, stagnant pools and ditches.*

Distribution: From Northeast Africa and Southeast Asia eastwards to China and Japan, and southwards throughout Malaysia reaching tropical Australia and the Solomon Islands.

Status of occurrence: Common.

Specimens examined: Kaliganj, Khudabon, 04.04.2008, R. Tabassum, 293 (DUSH); Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 404 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1514 (DUSH); Sripur, Bager Bazar, 18.02.2013, R. Tabassum, 2433 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2812 (DUSH).

Genus 7. **Vallisneria** Mich. ex L., Gen. Pl. ed. 5: 446 (1754).

9. **Vallisneria spiralis** L., Sp. Pl.: 1015 (1753); Hook. f., Fl. Brit. India 3: 660 (1882); Prain, Beng. Pl. 2: 748 (1903, reprint 1963); Subramanyam, Aqua. Angios.: 57 (1962); Khan and Halim in Khan (Ed.), Fl. Bangl. 28: 10 (1985).

Vernacular name: *Pata shaola*. English names: Straight vallis, Tape grass.

Fully submerged dioecious herb. Leaves radical, linear, ribbon-shaped, sheathing at the base. Male spathe on a scape, flowers many, white. Female spathe on long,

slender, filiform scape, flower solitary. Fruit linear, capsule, basal part enclosed in spathe. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 20, 30, 40$ (Fedorov, 1969). *Fresh water tanks, beels, lakes, ditches, ponds and rivers*.

Distribution: Throughout India and Sri Lanka, and westwards in the Old and New Worlds.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 349 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 965 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1214 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1692 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2897 (DUSH).

Family 4. **APONOGETONACEAE** J.G. Agardh (1858)

Scapigerous, perennial aquatic plants with tuber-like corms or elongated and branched rhizomes. Leaves radical, oblong, floating or submerged, the juvenile leaves strap-like, mature ones stalked, linear, elliptic or oblong, submerged leaves thin, often undulate or contorted. Inflorescence a spike, emerging above the water surface. Flowers bisexual, sometimes unisexual. Perianth segments absent or up to 6, petal-like or bract-like. Stamens 6 or more, in 2 or more whorls. Carpels 2-9, free, ovary superior. Fruit a leathery follicle. Seeds 1-many.

The family Aponogetonaceae consists of the single genus *Aponogeton*, with about 40 species, native to the tropics of the Old World and to South Africa. In Bangladesh, it is represented by 4 species.

In the present study area this family is represented by a single species.

Genus 8. **Aponogeton** L.f., Suppl. 32: 214 (1782).

10. **Aponogeton natans** (L.) Engl. & Krause in Engl., Pflanzenreich 24: 22 (1906). *Saururus natans* L. (1771), *Aponogeton monostachyon* L. f. (1781); Hook. f., Fl. Brit. Ind. 6: 564 (1893); Prain, Beng. Pl. 2: 845 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925).

Vernacular name: *Ghechu*. English names: Drifting sword plant, Sword-leaf lace plant.

Herb with edible stoloniferous rootstock. Leaves oblong or linear-oblong to linear-lanceolate, acute or obtuse. Inflorescence a spike, usually dense-flowered. Flowers white. Fruit a subglobose follicle. *Flowering and fruiting*: April - October.

Chromosome number: $2n = 76$ (Kumar and Subramaniam, 1986). *Shallow ditches and margins of beels.*

Distribution: Tropical Asia including India and Sri Lanka, and up to Australia.

Status of occurrence: Apparently common.

Uses: The rootstock locally known as *ghechu* is eaten by poor people.

Specimens examined: Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 464 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 488 (DUSH); Sripur, Baghmara, 18.02.2013, R. Tabassum, 2449 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2917 (DUSH).

Family 5. **POTAMOGETONACEAE** Dumortier (1839)

Submerged aquatic herbs, usually rooting at the lower nodes. Stem branched. Leaves alternate, opposite or whorled, simple, entire. Inflorescence of axillary spikes, emerged or submerged. Tepals 4. Stamens 4. Carpels 4, ovary superior, styles short, stigmas sessile. Fruits of 4, somewhat compressed drupelets. Seeds with well-developed hypocotyle and without endosperm.

The family Potamogetonaceae consists of the single cosmopolitan genus *Potamogeton* with perhaps 100 species. In Bangladesh, it is represented by 5 species.

In the present study area this family is represented by a single species.

Genus 9. **Potamogeton** [Tourn.] L., Syst. ed. 1 (1753).

11. **Potamogeton crispus** L., Sp. Pl.: 126 (1753); Hook. f., Fl. Brit. Ind. 6: 566 (1893); Prain, Beng. Pl. 2: 845 (1903, reprint 1963); Khan and Halim in Khan & Rahman (Eds.). Fl. Bangl. 40: 1 (1989).

English name: Curly pondweed.

Rhizomatous perennial herb. Leaves broadly linear to oblong, undulate, translucent. Flowers 6-8. Druplets obliquely ovoid. *Flowering and fruiting:* January - February. *Chromosome number:* $2n = 52$ (Fedorov, 1969). *Ponds, lakes, ditches, beels and haors.*

Distribution: Plains of India, Himalayas, Bhutan and in general temperate and subtropical regions.

Status of occurrence: Common.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 207 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 937 (DUSH); Sripur, Borkul,

21.06.2010, R. Tabassum, 1144 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2721 (DUSH); Kapasia, Kandunia village, 03. 11.2013, R. Tabassum, 3733 (DUSH).

Family 6. **NAJADACEAE** A. L. de Jussieu (1789)

Annual, submerged aquatic, fragile herbs, rooting at the base and from lower nodes. Stem elongated, slender, much branched, occasionally spiny. Leaves sessile, in pseudop-whorls, linear, linear-oblong, spinose dentate or serrate at the margins. Flowers unisexual, axillary, solitary or few in axillary shoots. Male flowers enclosed by 2-lipped perianth, anther basifixed, slightly open at the apex, stamens 1-6. Female flowers without perianth, ovary subsessile, 1-locular, with 1 basal, erect, anatropous ovule, style cylindrical, stigmas 2-3. Fruit indehiscent. Seed with hard testa, without endosperm.

The family Najadaceae consists of a single genus and about 50 species, distributed throughout the world in fresh and brackish water habitats. In Bangladesh, this family is represented by 5 species.

In the present study area this family is represented by a single species.

Genus 10. **Najas** L., Sp. Pl.: 1015 (1753).

12. **Najas indica** (Willd.) Cham., Linnaea 4: 501 (1829); Hook. f., Fl. Brit. Ind. 6: 569 (1893); Prain, Beng. Pl. 2: 847 (1903, reprint 1963). *Caulinia indica* Willd. (1801), *Najas falciculata* A. Br. (1864), *Najas lacerata* Rendle (1899).

Submerged, slender, grass-like herb. Leaves linear, marginal spinules numerous, auricles or sheath falcately incurved, with a few teeth along the outer edge, inner edge entire. Spathe of the male flower ellipsoidal. Fruit an achene. *Flowering and fruiting*: June - September. *Chromosome number*: $2n = 12$ (Kumar and Subramaniam, 1986). *Slow moving and stagnant fresh water*.

Distribution: South India and the Philippines.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1298 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1851 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2323 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2969 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3525 (DUSH).

Family 7. **ARECACEAE** C. H. Schultz-Schultzen (1832).

Shrubs or trees, solitary or gregarious, sometimes climbing, naked or prickly, stem simple, rarely branched above. Leaves alternate, usually crowded at the apex of stem, plicate in bud, pinnatisect or palmate, rarely simple or bipinnate, petiole sheathing. Inflorescence in panicles or spikes, enclosed in one or more large sheathing spathes. Flowers small, bisexual or more commonly unisexual, actinomorphic, usually 3-bracteate. Perianth inferior, biseriate, segments in each series 3, outer ones sepaloid and the inner ones petaloid. Stamens usually 6 in two whorls, filaments free, anthers 2-celled, versatile. Carpels 3, syncarpous, ovary superior, 1-3 celled, ovules 1-2 in each locule, stigmas 3. Fruit a 1-3 celled berry or drupe. Seeds erect or laterally attached, rarely pendulous.

The family Arecaceae consists of about 200 genera and 3,000 species, almost all restricted to the tropical or warm-temperate regions of the World. In Bangladesh, it is represented by 20 genera and 40 species.

In the present study area this family is represented by 7 genera and 11 species.

Key to genera:

- | | |
|---|-----------------|
| 1. Leaves palmate or costapalmate or pinnate, induplicate; flowers solitary or clustered, never in triads of a central female and two lateral male flower | 2 |
| - Leaves pinnate, bipinnate or entire, pinnately ribbed or reduplicate; flowers solitary or clustered frequently in triads | 3 |
| 2. Leaves palmate, basal leaflets not modified into spines | Borassus |
| - Leaves pinnate, basal leaflets modified into spines | Phoenix |
| 3. Ovary and fruit covered in imbricate scales; flowers monomorphic, arranged singly or in dyad or in cincinni | Calamus |
| - Ovary and fruit glabrous or with basifixed scales; flowers dimorphic, arranged singly or in triad | 4 |
| 4. Leaves pinnate or bipinnate, induplicate; inflorescence hapaxanthic or pleonanthic, monoecious; mostly prophyll and many peduncular bracts | Caryota |
| - Leaves pinnate or palmately ribbed, reduplicate; inflorescence unisexual or bisexual with a prophyll and a large peduncular bract | 5 |
| 5. Fruit with bony endocarp with three distinct pores below or above the middle | Cocos |

- Fruit without bonny endocarp or pores 6
- 6. Inflorescence intrafoliar; crownshaft distinct **Areca**
- Inflorescence interfoliar; crownshaft not distinct **Chrysalidocarpus**

Genus 11. **Areca** L., Sp. Pl.: 1189 (1753).

13. **Areca catechu** L., Sp. Pl.: 1189 (1753); Hook. f., Fl. Brit. India 6: 405 (1892); Prain, Beng. Pl. 2: 826 (1903, reprint 1963); R. L. Heinig, List Chittagong: 72 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 110 (1956).

Vernacular names: *Supari, Gua*. English names: Betel nut palm, Areca-nut palm.

Solitary, erect, cylindrical palm. Leaves pinnatisect, 10-15 per tree, leaflets up to 100 per blade. Inflorescence below the crownshaft, much branched. Spathes 2, boat-shaped, caduceus. Male flowers white, fragrant, female flowers larger than male ones, green. Berries olive-shaped with a smooth, soft and fibrous covering, orange or scarlet when ripe. *Flowering and fruiting*: throughout the year, mainly during the early summer. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in a wide variety of soils*.

Distribution: Native of Malaysia and cultivated throughout the warm and humid regions of Asia.

Status of occurrence: Common.

Uses: Seeds are chewed with betel leaf. Wood is used for various purposes.

Specimens examined: Kaligonj, Membari, 26.03.2008, R. Tabassum, 271 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 392 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 998 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1261 (DUSH); Kapasia, Voboner Chala, 03.11.2013, 3632 (DUSH).

Genus 12. **Borassus** L., Sp. Pl.: 1187 (1753).

14. **Borassus flabellifer** L., Sp. Pl.: 1187 (1753); Hook. f., Fl. Brit. India 4: 482 (1884); Prain, Beng. Pl. 2: 822 (1903, reprint 1963); R. L. Heinig, List Chittagong: 73 (1925).

Vernacular name: *Tal*. English names: Palmyra palm, Toddy palm.

Solitary, stout, unbranched palm. Leaves fan-shaped, 25-40 per plant, segments 60-80 per blade, linear-lanceolate, 2-fid, petiole stout with spiny teeth along the margin, black in colour, base expanded. Male and female flowers borne on separate trees. Female

inflorescence a sparingly branched spadix, flowers green. Male inflorescence a simple, branched spadix, flowers small, mixed with scale-like bracts. Drupes broadly obovoid, dark brown when ripe, very fibrous inside. *Flowering and fruiting*: January - October. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Floodplains and also highlands*.

Distribution: Native of Bangladesh, India, Pakistan and Malaysia, cultivated in tropical Africa, Myanmar and Sri Lanka.

Status of occurrence: Common.

Uses: Fruits are eaten raw or cooked. Leaves are used in making fans, mats and for thatching. Trunks are used in making poles and country boat. Juice extracted from inflorescence is used for making molasses.

Specimens examined: Kapasia, Barishabe, 09.03.2012, R. Tabassum, 2095 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3044 (DUSH); Kaliganj, Banglahola, 02.12.2013, R. Tabassum, 3840 (DUSH); Sripur, Boherar chala, 21.12.2013, R. Tabassum, 3377 (DUSH).

Genus 13. **Calamus** L., Gen. Pl. (ed. 6): 174 (1764).

Key to species:

- | | |
|---|-------------------|
| 1. Leaf ending in a cirrus | latifolius |
| - Leaf ecirrate | 2 |
| 2. Leaflets more or less regularly disposed on the rachis | tenuis |
| - Leaf irregularly disposed on the rachis | viminalis |

15. **Calamus latifolius** Roxb., Fl. Ind. 3: 775 (1832); Hook. f., Fl. Brit. Ind. 6: 455 (1892); Prain, Beng. Pl. 2: 827 (1903, reprint 1963). *Calamus humilis* Roxb. (1832).

Vernacular names: *Korak bet*, *Budum bet*.

Stout, extensive climber, clustering to form dense clumps. Leafsheath covered with flat, stout, deflexed spines. Leaves cirrate, petiole armed with flat, saccate spines, leaflets 12-15 on either side, elliptic or elliptic-lanceolate, boat-shaped in the under surfaces. Inflorescence both male and female superficially similar. Fruits sub-globose, apiculate, covered by vertical rows of scales. *Flowering and fruiting*: November - June. *Grows along forest margins, perform well in the shade*.

Distribution: Sikkim Himalayas, eastern India, Myanmar to China.

Status of occurrence: Seems to be rare.

Use: Used for makin furniture.

Specimens examined: Sripur, Barkul, 21.06.2010, R. Tabassum, 1154 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1743 (DUSH).

16. **Calamus tenuis** Roxb., Fl. Ind. 3: 780 (1832); Hook. f., Fl. Brit. Ind. 6: 447 (1892); Prain, Beng. Pl. 2: 827 (1903, reprint 1963).

Vernacular names: *Bet, Jali bet.*

English name: Rattan.

Climber, clustering to form dense clumps. Leafsheath armed with irregular, flattened, horizontal, solitary spines with a flattened base, flagella whip-like, armed with clawed recurved black spines. leaves ecirrate, leaflets 20-30 on either side, equidistant, linear. Inflorescence both male and female superficially similar. Fruits oblong-ellipsoid with solid beak, brownish. *Flowering and fruiting:* July - April. *Village groves, roadsides, marshy places and the edges of water bodies.*

Distribution: Myanmar and India.

Status of occurrence: Common.

Use: Widely used for domestic purposes.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 218 (DUSH); Sripur, Gorgoria, 21.09.2012, R. Tabassum, 2170 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2806 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3165 (DUSH).

17. **Calamus viminalis** Willd., Sp. Pl. 2(1): 203 (1799); R. L. Heinig, List Chittagong: 73 (1925). *Calamus fasciculatus* Roxb. (1832), *Calamus extensus* Martius (1838), *Calamus viminalis* Willd. var. *fasciculatus* (Roxb.) Becc. ex Becc. (1908); Hook. f., Fl. Brit. Ind. 6: 444 (1892); Prain, Beng. Pl. 2: 827 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9 (2): 110 (1956), *Calamus viminalis* Willd. var. *andamanicus* Becc. (1908).

Vernacular name: *Bara bet.*

English name: Rattan.

Clustering to form dense clumps, climbing with support. Leafsheath armed with irregular, flattened horizontal spines, flagella whip-like, slender. Leaflets linear. Inflorescence male and female superficially similar. Flowers distichous. Fruit roundish, apiculate at the tip, crowned by trifid stigma, tip pinkish. *Flowering and fruiting:* almost throughout the year. *Associated with scrub vegetation and dry village thickets.*

Distribution: India (northeast India and the Andaman Islands), Myanmar, Thailand, southern China to the Lesser Islands (Java, Indonesia).

Status of occurrence: Common.

Uses: Widely used for making furniture and walking sticks. Fruits are edible.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 201 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1260 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3152 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3731 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3793 (DUSH).

Genus 14. **Caryota** L., Sp. Pl. 2: 1189 (1753).

Key to species:

1. Moderate-sized palms, with clustered stems; rachillae less than 80 per inflorescence; flowers purple to maroon; fruits purple, purple-black, or brownish purple **mitis**
- Massive, solitary palms; rachillae more than 80 per inflorescence; flowers yellowish, rarely reddish brown to purple; fruits reddish, orange, or rarely purple **urens**

18. **Caryota mitis** Lour., Fl. Cochinch. 2: 569 (1790); Hook. f., Fl. Brit. Ind. 6: 423 (1892); Prain, Beng. Pl. 2: 823 (1903, reprint 1963); R. L. Heinig, List Chittagong: 72 (1925).

English name: Fishtail palm.

Small, soboliferous palm. Leaves few, very large, twice pinnatisect, lobules very obliquely, dimitiately flabelliform or cuneiform. Flowers monoecious, solitary and male or ternate with the central female. Fruit globose, 1-2 seeded. *Flowering and fruiting:* April - May. *Chromosome number:* $2n = 32$ (Fedorov, 1969). *Grows in dry areas.*

Distribution: India (the Andaman Islands), Myanmar and Malay Peninsula.

Status of occurrence: Cultivated.

Use: Planted along roadsides and in gardens as an ornamental plant.

Specimen examined: Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3942 (DUSH).

19. **Caryota urens** L., Sp. Pl. 2: 1189 (1753); Hook. f., Fl. Brit. Ind. 6: 422 (1892); Prain, Beng. Pl. 2: 823 (1903, reprint 1963).

Vernacular names: *Chau, Chau-gota, Sago palm.* English name: Indian sago palm, Hill palm.

Solitary, erect, cylindrical palm. Leaves 10-15 per tree, bipinnate, broad, cuneiform, obliquely truncate, acutely serrate-toothed. Inflorescence a spadix, interfoliar, enormous, peduncle stout, curved, rope-like, drooping, flowers monoecious, female flower in between 2 male flowers. Fruit a globose berry, 1-2 seeded in masses hanging in many crowded pendulous strings, reddish when ripe. *Flowering and fruiting*: April - September. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in dry lands*.

Distribution: A native of India, Pakistan, Bangladesh and Malaysia, and is distributed throughout tropical Asia.

Status of occurrence: Cultivated.

Uses: Planted as an avenue tree.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1750 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2164 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3141 (DUSH).

Genus 15. **Chrysalidocarpus** H. Wendl. in Bot. Zeit. 36: 171 (1878).

20. **Chrysalidocarpus lutescens** (Bory) H. Wendl. in Bot. Zeit. 36: 171 (1878).

English name: Yellow areca palm.

Dioecious palm with many trunks, slender. Leaves pinnate, 6-10 per trunk, spreading, pinnatisect, arching, leaf blade consisting of 40-60 pairs of narrowly lanceolate leaflets. Inflorescence interfoliar, male and female inflorescence borne on separate plants; spathes yellowish-green. Flowers white. Fruit baccate, ellipsoid-turbinate, black-violaceous when ripe. *Flowering and fruiting*: December - April. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Gardens and lawns*.

Distribution: A native of Madagascar and is now planted in the tropical regions of the world.

Status of occurrence: Cultivated.

Use: Ornamental plant.

Specimens examined: Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2072 (DUSH); Tongi, Chaydana, 19.08.2013, R. Tabassum, 2856 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3254 (DUSH).

Genus 16. **Cocos** L., Sp. Pl.: 1188 (1753).

21. **Cocos nucifera** L., Sp. Pl.: 1189 (1753); Hook. f., Fl. Brit. Ind. 4: 482 (1884); Prain, Beng. Pl. 2: 824 (1903, reprint 1963); R. L. Heinig, List Chittagong: 74 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 110 (1956).

Vernacular names: *Narikel, Daab*.

English name: Coconut palm.

Tall, unbranched palm. Leaves pinnatisect, petiole long, stout, leaflets up to 180 per blade, sword-shaped. Inflorescence of spadix, dioecious. Flowers light green. Fruit obovoid, green or yellowish, covered with a tough fibrous husk, the large cavity filled with a sweet fluid. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in a wide variety of soils*.

Distribution: Originated in the Pacific Islands near the coast of Panam, now it is cultivated throughout the tropical and subtropical areas of the world.

Status of occurrence: Cultivated.

Uses: Fruits are eaten raw and used for making sweetmeats. *Copra* is used for making oil. The outer husk of the fruit is used for various ways.

Genus 17. **Phoenix** L., Sp. Pl. 2: 1188 (1753).

Key to species:

- | | |
|---|-------------------|
| 1. Stem acaulescent or very dwarf; fruiting peduncle sessile, erect | acaulis |
| - Stem long; fruiting peduncle pendulous, long | sylvestris |

22. **Phoenix acaulis** Buch.-Ham. ex Roxb., Fl. Ind. 3: 783 (1832); Hook. f., Fl. Brit. Ind. 6: 426 (1892); Prain, Beng. Pl. 2: 825 (1903, reprint 1963).

Vernacular name: *Khudi khejur*.

English name: Stemless date palm.

Stemless, dwarf, simple palm. Leaves pinnatisect, segments lanceolate or ensiform. Flowers dioecious, small, yellowish, on branched, interfoliar, erect or drooping spadices, spathe basilar. Fruit 1-seeded, oblong, pericarp fleshy, with a membranous endocarp. Seeds oblong, ventrally grooved. *Flowering and fruiting*: April - May. *Grows in the Sal forest as an undergrowth*.

Distribution: India (Bihar and Chota Nagpur).

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 931 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1719 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2003 (DUSH).

23. **Phoenix sylvestris** Roxb., Fl. Ind. 3: 787 (1832); Hook. f., Fl. Brit. Ind. 4: 425 (1884); Prain, Beng. Pl. 2: 825 (1903, reprint 1963); R. L. Heinig, List Chittagong: 73 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 110 (1956).

Vernacular names: *Khejur*, *Deshi khejur*. English names: Wild date palm, Silver date palm.

Single stemmed, erect palm, surface rugged due to persisting leaf bases. Leaves pinnate, densely set, leaflets uniform, with spinous tip. Inflorescence interfoliar, usually several. Flowers yellowish- green or yellowish-white. Fruits drupe, 1-seeded, olive-shaped, orange-yellow, rich in sugar content. *Flowering and fruiting:* December - July. *Chromosome number:* $2n = 36$ (Fedorov, 1969). *Floodplains, in a wide variety of soils.*

Distribution: Indigenous to Bangladesh, India and Pakistan.

Status of occurrence: Common.

Uses: Fruit yielding plant. The leaves are used for making mats, baskets, bags, brooms, and fans. Wood is used in the construction of buildings.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 391 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1105 (DUSH); Kaliakoir, Nabinagar, 12.02.2011, R. Tabassum, 1980 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2276 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2409 (DUSH).

Family 8. **PANDANACEAE** R. Brown (1810)

Shrubs or trees, dioecious, often with stilt roots. Leaves in tristichous spirals, narrow, acuminate with sheathing base, midrib and margin spinous. Spadices axillary or terminal, enveloped by leafy spathes. Flowers fasciculated. Perianth rudimentary or absent. Male flowers: stamens numerous, filaments free or connate, anthers basifixed, 2-celled. Female flowers: staminodes if present small and hypogynous, carpels connate, in groups (phalanges) or all free, superior, style absent or very short, ovules solitary to many, basal or parietal. Fruit a drupe, oblong-globose, endosperm fleshy.

The family Pandanaceae consists of 3 genera and near about 500-600 species, distributed in the tropics of the Old World. In Bangladesh, this family is represented by a single genus and 5 species.

In the present study area this family is represented by a single species.

Genus 18. **Pandanus** L. f., Suppl.: 64 (1781).24. **Pandanus fascicularis** Lamk., Encyl. 1: 372 (1785).Vernacular names: *Keya*, *Keya-kanta*.

English name: Large screw-pine.

Robust bushy shrub. Stem bushy or erect, branching from various regions. Leaves drooping, linear, large incurved spines both in margin and on the midrib. Male inflorescence white, fragrant. Drupes large, pineapple-like, drooping, confluent in groups of 5-8, woody, orange-yellow to red when ripe. *Flowering and fruiting*: May - October. *By the side of wet lands and canals*.

Distribution: Malay Islands, Mauritius, China and Polynesia.

Status of occurrence: Less common.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 536 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 835 (DUSH).

Family 9. **ARACEAE** A. L. Jussieu (1789).

Perennial, usually terrestrial, climbing, sometimes epiphytic or floating aquatic herbs. Underground stem rhizomatous or tuberous or coromous. Leaves alternate or apparently basal, petiolate with sheathing bases, often subtended by cataphylls, blade very variable, linear, simple, sometimes peltate or variously compound, perforated, lobed. Inflorescence a spadix of sessile, bractless flowers subtended by a large bract. Spathe commonly with tube-like base and withering or deciduous blade. Spadix bearing bisexual or unisexual flowers, sometimes with a sterile, terminal appendix, no perianth in unisexual flowers but present in bisexual flowers, tepals 0, 4 or 6, stamens usually 4-6 per flower, filaments free, anthers bilocular, ovary usually 3-loculed. In unisexual flowers, male represented by a single stamen or synandria of 2 fused stamens, female flowers consisting of single ovary, commonly unilocular, ovules 1-numerous in each locule, style short or absent, stigma discoid, globose or lobed. Neuter flowers derived from male or female flowers sometimes present at the apex of the female and/or male section. Fruit usually a head of 1-many seeded berries, commonly red.

The family Araceae consists of about 110 genera and 2500 species, distributed in tropical and subtropical regions of the World. In Bangladesh, this family is represented by 30 genera and 89 species.

In the present study area the family is represented by 16 genera and 21 species.

Key to genera:

- | | | |
|-----|---|----------------------|
| 1. | Flowers bisexual | 2 |
| - | Flowers unisexual, plants monoecious or sometimes dioecious | 8 |
| 2. | Flowers with perianth | 3 |
| - | Flowers without perianth or reduced and not visible from above | 7 |
| 3. | Plants climbing | 4 |
| - | Plants herbaceous, not climbing | Lasia |
| 4. | Stem with arial root; distinct leaf scar present on stem | Philodendron |
| - | Stem without arial root; distinct leaf scar absent on stem | 5 |
| 5. | Climbers with constricted leaves | Pothos |
| - | Climbers without constricted leaves | 6 |
| 6. | Stout, robust lianas with large, pinnatisect leaves | Monstera |
| - | Weak lianas hastate or pediate leaves | Syngonium |
| 7. | Fruit each a discrete indehiscent berry | Rhaphidophora |
| - | Fruit not a discrete berry, dehiscent via shedding of stylar plate | Scindapsus |
| 8. | Plant a free-floating aquatic | Pistia |
| - | Plant never a free-floating aquatic, if aquatic then rooted in soil | 9 |
| 9. | Stamens of each male flower entirely connate into distinct synandrium | 10 |
| - | Stamens of each male flower free, or only filaments connate (rarely also anthers fused in <i>Arisaema</i>) | 13 |
| 10. | Green leaves with colourfull marks (i.e. red, white) | Caladium |
| - | Leaves green without any colour marks | 11 |
| 11. | Mature infructescences declined to pendent; placentation parietal; fruit less than 3 mm dia., pale yellow to brown and fruit-smelling when ripe; seeds small, very numerous per fruit | 12 |

- Mature infructescences erect; placentation basal; fruit more than 4 mm dia, red when ripe, odorless; seeds large, few per fruit **Alocasia**
- 12. Leaf peltate; petiole green **Colocasia**
- Leaf not peltate; petiole violet **Xanthosoma**
- 13. Spadix appendix absent, or if present then usually consisting of clearly defined subglobose sterile flowers **Homalomena**
- Spadix appendix present, $\pm$ smooth to rugulose, hairy or echinate, without subglobose sterile flowers, or if such sterile flowers present then usually confined to proximal part or base **14**
- 14. Spadix unisexual, or if bisexual then male and female zones contiguous or separated by sterile zone usually covered with staminodes **Amorphophallus**
- Spadix bisexual, male and female zones separated by naked sterile axis **15**
- 15. Sterile zone between female and male zones with smooth naked distal part; staminodes spatulate **Typhonium**
- Sterile zone between female and male zones fully covered with staminodes, staminodes never spatulate **Anthurium**

Genus 19. **Alocasia** (Schott) G. Don in Sweet, Hort. Brit., ed. 3: 631 (1839).

Key to species:

- 1. Plants massive, pachycaul, at least 1 m tall **2**
- Plants not as above, or if taller than 1 m then never massive **3**
- 2. Sinus between posterior leaves naked **macrorrhizos**
- Sinus between posterior leaves peltate **fornicata**
- 3. Stems stoutly erect and basally much branched; leaf blade broadly ovate; only known from areas of human disturbance **cucullata**
- Stems weakly erect to decumbent, not branching basally; leaf blade various but never broadly ovate; plants of natural forest **fallax**

25. **Alocasia cucullata** (Lour.) G. Don. in Sweet, Hort. Brit. *ed.* 3: 631 (1839) ('*cucullatum*'); Hook. f., Brit. Ind. 6: 525 (1893); Prain, Beng. Pl. 2: 836 (1903, reprint 1963). *Arum cucullatum* Lour., Fl. Cochinch. 2: 536 (1790). *Colocasia cucullata* (Lour.) Schott ex Kunth, Enum. Pl. 3: 34 (1841).

Vernacular name: *Bish-kachu*.

English name: Chinese taro.

Evergreen herb. Leaves many, blade broadly ovate-cordate, apex acute, base shallowly cordate. Inflorescence a spadix, usually solitary, spathe green. Berry sub-globose. *Flowering and fruiting*: May - July. *Chromosome number*: $2n = 28$ (Petersen, 1989). *Grows in shady and damp places in the forests and village thickets*.

Distribution: Southeastern Asia.

Status of occurrence: Common.

Uses: Leaf paste is used in muscle pain by *Santal*.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 136 (DUSH); Kaliakoir, Uluhara, 08. 01.2010, R. Tabassum, 647 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1417 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2310 (DUSH).

26. **Alocasia fallax** Schott in Bonplandia 7: 28 (1859); Hook. f., Brit. Ind. 6: 527 (1893).

Herb with short, suberect rhizome. Leaves peltate, ovate, base cordate. Spathe membranaceous. Spadix shorter than the spathe, female zone short, male zone cylindric, creamy. Berries globose, 1-seeded. *Flowering and fruiting*: May - December. *Grows in shady areas*.

Distribution: Bhutan and India.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1764 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2526 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3293 (DUSH); Kapasia, Voboner, 03.11.2013, R. Tabassum, 3505 (DUSH).

27. **Alocasia fornicata** (Roxb.) Schott, Oesterr. Bot. Wochenbl. 4: 410 (1854); Hook. f., Fl. Brit. Ind. 6: 426 (1893); Prain, Beng. Pl. 2: 836 (1903, reprint 1963); R. L. Heinig, List Chittagong: 74 (1925). *Arum fornicatum* Roxb. (1832), *Colocasia fornicata* (Roxb.) Kunth (1841).

Vernacular name: *Salukachu*.

Herb. Leaves peltate, ovate-lanceolate, sagittate. Inflorescence usually 2 from a leaf axile. Spathe ellipsoid, dark green. Spadix slightly shorter than the spathe. Fruit a sub-globose berry, orange-red or scarlet-red when ripe. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 28, 42, 56$ (Petersen, 1989). *Shady damp places in the forests and also in village thickets*.

Distribution: Northeast and South India and Sri Lanka.

Status of occurrence: Common.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 489 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1922 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2457 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3354 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3809 (DUSH).

28. **Alocasia macrorrhizos** (L.) G. Don in Sweet, Hort. Brit. ed. 3: 631(1839). *Arum macrorrhizon* L. (1753), *Arum indicum* Lour. (1790); Prain, Beng. Pl. 2: 836 (1903, reprint 1963).

Vernacular names: *Mankachu, Fankachu*.

English name: Giant taro.

Very robust, evergreen herb. Stem caulescent. Leaves broadly ovate, large. Inflorescences 2 or more in each axil. Spathe constricted. Spadix sessile. Berries ellipsoid, orange. *Flowering and fruiting*: July - October. *Chromosome number*: $2n = 28$ (Petersen, 1989). *Village shrubberies, banks of flowing streams, low-lying marshy areas and shades of trees and plantations*.

Distribution: India through Southeast Asia and the Pacific Islands.

Status of occurrence: Common.

Use: Tuber is used as cooked vegetable.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2228 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2334 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3174 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tanassum, 3499 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3846 (DUSH).

Genus 20. **Amorphophallus** Blume ex Decaisne in Nouv. Ann.

Mus. Hist. Nat. 3: 366 (1834).

Key to species:

1. Leaf not bulbiferous, segments green edged; petiole warted; spathe campanulate, inside purple; style much longer than ovary **paeoniifolius** var. **campanulatus**

- Leaf bulbiferous, segments purple edged; petiole smooth; spathe wide-turgid, inside rose pink; style absent

bulbifer

29. **Amorphophallus bulbifer** (Roxb.) Blume in Rumphia 1: 148 (1837). Hook. f., Brit. Ind. 6: 515 (1893); Prain, Beng. Pl. 2: 835 (1903, reprint 1963); *Arum bulbiferum* Roxb. (1832); *Amorphophallus tuberculiger* (Schott) Engl. (1879).

Vernacular names: *Amla-bela*, *Jongle ol*.

English name: Voodoo lily.

Corms globose, brown. Leaf solitary, petioles with deep green or greenish-brown stripes or blotches, lamina tripartite, the lateral parts sometimes again bifurcating, all ultimately divided into oblong-obovate, acuminate lobes. Spathe convolute at the base, spreading above into an ovate, obtuse limb, outside pale pink-mauve with green blotches, inside pale pink-mauve with numerous red papillae towards the base. Spadix usually longer than or shorter than the spathe. Berries usually 1-seeded. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 26, 36, 39$ (Petersen, 1989). *Grows in shady and moist areas*.

Distribution: India and Myanmar.

Status of occurrence: Common.

Use: The petiole and young leaves are used as cooked vegetable by local people.

Specimens examined: Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 261 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1864 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2933 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3623 (DUSH).

30. **Amorphophallus paeoniifolius** (Dennst.) Nicolson, var. **campanulatus** (Decne.) Sivadasan, Taxon 32: 130 (1983). *Amorphophallus campanulatus* Decne., Nouv. Ann. Mus. Hist. Nat. Paris 3: 366 (1834); Hook. f., Brit. Ind. 6: 513 (1893); R. L. Heinig, List Chittagong: 74 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 110 (1956). *Amorphophallus campanulatus* var. *blume* Prain, Beng. Pl. 2: 835 (1903).

Vernacular name: *Olkachu*.

English name: Elephant-yam.

Erect herb, corm depressed-globose. Leaf solitary, lamina tripartite, lamina tripartite, the lateral parts again bifurcating and ultimately divided into oblong, acuminate lobes. Inflorescence short-peduncled. Spathe broadly campanulate. Spadix very stout and sessile, with female flowers below, male flowers above, and with an apical naked, sterile, dark greenish-purple appendix. Berries obovoid, orange to red when ripe. *Flowering and fruiting*: May - November. *Chromosome number*: $2n = 28$ (Petersen,

1989). *Grows in damp and moist places under the shade of trees, forest areas and plantations.*

Distribution: India, Sri Lanka, Myanmar and Indonesia.

Status of occurrence: Common.

Use: Vegetable yielding plant.

Specimens examined: Kaliganj, Khudabon, 26.03.2008, R. Tabassum, 272 (DUSH); Sripur, Gorgoria Ghat, 21.06.2010, R. Tabassum, 1434 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2664 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3694 (DUSH).

Genus 21. **Anthurium** Schott in Wiener Z. Kunst 1829(3): 828 (1829).

31. **Anthurium andreanum** Linden, Illustr. Hortic.: 43, t. 271 (1877).

English name: Flamingo flower.

Small herb. Leaves petiolate, lamina narrowly ovate, heart-shaped. Inflorescence more or less erect, usually held above the leaves. Spathe broadly ovate to almost rounded, cordate, bright red. Spadix usually white. Berries ovoid, reddish. *Flowering and fruiting:* January - December. *Chromosome number:* $2n = 30, 32$ (Kumar and Subramaniam, 1986). *Grows in warm, moist environment and shady damp places.*

Distribution: Southwest Colombia and Northwest Ecuador.

Status of occurrence: Common.

Use: Ornamental plant.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 119 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 647 (DUSH); Gazipur Sadar, Murkun, 04.02.2011, R. Tabassum, 1901 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2109 (DUSH).

Genus 22. **Caladium** Vent., Descript. Pl. Nouv. Jard. Cels 30 (1801).

32. **Caladium humboldtii** Schott, Oesterr. Bot. Wochenbl. 4: 417 (1854). *Caladium myriostigma* C. Koch (1862); *Caladium humboldtii* var. *myriostigma* (C. Koch) Engler (1879).

Terrestrial herb. Leaves several, erect, petiolate, lamina ovate, peltate with sagittate base, dull deep green with white blotches and spots above, paler below. *Chromosome number:* $2n = 19$ (Petersen, 1989). *Shady moist places.*

Distribution: Brazil and Venezuela.

Status of occurrence: Cultivated.

Use: Ornamental plant.

Specimens examined: Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2556 (DUSH); Kaliakoir, 01.10.2013, R. Tabassum, 3279 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3500 (DUSH).

Genus 23. **Colocasia** Schott in Schott & Endl., Melet. Bot.: 18 (1832).

Key to species:

1. Plants gigantic, often exceeding 2 m tall; petioles and abaxial surface of leaves white pruinose; inflorescence arising as a fan of 5-13 inflorescences; spathe limb pure white **gigantea**
- Plants small to large (very rarely exceeding 1.5 m tall); petioles and abaxial surface of leaves at most grayish glaucous; inflorescence solitary or in pairs, rarely 4 together and then not in a fan; spathe limb not pure white **esculenta**

33. **Colocasia esculenta** (L.) Schott, Schott & Endlicher, Melet. Bot. 18 (1832); J. Sinclair in Bull. Bot. Soc. Beng. 9 (2): 110 (1956). *Arum esculenta* L., Sp. Pl. 2: 965 (1753). *Colocasia nymphaeifolia* (Vent) Kunth, Enum. Pl. 3: 37 (1841); Prain, Beng. Pl. 2: 837 (1903); R. L. Heinig, List Chittagong: 74 (1925). *Colocasia antiquorum* Schott, Schott & Endlicher, Melet. Bot. 18 (1832); Hook. f., Brit. Ind. 6: 523 (1893); Prain, Beng. Pl. 2: 837 (1903, reprint 1963).

Vernacular name: *Jangli kachu*.

English names: Taro, Dasheen, Cocoyam.

Perennial herb with underground tubers. Leaves peltate, ovate, acute, cordate. Inflorescence with axillary peduncle, shorter than the petiole, solitary-many. Spathe constricted, basal part convolute, persistent, upper part lanceolate, yellow. Spadix sessile, male and female zones usually separated by a flat elongate neuters. Berries ovoid. *Flowering and fruiting:* May - October. *Chromosome number:* 2n = 28 (Petersen, 1989). *Grows in the bank of streams, ditches, water-logged low-lying areas, paddy fields, shady areas and plantations.*

Distribution: Pantropical.

Status of occurrence: Common.

Uses: Occasionally used as cooked vegetables.

Specimens examined: Kaliganj, Kolatola, 05.03.2010, R. Tabassum, 670 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2151 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2700 (DUSH).

34. **Colocasia gigantea** (Blume) Hook. f., Fl. Brit. Ind. 6: 524 (1893). *Caladium giganteum* Blume (1823), *Leucocasia gigantea* (Blume) Schott (1857).

Vernacular name: *Salad-kachu*.

English name: Giant elephant ear.

Perennial herb with a short stout above-ground stem. Leaves several together, blade ovate-cordate. Inflorescence 5-8 in each axil of leaf. Spathe white, oblong, distinctly constricted. Spadix sessile, shorter than the spathe. Flowers unisexual, naked. Fruit an oblong berry. *Flowering and fruiting:* April - September. Flowering of the plant is not an annual phenomenon but occurs at intervals of 6-7 years. *Chromosome number:* $2n = 28, 42$ (Petersen, 1989). *Shady places*.

Distribution: Native of southern China and Indo-China to the Malay Peninsula and Indonesia.

Status of occurrence: Seems to be rare.

Use: Petoiole of the plant is edible.

Specimen examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1865 (DUSH).

Genus 24. **Homalomena** Schott in Schott & Endl., Melet. Bot.: 20 (1832).

35. **Homalomena aromatica** (Roxb. ex Sim) Schott, Schott & Endl., Melet. Bot.: 20 (1832); Hook. f., Fl. Brit. Ind. 6: 532 (1893). *Calla aromatica* Roxb. ex Sim (1832). *Homalomena kelungensis* Hayata (1919).

Evergreen, perennial herb, rhizomes aromatic. Leaves broadly ovate, acuminate, cordate, basal lobes usually divaricate. Peduncle several; spathe green, oblong, convolute, not constricted. Spadix stipitate, male zone longer than the female zone, female zone cylindric. Berries ovoid, many-seeded. *Flowering and fruiting:* June - September. *Shady places*.

Distribution: India.

Status of occurrence: Common.

Specimens examined: Kapasia, 30.01.2001, R. Tabassum, 77 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1369 (DUSH); Kaliganj, Taltia, 23.08.2010, R.

Tabassum, 1601 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1871 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2923 (DUSH).

Genus 25. **Lasia** Lour., Fl. Cochinch. 64: 81 (1790).

36. **Lasia spinosa** (L.) Thw., Enum. Pl. Seyl.: 336 (1864); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 110 (1956). *Dracontium spinosum* L., Sp. Pl. 967 (1753). *Lasia heterophylla* Schott, Melet. 1: 21 (1832); Hook. f., Brit. Ind. 6: 550 (1893); Prain, Beng. Pl. 2: 840 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925).

Vernacular name: *Kanta-kachu*.

Perennial, prickly rhizomatous herb. Leaves hastate or sagittate, older variously lobed. Inflorescence solitary, axillary and spiny. Spathes fleshy, tube ovate-oblong, dark purplish-green outside, inside yellowish-green. Spadix pale crimson. Berry obovoid, hexagonal. *Flowering and fruiting*: January - November. *Chromosome number*: $2n = 26$ (Petersen, 1989). *Grows in shady and moist places in forests growing as undergrowth and in village thickets*.

Distribution: From India through Papua New Guinea.

Status of occurrence: Common.

Uses: It is used as vegetable and as medicine.

Specimens examined: Gazipur Sadar, Simultoli, 30.01.2001, R. Tabassum, 76 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1368 (DUSH).

Genus 26. **Monstera** Adanson, Fam. Pl. 2: 470 (1763).

37. **Monstera obliqua** Miq., Linnaea 18: 79 (1844). *Monstera microstachya* Schott (1855), *Monstera exillata* Schott (1860).

English names: Window leaf, Mexican breadfruit.

Slender climbing epiphyte on trees, saplings or shrubs. Leaves of juvenile plants ovate to lanceolate, entire, leaves of adult plants quite variable in shape, ranging from lanceolate to ovate, usually entire but sometimes perforated, the holes one to many in a single series on each side of the midrib. Inflorescence produced sympodially in groups of 6 to 8, rarely fewer. Spathe green to white when immature, becoming bright yellow at maturity. Flowering spadix deep yellow, fruiting spadix green to olive-green, finally deep orange at maturity. Berries globose. *Flowering and fruiting*: May - November. *Shady and moist places*.

Distribution: Panama, Colombia, Peru, Bolivia, Venezuela, Trinidad, Tobago and the Guyanas and Amazonian Brazil.

Status of occurrence: Common.

Use: The species has of ornamental value.

Specimens examined: Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 675 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1283 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 04.02.2011, R. Tabassum, 1739 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2926 (DUSH).

Genus 27. **Philodendron** Schott in Wiener Z. Kunst
1829 (3): 780 (1829), ('Philodendrum').

38. **Philodendron scandens** C. Koch & Sello *ex* Koch in Koch & Bouché, Index Sem. Hort. Berol. 1853 (Append.): 14 (p. 4 in separate) (1853). *Pothos discolor* Hort. (1931).

English name: Heart-leaf philodendron.

Climbing herb of small size. Leaves petiolate, leaf blade in juvenile stage small and softly purple, in the adult stage large, heart-shaped, reflexed. Spathe green outside, red inside. Lower portion of spadix female, upper portion male. *Flowering and fruiting:* May - November. *Chromosome number:* $2n = 32$ (Petersen, 1989). *Partially shady places.*

Distribution: Northern Neotropics.

Status of occurrence: Common.

Use: The species has of ornamental value.

Specimens examined: Kaliganj, Kolafata, 29.04.2005, R. Tabassum, 227 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 799 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1162 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2560 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3612 (DUSH).

Genus 28. **Pistia** L., Sp. Pl.: 963 (1753).

39. **Pistia stratiotes** L., Sp. Pl.: 963 (1753); Hook. f., Fl. Brit. Ind. 6: 497 (1893); Prain, Beng. Pl. 2: 831 (1903, reprint 1963); R. L. Heinig, List Chittagong: 74 (1925). *Zala asiatica* Lour. (1790), *Pistia minor* Blume (1836); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 110 (1956).

Vernacular name: *Topapana*. English names: Water lettuce, Tropical duckweed.

Aquatic, free floating, monoecious herb. Leaves in a rosette, spatulate, obconic or oblong. Spathe light yellowish-green to white-tomentose. Fruit a berry. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 28$ (Petersen, 1989). *Surface of ponds, ditches, slow-running streams and irrigation canals*.

Distribution: Tropics and subtropics, but rare in Oceania.

Status of occurrence: Common.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 208 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1145 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2609 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3324 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3734 (DUSH).

Genus 29. **Pothos** L., Sp. Pl.: 968 (1753).

40. **Pothos scandens** L., Sp. Pl.: 968 (1753); Hook. f., Fl. Brit. Ind. 6: 551 (1893); Prain, Beng. Pl. 2: 839 (1903, reprint 1963). *Pothos angustifolius* Presl (1849), *Pothos cognatus* Schott (1853).

Vernacular names: *Sunat, Sundad, Batilata, Hatilata*.

Epiphytic creeping liana, densely clothed with leaves. Leaves petiolate, petiole broadly winged, lamina ovate to elliptic or lanceolate. Inflorescence solitary, small, axillary, peduncle with 6-8 green cataphylls. Spathe very small, purple. Spadix yellow-green or yellow. Tepals yellow-green to dirty white. Fruit a berry, oblong-ovate, yellow or red. *Flowering and fruiting*: January - December. *Chromosome number*: $2n = 24$ (Petersen, 1989). *Trees in the forests, occasionally hedges or scrubs*.

Distribution: Madagascar to New Guinea.

Status of occurrence: Apparently common.

Use: Medicinal plant.

Specimens examined: Kaliganj, Kolatola, 02.11.2002, R. Tabassum, 162 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1110 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1435 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2687 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3142 (DUSH).

Genus 30. **Rhaphidophora** Hassk. in Flora 25(2) Beibb. 1: 11 (1842).

41. **Rhaphidophora aurea** (Linden & André) Birdsey in Bailey 10: 155 (1962). *Pothos aureus* Linden & André (1880), *Scindapsus aureus* (Linden & André) Engl. & Krause (1908).

Vernacular name: *Money plant*.

English name: Money plant.

Very long climber. Leaves ovate, waxy, lobed or slashed when mature, deep green or splashed or blotched with cream-yellow. Inflorescence pedunculate and axillary. Spathe yellowish at maturity, boat-shaped. Spadix shorter than the spathe, sub-cylindric. Fruit rarely produced. Flowering of the plant is not annual, there is an interval of several years between flowering. *Grows in partial shady damp places.*

Distribution: Solomon Islands.

Status of occurrence: Cultivated.

Uses: The plant is widely used for ornamental purposes.

Specimens examined: Kaliganj, Meghdubi, 05.03.2010, R. Tabassum, 700 (DUSH); Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1010 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1284 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1504 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2756 (DUSH).

Genus 31. **Scindapsus** Schott in Schott & Endl., Melet. Bot.: 21 (1832).

42. **Scindapsus officinalis** (Roxb.) Schott, Schott & Endl., Melet. Bot.: 21 (1832); Hook. f., Fl. Brit. Ind. 6: 541 (1893); Prain, Beng. Pl. 2: 839 (1903, reprint 1963). *Pothos officinalis* Roxb. (1820).

Vernacular name: *Gaj-pipul*.

Robust, branched, shrubby climber on trees. Stem with adhesive roots on the nodes, almost woody when old. Leaves several, simple, spiral, broadly elliptic-ovate to nearly orbicular. Spathes oblong, not constricted, fully convolute when young, yellowish-brown within. Spadix enlarging in fruits, greenish-yellow, dense-flowered. Flowers bisexual. Fruit a berry, only few ripening. *Flowering and fruiting:* May - October. *Chromosome number:* $2n = 56$ (Petersen, 1989). *Scrambling or climbing on trees in shady and moist places in the forests.*

Distribution: India and Myanmar.

Status of occurrence: Common.

Use: Medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 407 (DUSH); Kaliganj, Kolatola, 05.03.2010, R. Tabassum, 684 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1243 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1869 (DUSH).

Genus 32. **Syngonium** Schott in Wiener Z. Kunst 3: 780 (1829).

43. **Syngonium podophyllum** Schott, Bot. Zeitung (Berlin): 85 (1851). *Arum auritum* Vell. (1827), *Pothos auritus* Willd. ex Schult. (1827).

English name: Arrow-head vine.

Large, epiphytic vine. Juvenile plants with simple leaves, blades cordate, becoming sagittate or hastate, basal lobes triangular or oblong-lanceolate, terminal lobes acuminate, adult plants with pedatisect blades. Inflorescence 4-11 per axil, pendent. Spathe tube narrowly ovoid to ellipsoid, spathe blade greenish-white to creamy-white or sometimes green outside and creamy-white inside. Pistillate portion of the spadix greenish-creamy. Infructescence red to reddish-orange or yellow (rarely brown) at maturity. *Flowering and fruiting*: February - November. *Chromosome number*: $2n = 26$ (Petersen, 1989). *Shady moist places*.

Distribution: From Mexico to the Guyanas, Brazil and Bolivia.

Status of occurrence: Cultivated.

Uses: The plant is widely used for ornamental purposes.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 503 (DUSH); Kaliganj, Gudara, 02.01.2013, R. Tabassum, 2257 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2369 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3143 (DUSH).

Genus 33. **Typhonium** Schott in Wiener Z. Kunst 1829 (3): 732 (1829).

44. **Typhonium trilobatum** (L.) Schott, Wien. Zeitschr. 3: 72 (1829); Hook. f., Fl. Brit. Ind. 6: 509 (1893); Prain, Beng. Pl. 2: 833 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 110 (1956); *Arum trilobatum* L. (1753), *Arum orixense* Roxb. ex Andr. (1804).

Vernacular names: *Ghetkachu*, *Ghekul*.

Tuberous terrestrial herb. Leaves sheathing at the basal part, leaf blade usually deeply trilobed. Spathe tube elliptic, persistent, greenish outside and purplish inside, spathe blade dark red inside, greenish outside. Spadix erect, pinkish; male flowers pink with coral-coloured pollen. Sterile flowers filiform, whitish. Infructescence surrounded by the persistent spathe tube. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Damp moist places*.

Distribution: From Nepal to southeast China, north Malaysia and Sri Lanka. Introduced in the Philippines, west Borneo, Singapore, West Africa (Ivory Coast) and the Neotropics.

Status of occurrence: Common.

Use: The species has medicinal value.

Specimens examined: Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 314 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2502 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3147 (DUSH); Kapasia, Kandunia, 3.11.2014, R. Tabassum, 3738 (DUSH).

Genus 34. **Xanthosoma** Schott in Schott & Endl., Melet. Bot.: 19 (1832).

45. **Xanthosoma violaceum** Schott, Oesterr. Bot. Wochenbl. 3: 370 (1853).

Vernacular name: *Dudhkachu*.

English names: Blue taro, Purple-stem taro.

Perennial herb. Leaves long-vaginate, brownish-violaceous, leaf blade sagittate-ovate. Spathe in two parts, the lower tube of the spathe oblong, often tinged with violet or dark purple, the upper blade oblong-lanceolate, yellowish-white. Pistillate portion of the spadix whitish. *Flowering and fruiting:* April - October. *Shady, moist places and village thickets.*

Distribution: The West Indies and South America.

Status of occurrence: Common.

Uses: Petioles and leaf blades are commonly used as a vegetable.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 911 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1781 (DUSH); Sripur, Bagher Bazar, 18.02. 2013, R. Tabassum, 2527 (DUSH).

Family 10. **LEMNACEAE** S. F. Gray (1824)

Thalloid herbs, free floating in stagnant water, small and leaf-like, without distinct stem, leafy part called frond, bright to deep green, sometimes reddish underneath, base with or without scaly bifid leaflets. Reproduction mostly by vegetative means, by budding of daughter fronds emerging from the specialized reproductive pouch or cavity, flowering and fruiting rare, each frond may develop 1-2 flowers. Flowers naked, or enclosed by spathes within pouches, bisexual, rarely unisexual. Stamens 1-4. Ovary bottle-shaped, single, tapered to a short style and a stigma, stigma funnel-shaped, ovule 1 (-7 in *Spirodela* and *Lemna minor*). Fruits usually 1 seed (-5 seeds in *Spirodela* and *Lemna minor*). Seeds ovoid, longitudinally ribbed or smooth.

The family Lemnaceae consists of 4 genera and 34 species distributed all over the world except the Arctic, very humid and very dry areas. In Bangladesh, this family is represented by 3 genera and 6 species.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

- | | |
|---|------------------|
| 1. Fronds with 1 root and 1-5(-7) veins, without a scale at base | Lemna |
| - Fronds with 2-21 roots and (3-)5-21 veins, surrounded at base by a small membranous scale covering point of attachment of roots | Spirodela |

Genus 35. **Lemna** L., Sp. Pl.: 970 (1753).

46. **Lemna perpusilla** Torrey, F. N. Y. 2: 245 (1843). *Lemna paucicostata* Hegelm. (1868); Hook. f., Fl. Brit. Ind. 6: 556 (1893); Prain, Beng. Pl. 2: 841 (1903, reprint 1963).

Vernacular names: *Kkutipana, Khudipana.*

English name: Minute duckweed.

Free floating herb. Fronds ovate to obovate or obovate-oblong, solitary or in groups of 2-5. Root mostly 1. Stipe hyaline. Fruit asymmetric, ellipsoid. *Chromosome number*: $2n = 40, 42$ (Landolt, 1986). *Freshwater tanks, beels, lakes, ditches, ponds, slow flowing drains, canals, rice fields and other stagnant water bodies.*

Distribution: World wide, except the Arctic, and extreme humid and dry areas.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 35 (DUSH); Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 674 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2209 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2988 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3709 (DUSH).

Genus 36. **Spirodela** Schleid., Linnaea 13: 391 (1839).

47. **Spirodela polyrhiza** (L.) Schleid., Linnaea 13: 392 (1839). *Lemna polyrhiza* L. (1753); Hook. f., Fl. Brit. Ind. 6: 557 (1893); Prain, Beng. Pl. 2: 841 (1903, reprint 1963).

Vernacular name: *Tetulepana.*

English name: Common duckweed.

Free floating herbaceous plant. Frond symmetrical, reniform to round, linear-lanceolate to oblong, green, reddish to purple beneath; inflorescence consisting of 1

female and 2 male (rarely 3) flowers enclosed within a membranous spathe. Fruit an utricle, edges winged at the top. Under adverse conditions thick turions are formed and sink to the bottom. The colour of the turions is brownish to dark green. *Chromosome number*: $2n = 30$, 30-80 (in different clones) (Landolt, 1986). *Freshwater ponds, ditches, lakes, slow-flowing drains, open concrete water-tanks and other stagnant water bodies*.

Distribution: All over the world except the Arctic, sub-Arctic, very humid and very dry regions or regions with cool summers, rare in Mediterranean climates, lacking in South America (except the northwest), New Zealand and some other oceanic islands.

Status of occurrence: Common.

Specimens examined: Kaligonj, Taltia, 23.08.2010, R. Tabassum, 1605 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2474 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2996 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3576 (DUSH).

Family 11. **XYRIDACEAE** C. A. Agardh (1823)

Erect, tufted, perennial, marshy grass-like herbs. Leaves radical, linear, sheathing. Inflorescence an ovoid-globose or ellipsoid bracteates head on a solitary, terminal scape-like peduncle. Bracts orbicular or obovate, persistent, spirally imbricating. Flowers bisexual, slightly zygomorphic, white or yellow. Sepals 3, unequal, lateral 2 small, keeled, median one cap-shaped, enveloping the corolla, caducous. Petals 3, free. Stamens 3, shorter than and opposite to petals, staminodes 3 (or absent). Ovary superior, 1-celled or incompletely 3-celled, with many ovules, placentas basal, styles 3-fid, stigmas capitate. Fruit a capsule, 3-valved. Seeds numerous, minute.

The family Xyridaceae consists of 4 genera and more than 200 species, widespread in tropical and subtropical regions. In Bangladesh, it is represented by a single with 2 species.

In the present study area this family is represented by a single species.

Genus 37. **Xyris** L., Sp. Pl. 1: 42 (1753).

48. **Xyris indica** L., Sp. Pl.: 42 (1753); Hook. f., Fl. Brit. Ind. 6: 364 (1892); Prain, Beng. Pl. 2: 813 (1903, reprint 1963); Khan and Ara in Khan & Rahman (Eds.). Fl. Bangl. 46: 2 (1991). *Xyris robusta* Mart. (1832), *Xyris capito* Hance (1876).

Vernacular names: *Chinaghauza*, *Chineghas*.

Tufted herb. Leaves linear-ensiform, falcate. Inflorescence a head. Fruit a capsule. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in marshy areas*.

Distribution: India, Sri Lanka, Malay Islands, southwards to Malesia.

Status of occurrence: Seems to be rare.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4021 (DUSH).

Family 12. COMMELINACEAE R. Brown (1810).

Succulent annual or perennial herbs, adventitious roots on the underground stem are fibrous or occasionally swollen and tuberous. Leaves alternate, flat, entire, with a closed basal sheath. Flowers usually bisexual, regular but occasionally irregular, hypogynous in terminal panicle or axillary cymes, borne either at the end of the stem or in the axil of a leaf. Perianth consists of 2 series, the outer bears generally free, imbricate, green sepals, the inner bears free, usually equal petals. Stamens 6, all perfect or 2 or more reduced to staminodes, adnate to the base of the inner perianth, filaments often bearded, anthers often dissimilar. Ovary superior, of 3 or 2 fused carpels, 3-locular (rarely 2-locular), ovules 1 to several, orthotropous. Fruit a thin-walled dehiscent capsule, but rarely may be fleshy and indehiscent. Seeds usually angled with rough or ridged surface with smooth or rugose testa.

The family Commelinaceae consists of about 50 genera and 700 species, widespread in tropical and subtropical regions. In Bangladesh, it is represented by 10 genera and 27 species.

In the present study area this family is represented by 5 genera and 10 species.

Key to genera:

1. Involucral bracts spathe-like (except in *Cyanotis axillaris*, which has inflorescence enveloped in leaf sheath; fertile stamens 6; petals connate at middle). 2
- Involucral bracts present or absent, spreading or sheath-like, never spathe-like 4
2. Petals connate, tubular, with 2 ends free; fertile stamens 6; bracts falcate-curved, imbricately arranged in 2 rows **Cyanotis**
- Petals wholly free; fertile stamens 3 or 6; bracts not imbricately arranged in 2 rows 3

- | | |
|---|---------------------|
| 3. Flowers zygomorphic; fertile stamens 3, inserted on 1 side; antherodes 4-lobed, butterflylike; capsule usually 2-valved, posterior valve often indehiscent | Commelina |
| - Flowers actinomorphic; fertile stamens 6; capsule 3-valved | Tradescantia |
| 4. Staminodes apically entire and sagittate, or 3-sect; fertile stamens 3 (sometimes 1 or 2 aborted), all inserted opposite sepals | Murdannia |
| - Staminodes apically dumbbell-shaped; fertile stamens 2 or 3, inserted in posterior or anterior position | Zebrina |

Genus 38. **Commelina** L., Sp. Pl.: 40 (1753).

Key to species:

- | | |
|---|---------------------|
| 1. Leaves ovate, elliptic ovate or broadly ovate; spathes turbinate or all most funnel shaped | benghalensis |
| - Leaves lanceolate, acute or acuminate; spathes complicate | 2 |
| 2. Seeds cylindrical, reticulate or rugose-foveate | diffusa |
| - Seeds ovate to subglobose, smooth or rarely faintly pitted | longifolia |

49. **Commelina benghalensis** L., Sp. Pl.: 41 (1753); Hook. f., Fl. Brit. Ind. 6: 370 (1892); Prain, Beng. Pl. 2: 814 (1903, reprint 1963); R. L. Heinig, List Chittagong: 72 (1925); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 19 (1977). *Commelina pyrrhoblepharis* Hassk. in Schweinf. Beitr. Fl. Aethiop. 209 (1867).

Vernacular names: *Dholpata*, English names: Blue commelina, Bengal *Kkachira*. dayflower.

Creeping herb, much branched, succulent herb, rooting at lower nodes. Leaves elliptic-ovate to broadly ovate. Flowers usually in leaf opposed 2-fid cymes emerging from a funnel-shaped spathaceous bract, blue. Capsules 3-celled. *Flowering and fruiting*: February - December. *Chromosome number*: $2n = 22$ (Rao *et al.*, 1970; Zaman and Ahmad, 1972). *Grows in roadsides and other moist waste places*.

Distribution: Tropical Asia and Africa.

Status of occurrence: Common.

Uses: Medicinal plant.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 53 (DUSH); Kaliakior, Shohag Polly, 09.05.2010, R. Tabassum, 794 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2069 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2092 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2300 (DUSH).

50. ***Commelina diffusa*** Burm. f., Fl. Ind.: 18, t. 7 (1768); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 20 (1977). *Commelina nudiflora* L., Sp. Pl.: 4 (1753), *pro parte, nomen ambig.*, vide Merrill in J. Arn. Arb. 18: 64-66 (1937); Hook. f., Fl. Brit. Ind. 6: 369 (1892); Prain, Beng. Pl. 2: 814 (1903, reprint 1963); *Commelina longicaulis* Jacq., Coll. 3: 234 (1790).

English name: Climbing dayflower.

Diffusely branched, annual herb. Stem creeping or sub-scandent, rooting at the nodes. Leaves oblong-lanceolate, acuminate. Flowers in leaf-opposed 2-fid cymes emerging from a funnel-shaped spathaceous bract; flowers blue. Fruit a capsule, 3-celled, two anterior loculicidal, posterior keeled. *Flowering and fruiting:* December - January. *Chromosome number:* $2n = 30$ (Zaman and Ahmad, 1972). *Moist clayey to sandy soil along the water's edge, sandy alluvial swamps and grasslands.*

Distribution: Throughout the Indian subcontinent, Sri Lanka and Singapore.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 149 (DUSH); Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 652 (DUSH); Kaligonj, Meghdubi, 05.03.2010, R. Tabassum, 701 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1506 (DUSH); Sripur, Bager Bazar, 18.02.2013, R. Tabassum, 2425 (DUSH).

51. ***Commelina longifolia*** Lamk., Tabl. Encycl. 1: 129 (1792); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 22 (1977). *Commelina salicifolia* Roxb., Fl. Ind. 1: 172 (1832); Hook. f., Fl. Brit. Ind. 6: 370 (1892); Prain, Beng. Pl. 2: 814 (1903, reprint 1963).

Vernacular name: *Pani kanchira*.

Diffused herb. Stem slender with long internodes. Leaves lanceolate, acuminate. Flowers usually in leaf-opposed 2-fid cymes emerging from a funnel-shaped spathaceous bract. Spathes axillary, solitary, lanceolate. Flowers blue. Fruit a capsule, 3-celled. *Flowering and fruiting:* December - January. *Chromosome number:* $2n = 90$ (Rao *et al.*, 1970). *Moist grassland on alluvial soil, and edges of water bodies or ditches.*

Distribution: Peninsular and eastern India, Indonesia and Hong Kong towards the east.

Status of occurrence: Common.

Specimens examined: Kaliganj, Mirer Bazar, 14.03.2008, R. Tabassum, 238 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1429 (DUSH); Gazipur Sadar, Hotapara, 04.02.2011, R. Tabassum, 1856 (DUSH); Kapasia, Barishabo, 09.03.2012, R. Tabassum, 2093 (DUSH); Kaliakior, Fulbari, 13.09.2013, R. Tabassum, 3328 (DUSH).

Genus 39. **Cyanotis** D. Don, Prodr. Fl. Nep.: 45 (1825).

52. **Cyanotis cristata** (L.) D. Don., Prodr. Fl. Nep.: 46 (1825); Hook. f., Fl. Brit. Ind. 6: 385 (1892); Prain, Beng. Pl. 2: 816 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9 (2): 110 (1956); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 26 (1977). *Commelina cristata* L., Sp. Pl.: 42 (1753). *Cyanotis racemosa* C. B. Clarke, Comm. et Cyrt. Beng.: t. 38 (1874).

Creeping herb with many angular branches, villous on the angles. Leaves lanceolate, rather fleshy, hirsute in the margin. Flowers in the terminal cymes formed of imbricate, foliaceous bracteoles. Flowers purple. Fruits capsules with accrescent sepals. *Flowering and fruiting*: September - February. *Chromosome number*: $2n = 24$ (Rao *et al.*, 1970). *Grows in paddy fields and edges of ditches*.

Distribution: Tropical Africa, the Mauritius, India, Myanmar, Sri Lanka and Malaysia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 434 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1279 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3367 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3746 (DUSH).

Genus 40. **Murdannia** Royle, Bot. Himal.: 403, t. 95 (1839).

Key to species:

- | | |
|--|-------------------|
| 1. Cells of ovary 2-ovuled | 2 |
| - Cells of ovary 3-ovuled or more ovuled | 3 |
| 2. Leaves 3-5 mm broad; stem slender, branches decumbent | nudiflora |
| - Leaves 1.0-1.5 cm broad; stem stout, procumbent, branches more or less erect | loriformis |
| 3. Panicles borne on an erect leafless scape with large sheathing bracts | scapiflora |

- Panicles or cymes borne on leafy stem **spirata**

53. **Murdannia loriformis** (Hassk.) Rolla Rao *et* Kamm., Bull. Bot. Surv. Ind. 3 (3&4): 393 (1961); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 30 (1977). *Aneilema loriforme* Hassk. in Miq., Pl. Jungh.: 143 (1852); *Aneilema terminalis* Wight, Ic. Pl. Ind. Or. 6: 31, t. 2076 (1853); *Aneilema nudiflorum* R. Br. var. *terminalis* (Wight) C.B. Clarke in DC., Monogr. Phaner. 3: 211 (1881); Hook. f., Fl. Brit. Ind. 6: 379 (1892).

Leafy herb with stout angular stem. Leaves lanceolate or narrowly oblong, acute. Flowers in terminal and axillary, few-flowered cymes, bluish or purplish. Capsules subglobose, 3-celled. *Flowering and fruiting*: August - November. *Chromosome number*: $2n = 20$ (Rao *et al.*, 1970). *Grows in humus-covered surface near water and sandy alluvium.*

Distribution: India, Sri Lanka and extending eastwards through Indonesia up to China.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3892 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3916 (DUSH).

54. **Murdannia nudiflora** (L.) Brenan, Kew Bull.: 189 (1952); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 31 (1977). *Commelina nudiflora* L., Sp. Pl. 1: 41 (1753), *pro parte vide*; Merril, J. Arn. Arb. 18: 64-66 (1937); J. Sinclair in Bull. Bot. Soc. 9 (2): 109 (1956). *Aneilema nudiflorum* (L.) Wall., Lists 182, n. 5224 (1830); Hook. f., Fl. Brit. Ind. 6: 378 (1892); Prain, Beng. Pl. 2: 816 (1903, reprint 1963).

Vernacular names: *Kanduli, Kureli.* English name: Naked-stem dew-flower.

Erect herb, sometimes creeping branches decumbent. Leaves linear or lanceolate. Flowers in sub-terminal, few-flowered cymes, blue. Capsules subglobose in the middle, acute at both ends. *Flowering and fruiting*: July - December. *Chromosome number*: $2n = 20$ (Rao *et al.*, 1970). *Grows in lawns, fallow lands, roadsides and crevices of old walls.*

Distribution: India from the northwest Himalayas to the Deccan and Khasia Hills, Myanmar, Sri Lanka and Malaysia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 54 (DUSH); Kaliganj, Kolatola, 05.03.2010, R. Tabassum, 666 (DUSH).

55. **Murdannia scapiflora** (Roxb.) Royle, Illustr. Bot. Himal.: 403, t. 95 (1839); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 32 (1977). *Commelina scapiflora* Roxb., Fl. Ind. 1: 175 (1832); *Aneilema scapiflorum* Wight, Ic. Pl. Ind. Or.: 30, t. 2073 (1853); Hook. f., Fl. Brit. Ind. 6: 375 (1892); Prain, Beng. Pl. 2: 816 (1903, reprint 1963).

Perennial herb with reduced stem and elongated tuberous roots. Leaves radical, narrowly ensiform to oblong, entire, finely acuminate. Flowers in a narrow panicle on a long scape, blue. Capsules mucronate. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Grows in forest floors and sandy soils*.

Distribution: India to Bhutan and southern Myanmar.

Status of occurrence: Limited occurrence.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 736 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1728 (DUSH).

56. **Murdannia spirata** (L.) Brück. in Engl. et Prantl, Nat. Pflanzenfam. ed. 2, 15a: 173 (1930); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 33 (1977). *Commelina spirata* L., Mant.: 176 (1767); *Aneilema spiratum* (L.) R. Br., Prodr.: 271 (1810), in *adnot*; C.B. Clarke in DC., Monogr. Phaner. 3: 207 (1881); Hook. f., Fl. Brit. Ind. 6: 377 (1892); Prain, Beng. Pl. 2: 816 (1903, reprint 1963); *Aneilema canaliculatum* Dalz. in Hook., Journ. Bot. 3: 137 (1851).

English name: Asiatic dew-flower.

Slender herb, branches decumbent. Leaves with auricled base. Flowers in terminal and axillary cymes with short few-flowered branches, blue. Capsules subglobose or pblong, acutely trigonous. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 18, 20, 40$ (Kumar and Subramaniam, 1986). *Grows in marshy areas both in clayey and sandy soils, and in rice fields associated with grasses*.

Distribution: Throughout India from the upper Gangetic Plain to Kerala, Sri Lanka and extending eastwards to China.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 832 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1045 (DUSH); Gazipur Sadar, Shalikhchura, 19.08.2013, R. Tabassum, 2543 (DUSH).

Genus 41. **Tradescantia** L., Sp. Pl.: 288 (1753).

57. **Tradescantia pallida** (Rose) D.R. Hunt, Kew Bull. 30 (3): 452 (1975); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 36 (1977). *Setcreasia pallida* Rose in Contrib. U.S. Nat. Herb. 13: 294 (1911); *Setcreasia purpurea* Boom in Acta. Bot. Neerl. 4: 167 (1955).

English names: Purple heart, Purple queen.

Erect herb. Leaves lanceolate, acute, deep purple. Flowers in cymes subtended by two leaf-like spathaceous bracts, purple. Fruit a 3-locular capsule. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 12$ (Zaman and Matin, 1972). *Generally cultivated in gardens*.

Distribution: A native of Mexico and the USA.

Status of occurrence: Cultivated.

Use: Ornamental garden plant.

Specimens examined: Kaliganj, Bhulta, 02.01.2013, R. Tabassum, 2337 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2503 (DUSH); Kaliakoir, Srinail, 1.10.2013, R. Tabassum, 3207 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3686 (DUSH).

Genus 42. **Zebrina** Schnizl., Bot. Zeit. 7: 870 (1849).

58. **Zebrina pendula** Schnizl., Bot. Zeit. 7: 870 (1849); Khan and Alam in Khan (Ed.), Fl. Bangl. 4: 37 (1977).

English name: Wandering jew.

Branched herb. Stem fleshy, variegated, rooting at the nodes. Leaves ovate-lanceolate, reddish with 2 broad, pale green longitudinal bands on upper surface. Flowers purple. *Flowering*: throughout the year. *Chromosome number*: $2n = 24, 48$ (Fedorov, 1969). *Grows in dry soils and gardens*.

Distribution: Indigenous to Mexico.

Status of occurrence: Cultivated.

Use: Ornamental garden plant.

Specimens examined: Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2067 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2757 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3112 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3489 (DUSH).

Family 13. **ERIOCAULACEAE** Desvaux (1828)

Perennial or rarely annual, monoecious, usually marshland, sometimes aquatic or dryland herbs. Leaves narrow (filiform in submerged aquatic plants), spirally arranged, crowded into a basal rosette or dispersed on an elongated stem. Inflorescence a peduncled capitulum, or umbel, head composed of many unisexual flowers. Flowers small, 3-merous, rarely 2-merous, usually zygomorphic, male and female flowers intermingled or the males in the middle and the female around it. Perianth composed of 2 whorles, the outer whorl or calyx partly free or connate completely, the inner whorl or corolla free or partly connate. Stamens (in male flowers) as many or twice as many as the sepals, epipetalous, filaments slender, anthers 2-celled, forisfixed. Female flowers with a superior 2-3 locular ovary, style simple, tipped with 2, 3 or 6 elongated stigmas. Fruit a thin-walled, longitudinally dehiscent capsule. Seeds elliptic-oblong or ovoid.

The family Eriocaulaceae consists of 13 genera and about 1150 species distributed throughout the tropics and subtropics regions of the world. In Bangladesh, this family is represented by 1 genus and 11 species.

In the present study area the family is represented by a single species.

Genus 43. **Eriocaulon** L., Sp. Pl.: 87 (1753).

59. **Eriocaulon cinereum** R. Br., Prod.: 254 (1810). *Eriocaulon sexangulare* sensu Mart. (1832); *Eriocaulon sieboldianum* Siebold et Zuccarini ex Steud. (1855); Hook. f., Fl. Brit. Ind. 6: 577 (1893); Prain, Beng. Pl. 2: 848 (1903, reprint 1963); *Eriocaulon redactum* Ruhl. (1930).

English name: Ashy pipewort.

Stemless, tufted, annual herb. Leaves numerous, forming a dense cluster, capillary or subulate. Scapes few to many. Inflorescence globose to conical or ovoid head, whitish-grey or straw-coloured; seeds ovoid-ellipsoid. *Flowering and fruiting*: October - January. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in shallow, temporary water, rice fields and damp shaded forest floors*.

Distribution: Tropical Asia and Australia, naturalized in Europe and North America.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Sitpara, 01.12.2000, R. Tabassum, 25 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1030 (DUSH).

Family 14. **CYPERACEAE** A. L. de Jussieu (1789).

Annual or perennial, often grass-like herbs. The perennial species with short or long creeping sympodial rhizomes not emitting stolons. Stem solid, exceptionally hollow, sometimes septate, often trigonous, usually nodeless below the inflorescence. Leaves often 3-ranked, rarely distichous or polystichous, basal and cauline, usually sheathing at the base, blade sessile, linear or setaceous, rarely lanceolate and petioled. Inflorescence of various types, mostly anthelate, paniculate, racemose, spicate or congested in the head, subtended by leafy bracts, bearing 1-numerous spikelets. Spikelets with few-many glumes, all or some of the glumes bearing an axillary flower. Flowers hermaphrodite or unisexual, rarely dioecious, naked or with perianth of (1-) 3 to many bristles or of scaly segments. Stamens generally 1-3 in a flower. Pistil bi-or tri-carpellate, ovary unilocular with a single anatropous ovule, maturing into an achene.

The family Cyperaceae consists of about 70 genera and over 4,000 species, distributed throughout the World. In Bangladesh, this family is represented by 22 genera and 146 species.

In the present study area this family is represented by 13 genera and 62 species.

Key to genera:

- | | | |
|----|---|---------------------|
| 1. | All flowers unisexual | Scleria |
| - | At least some flowers bisexual | 2 |
| 2. | Spikelets much reduced, with 0-2 glumes subtended by a glumelike spikelet bract, spikelets densely | Lipocarpa |
| - | Spikelets not as above, elongated, with spirally or distichously arranged glumes | 3 |
| 3. | Spikelets usually with bisexual and male flowers | Rhynchospora |
| - | Spikelets usually with bisexual flowers only | 4 |
| 4. | Style jointed with ovary and clearly demarcated from it | 5 |
| - | Style continuous with ovary and not demarcated from it | 7 |
| 5. | Leaf blades absent; perianth bristles present | Eleocharis |
| - | Leaf blades usually present, if absent then style base not persistent on nutlet; perianth bristles absent | 6 |
| 6. | Leaf sheath without long silky hairs at apex; nutlets without persistent style base | Fimbristylis |

- Leaf sheath with long silky hairs at apex; nutlets with persistent style base **Bulbostylis**
- 7. Glumes distichous **8**
- Glumes spirally arranged **11**
- 8. Stigmas 3, rarely 2; nutlets trigonous, rarely biconvex with 1 side facing spikelet axis **9**
- Stigmas 2; nutlets 2-sided with 1 margin facing spikelet axis **10**
- 9. Annual or perennial; glumes not winged **Cyperus**
- Annual; glumes prominently winged **Courtoisina**
- 10. Spikelets with more than 2 glumes; spikelet axis and glumes persistent **Pycneus**
- Spikelets with 1 or 2 glumes; spikelet axis deciduous, spikelets falling whole **Kyllinga**
- 11. Perianth bristles present, 3 inner ones squamellate **Fuirena**
- Perianth bristles present but not as above, or absent **12**
- 12. Inflorescence paniculate **Scirpus**
- Inflorescence a single spikelet, up to 3 spikelets, or capitate, if paniculate then longest inflorescence bract culmlike and apparently continuous with culm, inflorescence appearing to be lateral **Schoenoplectus**

Genus 44. **Bulbostylis** Kunth, En. Pl. 2: 205 (1837).

60. **Bulbostylis barbata** (Rottb.) C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 651 (1893); Prain, Beng. Pl. 2: 870 (1903, reprint 1963); L. Heinig, List Chittagong: 76 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 112 (1956). *Scirpus barbata* Rottb. (1772), *Stenophyllus barbatus* (Rottb.) T. Cook (1908); D.A. Simpson & T. Koyama in T. Santisuk & K. Larsen, Fl. Thailand 6 (4): 345 (1998).

Annual herb, culms densely tufted. Leaves basal, blade capillary to filiform. Inflorescence capitate, hemispherical. Spikelets 2-20 per spike, sessile, lanceolate to ovoid-conical, angular, eventually brownish. Nutlets obovoid-orbicular, trigonous, whitish to stramineous. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 10$ (Fedorov, 1969). *Open semi-dry sandy places and sandy grasslands*.

Distribution: Old World tropics and sub-tropics, also in southern USA.

Status of occurrence: Common.

Use: Acts as a soil binder in open sandy soil.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3893 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3917 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3944 (DUSH).

Genus 45. **Courtoisina** Sojak, Cas. Nar.

Muz. (Prague) 148 (3-4): 193 (1980).

61. **Courtoisina cyperoides** (Roxb.) Sojak, Cas. Nar. (Prague) 148 (3-4): 193 (1980); Hook. f., Fl. Brit. Ind. 6: 625 (1893); Prain, Beng. Pl. 2: 864 (1903, reprint 1963). *Kyllinga cyperoides* Roxb. (1820), *Mariscus cyperoides* (Roxb.) Dietr. (1833).

Annual herb, culms tufted. Leaves basal, 1-3, blade acuminate, flattish. Inflorescence compound to decompounds. Spikelets 6-15 per spike, in globose to stellate cluster. Nutlets fusiform, brown. *Flowering and fruiting:* June - November. *Chromosome number:* $2n = 10, 40$ (Kumar and Subramaniam, 1986). *Wet places, sometimes rice fields.*

Distribution: India, Myanmar, Thailand and Vietnam.

Status of occurrence: Common.

Specimens examined: Kaligonj, Khudabon, 26.03.2008, R. Tabassum, 274 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1992 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2776 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2962 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3490 (DUSH).

Genus 46. **Cyperus** L., Sp. Pl. 1: 44 (1753).

Key to species:

- | | |
|---|--------------------|
| 1. Spikelets digitate or fasciculate on a very short rachis, or inflorescences capitate or globose | 2 |
| - Spikelets in spikes terminating rays (rachis (0.5-)1-6 cm, usually visible, sometimes covered by bases of spikelets in pressed specimens) | 10 |
| 2. Inflorescences capitate or anthelate, with very short rays | michelianus |
| - Inflorescences anthelate, with elongate rays, sometimes with secondary (compound) and tertiary (decompound) branching | 3 |

- | | | |
|-----|--|-----------------------|
| 3. | Perennial herbs; glumes ca. 2 mm; nutlet 0.7–1.5 mm | 4 |
| - | Annual or perennial herbs; glumes ca. 1(-1.5) mm; nutlet 0.2-0.3 mm | 7 |
| 4. | Spikelets slightly turgid; glumes 7-veined or more | laxus |
| - | Spikelets compressed; glumes 3-5 veined | 5 |
| 5. | Culms compressed triquetrous, with leaves at basal part; leafy involucre bracts 5–12, unequal in length | platystylis |
| - | Culms obtusely 3-angled to subterete, with bladeless sheaths basally; leafy involucre bracts 15–20, nearly equal in length | 6 |
| 6. | Involucre bracts flexuose, drooping; apex of glumes acute; nutlet not stipitate | alopecuroides |
| - | Involucre bracts rigid; apex of glumes acuminate; nutlet stipitate | flabelliformis |
| 7. | Leaves very narrow, adaxially canaliculate, margin involute; glumes papery, apex truncate and with a recurved awn; nutlet oblong-obovoid to oblong | cuspidatus |
| - | Leaves flat; glumes membranous, apex obtuse and mucronate or muticous; nutlet obovoid or ellipsoid | 8 |
| 8. | Perennials or rarely annuals; culms with few leaves or with bladeless sheaths only; stamens (1–)3; nutlet less than 1/2 as long as subtending glume | 9 |
| - | Annuals without stolons; culms usually leafy; stamens 1 or 2(or 3); nutlet 1/2 or more as long as subtending glume | difformis |
| 9. | Leafy involucre bracts usually longer than inflorescence; glumes laxly imbricate, with recurved apex; anther apices not white setose; nutlet 0.2-0.3 mm wide | tenuispica |
| - | Leafy involucre bracts usually shorter than inflorescence; glumes densely imbricate, apex straight; anther apices white setose; nutlet 0.4-0.5 mm wide | haspan |
| 10. | Rachilla not winged or only with very narrow white hyaline margins; style short | 11 |
| - | Rachilla winged; style usually long or medium, rarely short | 16 |

- | | | |
|-----|--|--------------------|
| 11. | Perennials, with long stolons; spikelets slightly turgid; glumes abaxially not keeled or rarely keeled, margin involute, apex obtuse or rounded and usually muticous or rarely mucronate | 12 |
| - | Annuals, without rhizomes or stolons, with fibrous roots only; spikelets } compressed; glumes abaxially keeled, margin not involute, apex mucronate to cuspidate | 14 |
| 12. | Culms with long sheaths at basal part, sheaths with short blade or nearly bladeless; rachis of spikes glabrous; spikelets linear; glumes elliptic to oblong | malaccensis |
| - | Culms with long blades; rachis of spikes hispidulous, rarely glabrous; spikelets narrowly ovoid; glumes ovate or broadly ovate | 13 |
| 13. | Inflorescence a compound anthela; glumes with inconspicuous keel and not spinulose | pilosus |
| - | Inflorescence a simple anthela; glumes with conspicuous keel and spinulose | babacan |
| 14. | Dried plants with odor like curry; stamen 1; glumes 7-9 veined, apex cuspidate | squarrosus |
| - | Dried plants odorless; stamens 3; glumes 3–7-veined, apex obtuse, mucronulate, or cuspidate | 15 |
| 15. | Rachis of spikes short; spikelets densely arranged, subcapitate; glumes densely imbricate; nutlet ca. 1/2 as long as subtending glume | compressus |
| - | Rachis of spikes long; spikelets laxly arranged; glumes laxly imbricate; nutlet nearly as long as subtending glume | iria |
| 16. | Mature spikelets disarticulating at base of each glume, with each nutlet clasped by rachilla wings; rachilla wings yellowish spongy | odoratus |
| - | Mature spikelets either falling as a unit or rachilla remaining attached to rachis and glumes falling; rachilla wings hyaline and not spongy | 17 |
| 17. | Spikes cylindric, with numerous spikelets | 18 |
| - | Spikes broadly ovoid, turbinate, ellipsoid, oblong, orbicular, or rarely cylindric, with up to 10 spikelets | 22 |

- | | | |
|-----|---|---------------------|
| 18. | Mature spikelets not deciduous with glumes and nutlets falling from rachilla | 19 |
| - | Mature spikelets deciduous and falling from rachis with glumes and nutlets attached | 20 |
| 19. | Spikelets linear, terete or subterete; rachilla broadly winged, wings lanceolate and deciduous | digitatus |
| - | Spikelets narrowly oblong-ovoid, compressed; rachilla narrowly winged, wings linear and persistent | exaltatus |
| 20. | Spikelets 1-3(or 4) flowered; glumes tightly included around nutlet | cyperoides |
| - | Spikelets 4-10 flowered; glumes not tightly included around nutlet | 21 |
| 21. | Annuals; glumes with a recurved mucro at apex; stamens 1 | squarrosus |
| - | Perennials; glumes without mucro at apex; stamens 3 | compactus |
| 22. | Rhizomes short or surculose, without stolons or tubers; glumes laxly spreading | distans |
| - | Rhizomes creeping or with stolons and tubers; glumes } densely imbricate | 23 |
| 23. | Culms stout; sheaths bladeless or apicalmost with short blade only; glumes oblong, concave, margin involute; spikelets slightly compressed, rachilla with reddish brown wings | compactus |
| - | Culms slightly slender; sheaths with blade; glumes ovate, broadly ovate, or ovate-elliptic, margin not involute | 24 |
| 24. | Culm septate | articulatus |
| - | Culm not septate | 25 |
| 25. | Spikes ovoid; glumes laxly imbricate, spreading at maturity | pulcherrimus |
| - | Spikes broadly ovoid, obdeltoid, or obovoid; glumes densely imbricate, not spreading at maturity | 26 |
| 26. | Glumes dark blood-red, ovate to oblong-ovate | rotundus |
| - | Glumes straw-colored to brownish yellow, broadly ovate to elliptic | tuberosus |

62. **Cyperus alopecuroides** Rottb., Descr. Pl. Rar. Progr.: 20 (1772). *Juncellus alopecuroides* C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 595 (1893).

English names: Mat sedge, Foxtail flat-sedge.

Perennial herb with very short rhizome. Stem stout, tufted, trigonous. Leaves flat or somewhat plicate. Inflorescence compound or decompounds. Spikelets spicately arranged, ovate to oblong-lanceolate, 12-30 flowered, rachilla straight, strongly compressed. Nutlets dorsiventrally compressed, plano-convex or with a raised dorsal angle, elliptic to slightly obovate, golden-yellow to stramineous. *Flowering and fruiting*: August - January. *Chromosome number*: $2n = 108$ (Kumar and Subramaniam, 1986). *Swamps and lake margins*.

Distribution: The West Indies, in Africa from the Mediterranean region to the tropics, Madagascar, from India extending to Queensland (Australia) through Malesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 34 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1341 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2929 (DUSH).

63. **Cyperus articulatus** L., Sp. Pl. ed. 1: 44 (1753); Hook. f., Fl. Brit. Ind. 6: 611 (1893); Prain, Beng. Pl. 2: 861 (1903, reprint 1963).

Vernacular name: *Shondha*.

English names: Joined flat-sedge, Guinea rush.

Perennial sedge growing in large colonies with long-creeping rhizome. Inflorescence compound to subdecompound. Spikelets sub-erect to spreading, linear, rachilla straight. Nutlets oblong, trigonous, maturing brown or grey-brown, style deeply 3-cleft. *Flowering and fruiting*: September - January. *Chromosome number*: $2n = 112$ (Kumar and Subramaniam, 1986). *Marshy places*.

Distribution: Mediterranean region, tropical Africa, India, Indo-China, southeastern USA to Central and South America. More frequently occurs in the Neotropics.

Status of occurrence: Common.

Use: Culms used to make mat.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 817 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1310 (DUSH); Kaligonj, Taltia, 23.08.2010, R. Tabassum, 1620 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2747 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3654 (DUSH).

64. **Cyperus babakan** Steud., Syn. Pl. Glum. 2: 6 (1855). *Cyperus babakensis* Steud. (1856); Hook. f., Fl. Brit. Ind. 6: 610 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963); *Cyperus pilosus* Vahl var. *babakensis* (Steud.) ex Miq.) C.B. Clarke (1884).

Perennial herb, the rhizome emitting slender stolons clothed with broadly ovate-lanceolate, brownish scales, culms 1-few. Leaves few, blade broadly linear, flat to plicate-canaliculate. Inflorescence simple, primary branches 2-5. Spikelets numerous, crowded, spirally arranged, patent to spreading or reflexed. Nutlets broadly ellipsoid or obovoid, triquetrous, apiculate, maturing dark brownish to blackish. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 72$ (Kumar and Subramaniam, 1986). *Open swamps, wet floors of open forests and rice fields*.

Distribution: India, Thailand, Indo-China through Malesia to New Guinea.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 989 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1499 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2505 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2669 (DUSH).

65. **Cyperus compactus** Retz., Obs. Bot. 5: 10 (1789). *Cyperus dilutus* Vahl (1806), *Mariscus microcephalus* Presl (1828); Hook. f., Fl. Brit. Ind. 6: 624 (1893); Prain, Beng. Pl. 2: 864 (1903, reprint 1963); *Mariscus compactus* (Retz.) Bold. (1916).

Rhizomatous perennial herb, culms 1-few, often robust. Leaves rigid, blade linear, acuminate, strongly canaliculated. Inflorescence large, compound or decompound, primary branches 6-12. Spikelets numerous, squarrose, falling entire, narrowly lanceolate to linear-oblong. Nutlets narrowly cylindric, trigonous, slightly convex on one side, yellowish-brown. *Flowering and fruiting*: September - March. *Chromosome number*: $2n = 86$ (Kumar and Subramaniam, 1986). *Swamps, wet rice fields, ditches, riverbanks and wet forest margins*.

Distribution: Mascarenes (Mauritius), India, Sri Lanka, Thailand, Indo-China, southern China, Taiwan and Malesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 151 (DUSH); Kaligonj, Meghdubi, 05.03.2010, R. Tabassum, 694 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2511 (DUSH); Kaliakoir, Voboner Chala, 03.11.2013, R. Tabassum, 3548 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3754 (DUSH).

66. **Cyperus compressus** L., Sp. Pl. 1: 46 (1753); Hook. f., Fl. Brit. Ind. 6: 605 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963); D.A. Simpson & T. Koyama in T. Santisuk & K. Larsen, Fl. Thailand 6 (4): 363 (1998); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 111 (1956). *Cyperus brachiatus* Poir. (1806); *Cyperus pectiniformis* R. & S. (1824).

Vernacular name: *Chanch*.

English name: Poorland flat-sedge.

Annual herb, culms tufted, relatively stout. Leaves few, basal, blade linear, flat to channeled. Inflorescence simple. Spikelets 3-10 per spike, subdigitately arranged on the very short rachis, patent to spreading, linear to oblong-lanceolate, rachill zigzag. Nutlets broadly obovoid, trigonous with incrassate angles. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 96, 98, 128$ (Kumar and Subramaniam, 1986). *Open grasslands, waste places, roadsides, cultivated grounds and in the lowlands*.

Distribution: Tropical, subtropical and many temperate regions of the world.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 378 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 532 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2507 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3001 (DUSH).

67. **Cyperus corymbosus** Rottb., Descer. & Icon. Rar. 42. t. 7, f. 4 (1773); Hook. f., Fl. Brit. India 6: 612 (1893); Prain, Beng. Pl. 2: 861 (1903, reprint 1963); D.A. Simpson & T. Koyama in T. Santisuk & K. Larsen, Fl. Thailand 6 (4): 354 (1998). *Cyperus longus* (non L.) auct. (1912).

Vernacular name: *Gola methi*.

Rhizomatous perennial herb, often forming a large colony. Leaves usually reduced to bladeless sheath, rarely with the linear blade. Inflorescence simple to compound spikes. Spikelets 5-15 per spike, linear, flattened to sub-erect, rachilla straight, winged, wings white hyaline or red brown. nutlets cylindric, trigonous, maturing brown or grayish-brown. *Flowering and fruiting*: throughout the year. *Marshy places*.

Distribution: Tropical Africa, Madagascar, India, Nepal, Sri Lanka, Myanmar, Thailand, Indo-China, Australia, the West Indies and tropical South America.

Status of occurrence: Common.

Uses: The plant is used for making rough mat.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 13 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1500 (DUSH); Kaligonj, Taltia,

23.08.2010, R. Tabassum, 1600 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2713 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3184 (DUSH).

68. **Cyperus cuspidatus** Kunth in Humb., Bonpl. & Kunth, Nov. Gen. & Sp. Pl. 1: 204 (1815); Hook. f., Fl. Brit. India 6: 598 (1893); Prain, Beng. Pl. 2: 859 (1903, reprint 1963). *Cyperus angustifolius* Nees (1834); *Cyperus uncinatus* Camus (1912).

English name: Coastal plain flat-sedge.

Slender annual herb with fibrous, yellowish roots. Leaf blade narrowly linear to setaceous, canaliculated. Inflorescence simple to capitate. Spikelets linear, strongly flattened, digitately arranged, rachis straight, wingless, persistent. Nutlets obovoid to cylindric, trigonous, brown to castaneous. *Flowering and fruiting*: August - November. *Chromosome number*: $2n = 112$ (Kumar and Subramaniam, 1986). *Grows in open sandy soils, cultivated ground and rice fields.*

Distribution: Pan-tropical, throughout India, extending northwards to South China and South Formosa, southwards to Queensland (Australia), from southern North America through Mexico and the West Indies to Brazil.

Status of occurrence: Common.

Specimens examined: Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2749 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2948 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3488 (DUSH).

69. **Cyperus cyperoides** (L.) O. Ktze., Rev. Gen. Pl. 3(2): 333 (1898). *Scirpus cyperoides* L. (1771); *Kyllinga umbellata* Rottb. (1773); *Mariscus sieberianus* Nees ex C.B. Clarke in Hook. f., Fl. Brit. India 6: 622 (1893); Prain, Beng. Pl. 2: 863 (1903, reprint 1963).

English name: Coastal plain flat-sedge.

Rhizomatous perennial herb, culms 1-several. Leaves rather weak, blade linear, gradually long attenuate, sacbrid in the upper part. Inflorescence simple, rarely sub-compound. Spikelets numerous per spike, at first obliquely erect, finally at right angles to the rachis and the lower ones often reflexed, linear to linear-lanceolate, rachilla broadly winged. Nutlets 2-3 per spikelet, linear-cylindric, slightly curved, golden brown. *Flowering and fruiting*: throughout the year. *Grows in open or slightly shaded forest margins and clearings, rice fields, waysides, cultivated grounds and waste places.*

Distribution: Tropical and subtropical regions of Africa and Asia, extending north to central Japan, also in the West Indies.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3894 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3918 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3945 (DUSH).

70. **Cyperus difformis** L., Cent. Pl. 2: 6 (1756); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 599 (1893); Prain, Beng. Pl. 2: 859 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 111 (1956). *Cyperus subrotandus* Llanos (1851); *Cyperus goeringii* Steud. (1855).

Vernacular name: *Behua*. English names: Small flower umbrella plant, Variable flat-sedge.

Annual herb with purple, fibrous roots, culms tufted in small or rather often relatively large clumps. Leaves basal, blade linear, flaccid, slightly canaliculated. Inflorescence simple or compound, heads, usually rather lax, occasionally congested, primary branches 5-9. Spikelets in congested globose cluster, linear to linear-oblong, 10-30 flowered. Nutlets ellipsoid to obovoid, maturing yellowish. *Flowering and fruiting:* August - December. *Chromosome number:* $2n = 26, 34, 36$ (Kumar and Subramaniam, 1986). *Grows in rice fields, wet or swampy places and open grassy fields.*

Distribution: Widely distributed in tropical, subtropical and warm temperate regions of the World.

Status of occurrence: Common.

Uses: Occasionally the plant is used as fodder.

Specimens examined: Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 262 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 957 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1158 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1898 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3736 (DUSH).

71. **Cyperus digitatus** Roxb., Fl. Ind. ed. Carey 1: 209 (1820); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 618 (1893); Prain, Beng. Pl. 2: 862 (1903, reprint 1963); *Cyperus venustus* (non R. Br.) Nees (1834); *Cyperus strigosus* (non L.) Llanos (1851); *Cyperus auricomus* (non Sieb.) Benth. (1878).

English names: Digitate cyperus, Finger flat-sedge.

Shortly rhizomatous perennial herb, culms tufted or solitary. Leaves basal, blade linear, long-acute, scabrous on the margins. Inflorescence compound to decompounds, primary branches 4-10, unequal, spikes cylindric, digitately arranged. Nutlets

cylindric-ellipsoid to cylindric-obovate, maturing yellowish-brown. *Flowering and fruiting*: September - January. *Chromosome number*: $2n = 108$ (Kumar and Subramaniam, 1986). *Grows in open swamps, riverbanks and wet rice fields*.

Distribution: Pan-tropical, extending north into South China and Taiwan, abundant in South America and relatively scarce in tropical Africa and Australia.

Status of occurrence: Common.

Specimens examined: Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2262 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2405 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2777 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3491 (DUSH).

72. **Cyperus distans** L. f., Suppl. 103 (1781); Hook. f., Fl. Brit. Ind. 6: 607 (1893); Prain, Beng. Pl. 2: 861 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 111 (1956). *Cyperus elatus* (non L.) Rottb. (1773); *Cyperus graminicola* Steud. (1854); *Cyperus kurrii* Steud. (1855).

Vernacular name: *Pani malanga*.

English names: Slender cyperus, Piedmont flat-sedge.

Perennial herb with knotty rhizomes, culms solitary or few together, often rather slender. Leaves shorter than or equalling the culms, blade linear, weakly folded. Inflorescence compound or rarely decompounds spikes. Spikelets mostly spreading, rather distant, rachilla zigzag, winged. Nutlets cylindric to cylindric-ellipsoid, maturing dark brown. *Flowering and fruiting*: throughout the year. *Open, wet grounds, including forest clearings, waysides and margins of rice fields, also in swamps*.

Distribution: Pan-tropical.

Status of occurrence: Common.

Specimens examined: Kaligonj, Kolafata, 05.03.2010, R. Tabassum, 687 (DUSH); Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 990 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1502 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2181 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2783 (DUSH).

73. **Cyperus exaltatus** Retz., Obs. Bot. 5: 11 (1789); Hook. f., Fl. Brit. Ind. 6: 617 (1893); Prain, Beng. Pl. 2: 862 (1903, reprint 1963); R. L. Heinig, List Chittagong: 76 (1925). *Cyperus venustus* R. Br. (1810); *Cyperus altus* Nees (1834).

Perennial herb, loosely tufted with short woody rhizome, culms robust, tufted. Leaves several, nearly equalling the culm, blades linear, 3-costate. Inflorescence compound to decompounds, spikes digitately arranged. Spikelets 20-40 per spike, crowded, erecto-

patent to patent, 2-ranked, oblong-lanceolate to linear, rachilla straight, winged, persistent. Nutlets ellipsoid to ellipsoid-obovoid, yellowish-brown. *Flowering and fruiting*: July - February. *Chromosome number*: $2n = 90, 96$ (Kumar and Subramaniam, 1986). *Open swamps and wet places*.

Distribution: Pan-tropical, with its range extending northwards to eastern China and Japan, sporadic in tropical Africa and rare in South America.

Status of occurrence: Common.

Specimens examined: Sripur, Piruzali, 17.02.2012, R. Tabassum, 1994 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2786 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2971 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3696 (DUSH).

74. **Cyperus flabelliformis** Rottb., Descr. Pl. Rar. Progr.: 22 (1772). *Cyperus flabelliformis* var. *obtusangulus* Boeck. (1868); *Cyperus alternifolius* L. subsp. *flabelliformis* Kük. (1936); *Cyperus alternifolius* (non L.) Back. (1949).

English names: Umbrella plant, Flat sedge.

Tall perennial herb, culms tufted. Normal leaves several only present on the first sterile shoot, leaves on the flowering stems reduced to long, wide brownish basal sheaths, the lower ones cataphyloid. Inflorescence ample, dense, decompounds. Spikelets in clusters of 3-10, digitately arranged, stellately spreading, densely flowered, rachilla wingless, persistent. Fruit an achene, obovate-elliptic, 3-sided, yellowish-brown. *Flowering and fruiting*: July - October. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Usually planted as an ornamental plant but escapes into grassy fallow lands*.

Distribution: A native of tropical Africa and Arabia.

Status of occurrence: An indoor ornamental plant.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1920 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2455 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3120 (DUSH).

75. **Cyperus haspan** L., Sp. Pl.: 45 (1753); Hook. f., Fl. Brit. Ind. 6: 600 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 111 (1956). *Cyperus micranthus* Presl (1828), *Cyperus minutiflorus* Presl (1830), *Cyperus flavidus* Retz. var. *africana* Camus (1912).

English name: Haspan flat-sedge.

Annual or short-lived rhizomatous perennial herb, rhizome inconspicuous, culms tufted or solitary, slender. Leaves 2-4 to a culm, blade elongated or reduced to lanceolate appendage of sheaths. Inflorescence compound or decompound, open to somewhat congested. Spikelets 1 or in a finger-like cluster of 3-6 (-10). Nutlets broadly obovate, trigonous. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 16, 26, 30, 36$ (Kumar and Subramaniam, 1986). *Open and wet places, a common and characteristic weed of inundated rice fields.*

Distribution: Tropical and subtropical regions worldwide with its range in Asia extending northwards to Japan and northeast China.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 764 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1078 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2475 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2814 (DUSH).

76. **Cyperus iria** L., Sp. Pl. ed. 1: 45 (1753); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 606 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. 9 (2): 111 (1956). *Cyperus parviflorus* Nees (1834); *Cyperus nuttallii* Llanos (1851); *Cyperus diaphaniria* Steud. (1855).

Vernacular name: *Barachucha*. English names: Umbrella sedge, Rice flat-sedge.

Annual, or under favourable conditions perennial herb, culms 1-few. Leaves basal, blades linear, flattish to weakly channeled. Inflorescence simple to compound, spikes in a cluster. Spikelets spicately arranged, oblong-elliptic to linear-oblong, flattened, rachilla wingless, persistent. Nutlets ellipsoid to obovoid, dark brown. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 16, 72, 128$ (Kumar and Subramaniam, 1986). *Grows in rice fields, cultivated grounds and waysides, also in open, wet and grassy places.*

Distribution: Tropical Asia and northwards to China and Japan, and east to Malesia and Australia, also in East Africa. Naturalized in the Southeast United States, the West Indies and South America.

Status of occurrence: Common.

Uses: The plant is used for making rough mats.

Specimens examined: Kaliganj, Nimtoli, 29.04.2005, R. Tabassum, 223 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 944 (DUSH); Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1035 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1159 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2582 (DUSH).

77. **Cyperus laxus** Lamk., Ill. Gen. 1: 146 (1791) var. **laxus** Simpson & Koyama, Fl. Thai. 6 (4): 368 (1998). *Cyperus diffusus* Vahl, En. 2: 321 (1806); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 603 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925); *Cyperus nigro-viridis* Thw. (1864); *Cyperus kurzii* (*non* Clarke) Camus (1912).

Perennial herb, with a short corm-like rhizome clothed with dark brown scales and their fibrous remnants. Leaf blades linear. Inflorescence compound to decompound. Spikelets in open finger-like clusters of 2-9, oblong, subterete. Nutlets elliptic, blackish-brown. *Flowering and fruiting*: almost throughout the year. *Chromosome number*: $2n = 38$ (Kumar and Subramaniam, 1986). *Grows in scrubs, wet forest floors and bamboo groves.*

Distribution: India through Myanmar, Thailand and Indo-China, Northeast to Southeast China and Taiwan, east to Malesia and Solomon Islands.

Status of occurrence: Common.

Specimens examined: Sripur, Gozaria, 21.06.2010, R. Tabassum, 1412 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1883 (DUSH); Kaliakoir, Nobinagar, 12.02.2011, R. Tabassum, 1978 (DUSH); Kaliganj, Gudara, 02.01.2013, R. Tabassum, 2247 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3647 (DUSH).

78. **Cyperus malaccensis** Lamk., Tabl. Enc. 1: 146 (1791); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 608 (1893); Prain, Beng. Pl. 2: 861 (1903, reprint 1963); *Cyperus spaniophyllus* Steud. (1855); *Cyperus tegetiformis* (*non* Roxb.) Benth. (1878).

Vernacular name: *Chumati pati*.

English name: Shichito matgrass.

Rhizomaouts perennial herb, rhizome long-creeping, clothed with scarious dark brown scales, culms 1-few. Leaves reduced to bladeless sheaths except for the upper 1-3 leaves, blades linear, linear-lanceolate. Inflorescence compound or sub-compound, somewhat congested. Spikelets spicately arranged. Nutlets cylindric, blackish-brown. *Flowering and fruiting*: May - October. *Marshy places with polluted water, a coloniser along muddy river-mouths.*

Distribution: Widespread in the eastern hemisphere, from Iraq through India, Thailand, Indo-China and south China. Also Malesia to north Australia and Polynesia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3895 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3919 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3946 (DUSH).

79. **Cyperus michelianus** (L.) Link, Hort. Bot. Berol. Descr. 1: 303 (1827). *Scirpus michelianus* L. (1753), *Cyperus pygmaeus* Rottb. (1773), *Juncellus pygmaeus* (Rottb.) C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 596 (1893); Prain, Beng. Pl. 2: 857 (1903, reprint 1963); *Dichostylis micheliana* (L.) Nees ex Palla (1900).

Vernacular name: *Chhoto gotubi*.

Annual herb, culms tufted, often pulvinate, erect or patent. Leaves basal, 1-2 on a culm, blade linear, flat or canaliculated. Inflorescence capitate, with 1 to several congested, ovoid to globose cluster of spikelets. Spikelets broadly ovate to ovate-lanceolate. Nutlets oblong to ovate-oblong, biconvex to flattened trigonous, pale brown. *Flowering and fruiting*: September - February. *Chromosome number*: $2n = 78$ (Kumar and Subramaniam, 1986). *Open wet places in cultivated grounds, dried-up pools and ditches and muddy riverbanks*.

Distribution: Mediterranean region and East Africa, through West Asia and India to Southeast Asia, Malesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1356 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1902 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3121 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3613 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3838 (DUSH).

80. **Cyperus odoratus** L., Sp. Pl.: 46 (1753). *Cyperus ferax* L. (1792); *Mariscus ferax* (L.C. Rich.) C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 624 (1893); Prain, Beng. Pl. 2: 864 (1903, reprint 1963); *Torulinium odoratum* (L.) S. Hooper (1972).

English name: Fragrant flat-sedge.

Annual or short-lived perennial herb, culms 1-few, slender, rooting at the nodes. Leaves basal, blades linear, flattish to canaliculated. Inflorescence simple, or reduced to a cluster of few spikelets, or contracted to a dense head. Spikelets spreading to reflexed, rachilla flexuous, wingless. Nutlets partially obscure by wings of rachis, biconvex, cylindric to cylindric-obovoid, dark brown. *Flowering and fruiting*: October - February. *Grows in open wet or marshy, grassy places, waysides and rice fields*.

Distribution: Widely distributed in the warmer parts of the eastern hemisphere and tropical Africa, from the Black Sea through central and eastern Asia to Japan and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1254 (DUSH); Kapasia, Pakundia, 09.03.2012, R. Tabassum, 2150 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2576 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2937 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3862 (DUSH).

81. **Cyperus pilosus** Vahl, Enum. Pl. 2: 354 (1806); Hook. f., Fl. Brit. Ind. 6: 609 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963). *Cyperus marginellus* Nees (1834), *Cyperus obliquus* Nees (1834).

English name: Fuzzy flat-sedge.

Stoloniferous perennial herb, culms 1 to few. Leaves few to several, blade broadly linear. Inflorescence simple to compound. Spikelets rather distant, spreading, linear-lanceolate to elliptic-oblong. Nutlets broadly ellipsoid to obovoid, trigonous, dark brown. *Flowering and fruiting:* almost throughout the year. *Chromosome number:* 16, 36 (Kumar and Subramaniam, 1986). *Open wet places, grasslands, swamps, riverbanks and rice fields.*

Distribution: Rather widely distributed in tropical and subtropical regions of the Old World from tropical West Africa through Central Asia and the Indian subcontinent eastward to Malesia and northern Australia. In eastern Asia, the range extends northwards as far as warm temperate Japan.

Status of occurrence: Common.

Specimens examined: Sripur, Gozaria, 21.06.2010, R. Tabassum, 1411 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1924 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3235 (DUSH); Kapasia Kandunia, 03.11.2013, R. Tabassum, 3663 (DUSH).

82. **Cyperus platystylis** R. Br., Prod. Fl. Nov. Holl. : 214 (1810); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 598 (1893); Prain, Beng. Pl. 2: 859 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925). *Cyperus pallidus* Nees (1834); *Anosporum pallidum* (Nees) Boeck. (1870).

Rhizomatous perennial herb, roots funiliform, culms solitary, rather 2-3 together, growing in large communities. Leaves basal, few, blade linear to broadly linear. Inflorescence compound to decompound, depressed corymbose or semi-globose. Spikelets in finger-like clusters of 2-8, oblong-lanceolate to lanceolate. Nutlets cylindric-ellipsoid or cylindric-ovoid, brown. *Flowering and fruiting:* November - February. *Grows in wet places in swamps, margin of pools and wet rice fields.*

Distribution: From India and Sri Lanka eastwards to Malesia and Australia (Queensland and New South Wales) and also in Taiwan.

Status of occurrence: Common.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 499 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2516 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2900 (DUSH).

83. **Cyperus pulcherrimus** Willd. ex Kunth, En. Pl. 2: 35 (1837). *Cyperus eumorphos* Steud. (1855); *Cyperus silletensis* (non Nees) Camus (1912).

Short rhizomatous perennial herb, often flowering in the first year, culms tufted. Leaves basal, blade linear, flattish to slightly canaliculated. Inflorescence compound to decompound, open to congested. Spikelets in finger-like clusters of 5-20, linear-oblong. Nutlets ovoid-ellipsoid, brownish. *Flowering and fruiting:* September - February. *Grows in open or shaded, wet or swampy localities, such as wet forest floors, open pool margins and ditches and rice fields.*

Distribution: India, Sri Lanka, Thailand, Indo-China to Malesia.

Status of occurrence: Common.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 128 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2817 (DUSH); Kaliakior, Srinail, 13.09.2013, R. Tabassum, 3102 (DUSH); Kapasia, Kandunia, 03.11. 2013, R. Tabassum, 3722 (DUSH).

84. **Cyperus rotundus** L., Sp. Pl.: 45 (1753); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 614 (1893); Prain, Beng. Pl. 2: 862 (1903, reprint 1963); R. L. Heinig, List Chittagong: 76 (1925). *Schoenus tuberosus* Burm. f. (1768); *Cyperus longus* (non L.) K. Sch. & Laut. (1901); *Cyperus bulbosus* (non Vahl) Camus (1912).

Vernacular names: *Mutha*, *Nagarmutha*.

English name: Nut grass.

Stoloniferous perennial herb. Leaves basal, several, blades linear, flattish, rigidulous. Inflorescence simple, rarely compound, obliquely erect to spreading. Spikelets 3-10 per spike, spicately arranged, narrowly oblong to linear. Nutlets cylindric to cylindric-obovate, brown. *Flowering and fruiting:* throughout the year but mainly from May - September. *Chromosome number:* $2n = 108$ (Fedorov, 1969). *Grows in open or slightly shaded grounds, lawns, roadsides and waste places.*

Distribution: Widely distributed in the warmer regions of the World.

Status of occurrence: Common.

Use: The plant acts as a soil binder.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 251 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 951 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1508 (DUSH); Sripur, Bager Bazar, Veramtoly, 17.02.2012, R. Tabassum, 1991 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2594 (DUSH).

85. **Cyperus squarrosus** L., Cent. Pl. 2: 6 (1756). *Cyperus aristatus* Rottb. (1772); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 606 (1893); Prain, Beng. Pl. 2: 860 (1903, reprint 1963); *Mariscus squarrosus* (L.) C.B. Clarke (1893); *Mariscus aristatus* (Rottb.) Cherm. (1938).

English name: Bearded flat-sedge.

Small annual herb, culms tufted. Leaves few, weak, blades linear, flat, canaliculated. Inflorescence simple, often reduced to a single sessile spike or with 1-3 rays more or less developed. Spikelets numerous, oblong, crowded, flattened. Nutlets very variable, broadly to narrowly cylindric or cylindric-obovate, grayish-brown. *Flowering and fruiting:* June - October. *Chromosome number:* $2n = 94, 108$ (Kumar and Subramaniam, 1986). *Open, wet grassy areas.*

Distribution: Northern Australia, tropical and southern Africa, South and Southeast Asia, and southern Canada, throughout the USA to Argentina.

Status of occurrence: Common.

Specimens examined: Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1088 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1914 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2229 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2940 (DUSH).

86. **Cyperus tenuispica** Steud., Syn. Pl. Glum. 2: 11 (1855). *Cyperus caespitosus* (non Poir.) Llanos (1851); *Cyperus flavidus* (non Retz.) C.B. Clarke (1893).

Annual or rarely short-lived perennial herb, culms tufted with fibrous red or purple roots. Leaves basal, blade linear. Inflorescence compound or decompounds, open to rather congested. Spikelets 1 or in finger-like cluster of 2-9, linear-oblong. Nutlets obovoid-orbicular or ovoid, white to creamy-yellow. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 16$ (Kumar and Subramaniam, 1986). *Open, wet places, often as a weed of inundated rice fields.*

Distribution: Widely distributed in the warm regions of the eastern hemisphere, tropical Africa, India, Sri Lanka, Nepal, Thailand, Malesia, China and Japan.

Status of occurrence: Common.

Use: The species acts as a soil binder.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 105 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 902 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2641 (DUSH); Kapasia, Vobonerchala, 3.11.2013, R. Tabassum, 3593 (DUSH).

87. **Cyperus tuberosus** Rottb., Descr. et Icon. 28, t. 7, f. 1 (1773); Hook. f., Fl. Brit. Ind. 6: 616 (1893); Prain, Beng. Pl. 2: 862 (1903, reprint 1963). *Cyperus pangorei* Retz. (1789), *Cyperus procerulus* Nees (1834), *Cyperus rotundus* Benth. (1878).

Stoloniferous perennial herb. Leaves basal, several, blade linear. Inflorescence simple, rarely compound umbel. Spikelets very slender, spicately arranged. Nutlets cylindric to cylindric-obovate, brown. *Flowering and fruiting:* August - January. *Open, moist grassy places, wastelands, rice fields, forest clearings and roadsides.*

Distribution: Australia, Sri Lanka and India.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 958 (DUSH); Sripur, Barkul, 21.06.2010, R. Tabassum, 1193 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2022 (DUSH); Gazipur Sadar, Etahata, Borboika, 30.10.2013, R. Tabassum, 3422 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3586 (DUSH).

Genus 47. **Eleocharis** R. Br., Prodr. Fl. Nov. Holl.: 224 (1810).

Key to species:

1. Spikelet usually cylindric or narrowly ellipsoid, as wide as culms; culms usually stout, sometimes transversely septate with nodes evident on surface (in *E. dulcis*); leaf sheath mouth oblique; glumes firm, subcartilaginous, rarely subpapery or membranous, midvein obscure or indistinct but with 15 or more prominent to obscure close longitudinal veins.

2

- Spikelet ovoid to narrowly ovoid, rarely cylindric, usually wider than culms; culms slender, nodes not evident on surface; leaf sheath mouth truncate or slightly oblique, rarely with a scarious appendage; glumes generally membranous, midvein distinct or rarely obscure.

congesta

2. Culms with transverse septa, nodes evident on surface when dry; spikelet with basal 2 glumes empty, rarely 1 with a flower; nutlet surface essentially smooth **dulcis**
- Culms without transverse septa, nodes not evident on surface when dry; spikelet with only basalmost glume empty; nutlet surface cancellate or reticulate **acutangula**

88. **Eleocharis acutangula** (Roxb.) Schult. in Roem. & Schult., Mantissa 2: 91 (1824). *Scirpus fistulosus* (non Forssk.) Poir. (1804); *Scirpus acutangulus* Roxb. (1820); *Eleocharis fistulosa* (Poir.) Schult. (1824); Hook. f., Fl. Brit. Ind. 6: 626 (1893); Prain, Beng. Pl. 2: 865 (1903, reprint 1963).

English name: Acut spike-rush.

Stoloniferous perennial herb, culms tufted, spongy inside. Basal sheaths 3 or 4. Spikelets cylindric, loosely many-flowered. Nutlets broadly obovate. *Flowering and fruiting*: October - February. *Open wet places, particularly pond margins and rice fields*.

Distribution: Australia, Malesia, tropical southern Asia, tropical Africa and the America.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 761 (DUSH); Kapasia, Chonabari, 03.07.2010, R. Tabassum, 1517 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1908 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2290 (DUSH); Sripur, Bager Bazar, 18.02.2013, R. Tabassum, 2418 (DUSH).

89. **Eleocharis congesta** D. Don, Prodr. Fl. Nepal: 41 (1825); Hook. f., Fl. Brit. Ind. 6: 630 (1893); Prain, Beng. Pl. 2: 865 (1903, reprint 1963); *Eleocharis subvivipara* Boeck. (1870).

English name: Spike-rush.

Annual or rarely short-lived perennial herb, culms deeply tufted, slender. Basal sheaths reddish to reddish-brown. Spikelets erect, ovate-oblong to ovate. Nutlets obovate, pale greenish-yellow to olive green. *Flowering and fruiting*: September - April. *Chromosome number*: $2n = 20$ (Kumar and Subramaniam, 1986). *Shallow freshwater swamps, margins of pools and ponds, ditches and rice fields*.

Distribution: India, Sri Lanka, Nepal, Thailand, Malesia, China and Japan.

Status of occurrence: Common.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2497 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2662 (DUSH); Kaliakoir, Simultoli, 01.10.2013, R. Tabassum, 3374 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3766 (DUSH).

90. **Eleocharis dulcis** (Burm. f.) Trin. ex Hensch., Vita Rumph.: 186 (1833); Hook. f., Fl. Brit. Ind. 6: 625 (1893); *Cyperus dulcis* Rumph. (1750), *Andropogon dulce* Burm. f. (1768), *Scirpus plantagineus* Retz. (1789); Prain, Beng. Pl. 2: 865 (1903, reprint 1963); *Eleocharis equisetina* Presl (1828).

English names: Chinese water chestnut, Ground chestnut.

Stoloniferous perennial herb, culms tufted, terete, finely longitudinally striate, transversely septae, spongy, the intersepta hollowed. Spikelet cylindrical, whitish. Nutlets obovate, biconvex with obtuse edges. *Flowering and fruiting:* May - December. *Chromosome number:* $2n = 76$ (Kumar and Subramaniam, 1986). *Open marshy places, often forming large, pure stands surrounding the open water.*

Distribution: Widely distributed in the tropical parts of the Old World.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1887 (DUSH); Kaligonj, Bhulta, 02.01.2013, R. Tabassum, 2332 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3163 (DUSH); Sripur, Boherar, 21.10.2013, R. Tabassum, 3383 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3671 (DUSH).

Genus 48. **Fimbristylis** Vahl, En. Pl. 2: 285 (1806).

Key to species:

- | | |
|---|------------------|
| 1. Spikelets compressed; glumes distichous at least on basal part of spikelet | ovata |
| - Spikelets terete; glumes spirally imbricate | 2 |
| 2. Spikelet solitary; involucre bracts glumelike; leaves with only a bladeless sheath | acuminata |
| - Spikelets (1 or)2 to many; involucre bracts not glumelike; leaves with a blade | 3 |
| 3. Stigmas 2; style compressed, apically ciliate | 4 |
| - Stigmas (2 or)3; style not compressed or rarely slightly compressed, apically not ciliate | 10 |

4.	Spikelets angular because of keeled glumes, 7 mm or less	5
-	Spikelets terete, at least some to 10 mm or more	7
5.	Style base with sparse long hairs covering nutlet apex	squarrosa
-	Style base glabrous	6
6.	Nutlet broadly obovoid, with transverse oblong reticulation; leaf sheath greenish yellow or with rust-colored flecks; leaf blade 0.7-1.5 mm wide	bisumbellata
-	Nutlet obovoid, almost smooth but sometimes with very indistinct hexagonal reticulation; leaf sheath brown; leaf blade 0.5-1.0 mm wide	aestivalis
7.	Spikelets 1-3(-6)	8
-	Spikelets several to many	9
8.	Glumes yellowish white, ca. 3 mm; nutlet yellowish white, with a short yellowish white stipe	schoenoides
-	Glumes brown, 5-7 mm; nutlet brown or yellowish brown, with a short brown stipe.	falcata
9.	Nutlet obovoid, with obvious vertical ribs, not verruculose; inflorescences 5–9 cm	dichotoma
-	Nutlet ovoid, without vertical ribs, sparsely verruculose; inflorescences 3-4 cm	alboviridis
10.	Basal part of culms with 1-3 leafless sheaths	11
-	Culm leaves all with a leaf blade	dipsacea
11.	Leaf blade bilaterally compressed, ensiform; leaf sheaths compressed; spikelets spherical or subspherical; glumes 1.0-1.3 mm	miliacea
-	Leaf blade (if present) dorsiventrally flattened but canaliculate, linear; leaf sheaths tubular; spikelets more elongated; glumes 1.5-2.7 mm	12
12.	Glume apices obtuse to rounded and not mucronate or apiculate; nutlet 0.6-0.8 mm; spikelets 2.7-7.0 mm	aphylla

- Glume apices mucronate or apiculate or at least acute; nutlet ca. 0.8 mm; spikelets 2-5 mm. **quinquangularis**

91. **Fimbristylis acuminata** Vahl, En. Pl. 2: 285 (1806); Hook. f., Fl. Brit. Ind. 6: 631 (1893); Prain, Beng. Pl. 2: 867 (1903, reprint 1963); *Fimbristylis setacea* C.B. Clarke (1893); *Fimbristylis nutans* Vahl var. *minor* Camus (1912).

English name: Pointed fimbristylis.

Short-lived perennial herb, densely tufted with fibrous roots, culms slender, densely tufted. Leaves reduced to basal sheaths, sheath cylindrical. Inflorescence a simple terminal spike. Spikelets ovoid to ovoid-conical, terete. Nutlets obovate to orbicular, biconvex, whitish to cream. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 10$ (Kumar and Subramaniam, 1986). *Open wet and muddy places*.

Distribution: India and Sri Lanka, Thailand through Malesia to northern Australia, northeastward to South China and the Ryukyu Island of Japan.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3947 (DUSH).

92. **Fimbristylis aestivalis** (Retz.) Vahl, En. Pl. 2: 288 (1806) Hook. f., Fl. Brit. Ind. 6: 637 (1893); Prain, Beng. Pl. 2: 868 (1903, reprint 1963). *Scirpus aestivalis* Retz. (1786).

English name: Summer fimbry.

Annual herb, culms densely tufted. Leaves basal, blade narrowly linear. Inflorescence simple to compound corymb, sub-globose. Spikelets solitary, ovoid-conical or oblong-conical. Nutlets obovate, thickly biconvex. *Flowering and fruiting*: September - February. *Chromosome number*: $2n = 10$ (Kumar and Subramaniam, 1986). *Open wet places including rice fields*.

Distribution: India through Indo-China to China, eastwards to Japan, Malesia and northern Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 353 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 981 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1244 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2660 (DUSH); Kaligonj, Baglahaola, 02.12.2013, R. Tabassum, 3798 (DUSH).

93. **Fimbristylis albobiridis** C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 638 (1893). *Fimbristylis annua* var. *pluristriata* Back. (1949).

Annual herb, culms tufted, compressed trigonous. Leaves basal, blade linear. Inflorescence simple to compound. Spikelets solitary, ovoid to ovoid cylindric. Nutlets broadly obovate, biconvex. *Flowering and fruiting*: September - March. *Dry sandy grassy places and riverbanks*.

Distribution: India, Thailand, the Malaya Peninsula, Indonesia and the Philippines.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 788 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2498 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2751 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3651 (DUSH).

94. **Fimbristylis aphylla** Steud., Syn. Pl. Glum. 2: 114 (1855). *Fimbristylis globulosa* Kunth var. *aphylla* (Steud.) Miq. (1856); *Fimbristylis quinquangularis* Kunth var. *crassa* C.B. Clarke (1893).

Perennial herb with very short rhizome, densely tufted with fibrous roots, culms arising from the axils of bladed leaves. Leaves basal on sterile shoots, or cauline, reduced to bladeless sheath, blade linear. Inflorescence decomposed corymb. Spikelets solitary, ovoid to ovoid-globose. Nutlets broadly obovoid, white to cream. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 10$ (Fedorov, 1969). *Open, wet grassy places and rice fields*.

Distribution: Widely distributed in the Old World tropics from tropical Africa through India, Indo-China and western Malesia to northern Australia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3896 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3920 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3947 (DUSH).

95. **Fimbristylis bisumbellata** (Forssk.) Bubani, Dodecanth.: 30 (1850). *Scirpus bisumbellatus* Forssk. (1775), *Fimbristylis pallescens* Nees (1834).

Densely tufted annual herb, culms slender, few-leaved at the base. Leaf blades narrowly linear. Inflorescence corymbose, compound to decomposed, densely bearing many spikelets. Spikelets solitary, ovate-oblong. Nutlets broadly obovate, thickly

biconvex, lightly yellow. *Flowering and fruiting*: February - August. *Chromosome number*: $2n = 10$ (Kumar and Subramaniam, 1986). *Wet grounds and rice fields*.

Distribution: Widely distributed from the Mediterranean region through tropical Asia eastwards to northern Australia.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 50 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3712 (DUSH).

96. **Fimbristylis dichotoma** (L.) Vahl, En. Pl. 2: 287 (1806) subsp. **dichotoma** D.A. Simpson & T. Koyama in T. Santisuk & K. Larsen, Fl. Thailand 6 (4): 321 (1998); Hook. f., Fl. Brit. Ind. 6: 635 (1893); Prain, Beng. Pl. 2: 868 (1903, reprint 1963); R. L. Heinig, List Chittagong: 76 (1925); *Scirpus dichotoma* L., Sp. Pl. 1: 50 (1753); *Scirpus diphyllus* Retz. (1789); *Fimbristylis diphylla* (Retz.) Vahl (1806).

Vernacular name: *Bara nirbishi*.

English names: Tall fringe-rush, Two-leaf fimbristylis.

Annual to short-lived perennial herb, culms usually tufted in a small clump. Leaves basal, few to several, occasionally many, blades narrowly linear. Inflorescence simple to compound, open to congested. Spikelets ovoid to ovoid-ellipsoid. Nutlets obovate to broadly obovate, cream or pale brown. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 10, 20, 30$ (Kumar and Subramaniam, 1986). *Grows in grassy waysides, cultivated grounds, rice fields, plantations and swamps*.

Distribution: Cosmopolitan in tropical, subtropical and warm temperate regions of the World.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 401 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1082 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1226 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2828 (DUSH); Kaligonj, Baglahaola, 2.12.2013, R. Tabassum, 3799 (DUSH).

97. **Fimbristylis dipsacea** (Rottb.) C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 635 (1893); Prain, Beng. Pl. 2: 870 (1903, reprint 1963); *Scirpus dipsaceus* Rottb. (1773), *Echinolytrum dipsaceum* (Rottb.) Desb. (1808).

Annual herb, densely tufted with tuberous root only, culms slender, soft. Leaves 2-4 per culm, reduced to short-bladed sheath, blades narrowly linear to setaceous.

Inflorescence simple or a cluster of 2-3 spikelets. Spikelets usually solitary, globose to ovoid-globose. Nutlets linear-oblong, cream to brownish. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 10$ (Kumar and Subramaniam, 1986). *Grows in moist riverbanks, margins of lakes and swamps.*

Distribution: Tropical Africa and Asia, western Malesia, northwards to Japan.

Status of occurrence: Common.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1212 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2679 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2939 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3512 (DUSH); Kaligonj, Baglahaola, 02.12.2013, R. Tabassum, 3782 (DUSH).

98. **Fimbristylis falcata** (Vahl) Kunth, En. Pl. 2: 239 (1837). *Scirpus falcatus* Vahl (1806); *Thrichelostylis junciformis* Nees (1834); *Fimbristylis junciformis* (Nees) Kunth (1837); C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 647 (1893); Prain, Beng. Pl. 2: 869 (1903, reprint 1963).

Vernacular name: *Bindimathi*.

Rhizomatous perennial herb, rhizome covered with fibrous leaf sheath remnants. Leaves basal, many, rosette forming, blades linear-falcate. Inflorescence simple to compound corymb, open to congested. Spikelets few to many per inflorescence, solitary or in cluster, ovoid or ovoid-ellipsoid. Nutlets obdeltoid-obovoid, yellow to yellowish-brown. *Flowering and fruiting*: April - December. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Grows in open grasslands.*

Distribution: Pakistan, India, Sri Lanka, Nepal, Thailand, Indo-China and Malesia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1006 (DUSH); Sripur, Bager Bazar, 18.02.2013, R. Tabassum, 2454 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3639 (DUSH).

99. **Fimbristylis miliacea** (L.) Vahl, En. Pl. 2: 287 (1806); Hook. f., Fl. Brit. Ind. 6: 644 (1893); Prain, Beng. Pl. 2: 869 (1903, reprint 1963); L. Heinig, List Chittagong: 76 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 112 (1956); *Scirpus miliaceus* L., Syst. Nat. ed. 10, 868 (1759); *Fimbristylis littoralis* Gaudich. (1826).

Vernacular name: *Bara javani*.

English names: Lesser fimbristylis, Grass-like fimbristylis.

Annual or short-lived perennial herb, densely tufted without conspicuous rhizome, culms arising from the leaf axils. Leaves basal, or cauline, reduced to bladeless sheath, blade linear. Inflorescence compound to decompound umbels. Spikelets spirally arranged, broadly ovoid-globular, reddish-brown. Nutlets obovoid to broadly obovate, creamy yellow. *Flowering and fruiting*: May - November. *Chromosome number*: $2n = 10$ (Fedorov, 1969). *Wet rice fields and wet places*.

Distribution: Tropical and subtropical regions of the world. In eastern Asia, the range extends into temperate regions as far as central Japan and China.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 402 (DUSH); Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1083 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1693 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1893 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2432 (DUSH).

100. **Fimbristylis ovata** (Burm. f.) Kern, Blumea 15: 126 (1967). *Carex ovata* Burm. f. (1768); *Cyperus monostachyos* L. (1771); *Fimbristylis monostachyos* (L.) Hassk. (1848).

Vernacular name: *Marmari*.

Perennial herb, densely tufted, rhizome short. Leaves many, blade linear. Inflorescence a single terminal spikelet or seldom bearing 2 spikelets. Spikelets ovate, glaucous yellow or light yellow-green. Nutlets broadly obovate, white or cream white. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 10, 20$ (Kumar and Subramaniam, 1986). *Grows in open grasslands*.

Distribution: Tropical and subtropical regions of both hemisphere. In Asia, the range of this species extends northwards into the warm-temperate region as far as central Japan.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1718 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2349 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2501 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Taaabssum, 3248 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3687 (DUSH).

101. **Fimbristylis quinquangularis** (Vahl) Kunth, Enum. Pl. 2: 229 (1807); Hook. f., Fl. Brit. Ind. 6: 644 (1893); Prain, Beng. Pl. 2: 869 (1903, reprint 1963); L. Heinig,

List Chittagong: 76 (1925). *Scirpus quinquangularis* Vahl (1806), *Trichelostylis quinquangularis* (Vahl) Nees (1834).

English name: Five-angle fimbry.

Annual or biennial herb with very short rhizome. Leaf blades linear, flat. Inflorescence corymbose, compound to decompound. Spikelets solitary, ovoid. Glumes boat-shaped. Nutlets obovate, cream white. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 10, 20$ (Kumar and Subramaniam, 1986). *Wet grassy places and rice fields*.

Distribution: Widely distributed in the tropical regions of the Old World from tropical Africa through India and Malesia to northern Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 04.02.2011, R. Tabassum, 1733 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2964 (DUSH).

102. **Fimbristylis schoenoides** (Retz.) Vahl, En. Pl. 2: 286 (1806); Hook. f., Fl. Brit. Ind. 6: 634 (1893); Prain, Beng. Pl. 2: 868 (1903, reprint 1963). *Scirpus schoenoides* Retz. (1789).

Vernacular names: *Kesari malanga*, *Marmari*.

English name: Ditch fimbry.

Rhizomatous annual or short-lived perennial herb, culms tufted with fibrous roots. Leaves few, basal, blade narrowly linear to filiform. Inflorescence usually a solitary spikelet, or 1 or 2 lateral, peduncled spikelets added. Spikelets solitary, ovoid to ellipsoid, whitish ferruginous to fulvescent, rachilla narrowly winged. Nutlets obovate-orbicular, biconvex, yellowish-white. *Flowering and fruiting*: July - November. *Wet open grasslands, rice fields and wet forest floors*.

Distribution: India, Thailand, through Malesia to northern Australia. Also in South China and Taiwan.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 444 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1510 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2363 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3312 (DUSH).

103. **Fimbristylis squarrosa** Vahl, En. Pl. 2: 289 (1806); Hook. f., Fl. Brit. Ind. 6: 635 (1893); Prain, Beng. Pl. 2: 868 (1903, reprint 1963). *Pogonostylis squarrosa* Bertol (1833); *Fimbristylis aestivalis* var. *Squarrosa* T. Koyama (1961).

Annual herb with fibrous roots, stem slender, densely tufted, setaceous. Leaves shorter than the stem, very narrow. Inflorescence compound or decompound, with several to many spikelets. Spikelets lanceolate, angular, many-flowered, rachilla narrowly winged. Nutlets obovate, biconvex, with acute edges. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 10, 20, 24$ (Kumar and Subramaniam, 1986). *Wet sandy soils*.

Distribution: Widely distributed in tropical and warm-temperate regions of Asia, south Europe, Africa and South America.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Sitpara, 02.11.2002, R. Tabassum, 141 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 910 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1099 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1422 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3789 (DUSH).

Genus 49. **Fuirena** Rottb., Descr. & Icon. Rar.: 70 (1773).

Key to species:

1. Perianth bristles 3, all alike, obovate, subsessile, gradually narrowed at base; culms 60-120 cm tall; anthers 0.5-0.7 mm **umbellata**
- Perianth bristles 6, of two types, outer ones needlelike and scaberulose or smooth, inner ones with a subquadrate or spatulate blade abruptly narrowed at base to a distinct ca. 0.3 mm stalk; culms 7-68 cm tall; anthers 0.2-0.3 mm **ciliaris**

104. **Fuirena ciliaris** (L.) Roxb., Fl. Ind. ed. Carey 1: 184 (1820); Prain, Beng. Pl. 2: 871 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 112 (1956). *Scirpus ciliaris* L., Mant. 2: 182 (1771). *Fuirena glomerata* Lam., Tabl. Enc. 1: 150 (1791); C. B. Clarke in Hook. f., Fl. Brit. India 6: 666 (1893); L. Heinig, List Chittagong: 76 (1925).

English name: Umbrella grass

Annual herb with fibrous roots. Leaves cauline, blades linear. Inflorescence with 1-3 clusters of spikelets. Spikelets ovate or oblong-elliptic, greyish-green. Fruit a nutlet, obovoid to ellipsoid. *Flowering and fruiting*: September - February. *Chromosome*

number: $2n = 38$ (Kumar and Subramaniam, 1986). *Open wet or swampy places including wet grasslands, riverbanks, margins of ponds and rice fields.*

Distribution: Widely distributed in the Old World tropics and subtropics, tropical Africa, the Indian subcontinent, southern China, Japan, Malesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1227 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2975 (DUSH).

105. **Fuirena umbellata** Rottb., Descr. & Icon. Rar.: 70 (1773); Hook. f., Fl. Brit. India 6: 666 (1893); Prain, Beng. Pl. 2: 871 (1903, reprint 1963). *Fuirena pentagona* Wight 7 Arn. ex Nees (1834); *Fuirena uncinata* Thw. (1864).

English name: Umbrella grass.

Rhizomatous perennial herb. Leaves basal and cauline, basal leaves reduced to the subaphyllous sheath, cauline leaves lanceolate to linear-lanceolate. Inflorescence with 3-12 clusters of spikelets, peduncle whitish-villous. Spikelets ovoid or ovoid-ellipsoid, squarrose. Nutlets obovoid to ellipsoid. *Flowering and fruiting*: August - February. *Chromosome number*: $2n = 48, 52$ (Kumar and Subramaniam, 1986). *Open wet or swampy places, swampy grasslands, rice fields, sometimes in secondary forests.*

Distribution: Widely distributed in the tropical and subtropical regions of the world.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1264 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2685 (DUSH); Kalioakoir, Fulbari, 01.13.2013, R. Tabassum, 3309 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3667 (DUSH).

Genus 50. **Kyllinga** Rottb., Descr. Icon. Rar. Nov. Pl.: 12 (1773).

Key to species:

- | | |
|--|-------------------|
| 1. Glumes abaxially keeled | nemoralis |
| - Glumes not abaxially keeled | 2 |
| 2. Rhizomes short; culms tufted; spikes (1-)3; glume abaxial keel without spinules | bulbosa |
| - Rhizomes long and creeping; culms scattered, single at each node of rhizome; spike 1(-3); glume abaxial keel spinulose | 3 |
| 3. Keel of glumes spinulose, apex recurved mucronate; longest involucre bract erect to oblique | brevifolia |

- Keel of glumes not spinulose, apex without a mucro or sometimes with a strict mucro; longest involucre bract oblique to horizontal

microcephala

106. **Kyllinga brevifolia** Rottb., Descr. Icon. Rar. Nov. Pl. 13, t. 4. f. 3 (1773); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 588 (1893); Prain, Beng. Pl. 2: 855 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925). *Cyperus brevifolius* (Rottb.) Hassk., Cat. Hort. Bogor. 24 (1884); J. Sinclair in Bull. Bot. Soc. 9 (2): 111 (1956).

English name: Green kyllinga.

Rhizomatous perennial herb. Leaves basal, few, blades narrowly linear. Inflorescence a terminal, single, globose head. Spikelets oblanceolate to elliptic-lanceolate. Nutlets obovate or elliptic, yellowish-brown. *Flowering and fruiting*: March - December. *Sunny or partly shaded places, along roadsides, grassy fields, riverbanks and damp forest clearings.*

Distribution: Pan-tropical.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 93 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 897 (DUSH); Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1070 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1930 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3841 (DUSH).

107. **Kyllinga bulbosa** Beauv., Fl. d'Oware & Benin 1: 11, t. 8, f. 1 (1804). *Kyllinga triceps* Rottb. (1773); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 587 (1893); Prain, Beng. Pl. 2: 855 (1903, reprint 1963); *Cyperus triceps* (Rottb.) Endl. (1842).

Rhizomatous perennial herb, culms slender, sometimes setaceous. Leaves basal, few, blades linear. Inflorescence capitate with 3-5 sessile spikes. Spikelets oblong or lanceolate. Nutlets oblong, brownish, apiculate. *Flowering and fruiting*: almost throughout the year. *Grows in sunny places.*

Distribution: From tropical Africa through India and Indo-China, northeastwards to southern China, and eastwards to Malesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1408 (DUSH); Tongi, Dighir Chala, 19.08.2013, R. Tabassum, 2766 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3272 (DUSH).

108. **Kyllinga microcephala** Steud., Syn. Cyp.: 70 (1856); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 588 (1893); Prain, Beng. Pl. 2: 855 (1903, reprint 1963). *Isolepis kyllingioides* A. Rich. (1805); *Scirpus kyllingioides* Boeck. (1870).

Stoloniferous annual herb. Leaves basal, blades narrowly linear, flat, canaliculated. Inflorescence head-like. Spikelets very small. Nutlets oblong-obovoid, brown or black. *Flowering and fruiting*: July - November. *Shady, moist places, roadsides and grassy fields*.

Distribution: Tropical Africa and India.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 144 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1446 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3362 (DUSH).

109. **Kyllinga nemoralis** (J. R. Forst. & G. Forst.) Dandy ex Hutchins. & Dalziel, Fl. W. Trop. Africa 2: 486 (1936). *Kyllinga monocephala* Rottb., Descr. Icon. Rar. Nov. Pl. 13, t. 4, f. 4 (1773), *nom. illeg.*; C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 588 (1893); Prain, Beng. Pl. 2: 855 (1903, reprint 1963); *Thryocephalon nemoralis* J. R. Forst. & G. Forst., Char. Gen. Pl.: 130 (1776).

English name: Whitehead spike-sedge.

Rhizomatous perennial herb. Leaves basal, many, blades linear. Inflorescence a single head, bearing a globose central spike and 2 or 3 lateral spikes. Spikelets ovate-elliptic. Nutlets ovate-oblong, yellowish-brown to castaneous. *Flowering and fruiting*: throughout the year but mainly June-September. *Grows in sunny or somewhat shaded waste places, roadsides and grasslands*.

Distribution: Pan-tropical, common in the warmer parts of Asia, less so in tropical Africa and Australia, very rare in tropical America.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 370 (DUSH); Kapasia, Chonabari, 03.07.2010, R. Tabassum, 1518 (DUSH); Kaliakoir, Simultoly Ataboho, 01.10.2013, R. Tabassum, 3367 (DUSH).

Genus 51. **Lipocarpa** R. Br. in Turkey,
Narr. Exped. Congo, Append.: 459 (1818).

110. **Lipocarpa squarrosa** (L.) Goetgh. in Goetgh. & van den Borre, Wagen. Agric. Univ. Papers 89(1): 71 (1989). *Scirpus squarrosus* L. (1771); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 663 (1893); Prain, Beng. Pl. 2: 873 (1903, reprint 1963); *Isolepis squarrosa* (L.) Roem. & Schult. (1817); *Rikliella squarrosa* (L.) Raynal (1973).

Vernacular name: *Guri*.

Annual herb with purplish fibrous roots. Leaves 2-3 to a culm, the lowest usually reduced to a bladeless sheath, blades filiform. Inflorescence a pseudo-lateral head; spike sessile, squarrose. Spikelets bracts deltoid-ovate. Nutlets obovoid, pale brown. *Flowering and fruiting*: September - January. *Open, wet, sandy or clay soils*.

Distribution: India, Sri Lanka, Indo-China, Malaysia and Thailand.

Status of occurrence: Common.

Specimens examined: Kaliganj, Meghdubi, 26.03.2008, R. Tabassum, 263 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 908 (DUSH); Gazipur Sadar, Raklal, 19.08.2013, R. Tabassum, 2829 (DUSH).

Genus 52. **Pycreus** P. Beauv., Fl. d'Oware *et* Benin 2: 48, t. 86 (1807).

Key to species:

1. Glume apices truncate to emarginate and excurved mucronate to awned **pumilus**
- Glume apices obtuse or acute and not excurved mucronate **unioloides**

111. **Pycreus pumilus** (L.) Nees [Linnaea 9: 283 (1835), comb. invalid] *ex* C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 591 (1893). *Cyperus pumilus* L. (1756), *Cyperus nitens* Retz. (1789), *Pycreus nitens* Nees (1834); Hook. f., Fl. Brit. Ind. 6: 591 (1893); Prain, Beng. Pl. 2: 856 (1903, reprint 1963); R. L. Heinig, List Chittagong: 75 (1925).

English name: Low flat-sedge.

Annual herb. Leaves few, shorter than to surpassing the culms, blades narrowly linear. Inflorescence simple to sub-compound or rather frequently contracted to a head-like cluster of spikelets. Spikelets spreading, oblong to oblong-lanceolate. Nutlets elliptic to elliptic-lanceolate, brownish. *Flowering and fruiting*: August - February. *Open, wet to semi-dry grassy places and sandy soils*.

Distribution: From India and southern China through Indo-China to Malesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 110 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 758 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1889 (DUSH); Kapasia, voboner Chala, 03.11.2013, R. Tabassum, 3641 (DUSH).

112. **Pycneus unioloides** (R. Br.) Urban, Symb. Antill. 2: 35 (1900). *Cyperus unioloides* R. Br. (1810), *Cyperus angulatus* Nees (1834).

Short-lived perennial herb. Leaf blades linear. Inflorescence simple, open or congested. Spikelets patent to spreading, lanceolate to oblong-lanceolate. Nutlets relatively small, broadly elliptic to obovate-orbicular, shiny black. *Flowering and fruiting*: July - November. *Open, wet grassy fields, swamps and riverbanks*.

Distribution: Pan-tropical, extending north in Asia up to central Japan.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 728 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1193 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1897 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3672 (DUSH).

Genus 53. **Rhynchospora** Vahl, En. Pl. 2: 229 (1806).

113. **Rhynchospora rubra** (Lour.) Makino, Bot. Mag. Tokyo 17: 180, t. 7, f. la, b (1903). *Schoenus ruber* Lour. (1790); *Rhynchospora wallichiana* Kunth (1837).

English name: Rhynchospora.

Annual or short-lived perennial herb, culms tufted, few to several to a clump. Leaves basal, blades narrowly linear. Inflorescence a single sub-globose to globose head. Spikelets many, ovate-lanceolate, somewhat flattened. Nutlets ovate to broadly obovate, somewhat mid-brown. *Flowering and fruiting*: July - December. *Open wet or semi-dry grasslands*.

Distribution: India to Vietnam, South China, central Japan, Malesia to Australia and Pacific Islands.

Status of occurrence: Common.

Specimens examined: Kaliganj, Memberbari, 26.03.2008, R. Tabassum, 270 (DUSH); Kapasia, Boznakandi, 16.05.2010, R. Tabassum, 1109 (DUSH); Kaliakior, Srinail, 13.09.2013, R. Tabassum, 3079 (DUSH).

Genus 54. **Schoenoplectus** (Rchb.) Palla, Sitzb. Zool.-Bot. Ges. Wien 38: 49 (1888).

Key to species:

- | | |
|---|------------------|
| 1. Perianth bristles plumosely fringed | litoralis |
| - Perianth bristles retrorsely scabrous | 2 |

2. Culms 56-120 cm tall, transversely septate; Spikelets ovoid; Nutlet yellowish-grey **articulatus**
- Culms 15-40 cm tall, transversely not septate; Spikelets oblong-ovoid; Nutlet dark brown **juncoides**

114. **Schoenoplectus articulatus** (L.) Palla, Bot. Jb. 10: 299 (1889). *Scirpus articulatus* L. (1753); Hook. f., Fl. Brit. Ind. 6: 656 (1893); Prain, Beng. Pl. 2: 874 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 112 (1956). *Scirpus incurvatus* Roxb. (1820), *Isolepis articulatus* (L.) Nees (1834).

Vernacular name: *Putputi-chechra*.

Short-lived perennial herb. Leaves bladeless, upper two sheaths cylindrical, lower sheaths scale-like. Inflorescence pseudo-lateral, capitate. Spikelets densely many-flowered, cylindric or oblong. Nutlets broadly obovoid, dark brown. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 30, 32$ (Kumar and Subramaniam, 1986). *Open marshy places, rice fields and shallow water along the margins of ponds*.

Distribution: From the Mediterranean region and Africa through India and Sri Lanka, Thailand to Southeast China. Also Malesia and northern Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Sitpura, 01.12.2000, R. Tabassum, 26 (DUSH); Sripur, Borkul, 16.05.2010, R. Tabassum, 1183 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3166 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3707 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3816 (DUSH).

115. **Schoenoplectus juncoides** (Roxb.) Palla, Bot. Jb. 10: 299 (1889). *Scirpus juncoides* Roxb. (1820); Prain, Beng. Pl. 2: 873 (1903, reprint 1963), *Scirpus erectus* auct. C.B. Clarke (1893); Hook. f., Fl. Brit. Ind. 6: 656 (1893);

English names: Bulrush, Hard-stem bulrush.

Perennial herb. Leaves bladeless, sheaths 3-4. Inflorescence pseudo-lateral, capitate. Spikelets oblong to ovoid-oblong. Nutlets broadly obovate, shiny dark brown. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 74$ (Kumar and Subramaniam, 1986). *Open freshwater places such as rice fields, riverbanks and margins of lakes, pools and swamps*.

Distribution: Madagascar, India, Southeast Asia, Malesia, Australia, China, Japan, Micronesia, Fiji and Hawaii.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 435 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1501 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2174 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3348 (DUSH).

116. **Schoenoplectus littoralis** (Schrad.) Palla, Sitzb. Zool-Bot. Gen. Wien 38: 49 (1888) subsp. **subulatus** (Vahl) T. Koyama in Dassan. & Fosberg, Rev. Handb. Fl. Ceylon 5: 157 (1985). *Scirpus littoralis* Schrad. (1806); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 659 (1893); Prain, Beng. Pl. 2: 874 (1903, reprint 1963); *Scirpus subulatus* Vahl (1806).

English name: Coast club-rush.

Stoloniferous perennial herb, stolons terminated by a tuber. Leaves bladeless, sheaths cylindric. Inflorescence pseudo-lateral, simple, umbel-like corymb. Spikelets oblong-ovate or elliptic-ovate. Nutlets broadly obovate, chestnut-brown. *Flowering and fruiting:* August - December. *Chromosome number:* $2n = 10, 80$ (Kumar and Subramaniam, 1986). *Brackish water, often forming a large community.*

Distribution: Sri Lanka, India, Thailand, Malesia, Australia, Ryukyu Island (Japan) and Micronesia.

Status of occurrence: Common.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 351 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 980 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1917 (DUSH).

Genus 55. **Scirpus** L., Sp. Pl.: 47 (1753).

117. **Scirpus lacustris** L., Sp. Pl. 1: (1753) subsp. **validus** (Vahl) T. Koyama, Can. Journ. Bot. 40: 927 (1962). *Scirpus validus* Vahl (1806); *Scirpus triqueter* var. *segregata* C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 658 (1893); Prain, Beng. Pl. 2: 874 (1903, reprint 1963).

English name: Triangular rush.

Rhizomatous perennial herb. Leaves reduced to the sheathing bases. Inflorescence pseudo-lateral, compound or subdecompound. Spikelets solitary or partly in clusters of 2-3, ovoid to oblong-ovoid. Nutlets plano-convex, obovate, greyish-black. *Flowering and fruiting:* December - March. *Chromosome number:* $2n = 42$ (Fedorov, 1969). *Open marshes and freshwater swamps.*

Distribution: Cosmopolitan, widely distributed in the countries bordering the Pacific Ocean.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1347 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1905 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2994 (DUSH); Kapasia, Kandunia Village, 03.11.2013, R. Tabassum, 3579 (DUSH).

Genus 56. **Scleria** Berg., Kongl. Vet. Akad. Handl. Stockh. 26: 142, t. 4 & 5 (1765).

Key to species:

1. Bisexual spikelets dominant on inflorescences; disk subtending
nutlet either stipelike or indistinct **annularis**
- Bisexual spikelets few or absent on inflorescences; disk subtending
nutlet lobed or cup-shaped **2**
2. Nutlet smooth **psilorrhiza**
- Nutlet reticulate and stellate-hairy **3**
3. Disk slightly 3-lobed or barely lobed; lobes flatly semicircular,
apex rounded **terrestris**
- Disk deeply 3-lobed; lobes lanceolate-triangular or ovate-
triangular, apex acute to subtruncate **levis**

118. **Scleria annularis** Nees *ex* Steud., Syn. 2: 176 (1855); C. B. Clarke in Hook. f., Fl. Brit. Ind. 6: 687 (1893). *Hypoporum annulare* Nees (1835).

Annual herb. Leaves cauline, blades linear. Inflorescence narrow, elongated, consisting of a terminal panicle and 2-3 remote lateral ones. Spikelets sessile. Nutlets ovoid, white. *Flowering and fruiting:* October - March. *Grows in moist grasslands.*

Distribution: Scattered throughout India, central China and Malesia.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3898 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3922 (DUSH).

119. **Scleria levis** Retz., Obs. Bot. 4: 13 (1786). *Scleria herbacea* Nees (1834); *Scleria japonica* Steud. (1855).

Vernacular name: *Nagormuthora* (Garó).

Rhizomatous perennial herb. Leaves cauline, evenly distributed on the culm, blades linear. Inflorescence panicate, open to compact, sometimes appearing head-like. Spikelets unisexual, in group of 2-4. Nutlets globose, shiny white. *Flowering and fruiting*: throughout the year. *Grows in floors of open forests and margins of rice fields*.

Distribution: Sri Lanka, India, through Indo-China to central Japan, Malesia and New Caledonia.

Status of occurrence: Common.

Uses: Whole plant is used in diabetes by *Garó*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 6 (DUSH); Kaligonj, Meghdubi, 05.03.2010, R. Tabassum, 663 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2169 (DUSH); (DUSH); Kaliakoir, Vogora, 03.09.2013, R. Tabassum, 3926 (DUSH).

120. ***Scleria psilorrhiza*** C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 691 (1894). *Scleria alata* (non Boeck.) Camus (1912).

Stoloniferous perennial herb. Leaves cauline, blades linear. Inflorescence dense, narrow, consisting of a terminal panicle. Spikelets in clusters of 2-3. Nutlets ovoid or ovoid-globular, shiny white. *Flowering and fruiting*: July - October. *Sides of ditches under temporary water bodies*.

Distribution: India, Thailand, Indo-China, Malesia and northern Australia.

Status of occurrence: Seems to be rare.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2480 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2795 (DUSH).

121. ***Scleria terrestris*** (L.) Fasset, Rhodora 26: 159 (1924). *Zizania terrestris* L. (1753), *Scleria elata* Thw. (1864); C.B. Clarke in Hook. f., Fl. Brit. Ind. 6: 690 (1894); Prain, Beng. Pl. 2: 853 (1903, reprint 1963), *Scleria melanostoma* Nees ex Boeck. (1874), *Scleria ploemii* Boeck. (1884).

English names: High stalk razor-sedge, Tall nut-rush.

Rhizomatous perennial herb, culms slender to very robust. Leaves cauline, often closely spaced, blade linear. Inflorescence consisting of 2-4 compound panicles. Spikelets solitary or in a group of 2-3. Nutlets ovoid-globose to globose, shiny white to dark purplish. *Flowering and fruiting*: March - August. *Forest floors, thickets and wet grasslands*.

Distribution: From India and Sri Lanka northeast to China and Japan, east to Malesia and Australia.

Status of occurrence: Seems to be rare.

Specimens examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3899 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3948 (DUSH).

Family 15. **POACEAE** Barnhart (1895)

Herbs with fibrous roots, rarely shrubs or trees, sometimes with rhizomes or stolons, culms erect, procumbent or decumbent, usually branched near the base, cylindrical, rarely flattened, conspicuously jointed at the nodes, branches subtended by a leaf, and with a 2-keeled hyaline leaflets at the base. Leaves alternate, solitary, distichous, consisting of sheaths, ligule and blade, leaf blades usually linear, sheaths encircling the culm. Inflorescence composed of spikelets arranged in a panicle, or in spikes or racemes, either solitary, digitate or disposed along the central axis, usually terminal. Flowers tiny, inconspicuous, usually bisexual, grouped in spikelets. The lower bracts, usually two, known as glume, followed by 1 to many bracts or lemma, each of which with a floret in its axil subtended by palea. Each spikelet with 1 to many florets. Perianth inconspicuous, represented by 2 or rarely 3 lodicules. Stamens hypogynous, usually 3, sometimes 1, 2, 6 or even more, filaments very slender, anthers 2-celled. Pistil 1 (very rarely 3), ovary superior, 1-celled, ovule anatropous, styles 1-3, stigmas plumose. Fruits usually a caryopsis, pericarp thin, or an utricle, or a berry, or a nut, endosperm starchy.

The family Poaceae includes about 500 genera and 8000 species of cosmopolitan distribution, but most abundant in tropical and north-temperate semi-arid regions with seasonal rainfall, where they form extensive grasslands. In Bangladesh, this family is represented by 113 genera and 285 species.

In the present study area this family is represented by 39 genera and 64 species.

Key to genera:

- | | | |
|----|--|------------------|
| 1. | Bamboo with woody culm, 5- or more metres long | 2 |
| - | Herb (cane-like, reed-like, or suffrutescent in a few genera), less than 5 metres tall | 3 |
| 2. | Fruit oblong or linear-oblong, not beaked, small, pericarp thin | Bambusa |
| - | Fruit pyriform, long beaked, very large, pericarp thick | Melocanna |
| 3. | Spikelet 2-flowered, falling entire at maturity, usually with the upper floret hermaphrodite and the lower male or barren and if | 4 |

- the latter, often reduced to the lemma or rarely the lemma entirely absent, all alike or more often differing in size, shape and structure, frequently dorsally compressed
- Spikelet 1 to many flowered, breaking up at maturity above the more or less persistent glume, or if falling entire, then not 2-flowered with the lower male or barren and the upper floret hermaphrodite, usually more or less laterally compressed or terete or if 2-flowered and falling entire, the glume and lemma all membranous and with a globose wrinkled seed which splits the palea when mature **30**
 - 4. Male and female spikelets in separate inflorescence **5**
 - Spikelets all hermaphrodite **6**
 - 5. Female spikelets completely enclosed in a false involucre **Coix**
 - Female spikelets not enclosed in a false involucre **Zea**
 - 6. Spikelet often paired, with one sessile and the other pedicelled, those of each pair similar or more often dissimilar, rarely solitary and all alike; glume as long as the spikelet and enclosing the floret, more or less rigid and firmer than the lemma which are both hyaline **7**
 - Spikelet solitary or paired, more or less similar; glume usually membranous, the lower usually smaller or sometimes suppressed; lower lemma mostly resembling the upper glume in texture; upper lemma papery to very tough and rigid, usually awnless **15**
 - 7. Spikelets solitary; pedicelled or almost sessile **Dimeria**
 - Spikelets in pairs, rarely in threes; one pedicelled and one sessile or one with longer pedicelled than other **8**
 - 8. Spikelet of each pair similar, the sessile and the pedicelled hermaphrodite **9**
 - Spikelet of each pair dissimilar, the sessile hermaphrodite, the pedicelled male or sterile, or completely absent **10**
 - 9. Rachis of raceme tough or tardily breaking up; spikelet deciduous from their pedicels **Imperata**
 - Rachis of the raceme breaking up **Saccharum**

- | | | | |
|-----|---|---------------------|-----------|
| 10. | Joints of the rachis and pedicel of the pedicelled spikelet swollen, 3-angled, rounded or flattened | Hemarthria | |
| - | Joints of the rachis and the pedicel narrow, seldom thickened upward | | 11 |
| 11. | Spikelet in racemes which are not interrupted by spathe or solitary at the ends of the branches; the raceme collected into whorled panicles; joints and pedicels not furrowed | | 12 |
| - | Panicle of racemes which are interrupted by spathes, or the espatheate racemes digitate or in pairs or solitary and terminal, sometimes the joints and/or pedicels with a translucent median furrow | | 14 |
| 12. | Spikelets dorsally compressed | Sorghum | |
| - | Spikelets compressed from the sides | | 13 |
| 13. | Spikelet in groups, each consisting of a sessile and two more or less reduced pedicelled spikelet; lower glume smooth | Chrysopogon | |
| - | Spikelet with many pairs of spikelet arranged in whorled racemes; lower glume tuberculate | Vetiveria | |
| 14. | Upper lemma of the sessile spikelets not cleft | Bothriochloa | |
| - | Upper lemma of the sessile spikelet 2-lobed or 2-cleft | Cymbopogon | |
| 15. | Spikelet falling singly, not subtended by bristles, or if so, then the bristles persisting after the spikelets have fallen | | 16 |
| - | Spikelet with an involucre of bristles or subtended by a solitary bristle and falling with or without the bristles at maturity, solitary or in clusters | | 29 |
| 16. | Spikelet arranged in more or less open panicles, or with the panicles contracted and spike-like | | 17 |
| - | Spikelet arranged in one-sided spike-like racemes; spikes or racemes digitate or scattered, rarely solitary | | 22 |
| 17. | Spikelet not subtended by bristle-like branche | | 18 |
| - | Spikelet subtended or replaced by one to many bristle-like branche | Setaria | |
| 18. | Spikelet arranged in open or contracted panicle | | 19 |
| - | Spikelet arranged in cylindrical spike-like panicle | | 21 |

19.	Spikelet not gibbous	20
-	Spikelet distinctly gibbous	Cyrtococcum
20.	Fertile floret without lateral basal appendages or scars	Panicum
-	Fertile floret with lateral basal appendages or scars	Ichnanthus
21.	Upper lemma and palea indurated and closed at apex; spikelets more or less gibbous	Sacciolepis
-	Upper lemma and palea membranous and gaping at apex; spikelets lanceolate	Hymenachne
22.	Lemma of the upper floret more or less crustaceous or coriaceous, usually with narrow inrolled margins, exposing much of the palea	23
-	Lemma of the upper floret thinly cartilaginous, usually with hyaline margins	28
23.	Lower glume turned away from the rachis of the racemes or spikes, the back of the upper lemma facing it	24
-	Lower glume turned towards the rachis of the racemes or spikes, the back of the upper lemma turned away from it	27
24.	Lower glume developed, although sometimes small	25
-	Lower glume usually absent	Paspalum
25.	Glumes acuminate or awned; upper lemma not mucronate	26
-	Glumes not awned if awned; upper lemma mucronate	Paspallidium
26.	Leaf-blades linear; racemes dense; culms erect or suberect	Echinochloa
-	Leaf-blades lanceolate to ovate; racemes loose; culms creeping and ascending	Oplismenus
27.	Lower glume present	Brachiaria
-	Lower glume absent	Axonopus
28.	Spikelets awnless	Digitaria
-	Spikelets awned	Alloteropsis
29.	Upper lemma smooth; bristles caducous	Pennisetum
+	Upper lemma rugose; bristles persistent	Setaria
30.	Spikelets borne in open or contracted or spike-like panicle less	31

often in racemes or spikes	
- Spikelets sessile or shortly pedicelled along one side of the rhachis of solitary, digitate, or scattered spikes, spike-like racemes or on opposite sides of the rhachis of solitary spikes or racemes	Triticum
31. Spikelets usually with two or more fertile florets, or if with one fertile floret then with sterile reduced floret above it	32
- Spikelets usually with one fertile florets, with or without one or two male or barren florets below it, the latter often much reduced	36
32. Lemma and rhachilla glabrous or hairy, but with the hairs not enveloping the lemma, or if so, the lemma with a geniculate awn; low or moderately tall grasses	33
- Lemma or rhachilla joints bearing long silky hairs which envelop the lemma; lemmas awnless or with a straight awn from the tip, often thin; tall grasses with usually large plume-like panicles	Arundo
33. Inflorescence of panicles; if racemes or spikes the spikelets not secund	34
- Inflorescence of racemes or panicles of racemes; the spikelets secund	Cynodon
34. Lemma usually entire at the apex; nerves glabrous; cleistogamous spikelets not developed in the axis of the leaf-sheaths	35
- Lemma usually emarginated or 2-4 lobed or toothed at the apex; nerves hairy; cleistogamous spikelets developed in the axis of the leaf-sheaths	Leptochloa
35. Spikelets in open, contracted, or spike-like panicles	Eragrostis
- Spikelets in digitate or subdigitate spikes	Eleusine
36. Glume minute; fertile lemma and palea similar in shape and size	37
- Glume well developed; fertile lemma and palea not similar in shape and size	38
37. Leaf blade ovate-oblong or ovate-lanceolate; a floating grass;	Hygroryza

- Spikelet without scales below the floret
- Leaf blade linear; aquatic erect grass; Spikelet with 2 narrow scales below the floret **Oryza**
 - 38. Spikelet with 2 florets; the lower, male and barren, the upper hermaphrodite **Arundinella**
 - Spikelet with one fertile floret **Sporobolus**

Genus 57. **Alloteropsis** Presl, Rel. Hanek. : 343, t. 47 (1830).

122. **Alloteropsis cimicina** (L.) Stapf in Prain, Fl. Trop. Afr. 9: 487 (1919). *Panicum cimicinum* (L.) Retz. (1783); *Axonopus cimicinus* (L.) P. Beauv. (1812); Hook. f., Fl. Brit. India 7: 64 (1897); Prain, Beng. Pl. 2: 883 (1903, reprint 1963); *Urochloa cimicina* (L.) Kunth (1829).

Annual or perennial grass, culms tufted, erect or ascending. Leaf blades narrowly lanceolate, amplexicaul. Inflorescence composed of 4-11 pseudo-spicate slender racemes, rachis flexuous bearing paired spikelets towards the apex. Spikelets narrowly elliptic-ovate. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Slightly moist or slightly shaded places*.

Distribution: Throughout the Old World tropics and Australia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Board Bazar, 30.01.2001, R. Tabassum, 41 (DUSH); Kapasia, Chonabari, 03.07.2010, R. Tabassum, 1520 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2063 (DUSH).

Genus 58. **Arundinella** Raddi, Agrost. Bras.: 37, t. 1 (1823).

123. **Arundinella bengalensis** (Spreng.) Druce, Rep. Bot. Exchng. Club. Brit. Isles: 605 (1916); *Panicum strictum* Roxb. (1820); *Panicum bengalensis* Spreng. (1825); *Arundinella wallichii* Nees ex Steud. (1854); Hook. f., Fl. Brit. India 7: 75 (1897); Prain, Beng. Pl. 2: 916 (1903, reprint 1963).

Vernacular name: *Ganga bena*.

Perennial grass, culms tall, stout, erect. Leaf blades lanceolate. Inflorescence an elongated panicle. Spikelets 3-4 seriate, 2-flowered, ovoid, setose. Fruits caryopsis. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 32, 36$ (Kumar and Subramaniam, 1986). *Sides of railway lines*.

Distribution: Tropical Himalayas to Myanmar.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 70 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 617 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1363 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1618 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3714 (DUSH).

Genus 59. **Arundo** L., Sp. Pl. ed. 1 : 81 (1753).

124. **Arundo donax** L., Sp. Pl. ed. 1: 81 (1753); Hook. f., Fl. Brit. India 7: 302 (1897); Prain, Beng. Pl. 2: 918 (1903, reprint 1963). *Arundo sativa* Lamk. (1778); *Arundo bifaria* Retz. (1786); *Arundo bengalemsis* Retz. (1799); *Arundo longifolia* Salisb. ex Hook. f. (1896).

Vernacular names: *Arjun bachchuri*, *Baranal*, *Nal*.

English name: Giant reed.

Rhizomatous perennial grass, culms mostly 2-6 m tall. Leaves rather uniformly spaced and distichous on the culm, blades linear-lanceolate, flat. Panicles large, dense, profusely branched. Spikelets mostly 2-4 flowered, elliptic-lanceolate or lanceolate. *Flowering and fruiting:* June - December. *Chromosome number:* 2n = 60, 100, 110 (Federov, 1969). *Canyons, gulleys and other moist areas of the highlands, but grows well in dryer places once established.*

Distribution: North Africa, tropical Asia and the Mediterranean region, introduced in many parts of the New World.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3900 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3923 (DUSH).

Genus 60. **Axonopus** P. Beauv., Ess. Agrost. 12 : 154 (1812).

125. **Axonopus compressus** (Sw.) P. Beauv., Ess. Agrost. 12 : 154 (1812). Hook. f., Fl. Brit. India 7: 302 (1897); Prain, Beng. Pl. 2: 918 (1903, reprint 1963). *Milium compressus* Sw. (1788); *Paspalum platycaulon* Poir. (1804); *Agrostis compressa* (Sw.) Poir. (1810); *Paspalum compressus* (Sw.) Rasp. (1825).

Vernacular name: *Ghora-dubo*
Har.

English names: Broad-leaf carpet grass, Carpet grass, Savannah grass.

Rhizomatous perennial grass, culms creeping or stoloniferous, erect when flowering, sometimes rosette-like and forming mats, rooting at the nodes. Leaf blades linear-oblong, oblanceolate, linear-lanceolate or lanceolate, laterally folded. Inflorescence composed of 2-6 racemes, binate, digitate or alternate on a stalk. Spikelets elliptic-

oblong or elliptic-lanceolate. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 40, 60$ (Federov, 1969). *A wide range of habitats and soils growing as a ruderal and weed*.

Distribution: A native of tropical America, introduced widely and now naturalized in many warm countries.

Status of occurrence: Very common.

Use: Widely used as lawn grass.

Specimens examined: Kaliganj, Nimtoli, 29.04.2005, R. Tabassum, 221 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 943 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1171 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2655 (DUSH); Kapasia, Voboner Chala, 3.11.2013, R. Tabassum, 3611 (DUSH).

Genus 61. **Bambusa** Schreber, Gen. Plant. (ed. 8) 1: 236 (1789).

Key to species:

- | | | |
|----|--|--------------------------|
| 1. | Culms shrubby, up to 6 m tall; both surfaces of culm sheath blade glabrous | Bambusa jaintiana |
| - | Culms arborescent, more than 6 m tall; at least adaxial surface of culm sheath blade pubescent or bristled | 2 |
| 2. | Culms with stiff spines to the branches, spines always in threes | Bambusa bambos |
| - | Culms without spines to the branches | 3 |
| 3. | Culms scabrid, bristled, pubescent or tomentose | Bambusa balcooa |
| - | Culms glabrous or with white floury powdery blooms when young | 4 |
| 4 | Culms uniform; nodes almost as broad as the internodes; bristles of leafsheaths auricles erect | Bambusa nutans |
| - | Culms not uniform; nodes wider than the internodes; bristles of leafsheaths auricles spreading | Bambusa tulda |

126. **Bambusa balcooa** Roxb., Fl. Ind. 2: 196 (1832); Hook. f., Fl. Brit. India 7: 391 (1897); Prain, Beng. Pl. 2: 930 (1903, reprint 1963). *Dendrocalamus balcooa* (Roxb.) Voigt (1845).

Vernacular names: *Bhalku bans*, *Borak bans*, *Barra bans*, *Boura bans*, *Nal borak*.

English name: Bhalku bamboo.

Moderately to densely tufted, sympodial bamboo. Young shoots blackish-green, covered with blackish hairs, tip acute. Culms dull greyish-green, silvery-brown pubescent when young, internodes slightly sulcated. Nodes slightly greater in diameter than the internodes. Leaves in complements of 8-10 blades, leaf sheaths covered with brown hairs, blades oblong-lanceolate. Flowering branches usually leafless, rarely leafy. Fruits not known. *Flowering*: March-September. *Flowering habit*: irregular. *Flowering cycle*: 40 ± 5 years. *Different types of soil, but grows better in heavy textured soils with good drainage*.

Distribution: India (Uttar Pradesh, Bihar, West Bengal, Assam and Arunachal Pradesh) and Nepal.

Status of occurrence: Cultivated.

Uses: The culms are very strong and durable, and are used for various purposes.

Specimens examined: Kaligonj, Kolafata, 05.03.2002, R. Tabassum, 164 (DUSH); Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 451 (DUSH); Kaliakoir, Vogora, (Bipass), 09.05.2010, R. Tabassum, 918 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1287 (DUSH).

127. **Bambusa bambos** (L.) Voss, Vilmorin's Blumea. ed. 3, 1: 1189 (1896). *Arundo bambos* L. (1753); *Bambos arundinacea* Retz. (1789); *Bambusa arundinacea* (Retz.) Willd. (1797); Hook. f., Fl. Brit. India 7: 395 (1897); Prain, Beng. Pl. 2: 930 (1903, reprint 1963); *Bambusa orientalis* Nees ex Munro (1868).

Vernacular names: *Ban bans*, *Kanta bans*, *Ketua bans*.

English names: Spiny bamboo, Thorny bamboo.

Densely tufted, sympodial bamboo. Young shoots deep purple with very few white stripes, blades erect, tip blunt. Culms dull to deep green, internodes sulcated. Nodes comparatively greater in diameter than the internodes. Leaves in complements of 8-10 blades, leaf sheaths slightly keeled, blades lanceolate to linear. Flowering branches many from a single node. Caryopsis oblong, ending in a short beak by the end of the style. *Flowering and fruiting*: April - March. *Flowering habit*: gregarious. *Flowering cycle*: 45 years. *Chromosome number*: $2n = 70, 72$ (Varmah and Bahadur, 1980). *Alluvial soils of the plains*.

Distribution: Apparently native to South East Asia and now widely introduced and cultivated throughout the tropics.

Status of occurrence: Cultivated.

Uses: The culms are used for construction of houses.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 588 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 616 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1317 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1621 (DUSH); Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2656 (DUSH).

128. **Bambusa jaintiana** R.B. Majumdar in Karthikeyan *et al.*, Pl. Ind. Enumeratio: Monocotyledonae: 274-275 (1989). *Bambusa alamii* Stapleton (1994).

Vernacular names: *Chikoin bans*, English name: Tentua bamboo. *Chotomitinga bans*, *Konkoi bans*, *Tentua bans*.

Densely tufted, synpodial bamboo, crowns of matured culms spreading. Young shoots yellowish-green, white blooms on back of the sheaths. Culms dull green, internodes slightly sulcated just above the node. Nodes slightly greater in diameter than the internodes. Branches from base mid culms. Culm sheath green when young, deciduous, conical including the blade. Leaves in complements of 5-11 blades, leaf sheaths keeled on the back, leaf blades lanceolate. Flowering branches sometimes leafy. Caryopsis nearly obovate, attenuated towards the top. *Flowering and fruiting:* March - February. *Flowering habit:* gregarious, irregular. *Flowering cycle:* 35 ± 5 years. *Homesteads, especially in loamy soils.*

Distribution: India and Nepal.

Status of occurrence: Seems to be rare.

Uses: The culms are commonly used for making fishing rods.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1335 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2719 (DUSH).

129. **Bambusa nutans** Wall. ex Munro, Trans. Linn. Soc. 26: 92 (1868); Hook. f., Fl. Brit. India 7: 395 (1897); *Bambusa falconeri* Munro (1868); *Bambusa pallida* Munro (1868); *Bambusa teres* Ham. ex Munro (1868).

Vernacular names: *Bakhal bans*, *Mahal bans*, English name: Makhal bamboo. *Moral bans*.

Loosely tufted, sympodial bamboo. Young shoot dull to yellowish-green, sheaths sparsely pubescent with shiny black hairs and white powdery mass above. Culms dull green, internodes uniform, not sulcated. Nodes almost parallel with the internodes. Culm sheaths deciduous at the time of branch emergence. Leaves in complements of 6-13 blades, leaf sheath slightly keeled on the back, blades lanceolate to oblong-lanceolate. Flowering branches many of different sizes from each node of the main

culm. Caryopsis oblong, hairy at the top. *Flowering and fruiting*: April - September. *Flowering habit*: irregular and gregarious. *Flowering cycle*: 35 years. *Grows in loamy soils in villages*.

Distribution: The lower Himalayas and Assam.

Status of occurrence: Common.

Uses: It is suitable for basketry works and mat makings.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 494 (DUSH); Gazipur Sadar, Senanibash, 04.02.2011, R. Tabassum, 1705 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2062 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2291 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3187 (DUSH).

130. **Bambusa tulda** Roxb., Fl. Ind. 2: 193 (1832); Hook. f., Fl. Brit. India 7: 387 (1897); Prain, Beng. Pl. 2: 930 (1903); R. L. Heinig, List Chittagong: 79 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 114 (1956).

Vernacular names: *Mirtinga bans*, *Talla bans*. English name: Tulda bamboo.

Loosely tufted bamboo. Young shoots dull green, sheath sparsely pubescent with shiny black hairs and white powdery mass above. Culms dull green with white streaks in the lower internodes, glabrous, powdery mass at least in young stage, internodes not sulcated. Nodes greater in diameter than the internodes. Branch generally from lower mid to upper nodes, mostly horizontal. Culm sheath deciduous. Leaves in complements of 8-12 blades, leaf sheaths thickl. Flowering branches many, initially leafy, ultimately leafless. *Flowering and fruiting*: September-May. *Chromosome number*: $2n = 70, 72$ (Ghorai and Sharma, 1980). *Grows in village near homesteads*.

Distribution: India, Myanmar and Thailand.

Status of occurrence: Common.

Uses: The culms are commonly used for making basketry works.

Specimens examined: Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2953 (DUSH); Gazipur Sadar, Etahata, Borboila, 19.12.2013, R. Tabassum, 3410 (DUSH); Kapasia, Voboner chala, 03.11.2013, R. Tabassum, 3621 (DUSH).

Genus 62. **Bothriochloa** O. Kuntze, Rev. Gen. Pl. 2: 762 (1891).

Key to species:

- | | |
|--|----------------|
| 1. Lower glume of the sessile spikelet with one, rarely two pits | pertusa |
| - Lower glume of the sessile spikelet without pits | bladhi |

131. **Bothriochloa bladhii** (Retz.) S.T. Blake, Proc. Roy. Soc. Queensland 80: 62 (1969). *Andropogon bladhii* Retz. (1781); *Andropogon intermedius* R. Br. (1810); Hook. f., Fl. Brit. India 7: 175 (1897); Prain, Beng. Pl. 2: 907 (1903, reprint 1963); *Andropogon punctatus* Roxb. (1820); *Bothriochloa intermedia* (R. Br.) A. Camus (1931).

Vernacular name: *Gandha* English names: Australian blue-stem, Forest blue *gourana*. grass.

Perennial grass, culm tufted, often robust. Leaf blades linear, acuminate. Inflorescence with a central axis, racemes numerous and borne loosely or densely in irregular whorls upon simple or branched peduncles. Sessile spikelets narrowly elliptic, pedicellate spikelets oblong. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 40, 60, 80$ (Fedorov, 1969). *Bank of rivers and streams, and open forests*.

Distribution: Old World tropics.

Status of occurrence: Common.

Uses: It is a good fodder frass.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 481 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1623 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1847 (DUSH); Kaliakoir, Fulbari, 01.09.2013, R. Tabassum, 3352 (DUSH).

132. **Bothriochloa pertusa** (L.) A. Camus in Ann. Soc. Linn. Lyon, n.s. 76: 164 (1931). *Holcus pertusus* L. (1771); *Andropogon pertusus* (L.) Willd. (1806); Hook. f., Fl. Brit. India 7: 173 (1897); Prain, Beng. Pl. 2: 907 (1903, reprint 1963); *Dichanthium pertusum* (L.) Clayton (1977).

Vernacular name: *Barboda* English names: Barbados-sour grass, Hurricane *ghas*. grass, Indain-blue grass.

Stoloniferous perennial grass, culms tufted, erect or geniculately ascending. Leaf blades lanceolate or linear-acuminate. Inflorescence sub-digitate, bearing 3-8 (-13) shortly pedunculate spike-like racemes. Sessile spikelets narrowly elliptic, pedicellate spikelets oblong or elliptic. Caryopsis oblong. *Flowering and fruiting*: August - February. *Chromosome number*: $2n = 40, 60$ (Fedorov, 1969). *Usually along the bunds of fields, and wetlands and open grasslands*.

Distribution: Arabia eastwards to South East Asia, Australia and tropical Africa.

Status of occurrence: Common.

Uses: It is a good fodder frass.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 482 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 999 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1293 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2268 (DUSH).

Genus 63. **Brachiaria** (Trin.) Griseb., Fl. Ross. 4: 469 (1853).

Key to species:

- | | |
|---------------------------------------|------------------|
| 1. Spikelets 1.2-2.5 mm long | reptans |
| - Spikelets 2.6-4.5 mm long or longer | distachya |

133. **Brachiaria distachya** (L.) Stapf in Prain, Fl. Trop. Afr. 9: 565 (1919). *Panicum distachyon* L. (1771), *Brachiaria miliiformis* (Presl) Chase (1920), *Brachiaria subquadripara* (Trin.) Hitchc. (1931).

Vernacular name: *Cori ghas*.

English names: Cori grass, Green summer grass, Two-finger grass, Two-spiked panic.

Annual or perennial grass, culms creeping or decumbent, rooting at the nodes. Leaves lanceolate or elliptic-lanceolate. Inflorescence composed of 2-3 racemes. Spikelets elliptic. Lower florets empty, upper florets bisexual. Lower lemmas similar to upper glumes, upper lemmas ovate. Paleas ovate-oblong or elliptic. Caryopsis oval. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 72$ (Fedorov, 1969). *Bank of backwaters, and in wastelands.*

Distribution: Sri Lanka, India, Myanmar, Malesia and Australia.

Status of occurrence: Common.

Uses: It is a good cattle fodder.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 248 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 519 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 949 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1181 (DUSH); Gazipur Sadar, Etahata Borboika, 19.12.2013, R. Tabassum, 3410 (DUSH).

134. **Brachiaria reptans** (L.) Gard. & Hubb. in Hook., Ic. Pl.: 34, sub t. 3363 (1938). *Panicum reptans* L. (1759), *Panicum prostratum* Lamk. (1791); Hook. f., Fl. Brit. Ind. 7: 33 (1897); Prain, Beng. Pl. 2: 886 (1903, reprint 1963); L. Heinig, List Chittagong:

77 (1925), *Brachiaria prostrata* (Lamk.) Griseb. (1857), *Urochloa reptans* (L.) Stapf (1920).

Annual grass, culms decumbent, rooting at the nodes. Leaf blades narrowly lanceolate to lanceolate. Inflorescence consists of 5-15 racemes, arranged alternately. Spikelets narrowly ovate to broadly elliptic. Lower florets empty or staminate, upper florets bisexual. Lower lemmas broadly ovate, upper lemmas ovate. Paleas ovate or ovate-elliptic. Caryopsis flattened-oval. *Flowering and fruiting*: August - September. *Chromosome number*: $2n = 14, 18$ (Fedorov, 1969). *Edges of water-logged areas, wetlands and shades of bushes.*

Distribution: Tropics of Old and New World, Polynesia and Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 502 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2066 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2652 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3005 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3806 (DUSH).

Genus 64. **Centotheca** Desv. in Nouv., Bull. Soc. Philom. Paris 2 : 189 (1810).

135. **Centotheca lappacea** (L.) Desv. in Nouv., Bull. Soc. Philom. Paris 2 : 189 (1810); Hook. f., Fl. Brit. Ind. 7: 332 (1897); Prain, Beng. Pl. 2: 917 (1903, reprint 1963). *Holcus latifolius* Osbeck (1757); *Cenchrus lappaveus* L. (1763); *Centotheca latifolia* Trin. (1820); *Melica lappacea* (L.) Rasp. (1825).

Erect, tufted perennial grass. Leaf blades ovate-elliptic or elliptic-lanceolate. Inflorescence a pyramidal panicle, well exserted from the uppermost sheath. Spikelets oblong or elliptic-oblong, 2-3 flowered. Lower glumes ovate or ovate-lanceolate, upper glumes well separated on the rachilla, boat-shaped. Lemmas oblong or ovate-oblong. Paleas elliptic or oblong-elliptic. Caryopsis dark brown. *Flowering and fruiting*: October - March. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Wet zone, mostly in moist, shady forest floors.*

Distribution: Widely distributed in South East Asia, China, tropical Africa and Polynesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 2 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 860 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1016 (DUSH); Sripur, Gorgoria,

21.06.2010, R.Tabassum, 1320 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2287 (DUSH).

Genus 65. **Chrysopogon** Trin., Fund. Agrost.: 187 (1820).

136. **Chrysopogon aciculatus** (Retz.) Trin., Fund. Agrost. 188 (1820); J. Sinclair in Bull. Bot. Soc. 9 (2): 113 (1956). *Andropogon aciculatus* Retz., Obs. Bot. 5: 22 (1789); Hook. f., Fl. Brit. India 7: 188 (1897); Prain, Beng. Pl. 2: 907 (1903, reprint 1963); R. L. Heinig, List Chittagong: 78 (1925).

Vernacular names: *Badaiya*, *Chorkata*, *Lengra*, *Premkanta*. English names: Grass seed, Love grass.

Perennial, erect grass. Leaf blades ovate-lanceolate or linear-lanceolate. Inflorescence a pyramidal panicle, reddish. Sessile spikelets narrowly elliptic, pedicellate spikelets lanceolate or linear-lanceolate. Lower florets empty, upper florets bisexual. Lower lemmas obovate, upper lemmas ovate-lanceolate. Paleas oblong; caryopsis oblong, golden-yellow. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Roadsides and trodden or heavily grazed places*.

Distribution: India to China, Australia and Polynesia, introduced into many other tropical countries.

Uses: Straw is used for making hats and mats.

Status of occurrence: Common.

Specimens examined: Kapasia, Borun, 24.04.2008, R. Tabassum, 326 (DUSH); Kaliakoir, Nagpara, 09.05.2010, R. Tabassum, 1013 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1938 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2470 (DUSH).

Genus 66. **Coix** L., Sp. Pl.: ed. 1, 2: 972 (1753).

137. **Coix lacryma-jobi** L., Sp. Pl. ed.1: 972 (1753); Hook. f., Fl. Brit. India 7: 100 (1897); Prain, Beng. Pl. 2: 912 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 114 (1956); *Coix lacryma* L., Syst. Nat. ed. 10, 1261 (1759); *Coix arundinacea* Lamk. (1791); *Coix pendula* Salisb. (1796); *Coix exaltata* Jack (1820).

Vernacular names: *Kunch*, *Kalokunch*, *Tasbi*. English name: Job's tears.

Coarse annual grass. Leaf blades linear-lanceolate. Inflorescence all bisexual on flattened peduncles clustered in the upper leaf axils, each consists of an involucre, a female spike and a male spike. Lower glumes ovate-elliptic or elliptic-lanceolate, upper glumes elliptic-lanceolate, oblong-lanceolate or ovate. Lower lemmas elliptic-

lanceolate or oblong-lanceolate, upper lemmas elliptic or elliptic-lanceolate or ovate-oblong. Paleas elliptic-lanceolate, oblong-lanceolate or ovate-oblong. Fruit caryopsis. *Flowering and fruiting*: August - March. *Chromosome number*: $2n = 20, 40$ (Fedorov, 1969). *Marshy places, water courses, banks of streams, rivers, ponds, paddy fields and other wetlands*.

Distribution: Native in tropical Asia but now distributed throughout the tropics.

Status of occurrence: Common.

Uses: It is a good fodder plant.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 254 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 953 (DUSH); Sripur, Barkul, 21.06.2010, R. Tabassum, 1228 (DUSH); Gazipur Sadaar, Raklal, 19.08.2013, R. Tabassum, 2843 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3622 (DUSH).

Genus 67. **Cymbopogon** Spreng., Pl. Pugill. 2: 14 (1815).

138. **Cymbopogon citratus** (DC.) Stapf, Kew Bull.: 322, 357 (1906). *Andropogon citratus* DC. (1813).

Vernacular names: *Gandha trina*, *Dhan* English names: Lemon grass, *sabarang*, *Lemon ghas*. Citronella grass.

Perennial grass, culms tufted, erect. Leaf blades linear-lanceolate. Inflorescence a laxly, loose panicle. Sessile spikelets linear-lanceolate, pedicellate spikelets narrowly elliptic-oblong. Lower glumes ovate-lanceolate or lanceolate, upper glumes lanceolate. Lower florets empty, upper florets bisexual. Upper lemmas lanceolate. *Flowering and fruiting*: July - September. *Chromosome number*: $2n = 20, 40$ (Fedorov, 1969). *Margin of forests and grasslands*.

Distribution: India, Sri Lanka, Myanmar, Malaysia, cultivated throughout the tropics.

Status of occurrence: Apparently common.

Uses: Leaves are used for flavouring foods and drinks. The buds of the rhizome are sold as flavouring for curries.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 104 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2537 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2965 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3719 (DUSH).

Genus 68. **Cynodon** Rich., Syn. Pl. 1: 85 (1805).

139. **Cynodon dactylon** (L.) Pers., Syn. Pl. 1: 85 (1805); Hook. f., Fl. Brit. Ind. 7: 288 (1896); Prain, Beng. Pl. 2: 925 (1903, reprint 1963); R. L. Heinig, List Chittagong: 78 (1925). *Panicum dactylon* L., Sp. Pl. ed. 1, 1: 58 (1753); *Digitaria dactylon* (L.) Scop. (1772); *Cynodon glabratus* Steud. (1854).

Vernacular name: *Dubba*, *Durba*,
Durba ghas.

English names: Bahama grass, Bermuda
grass, Creeping-finger grass.

Stoloniferous, mat-forming, creeping perennial grass, culms slender. Leaf blades linear-lanceolate. Inflorescence of 3-6 flattened racemes, digitately arranged. Spikelets oblong-lanceolate or elliptic-lanceolate. Lemmas boat-shaped. Paleas completely enclosed by lemma. Caryopsis ellipsoid. *Flowering and fruiting*: July - December. *Chromosome number*: $2n=18, 36$ (Fedorov, 1969). *Light or sandy soils, open moist or dry waste places, roadsides, lawns, riversides, and crop fields*.

Distribution: Tropical and warm temperate regions of the World.

Status of occurrence: Very common.

Uses: It is used as a lawn-grass, fodder grass and soil binder.

Specimens examined: Sripur, Merua, 07.06.2002, R. Tabassum, 103 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 961 (DUSH); Kapasia, Saldio, 03.07.2010, R. Tabassum, 1471 (DUSH); Kaliganj, Taltia, 23.08.2010, R. Tabassum, 1629 (DUSH); Gazipur Sadar, Shalihchura, 19.08.2013, R. Tabassum, 2640 (DUSH).

Genus 69. **Cyrtococcum** Stapf in Prain, Fl. Trop. Afr. 9: 15 (1917).

Key to species:

- | | |
|--|-------------------|
| 1. Panicle very lax; pedicel fairly long | accrescens |
| - Panicle contracted; pedicel shorter | patens |

140. **Cyrtococcum accrescens** (Trin.) Stapf in Hook. Ic. Pl.: sub t. 3096 (1922). *Panicum accrescens* Trin. (1828); *Panicum patens* var. *latifolium* (Honda) Ohwi (1942).

Annual scrambling grass, culms slender, rooting from the lower nodes. Leaf blades lanceolate or linear-lanceolate. Inflorescence a large, wide panicle. Spikelets widely spaced on pedicels, numerous. Lower glumes purple. Lower florets neuter. Upper florets bisexual. Lower lemmas boat-shaped. Lower paleas a minute scale. Fruits

caryopsis. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Shady moist places, often gregarious in openings in the jungles.*

Distribution: Sri Lanka, India, Indonesia, the Philippines and New Guinea.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 152 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 493 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 784 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1269 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3792 (DUSH).

141. **Cyrtococcum patens** (L.) A. Camus, Bull. Mus. Hist. Nat. Paris 27: 118 (1921). *Panicum patens* L. (1753); *Panicum muricatum* Retz. (1786); *Cyrtococcum radicans* (Retz.) Stapf (1922).

Perennial, creeping grass, culms prostrate, rooting at the nodes. Leaf blades ovate-lanceolate or elliptic-lanceolate. Inflorescence a laxly panicle. Spikelets ovate or obovate, purplish-green. Lower glumes ovate, upper glumes obovate or ovate. Lower florets sterile, upper florets bisexual. Lower lemmas ovate, upper lemmas deltoid. Paleas rudimentary or absent in lower florets, in upper florets ovate-oblong. *Flowering and fruiting*: throughout the year. *Shady habitat, especially as undergrowth in scrub jungles and along forest margins.*

Distribution: India and tropical Asia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 428 (DUSH); Kapasia, Baoraid, 03.07.2010, R. Tabassum, 1534 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3009 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3790 (DUSH).

Genus 70. **Digitaria** Heister ex Fabricius, Enum. ed. 1: 207 (1759).

Key to species:

- | | |
|---|--------------------|
| 1. Nerves of lemma smooth | ciliaris |
| - Nerves of lemma with sparse to numerous minute siliceous spines or scabridities | sanguinalis |

142. ***Digitaria ciliaris*** (Retz.) Koeler, Desc. Gram.: 27 (1802). *Panicum ciliare* Retz. (1786); *Panicum adscendens* H. B. & K. (1816); *Digitaria marginata* Link (1821).

English names: Hairy crab-grass, Summer grass, Wild crab-grass.

Annual grass, culms tufted, weak, rooting at the nodes. Leaf blades linear, linear-lanceolate or rarely lanceolate. Inflorescence composed of 2-12 racemes, digitately arranged. Spikelets in unequally pedicellate pairs, or solitary and pedicellate by abortion of the subsessile spikelets. Lower glumes triangular, upper ones lanceolate. Lower florets empty, upper ones bisexual. Lower lemmas elliptic or elliptic-lanceolate, upper ones elliptic. Paleas elliptic-lanceolate. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36, 54, 60$ (Fedorov, 1969). *Grows in wastelands, along river banks, moist shady places, roadsides and as a weed of cultivated fields.*

Distribution: Tropics of the Old World.

Status of occurrence: Common.

Uses: It is an important fodder grass.

Specimens examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3901 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3924 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3949 (DUSH).

143. ***Digitaria sanguinalis*** (L.) Scop. Fl. Carn., ed. 2, 1: 52 (1772); Prain, Beng. Pl. 2: 889 (1903, reprint 1963); R. L. Heinig, List Chittagong: 76 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 113 (1956). *Panicum sanguinale* L., Sp. Pl. 1: 57 (1753). *Paspalum sanguinale* (L.) Lamk., Tab. Encycl. 1: 176 (1791); Hook. f., Fl. Brit. India 7: 13 (1897).

Vernacular name: *Makunjali*.

English names: Crab grass, Hairy finger-grass.

Annual grass, culms decumbent at the base, geniculately ascending. Leaf blades broadly linear to narrow lanceolate. Inflorescence composed of 2-16 racemes, digitate or subdigitate. Spikelets binate, elliptic to ovate elliptic. Caryopsis lanceolate, grey or light brown. *Flowering and fruiting*: August - October. *Chromosome number*: $2n = 18, 36, 54, 76$ (Fedorov, 1969). *Grows in cultivated lands, waste places, railway sidings, also in sandy fields and roadsides.*

Distribution: Frequent in the Mediterranean Region and Asia, introduced into North and South America, South Africa and Australia.

Status of occurrence: Common.

Uses: It is an important fodder grass.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 67 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 517 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 888 (DUSH); Sripur, Barkul, 21.06.2010, R. Tabassum, 1163 (DUSH); Kaliganj, Badarti, 02.01.2013, R. Tabassum, 2309 (DUSH).

Genus 71. **Dimeria** Heister ex Fabricius, Enum. ed. 1: 207 (1759).

144. **Dimeria ornithopoda** Trin., Fund. Agrost.: 167, t. 14 (1820); Hook. f., Fl. Brit. India 7: 104 (1897); Prain, Beng. Pl. 2: 894 (1903, reprint 1963). *Andropogon filiformis* Roxb. (1820); *Dimeria filiformis* (Roxb.) Hochst. (1851).

Annual grass, culms tufted, leafy, nodes hairy. Leaf blades lanceolate or linear. Inflorescence composed of 2-3 racemes, sub-digitately arranged on a well-exserted slender culm, rachis zigzag, narrowly winged. Spikelets lanceolate. *Flowering and fruiting:* August - March. *Chromosome number:* $2n = 32$ (Kumar and Subramaniam, 1986). *Dry grassy spots of the lowlands, roadsides, broken walls, usually on poor soils, sometimes in periodically wet places.*

Distribution: India, Myanmar and Malesia to Australia.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3950 (DUSH).

Genus 72. **Echinochloa** P. Beauv., Ess. Agrost.: 53, 161 (1812).

Key to species:

- | | |
|--|------------------|
| 1. Ligule represented by a fringe of hairs, at least in the lower leaves | stagnina |
| - Ligule absent | 2 |
| 2. Spikelets acuminate to awned, hispid; racemes untidily 2-several-rowed, the longest 2-10 cm | crusgalli |
| - Spikelets acute to cuspidate, pubescent; racemes seldom over 3 cm, simple | colona |

145. **Echinochloa colonum** (L.) Link, Hort. Berol. 2: 209 (1833); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Panicum colonum* L. (1759); Hook. f., Fl. Brit. Ind. 7: 32 (1897); Prain, Beng. Pl. 2: 886 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925), *Panicum brizoides* L. (1771), *Oplismenus colonum* (L.) H. B. K. (1816), *Echinochloa crusgalli* (L.) P. Beauv. subsp. *colona* (L.) Honda (1923).

Vernacular names: *Shama* English names: Awnless barnyard-grass, Corn ghas, *Shama dhan*. panic-grass, Deccan grass, Jungle rice, Millet rice.

Annual grass. Leaf blades lanceolate, linear-lanceolate or linear. Inflorescence linear-oblong or spiciform panicle, racemes 4-12, nearly 4-rowed. Spikelets ovate-elliptic to subglobose. Lower florets barren, upper florets bisexual. Lower lemmas ovate, upper lemmas ovate-elliptic. Paleas ovate-oblong. *Flowering and fruiting*: throughout the year but mainly in May - September. *Chromosome number*: $2n = 36, 48, 54, 72$ (Fedorov, 1969). *Paddy fields, wastelands, fallow lands and shallow marshes*.

Distribution: Throughout the tropics and subtropics.

Status of occurrence: Common.

Uses: It is eagerly eaten by cattle both before and after flowering.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 153 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 495 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1634 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1849 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3321 (DUSH).

146. **Echinochloa crusgalli** (L.) P. Beauv., Ess. Agrost.: 53, 161 (1812). *Panicum crusgalli* L. (1753); Hook. f., Fl. Brit. Ind. 7: 30 (1897); Prain, Beng. Pl. 2: 886 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925), *Panicum hispidulum* Retz. (1789), *Panicum grossum* Salisb. (1796), *Echinochloa glabrescens* Munro ex Eggel. (1947).

Vernacular name: *Bara shama-ghas*. English names: Barnyard millet, Cockspur grass, Water grass.

Coarse annual grass. Leaf blades lanceolate, linear-lanceolate or linear. Inflorescence a congested panicle, linear to pyramidal, racemes usually 2-several rowed. Spikelets ovate-elliptic. Lower florets male or barren, upper ones bisexual. Paleas elliptic-oblong, hyaline. *Flowering and fruiting*: April - October. *Chromosome number*: $2n = 36, 54, 72$ (Fedorov, 1969). *Marshy and muddy waste lands, and rice fields*.

Distribution: Warm temperate and subtropical regions of the world.

Status of occurrence: Common.

Uses: It is a good fodder grass for all herbivorous animals.

Specimens examined: Kaliganj, Chamundi, 29.04.2005, R. Tabassum, 235 (DUSH); Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 455 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 742 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3619 (DUSH).

147. **Echinochloa stagnina** (Retz.) P. Beauv., Ess. Agrost.: 53, 161, 171 (1812). *Panicum stagninum* Retz. (1789).

Vernacular names: *Dul, Parua*.

Aquatic perennial (sometimes annual or biennial) grass, culms spongy. Leaf blades lanceolate, linear-lanceolate or linear. Inflorescence an open panicle, narrowly lanceolate, rarely narrowly ovate, racemes simple. Spikelets ovate to broadly ovate. Lower florets staminate, upper ones bisexual. Paleas elliptic. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 36, 54, 108, 126$ (Fedorov, 1969). *Along the marshy places, wetlands, paddy fields and other water-logged areas*.

Distribution: Tropical Asia and Africa.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 199 (DUSH); Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 730 (DUSH); Sripur, Bager Bazar, 18.02.2013, R. Tabassum, 2445 (DUSH).

Genus 73. **Eleusine** Gaertn., Fruct. t. 1, 1: 7 (1788).

148. **Eleusine indica** (L.) Gaertn., Fruct. Sem. 1: 8 (1788); Hook. f., Fl. Brit. India 7: 393 (1897); Prain, Beng. Pl. 2: 927 (1903, reprint 1963); R. L. Heinig, List Chittagong: 78 (1925); *Cynosurus indicus* L., Sp. Pl. 1: 72 (1753).

Vernacular names: *Ghora dubboher*,
Malanga kuri, Malankuri.

English names: Crab grass, Crowfoot
grass, Goose grass.

Tufted annual or short-lived perennial, caespitose grass. Leaf blades linear, usually folded. Inflorescence composed of 1-15 (usually 4-5) slender ascending spikes, spikes digitate or often with an extra spike below the terminal cluster. Spikelets 3-9 flowered, elliptic. Caryopsis obtusely trigonous, dark brown. *Flowering and fruiting*: June - August. *Chromosome number*: $2n = 18, 36$ (Fedorov, 1969). *Dry and wet zones, commonly grows as a weed of lawns, vegetable gardens, wastelands, roadsides, also open moist sites in lowland jungles*.

Distribution: Throughout the tropics and extending into warm-temperate regions of the World.

Status of occurrence: Common.

Uses: It is used as fodder grass.

Specimens examined: Kaliganj, Kolatola, 02.11.2002, R. Tabassum, 160 (DUSH); Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 397 (DUSH); Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 472 (DUSH); Sripur, Borkul,

21.06.2010, R. Tabassum, 1169 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3530 (DUSH).

Genus 74. **Eragrostris** Host, Ic. Gram. 4: 14 (1809).

Key to species:

1. Spikelets shedding their florets from the apex downwards at maturity, the rhachilla internodes falling with the florets 2
- Spikelets shedding their florets from below upwards, the rhachilla remaining upon the pedicel 3
2. Lemmas, or at least the upper, with a few short stiff hairs on the keel; panicle woolly, spike-like or $\pm$ lobed and interrupted, the spikelets densely clustered; stamens 2 **ciliaris**
- Lemmas smooth or slightly scaberulous on the keel; panicles open, neither woolly nor with the spikelets in dense clusters; stamens 3 **tenella**
3. Palea falling at about the same time as the lemma 4
- Palea persisting on the rhachilla long after the lemma has fallen **cilianensis**
4. Spikelets broadly ovate to oblong, 2.5-4.0 mm wide **unioloides**
- Spikelets narrowly oblong to linear, 0.7-2.5 mm wide **gangetica**

149. **Eragrostis cilianensis** (All.) Vignolo-Lutati, Malpighia 18: 386 (1904). *Briza eragrostis* L. (1753), *Poa cilianensis* All. (1785), *Poa megastachya* Koel. (1802), *Eragrostis megastachya* (Koel.) Link (1827).

English name: Stink grass.

Annual grass, culms loosely tufted, erect or ascending. Leaf blades lanceolate or linear-lanceolate, acuminate. Panicle fairly dense. Spikelets 5-60 flowered, pallid yellowish-green to leaden-grey. Caryopsis subglobose or orbicular, rarely oblong. *Flowering and fruiting*: June - November. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Margin of forests*.

Distribution: Tropical and warm temperate regions of the Old World, introduced to the New World.

Status of occurrence: Common.

Specimens examined: Kaliganj, Banglahaola, 02.12.2013, R. Tabassum, 3903 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3926 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3951 (DUSH).

150. **Eragrostis ciliaris** (L.) R. Br. in Tuckey, Narr. Exp. Congo App.: 478 (1818). *Poa ciliaris* L. (1759), *Megastachya ciliaris* (L.) P. Beauv. (1812), *Cynodon ciliaris* (L.) Rasp. (1825).

English names: Black grass, Grey love-grass, Stink grass.

Annual or short-lived perennial grass, culms slender, erect or slightly geniculate. Leaf blades flat or loosely involutelong acuminate. Panicle spiciform. Spikelets densely clustered, ovate, fluffy, often purplish. Caryopsis narrowly ovatepale brown. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 20, 40$ (Fedorov, 1969). *Dry places, disturbed roadsides and lowlands*.

Distribution: Tropical and subtropical regions of the world.

Status of occurrence: Common.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 122 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 521 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1636 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2596 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3015 (DUSH).

151. **Eragrostis gangetica** (Roxb.) Steud., Syn. Pl. Glum. 1: 266 (1854); Prain, Beng. Pl. 2: 921 (1903, reprint 1963); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 112 (1956). *Poa gangetica* Roxb. (1820), *Eragrostis stenophylla* Hochst. ex Miq. (1851); Hook. f., Fl. Brit. Ind. 7: 318 (1897); L. Heinig, List Chittagong: 79 (1925).

Annual or short-lived perennial grass. Leaf blades lanceolate or linear-lanceolate. Inflorescence a panicle, ovate-oblong or elliptic. Spikelets ovate-oblong or oblong-lanceolate. Caryopsis oblong-elliptic, dull-brown. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 80$ (Fedorov, 1969). *Lowlands in dry and arid zones, usually in association with grasslands in low-lying sites and depressions, also fairly common in damp places, river beds, margins of streams and harvested paddy fields*.

Distribution: Tropical regions of Asia and Africa.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.200, R. Tabassum, 426 (DUSH); Kaligonj, Meghdubi, 05.03.2010, R. Tabassum, 715 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1174 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2984 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3537 (DUSH).

152. **Eragrostis tenella** (L.) P. Beauv. ex Roem. & Schult., Syst. Veg. 2: 576 (1817); L. Heinig, List Chittagong: 79 (1925). *Poa tenella* L. (1753), *Poa plumosa* Retz. (1786); Prain, Beng. Pl. 2: 921 (1903, reprint 1963), *Eragrostis plumosa* (Retz.) Link (1827).

Vernacular name: *Koni ghas*. English names: Bug's egg-grass, Japanese love-grass.

Delicate, annual grass, culms slender, erect or geniculately ascending, base covered with shining straw-coloured cataphylls. Leaf blades narrowly linear. Inflorescence a terminal panicle, elliptic or pyramidal. Spikelets 4-8 flowered, oblong-ovate, rachilla fragile. Caryopsis ellipsoid, golden-brownish. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Open waste grounds, along roadsides and bunds of paddy fields*.

Distribution: Throughout the tropics.

Status of occurrence: Common.

Uses: It is a fodder grass both fresh and dry.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 384 (DUSH); Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 995 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1131 (DUSH); Kaligonj, Pubail, 23.08.2010, R. Tabassum, 1588 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3474 (DUSH).

153. **Eragrostis unioides** (Retz.) Nees ex Steud., Syn. Pl. Glum. 1: 264 (1854); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 112 (1956). *Poa unioides* Retz., Obs. Bot. 5, 19 (1789); Hook. f., Fl. Brit. India 7: 317 (1897); Prain, Beng. Pl. 2: 921 (1903, reprint 1963).

Annual or short lived perennial grass. Leaf blades flat or inrolled. Inflorescence a strict to open panicle. Spikelets 10-40 flowered, purplish. Caryopsis obovoid or ellipsoid, orange-brown. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 20, 30$ (Fedorov, 1969). *Paddy fields, roadsides, bank of rivers, wastelands and cultivated lands*.

Distribution: Widespread in Old World tropics.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 130 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1182 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1637 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3019 (DUSH).

Genus 75. **Hemarthria** R. Br., Prodr. Fl. Nov. Holl.: 207 (1810).

154. **Hemarthria protensa** Steud., Syn. Pl. Glum.: 359 (1854); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Rottboellia protensa* (Steud.) Hack. in DC., Monogr. Phan. 6: 289 (1889); Hook. F., Fl. Brit. India 7: 153 (1897); Prain, Beng. Pl. 2: 898 (1903, reprint 1963), *Manisuris protensa* (Steud.) Hitchc. (1936).

Vernacular names: *Chaila*, *Chailla*.

Perennial grass, erect from a decumbent base, fastigiated at the summit. Leaf blades linear-lanceolate. Inflorescence a pseudo-spike. Spikelets paired, alike. Caryopsis oblong. *Flowering and fruiting*: May - October. *Chromosome number*: $2n = 18, 54$ (Kumar and Subramaniam, 1986). *Marshes, plain lands and high lands*.

Distribution: India, Myanmar and South East Asia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur (Gojaria), 06.12.2009, R. Tabassum, 475 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 506 (DUSH); Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 725 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1646 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2443 (DUSH).

Genus 76. **Hygroryza** Nees, Edinburgh New Philos. J. 15: 380 (1833).

155. **Hygroryza aristata** (Retz.) Nees in Wight & Arn., Edinburgh New Philos. J. 15: 380 (1833); Hook. F., Fl. Brit. India 7: 95 (1897); Prain, Beng. Pl. 2: 892 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Pharus aristatus* Retz., Obs. Bot. 5: 23 (1789), *Leersia aristata* (Retz.) Roxb. (1832).

Vernacular names: *Jangli dhan*, *Phutki*.

Annual or perennial grass, culms creeping or trailing forming mat on the surface of stagnant water, spongy. Leaf blades ovate-oblong or ovate-lanceolate or lanceolate. Inflorescence a panicle, whorled at the top of peduncle. Spikelets 1-flowered, solitary, pale green. Caryopsis oblong. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 24$ (Fedrov, 1969). *Dry low lands, tanks and marshes, margins of paddy fields, forming masses*.

Distribution: Sri Lanka, China, Nepal, India, Myanmar, southern China and South East Asia.

Status of occurrence: Common.

Use: It is a good fodder grass.

Specimens examined: Gazipur Sadar, Sitpura, 01.12.2000, R. Tabassum, 24 (DUSH); Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 727 (DUSH); Kapasia, Torgao, 06.05.2010, R. Tabassum, 1080 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1333 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1635 (DUSH).

Genus 77. **Hymenachne** P. Beauv., Ess. Agrost.: 48, t. 10, f. 8 (1812).

156. **Hymenachne pseudointerrupta** C. Muell., Bot. Zeit. (Berlin) 19: 333 (1861). *Hymenachne myurus* Beauv. (1812); *Panicum myurus* H. B. & K. (1816); Hook. f., Fl. Brit. India 7: 39 (1897); Prain, Beng. Pl. 2: 887 (1903, reprint 1963); *Hymenachne amplexicaulis* (Rudge) Nees (1829); *Panicum acutiglumum* Steud. (1854).

English names: Dal grass, Wick grass.

Perennial grass, culms creeping or trailing. Leaf blades lanceolate, linear-lanceolate or linear. Inflorescence a spiciform panicle. Spikelets elliptic-lanceolate. Caryopsis oblong, contracted at the top. *Flowering and fruiting:* March - August. *Grows in swamps, shallow lakes, and along slow-moving streams, often forming floating mats.*

Distribution: India, Sri Lanka, Myanmar, Indo-China and Polynesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 461 (DUSH); Kapasia, Torgao, 14.12.2009, R. Tabassum, 484 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1183 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3350 (DUSH).

Genus 78. **Ichnanthus** P. Beauv., Ess. Agrost.: 56, t. 12, f. 1 (1812).

157. **Ichnanthus vicinus** (F.M. Bailey) Merr., Enum. Philipp. Fl. Pl. 1: 70 (1923). *Hpanicum vicinum* F.M. Bailey (1890); *Ichnanthus pallens* sensu Hook. f. (1896); *Panicum nitens* Merr. (1904).

Annual or rarely perennial grass, culms decumbent, long creeping, flowering culms erect. Leaf blades usually elliptic or elliptic-lanceolate. Inflorescence a pyramidal panicle. Spikelets narrowly elliptic. *Flowering and fruiting:* March - August. *Chromosome number:* $2n = 40$ (Fedorov, 1969). *Grows in damp, shady sites and similar open habitat, often scrambling over other plants for long distances.*

Distribution: India, tropical region of South East Asia, Polynesia and Australia.

Status of occurrence: Seems to be rare.

Specimen examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3904 (DUSH).

Genus 79. **Imperata** Cyr., Pl. Rar. Neap. 2: 26, t. 11 (1792).

158. **Imperata cylindrica** (L.) Beauv. var. **major** (Nees) C. E. Hubb. ex Hubb. & Vaughan, Grass. Maur. 96 (1940). *Lagurus cylindrica* L., Syst. Nat. ed. 10: 878 (1759); Hook. f., Fl. Brit. India 7: 106 (1897); Prain, Beng. Pl. 2: 894 (1903, reprint 1963); *Saccharum koenigii* Retz. (1789); *Imperata pedicellata* Steud. (1846).

Vernacular names: *Chhan*, English names: Blady grass, Cotton wool-grass, *Ulukhar*.
Spear grass.

Perennial grass, culms tufted, erect, unbranched, strongly rhizomatous with stout, scaly underground shoots. Leaf blades rigid, flat, erect, gradually tapering to a point, margin very rough with tiny teeth. Inflorescence a cylindrical, spike-like panicle, fluffy in appearance due to the long silky hairs concealing the spikelets. Spikelets lanceolate or oblong. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Forest clearings, open forests, roadsides and as a weed of pastures*.

Distribution: In warm and temperate parts of Asia, extending to Australia, East and South Africa.

Status of occurrence: Common.

Uses: It is an excellent thatching grass, used for control of soil erosion, packaging and as fuel, also eaten by stalk only in its young stage of growth.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 382 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 762 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1184 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1648 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3527 (DUSH).

Genus 80. **Leptochloa** P. Beauv., yr., Pl. Rar. Neap. 2: 26, t. 11 (1792).

159. **Leptochloa chinensis** (L.) Nees, Syll. Ratisb. 1: 4 (1824); Hook. f., Fl. Brit. India 7: 299 (1897); Prain, Beng. Pl. 2: 924 (1903, reprint 1963). *Poa chinensis* L. (1753); *Poa malabarica* Retz. (1789).

Annual grass, culms tufted, usually procumbent, rooting at the nodes. Leaf blades linear, finely pointed. Inflorescence terminal panicle. Spikelets oblong or lanceolate. Caryopsis oblong or elliptic-oblong. *Flowering and fruiting*: May - December. *Chromosome number*: $2n = 40$ (Fedorov, 1969). *Damp cultivated places*.

Distribution: Warmer parts of South and South East Asia to Australia.

Status of occurrence: Common.

Use: It is a good fodder frass.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3905 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3928 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3952 (DUSH).

Genus 81. **Melocanna** Trin. in Spreng., Neue Ent. 2: 43 (1820).

160. **Melocanna baccifera** (Roxb.) Kurz, Prelim. Rep. For. Veg. Pegu, App. B.: 94 (1875). *Bambusa baccifera* Roxb. (1814); *Melocanna bambusoides* Trin. (1820); Hook. f., Fl. Brit. India 7: 417 (1897); Prain, Beng. Pl. 2: 933 (1903, reprint 1963).

Vernacular names: *Muli, Nali, Tarai, Paiyya.*

English name: Berry bamboo.

Diffusely clumped sympodial bamboo. Young shoots yellowish-brown. Culms green when young, straw-coloured when old; nodes very slightly larger in diameter than the internodes. Leaves in complements of 8-12 blades, leaf sheaths thick, blades oblong-lanceolate. Flowering branches 2-many of different sizes from each node. Caryopsis ovoid to globose. *Flowering:* initiates first in September and continues throughout the year. *Fruiting:* April - September. *Flowering habit:* gregarious, precocious. *Flowering cycle:* 30-35 years. *Chromosome number:* $2n = 72$ (Zhang, 1987). *Forests, also occurs in pure brakes or mixed with other vegetation.*

Distribution: Myanmar and India.

Status of occurrence: Common.

Uses: Berry bamboo is used for various purposes.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1217 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 04.02.2011, R. Tabassum, 1731 (DUSH); Kaligonj, Gudara Ghat, 02.01.2013, R. Tabassum, 2257 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3016 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3666 (DUSH).

Genus 82. **Oplismenus** P. Beauv., Fl. Owar Benin 2: 14, t. 58 (1810).

Key to species:

- | | |
|---|-------------------|
| 1. Awn reddish, smooth, viscid, filiform, stiff | compositus |
| - Awn pale, barbellate, capillare, often flexuous | burmannii |

161. **Oplismenus burmanii** (Retz.) P. Beauv., Ess. Agrost. 54, 168, 169 (1812); Hook. f., Fl. Brit. Ind. 7: 68 (1897); Prain, Beng. Pl. 2: 883 (1903, reprint 1963); R. L. Heinig, List Chittagong: 77 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 113 (1956). *Panicum burmanii* Retz., Obs. Bot. 3: 10 (1783); *Panicum bromoides* Lamk. (1791); *Oplismenus bromoides* (Lamk.) P. Beauv. (1812).

Annual grass, culms prostrate or trailing, creeping, rooting at the nodes. Leaf blades lanceolate to narrowly ovate. Inflorescence consists of 2-8 racemes. Spikelets lanceolate. Caryopsis cylindric, cream-coloured. *Flowering and fruiting*: September - January. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Bunds, roadsides, often in moist, shady places forming pure mats along the shades of trees and shrubs.*

Distribution: Throughout tropical Africa, America and Asia.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 769 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1185 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1649 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3650 (DUSH).

162. **Oplismenus compositus** (L.) P. Beauv., Ess. Agrost. 54: 169 (1812); Hook. F., Fl. Brit. India 7: 83 (1897); Prain, Beng. Pl. 2: 883 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Panicum compositum* L., Sp. Pl. ed. 1, 57 (1753). *Panicum clatius* L. f. (1788), *Panicum lanceolatum* Retz. (1789), *Panicum sylvaticum* Lamk. (1798), *Oplismenus pratensis* (Spreng.) Schult. (1827), *Oplismenus decompositus* Nees (1833).

Vernacular name: *Gohur*.

Annual or perennial grass, culms rambling or trailing, creeping, rooting at the nodes. Leaf blades narrowly lanceolate to narrowly ovate. Inflorescence composed of 4-8 racemes. Spikelets paired, elliptic or elliptic-lanceolate. Fruit a caryopsis. *Flowering and fruiting*: throughout the year but mainly in August - September. *Chromosome number*: $2n = 54, 72$ (Fedorov, 1969). *Undergrowth in scrub jungles, forest margins, raised bunds and other shady places.*

Distribution: Tropical regions in the Old and New World.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1862 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3270 (DUSH).

Genus 83. **Oryza** L., Sp. Pl. ed. 1, 1: 333 (1753).

163. **Oryza sativa** L., Sp. Pl. ed. 1, 1: 333 (1753); Hook. f., Fl. Brit. Ind. 7: 92 (1897); Prain, Beng. Pl. 2: 891 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Oryza nivara* Shastri & Sharma (1965).

Vernacular names: *Chaul, Dhan*.

English name: Rice.

Annual or rarely perennial grass, culms tall, tufted, erect, rooting at the nodes. Leaf blades linear-lanceolate or linear. Inflorescence a laxly panicle. Spikelets ovate-oblong or oblong. Caryopsis oblong, angular, tightly enclosed by lemma and palea. *Flowering and fruiting*: September - June. *Chromosome number*: $2n = 24$ (Fedorov, 1969). *Stagnant water or areas that are only seasonally wet*.

Distribution: Originated in South East Asia, now cultivated and escaped worldwide in the tropics and extending well north and south into warm-temperate areas.

Status of occurrence: Cultivated.

Uses: Rice is the staple food of about half of the total human race. The husk is used as fuel and straw is retained for feeding draught animals and also for mushroom culture.

Specimens examined: Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1037 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1996 (DUSH); Kaligonj, Badarti, 02.01.2013, R. Tabassum, 2286 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2680 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3291 (DUSH).

Genus 84. **Panicum** L., Sp. Pl. 1: 55 (1753).

Key to species:

- | | |
|---|------------------|
| 1. Spikelets 4.0-5.5 mm long | miliaceum |
| - Spikelets up to 3.5 mm long | 2 |
| 2. Spikelets narrowly lanceolate or oblong-lanceolate, acute | 3 |
| - Spikelets oblong, ovate-oblong or elliptic, acute or obtuse | 4 |
| 3. Culms soft, spongy; spikelets narrowly lanceolate; leaf-blades broad, flat | paludosum |
| - Culms firm, not spongy; spikelets lanceolate or oblong-lanceolate; leaf-blades narrow, often involute | repens |
| 4. Lower glume separated by an internode; upper lemma glabrous at the apex | notatum |

- Lower glume not separated by an internode; upper lemma ciliolate at the apex **fasciculatum**

164. **Panicum fasciculatum** Sw., Prodr. Veg. Ind. Occ.: 22 (1788). *Panicum flavescens* Sw. (1788); Hook. f., Fl. Brit. Ind. 7: 56 (1897); Prain, Beng. Pl. 2: 888 (1903, reprint 1963).

Vernacular name: *Banaspati ghas*.

Annual grass. Leaf blades linear or linear-lanceolate, plicate. Inflorescence a panicle. Spikelets lanceolate. Caryopsis enclosed in glumes. *Flowering and fruiting*: February - April. *Lowlands and marshy places in shade*.

Distribution: Tropical America, Mauritius, introduced in India and many other hotter countries of the world.

Status of occurrence: Common.

Specimens examined: Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2411 (DUSH); Gazipur Sadar, Skuib Road, 19.08.2013, R. Tabassum, 2911 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3688 (DUSH).

165. **Panicum miliaceum** L., Sp. Pl. 1: 58 (1753); Hook. f., Fl. Brit. Ind. 7: 45 (1897); Prain, Beng. Pl. 2: 887 (1903, reprint 1963); *Milium panicum* Miller (1759; *Panicum milium* Pers. (1805); *Panicum asperrimum* Fisch. (1812).

Vernacular name: *Cheena* English names: Brown-corn millet, Common millet, *chaul*. Red french millet, White french millet.

Annual, erect or decumbent grass, culms sparsely to densely hispid, often branching. Leaf blades linear to narrowly lanceolate. Panicle narrowly oblong to pyramidal. Spikelets mostly towards the end of the branches, ovate to ovate-oblong. Caryopsis ovate-elliptic. *Flowering and fruiting*: March - September. *Chromosome number*: $2n = 36, 54, 72$ (Fedorov, 1969). *Lowlands and marshy places in shade*.

Distribution: Introduced in Africa and distributed in Europe, North and South America, Australia, Central and eastern Asia.

Status of occurrence: Common.

Uses: A minor cereal grain cultivated for feeding birds and also eaten as edible starch.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1130 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1650 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3072 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R.

Tabassum, 2567 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3758 (DUSH).

166. **Panicum notatum** Retz., Obs. Bot. 4: 18 (1786). *Panicum montanum* Roxb. (1820); Hook. f., Fl. Brit. Ind. 7: 53 (1897); Prain, Beng. Pl. 2: 888 (1903, reprint 1963); *Panicum courtallense* Nees & Wall. (1854).

Perennial grass, rooting at the lower most nodes, scrambling in bushy vegetation. Leaf blades lanceolate to linear-lanceolate. Inflorescence a panicle, branches widely spreading, verticillate in the lower nodes, opposite or alternate in the upper nodes. Spikelets ovate-oblong. Caryopsis elliptic. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36, 72$ (Fedorov, 1969). *Margin of forests and scrub jungles, usually in moist and shady places.*

Distribution: Sri Lanka, India to China and South East Asia.

Status of occurrence: Common.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 249 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 950 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1418 (DUSH); Gazipur Sadar, Khainukar, 19.08.2013, R. Tabassum, 2879 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3736 (DUSH).

167. **Panicum paludosum** Roxb., Fl. Ind. 1: 310 (1820); R. L. Heinig, List Chittagong: 77 (1925). *Panicum nutans* Koem. ex Trin. (1826); *Panicum proliferum* Hook. f., Fl. Brit. India 7: 50 (1897); Prain, Beng. Pl. 2: 888 (1903, reprint 1963).

Vernacular names: *Barti, Borali, Kalam, Kalash nar.*

Aquatic perennial grass, culms spongy below, rooting at the lower nodes. Leaf blades linear to linear-lanceolate. Inflorescence a panicle, widely spreading. Spikelets elliptic-lanceolate or narrowly lanceolate. Caryopsis oblong. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 54$ (Fedorov, 1969). *Grows in wetlands, marshes, submerged or floated in shallow and still water and along the banks of streams.*

Distribution: Pakistan, Nepal, India, Sri Lanka, through Myanmar to Southeast Asia and tropical Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Bagrahatta, 07.06.2002, R. Tabassum, 118 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 582 (DUSH); Kaliakoir, Shohag Polly,

09.05.2010, R. Tabassum, 743 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1654 (DUSH); Tongi, Chaydana, 19.08.2013, R. Tabassum, 2855 (DUSH).

168. **Panicum repens** L., Sp. Pl. ed. 2: 87 (1762); Hook. F., Fl. Brit. India 7: 49 (1897); Prain, Beng. Pl. 2: 888 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925). *Panicum ischaemoides* Retz. (1786); *Panicum arenarium* Brot. (1804); *Panicum proliferum* Hook. f., Fl. Brit. India 7: 50 (1897); *Panicum leriogonum* Delile (1812).

Vernacular names: *Baranda*, English names: Couch panicum, Creeping panicum, *Dhani ghas*. Ginger grass, Ginger-root grass.

Rhizomatous or stoloniferous, perennial grass. Leaf blades linear-lanceolate. Inflorescence a panicle. Spikelets oblong-elliptic to ovate-elliptic, usually greenish sometimes purplish. Fruit a caryopsis. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Roadsides, margin of marshes, ditches, rice fields, tanks and marshy pastures*.

Distribution: Warm temperate to tropical areas of the World.

Status of occurrence: Common.

Use: It is a medicinal plant.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3906 (DUSH); Kapasia, Samania, 14.12.2013, R. Tabassum, 3929 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3957 (DUSH).

Genus 85. **Paspalidium** Stapf, Fl. Trop. Afr. 9: 582 (1920).

Key to species:

- | | |
|--|------------------|
| 1. Lower floret sterile, without a palea; upper lemma rugulose | punctatum |
| - Lower floret male, with a palea; upper lemma granulose | flavidum |

169. **Paspalidium flavidum** (Retz.) A. Camus in Lecomte, Fl. Gen. Indo-Chine 7: 419 (1922); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Panicum flavidum* Retz., Obs. Bot. 4: 15 (1786); Hook. F., Fl. Brit. India 7: 28 (1897); Prain, Beng. Pl. 2: 885 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925). *Panicum granulare* Lamk. (1791); *Panicum brizoides* Jacq. (1813).

Vernacular names: *Bolai mandi*, *Karin ghas*.

Annual or perennial grass. Leaf blades linear-oblong or linear, flat or folded. Inflorescence a spiciform raceme. Spikelets ovate, gibbously globose. Fruit a caryopsis. *Flowering and fruiting*: July - December. *Chromosome number*: $2n = 36, 54$ (Fedorov, 1969). *Shady forest areas, roadsides, banks of water-courses, shallow ditches and other wet, damp places.*

Distribution: Tropical Asia.

Status of occurrence: Common.

Uses: It is eaten by cattle and horses.

Specimens examined: Kaliakoir, Uluhara, 08.01.2010, R. Tabassum, 649 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1655 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2430 (DUSH); Sripur, Boherar Chala, 21.10.2013, R. Tabassum, 3380 (DUSH).

170. **Paspalidium punctatum** (Burm. f.) A. Camus in Lecomte, Fl. Gen. Indo-Chine 7: 419 (1922). *Panicum punctatum* Burm. f. (1768); Hook. f., Fl. Brit. Ind. 7: 29 (1897); Prain, Beng. Pl. 2: 885 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925), *Panicum mucronatum* Roth ex Roem. & Schult. (1817).

Vernacular name: *Petinar*.

Perennial grass, culms creeping or floating with spongy rhizomatous trailing. Leaves lanceolate or linear. Inflorescence a spiciform panicle. Spikelets ovate or broadly elliptic. Fruits caryopsis. *Flowering and fruiting*: August - March. *Chromosome number*: $2n = 36, 54$ (Kumar and Subramaniam, 1986). *Edge of ditches, canals, bank of streams, back-water and other wetlands.*

Distribution: Tropical Asia.

Status of occurrence: Common.

Uses: Much relished by all stock.

Specimens examined: Kapasia, Baoraid, 14.12.2009, R. Tabassum, 534 (DUSH); Kaliganj, Bartula, 02.01.2013, R. Tabassum, 2347 (DUSH); Sripur, Baghmara, 18.02.2013, R. Tabassum, 2440 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3304 (DUSH).

Genus 86. **Paspalum** L., Syst. Nat. ed. 10, 2: 855 (1759).

Key to species:

1. Spikelets with a marginal ciliate fringe of silky hairs; hairs 1-2 mm

orbiculare

- Spikelets glabrous or pubescent, without a marginal fringe of silky hairs 2
- 2. Plants with long stolons; racemes 2(-3), paired; spikelets lanceolate to ovate or obovate **distichum**
- Plants tufted; racemes up to 20 along a common axis; spikelets broadly elliptic, obovate or suborbicular **scrobiculatum**

171. **Paspalum distichum** L., Syst. Nat. ed. 10, 2: 855 (1759); Hook. f., Fl. Brit. Ind. 7: 12 (1897); Prain, Beng. Pl. 2: 890 (1903, reprint 1963), *Digitaria paspaloides* Michx. (1803), *Paspalum paspaliforme* J. S. Presl ex C. B. Presl (1830), *Paspalum bracteatum* Duf. ex Kunth (1833), *Paspalum elliotii* S. Wats. (1890), *Paspalum paspaloides* (Michx.) Lams-Scribn. (1894).

English names: Salt-water couch, Sea-shore paspalum, Water couch.

Perennial, rhizomatous, stoloniferous, creeping, colony forming grass. Leaf blades linear-lanceolate. Inflorescence a panicle. Spikelets solitary, elliptic-lanceolate to elliptic. Fruits caryopsis. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 40, 60$ (Fedorov, 1969). *Marshy areas, ditches and tanks*.

Distribution: Warm temperate to tropical regions of the world.

Status of occurrence: Common.

Uses: It is a fodder grass.

Specimens examined: Kapasia, Bozna, 24.04.2008, R. Tabassum, 350 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 979 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1657 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2592 (DUSH).

172. **Paspalum orbiculare** G. Forst., Fl. Insul. Austr. Prodr.: 7 (1786).

Perennial grass, culms single or tufted. Leaf blades linear-lanceolate. Inflorescence exserted, axis bearing 2-4 one-sided spikes on alternate sides. Spikelets single or in pairs, obovate to suborbicular. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 40, 54$ (Fedorov, 1969). *Open waste places or shallow water bodies*.

Distribution: India, South East Asia to Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Junglebari, 16.05.2010, R. Tabassum, 1036 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2448 (DUSH); Gazipur Sadar,

Shalikchura, 19.08.2013, R. Tabassum, 2598 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3074 (DUSH).

173. **Paspalum scrobiculatum** L., Mant. Pl. 1: 29 (1767); Hook. f., Fl. Brit. Ind. 7: 10 (1897); Prain, Beng. Pl. 2: 890 (1903, reprint 1963). *Paspalum kora* Willd. (1798); *Paspalum distachyon* Poir. ex Trin. (1834).

Vernacular names: *Goicha*, *Kodoa* English names: Kodo millet, Scrobic dhan. paspalum.

Annual or perennial grass, culms erect, sometimes prostrate. Leaf blades linear-lanceolate, lanceolate or linear. Inflorescence composed of 2 (rarely 3 or 4) racemes, digitate or borne on an axis. Spikelets slightly overlapping, broadly elliptic, obovate or suborbicular, green, becoming brown. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 40$ (Fedorov, 1969). *Open waste grounds or lowlands*.

Distribution: Throughout the Old World tropics.

Status of occurrence: Common.

Use: It is a medicinal plant.

Specimens examined: Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1656 (DUSH); Tongi, Khataldi, 19.08.2013, R. Tabassum, 1879 (DUSH; Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3089 (DUSH).

Genus 87. **Pennisetum** Rich. ex Pers., Syn. Pl. 1: 72 (1805).

174. **Pennisetum purpureum** Schum., Beskr. Guin. Pl.: 44 (1827). *Pennisetum macrostachyum* Benth. (1849); *Pennisetum benthamii* Steud. (1854); *Pennisetum nitens* Hack. (1888).

English names: Elephant grass, Merker grass, Napier grass.

Perennial, colony forming (sometimes stoloniferous) grass, culms tall, erect or decumbentrooting at the lower nodes, internodes solid or hollow, grooved on one side. Leaves cauline, blades linear, flat. Inflorescence a terminal spike, usually yellowish, sometimes purple. Caryopsis elliptic. *Flowering and fruiting*: September - February. *Chromosome number*: $2n = 28, 56$ (Fedorov, 1969). *Cultivated and escaped to roadsides and other secondary vegetation*.

Distribution: Native to Africa, now widely introduced into all tropical areas as a forage grass and widely naturalized.

Status of occurrence: Common.

Use: It is a fodder grass.

Specimens examined: Sripur, Borkul, 21.06.2010, R. Tabassum, 1114 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2555 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3078 (DUSH).

Genus 88. **Saccharum** L., Sp. Pl. ed. 1, 1: 54 (1753).

Key to species:

1. Leaves laminate to the base; blades flat or folded, up to 4 cm wide **officinatum**
- Leaves becoming petiolate towards the base; blades flat or convolute above, up to 7.5 mm wide **spontaneum**

175. **Saccharum officinatum** L., Sp. Pl.: 54 (1753); Hook. f., Fl. Brit. Ind. 7: 118 (1897); Prain, Beng. Pl. 2: 895 (1903, reprint 1963); L. Heinig, List Chittagong: 78 (1925).

Vernacular names: *Aakh, Ikkhu, Gendari, Kusa, Kushiar*. English name: Sugarcane.

Tufted perennial grass, culms erect, internodes variously coloured, green, yellow, brown, red, purple or combinations in stripes, often waxy, juicy, sweet. Leaf blades linear-lanceolate. Inflorescence a very large panicle, ovate-pyramidal, spreading. Spikelets linear-oblong. *Flowering and fruiting:* August - October. *Chromosome number:* $2n = 60, 80$ (Fedorov, 1969). *Lowlands*.

Distribution: Probably native to New Guinea, cultivated in all tropical and subtropical regions.

Status of occurrence: Cultivated.

Uses: Sugar and molasses are produced from stem juice of the plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 440 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1286 (DUSH); Kapasia, Chonabari, 03.07.2010, R. Tabassum, 1519 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1658 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3349 (DUSH).

176. **Saccharum spontaneum** L., Mant. Alt.: 183 (1771); Hook. f., Fl. Brit. Ind. 7: 118 (1897); Prain, Beng. Pl. 2: 895 (1903, reprint 1963); R. L. Heinig, List Chittagong: 78 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 113 (1956). *Imperata*

spontanea (L.) P. Beauv. (1812); *Saccharum semidecumbens* Roxb. (1820); *Saccharum propinquum* Steud. (1855).

Vernacular names: *Kaichha*, *Kash*, English name: Wild sugarcane.
Khagra.

Rhizomatous perennial, clump or colony forming grass. Leaf blades linear-lanceolate. Inflorescence a panicle, racemes verticillate. Spikelets all alike, lanceolate. Caryopsis oblong-elliptic. *Flowering and fruiting*: throughout the year but mostly at the end of rains. *Chromosome number*: $2n = 40, 80, 112, 128$ (Fedorov, 1969). *Sides of streams, rivers, pools and ponds, field borders, fringes and low-lying grassy areas*.

Distribution: Throughout the Old World tropics from West Africa to New Guinea and adjacent Melanesian and Micronesian islands.

Status of occurrence: Common.

Uses: It is an effective soil binder.

Specimens examined: Kaligonj, Borga, 14.03.2008, R. Tabassum, 252 (DUSH); Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 389 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 997 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1258 (DUSH); Kapasia, Kandunia village, 03.11.2013, R. Tabassum, 3742 (DUSH).

Genus 89. **Sacciolepis** Nash, Man. Fl. N. States Canada, ed. 1: 89 (1901).

Key to species:

- | | |
|-------------------------------------|--------------------|
| 1. Spikelets 2.0-2.8 mm, lanceolate | indica |
| - Spikelets 1.5-2.0 mm, ovate | myosuroides |

177. **Sacciolepis indica** (L.). A. Chase, Proc. Biol. Soc. Wash. 21: 8 (1908); J. Sinclair in Bull. Bot. Soc. Beng. 9(2): 113 (1956). *Aira spicata* L. (1753), *Panicum indicum* (L.) L., Mant. Pl. 2: 184 (1771); Hook. f., Fl. Brit. Ind. 7: 41 (1897); Prain, Beng. Pl. 2: 887 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925); *Sacciolepis spicata* (L.) Honda (1930).

English name: Glenwood grass.

Annual grass, culms slender. Leaf blades lanceolate, linear-lanceolate or linear. Inflorescence a cylindrical spiciform panicle, densely flowered. Spikelets elliptic-lanceolate or ovate, green or purplish. Fruit a caryopsis. *Flowering and fruiting*: May -

December. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Wet depressions or moist grassy slopes, sometimes partial shades.*

Distribution: Tropical Asia, Polynesia and Australia.

Status of occurrence: Common.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1457 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2841 (DUSH); Kaliakoir, Fulbari, 01.10.2013, R. Tabassum, 3278 (DUSH); Kapshia, Voboner Chala, 03.11.2013, R. Tabassum, 3493 (DUSH).

178. **Sacciolepis myosuroides** (R. Br.) A. Camus in Lecomte, Fl. Gen. de l' Indo-Chine 7: 460 (1922). *Panicum myosuroides* R. Br. (1810); Hook. f., Fl. Brit. Ind. 7: 42 (1897); Prain, Beng. Pl. 2: 887 (1903, reprint 1963); *Hymenachne myosuroides* (R. Br.) Balansa (1890).

Annual grass, culms erect or geniculate. Leaf blades linear-lanceolate or linear, flat. Inflorescence a narrow, spiciform panicle, densely flowered. Spikelets elliptic or ovate-oblong, dark-coloured at maturity. Fruit a caryopsis. *Flowering and fruiting*: August - December. *Chromosome number*: $2n = 36$ (Fedorov, 1969). *Moist or wet areas, marshes and rice fields.*

Distribution: Tropics of Asia and Australia.

Status of occurrence: Common.

Specimens examined: Kapasia, Junglebari, 14.12.2009, R. Tabassum, 560 (DUSH); Kaliganj, Pubail, 23.08.2010, R. Tabassum, 1660 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2367 (DUSH); Kaliakoir, Srinail, 01.10.2013, R. Tabassum, 3191 (DUSH).

Genus 90. **Setaria** P. Beauv., Ess. Agrost.: 51, 178, t. 13, f. 3 (1812).

179. **Setaria italica** (L.) P. Beauv. Ess. Agrost. 51: 170, 178 (1812); Hook. f., Fl. Brit. Ind. 7: 78 (1897); Prain, Beng. Pl. 2: 880 (1903, reprint 1963); *Panicum italicum* L. (1753); *Panicum germanicum* Mill. (1768); *Setaria germanica* P. Beauv. (1812); *Setaria californica* Kellog (1873).

Vernacular names: *Kaon*, *Kangul*, *Kanti dana*, *Shyamdhath*. English names: Dwarf setaria, Fox-tail, Italian millet, Bristle grass.

Annual grass, culms tall, erect or somewhat geniculate at the base. Leaf blades linear, acuminate. Inflorescence a pseudo-spike of many-flowered contracted racemes, erect or drooping, rachis densely pubescent. Spikelets elliptic to obovate. *Flowering and*

fruiting: February - August. *Chromosome number*: $2n = 18$ (Fedorov, 1969). *Grows in shady and moist places and lowlands*.

Distribution: Probably origin of Old World, now cultivated sporadically worldwide.

Status of occurrence: Cultivated.

Use: It is cultivated for grain and forage.

Specimens examined: Kaliganj, Kolatola, 24.04.2008, R. Tabassum, 311 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 841 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1225 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2885 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3630 (DUSH).

Genus 91. **Sorghum** Moench, Meth. Bot.: 207 (1794).

180. **Sorghum halepense** (L.) Pers., Syn. Pl. 1: 101 (1805). *Holcus halepensis* L. (1753); *Andropogon halepensis* (L.) Brot. (1804); Hook. f., Fl. Brit. Ind. 7: 182 (1897); Prain, Beng. Pl. 2: 907 (1903, reprint 1963); *Sorghum giganteum* Edge. (1853); *Sorghum miliaceum* (Roxb.) Snowden (1955).

Vernacular names: *Dora byara*, *Kala mucha*, English names: Aleppo grass, *Silnaja*. Johnson grass.

Rhizomatous perennial grass, culms tall, simple or branched. Leaf blades lanceolate or linear-lanceolate. Inflorescence a pyramidal panicle, loose when in flower, contracted after flowering. Fruits caryopsis. *Flowering and fruiting*: October - February. *Chromosome number*: $2n = 20, 40$ (Fedorov, 1969). *Fringes of forests and banks of streams and rivers, occasionally as a weed of cultivated lands*.

Distribution: Most of the warmer parts of the world.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 9 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 862 (DUSH); Kapasia, Torgao, 16.05.2010, R. Tabassum, 1021 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1912 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2371 (DUSH).

Genus 92. **Sporobolus** R. Br., Prod.: 169 (1810).

Key to species:

- | | |
|-----------------------|----------------|
| 1. Panicle contracted | indicus |
| - Panicle effuse | diander |

181. **Sporobolus diander** (Retz.) P. Beauv., Ess. Agrost. 26: 147, 178 (1812); Hook. f., Fl. Brit. Ind. 7: 247 (1897); Prain, Beng. Pl. 2: 914 (1903, reprint 1963); R. L. Heinig, List Chittagong: 78 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 112 (1956). *Agrostis diandra* Retz., Obs. Bot. 5: 19 (1789); *Vilfa erosa* Trin. (1839); *Vilfa retzii* Steud. (1841).

Vernacular name: *Bina joni*.

English name: Indian dropseed.

Tufted perennial grass. Leaf blades linear-lanceolate or linear. Inflorescence a pyramidal or narrowly lanceolate, contracted, loose or somewhat compact terminal panicle. Spikelets obovoid, grayish. Caryopsis oblong-obovate, pale brown. *Flowering and fruiting*: March - October. *Chromosome number*: $2n = 24, 36$ (Fedorov, 1969). *Grows in grasslands, roadsides and forest glades*.

Distribution: Pakistan, India, Sri Lanka, Myanmar, throughout Southeast Asia and Australia.

Status of occurrence: Common.

Uses: It is a very good fodder.

Specimens examined: Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1315 (DUSH); Kaligonj, Kalerhat, 23.08.2010, R. Tabassum, 1570 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1844 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3099 (DUSH).

182. **Sporobolus indicus** R. Br., Prodr.: 170 (1810); Hook. f., Fl. Brit. India 7: 247 (1897); Prain, Beng. Pl. 2: 914 (1903); L. Heinig, List Chittagong: 78 (1925); Datta & Mitra, Bull. Bot. Soc. Beng. 7 (1& 2): 93 (1953).

English name: Smut grass.

Perennial grass, culms tufted, stout. Leaf blades linear, acuminate, flat or convolute. Inflorescence a spikyform, contracted panicle. Spikelets 1-flowered, hyaline. Caryopsis broadly obovoid. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 18, 24, 36, 48$ (Kumar and Subramaniam, 1986). *Low lands of the dry and arid zones, usually in open or disturbed sites*.

Distribution: India, Sri Lanka, Pakistan, Myanmar and all warmer countries of the World.

Status of occurrence: Seems to be rare.

Specimen examined: Gazipur Sadar, Rajendrapur Sal forest, 09.08.2014, R. Tabassum, 4022 (DUSH).

Genus 93. **Triticum** L., Sp. Pl. ed. 1, 1: 85 (1753).

183. **Triticum aestivum** L., Sp. Pl. ed. 1, 1: 85 (1753). *Triticum compositum* L. (1774), *Triticum sativum* Lamk. (1778), *Triticum vulgare* Vill. (1787); Hook. F., Fl. Brit. Ind. 7: 307 (1897); Prain, Beng. Pl. 2: 929 (1903, reprint 1963).

Vernacular name : *Gom*.

English names: Bread wheat, Common wheat.

Annual or biennial grass, culms erect, freely branching at the base. Leaf blades linear-lanceolate or broadly linear. Inflorescence a spike, erect but curved at maturity. Spikelets solitary, ovoid, laterally compressed. Caryopsis oblong, ventrally grooved. *Flowering and fruiting*: January - April. *Chromosome number*: $2n = 42$ (Fedorov, 1969). *Different types of fertile soils, moist and open places*.

Distribution: Probably native to the near East, cultivated in most temperate areas of the world.

Status of occurrence: Cultivated.

Uses: Wheat is the most important cereal in the world and used for human consumption. The leaves are used as fodder.

Specimens examined: Kaliganj, Banglahoala, 02.12.2013, R. Tabassum, 3907 (DUSH); Kapasia, Sanmania, 14.12.2013, R. Tabassum, 3930 (DUSH); Kaliakoir, Mathalyth, 01.01.2014, R. Tabassum, 3954 (DUSH).

Genus 94. **Vetiveria** Lem.-Lisanc., Bull. Sci. Soc. Philom. Paris: 43 (1822).

184. **Vetiveria zizanioides** (L.) Nash in Small, Fl. Southeast U.S.: 67 (1903). *Phalaris zizanioides* L., Mant. 2: 183 (1771). *Andropogon muricatus* Retz. (1783); *Vetiveria odoratissima* Lem.-Lisanc. (1822); *Vetiveria odorata* Virey (1827); *Andropogon squarrosus* Hook. F., Fl. Brit. Ind. 7: 186 (1897); Prain, Beng. Pl. 2: 907 (1903, reprint 1963).

Vernacular names: *Bena*, *Bena-mul*, *Gandha bena*,
Gandha Bena, *Khas-khas*.

English names: Khas-khas
grass, Vetiver grass.

Tufted perennial grass. Leaf blades linear, folded towards the base. Panicle oblong, usually contracted. Caryopsis rarely formed. *Flowering and fruiting*: September - December. *Chromosome number*: $2n = 20$ (Fedorov, 1969). *Grows in seasonally inundated grassy areas around tanks and ponds and ditches in lowlands*.

Distribution: Pakistan, India, Sri Lanka, Nepal, Myanmar and Southeast Asia, tropical Africa and introduced to the West Indies.

Status of occurrence: Common.

Uses: Peduncle of the inflorescence is used to make hand fan by local people, also a medicinal plant.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 403 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 583 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1664 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2401 (DUSH); Tongi, Raktal, 19.08.2013, R. Tabassum, 2788 (DUSH).

Genus 95. **Zea** L., Sp. Pl. ed. 1, 2: 971 (1753).

185. **Zea mays** L., Sp. Pl. ed. 1, 2: 971 (1753); Hook. f., Fl. Brit. Ind. 7: 102 (1897); Prain, Beng. Pl. 2: 911 (1903, reprint 1963); L. Heinig, List Chittagong: 77 (1925). *Mays zea* Gaertn. (1789), *Zea segetalis* Salisb. (1796), *Mayzea cerealis* Raf. (1830), *Zea hirta* Bonaf. (1836).

Vernacular names: *Bhutta, Makai, Makka-joar*. English names: Corn, Maize, Sweet corn.

Robust, monoecious annual grass, culms single, tall. Leaves numerous, overlapping, blades lanceolate. Male inflorescence a terminal panicle. Male spikelets single or paired. Pistillate inflorescence produced in the axils of mid-culm leaves, tightly enclosed in numerous husks. Mature grains becoming hard and bony. *Flowering and fruiting:* April - August. *Chromosome number:* $2n = 40$ (Fedorov, 1969). *Cultivated in plains.*

Distribution: A crop plant of warm temperate and tropical regions of the world.

Status of occurrence: Cultivated.

Uses: Maize is used as a staple human food, as feed for live-stock and as a raw material for many industrial products.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 486 (DUSH); Kaliakoir, Horintatia, 09.05.2010, R. Tabassum, 867 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1374 (DUSH); Kaligonj, Gudara Ghat, 02.01.2013, R. Tabassum, 2240 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2886 (DUSH).

Family 16. **BROMELIACEAE** A. L. de Jussieu (1789).

Herbs, sometimes terrestrial xerophytes. Leaves alternate, usually rosulate on the short stem, narrow, parallel-veined, simple, entire or spinose-serrate. Flowers perfect or sometimes functionally unisexual, regular or slightly irregular, trimerous, hypogynous to epigynous, borne in simple or compound spikes or racemes or heads with brightly

coloured bracts. Sepals 3, green and herbaceous. Petals 3, often brightly coloured. Stamens 6, in 2 sets, anthers tetrasporangiate and dithecal. Carpels 3, united to form a compound, trilocular ovary with a terminal often trifid style, stigma papillate, ovules few to numerous on the axile placentas. Fruit a berry or less often a septcidal capsule, or seldom multiple and fleshy. Seeds in capsular fruits winged or plumose.

The family Bromeliaceae consists of about 45 genera and 2,000 species, native to tropical and warm temperate America. In Bangladesh, this family is represented by a single genus with a single species.

Genus 96. **Ananas** Mill., Dict. ed. 6 (1762).

186. **Ananas comosus** (L.) Merr., Interpr. Herb. Amboin.: 133 (1917). *Bromelia comosa* L. (1754), *Ananas sativus* (Lindl.) Schult. f. (1830).

Vernacular name: *Anarash*.

English name: Pineapple.

Perennial herb. Stem short, unbranched, fleshy. Leaves long, narrow, lanceolate, spiny, closely spaced in a rosette on the stem. Inflorescence a terminal condensed spike having a cone-like bunch of bluish flowers. Flowers bisexual, regular. Fruit fleshy, the whole fruit with the bract, rachis and receptacles form a cone-like fleshy syncarp known as sorosis. *Flowering and fruiting*: February - July. *Chromosome number*: $2n = 50, 75, 100$ (Fedorov, 1969). *The plant grows in a dry upland area but can also grow in moist and hot areas with high rainfall, provided the land is naturally well drained.*

Distribution: A native of tropical and sub-tropical America. It is now also introduced in other tropical countries, and is extensively cultivated in Hawaii, Mexico, Cuba, the West Indies, Formosa, Sri Lanka, India, China, Taiwan, the Philippines, Singapore, Queensland (Australia).

Status of occurrence: Cultivated.

Uses: Ripe fruit is eaten fresh as a dessert and used in making juice, squash, jam and jellies.

Specimens examined: Kaliganj, Kolatola, 05.03.2002, R. Tabassum, 166 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2459 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2955 (DUSH).

Family 17. **MUSACEAE** A. L. de Jussieu (1789)

Tree-like perennial herbs, main stem rhizomatous or corm-like, aerial pseudo-stem stout, unbranched, sheathed by the petioles. Leaves very large, spirally arranged, petiole long with a coarse basal sheath, blade simple, expanded, entire, rolled-up from one side to the other in the bud. Inflorescence axis arising from the corm, growing up

through the tube formed by the leaf sheaths, exerted portion of the axis bearing a close succession of large, leathery-firm, keeled or boat-shaped, spirally arranged bracts. Flowers epigynous, irregular, functionally unisexual, subtended by the lower bracts. Tepals 6, all petaloid but dissimilar, basically in 2 series, stamens generally 5, filaments slender, anthers linear, tetrasporangiate and dithecal, opening by longitudinal slits. Carpels 3, united, ovary inferior, 3-loculed, style slender, stigma 3-lobed, ovules numerous in each locule, placentation axile. Fruits berry-like, fleshy, with a firmer, separable exocarp. Seeds few to numerous, with a thick and hard testa.

The family Musaceae consists of 2 genera and about 50 species distributed in tropical and subtropical regions of the World. In Bangladesh, this family is represented by a single genus *Musa* with 3 species.

In the present study area this family is represented by a single species.

Genus 97. **Musa** L., Sp. Pl.: 1043 (1753).

187. **Musa paradisica** L., Sp. Pl.: 1043 (1753). *Musa sapientum* L., Syst. 1303 (1759); Hook. f., Fl. Brit. Ind. 6: 262 (1892); Prain, Beng. Pl. 2: 789 (1903, reprint 1963); R. L. Heinig, List Chittagong: 70 (1925). *Musa paradisiacal* L. subsp. *sapientum* (L.) K. Schum. (1900).

Vernacular names: *Kola, Kanch kola*.

English names: Banana, Plantain.

Tree-like herb. Leaves petiolate, blade oblong, 1-3 m long, splitting between the transverse parallel veins. Inflorescence a drooping spike, peduncle thick. Bracts dark red. Flowers whitish-yellow, tinged pink. Fruits oblong, fleshy. *Flowering and fruiting*: throughout the year. *Chromosome number*: $2n = 16, 22, 32, 33, 34, 35, 44, 48, 55, 77, 88$ (Kumar and Subramaniam, 1986). *Cultivated in plainlands*.

Distribution: Native to tropical Asia and widely cultivated in the tropics.

Status of occurrence: Cultivated.

Uses: Ripe fruits are eaten raw and green fruits are eaten as cooked vegetables.

Specimens examined: Kapasia, Baoraid, 16.05.2010, R. Tabassum, 1085 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1460 (DUSH); Kaligonj, Kalerhat, 23.08.2010, R. Tabassum, 1571 (DUSH); Tongi, Raklal, 19.08.2013, R. Tabassum, 2792 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2999 (DUSH).

Family 18. **ZINGIBERACEAE** Lindley (1835)

Rhizomatous aromatic herbs. Rhizome usually fleshy, sympodial. Leaves linear, lanceolate, oblong or roughly orbicular, radical or cauline, distichously arranged, ligulate, sheathing below, sheaths usually open. Inflorescence terminal on a leafy

shoot or radical, spicate or paniced. Flowers bisexual, zygomorphic, solitary in the axils of bracts or in cincinni with or without bracteole. Calyx tubular or campanulate. Corolla tube slender. Labellum adnate at the base to corolla tube, generally petaloid and most conspicuous feature of the flower. Lateral staminodes petaloid or reduced to subulate teeth or absent. Fertile stamen 1. Ovary inferior, unilocular with parietal placentation or trilocular with axile placentation, styles linear, stigmas usually expanded. Fruit a dehiscent capsule, rarely a fleshy berry. Seeds arillate.

The family Zingiberaceae consists of about 47 genera and a thousand species, native to tropical regions, especially in southern and southeastern Asia. In Bangladesh, this family is represented by 14 genera and 60 species.

In the present study area this family is represented by 3 genera and 7 species.

Key to genera:

- | | |
|---|-----------------|
| 1. Lateral staminodes adnate to labellum forming a 3-lobed structure | Zingiber |
| - Lateral staminodes petaloid | 2 |
| 2. Ovary 1-loculed, placentation parietal; anther long; labellum adnate to filament | Globba |
| - Ovary 3-loculed, placentation axile; anther short; labellum free from filament | Curcuma |

Genus 98. **Curcuma** Roxb., Asiat. Res. 11: 329 (1810).

Key to species:

- | | |
|---|------------------|
| 1. Rhizomes pale yellow | 2 |
| - Rhizomes orange or bright orange-yellow | 3 |
| 2. Rhizome with green mango smell; leaf blade without a purple band along center | amada |
| - Rhizome without green mango smell; leaf blade with a purple band along center | zedoaria |
| 3. Inflorescences terminal on pseudostems; plants flowering in autumn | longa |
| - Inflorescences on separate shoots arising from rhizomes; plants flowering in summer | aromatica |

188. **Curcuma amada** Roxb., Asiat. Res. 11: 341 (1810); Hook. f., Fl. Brit. Ind. 6: 213 (1890); Prain, Beng. Pl. 2: 783 (1903, reprint 1963).

Vernacular name: *Amada*.

Leafy rhizomatous herb. Leaves petiolate, lamina oblong-elliptic or oblanceolate. Spike arising from the centre of the leafy tuft. Fertile bracts white or pale green, coma bracts pinkish or whitish. Flowers whitish. *Flowering*: July - September. *Chromosome number*: $2n = 42$ (Kumar and Subramaniam, 1986). *Forest and fallow lands*.

Distribution: India.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Simultoli, 30.01.2001, R. Tabassum, 66 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2048 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3161 (DUSH); Kapasia, Voboner Chala, 03. 11.2013, R. Tabassum, 3532 (DUSH).

189. **Curcuma aromatica** Salisb., Parad. Lond. 2: t. 96 (1803); Hook. f., Fl. Brit. Ind. 6: 210 (1890); Prain, Beng. Pl. 2: 783 (1903, reprint 1963).

Vernacular name: *Bon haldi*.

Leafy rhizomatous herb, rhizome strongly aromatic. Leaves 5-7, petiolate, lamina broadly lanceolate. Spikes radical, commonly appearing before leaves or central with leaves in the late season. Fertile bracts pale green in the lower portion and mauve-tipped in the upper, coma bracts pink (mauve). Flowers included in the bracts, pinkish. Fruits usually not formed. *Flowering*: March - July. *Chromosome number*: $2n = 42$ (Kumar and Subramaniam, 1986). *Margins of the forest and shady forest floors*.

Distribution: Bhutan, India, Nepal, Sri Lanka and Thailand.

Status of occurrence: Common.

Use: It is a medicinal plant.

Specimens examined: Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1967 (DUSH); Sripur, Veramtoli, 17.02.2012, R. Tabassum, 2083 (DUSHG); Gazipur Sadar, Shalikhura, 19.08.2013, R. Tabassum, 2666 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3676 (DUSH).

190. **Curcuma longa** L., Sp. Pl. 1: 2 (1753); Hook. f., Fl. Brit. Ind. 6: 214 (1890); Prain, Beng. Pl. 2: 783 (1903, reprint 1963); R. L. Heinig, List Chittagong: 70 (1925). *Amomum curcuma* Jacq. (1776), *Kua domestica* Medic. (1790), *Stissera curcuma* Giseke (1792), *Curcuma domestica* Valet. (1918).

Vernacular names: *Halud, Haldi*.

English name: Turmeric.

Leafy rhizomatous herb, rhizome yellow-orange inside, strongly aromatic. Leaves petiolate, lamina oblong-lanceolate or elliptic-lanceolate. Spike appearing with the leaves and central to the leaf tuft. Fertile bracts white to light green, coma bracts greenish-white. Flowers slightly exserted from the bracts, calyx white, petals white. Fruits are usually not formed. *Flowering*: August - October. *Chromosome number*: $2n = 32$ (Kumar and Subramaniam, 1986). *Highlands both in partial shade and open sun*.

Distribution: Cultivated throughout the tropics.

Status of occurrence: Cultivated.

Use: It is a spice and a medicinal plant.

Specimens examined: Sripur, Gorgoria, 02.06.2010, R. Tabassum, 1406 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2881 (DUSH); Kaliakoir, Simultoli, 01.10.2013, R. Tabassum, 3376 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3574 (DUSH).

191. **Curcuma zedoaria** (Christm.) Rosc., Trans Linn. Soc. Lond. 8: 354 (1807); Hook. F., Fl. Brit. Ind. 6: 210 (1890); Prain, Beng. Pl. 2: 783 (1903, reprint 1963); R. L. Heinig, List Chittagong: 70 (1925). *Amomum latifolia* Lamk. (1692), *Curcuma officinalis* Salisb. (1747), *Amomum zedoaria* Christm., Mat. Med. 41 (1779).

Vernacular names: *Failla, Shoti*.

English name: Zedoary.

Rhizomatous herb. Leaves petiolate, lamina oblong or narrowly oblong-lanceolate. Spikes radical, appearing before leaves. Fertile bracts pale green, coma bracts purplish-pink. Flowers exserted from the bracts, calyx white, petals white. Fruits usually not formed. *Flowering and fruiting*: April - May. *Chromosome number*: $2n = 40$ (Kumar and Subramaniam, 1986). *Grows in fallow lands and roadsides*.

Distribution: Bhutan, India, Indonesia and Malaysia.

Status of occurrence: Common.

Use: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 189 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 928 (DUSH).

Genus 99. **Globba** L., Mant. Alt.: 170 (1771).

192. **Globba marantina** L., Mant. Alt.: 170 (1771). *Globba bulbifera* Roxb. (1810); Hook. f., Fl. Brit. Ind. 6: 206 (1890); Prain, Beng. Pl. 2: 779 (1903, reprint 1963), *Globba marantinoides* Wight (1853).

English name: Yellow dancing girl.

Small annual herb. Leaves shortly petiolate, lamina broadly lanceolate. Inflorescence terminal, drooping. Bracts persistent, green. Calyx yellow, petals yellow. *Flowering*: June - September. *Chromosome number*: $2n = 48$ (Kumar and Subramaniam, 1986). *Secondary forests in partial shade*.

Distribution: India, Sri Lanka, Malaysia and the Philippines.

Status of occurrence: Apparently common.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3984 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3995 (DUSH).

Genus 100. **Zingiber** Boehmer, Lud. Def. Gen. Pl.: 89 (1760).

Key to species:

1. Ligule 2-4 mm; inflorescences ovoid, 4-5 cm; bracts ovate, apex mucronate **officinale**
- Ligule 8-10 mm; inflorescences fusiform, 4-12 cm; bracts rhombic, apex obtusely acuminate **montanum**

193. **Zingiber montanum** (Koen.) Dietr. in L., Sp. Pl. ed. 6, 1: 52 (1832). *Amomum montanum* Koen. (1731), *Zingiber purpureum* Rosc. (1807), *Cassumunar roxburghii* Colla. (1830).

Vernacular names: *Bon ada*, *Moor ada*.

Rhizomatous herb with annual aerial leafy stem. Leaves sessile or subsessile, lamina lanceolate. Scape radical, spikes ovate to oblong. Bracts purplish-brown. Corolla pale yellow. Capsules ovoid. *Flowering*: July - September. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *Shady forest floors*.

Distribution: Bhutan, India, Malay Peninsula, the Philippines and Sri Lanka.

Status of occurrence: Common.

Use: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 06.11.2008, R. Tabassum, 450 (DUSH); Kapasia, Shaldio, 03.07.2010, R. Tabassum, 1531 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2378 (DUSH); Koliakoir, Chandra, 13.09.2013, R. Tabassum, 3237 (DUSH).

194. **Zingiber officinale** Rosc., Trans. Linn. Soc. Lond. 8: 348 (1807); Hook. f., Fl. Brit. Ind. 6: 246 (1892); Prain, Beng. Pl. 2: 785 (1903, reprint 1963). *Amomum zingiber* L. (1753).

Vernacular name: *Ada*.

English name: Ginger.

Small rhizomatous herb, rhizome aromatic with pungent taste. Leaves sessile, lamina linear-lanceolate. Spike radical. Bracts green with a creamy-yellow margin. Petals creamy-yellow. *Flowering*: September - November. *Chromosome number*: $2n = 22$ (Kumar and Subramaniam, 1986). *High lands where it is cultivated*.

Distribution: Widely cultivated throughout tropical Asia.

Status of occurrence: Cultivated.

Use: It is a spice yielding plant.

Specimens examined: Kapasia, Chonabaj, 03.07.2010, R. Tabassum, 1522 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2450 (DUSH); Tongi, Skuib Road, 19.08.2013, R. Tabassum, 2882 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3041 (DUSH).

Family 19. **COSTACEAE** Nakai (1941).

Perennial, tall herbs with creeping, tuberous rootstock and twisting stem. Leaves simple, spirally arranged, alternate or 4-ranked with tubular, ligulate, closed sheaths. Inflorescence a dense, terminal, cone-like spike, with spirally arranged bract. Flowers perfect. Sepals forming a short tube. Petals 3, unequal with petaloid lobe. Functional stamen 1, staminodes 2, anther loculicidal, often apically appendiculate. Carpels 3, united, ovary 3-celled. Fruit a capsule.

The family Costaceae consists of 4 genera and about 150 species, and pantropical in distribution, but best developed in the New World. In Bangladesh, it is represented by a single genus with a single species.

Genus 101. **Costus** L., Sp. Pl.: 2 (1753).

195. **Costus speciosus** (Koenig) Smith, Trans. Linn. Soc. London 1: 249 (1791); Hook. f., Fl. Brit. Ind. 6: 249 (1892) Prain, Beng. Pl. 2: 786 (1903, reprint 1963); R. L. Heinig, List Chittagong: 70 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 108 (1956); Mia & Rahman in Khan & Rahman, Fl. Bangladesh 45: 2 (1990). *Banksea speciosa* Koen. In Retz., Obs. Bot. 3: 75 (1783).

Vernacular names: *Kushtha*, *Kemak*,
Banduki, *Ghorakukra* (*Santal*).

English name: Spiral ginger.

Rhizomatous, tall herb. Leaves elliptic, oblong or elliptic-oblong, acuminate. Inflorescence of spikes. Flowers white with a yellow centre. Capsules subglobose to ovoid, 3-gonous, red, crowned with the persistent calyx. *Flowering and fruiting*: September - December. *Chromosome number*: $2n = 18, 27, 36$ (Fedorov, 1969). *Grows in village shrubberies, forest openings, village thickets and other shady places.*

Distribution: Indo-Malaysia to Papua New Guinea and Australia.

Status of occurrence: Common.

Use: Root tuber is used in jaundice by *Santal*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 7 (DUSH); Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 870 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1316 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3703 (DUSH).

Family 20. **CANNACEAE** A. L. de Jussieu (1789).

Perennial, erect herbs. Leaves large, spirally arranged, with a short, open sheath gradually passing into the petiole, blade expanded, simple, entire, midrib prominent, rolled-up from one side to the other in bud. Inflorescence terminal, usually openly branched. Flowers showy, bisexual, epigynous, irregular, fundamentally trimerous. Sepals 3, green or purplish, not petaloid, free, spirally arranged, persistent in the fruit. Petals 3, one smaller than the other 2. Stamens half functional, others petaloid. Carpels 3, syncarpous, ovary inferior, 3-celled, style petaloid, stigma papillate, placentation axile. Fruit usually a warty capsule.

The family Cannaceae consists of the single genus *Canna* with about 50 species native to tropical and sub-tropical parts of the New World. In Bangladesh, this family is represented by a single species.

Genus 102. **Canna** L., Sp. Pl. 1: 1 (1753).

196. **Canna indica** L., Sp. Pl. 1: 1 (1753); R. L. Heinig, List Chittagong: 70 (1925). *Canna orientalis* Rosc. (1824), *Canna indica* L. var. *orientalis* Baker (1892); Hook. f., Fl. Brit. Ind. 6: 260 (1892); Prain, Beng. Pl. 2: 787 (1903, reprint 1963).

Vernacular names: *Sarbojoya*, English names: Indian shot, Canna lily, *Kolabati*. African arrowroot.

Perennial rhizomatous herb. Leaves simple, spirally arranged, leaf blade lanceolate or oblong to elliptic, entire. Inflorescence racemose, raceme simple. Flowers bracteate and bracteolate, zygomorphic, fundamentally trimerous, calyx green or maroon, corolla red or variously coloured. Fruit a warty capsule. *Flowering and fruiting*: April

- November. *Chromosome number*: $2n = 18$ (Kumar and Subramaniam, 1986). *Wild forms prefer marshy places*.

Distribution: Tropical and sub-tropical regions of the world.

Status of occurrence: Cultivated.

Use: Ornamental garden plant.

Specimens examined: Kapasia, Torgao, 14.12.2009, R. Tabassum, 504 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2460 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2928 (DUSH).

Family 21. **MARANTACEAE** Peterson (1888)

Perennial rhizomatous herbs. Leaves more or less distichous, often imbricated, mostly basal or seemingly so, with an open sheath and a distinct, sometimes winged petiole, blade usually linear, ovate, or oblong to elliptic, with a prominent midrib. Inflorescence a terminal spike or panicle, usually subtended by spathaceous bracts, sometimes on a separate stem arising directly from the rhizome. Flowers bisexual, irregular, perianth segments 6 in 2 series, differentiated into sepals and petals. Sepals 3. Petals 3, connate below into a tube. Androecium of 2 whorls, the outer whorl represented by 1 or 2 petaloid staminodes, the inner by 1 fertile stamen and 1 or 2 petaloid staminodes, fertile stamen with i-celled anther. Gynoecium of 3 carpels, united to form a compound, inferior, trilocular ovary, style terminal, stigma 1. Fruit a loculicidal capsule or fleshy and berry-like but dehiscent. Seeds often arillate.

The family Marantaceae consists of about 30 genera and 400 species, distributed throughout the tropics, but most abundant in the New World. In Bangladesh, this family is represented by 3 genera and 5 species.

In the present study area this family is represented by 2 genera with 2 species.

Key to genera:

1. Stems simple; cauline leaf 1 or absent; inflorescences capitate or spikelike; flower pairs subsessile; sepals and ovary not visible (covered by bracts); corolla tube proximally $\pm$ solid, not obviously hollow
- Stems branched to much branched; cauline leaves (1 or)2 to numerous; inflorescences terminal on leafy shoots, racemose or paniculate; flower pairs exerted; sepals and ovary clearly visible; corolla tube obviously hollow throughout

Phrynium

Maranta

Genus 103. **Maranta** L., Sp. Pl.: 2 (1753).

197. **Maranta arundinacea** L., Sp. Pl.: 2 (1753); Prain, Beng. Pl. 2: 788 (1903, reprint 1963). R. L. Heinig, List Chittagong: 70 (1925). *Maranta sylvatica* Roscoe ex J.E. Smith (1819).

Vernacular names: *Tukhur*, *Tikhur* English names: Arrowroot, West Indian arrowroot.
aararut.

Herb with a creeping rootstock. Leaves petioled on sheaths, blade ovate. Flowers in terminal cyme, bracteates, spathaceous. Fruit ovoid-oblong, indehiscent. *Flowering and fruiting*: May - August. *Chromosome number*: $2n = 18, 46, 48$ (Kumar and Subramaniam, 1986). *High humid and shady places*.

Distribution: South America and Zanzibar. The Europeans introduced the plant in India in the 18th century.

Status of occurrence: Apparently rare.

Specimen examined: Kapasia, Saldio, 03.07.2010, R. Tabassum, 1464 (DUSH).

Genus 104. **Phrynium** Willd., Sp. Pl. 1: 17 (1797).

198. **Phrynium imbricatum** Roxb., Fl. Ind. 1: 6 (1820).

Vernacular name: *Pituli pata*.

Rigid herb, rhizome creeping with petiole-like aerial stem. Leaves large, oblong, acute, entire, petiole longer than the blade. Inflorescence a spike, from the side of the petiole. Flowers white. Fruit a capsule, usually 3-seeded. *Flowering and fruiting*: April - September. *Deep forests, by the side of running water sources*.

Distribution: Not known outside Bangladesh.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 142 (DUSH); Kaliakoir, Kalampur, 09.05.2010, R. Tabassum, 767 (DUSH); Sripur, Garabon, 21.09.2012, R. Tabassum, 2173 (DUSH); Kapasia, Voboner Chala, 03.11, 2013, R. Tabassum, 3550 (DUSH).

Family 22. **PONTEDERIACEAE** Kunth (1816)

Submerged, free floating or erect marshy herbs rooting in the mud. Stem rhizomatous or stoloniferous or erect and unbranched, with numerous air chambers within. Leaves whorled or alternate, or solitary at the top of the stem, blade lanceolate to broadly

ovate. Inflorescence a raceme or panicle, usually subtended by a spathe-like leaf sheath. Flowers bisexual, mostly regular or rarely irregular, blue, lilac, yellow or white. Perianth usually composed of 6 segments, all quite similar and petal-like, polyphyllous or gamophyllous, persistent and enclosing the fruit. Stamens 6 or 3, rarely 1, filaments slender, free, anthers 2-celled. Ovary superior, 3-locular with numerous ovules on axile placentas, or unilocular with 1 apical or with 3 parietal placentas, style 1, stigma entire or minutely 3-lobed. Fruit perfectly or imperfectly 3-valved, 1-seeded utricle. Seeds ribbed longitudinally.

The family Pontederiaceae consists of about 9 genera and 30 species, widespread in tropical and subtropical regions of the World. In Bangladesh, it is represented by 2 genera and 3 species only.

In the present study area this family is represented by 2 genera and 3 species.

Key to genera:

- | | | |
|----|---|-------------------|
| 1. | Flowers distinctly pedicellate; perianth actinomorphic, segments free nearly to base, all essentially uniform in color; stamens 6, 1 usually longer than others; petiole not inflated | Monochoria |
| - | Flowers sessile; perianth zygomorphic, segments basally united into a tube, apical lobe with a discolorous blotch; stamens 6, 3 much longer than others; petiole inflated | Eichhornia |

Genus 105. **Eichhornia** Kunth, Enum. 4: 129 (1843).

199. **Eichhornia crassipes** (Mart.) Solms in A. DC., Mon. Phan. 4: 527 (1883). *Pontederia crassipes* Mart., Nov. Gen. Sp.: 9, t. 4 (1823); *Eichhornia speciosa* Kunth, Enum. 4: 131 (1843); Backer in Van Steenis, Fl. Males. ser. 1, 4(3): 259 (1951); Rahman & Halim in M. S. Khan, Fl. Bangladesh 24: 2 (1984).

Vernacular names: *Kachuripana*, *Jarmani*.

English name: Water hyacinth.

Aquatic, free floating herb. Leaves emerged with spongy petioles, blade ovate or rhomboid. Inflorescence peduncled having 2 close bracts, lower one with a long tubular sheath and a small blade, upper one apicular, mostly tubular. Flowers very showy, perianth lobes lilac, posterior lobe with a bright yellow, blue bordered median blotch. *Flowering*: throughout the year. *Chromosome number*: $2n = 32$ (Fedorov, 1969). *Grows in stagnant or slow moving fresh water*.

Distribution: A native of Brazil, introduced as an ornamental into South East Asia, and has become a serious pest clogging waterways in many tropical countries.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Kamalpara, 02.11.2002, R. Tabassum, 157 (DUSH); Kaliganj, Nagorik, 05.03.2003, R. Tabassum, 185 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 842 (DUSH); Kapasia, Chonabaj, 03.07.2010, R. Tabassum, 1523 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2370 (DUSH).

Genus 106. **Monochoria** Presl, Rel. Haenk. 1: 127 (1830).

Key to species:

1. Flowering stems usually 12-35 cm; inflorescences reflexed after anthesis **vaginalis**
- Flowering stems usually 30-200 cm; inflorescences remaining erect after anthesis **hastata**

200. **Monochoria hastata** (L.) Solms in A. DC., Mon. Phan. 4: 523 (1883). *Pontederia hastata* L., Sp. Pl.: 288 (1753). *Monochoria hastaefolia* Presl, Rel. Haenk. 1: 128 (1827); Hook. F., Fl. Brit. Ind. 6: 362 (1892); Prain, Beng. Pl. 2: 812 (1903, reprint 1963); Rahman & Halim in M. S. Khan, Fl. Bangladesh 24: 4 (1984).

Vernacular name: *Baranukha*.

English name: Arrowleaf false pickerelweed.

Perennial, rhizomatous herb. Leaves hastate, many-nerved, basal lobes divergent, petioles of radical leaves longer, broad and sheathing at the base, of the floral leaves shorter. Inflorescence racemes or subumbels. Flowers pale blue. Capsules ellipsoid. *Flowering and fruiting:* throughout the year. *Chromosome number:* $2n = 28$ (Fedorov, 1969). *Grows in shallow water and mud, near canals and ditches.*

Distribution: India and Sri Lanka extending to Malay Islands and China.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Tongi Bazar, 30.01.2001, R. Tabassum, 62 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 578 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 614 (DUSH); Kaligonj, Taltia, 23.08.2010, R. Tabassum, 1622 (DUSH); Sripur, Bager Bazar, 18.02.2013, R. Tabassum, 2368 (DUSH).

201. **Monochoria vaginalis** (Burm. f.) Presl, Rel. Haenk. 1: 128 (1827). *Pontederia vaginalis* Burm. f., Fl. Ind. 80 (1768); *Pontederia plantaginea* Roxb., Fl. Ind. 2: 123 (1832). *Monochoria vaginalis* var. *plantaginea* (Roxb.) Solms in A. DC., Mon. Phan. 4: 524 (1883); Hook. f., Fl. Brit. Ind. 6: 363 (1892); Prain, Beng. Pl. 2: 812 (1903, reprint 1963); Rahman & Halim in M. S. Khan, Fl. Bangladesh 24: 5 (1984).

Vernacular names: *Nukha*, English name: Heartshape false pickerelweed. *Sarkachu*.

Slender perennial herb. Leaves extremely variable in size and shape, usually acuminate, petioles of lower leaves long, stout, terete. Flowers blue, globose in bud and the elongating as the flowers expand, the terminal flower opening first. Fruits glandular outside. *Flowering and fruiting*: May - January. *Chromosome number*: $2n = 52$ (Fedorov, 1969). *Grows in shallow water and mud in rice fields, jute fields, along streams and ditches*.

Distribution: India from Kashmir to Assam and south to Travancore, Sri Lanka and extending to Malaya Islands, China, Japan and Tropical Africa.

Status of occurrence: Common.

Specimens examined: Kaliganj, Borga Bazar, 14.03.2008, R. Tabassum, 253 (DUSH); Kapasia, Baoraid, 14.12.2009, R. Tabassum, 579 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 615 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1187 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2682 (DUSH).

Family 23. **LILIACEAE** A. L. de Jussieu (1789)

Perennial or annual herbs, rarely wiry shrubs, with starchy rhizome, bulb or corm. Leaves simple, alternate or less often opposite or whorled, often all basal, usually narrow, sometimes much-reduced (as in *Asparagus*). Flowers in a raceme, spike, panicle or involucrate cymose umbel, sometimes solitary or paired in the axils of the leaves, usually perfect. Perianth of 6 tepals, usually in 2 similar and petaloid cycles, all tepals distinct or jointed together towards the base to form a perianth tube, often bearing a corona in addition to the perianth segments. Stamens usually as many as the tepals, seldom 3, rarely up to 12, free. Carpels 3 (rarely 2 or 4), united, ovary superior or inferior, style mostly solitary, stigma capitate or 3-lobed. Fruit usually a loculicidal or septicidal capsule, less often a berry, seldom nut-like. Seeds with a terminal cotyledon and lateral plumule.

The family Liliaceae consists of about 280 genera and 4,000 species, widespread throughout the World. In Bangladesh, this family is represented by 13 genera and 26 species.

In the present study area this family is represented by 6 genera and 7 species.

Key to genera:

- | | |
|--|---|
| 1. Inflorescence often a raceme; ovary superior | 2 |
| - Inflorescence usually an umbel, borne on a scape; ovary often inferior | 4 |

- | | | |
|----|---|-------------------|
| 2. | Plants cormous or bulbiferous | 3 |
| - | Plants not bulbiferous or cormous, but often producing rhizomes or other underground organs | Asparagus |
| 3. | Plants cormous, climber | Gloriosa |
| - | Plants bulbiferous, herb | Allium |
| 4. | Plants with corms, rhizomes, tubers, or fleshy, fibrous roots; flowering stem leafy or bracteate | Curculigo |
| - | Plants with bulbs or a bulblike base formed by persistent leaf bases; flowering stem scapose, leafless except for involucre enclosing strictly terminal umbel, sometimes 1-flowered | 5 |
| 5. | Filaments basally connate into a cup or with free scales among them | Pancratium |
| - | Filaments free, without scales among them | Crinum |

Genus 107. **Allium** L., Sp. Pl.: 294 (1753).

Key to species:

- | | | |
|----|---|----------------|
| 1. | Bulbs with a narrow, more or less cylindrical distinct rhizome; leaves usually terete | cepa |
| - | Bulbs broadly ovoid to subglobose, without a distinct rhizome; leaves usually flat | sativum |

202. **Allium cepa** L., Sp. Pl. 1: 300 (1753); Hook. f., Fl. Brit. Ind. 6: 337 (1892); Prain, Beng. Pl. 2: 809 (1903, reprint 1963). R. L. Heinig, List Chittagong: 72 (1925).

Vernacular name: *Piyaj*.

English names: Onion, Bulb onion.

Annual herb. Leaves radical, simple, long cylindrical. Flowers arranged in a terminal umbel inflorescence borne on a long leafless scape and enclosed by membranous bracts. Flowers complete, bisexual. Fruit a membranous, loculicidal capsule. Seeds compressed, black. *Flowering and fruiting*: February - June. *Chromosome number*: $2n = 16$ (Kumar and Subramaniam, 1986). *Cultivated in fertile lands*.

Distribution: Probably originated in central Asia, now only known from cultivation, and is being cultivated in most of the countries of the world.

Uses: The whole immature plant is used as vegetable. Bulbs are used as spice.

Status of occurrence: Cultivated.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1065 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1239 (DUSH); Kaligonj, Kalerhat, 23.08.2010, R. Tabassum, 1567 (DUSH) Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2647 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2997 (DUSH).

203. **Allium sativum** L., Sp. Pl. 1: 297 (1753); Hook. f., Fl. Brit. Ind. 6: 337 (1892); Prain, Beng. Pl. 2: 809 (1903, reprint 1963). R. L. Heinig, List Chittagong: 72 (1925).

Vernacular name: *Rashun*.

English name: Garlic.

Erect herb. Leaves simple, radical, blade linear. Flowers in umbel inflorescence on a solid scape, tepals greenish-white. Fruit seedless. *Flowering and fruiting:* February - April. *Chromosome number:* $2n = 16$ (Kumar and Subramaniam, 1986). *Moderately high land with loamy soil.*

Distribution: Garlic is believed to have been originated from Central Asia (Tien Shan) where its wild ancestor *A. longicuspis* Regd is endemic. It is cultivated throughout Bangladesh during the winter. Its leading producers include China, Egypt, India, South Korea, Spain, Thailand and Turkey.

Use: It is an important spice yielding plant.

Status of occurrence: Cultivated.

Specimens examined: Kaliganj, Kolafata, 05.03.2010, R. Tabassum, 683 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1272 (DUSH); Kapasia, Barisho, 09.03.2012, R. Tabassum, 2106 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2646 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2998 (DUSH).

Genus 108. **Asparagus** L., Sp. Pl.: 313 (1753).

204. **Asparagus racemosus** Willd., Sp. Pl. 2: 152 (1799); Hook. F., Fl. Brit. Ind. 6: 316 (1892); Prain, Beng. Pl. 2: 805 (1903, reprint 1963).

Vernacular name: *Shatamuli*.

English name: Asparagus.

Perennial, slender, scandent shrub with reflexed spines, root tuberous, many together. Leaves scale-like, cladodes present in scale-like leaf axils. Inflorescence a raceme. Flowers bisexual, white. Fruit a globose berry. *Flowering and fruiting:* November - March. *Chromosome number:* $2n = 20, 22, 30, 40, 48$ (Kumar and Subramaniam, 1986). *Scrub jungles.*

Distribution: Throughout tropical and subtropical India, including Sri Lanka, Pakistan, Nepal, Bhutan, Malaysia, Australia and tropical Africa.

Status of occurrence: Common.

Uses: Roots are used in dysentery by *Koch*.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 416 (DUSH); Kaliganj, Tumulia, 23.08.2010, R. Tabassum, 1670 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2051 (DUSH); Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2621 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3534 (DUSH).

Genus 109. **Crinum** L., Gen. ed. 1: 97 (1737).

205. **Crinum latifolium** L., Sp. Pl.: 291 (1753); Hook. f., Fl. Brit. India 6: 283 (1892); Prain, Beng. Pl. 2: 798 (1903, reprint 1963). *Crinum ornatum* Herb. (1837).

Vernacular names: *Uliraj*, *Barakanur*.

English name: Giant crinum lily.

Bulbous perennial herb. Leaves many, lorate. Scape reddish to purple, spathe green-reddish to purple. Inflorescence of 10-20 flowered umbels. Flowers white, tinged with red, sometimes red-purple, nearly all over the back. Fruit a sub-globose capsule. *Flowering and fruiting:* May - August. *Chromosome number:* $2n = 33$, allotriploid (Lubna *et al.*, 2004). *Soil rich in organic matter.*

Distribution: Throughout Sri Lanka, India and Myanmar, also in Malaysia and Africa.

Status of occurrence: Cultivated.

Use: Ornamental garden plant.

Specimens examined: Sripur, Toporbari, 21.09.2012, R. Tabassum, 2210 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2878 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2982 (DUSH); Kapasia, Kandunia, 03.11.2013, R. Tabassum, 3683 (DUSH).

Genus 110. **Curculigo** Gaertn., Fruct. 1: 63. t. 16 (1788).

206. **Curculigo orchoides** Gaertn., Fruct. 1: 63. t. 16 (1788); Hook. f., Fl. Brit. Ind. 6: 279 (1892); Prain, Beng. Pl. 2: 796 (1903, reprint 1963). *Curculigo brevifolia* Dryand (1811).

Vernacular name: *Talmuli*.

Slender herb. Leaves radical, linear-lanceolate, plicate. Scape flattened, hidden by the leaf sheaths. Flowers distichous yellow. Fruit an oblong capsule. Seeds shining black. *Flowering and fruiting:* June - August. *Highland soils.*

Distribution: Subtropical Himalayas from Kumaon eastwards, Khasia Hilla, Tripura and Manipur of India and Java Island of Indonesia.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 190 (DUSH); Kaliakoir, Mouchak, 09.05.2010, R. Tabassum, 822 (DUSH).

Genus 111. **Gloriosa** L., Sp. Pl.: 305 (1753).

207. **Gloriosa superba** L., Sp. Pl.: 305 (1753); Hook. F., Fl. Brit. India 6: 358 (1892); Prain, Beng. Pl. 2: 807 (1903, reprint 1963); R. L. Heinig, List Chittagong: 72 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 109 (1956).

Vernacular names: *Ulatchandal*, English names: Superb lily, Malabar
Bishlanguli, *Agnishikha*. glory lily, Climbing lily.

Climbing herb, underground rootstock perennial. Leaves lanceolate, acuminate, tip ending in a tendril-like spiral. Flowers solitary, large, greenish at first, then turning , and in sequence to orange, scarlet and finally crimson. Capsules linear-oblong, crimson when mature. *Flowering and fruiting:* July - November. *Chromosome number:* $2n = 22$; also recorded as 88, 90 (Bose and Yadab, 1989). *Generally grows wild in the high lands, also planted in the garden.*

Distribution: Common throughout the tropical regions of the world.

Status of occurrence: Common.

Specimens examined: Kaliganj, Nimtoli, 05.09.2003, R. Tabassum, 217 (DUSH); Kaliakoir, Mouchak, 08.01.2010, R. Tabassum, 638 (DUSH); Sripur, Borkul, 21.06.2010, R. Tabassum, 1153 (DUSH); Tongi, Khainukar, 19.08.2013, R. Tabassum, 2879 (DUSH).

Genus 112. **Pancratium** L., Sp. Pl.: 290 (1753).

208. **Pancratium verecundum** Ait., Hort. Kew. 1: 412 (1810); Hook. f., Fl. Brit. Ind. 6: 285 (1892); Prain, Beng. Pl. 2: 798 (1903, reprint 1963). *Pancratium triflorum* Roxb. (1824).

Vernacular name: *Gor-rashun*.

Perennial bulbous herb. Leaves radical, linear, scape compressed. Flowers in umbel inflorescence. Perianth tube greenish, lobes white. Fruit a sub-globose capsule, 3-

angled, loculicidal. *Flowering and fruiting*: March - July. *Chromosome number*: $2n = 44, 44+1$ (Kumar and Subramaniam, 1986). *Dry areas*.

Distribution: Foot of the Himalayas, from the Punjab eastwards to Sikkim and Assam (India).

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1923 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 2037 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 3011 (DUSH).

Family 24. **ALOACEAE** Batsch (1802).

Succulent, simple perennial herbs or sparingly branched shrubs, some attaining the height of small trees. Stem rhizomatous or tuberous. Leaves simple, alternate, sessile, usually crowded in dense rosettes at the end of the stem and branches or at the ground-level on a short main stem, more or less fleshy-succulent, often soft prickly along the margins. Inflorescence terminal, axillary, or lateral, spicate, racemose, or paniculate, bracts scarious, persistent. Flowers 3-merous. Perianth red, brown, yellow, orange or whitish, tepals petaloid. Stamens usually 6, sometimes 3, anthers dorsifixed, dehiscence extrorse. Carpels 3, united, ovary superior, style terminal, stigma punctuate, ovules numerous in each locule. Fruit a loculicidal capsule. Seeds usually winged or flattened.

The family Aloaceae consists of 5 genera and about 700 species, native to Africa, Madagascar, Arabia and some nearby islands but best developed in South Africa. In Bangladesh, it is represented by a single genus with a single species.

Genus 113. **Aloe** L., Sp. Pl. 1: 319 (1753).

209. **Aloe vera** (L.) Burm. f., Fl. Ind.: 83 (1768). *Aloe perfoliata* L. var. *vera* L. (1753), *Aloe barbadensis* Miller (1768).

Vernacular names: *Ghritakanchan*,
Ghritakumari, *Musabbar*.

English names: Barbados aloe, Medicinal
aloe, Burn plant.

Xerophytic perennial succulent herb. Leaves sessile, crowded, narrowly lanceolate, spiny-toothed at the margins. Inflorescence a raceme. Flowers shortly pedicelled, bisexual, perianth tubular, orange or red. Fruit a capsule. *Flowering and fruiting*: September - December. *Chromosome number*: $2n = 14$ (Alam and Khanam, 2005). *Cultivated in homestead gardens*.

Distribution: Tropics and subtropics. Nowadays, it is cultivated commercially in the United States, Mexico, the Caribbean, Middle East, Australia, Thailand and south Kalimantan.

Status of occurrence: Cultivated.

Specimens examined: Gazipur Sadar, Rajendrapur, 06.11.2008, R. Tabassum, 453 (DUSH); Kaliakoir, Shohagpolly, 09.05.2010, R. Tabassum, 1004 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1295 (DUSH); Kaligonj, Banglahaola, 02.12.2013, R. Tabassum, 3804 (DUSH).

Family 25. **AGAVACEAE** Endlicher (1841).

Perennial, often arborescent, rhizomatous herbs or shrubs, polygamous or dioecious. Leaves usually crowded at the base of the stem, usually succulent, entire, or with a prickly or toothed margin. Inflorescence racemose or paniculate, often on a thick scape. Flowers bisexual or unisexual. Perianth segments 6, free or united. Stamens 6, adnate to the perianth lobes, anthers 2-locular, dorsifixed. Ovary superior or inferior, 3-locular, ovules 1-many in each locule, superposed. Fruit a loculicidal capsule or berry. Seeds compressed.

The family Agavaceae consists of about 18 genera and 600 species, distributed in tropical and subtropical regions of the world. In Bangladesh, it is represented by 7 genera and 13 species.

In the present study area this family is represented by 3 genera with 3 species.

Key to genera:

- | | | |
|----|--|-------------------|
| 1. | Flowers actinomorphic; inflorescence usually paniculate | 2 |
| - | Flowers zygomorphic; inflorescence spicate or racemose | Polianthes |
| 2. | Stamens larger than the perianth, filaments thread-like | Agave |
| - | Stamens shorter than the perianth, filaments thickened in the lower part | Dracaena |

Genus 114. **Agave** L., Sp. Pl.: 323 (1753).

210. **Agave americana** L., Sp. Pl.: 323 (1753).

Vernacular names: *Shatabdi udvid*, *Shatabarshi udvid*.

English names: Century plant, American aloe.

Large rhizomatous herb. Stem very reduced. Leaves forming a rosette, widest about the middle, green, often with pale yellow borders or otherwise variegated, apical spine dark reddish-brown, marginal spines pointing downwards. Inflorescence a large panicle, erect. Flowers pale yellow. Fruit usually a globose capsule. *Flowering and fruiting*: July - October. *Chromosome number*: $2n = 20, 60, 120, 180, 240$ (Fedorov, 1969). *Cultivated in well-drained soils*.

Distribution: A native of Mexico, naturalized in the Mediterranean region, India and Pakistan.

Status of occurrence: Cultivated.

Use: Garden plant.

Specimens examined: Kaliganj, Kolafata, 24.04.2008, R. Tabassum, 308 (DUSH); Gazipur Sadar, Markun, 04.02.2011, R. Tabassum, 1895 (DUSH); Kaliakoir, Boroichuti, 13.09.2013, R. Tabassum, 2914 (DUSH); Kapasia, Voboner Chala, 03.11.2013, R. Tabassum, 3629 (DUSH).

Genus 115. **Dracaena** Vand. ex L., Mant. 1: 63 (1767).

211. **Dracaena spicata** Roxb., Fl. Ind. 2: 157 (1832); Hook. f., Fl. Brit. Ind. 6: 328 (1892); Prain, Beng. Pl. 2: 806 (1903, reprint 1963); R. L. Heinig, List Chittagong: 71 (1925); J. Sinclair in Bull. Bot. Soc. 9(2): 109 (1956).

Vernacular name: *Dracaena*.

Erect shrub. Leaves spirally arranged, sub-verticillate, lanceolate or oblong. Inflorescence a panicle. Flowers fascicled or partly solitary, pale yellow or green. Berry globose, deep reddish-orange when ripe. *Flowering and fruiting*: January - December. *Grows in shady moist places*.

Distribution: The Andaman Islands, Myanmar, Australia, Malaysia.

Status of occurrence: Seems to be rare.

Specimen examined: Tongi, Chaydana, 19.08.2013, R. Tabassum, 2858 (DUSH).

Genus 116. **Polianthes** L., Sp. Pl.: 315 (1753).

212. **Polianthes tuberosa** L., Sp. Pl.: 316 (1753).

Vernacular name: *Rajaniggondha*.

English name: Tuberose.

Perennial herb with tuberous rootstock. Basal leaves well-developed, long, narrow, upper ones short, reduced, bright green, sometimes reddish near the base. Inflorescence a terminal spike. Flowers in pairs, waxy white, fragrant. Perianth tubular

or funnel-shaped. *Flowering and fruiting*: July - September. *Chromosome number*: $2n = 50, 60, 120$ (Kumar and Subramaniam, 1986). *Grown in the gardens*.

Distribution: A native of Mexico and Trinidad.

Status of occurrence: Cultivated.

Use: Ornamental garden plant.

Specimens examined: Kapasia, Ranimohol, 16.05.2010, R. Tabassum, 1057 (DUSH); Gazipur Sadar, Nayanpur, 04.02.2011, R. Tabassum, 1894 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2482 (DUSH); Kaliakoir, Fulbari, 13.09.2013, R. Tabassum, 3292 (DUSH).

Family 26. **SMILACACEAE** Ventenat (1799)

Climbing, perennial, herbaceous or slenderly woody vines. Stem leafy, often with recurved prickles. Leaves alternate, usually petiolate, petioles sheathing, with a pair of tendrils arising from the petiole, blade lanceolate-ovate. Inflorescence 1 to many umbels, racemes or spikes of umbels, borne in the leaf axils. Flowers unisexual, rarely bisexual. Perianth segments 6, free or connate, segments rarely gamophyllous. Male flowers: stamens most commonly 6, seldom numerous, anthers tetrasporangiate and dithecal. Female flowers: staminodes 3-6, ovary superior, 3-locular, sometimes unilocular, styles 3, distinct, stigmas capitate or 3-lobed, ovules 1 or more in each locule. Fruit a berry, 1-3 seeded.

The family Smilacaceae consists of about 12 genera, widespread in tropical and subtropical regions, most diversified in the Southern Hemisphere, but also well represented in parts of the north temperate zones. The family is dominated by the large genus *Smilax*, with about 300 species. In Bangladesh, this family is represented by a single genus with 9 species.

In the present study area this family is represented by 2 species.

Genus 117. **Smilax** L., Sp. Pl. 2: 1028 (1753).

Key to species:

1. Inflorescence of 2-7 solitary umbels; filaments proximally connate, forming a short column **ocreata**
- Inflorescence of 10-30 umbels, umbels 2- or 4-subwhorled or nearly clustered; filaments free **perfoliata**

213. **Smilax ocreata** A. DC. in DC., Monogr. Phan. 1: 191 (1878). *Smilax roxburghiana* Wall. (1831-1832); Hook. f., Fl. Brit. Ind. 6: 311 (1892); Prain, Beng. Pl. 2: 806 (1903, reprint 1963).

Vernacular name: *Kumarilata*.

Woody climber. Stem and branches sparsely prickly. Leaves ovate to elliptic, petioles broadly winged for one-third or half of its length, tendrils commonly developed. Inflorescence a raceme of 2-4 umbels, 10-30 flowered. Flowers unisexual, yellowish-green or tinged pink. Berries globose, dark red. *Flowering and fruiting*: March - October. *Grows in forests, thickets and damp slopes*.

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

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest, 06.12.2009, R. Tabassum, 473 (DUSH); Kaliakoir, Mouchak, 12.02.2011, R. Tabassum, 1966 (DUSH); Sripur, Piruzali, 17.02. 2012, R. Tabassum, 2016 (DUSH).

214. **Smilax perfoliata** Lour., Fl. Cochinch.: 622 (1790). *Smilax prolifera* Roxb., Fl. Ind. 3: 795 (1832); Hook. F., Fl. Brit. Ind. 6: 312 (1892); Prain, Beng. Pl. 2: 806 (1903-reprint 1963); R. L. Heinig, List Chittagong: 71 (1925).

Vernacular names: *Kumarika*, *Kumarilata*.

Large climber with sparse divergent to recurved prickles. Leaves extremely variable in form and size, tendrils long, leaf blades basically ovate to ovate-oblong, sometimes elliptic or ovate-elliptic, rarely broadly elliptic. Inflorescence borne on lower and middle parts of branches, mostly 1-3 umbellate, but in staminate ones occasionally up to 15 umbellate, umbels densely 2 to 70-flowered. Flowers unisexual, greenish. Berries circular, maturing red. *Flowering and fruiting*: November - March. *Chromosome number*: $2n = 26$ (Kumar and Subramaniam, 1986). *Forests, shrubberies and village thickets*.

Distribution: From Nepal and northern India through Upper Myanmar, Thailand, north-eastwards to south-eastern China and Taiwan.

Status of occurrence: Common.

Use: It is a medicinal plant.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 8 (DUSH); Kaliakoir, Nabinagar, 09.05.2010, R. Tabassum, 871 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2366 (DUSH).

Family 27. **DIOSCOREACEAE** R. Brown (1810)

Twining annual herbs with stems arising from the perennial tubers. Leaves alternate or opposite, ovate-cordate, simple, sometimes compound with 3-7 digitate leaflets, petioles usually twisted. Flowers in spike, raceme or panicle, unisexual, rarely bisexual, regular. Perianth segments biseriate, campanulate, or rotate, basally united. Stamens 6, in two whorls, anthers introrse or extrorse, dehiscent longitudinally. Styles 3, ovary inferior, triquetrous, 3-locular, ovules 2 in each locule. Fruit a dehiscent capsule or berry. Seeds flat or globose, mostly winged.

The family Dioscoreaceae consists of about 6 genera and 600 species distributed in tropical and subtropical regions of the World. In Bangladesh, this family is represented by a single genus *Dioscorea* and 17 species.

In the present study area this family is represented by 11 species.

Genus 118. **Dioscorea** L., Sp. Pl.: 1033 (1753).*Key to species:*

- | | |
|---|-------------------|
| 1. Plant twing to right; leaves simple; capsule not reflexed against spike axis; seeds surrounded by equal, circular wing | 2 |
| - Plant twing to left; leaves simple or compound; capsule reflexed; seeds surrounded by unequal, circular or oblong wing | 5 |
| 2. Stem angled or winged | 3 |
| - Stem terete | 4 |
| 3. Stems conspicuously winged, drying yellowish-brown; capsule wings over 2 cm wide | alata |
| - Stems ridged or narrowly winged, drying reddish-brown; capsule wings under 2 cm wide | hamiltonii |
| 4. Leaves thin textured; secondary veins not prominent; leaf base truncate but not sagittate | glabra |
| - Leaves coriaceous; secondary veins prominent; leaf base shallowly cordate or sagittate | belophylla |
| 5. Leaves compound | 6 |
| - Leaves simple | 9 |
| 6. Leaflets always 3, the 3 central costate; capsule over 4 cm | hispida |

- Leaflets usually 5, if 3 then central leaflet with 1 midnerve; capsule under 3 cm 7
- 7. Leaflets usually 5, rarely 3 or 7; sparsely pubescent beneath 8
- Leaflets usually 3, rarely 4 or 2; softly grey tomentose beneath **tomentosa**
- 8. Inflorescence grey-white pubescent; flower small; male spike arranged along a lateral inflorescence axis **pentaphylla**
- Inflorescence creamy-white pubescent; flower larger; male spike often axillary on main stem **kamoonensis**
- 9. Petal and sepals linear, whitish, over 2 mm, flower scented, capsule oblong in outline **bulbifera**
- Petal and sepals inconspicuous, greenish, under 2 mm, flower not scented, capsule obovate in outline **oppositifolia**

215. **Dioscorea alata** L., Sp. Pl.: 1033 (1753); Hook. f., Fl. Brit. Ind. 6: 296 (1892); Prain, Beng. Pl. 2: 802 (1903, reprint 1963). R. L. Heinig, List Chittagong: 71 (1925). *Dioscorea alata* L. var. *globosa* Roxb. (1832), *Dioscorea alata* L. var. *purpurea* Roxb. (1832), *Dioscorea alata* L. var. *rubella* Roxb. (1832).

Vernacular names: *Chupri alu*,
Guraniya alu, *Kham*, *Kham alu*.

English names: Greater yam, Water yam,
Winged-yam, White yam.

Twining annual herb, tubers polymorphic. Stem twining to the right, bulbils globose, ovoid. Leaves opposite, blades ovate or deltoid-ovate. Flowers laxly arranged. Fruit a capsule. *Flowering and fruiting*: October - December. *Chromosome number*: $2n = 20, 30, 40, 50, 60, 70$ (Kumar and Subramaniam, 1986). *Homestead gardens*.

Distribution: Cultivated throughout the humid tropics, not known in the wild.

Status of occurrence: Common.

Uses: Tubers and bulbils are edible.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 448 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 804 (DUSH); Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1503 (DUSH); Sripur, Bagher Bazar, 18.02.2013, R. Tabassum, 2364 (DUSH).

216. **Dioscorea belophylla** (Prain) Voigt ex Haines, Forest Fl. Chota Nagpur: 530 (1910). *Dioscorea sagittata* Royle (1839).

Vernacular name: *Shora alu*.

Slender twining herb, tubers stalked, white, deeply buried. Stem twining to the right, bulbils warted. Leaves alternate, cordate, the larger leaves sagittate with the angled basal lobes. Flowers sessile. Fruit a capsule. *Flowering and fruiting*: June - October. *Chromosome number*: $2n = 60, 80$ (Kumar and Subramaniam, 1986). *Secondary forests and sides of streams*.

Distribution: India (Kashmir to Bhutan, Nilgiri and Khasia Hills).

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendropur Sal forest, 06.11.2008, R. Tabassum, 458 (DUSH); Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 726 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1398 (DUSH).

Dioscorea bulbifera L.

Key to variety:

- | | |
|--------------------------------------|---------------------------------|
| 1. Stem with axillary bulbils smooth | bulbifera var. sativa |
| - Stem with axillary bulbils warted | bulbifera var. bulbifera |

217. **Dioscorea bulbifera** L. var. **bulbifera** L., Sp. Pl.: 1033 (1753). *Dioscorea pulchella* Roxb., Fl. Ind. 3: 801 (1832).

Vernacular names: *Rata alu*, *Pagla alu*, *Rath* English names: Yam, Bitter yam. *pagla alu*.

Tuberous climber. Stem twining to left, bulbils abundant, small, warty. Leaves alternate, blades cordiform. Flowers whitish to pale pink. Fruit a capsule. *Flowering and fruiting*: June - October. *Chromosome number*: $2n = 36, 40, 54$ (Kumar and Subramaniam, 1986). *Grows in secondary forests*

Distribution: India, Nepal, Bhutan, Malaysia and Africa to the farthest Islands of the Pacific.

Status of occurrence: Common.

Use: Tuber is used as a cooked vegetable.

Specimens examined: Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2691 (DUSH); Kaliakoir, Srinail, 13.09.2013, R. Tabassum, 3080 (DUSH).

218. **Dioscorea bulbifera** L. var. **sativa** (Hook. f.) Prain, Bengal Pl. 2: 801 (1963). *Dioscorea sativa* Hook. f. (1892).

Vernacular names: *Mou alu*, *Mom alu*.

English name: Yam.

Twining herb. Stem twining to the left, bulbils abundant, large, smooth. Leaves alternate, blade cordiform with the long-acuminate apex. Flowers whitish to pale pink. Fruit a capsule, 3-angled, dehiscent. *Flowering and fruiting*: August - October. *Chromosome number*: $2n = 36, 40, 54$ (Kumar and Subramaniam, 1986). *Flat land in dry areas*.

Distribution: India and Bangladesh.

Status of occurrence: Common.

Use: Tubers and soft bulbils are used as cooked vegetable.

Specimens examined: Kapasia, Ranimohol, 03.07.2010, R. Tabassum, 1509 (DUSH); Sripur, Toporbari, 21.09.2012, R. Tabassum, 2212 (DUSH); Tongi, Cherag Ali, 19.08.2013, R. Tabassum, 2692 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2950 (DUSH).

219. **Dioscorea glabra** Roxb., Fl. Ind. 3: 804 (1832); Hook, f., Fl. Brit. India 6: 294 (1892); J. Sinclair in Bull. Bot. Soc. 9 (2): 109 (1956). *Dioscorea nummularia* Lamk., Roxb., Fl. Ind. 3: 803 (1832); Prain, Beng. Pl. 2: 802 (1903, reprint 1963); R. L. Heinig, List Chittagong: 71 (1925).

Vernacular names: *Shora jointa alu*, *Shora alu*.

Slender twining herb, tubers cylindrical, white. Stem twining to the right, bulbil absent. Leaves mostly opposite, lower alternate, upper oblong-elliptic to narrowly ovate. Inflorescence a spike. Flowers yellowish-green. *Flowering and fruiting*: September - December. *Chromosome number*: $2n = 40$ (Kumar and Subramaniam, 1986). *Twining over tall trees, usually in the drier areas*.

Distribution: India (subtropical Himalayas, Simla to Sikkim), Myanmar, Thailand and Malaysia.

Status of occurrence: Seems to be rare.

Use: Tubers are used as cooked vegetable.

Specimens examined: Gazipur Sadar, Rajendropur Sal forest, 06.12.2009, R. Tabassum, 477 (DUSH); Kaliakoir, Uluhara, 09.05.2010, R. Tabassum, 991 (DUSH).

220. **Dioscorea hamiltonii** Hook. f., Fl. Brit. Ind. 6: 295 (1892); Prain, Beng. Pl. 2: 802 (1903-reprint 1963); *Dioscorea hookeri* Prain ex Wood (1902).

Twining herb, tubers long, narrowly cylindrical, deeply buried. Stem twining to the right, bulbil absent. Leaves mostly opposite, lower alternate, ovate, cuspidate, upper and lateral ones deltoid. Inflorescence a spike. Flowers reddish-brown. Fruit a capsule. *Flowering and fruiting*: October - December. *Grows on secondary forests, specially at the margins*.

Distribution: Nepal to Bhutan, Assam (India), Myanmar and Indo-China.

Status of occurrence: Seems to be rare.

Use: Tubers are used as cooked vegetable.

Specimen examined: Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 790 (DUSH).

221. **Dioscorea hispida** Dennst., Hort. Ind. Malabar: 33 (1818). *Dioscorea daemona* Roxb. (1832); Hook. f., Fl. Brit. Ind. 6: 289 (1892); Prain, Beng. Pl. 2: 801 (1903, reprint 1963).

Vernacular name: *Rakhalshosha* English names: Wild yam, Intoxicating yam. (*Garó*).

Twining herb, tubers small. Stem twining to the left, bulbils small, globose, warty. Leaves tri-foliolate, central leaflet elliptic-oblong, lateral ones obliquely elliptic. Inflorescence a spike. Capsules reflexed, oblong in outline. *Flowering and fruiting*: September - December. *Chromosome number*: $2n = 40, 80$ (Kumar and Subramaniam, 1986). *Forests*.

Distribution: Africa, the Himalayas (Nepal to Sikkim and Bhutan), the tropical regions of Asia from India to Taiwan, the Philippines and New Guinea.

Status of occurrence: Apparently rare.

Uses: Tuber is used in dysentery by *Garó*.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 450 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 738 (DUSH); Sripur, Sal forest, 17.02.2012, R. Tabassum, 1990 (DUSH).

222. **Dioscorea kamoonsensis** Kunth, Enum. Pl. 5: 395 (1850); Hook. f., Fl. Brit. Ind. 6: 290 (1892); *Dioscorea triphylla* Wall. (1832).

Vernacular name: *Erabera lata*.

Slender twining herb. Stem twining to the left, bulbils abundant, axillary and small, globose, lightly attached to the axis. Leaves alternate, 3-5 foliolate. Male inflorescence

cream-white, female inflorescence carries 2-3 spikes. Fruit an oblong capsule, rounded at both ends. *Flowering and fruiting*: August - November. *Plain lands*.

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

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Shalikchura, 19.08.2013, R. Tabassum, 2659 (DUSH); Kaliakoir, Hijoltoli, 13.09.2013, R. Tabassum, 2951 (DUSH).

223. **Dioscorea oppositifolia** L., Sp. Pl.: 1033 (1753); Hook. f., Fl. Brit. Ind. 6: 292 (1892); Prain, Beng. Pl. 2: 967 (1903-reprint 1963); *Dioscorea oppositifolia* L. var. *thwaitesii* Prain & Burkill (1914); *Dioscorea oppositifolia* L. var. *linnaei* Prain & Burkill (1914).

English name: Chinese yam.

Tuberous climber, tubers usually solitary, cylindrical. Stem twining to the right, bulbil absent. Leaves opposite to subopposite, blade elliptic to ovate or obovate. Male inflorescence axillary, paniculate, panicles one or two in each axil, female inflorescence axillary, solitary, spicate. Fruit a capsule. *Flowering and fruiting*: August - November. *Chromosome number*: $2n = 40, 140$ (Kumar and Subramaniam, 1986). *Grows in secondary forests*.

Distribution: Sri Lanka and India.

Status of occurrence: Common.

Specimens examined: Gazipur Sadar, Rajendrapur Senanibash, 16.05.2008, R. Tabassum, 355 (DUSH); Kaliakoir, Jorapukur Road, 09.05.2010, R. Tabassum, 983 (DUSH); Sripur, Piruzali, 17.02.2012, R. Tabassum, 1999 (DUSH).

224. **Dioscorea pentaphylla** L., Sp. Pl.: 1032 (1753); Hook. F., Fl. Brit. India 6: 289 (1892); Prain, Beng. Pl. 2: 801 (1903, reprint 1963); R. L. Heinig, List Chittagong: 71 (1925); J. Sinclair in Bull. Bot. Soc. 9 (2): 109 (1956).

Vernacular names: *Jhum alu*, *Jhunjhuna lata*, English names: Yam, Five-leaf *Kanta alu*. yam.

Twining herb, tubers single, palmately-lobed. Stem twining to the left, prickly towards the base, bulbils abundant, globose, small. Leaves alternate, 3-5 foliolate. Inflorescence of paniculate or racemose. Capsules oblong, winged. *Flowering and fruiting*: June - December. *Chromosome number*: $2n = 36, 144$ (Kumar and Subramaniam, 1986). *Grows in secondary forests*.

Distribution: Africa, Sri Lanka, India, Bhutan, Nepal, Myanmar, Thailand, China, Malaysia, New-Guinea and the Pacific Islands.

Status of occurrence: Common.

Use: Tubers are used as vegetable.

Specimens examined: Gazipur Sadar, Rajendrapur Sal forest (Gojaria), 06.11.2008, R. Tabassum, 446 (DUSH); Kaliakoir, Shohag Polly, 09.05.2010, R. Tabassum, 737 (DUSH); Sripur, Gozaria, 21.06.2010, R. Tabassum, 1381 (DUSH).

225. **Dioscorea tomentosa** Koen. ex Spreng., Pl. Pugil. Secund.: 92 (1815); Hook. f., Fl. Brit. Ind. 6: 289 (1892); Prain, Beng. Pl. 2: 801 (1903, reprint 1963).

Tuberous herb, tuber cylindrical. Stem twining to left, densely pubescent, prickly. Leaves 3 or 5 foliolate, tomentose beneath with white to yellowish hairs, middle leaflet elliptic, lateral ones inequilateral. Male inflorescence paniculate or racemose, female ones axillary, spicate. Capsules oblong-elliptic, densely tomentose. *Flowering and fruiting:* April - August. *Chromosome number:* $2n = 40, 60$ (Kumar and Subramaniam, 1986). *Grows in secondary forests in the drier areas.*

Distribution: India and Sri Lanka.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 01.01.2014, R. Tabassum, 3985 (DUSH); Gazipur Sadar, Rajendrapur Sal forest, 09.08.14, R. Tabassum, 3987 (DUSH).

Family 28. **ORCHIDACEAE** A. L. de Jussieu (1789)

Perennial herbs. Roots adventitious, often aerial, main root always absent. Stem usually leafy, often with swollen internodes forming pseudobulbs. Leaves thick, usually alternate with closed sheaths or opposite, entire, often terete or reduced to scale-like bracts. Inflorescence a raceme, spike or paniculate, 1 to many-flowered, basal, lateral or terminal. Flowers bisexual, epigynous, zygomorphic. Perianth free, 3+3, the outer consisting of 3 sepals, the two lateral petals alike and resemble the sepals but the median petal usually much larger and known as the labellum or lip. Column short or long, fertile anther usually one, cap-like or dehiscent, pollen often agglutinated into masses called pollinia. Ovary inferior, usually twisted, unilocular with parietal placentation or rarely 3-locular with axile placentation, stigma 3-lobed, midlobe often modified to form a rostellum. Fruits capsules, usually opening laterally. Seeds numerous, dust-like.

The Orchidaceae is one of the largest families, comprising of 600-800 genera and more than 17,000 species, distributed in the humid tropics and sub-tropics but widely

distributed from the Equador to the Arctic Circle and from lowland areas to the snowline. In Bangladesh, this family is represented by 70 genera and 179 species.

In the present study area this family is represented by 2 genera and 3 species.

Key to genera:

- | | |
|-----------------------------|-----------------|
| 1. Terrestrial plant; herbs | Geodorum |
| - Epiphytic plant; shrubby | Vanda |

Genus 119. **Geodorum** Jack. in Andr., Bot. Rep.: t. 626 (1810).

Key to speceis:

- | | |
|---|--------------------|
| 1. Lip deeply saccate, streaked with purple or red; disk yellow | citrinum |
| - Lip not saccate, white with pink lines; disk not yellow | densiflorum |

226. **Geodorum citrinum** Jack. in Andr., Bot. Rep.: t. 626 (1810); Hook. f., Fl. Brit. Ind. 6: 17 (1890); Prain, Beng. Pl. 2: 764 (1903, reprint 1963); R. L. Heinig, List Chittagong: 69 (1925).

Terrestrial herb. Leaves lanceolate. Inflorescence a raceme. Flowers yellow, lip large, more or less red or purple streaked. *Flowering:* May - June. *Grows on forest floors.*

Distribution: Myanmar, Thailand and Malaysia.

Status of occurrence: Apparently common.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 03.11.2000, R. Tabassum, 1 (DUSH); Kaliakoir, Chandra Sal forest, 09.05.2010, R. Tabassum, 746 (DUSH).

227. **Geodorum densiflorum** (Lamk.) Schltr., Feddes Repert. 4: 259 (1929); *Limodorum densiflorum* Lamk. (1792); *Geodorum dilatatum* R. Br. (1813); Hook. f., Fl. Brit. Ind. 6: 17 (1890); Prain, Beng. Pl. 2: 764 (1903, reprint 1963); *Geodorum purpureum* R. Br. (1813); *Limodorum candidum* Roxb. (1814).

Terrestrial tuberous herb. Leaves 2-3, erect, lanceolate. Inflorescence a densely-flowered raceme. Flowers whitish, lip obscurely trilobed, broadly cymbiform, resembling a vessel with a spout, fleshy, pink with purple striations on the inside and with a central patch of yellow. *Flowering:* April. *Grows in moist places in deep or partially shaded forests.*

Distribution: India, Sri Lanka, Myanmar, Bhutan, China New Guinea, Solomon Islands, Fiji, Samoa, Tonga, Australia and Malaysia.

Status of occurrence: Seems to be rare.

Specimens examined: Gazipur Sadar, Rajendrapur Sal Forest, 11.04.2003, R. Tabassum, 206 (DUSH); Kaliakoir, Chandra, 09.05.2010, R. Tabassum, 936 (DUSH); Sripur, Baghmara, 18.02.2013, R. Tabassum, 2400 (DUSH).

Genus 120. **Vanda** Jones, As. Res. 4: 302 (1795).

228. **Vanda tessellata** (Roxb.) Hook. ex G. Don. in Loud., Hort. Brit. 372 (1830). *Epidendrum tessellatum* Roxb., Pl. Corom. 1: 34 (1795). *Vanda roxburghii* R. Br. in Bot. Reg. t. 506 (1820); Hook. f., Fl. Brit. India 6: 52 (1890); Prain, Beng. Pl. 2: 767 (1903, reprint 1963); R. L. Heinig, List Chittagong: 69 (1925).

Vernacular name: *Rasna*.

Epiphytic herb. Stem thick, sheathed. Leaves linear, spreading, recurved. Inflorescence a raceme, pendulous. Flowers bracteates, sepals greenish-yellow, petals similar to the sepals, lip 3-lobed, lateral lobes white, middle one varying from purplish-blue to red, with white streaks or white with yellow streaks. *Flowering:* April - June and August - September. *Chromosome number:* $2n = 38$ (Mehra, 1983). *Branches and trunks of the large host trees e.g. Albizia procera, Mangifera indica, Samanea saman etc.*

Distribution: Sri Lanka and India.

Status of occurrence: Common.

Specimens examined: Kaliakoir, Chandra, 26.08.2008, R. Tabassum, 406 (DUSH); Kapasia, Junglebari, 14.12.2009, R. Tabassum, 569 (DUSH); Sripur, Gorgoria, 21.06.2010, R. Tabassum, 1376 (DUSH); Kaligonj, Tumuli, 23.08.2010, R. Tabassum, 1679 (DUSH); Gazipur Sadar, 04.02.2011, R. Tabassum, 1777 (DUSH).

CHAPTER- 4

DISCUSSION

CHAPTER 4

DISCUSSION

4.1. FLORAL ANALYSIS

Taxonomic study of angiospermic flora of Gazipur district has revealed a total of 833 angiospermic taxa under 489 genera and 126 families (Table 5). Among those Magnoliopsida (dicotyledons) is represented by 605 taxa belonging to 369 genera and 98 families, whereas Liliopsida (monocotyledons) having comparatively less representation, i. e. only 228 taxa under 120 genera and 28 families. For just to have a look on representing families with number of genera and species have been arranged under Table 5.

A brief account of the same has also been shown under Table 6.

Table 5: Number of genera and species under each family.

Sl. No.	Name of the family	Genus	Species
CLASS: MAGNOLIOPSIDA			
1.	Acanthaceae	15	18
2.	Alangiaceae	1	2
3.	Amaranthaceae	7	15
4.	Anacardiaceae	6	7
5.	Annonaceae	4	6
6.	Apiaceae	4	4
7.	Apocynaceae	11	15
8.	Aristolochiaceae	1	2
9.	Asclepiadaceae	5	6
10.	Asteraceae	26	32
11.	Balsaminaceae	1	1
12.	Basellaceae	1	1
13.	Bignoniaceae	3	3
14.	Bixaceae	1	1
15.	Bombacaceae	1	1
16.	Boraginaceae	2	2

Sl. No.	Name of the family	Genus	Species
17.	Brassicaceae	3	8
18.	Cactaceae	1	1
19.	Caesalpinaceae	8	21
20.	Campanulaceae	1	1
21.	Cannabaceae	1	1
22.	Capparaceae	3	4
23.	Caricaceae	1	1
24.	Caryophyllaceae	1	2
25.	Casuarinaceae	1	1
26.	Ceratophyllaceae	1	1
27.	Chenopodiaceae	3	4
28.	Clusiaceae (Guttiferae)	2	3
29.	Combretaceae	2	6
30.	Convolvulaceae	5	13
31.	Crassulaceae	2	2
32.	Cucurbitaceae	12	18
33.	Cuscutaceae	1	2
34.	Dilleniaceae	1	3
35.	Dipterocarpaceae	3	3
36.	Ebenaceae	1	2
37.	Elaeocarpaceae	1	2
38.	Euphorbiaceae	19	32
39.	Fabaceae	33	58
40.	Flacourtiaceae	1	2
41.	Gentianaceae	1	1
42.	Hydrophyllaceae	1	1
43.	Lamiaceae	8	14
44.	Lauraceae	2	5
45.	Lecythidaceae	3	3
46.	Leeaceae	1	4
47.	Lentibulariaceae	1	2
48.	Linaceae	1	1

Sl. No.	Name of the family	Genus	Species
49.	Loranthaceae	3	3
50.	Lythraceae	4	7
51.	Magnoliaceae	1	1
52.	Malpighiaceae	1	1
53.	Malvaceae	10	19
54.	Melastomataceae	2	2
55.	Meliaceae	5	6
56.	Menispermaceae	4	5
57.	Menyanthaceae	1	2
58.	Mimosaceae	9	18
59.	Molluginaceae	2	3
60.	Moraceae	4	14
61.	Moringaceae	1	1
62.	Myrsinaceae	2	2
63.	Myrtaceae	3	9
64.	Nyctaginaceae	3	3
65.	Nymphaeaceae	1	3
66.	Ochnaceae	1	1
67.	Oleaceae	1	4
68.	Onagraceae	1	4
69.	Orobanchaceae	1	1
70.	Oxalidaceae	2	4
71.	Papaveraceae	1	1
72.	Passifloraceae	1	1
73.	Pedaliaceae	1	1
74.	Phytolacaceae	1	1
75.	Piperaceae	2	6
76.	Plumbaginaceae	1	1
77.	Polygalaceae	1	1
78.	Polygonaceae	3	14
79.	Portulacaceae	1	2
80.	Punicaceae	1	1

Sl. No.	Name of the family	Genus	Species
81.	Ranunculaceae	2	2
82.	Rhamnaceae	1	3
83.	Rhizophoraceae	1	1
84.	Rosaceae	1	1
85.	Rubiaceae	16	30
86.	Rutaceae	8	12
87.	Sapindaceae	5	5
88.	Sapotaceae	2	2
89.	Scrophulariaceae	6	9
90.	Solanaceae	8	18
91.	Sterculiaceae	5	6
92.	Theaceae	1	1
93.	Tiliaceae	3	8
94.	Trapaceae	1	1
95.	Ulmaceae	2	2
96.	Urticaceae	3	3
97.	Verbenaceae	10	14
98.	Vitaceae	4	8
Sub-total		369	605
CLASS: LILIOPSIDA			
99.	Agavaceae	3	3
100.	Alismataceae	1	2
101.	Aloaceae	1	1
102.	Aponogetonaceae	1	1
103.	Araceae	16	21
104.	Arecaceae	7	11
105.	Bromeliaceae	1	1
106.	Cannaceae	1	1
107.	Commelinaceae	5	10
108.	Costaceae	1	1
109.	Cyperaceae	13	62
110.	Dioscoriaceae	1	11

Sl. No.	Name of the family	Genus	Species
111.	Eriocaulaceae	1	1
112.	Hydrocharitaceae	5	6
113.	Lemnaceae	2	2
114.	Liliaceae	6	7
115.	Limnocharitaceae	1	1
116.	Marantaceae	2	2
117.	Musaceae	1	1
118.	Najadaceae	1	1
119.	Orchidaceae	2	3
120.	Pandanaceae	1	1
121.	Poaceae	39	64
122.	Pontederiaceae	2	3
123.	Potamogetonaceae	1	1
124.	Smilacaceae	1	2
125.	Xyridaceae	1	1
126.	Zingiberaceae	3	7
Sub-total		120	228
Grand total	126	489	833

Table 6: A concise statement of the families, genera and infra generic taxa with their percentage of occurrence.

Taxa	Magnoliopsida	Liliopsida	Total
Number of families	98	28	126
% of total families	78	22	100
Number of genera	369	120	489
% of total genera	75	25	100
Number of taxa	605	228	833
% of total taxa	73	27	100

The study and the Table 6 have revealed that Magnoliopsida constitutes about 73 percent of the total while Liliopsida constitutes 27 percent of the total angiospermic flora. The ratio of species, genera and families of Dicotyledons to Monocotyledons is more or less 3:1, 3:1 and 3:1 respectively. The similar ratio has also been found in world context.

All the families do not have the same number of species, it varies greatly.

Ten largest families concerning the number of genera and species under Dicots and Monocots have been appended in Table 7.

Table 7: Ten largest families of Dicot and Monocot with their number of genera and species.

Dicot families (Magnoliopsida)	Genera	Species	Monocot families (Liliopsida)	Genera	Species
Fabaceae	33	58	Poaceae	39	64
Asteraceae	26	32	Cyperaceae	13	62
Euphorbiaceae	19	32	Araceae	16	21
Rubiaceae	16	30	Arecaceae	7	11
Caesalpiniaceae	8	21	Dioscoriaceae	1	11
Acanthaceae	15	18	Commelinaceae	5	10
Malvaceae	10	19	Liliaceae	6	7
Cucurbitaceae	12	18	Zingiberaceae	3	7
Mimosaceae	9	18	Hydrocharitaceae	5	6
Solanaceae	8	18	Agavaceae	3	3

In Magnoliopsida **Fabaceae** appears as the largest family comprising of 58 species under 33 genera followed by Asteraceae (32 species), Euphorbiaceae (32 species), Rubiaceae (30 species) and Caesalpiniaceae (21 species). In Liliopsida **Poaceae** is the largest family with 64 species under 39 genera followed by Cyperaceae (62 species), Araceae (21 species), Arecaceae (11 species), Dioscoriaceae (11 species) and Commelinaceae (10 species). Out of 126 families recorded 40 families are represented each by a single species.

Six largest genera of Dicotyledons are *Persicaria* (9 species), *Solanum* (8 species), *Desmodium* (8 species), *Ficus* (8 species), *Ipomoea* (7 species) and *Senna* (7 species); while that of Monocotyledons are *Cyperus* (26 species), *Fimbristylis* (13 species), *Dioscorea* (11 species), *Eragrostis* (5 species), *Panicum* (5 species) and *Bambusa* (5 species).

From Table- 5 it also becomes clear that there are 19 monogeneric-multispecific families comprising 56 species and 40 monogeneric-monospecific families consisting of 40 taxa (Table 8). Therefore, out of 126 families 59 (19+40) are monogeneric consisting only of 96 species out of 833. The rest 67 families contain 737 species. It is also interesting that the thirteen largest families Poaceae, Cyperaceae, Fabaceae, Asteraceae, Euphorbiaceae, Rubiaceae, Araceae, Caesalpiniaceae, Malvaceae, Acanthaceae, Cucurbitaceae, Mimosaceae and Solanaceae contain 411 species, the rest 113 families contain 422 species.

Table 8: Monogeneric-multispecific and monogeneric-monospecific families.

Monogeneric-multispecific families		
A. MAGNOLIOPSIDA		
Sl. No.	Name of the family	Species
1.	Alangiaceae	2
2.	Aristolochiaceae	2
3.	Caryophyllaceae	2
4.	Cuscutaceae	2
5.	Dilleniaceae	3
6.	Ebenaceae	2
7.	Elaeocarpaceae	2
8.	Flacourtiaceae	2
9.	Leeaceae	4
10.	Lentibulariaceae	2
11.	Menyanthaceae	2
12.	Nymphaeaceae	3
13.	Oleaceae	4
14.	Onagraceae	4
15.	Pontederiaceae	2
16.	Rhamnaceae	3
B. LILIOPSIDA		
1.	Alismataceae	2
2.	Dioscoriaceae	11
3.	Smilacaceae	2
Monogeneric-monospecific families		
A. MAGNOLIOPSIDA		B. LILIOPSIDA
Sl. No.	Name of the family	Name of the family
1.	Balsaminaceae	1. Aloaceae
2.	Basellaceae	2. Aponogetonaceae
3.	Bixaceae	3. Bromeliaceae
4.	Bombacaceae	4. Cannaceae
5.	Cactaceae	5. Costaceae
6.	Campanulaceae	6. Eriocaulaceae

Sl. No.	Name of the family	Name of the family
7.	Cannabaceae	7. Limnocharitaceae
8.	Caricaceae	8. Musaceae
9.	Casuarinaceae	9. Najadaceae
10.	Ceratophyllaceae	10. Potamogetonaceae
11.	Gentianaceae	11. Xyridaceae
12.	Hydrophyllaceae	
13.	Linaceae	
14.	Magnoliaceae	
15.	Malpighiaceae	
16.	Moringaceae	
17.	Ochnaceae	
18.	Orobanchaceae	
19.	Papaveraceae	
20.	Passifloraceae	
21.	Pedaliaceae	
22.	Phytolacaceae	
23.	Plumbaginaceae	
24.	Polygalaceae	
25.	Punicaceae	
26.	Rhizophoraceae	
27.	Rosaceae	
28.	Theaceae	
29.	Trapaceae	

Table 9: A comparative account of the World flora, Country flora and Gazipur district flora.

Name of the work	Family	Genera	Species
MAGNOLIOPSIDA			
Cronquist (1981)	318	6842	1,65,000
Encyclopedia of Flora and Fauna of Bangladesh (EFFB) (2006-2009)	158	1031	2623
Gazipur district (2015)	98	369	605

Name of the work	Family	Genera	Species
LILIOPSIDA			
Cronquist (1981)	65	2783	50,000
Encyclopedia of Flora and Fauna of Bangladesh (EFFB) (2006-2009)	41	348	988
Gazipur district (2015)	28	120	228
CONSOLIDATED			
Cronquist (1981)	383	9625	2,15,000
Encyclopedia of Flora and Fauna of Bangladesh (EFFB) (2006-2009)	199	1379	3611
Gazipur district (2015)	126	489	833

From table above it reveals that so far number of family is concerned Gazipur district flora covers 32.9% of the world flora and 63.3% of the country flora. As the genera are concerned Gazipur district flora covers 5.1% of the world flora and 35.5% of the country flora. So far the number of species is concerned Gazipur district flora covers only 0.4% of the world flora and 23.1% of the country flora.

Table 10: A comparative account of the floristic elements of the present work with some other similar works.

Name of the floristic area	Total land area (sq.km)	Total no. of taxa	Total no. of taxa per sq.km	No. of dissimilar taxa	Annual rainfall of the area (mm)
Gazipur district	1742	832	0.48	-	2148
Runtia Sal forest	79	318	4.03	53	2782
Patuakhali district	3205	729	0.23	177	2326
Cox's Bazar district	50	692	13.84	358	3950
Ramu Upper Rezu	9	505	56.11	259	3950
Rampahar-Sitapahar	55	786	14.29	515	2912
Rema-Kalenga Wildlife Sanctuary	18	606	33.67	285	2372
Murshidabad district (WB)	5341	636	0.12	245	1506

From the table above it is clear that Murshidabad district of West Bengal is the largest in area but harbours comparatively less number taxa, perhaps mainly because of less amount of annual precipitation and vast crop land.

However, actual comparison should be done in terms of taxa present in unit area, i.e. 1 sq. km. which has also been shown in the above table (Table 10).

From the above table it becomes clear that district floras always harbour less number of taxa per unit area (Murshidabad 0.12, Patuakhali 0.23 and Gazipur 0.48). The forest floras support comparatively more species per unit area (Ramu 56.11, Rema-Kalenga 33.67, Sitapahar-Rampahar 14.29, Cox's Bazar 13.48 and Runtia 4.03). Most areas of the forest zones usually remain covered by dense vegetation, so number of taxa per unit area is obviously high, whereas the most areas of a district is covered by crop fields and human habitation, therefore a district compared to its vast area supports less number of species per unit area.

When Gazipur district forest flora (Table 10) is compared with those of other forest floras, per unit area taxa becomes closer. Gazipur district forest flora contains only 310 species, which is very close to the number of species listed for Runtia *Sal* forest (318). The dissimilar taxa also is very less, only 46. Runtia, as receive more precipitation annually than Gazipur forest area, supports a few species more.

It is vary natural that floristic elements in different areas will vary. The variation may be little or big. But still there must be many plant species common to all areas. Here is a list of few species which are common to all the seven areas compared here.

Table 11: The following taxa are found to be common to all the seven floristic areas.

Sl. No.	Name of taxa	Family
1.	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae
2.	<i>Amaranthus spinosus</i> L.	Amaranthaceae
3.	<i>Amaranthus viridis</i> L.	Amaranthaceae
4.	<i>Aphanamixis polystachya</i> (Wall.) R. N. Parker	Meliaceae
5.	<i>Blumea lacera</i> (Burm. f.) DC.	Asteraceae
6.	<i>Centella asiatica</i> (L.) Urban	Apiaceae
7.	<i>Clerodendrum viscosum</i> Vent.	Verbenaceae
8.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae
9.	<i>Cyperus difformis</i> L.	Cyperaceae
10.	<i>Dioscorea bulbifera</i> L. var. <i>bulbifera</i> L.	Dioscoriaceae
11.	<i>Dioscorea bulbifera</i> L. var. <i>sativa</i> (Hook. f.) Prain	Dioscoriaceae

Sl. No.	Name of taxa	Family
12.	<i>Dioscorea pentaphylla</i> L.	Dioscoriaceae
13.	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae
14.	<i>Eleusine indica</i> (L.) Gaertn.	Cyperaceae
15.	<i>Ficus benghalensis</i> L.	Moraceae
16.	<i>Ficus hispida</i> L. f.	Moraceae
17.	<i>Ficus racemosa</i> L.	Moraceae
18.	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	Flacourtiaceae
19.	<i>Glycosmis pentaphylla</i> (Retz.) A. DC.	Rutaceae
20.	<i>Holarrhena antidysenterica</i> (L.) Wall. ex Decne.	Apocynaceae
21.	<i>Mangifera indica</i> L.	Anacardiaceae
22.	<i>Moringa oleifera</i> Lamk.	Moringaceae
23.	<i>Phyllanthus acidus</i> (L.) Skeels	Euphorbiaceae
24.	<i>Phyllanthus emblica</i> L.	Euphorbiaceae
25.	<i>Phyllanthus niruri</i> L.	Euphorbiaceae
26.	<i>Phyllanthus reticulatus</i> Poir.	Euphorbiaceae
27.	<i>Streblus asper</i> Lour.	Moraceae
28.	<i>Sida acuta</i> Burm.	Malvaceae

As Gazipur district consists of considerable forest area as well as vast lowland area and large number of household areas, separate lists for Forest flora, Aquatic flora and Homestead flora are also furnished here.

Table 12: A list of forest flora of Gazipur district.

Sl. No.	Scientific name	Family	Local name
1.	<i>Abroma angusta</i> (L.) L. f.	Sterculiaceae	<i>Ulatkambal</i>
2.	<i>Abrus precatorius</i> L.	Fabaceae	<i>Kunch</i>
3.	<i>Abutilon hirtum</i> (Lamk.) Sweet	Malvaceae	<i>Gol-petari</i>
4.	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	<i>Gol-petari</i>
5.	<i>Acacia auriculiformis</i> A. Cunn. ex Benth. & Hook.	Mimosaceae	<i>Akashmoni</i>
6.	<i>Acacia concinna</i> (Willd.) DC.	Mimosaceae	<i>Banrita</i>
7.	<i>Acacia mangium</i> Willd.	Mimosaceae	<i>Mangium</i>

Sl. No.	Scientific name	Family	Local name
8.	<i>Acacia nilotica</i> (L.) Delile subsp. <i>indica</i> (Benth.) Brenan	Mimosaceae	<i>Babla</i>
9.	<i>Acalypha hispida</i> Burm. f.	Euphorbiaceae	<i>Bara hatisur</i>
10.	<i>Acalypha indica</i> L.	Euphorbiaceae	<i>Muktajhuri</i>
11.	<i>Achyranthus aspera</i> L.	Amaranthaceae	<i>Apang</i>
12.	<i>Aeginetia indica</i> L.	Orobanchaceae	Not known
13.	<i>Ageratum conyzoides</i> L.	Asteraceae	<i>Fulkuri</i>
14.	<i>Aidia oppositifolia</i> (Roxb.) Rahman & Das	Rubiaceae	<i>Rapta bhadi</i>
15.	<i>Albizia chinensis</i> (Osbeck.) Merr.	Mimosaceae	<i>Chakua koro</i>
16.	<i>Albizia lebbek</i> (L.) Benth. & Hook.	Mimosaceae	<i>Kala koro</i>
17.	<i>Albizia procera</i> (Roxb.) Benth.	Mimosaceae	<i>Sil koro</i>
18.	<i>Alocasia fallax</i> Schott	Araceae	Not known
19.	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae	<i>Chhatim</i>
20.	<i>Alternanthera sessilis</i> (L.) R. Br. ex Roem. & Schult.	Amaranthaceae	<i>Chanchi</i>
21.	<i>Amaranthus lividus</i> L.	Amaranthaceae	<i>Gobura</i>
22.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	<i>Kanta nutia</i>
23.	<i>Amaranthus viridis</i> L.	Amaranthaceae	<i>Notay</i>
24.	<i>Ampelocissus barbata</i> (Wall.) Planch.	Vitaceae	<i>Jarila lahari</i>
25.	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Vitaceae	<i>Gowalialata</i>
26.	<i>Anacardium occidentale</i> L.	Anacardiaceae	<i>Kaju</i>
27.	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees	Acanthaceae	<i>Kalomegh</i>
28.	<i>Anisomeles indica</i> (L.) O. Kuntze	Lamiaceae	<i>Gobura</i>
29.	<i>Antidesma acidum</i> Retz.	Euphorbiaceae	<i>Multa</i>
30.	<i>Antidesma ghaesembilla</i> Gaertn.	Euphorbiaceae	<i>Khudijam</i>
31.	<i>Aphanamixis polystachya</i> (Wall.) R.N. Parker	Meliaceae	<i>Royna</i>
32.	<i>Aporosa dioica</i> (Roxb.) Muell.-Arg.	Euphorbiaceae	<i>Pat kharona</i>

Sl. No.	Scientific name	Family	Local name
33.	<i>Argyreia nervosa</i> (Burm. f.) Boj.	Convolvulaceae	<i>Bara dudhi</i>
34.	<i>Aristolochia indica</i> L.	Aristolochiaceae	<i>Ishwarmul</i>
35.	<i>Aristolochia tagala</i> Cham.	Aristolochiaceae	<i>Ishwarmul</i>
36.	<i>Artocarpus chama</i> Buch.-Ham. ex Wall.	Moraceae	<i>Chapalish</i>
37.	<i>Artocarpus heterophyllus</i> Lamk.	Moraceae	<i>Khanthal</i>
38.	<i>Artocarpus lacucha</i> Buch.-Ham.	Moraceae	<i>Dewa</i>
39.	<i>Arundinella bengalensis</i> (Spreng) Druce	Poaceae	<i>Ganga bena</i>
40.	<i>Asparagus racemosus</i> Willd.	Liliaceae	<i>Shotomuli</i>
41.	<i>Axonopus compressus</i> (Sw.) P. Beauv.	Poaceae	<i>Ghora-dubohor</i>
42.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	<i>Neem</i>
43.	<i>Bacopa monnieri</i> (L.) Pennell	Scrophulariaceae	<i>Brammi</i>
44.	<i>Bambusa balcooa</i> Roxb.	Poaceae	<i>Borak bans</i>
45.	<i>Bambusa bambos</i> (L.) Voss	Poaceae	<i>Kanta bans</i>
46.	<i>Bambusa tulda</i> Roxb.	Poaceae	<i>Talla bans</i>
47.	<i>Barringtonia acutangula</i> (L.) Gaertn.	Lecythidaceae	<i>Hijol</i>
48.	<i>Bauhania acuminata</i> L.	Caesalpiniaceae	<i>Shada kanchon</i>
49.	<i>Bauhinia vahlii</i> Wight & Arn.	Caesalpiniaceae	<i>Kanchan-lata</i>
50.	<i>Bauhinia variegata</i> L.	Caesalpiniaceae	<i>Rakta kanchan</i>
51.	<i>Blumea lacera</i> (Burm.f) DC.	Asteraceae	<i>Kuksung</i>
52.	<i>Blumeopsis flava</i> (DC.) Gagnep.	Asteraceae	Not known
53.	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	<i>Punarnava</i>
54.	<i>Bombax ceiba</i> L.	Bombaceae	<i>Simul</i>
55.	<i>Bridelia retusa</i> (L.) A. Juss.	Euphorbiaceae	<i>Kata kuskui</i>
56.	<i>Butea monosperma</i> (Lamk.) Taub.	Fabaceae	<i>Palash</i>
57.	<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpiniaceae	<i>Nata</i>
58.	<i>Caesalpinia crista</i> L.	Caesalpiniaceae	<i>Lotkanta</i>

Sl. No.	Scientific name	Family	Local name
59.	<i>Calamus latifolius</i> Roxb.	Arecaceae	Korak bet
60.	<i>Calamus tenuis</i> Roxb.	Arecaceae	Bet
61.	<i>Calamus viminalis</i> Willd.	Arecaceae	Bara bet
62.	<i>Canthium parvifolium</i> Roxb.	Rubiaceae	Bish-main
63.	<i>Careya arborea</i> Roxb.	Lecythidaceae	Biri pata
64.	<i>Cassia fistula</i> L.	Cesalpiniaceae	Sonalu
65.	<i>Casuarina equisetifolia</i> Forst.	Casuarinaceae	Jhau
66.	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	Mankanta
67.	<i>Cayratia trifolia</i> (L.) Domin	Vitaceae	Amalla
68.	<i>Centella asiatica</i> (L.) Urban	Apiceae	Thankuni
69.	<i>Centipeda minima</i> (L.) A. Br. & Aschers.	Asteraceae	Machitti
70.	<i>Centotheca lappacea</i> (L.) Desv.	Poaceae	Barboda
71.	<i>Ceratophyllum demersum</i> L.	Ceratophyllaceae	Not known
72.	<i>Chenopodium album</i> L.	Chenopodiaceae	Batua shak
73.	<i>Chenopodium ambrosioides</i> L.	Chenopodiaceae	Chandan betu
74.	<i>Chromolaena odorata</i> (L.) King & Robinson	Asteraceae	Assam-lata
75.	<i>Chrozophora rottleri</i> (Geiseler) A. Juss. ex Spreng.	Euphorbiaceae	Khudi okra
76.	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Poaceae	Badaiya
77.	<i>Cissus adnata</i> Roxb.	Vitaceae	Aliangalata
78.	<i>Cissus assamica</i> (Lawson) Craib	Vitaceae	Amashalata
79.	<i>Cissus repanda</i> Vahl	Vitaceae	Not known
80.	<i>Cissus vitiginea</i> L.	Vitaceae	Guali-lata
81.	<i>Cleome rutidosperma</i> DC.	Capparaceae	Begune hurhure
82.	<i>Cleome viscosa</i> L.	Capparaceae	Halde hurhure
83.	<i>Clerodendrum hastatum</i> C.B. Clarke	Verbenaceae	Not known

Sl. No.	Scientific name	Family	Local name
84.	<i>Clerodendrum indicum</i> (L.) O. Kuntze	Verbenaceae	<i>Bamunhatti</i>
85.	<i>Clerodendrum viscosum</i> Vent.	Verbenaceae	<i>Bhat</i>
86.	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	<i>Telakucha</i>
87.	<i>Cocculus hirsutus</i> (L.) Theob .	Menispermaceae	<i>Huyer</i>
88.	<i>Commelina benghalensis</i> L.	Commelinaceae	<i>Dholpat</i>
89.	<i>Commelina diffusa</i> Burm.f.	Commelinaceae	<i>Dholpat</i>
90.	<i>Costus speciosus</i> Smith	Costaceae	<i>Khustha</i>
91.	<i>Crateva magna</i> (Lour.) DC.	Capparaceae	<i>Barun</i>
92.	<i>Crotolaria pallida</i> Ait.	Fabaceae	<i>Jhun-jhuni</i>
93.	<i>Crotolaria spectabilis</i> Roth	Fabaceae	<i>Pipli-jhunjan</i>
94.	<i>Croton bonplandianus</i> Baill.	Euphorbiaceae	<i>Bondhone</i>
95.	<i>Curculigo orchioides</i> Gaertn.	Liliaceae	<i>Talmuli</i>
96.	<i>Curcuma amada</i> Roxb.	Zingiberaceae	<i>Amada</i>
97.	<i>Curcuma aromatica</i> Salisb.	Zingiberaceae	<i>Bon haldi</i>
98.	<i>Curcuma zedoaria</i> (Christm.) Rosc.	Zingiberaceae	<i>Shoti</i>
99.	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	<i>Swarnalata</i>
100.	<i>Cyanotis cristata</i> (L.) D. Don	Commelinaceae	Not known
101.	<i>Cyathula prostrata</i> (L.) Blume	Amaranthaceae	Not known
102.	<i>Cyclea barbata</i> Miers	Menispermaceae	<i>Patalpur</i>
103.	<i>Cynodon dactylon</i> (L.) Pres.	Poaceae	<i>Durba ghas</i>
104.	<i>Cyperus plucherrimus</i> Willd. ex Kunth	Cyperaceae	Not known
105.	<i>Cyperus compactus</i> Retz.	Cyperaceae	Not known
106.	<i>Cyperus corymbosus</i> Rottb.	Cyperaceae	<i>Gola methi</i>
107.	<i>Cyperus difformis</i> L.	Cyperaceae	<i>Behua</i>
108.	<i>Cyperus digitatus</i> Roxb.	Cyperaceae	Not known
109.	<i>Cyperus distans</i> L. f.	Cyperaceae	<i>Pani malanga</i>
110.	<i>Cyperus rotundus</i> L.	Cyperaceae	<i>Mutha</i>
111.	<i>Cyperus squarrosus</i> L.	Cyperaceae	Not known
112.	<i>Cyperus tenuispica</i> Steud.	Cyperaceae	Not known
113.	<i>Cyperus tuberosus</i> Rottb.	Cyperaceae	Not known

Sl. No.	Scientific name	Family	Local name
114.	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	<i>Sissoo</i>
115.	<i>Dendrophthoe falcata</i> (L.f.) Etting.	Loranthaceae	<i>Bajrangi</i>
116.	<i>Dentella repens</i> (L.) J.R. & G. Forst.	Rubiaceae	<i>Bhuipat</i>
117.	<i>Desmodium dichotomum</i> (Willd.) DC.	Fabaceae	Not known
118.	<i>Derris scandens</i> (Roxb.) Benth.	Fabaceae	Not known
119.	<i>Desmodium gangeticum</i> (L.)DC.	Fabaceae	<i>Salpani</i>
120.	<i>Desmodium gyroides</i> (Roxb. ex Link) DC.	Fabaceae	Not known
121.	<i>Desmodium heterocarpon</i> (L.) DC.	Fabaceae	Not known
122.	<i>Desmodium heterophyllum</i> (Willd.) DC.	Fabaceae	Not known
123.	<i>Desmodium laxiflorum</i> DC.	Fabaceae	Not known
124.	<i>Desmodium motorium</i> (Houtt.) Merr.	Fabaceae	<i>Gorachan</i>
125.	<i>Desmodium pulchellum</i> (L.) Benth	Fabaceae	<i>Jatsalpani</i>
126.	<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	<i>Kulalia</i>
127.	<i>Desmodium triquetrum</i> (L.) DC.	Fabaceae	Not known
128.	<i>Digitaria sanguinalis</i> (L.) Scop.	Poaceae	<i>Makunjali</i>
129.	<i>Dillenia indica</i> L.	Dilleniaceae	<i>Chalta</i>
130.	<i>Dillenia pentagyna</i> Roxb.	Dilleniaceae	<i>Banchalta</i>
131.	<i>Dillenia scabrella</i> Roxb. ex. Wall.	Dilleniaceae	<i>Horgeza</i>
132.	<i>Dimocarpus longan</i> Lour.	Sapindaceae	<i>Ashphal</i>
133.	<i>Dioscorea alata</i> L.	Dioscoreaceae	<i>Kham alu</i>
134.	<i>Dioscorea belophylla</i> (Prain) Voigt ex Haines	Dioscoreaceae	<i>Shora alu</i>
135.	<i>Dioscorea glabra</i> Roxb.	Dioscoreaceae	<i>Shora alu</i>
136.	<i>Dioscorea hamiltonii</i> Hook. f.	Dioscoreaceae	<i>Thakan budo</i>
137.	<i>Dioscorea hispida</i> Dennst	Dioscoreaceae	<i>Bish alu</i>
138.	<i>Dioscorea kamoonsensis</i> Kunth	Dioscoreaceae	<i>Lal alu</i>
139.	<i>Dioscorea oppositifolia</i> L.	Dioscoreaceae	Not Known
140.	<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	<i>Jhum alu</i>

Sl. No.	Scientific name	Family	Local name
141.	<i>Dipterocarpus turbinatus</i> Gaertn.	Dipterocarpaceae	<i>Teli garjan</i>
142.	<i>Duranta repens</i> L.	Verbenaceae	<i>Kantamehedi</i>
143.	<i>Ecboium ligustrinum</i> (Vahl) Vollesen	Acanthaceae	<i>Udujati</i>
144.	<i>Echinochloa crusgalli</i> (L.) P. Beauv.	Poaceae	Not known
145.	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	<i>Kesaraj</i>
146.	<i>Elaeocarpus rugosus</i> Roxb. ex G. Don	Elaeocarpaceae	Not known
147.	<i>Eleocharis acutangula</i> (Roxb.) Schult	Cyperaceae	Not known
148.	<i>Entada rheedii</i> Spreng.	Mimosaceae	<i>Gila</i>
149.	<i>Eragrostis tenella</i> (L.) P. Beauv. ex Roem. & Schult.	Poaceae	Not known
150.	<i>Erythrina variegata</i> L.	Fabaceae	<i>Mandar</i>
151.	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Not known
152.	<i>Evolvulus nummularius</i> (L.)	Convolvulaceae	Not known
153.	<i>Fagerlindia fasciculata</i> (Roxb.) Tirveng.	Rubiaceae	Not known
154.	<i>Ficus benghalensis</i> L.	Moraceae	<i>Bat</i>
155.	<i>Ficus benjamina</i> L.	Moraceae	<i>Pakur</i>
156.	<i>Ficus heterophylla</i> L.	Moraceae	<i>Gaori-sheora</i>
157.	<i>Ficus hispida</i> L.	Moraceae	<i>Dumur</i>
158.	<i>Ficus racemosa</i> L.	Moraceae	<i>Jagyadumur</i>
159.	<i>Ficus religiosa</i> L.	Moraceae	<i>Ashwathwa</i>
160.	<i>Ficus rumphii</i> Blume	Moraceae	<i>Gai aswathwa</i>
161.	<i>Fimbristylis aestivalis</i> (Retz.) Vahl	Cyperaceae	Not known
162.	<i>Fimbristylis dichotoma</i> (L.) Vahl	Cyperaceae	<i>Bara nirbishi</i>
163.	<i>Fimbristylis schoenoides</i> (Retz.) Vahl	Cyperaceae	Not known
164.	<i>Fimbristylis squarrosa</i> Vahl	Cyperaceae	Not known
165.	<i>Flacourtia indica</i> (Burm. f) Merr.	Flourtiaceae	<i>Beuchi</i>
166.	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	Flacourtiaceae	<i>Paniala</i>
167.	<i>Fleminigia macrophylla</i> (Willd.) O. Kuntze ex Merr.	Fabaceae	<i>Bara-salphan</i>

Sl. No.	Scientific name	Family	Local name
168.	<i>Flemingia strobilifera</i> (L.) R. Br.	Fabaceae	<i>Sim busak</i>
169.	<i>Garcinia cowa</i> Roxb. ex DC.	Clusiaceae	<i>Kau</i>
170.	<i>Garcinia xanthochymus</i> Hook.f. ex T. Anders.	Clusiaceae	<i>Tomal</i>
171.	<i>Geodorum citrinum</i> Jack	Orchidaceae	Not known
172.	<i>Geodorum densiflorum</i> (Lamk.) Schltr.	Orchidaceae	Not known
173.	<i>Glinus oppositifolius</i> (L.) A.DC.	Molluginaceae	<i>Gemashak</i>
174.	<i>Globba marantina</i> L.	Zingiberaceae	Not known
175.	<i>Glochidion multiloculare</i> (Roxb. ex Willd.) Muell.-Arg.	Euphorbiaceae	<i>Aniatori</i>
176.	<i>Glycosmis pentaphylla</i> (Retz.) A.DC.	Rutaceae	<i>Ashsheora</i>
177.	<i>Gmelina arborea</i> Roxb.	Verbenaceae	<i>Gamari</i>
178.	<i>Gnaphalium luteo-album</i> L.	Asteraceae	<i>Bara kamra</i>
179.	<i>Gnaphalium pulvinatum</i> Del.	Asteraceae	Not known
180.	<i>Grangea maderspatana</i> (L.) Poir.	Asteraceae	<i>Nemutu</i>
181.	<i>Grewia asiatica</i> L.	Sterculiaceae	<i>Pholsa</i>
182.	<i>Grewia hirsuta</i> Vahl	Tiliaceae	<i>Kukurbicha</i>
183.	<i>Gymnopetalum cochichinense</i> (Lour.) Kurz	Cucurbitaceae	<i>Bon patal</i>
184.	<i>Hedyotis diffusa</i> Willd.	Rubiaceae	Not known
185.	<i>Hedyotis scandens</i> Roxb.	Rubiaceae	Not known
186.	<i>Heliotropium indicum</i> L.	Boraginaceae	<i>Hatisur</i>
187.	<i>Hemidesmus indicus</i> (L.) R. Br.	Asclepiadaceae	<i>Anantamul</i>
188.	<i>Holarrhena antidysenterica</i> (L.) Wall. ex Decne.	Apocynaceae	<i>Kurchi</i>
189.	<i>Hopea odorata</i> Roxb.	Dipterocarpaceae	<i>Telsur</i>
190.	<i>Hydrilla verticillata</i> (L.f.) Royle	Hydrocharitaceae	<i>Jhangi</i>
191.	<i>Hydrolea zeylanica</i> (L.) Vahl	Hydrophyllaceae	<i>Kasschara</i>
192.	<i>Hygrophila phlomoides</i> Nees	Acanthaceae	Not known
193.	<i>Hygrophila schulli</i> M.R. & S.N. Almeida	Acanthaceae	<i>Kanta kalika</i>

Sl. No.	Scientific name	Family	Local name
194.	<i>Hymenodictyon orixensis</i> (Roxb.) Mabb.	Rubiaceae	<i>Gomria gamar</i>
195.	<i>Hyptis suaveolens</i> (L.) Poit.	Lamiaceae	<i>Ganged tulshi</i>
196.	<i>Ichnocarpus frutescens</i> (L.) R.Br.	Apocynaceae	<i>Dudhilata</i>
197.	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	<i>Kalmi shak</i>
198.	<i>Ixora finlaysoniana</i> Wall. ex G. Don	Rubiaceae	<i>Sada rangan</i>
199.	<i>Jasminum scandens</i> Vahl	Oleaceae	Not known
200.	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	<i>Lalbherranda</i>
201.	<i>Justicia adhatoda</i> L.	Acanthaceae	<i>Vasak</i>
202.	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	<i>Juja-gabbe</i>
203.	<i>Kyllinga brevifolia</i> Rottb.	Cyperaceae	Not known
204.	<i>Lagerstroemia speciosa</i> (L.) Pers.	Lythraceae	<i>Jarul</i>
205.	<i>Leea alata</i> Edge.	Leeaceae	Not known
206.	<i>Leea crispa</i> L.	Leeaceae	<i>Banchalita</i>
207.	<i>Leea indica</i> Merr.	Leeaceae	<i>Kurkur jihwa</i>
208.	<i>Leea macrophylla</i> Roxb. ex Hornem.	Leeaceae	<i>Dhol-samudra</i>
209.	<i>Leonurus sibiricus</i> L.	Lamiaceae	Not known
210.	<i>Leucaena leucocephala</i> (Lamk.) de Wit.	Mimosaceae	<i>Ipil-ipil</i>
211.	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	<i>Choto halkusa</i>
212.	<i>Leucas indica</i> R. Br. ex Vatke	Lamiaceae	Not known
213.	<i>Limnophila aquatica</i> Alston	Scrophulariaceae	Not known
214.	<i>Lindernia antipoda</i> (L.) Alston	Scrophulariaceae	Not known
215.	<i>Litsea angustifolia</i> Wall. ex Hook. f.	Lauraceae	Not known
216.	<i>Litsea glutinosa</i> (Lour.) Robinson	Lauraceae	<i>Kukur-chita</i>
217.	<i>Litsea laeta</i> Wall. ex Nees	Lauraceae	<i>Bon-hoalu</i>
218.	<i>Ludwigia adscendens</i> (L.) Hara	Onagraceae	<i>Kesardum</i>
219.	<i>Ludwigia hyssopifolia</i> (G.Don) Exell apud A. & R. Fernandes	Onagraceae	Not known
220.	<i>Macaranga denticulata</i> (Blume) Muell.-Arg.	Euphorbiaceae	<i>Bura</i>
221.	<i>Macaranga peltata</i> (Roxb.) Muell.-Arg.	Euphorbiaceae	Not known

Sl. No.	Scientific name	Family	Local name
222.	<i>Madhuca longifolia</i> (Koenig) MacBride	Sapotaceae	<i>Mohua</i>
223.	<i>Melastoma malabathricus</i> L.	Melastomataceae	<i>Bon tezpata</i>
224.	<i>Mangifera indica</i> L.	Anacardiaceae	<i>Aam</i>
225.	<i>Manihot esculenta</i> Crantz.	Euphorbiaceae	<i>Kasava</i>
226.	<i>Merremia hederacea</i> (Burm. f.) Hallier f.	Convolvulaceae	<i>Kaladana</i>
227.	<i>Merremia hirta</i> (L.) Merr.	Convolvulaceae	Not known
228.	<i>Merremia umbellata</i> (L.) Hallier f.	Convolvulaceae	<i>Sada kolmi</i>
229.	<i>Mesua ferrea</i> L.	Clusiaceae	<i>Nageshwar</i>
230.	<i>Meyna spinosa</i> Roxb. ex Link	Rubiaceae	<i>Maina</i>
231.	<i>Michelia champaca</i> L.	Magonoliaceae	<i>Champa</i>
232.	<i>Mikania cordata</i> (Burm. f) Robinson	Asteraceae	<i>Germanlata</i>
233.	<i>Miliusa velutina</i> (Dunal) Hook. f. & Thom	Annonaceae	<i>Gandhigajari</i>
234.	<i>Mimosa pudica</i> L.	Mimosaceae	<i>Lajjabati</i>
235.	<i>Mollugo pentaphylla</i> L.	Molluginaceae	<i>Khetpapra</i>
236.	<i>Morinda angustifolia</i> Roxb.	Rubiaceae	<i>Banamali</i>
237.	<i>Mucuna pruriens</i> (L.) DC.	Fabaceae	<i>Torulata</i>
238.	<i>Murdannia scapiflora</i> (Roxb.) Royle	Commelinaceae	Not known
239.	<i>Nelsonia canescens</i> (Lamk) Spreng.	Acanthaceae	Not known
240.	<i>Nicotiana plumbaginifolia</i> Viv.	Solanaceae	<i>Bon tamak</i>
241.	<i>Nicotiana tabacum</i> L.	Solanaceae	<i>Tamak</i>
242.	<i>Ochna squarrosa</i> L.	Ochnaceae	<i>Ote champa</i>
243.	<i>Ocimum americanum</i> L.	Lamiaceae	<i>Bon tulshi</i>
244.	<i>Ocimum gratissimum</i> L.	Lamiaceae	<i>Raam tulsi</i>
245.	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	<i>Thona</i>
246.	<i>Osbeckia stellata</i> Buch.-Ham. ex Ker-Gawl.	Melastomataceae	Not known
247.	<i>Oxalis corniculata</i> L.	Oxalidaceae	<i>Amrul</i>
248.	<i>Oxalis corymbosa</i> DC.	Oxalidaceae	<i>Golapi</i>
249.	<i>Peperomia pellucida</i> (L.) H.B. & K	Piperaceae	<i>Luchi pata</i>

Sl. No.	Scientific name	Family	Local name
250.	<i>Persicaria hydropiper</i> Spach	Polygonaceae	<i>Panimarich</i>
251.	<i>Persicaria minor</i> Opiz	Polygonaceae	<i>Chhoto bishkatali</i>
252.	<i>Persicaria orientalis</i> (L.) Spach	Polygonaceae	<i>Bara panimorich</i>
253.	<i>Pevetta indica</i> L.	Rubiaceae	<i>Bana mali</i>
254.	<i>Phoenix acaulis</i> Buch.-Ham. ex Roxb.	Arecaceae	<i>Khudi khejur</i>
255.	<i>Phyllanthus acidus</i> (L) Skeels	Euphorbiaceae	<i>Orbori</i>
256.	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	<i>Amloki</i>
257.	<i>Phyllanthus reticulatus</i> Poir	Euphorbiaceae	<i>Chitki</i>
258.	<i>Polyalthia longifolia</i> (Sonn.) Thw.	Annonaceae	<i>Debdaru</i>
259.	<i>Pterospermum acerifolium</i> (L.) Willd.	Sterculiaceae	<i>Muskanda</i>
260.	<i>Pterospermum semisagittatum</i> Buch.-Ham. ex Roxb.	Sterculiaceae	<i>Bara assar</i>
261.	<i>Samanea saman</i> (Jacq.) Merr.	Mimosaceae	<i>Rendi koro</i>
262.	<i>Sapindus saponaria</i> L.	Sapindaceae	<i>Ritha</i>
263.	<i>Saraca indica</i> L.	Caesalpiniaceae	<i>Ashok</i>
264.	<i>Schima wallichii</i> (DC.) Korth.	Theaceae	<i>Kanak</i>
265.	<i>Schoenoplectus littoralis</i> (Schrader.) Palla	Cyperaceae	Not known
266.	<i>Scindapsus officinalis</i> (Roxb.) Schott	Araceae	<i>Gaj pipul</i>
267.	<i>Scleria levis</i> Retz.	Cyperaceae	Not known
268.	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	<i>Bhela</i>
269.	<i>Senna alata</i> (L.) Roxb.	Cesalpiniaceae	<i>Dadmardam</i>
270.	<i>Senna occidentalis</i> Roxb.	Cesalpiniaceae	<i>Eski</i>
271.	<i>Senna sophora</i> (L.) Roxb.	Cesalpiniaceae	<i>Kalkashunda</i>
272.	<i>Senna tora</i> (L.) Roxb.	Cesalpiniaceae	<i>Teraj</i>
273.	<i>Sesbania cannabina</i> (Retz.) Poir.	Fabaceae	Not known
274.	<i>Setaria italica</i> (L.) P.Beauv.	Poaceae	Not known
275.	<i>Shorea robusta</i> Roxb. ex Gaertn.	Dipterocarpaceae	<i>Sal</i>

Sl. No.	Scientific name	Family	Local name
276.	<i>Sida acuta</i> Burm. f.	Malvaceae	<i>Kurata</i>
277.	<i>Sida cordata</i> (Burm. f.) Borss.	Malvaceae	<i>Junka</i>
278.	<i>Smilax perfoliata</i> Lour.	Smilacaceae	<i>Kumarilata</i>
279.	<i>Solanum nigrum</i> L.	Solanaceae	<i>Tit begun</i>
280.	<i>Solanum torvum</i> Swartz.	Solanaceae	<i>Gota begun</i>
281.	<i>Solanum villosum</i> Mill.	Solanaceae	<i>Tit-begun</i>
282.	<i>Sonchus asper</i> (L.) Hill	Asteraceae	Not known
283.	<i>Spermacoce latifolia</i> Aublet	Rubiscaeae	<i>Ghui-jhil</i>
284.	<i>Sphaeranthus indicus</i> L.	Asteraceae	Not known
285.	<i>Spilanthes calva</i> DC.	Asteraceae	<i>Marhata</i>
286.	<i>Staurogyne polybotrya</i> (Nees) O. Kuntze	Acanthaceae	Not known
287.	<i>Stephania japonica</i> (Thunb.) Miers	Menispermaceae	Not known
288.	<i>Strobilanthes scaber</i> Nees	Acanthaceae	Not known
289.	<i>Synedrella nodiflora</i> (L.) Gaertn.	Asteraceae	Not known
290.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	<i>Tentul</i>
291.	<i>Tapiria hirsuta</i> Hook. f.	Anacardiaceae	Not known
292.	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	<i>Bon nil</i>
293.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	<i>Bohera</i>
294.	<i>Terminalia catappa</i> L.	Combretaceae	<i>Kathbadam</i>
295.	<i>Terminalia citrina</i> (Gaertn.) Roxb. ex Fleming	Combretaceae	<i>Harra</i>
296.	<i>Thespesia lampas</i> (Cav.) Dalz. & Gibs.	Malvaceae	<i>Bon karpas</i>
297.	<i>Tinospora cordifolia</i> (Walld.) Hook.f. & Thoms.	Menispermaceae	<i>Ghor-gulantha</i>
298.	<i>Tinospora crispa</i> (L.) Hook. f & Thoms.	Menispermaceae	<i>Gulantha</i>
299.	<i>Trema orientalis</i> (L.) Blume	Ulmaceae	<i>Jiban</i>
300.	<i>Trewia nudiflora</i> L.	Euphorbiaceae	<i>Latim, Pitali</i>
301.	<i>Tridax procumbens</i> L.	Asteraceae	<i>Tridhara</i>
302.	<i>Uraria lagopus</i> DC.	Fabaceae	<i>Dieng-sohmulla</i>

Sl. No.	Scientific name	Family	Local name
303.	<i>Urena lobata</i> L.	Malvaceae	<i>Congo pat</i>
304.	<i>Uvaria hamiltonii</i> Hook. f & Thoms	Annonaceae	<i>Latkan</i>
305.	<i>Vernonia cinerna</i> (L.) Less.	Asteraceae	<i>Dankumi</i>
306.	<i>Vitex negundo</i> L.	Verbenaceae	<i>Bara nishinda</i>
307.	<i>Vitex peduncularis</i> Wall. ex Schauer	Verbenaceae	<i>Horina</i>
308.	<i>Ziziphus mauritiana</i> Lamk.	Rhamnaceae	<i>Kul</i>
309.	<i>Ziziphus oenoplia</i> (L.) Mill.	Rhamnaceae	<i>Sialkul</i>
310.	<i>Ziziphus rugosa</i> Lamk.	Rhamnaceae	<i>Jangi boroi</i>

Table 13: A list of aquatic flora of Gazipur district (arranged alphabetically).

Sl. No.	Scientific name	Family	Local name
1.	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Amaranthaceae	<i>Helencha, Malancha shak</i>
2.	<i>Ammannia baccifera</i> L.	Lythraceae	<i>Dadmari, Janglimehedi</i>
3.	<i>Aponogeton natans</i> (L.) Engl. & Krause	Aponogetonaceae	<i>Ghechu</i>
4.	<i>Barringtonia acutangula</i> (L.) Gaertn.	Lecythidaceae	<i>Hijal, Kumia</i>
5.	<i>Blyxa auberti</i> Rich.	Hydrocharitaceae	Not known
6.	<i>Blyxa octandra</i> (Roxb.) Planch. ex Thw.	Hydrocharitaceae	<i>Seola</i>
7.	<i>Brachiaria distachya</i> (L.) Stapf	Poaceae	<i>Cori ghas</i>
8.	<i>Ceratophyllum demersum</i> L.	Ceratophyllaceae	<i>Sheola</i>
9.	<i>Coix lacryma-jobi</i> L.	Poaceae	<i>Kunch, Tasbi</i>
10.	<i>Colocasia esculenta</i> (L.) Schott	Araceae	<i>Jangli kachu</i>
11.	<i>Commelina longifolia</i> Lamk.	Commelinaceae	<i>Pani kanchira</i>
12.	<i>Crateva magna</i> (Lour.) DC.	Capparaceae	<i>Barun, Bonnya</i>
13.	<i>Cyperus articulatus</i> L.	Cyperaceae	<i>Shondha</i>
14.	<i>Cyperus corymbosus</i> Rottb.	Cyperaceae	<i>Gola methi</i>

Sl. No.	Scientific name	Family	Local name
15.	<i>Cyperus difformis</i> L.	Cyperaceae	<i>Behua</i>
16.	<i>Cyperus distans</i> L. f.	Cyperaceae	<i>Pani malanga</i>
17.	<i>Cyperus exaltatus</i> Retz.	Cyperaceae	Not known
18.	<i>Cyperus haspan</i> L.	Cyperaceae	Not known
19.	<i>Cyperus iria</i> L.	Cyperaceae	<i>Barachucha</i>
20.	<i>Cyperus laxus</i> Lamk.	Cyperaceae	Not known
21.	<i>Cyperus michelianus</i> (L.) Link	Cyperaceae	<i>Chhoto gotubi</i>
22.	<i>Cyperus odoratus</i> L.	Cyperaceae	Not known
23.	<i>Cyperus pilosus</i> Vahl	Cyperaceae	Not known
24.	<i>Cyperus platystylis</i> R. Br.	Cyperaceae	Not known
25.	<i>Cyperus tuberosus</i> Rottb.	Cyperaceae	Not known
26.	<i>Echinochloa colonum</i> (L.) Link	Cyperaceae	<i>Shama ghas,</i> <i>Shama dhan</i>
27.	<i>Echinochloa crusgalli</i> (L.) P. Beauv.	Cyperaceae	<i>Bara shama-ghas</i>
28.	<i>Eichhornia crassipes</i> (Mart.) Solms	Pontederiaceae	<i>Kachuripana,</i> <i>Jarmani</i>
29.	<i>Eleocharis acutangula</i> (Roxb.) Schult.	Cyperaceae	Not known
30.	<i>Eleocharis congesta</i> D. Don	Cyperaceae	Not known
31.	<i>Eleocharis dulcis</i> (Burm.f.) Trin. ex Hensch.	Cyperaceae	Not known
32.	<i>Enhydra fluctuans</i> Lour.	Asteraceae	<i>Helencha, Hingcha</i>
33.	<i>Eriocaulon cinereum</i> R. Br.	Eriocaulaceae	Not known
34.	<i>Fimbristylis aestivalis</i> (Retz.) Vahl	Cyperaceae	Not known
35.	<i>Fimbristylis aphylla</i> Steud.	Cyperaceae	Not known
36.	<i>Fimbristylis bisumbellata</i> (Forssk.) Bubani	Cyperaceae	Not known
37.	<i>Fimbristylis dichotoma</i> (L.) Vahl subsp. <i>dichotoma</i> D.A. Simpson & T. Koyama	Cyperaceae	<i>Bara nirbishi.</i>
38.	<i>Fimbristylis dipsacea</i> (Rottb.) C.B. Clarke	Cyperaceae	Not known
39.	<i>Fimbristylis miliacea</i> (L.) Vahl	Cyperaceae	<i>Bara javani</i>

Sl. No.	Scientific name	Family	Local name
40.	<i>Fimbristylis quinquangularis</i> (Vahl) Kunth	Cyperaceae	Not known
41.	<i>Fimbristylis schoenoides</i> (Retz.) Vahl	Cyperaceae	<i>Kesari malanga</i>
42.	<i>Fimbristylis squarrosa</i> Vahl	Cyperaceae	Not known
43.	<i>Hydrilla verticillata</i> (L. f.) Royle	Hydrocharitaceae	<i>Jhangi, Kureli</i>
44.	<i>Hydrolea zeylanica</i> (L.) Vahl	Hydrophyllaceae	<i>Kasschara, Ishalanguli</i>
45.	<i>Hygrophila phlomoides</i> Nees	Acanthaceae	Not known
46.	<i>Hygrophila schulli</i> (Buch.-Ham.) M. R. & S. N. Almeida	Acanthaceae	<i>Kulekhara, Talmakhna</i>
47.	<i>Hygroryza aristata</i> (Retz.) Nees	Poaceae	<i>Jangli dhan, Phutki</i>
48.	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	<i>Kalmi shak</i>
49.	<i>Ipomoea fistulosa</i> Mart. ex Choisy	Convolvulaceae	<i>Dhol kolmi</i>
50.	<i>Lagerstroemia speciosa</i> (L.) Pers.	Lythraceae	<i>Jarul, Pannya jarul</i>
51.	<i>Lemna perpusilla</i> Torrey	Lemnaceae	<i>Kkutipana, Khudipana</i>
52.	<i>Limnocharis flava</i> (L.) Buchen.	Limnocharitaceae	Not known
53.	<i>Limnophila aromatica</i> (Lamk.) Merr.	Scrophulariaceae	<i>Pani karpur</i>
54.	<i>Limnophila sessiliflora</i> (Vahl) Blume	Scrophulariaceae	Not known
55.	<i>Ludwigia adscendens</i> (L.) Hara	Onagraceae	<i>Kesar dam, Malcha</i>
56.	<i>Ludwigia hyssopifolia</i> (G. Don) Exell apud A. & R. Fernandes	Onagraceae	Not known
57.	<i>Ludwigia octovalvis</i> (Jacq.) Raven	Onagraceae	<i>Bhuikura, Bonlong</i>
58.	<i>Ludwigia perennis</i> L.	Onagraceae	Not known
59.	<i>Monochoria hastata</i> (L.) Solms	Pontederiaceae	<i>Baranukha</i>
60.	<i>Monochoria vaginalis</i> (Burm. f.) Presl	Pontederiaceae	<i>Nukha, Sarkachu</i>
61.	<i>Najas indica</i> (Willd.) Cham.	Najadaceae	Not known

Sl. No.	Scientific name	Family	Local name
62.	<i>Nechamandra alternifolia</i> (Roxb.) Thw.	Hydrocharitaceae	<i>Rasnajhangi</i>
63.	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Rubiaceae	<i>Kadam, Bul-kadam</i>
64.	<i>Neptunia oleracea</i> Lour.	Mimosaceae	<i>Paninajak, Panilajak</i>
65.	<i>Nymphaea nouchali</i> Burm. f.	Nymphaeaceae	<i>Nil-shapla, Nilkomol</i>
66.	<i>Nymphaea pubescens</i> Willd.	Nymphaeaceae	<i>Sada shapla, Shaluk</i>
67.	<i>Nymphaea rubra</i> Roxb. ex Andr.	Nymphaeaceae	<i>Lal shapla</i>
68.	<i>Nymphoides hydrophylla</i> (Lour.) O. Kuntze	Menyanthaceae	Not known
69.	<i>Nymphoides indicum</i> (L.) O. Kuntze	Menyanthaceae	<i>Panchuli, Chandmalla</i>
70.	<i>Oryza sativa</i> L.	Poaceae	<i>Chaul, Dhan</i>
71.	<i>Ottelia alismoides</i> (L.) Pers.	Hydrocharitaceae	<i>Ramkarala, Shamakola</i>
72.	<i>Panicum paludosum</i> Roxb.	Poaceae	<i>Barti, Kalash nar</i>
73.	<i>Panicum repens</i> L.	Poaceae	<i>Baranda, Dhani ghas.</i>
74.	<i>Paspalidium flavidum</i> (Retz.) A. Camus	Poaceae	<i>Bolai mandi, Karin ghas</i>
75.	<i>Paspalidium punctatum</i> (Burm.) A. Camus	Poaceae	<i>Petinar</i>
76.	<i>Paspalum distichum</i> L.	Poaceae	Not known
77.	<i>Persicaria barbata</i> (L.) Hara.	Polygonaceae	<i>Bekhanjabaj, Bishkatali</i>
78.	<i>Persicaria flaccida</i> (Meissn.) H. Gross ex Loesen.	Polygonaceae	<i>Lal-bishkatali</i>
79.	<i>Persicaria glabra</i> (Willd.) Gomez de la Maza	Polygonaceae	<i>Lal-kukri, Bihogni</i>
80.	<i>Persicaria hydropiper</i> (L.) Spach	Polygonaceae	<i>Bishkatali, Panimarich</i>
81.	<i>Persicaria lanata</i> (Roxb.) Hassan	Polygonaceae	<i>Shet-panimarich</i>

Sl. No.	Scientific name	Family	Local name
82.	<i>Persicaria lapathifolia</i> (L.) S. F. Gray	Polygonaceae	<i>Panimorich, Bishkatali</i>
83.	<i>Persicaria orientalis</i> (L.) Spach	Polygonaceae	<i>Bara panimorich</i>
84.	<i>Persicaria tomentosa</i> (Willd.) Sa.	Polygonaceae	<i>Pani-bishkatali</i>
85.	<i>Pistia stratiotes</i> L.	Araceae	<i>Topapana</i>
86.	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	<i>Karanja, Karach</i>
87.	<i>Potamogeton crispus</i> L.	Potamogetonaceae	
88.	<i>Rotala densiflora</i> (Roth ex Roem. & Schult.) Koehne	Lythraceae	Not known
89.	<i>Rotala indica</i> (Willd.) Koehne	Lythraceae	Not known
90.	<i>Rumex dentatus</i> L.	Polygonaceae	<i>Bon-palong</i>
91.	<i>Sagittaria guayanensis</i> H.B & K. subsp. <i>lappula</i> (D. Don) Bogin	Alismataceae	Not known
92.	<i>Sagittaria sagittifolia</i> L.	Alismataceae	<i>Muyamuya, Chhotokut</i>
93.	<i>Schoenoplectus articulatus</i> (L.) Palla	Cyperaceae	<i>Putputi-chechra</i>
94.	<i>Schoenoplectus juncoides</i> (Roxb.) Palla	Cyperaceae	Not known
95.	<i>Sesbania bispinosa</i> (Jacq.) Wight.	Fabaceae	<i>Dhaincha</i>
96.	<i>Setaria italica</i> (L.) P. Beauv.	Poaceae	<i>Kaon, Kangul, Kanti dana</i>
97.	<i>Spermacoce stricta</i> L. f.	Rubiaceae	<i>Bishmijal, Narikeljhuri shak</i>
98.	<i>Sphaeranthus indicus</i> L.	Asteraceae	<i>Chagul-nadi, Murmuri, Ghork-mundi</i>
99.	<i>Spirodela polyrhiza</i> (L.) Schleid.	Lemnaceae	<i>Tetulepana</i>
100.	<i>Trapa bispinosa</i> Roxb.	Trapaceae	<i>Paniphal, Singara</i>
101.	<i>Utricularia aurea</i> Lour.	Lentibulariaceae	<i>Jhangi</i>
102.	<i>Utricularia stellaris</i> L. f.	Lentibulariaceae	<i>Jhangi, Hijala, Hejla</i>
103.	<i>Vallisneria spiralis</i> L.	Hydrocharitaceae	<i>Pata shaola</i>

Table 14: A list of homestead flora of Gazipur district (arranged alphabetically).

Sl. No.	Scientific name	Family	Local name
1.	<i>Acacia auriculiformis</i> A. Cunn. ex Benth. & Hook.	Mimosaceae	<i>Akashmoni</i>
2.	<i>Acacia mangium</i> Willd.	Mimosaceae	<i>Mangium</i>
3.	<i>Acacia nilotica</i> (L.) Delile subsp. <i>indica</i> (Benth.) Brenan	Mimosaceae	<i>Babla</i>
4.	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	<i>Bel</i>
5.	<i>Annona reticulata</i> L.	Annonaceae	<i>Ata</i>
6.	<i>Annona squamosa</i> L.	Annonaceae	<i>Sharifa</i>
7.	<i>Areca catechu</i> L.	Arecaceae	<i>Supari</i>
8.	<i>Artocarpus heterophyllus</i> Lamk.	Moraceae	<i>Kanthal</i>
9.	<i>Artocarpus lacucha</i> Buch.-Ham.	Moraceae	<i>Dewa</i>
10.	<i>Averrhoa bilimbi</i> L.	Oxalidaceae	<i>Bilimbi, Bilumbi</i>
11.	<i>Averrhoa carambola</i> L.	Oxalidaceae	<i>Kamranga</i>
12.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	<i>Neem</i>
13.	<i>Bambusa balcooa</i> Roxb.	Poaceae	<i>Borak bans</i>
14.	<i>Bambusa bambos</i> (L.) Voss	Poaceae	<i>Kanta bans</i>
15.	<i>Bambusa jaintiana</i> R.B. Majumdar	Poaceae	<i>Konkoi bans</i>
16.	<i>Bambusa nutans</i> Wall. ex Munro	Poaceae	<i>Mahal bans</i>
17.	<i>Bambusa tulda</i> Roxb.	Poaceae	<i>Talla bans</i>
18.	<i>Bombax ceiba</i> L.	Bombacaceae	<i>Shimul</i>
19.	<i>Borassus flabellifer</i> L.	Arecaceae	<i>Tal</i>
20.	<i>Cassia fistula</i> L.	Caesalpiniaceae	<i>Sonalu</i>
21.	<i>Citrus aurantifolia</i> (Christm. & Panzer) Swingle	Rutaceae	<i>Lebu</i>
22.	<i>Citrus limon</i> (L.) Burm. f.	Rutaceae	<i>Gora-lebu</i>
23.	<i>Citrus maxima</i> (Burm.) Merr.	Rutaceae	<i>Batabi lebu, Jambura</i>
24.	<i>Cocos nucifera</i> L.	Anacardiaceae	<i>Narikel</i>
25.	<i>Crescentia cujete</i> L.	Bignoniaceae	<i>Dhaki bel, Pagla bel</i>

Sl. No.	Scientific name	Family	Local name
26.	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	<i>Sissoo</i>
27.	<i>Delonix regia</i> Rafin.	Caesalpiniaceae	<i>Krishnachura</i>
28.	<i>Dillenia indica</i> L.	Dilleniaceae	<i>Chalta</i>
29.	<i>Diospyros blancoi</i> A. DC.	Ebenaceae	<i>Belati gab</i>
30.	<i>Diospyros malabarica</i> (Desr.) Kostel.	Ebenaceae	<i>Gab</i>
31.	<i>Elaeocarpus floribundus</i> Blume	Elaeocarpaceae	<i>Jalpai</i>
32.	<i>Erythrina variegata</i> L.	Fabaceae	<i>Mandar</i>
33.	<i>Eucalyptus alba</i> Reinw.	Myrtaceae	<i>Eucalyptus</i>
34.	<i>Eucalyptus citriodora</i> Hook.	Myrtaceae	<i>Eucalyptus</i>
35.	<i>Flacourtia indica</i> (Burm. f.) Merr.	Flacourtiaceae	<i>Beuchi, Boichi</i>
36.	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	Flacourtiaceae	<i>Lukluki, Paniala</i>
37.	<i>Garcinia cowa</i> Roxb. ex DC.	Clusiaceae	<i>Kau, Kao-gola</i>
38.	<i>Gmelina arborea</i> Roxb.	Verbenaceae	<i>Gamar</i>
39.	<i>Lagerstroemia speciosa</i> (L.) Pers.	Lythraceae	<i>Jarul</i>
40.	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	<i>Jiga</i>
41.	<i>Leucaena leucocephala</i> (Lamk.) de Wit.	Mimosaceae	<i>Ipil-Ipil</i>
42.	<i>Limonia acidissima</i> L.	Rutaceae	<i>Koethbel</i>
43.	<i>Litchi chinensis</i> Sonn.	Sapindaceae	<i>Lichu</i>
44.	<i>Mangifera indica</i> L.	Anacardiaceae	<i>Aam</i>
45.	<i>Melia azedarach</i> L.	Meliaceae	<i>Goranim</i>
46.	<i>Melocanna baccifera</i> (Roxb.) Kurz	Poaceae	<i>Mulibansh</i>
47.	<i>Moringa oleifera</i> Lamk.	Moringaceae	<i>Sajna, Sojne</i>
48.	<i>Musa paradisiaca</i> L.	Musaceae	<i>Kola</i>
49.	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Rubiaceae	<i>Kadam</i>
50.	<i>Phoenix sylvestris</i> Roxb.	Arecaceae	<i>Khejur</i>
51.	<i>Plumeria alba</i> L.	Apocynaceae	<i>Gorur-champa</i>
52.	<i>Plumeria obtusa</i> L.	Apocynaceae	<i>Gorur-champa</i>
53.	<i>Plumeria rubra</i> L.	Apocynaceae	<i>Gorur-champa, Kathgolap</i>

Sl. No.	Scientific name	Family	Local name
54.	<i>Polyalthia longifolia</i> (Sonn.) Thw.	Annonaceae	<i>Debdaru</i>
55.	<i>Psidium guajava</i> L.	Myrtaceae	<i>Piyara</i>
56.	<i>Punica granatum</i> L.	Punicaceae	<i>Dalim</i>
57.	<i>Samanea saman</i> (Jacq.) Merr.	Mimosaceae	<i>Raintree, Randi-koroi</i>
58.	<i>Spondias pinnata</i> (L. f.) Kurz	Anacardiaceae	<i>Amra, Deshi-amra</i>
59.	<i>Spondias purpurea</i> L.	Anacardiaceae	<i>Beelati amra</i>
60.	<i>Swietenia mahagoni</i> (L.) Jacq.	Meliaceae	<i>Mehogany</i>
61.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	<i>Kala-jam</i>
62.	<i>Syzygium fruticosum</i> DC.	Myrtaceae	<i>Bon-jam, Khudi-jam</i>
63.	<i>Syzygium jambos</i> (L.) Alston	Myrtaceae	<i>Gulap-jam</i>
64.	<i>Syzygium malaccense</i> (L.) Merr. & Perry	Myrtaceae	<i>Jamrul</i>
65.	<i>Syzygium samarangense</i> (Blume) Merr. & Perry	Myrtaceae	<i>Jamrul</i>
66.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	<i>Tentul</i>
67.	<i>Tectona grandis</i> L. f.	Verbenaceae	<i>Shegun</i>
68.	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	<i>Arjun</i>
69.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	<i>Bohera</i>
70.	<i>Terminalia chebula</i> Retz.	Combretaceae	<i>Haritoki</i>
71.	<i>Thevetia peruviana</i> (Pers.) K. Schum.	Apocynaceae	<i>Halde karabi, Kalki phul</i>
72.	<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Rutaceae	<i>Bajna, Bazinali</i>
73.	<i>Ziziphus mauritiana</i> Lamk.	Rhamnaceae	<i>Boroi</i>

4.2. VEGETATION ANALYSIS

The vegetation of Gazipur district exhibits a diverse habitats, such as scrub jungles, homesteads, riparian, Sal forest, roadsides, wetlands, etc. which support luxuriant formation of angiosperms and play a vital role in local economy, environment and primary healthcare system. Vegetations of these habitats are briefly discussed below:

1. Scrub jungles or thicket vegetation: Growth of jungles or thickets is generally met within the rural areas, narrow patches of water land scattered around tanks and ditches. Some of the common plants of thickets and scrub jungles are *Alocasia cucullata* (Lour.) G. Don., *Calotropis gigantea* (L.) R. Br., *Diospyros malabarica* (Desr.) Kostel., *Ficus benghalensis* L., *Ficus hispida* L. f., *Leucaena leucocephala* (Lamk.) de Wit., *Litsea glutinosa* (Lour.) Robinson, *Morus alba* L., *Sida acuta* Burm. f., *Streblus asper* Lour., *Trema orientalis* (L.) Blume. The common climbers are *Cissus adnata* Roxb., *Coccinia grandis* (L.) Voigt, *Dioscorea glabra* Roxb., *Dioscorea pentaphylla* L., *Ipomoea aquatica* Forssk., and aggressive alien species *Mikania cordata* (Burm. f.) Robinson.

2. Riparian vegetation: Most of the river of the area have long slope from their banks which are traversed by the fresh water affected plants. Among fresh water affected plants include *Barringtonia acutangula*, *Crataeva magna* (Lour.) DC., *Cyperus exaltatus* Retz., *Ipomoea fistulosa* Mart. ex Choisy, *Lippia alba* (Mill.) Britton et Wilson, *Phragmites karka* (Retz.) Trin. ex Steud., etc.

3. Sal forest vegetation: The Sal forest area gives an undulated configuration and consists of high lands called ‘*chalas*’ intercepted by numerous depressions called ‘*baidis*’. The *chalas* are covered with forest plants, predominantly Sal (*Shorea robusta* Roxb. ex Gaertn. f.) in association with *Catunaregam spinosa* (Thunb.) Tirveng., *Dillenia pentagyna* Roxb., *Dipterocarpus turbinatus* Gaertn., *Grewia nervosa* (Lour.) Panigr., *Meyna pubescens* (Kurz) Robyns, etc. Whereas the *baidis* are cultivated with paddy.

4. Wetlands vegetation: Wetlands vegetation include shallow ponds, ditches, channels, small *beels*, *jheels* and fallow low laying water bodies. These provide different types of vegetation with the species of *Alternanthera philoxeroides* (Mart.) Griseb., *Aponogeton natans* (L.) Engl. & Krause, *Barringtonia acutangula* (L.) Gaertn., *Eichhornia crassipes* (Mart.) Solms, *Enhydra fluctuans* Lour., *Hydrilla verticillata* (L.f.) Royle, *Ipomoea aquatic* Forssk., *Ipomoea fistulosa* Mart. ex Choisy, *Lemna perpusilla* Torrey, *Ludwigia adscendence*, *Monochoria hastata*, *Najas graminea*, *Nymphaea nouchali* Burm. f., *Nymphaea rubra* Roxb. ex Andr., *Nymphoides indicum* (L.) O. Kuntze, *Ottelia alismoides* (L.) Pers., *Persicaria hydropiper* (L.) Spach, *Pistia stratiotes* L., *Sagittaria sagittifolia* L., *Trapa bispinosa* Roxb., *Utricularia aurea* Lour., *Vallisneria spiralis* L., etc.

5. Homestead vegetation: Generally in homesteads heterogenous assortment of plant species are found. Common weeds of the drier ground of homesteads include *Amaranthus viridis* L., *Blumea lacera* (Burm. f.) DC., *Centella asiatica* (L.) Urban, *Eclipta alba* (L.) Hassk., *Peperomia pellucida* (L.) H. B. & K., *Rorippa indica* (L.) Hiern, *Scoparia dulcis* L., *Synedrella nodiflora* (L.) Gaertn. Commonly cultivated fruit yielding plants are, *Artocarpus heterophyllus* Lamk., *Borassus flabellifer* L., *Cocos nucifera* L., *Mangifera indica* L., *Musa paradisiaca* L., *Phoenix sylvestris* Roxb., *Psidium guajava* L., *Spondias pinnata* (L. f.) Kurz, *Syzygium cumini* (L.) Skeels, *Ziziphus mauritiana* Lamk. There are some timber plants cultivated such as *Albizia lebbbeck* (L.) Benth. & Hook., *Albizia procera* (Roxb.) Benth., *Samanea saman* (Jacq.) Merr., *Swietenia mahagoni* Jacq., etc. Various vegetables, pot-herbs, bamboo, medicinal, ornamental, flowering plants which are used in religious festivals and temple decoration are found beside homestead in villages.

6. Roadside vegetation: The common roadside trees, shrubs and herbs are *Albizia lebbbeck* (L.) Benth. & Hook., *Albizia procera* (Roxb.) Benth., *Borassus flabellifer* L., *Cocos nucifera* L., *Croton bonplandianus* Baill., *Dalbergia sissoo* Roxb., *Delonix regia* Rafin., *Ficus benghalensis* L., *Ficus hispida* L. f., *Ficus religiosa* L., *Glycosmis pentaphylla* (Retz.) A. DC., *Heliotropium indicum* L., *Mangifera indica* L., *Mimosa pudica* L., *Samanea saman* (Jacq.) Merr., *Swietenia mahagoni* Jacq., *Senna occidentalis* Roxb., *Senna sophora* (L.) Roxb., *Sida acuta* Burm. f., *Urena lobata* L., *Xanthium indicum* Koen. ex Roxb. etc.

4.2.1. HABIT FORMS

Angiospermic plant taxa occurring in the study area has been categorized under six broad habit forms viz. herbs, shrubs, trees, climbers, epiphytes and parasites (Table 15).

Table 15: Habit form analysis of the taxa.

Habit form	Herbs	Shrubs	Trees	Climbers	Epiphytes	Parasites	Total
Magnoliopsida	253	110	166	70	1	5	605
Liliopsida	203	6	13	5	-	1	228
Total number of taxa	456	116	179	75	1	6	833

Among the total flora the largest number of taxa are herbs (456 taxa), followed by trees (179 taxa), shrubs (116 taxa), climbers (75 taxa), parasites (6 taxa) and epiphytes (1 taxon).

Herbs are represented by 54.74%, shrubs 13.93%, trees 21.49% and climbers 9.00%. Epiphytic and parasitic species constitutes less than 1% of the total angiospermic flora in the area (Fig. 2).

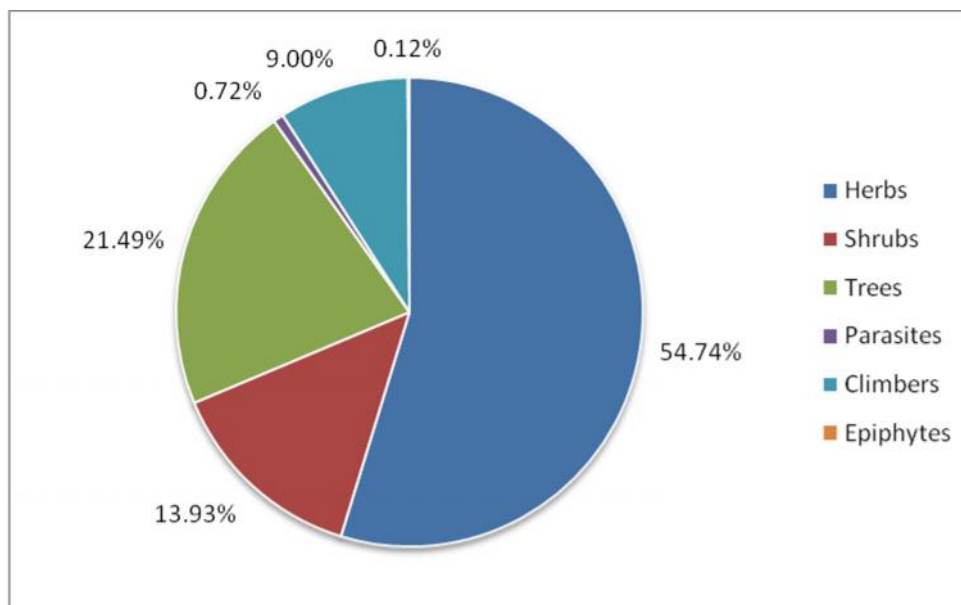


Fig. 2. Pie-chart showing percentage of habit-forms of taxa.

4.2.2. PHENOLOGY

Flowering and fruiting period of the plant species depend on climatic condition. There are three main noticeable seasons prevailing in the district as the hot summer, long rainy season and the winter having dry clear weather. Most of the taxa in the study area show much seasonal overlapping in case of flowering and fruiting time. Flowering and fruiting of a species may initiate in one season but it might continue to other season as well indicating flowering and fruiting of a species does not strictly restricted in one season.

Among the total taxa 24.75% produces flowers and/ or fruits in summer (March-June), 34.33% in rainy season (July-October), 33.15% in winter (November-February) and 7.77% species produces flowers and/ or fruits all the year round (Fig. 3). The analysis shows that the maximum number of plant produces flowers and/or fruits in Rainy season and the minimum number of species produces flowers and/or fruits in winter.

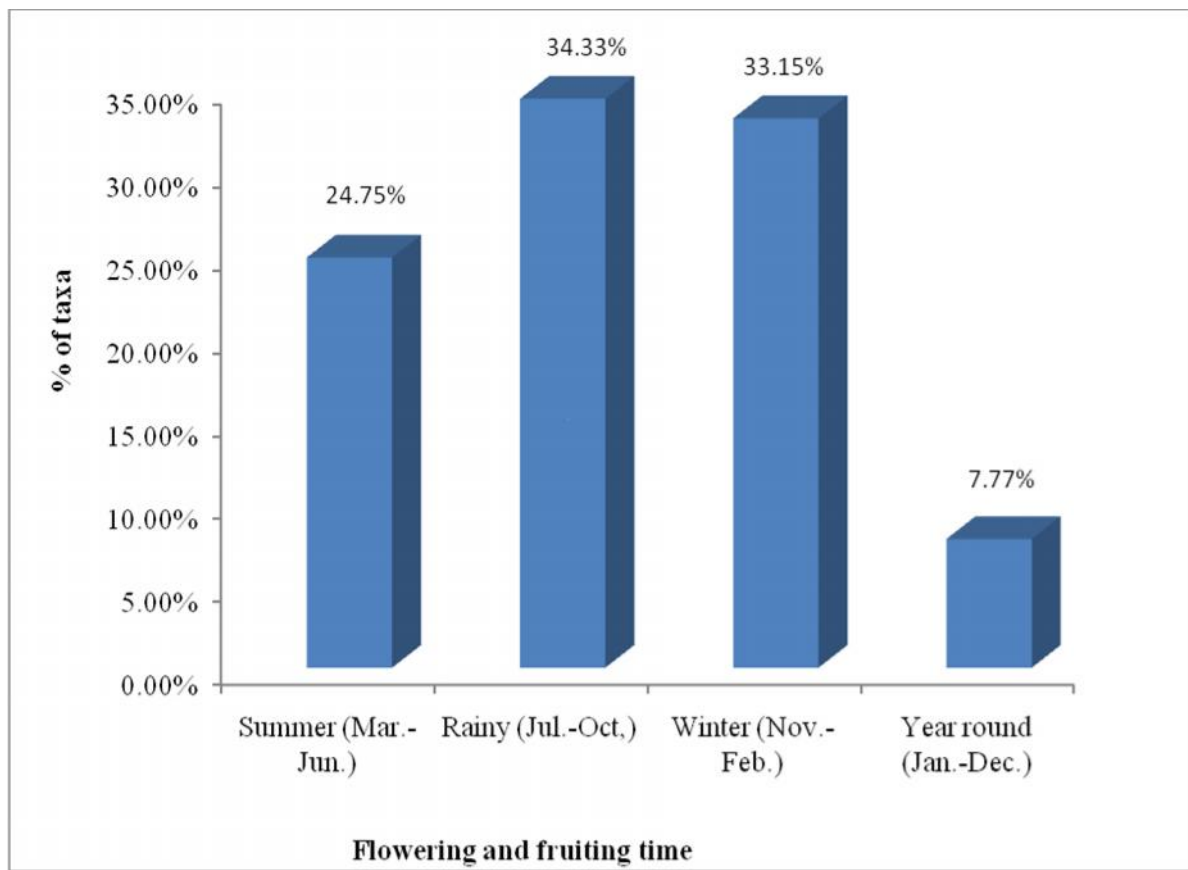


Fig. 3. Histogram showing the percentage of flowering and fruiting times of recorded species during the calendar year.

4.2.3. EXOTIC PLANT SPECIES

Based on Hossain and Pasha (2004) exotic plants of Gazipur district were determined. A total of 160 exotic plants were identified and some of the common exotic plants are *Acacia nilotica* (L.) Delile subsp. *indica* (Benth.) Brenan, *Ageratum conyzoides* L., *Bombax ceiba* L., *Colocasia esculenta* (L.) Schott, *Eichhornia crassipes* (Mart.) Solms, *Mikania cordata* (Burm. f.) Robinson, *Swietenia mahagoni* Jacq., etc. Out of total flora of the study area 20.8% plants species are exotic. On the other hand atleast 6% of the present flora of Bangladesh would be the true exotic plants (Hossain and Pasha, 2004).

4.2.4. STATUS OF OCCURRENCE

The present study revealed that 503 taxa are found in wild condition of which 618 taxa are commonly found, while 58 taxa are rare (Table 16).

Table 16: Analysis of flora based on status of occurrence.

Status of occurrence	Common	Rare	Cultivated	Total
Number of taxa	618	58	197	833
% of total flora	74.18	6.96	23.6	100

Here the plants found in all upazilas have been considered as common and the plants found in very few locations have been regarded as rare.

According to Khan *et al.* (2001), Rahman (2013) and Ara *et al.* (2013) the present study has recorded 15 threatened species namely *Andrographis paniculata* (Burm. f.) Wall. ex Nees, *Cissus vitiginea* Roxb., *Citrullus colocynthis* (L.) Schrad., *Cyclea barbata* Miers, *Curcuma amada* Roxb., *Elaeocarpus rugosus* Roxb. ex G. Don, *Hemidesmus indicus* (L.) R. Br., *Leea alata* Edge., *Marsdenia thyrsiflora* Hook. f., *Phoenix acaulis* Buch.-Ham. ex Roxb., *Polyalthia simiarum* (Hook. f. & Thom.) Hook. f. & Thom., *Pterospermum semisagittatum* Buch.-Ham. ex Roxb., *Rauvolfia serpentina* L., *Terminalia citrina* (Gaertn.) Roxb. ex Fleming and *Tinospora crispa* (L.) Hook. f. & Thoms.

4.2.5. ECONOMICALLY IMPORTANT PLANTS

Among the economically plants: the number of Timber yielding plants is 102, Medicinal plants 404, Vegetables 108, Edible fruits 68, Fibre yielding plants 20, Fire wood plants 60, Ornamental plants 150, Hedge plants 20, Fodder plants 140, Spice yielding plants 10, Pulse yielding plants 9, Cereals yielding plants 5, Tannin producing plants 18, Oil yielding plants 18, Dye yielding plants 9 and Wildlife supporting plants 70.

Table 17: A concise list of important medicinal, timber, dye and oil yielding plants.

Sl. No.	Scientific name	Family	Local name
A. Medicinal plants			
1.	<i>Abroma augusta</i> (L.) L.f.	Sterculiaceae	<i>Ulatkambal</i>
2.	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees	Acanthaceae	<i>Kalomegh</i>
3.	<i>Asparagus racemosus</i> Willd.	Liliaceae	Shatomuli
4.	<i>Calotropis gigantea</i> (L.) R. Br.	Asclepiadaceae	<i>Akando</i>
5.	<i>Centella asiatica</i> (L.) Urban	Apiaceae	<i>Thankuni</i>
6.	<i>Gloriosa superba</i> L.	Liliaceae	<i>Ulatchandul</i>
7.	<i>Hemidesmus indicus</i> (L.) R. Br.	Asclepiadaceae	<i>Anantamul</i>

Sl. No.	Scientific name	Family	Local name
8.	<i>Holarrhena antidysentrica</i> (L.) Wall. ex A. DC.	Apocynaceae	<i>Kurchi</i>
9.	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Apocynaceae	<i>Sarpagandha</i>
10.	<i>Tinospora cordifolia</i> (Willd.) Hook. f. & Thoms.	Menispermaceae	<i>Ghora-gulantha</i>
B. Timber yielding plants			
1.	<i>Acacia auriculiformis</i> A. Cunn. ex Benth. & Hook. (Under plantation)	Mimosaceae	<i>Akashmoni</i>
2.	<i>Albizia procera</i> (Roxb.) Benth.	Mimosaceae	<i>Koroi</i>
3.	<i>Artocarpus heterophyllus</i> Lamk.	Moraceae	<i>Kanthal</i>
4.	<i>Bombax ceiba</i> Burm. f.	Bombacaceae	<i>Shimul</i>
5.	<i>Borassus flabellifer</i> L.	Arecaceae	<i>Tal</i>
6.	<i>Cassia fistula</i> L.	Caesalpiniaceae	<i>Bandorlathi</i>
7.	<i>Gmelina arborea</i> Roxb.		<i>Gamar</i>
8.	<i>Shorea robusta</i> Roxb. ex Gaertn. f.	Dipterocarpaceae	<i>Sal, Gazari</i>
9.	<i>Swietenia mahagoni</i> Jacq.	Meliaceae	<i>Mahogoni</i>
10.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	<i>Jam</i>
C. Dye yielding plants			
1.	<i>Acacia catechu</i> (L. f.) Willd.	Mimosaceae	<i>Khair</i>
2.	<i>Basella rubra</i> L.	Basellaceae	<i>Poi-shak</i>
3.	<i>Bixa orellana</i> L.	Bixaceae	<i>Belati haldi</i>
4.	<i>Lawsonia inermis</i> L.	Lythraceae	<i>Mehedi</i>
D. Oil yielding plants			
1.	<i>Aphanamixis polystachya</i> (Wall.) R. N. Parker	Meliaceae	<i>Pitraj, Royna</i>
2.	<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Rutaceae	<i>Bazna</i>

4.2.6. THREATS TO THE ANGIOSPERMIC FLORA

A number of threats have been identified in the study area based on the observations and group discussion with local people during the field surveys which might lead to cause angiospermic flora to diminish. These threats are as appended below:

- Development activities and urbanization.
- Modern agricultural practice.
- Agricultural extension and illegal encroachment.

- Over exploitation.
- Pollution (air and water pollution).
- Exotic plantation.
- Invasive alien species.
- Inadequate awareness or lack of awareness about plant wealth.

4.2.7. RECOMMENDATIONS

The existence of lives depends on the extraction of the natural resources. Presently natural disaster, modern agriculture, urbanization, lack of awareness and exotic plantation are great threats to angiospermic flora in the study area. Hence immediate conservation measures are essential. Several discussions with local and ethnic stakeholders of the study area have been conducted on the conservation issues of angiospermic flora. A number of suggestions come out from such discussion are presented below:

- Native plants should be selected for plantation.
- Conservation of the threatened plant species by *in-situ* methods should be undertaken. The local people should be involved in this activity.
- Awareness among the local people should be created for the conservation of angiospermic flora.
- Nursery should be developed for the propagation of threatened plants.
- Government and local NGOs can act jointly for the conservation of angiospermic flora.
- Existing national and international forest rules and regulations should be strictly implemented.

4.2.8. CONCLUSION

The vegetation of Gazipur district is deciduous to semi-deciduous type and heterogenous in nature. Against so many threats, still it remains as a species rich area. To keep the species richness at this level immediate action should be taken to stop agricultural and industrial encroachment in the forest areas and sand filling for housing in the *beel*, *jheel* and other low-lying areas.

PHOTOGRAPHS



1. A part of Gazipur *Sal* forest



2. Bangabandhu Sheikh Mujib Safari Park, Gazipur



3. Homestead vegetation



4. Roadside vegetation



5. Scrub jungle



6. Wetland vegetation



7. Under growth of *Sal* forest



8. Rice cultivation in *Baid*



9. Encroachment into the forest for industrial setup



10. Appearance of regeneration in degraded *Sal* forest

Some rare plants of the study area



11. *Crescentia cujete* L.



12. *Gloriosa superba* L.



13. *Pterospermum semisagittatum* Buch.-
Ham. ex Roxb.



14. *Rauvolfia serpentina* (L.) Benth. ex
Kurz

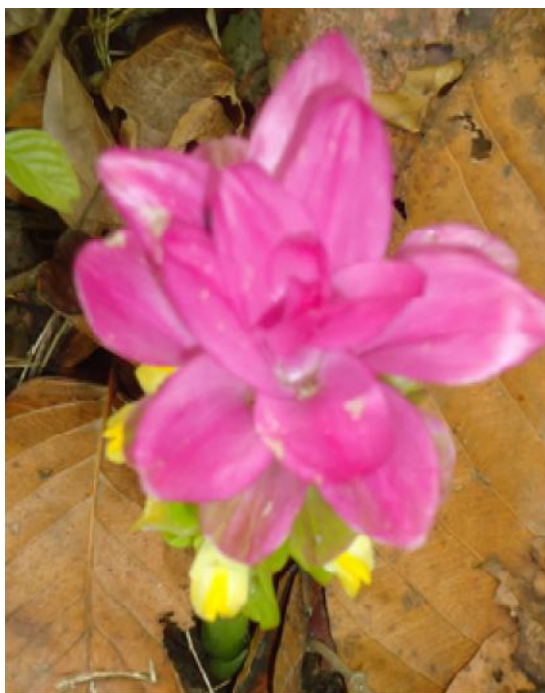
Some common plants of the study area



15. *Argyreia nervosa* (Burm. f.) Boj.



16. *Catunaregam spinosa* (Thunb.)
Tirveng.



17. *Curcuma zedoaria* (Christm.) Rosc.



18. *Derris scandens* (Roxb.) Benth.



19. *Desmodium pulchellum* (L.) Benth.



20. *Dillenia pentagyna* Roxb.



21. *Flemingia strobilifera* (L.) R. Br.



22. *Merremia hirta* (L.) Merr.



23. *Nymphaea nouchali* Burm. f.



24. *Sagittaria guayanensis* H.B & K.
subsp. *lappula* (D. Don) Bogin



25. *Shorea robusta* Roxb. ex Gaertn.



26. *Zanthoxylum rhesta* (Roxb.) DC.

CHAPTER- 5

REERENCES

CHAPTER 5

REFERENCES

- Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Kabir, S.M.H., Ahmed, M., Ahmed, A.T.A., Rahman, A.K.T. and Haque, E.U. (eds.). 2008-2009. *Encyclopedia of Flora and Fauna of Bangladesh*, vols. 6-10. Asiatic Society of Bangladesh, Dhaka.
- Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmed, M., Ahmed, A.T.A., Rahman, A.K.T. and Haque, E.U. (eds.). 2008. *Encyclopedia of Flora and Fauna of Bangladesh*, vol. 12. Asiatic Society of Bangladesh, Dhaka. pp. 1-552.
- Akter, A. and Zuberi, M.I. 2009. Invasive alien species in northern Bangladesh: Identification, inventory and impacts. *International Journal of biodiversity and conservation* 1(5): 129-134.
- Alam, M.K. 1986. Loranthaceae. In: Khan, M.S. (ed.). *Flora of Bangladesh*, No. 33. Bangladesh National Herbarium, Dhaka. 29 pp.
- Alam, M.K. 1995. Systematic studies in the Bamusoideae of Bangladesh. *Ph. D. thesis*, University of Dhaka (Unpublished). 397 pp.
- Alam, M.K. 1995a. Diversity in the woody flora of Sal (*Shorea robusta*) forest of Bangladesh. *J. Forest Sci.* 24(1): 41-51.
- Alam, M.K. 1998. *Documentation of ethnobiological information*. In: Brink, R.L., Alam, M.K., Pal, S.J. and Rastogi, A. (eds.). Applied Ethnobotany. Proceedings of Subregional Training Workshop on Applied Ethnobotany. BFRI, Chittagong, Bangladesh. pp. 28-29.
- Alam, M.K. 1999. Annotated Checklist of the Woody Flora of Sal Forests of Bangladesh. *Bulletin 8, Plant taxonomy Series*. Bangladesh Forest Research Institute, Chittagong. 60 pp.
- Alam, M.K. 2001. *Bamboos of Bangladesh- A field identification manual*. Bangladesh Forest Research Institute, Chittagong.
- Alam, M.K. 2002. Ethnobotanical Knowledge and Indigenous Non-Timber Food Crops for Sustainable Development of Upland Farming Systems in the CHT. In: Khan, N.A., Alam, M.K. and Khisa, S.K. (eds.), *Farming Practices and Sustainable Development in the Chittagong Hill Tracts*. Chittagong Hill Tracts Board. pp. 155-164.
- Alam, M.K. and Khisa, S.K. 2000. The perception of Ethnobotany in Chittagong Hill Tracts and its linkage with Biodiversity. In: Khan, N.A. (ed.). *Of Popular*

- Wisdom: Indigenous knowledge and Practices in Bangladesh. Bangladesh Resource Centre for Indigenous knowledge, Dhaka. pp. 39-46.
- Alam, M.S., Hassan, M.A. and Uddin, M.Z. 2006. A preliminary checklist of the angiospermic flora of Ghagotia union under Kapasia upazila in Gazipur district, Bangladesh. *Bangladesh J. Plant Taxon.* 13(2): 155-170.
- Alam, S.S. and Khanam, N. 2005. Fluorescent karyotype analysis of four *Aloe* species. *Bangladesh J. Bot.* 34(1): 17-20.
- Ara, H. and Khan, B. (eds.). 2009. *Flora of Bangladesh. Fasc. 59.* Bangladesh National Herbarium, Dhaka. pp. 1-59.
- Ara *et al.* 2013. *Red Data Book of Vascular Plants of Bangladesh, Vol. 2.* Bangladesh National Herbarium, Dhaka, Bangladesh. 280 pp.
- Atchison, E. 1948. Studies in the Leguminosae II. Cytogeography of *Acacia* (Tourn.) L. *Amer. J. Bot.* 35: 651-656.
- Atchison, E. 1951. Studies in the Leguminosae. VI. Chromosome Number among Tropical Woody Species. *Am. J. Bot.* 38(7): 538-547.
- Bakshi, D.N. Guha. 1984. *Flora of Murshidabad District West Bengal, India.* Scientific Publication Jodhpur India, pp 1-440.
- Barlow, B.A. 1971. The Cytogeography of Loranthaceae Mistletoes. *Taxon* 20(2 & 3): 313-332.
- BBS (Bangladesh Bureau of Statistics) 2013. *Monthly Statistical Bulletin*, June 2013. Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.
- Begum, M. 1987. *Edible fruits of Bangladesh.* pp. 1-123.
- Begum, M. 1995. Taxonomic studies of the family Acanthaceae from Bangladesh. Ph. D. thesis, Kalyani University, India (Unpublished), pp.1-355.
- Begum, M., Rezia, B.M. and Huq, A.M. 1998. Taxonomic Studies on the Genus *Albizia* Durazz. Bulletin of the Bangladesh National Herbarium, No. 2. Bangladesh National Herbarium, Bangladesh Agricultural Research Council, Dhaka. 13 pp.
- Bennet, S.S.R. 1979. *Flora of Howrah District.* International Book Distributors, Dehra Dun, India. pp. 1-406.
- Bhattacharyya, N.K. 1967. Cytological investigation on several genera of Scrophulariaceae and their interrelationships. *Proc. 54th Indian Sci. Congr.* Part 3: 384.
- Bhattacharyya, N.K. 1969. Cytological studies of a few more taxa of Scrophulariaceae. *Proc. 56th Indian Sci. Congr.* Part 3: 375.

- Bir, S.S. and Kumari, S. 1975. In: IOPB Chromosome Number Reports XLI. *Taxon* 22: 459-464.
- Bir, S.S. and Kumari, S. 1978. In: IOPB Chromosome Number Reports LIX. *Taxon* 27: 53-61.
- Bir, S.S. and Kumari, S. 1980. Cytological Evolution of the Leguminous Flora of the Punjab Plain. In: Bir, S.S. (ed.). *Recent Research in Plant Sciences*. Kalyani Publishers, Ludhiana, India. pp. 251-260.
- Bir, S.S. and Sidhu, M. 1980. Cytological Observations on Weed Flora of Orchards of Patiala District, Punjab. In: Bir, S.S. (ed.). *Recent Researches in Plant Science*. Kalyani Publishers, Ludhiana, India. pp. 261-271.
- Bor, N. L. 1960. *The Grassess of Burma, Ceylon, India and Pakistan (excluding Bambuseae)*. Pergamon Press, Oxford, London, New York, Paris. pp- 1-767.
- Borgen, L. 1975. Chromosome numbers of Macronesian Flowering Plants II. *Norw. J. Bot.* 21: 195-210.
- Borgmann, E. 1964. Anteil der polyploiden in der Flora des Bismarcksgebirges von Ostneuguinea. *Z. Bot.* 52: 118-173.
- Bose, R.B. and Choudhury, J.K. 1960. Cytological studies in *Lippia alba* (Mill.) N.E. Brown. *Bull. Bot. Soc. Beng.* 14(1-2): 71-72.
- Bose, T.K. and Yadab, L.P. 1989. *Commercial Flowers*. Naya Prokash, Calcutta, India. pp. 827-835.
- Brandis, D. 1906 (second reprint- 1978). *Indian Trees*. Bishen Singh Mahendra Pal Singh, Dehra Dun, India. pp. 1-767.
- Chakraverty, R.K. and Jain, S.K. 1984. *Beautiful Trees and Shrubs of Calcutta*. Botanical Survey of India, Howrah, Calcutta. 198 pp.
- Cronquist, A. 1981. *An integrated system of classification of flowering plants*. Columbia University Press, New York. pp 1-1262.
- Darlington, C.D. and Wylie, A.P. 1955. *Chromosome Atlas of Flowering Plants*. George Allen and Unwin Ltd. London. 520 pp.
- Das, D.K. and Alam, M.K. 2001. *Trees of Bangladesh*. Bangladesh Forest Research Institute, Chittagong. pp. 1-342.
- Dassanayake, M. D. and Fosberg, F. R. (eds.). 1980-87. *A Revised Handbook to the Flora of Ceylon, vols.1-6*. Amerind Publishing Co. Pvt. Ltd., New Delhi.
- Datta, M.K. 1971. Cytotaxonomy of Leguminosae. *Proc. 58th Ind. Sci. Congr.* 3: 471-472.
- Datta, N. 1967. In: IOPB Chromosome Number Reports XII. *Taxon* 16: 341-350.

- Datta, P.C. and Maiti, R.K. 1968. Cytotaxonomy of a few species of the tribe Galageae (Papilionaceae). *Genet. Iber* 20: 161-178.
- Datta, P.C. and Samanta, P. 1977. Cytotaxonomy of Meliaceae. *Cytologia* 42: 197-208.
- Datta, R.M. and Mitra, J.N. 1953. Common plants in and around Dacca. *Bot. Soc. Beng.* 7 (1 & 2): 1-10.
- Dey, C.K., Rahman, M.A. and Wilcock, C.C. 1988. An enumeration of the Tree species of Chittagong district. *Biod. Bull. Bangladesh* 1: 1-81.
- Fedorov, A.A. 1969. *Chromosomes Numbers of Flowering Plants*. Academy of Sciences of USSR Moscow. 926 pp.
- Frahm-liveld, J.A. 1953. Some chromosome numbers in tropical Leguminous plants. *Euphytica* 2: 46-48.
- Gadella, T.W. and Kliphuis, E. 1968. In: IOPB Chromosome Number Reports XVI. *Taxon* 17: 199-204.
- Gajapathy, C. 1961. Cytological studies in some Indian medicinal plants. *Bull. Bot. Surv. India* 3: 49-51.
- Gamble, J. S. 1922 (rep. 1984). A manual of Indian Timbers. Bishen Singh Mahendra Pal Singh, Dehra Dun, India. pp. 1-868.
- Ghani, A. 1998. *Medicinal Plants of Bangladesh: chemical constituents and uses*. Asiatic Society of Bangladesh, Dhaka. 460 pp.
- Ghorai, A. and Sharma, A. 1980. Bambusae- a review. *Feddes Repertorium* 91: 281-299.
- Gill, B.S., Bir, S.S. and Singhal, V.K. 1979. In: IOPB Chromosome Number Reports LXV. *Taxon* 28: 627-637.
- Guha, S. 1972. Cytotaxonomical studies of the Family Lythraceae. *Proc. 59th Indian Sci. Congr.* 3: 344.
- Hajra, P. K., Rao, R. R., Singh, D. K. and Uniyal, B. P. (eds.).1995. Flora of India, vol.-13. Botanical Survey of India, Calcutta. pp.1-411.
- Hajra, P. K., Rao, R. R., Singh, D. K. and Uniyal, B. P. (eds.).1995a. Flora of India, vol.-12. Botanical Survey of India, Calcutta. pp.1-449.
- Hassan, M.A. 1970. Taxonomic studies in the genera *Lindernia* and *Polygonum* from Dacca district. *M. Sc. Thesis*, University of Dhaka (Unpublished). pp.1-88.
- Hassan, M.A. 1989. Systematic studies in the genus *Polygonum* L. (s. l.) from Bangladesh. *Ph. D. Thesis*, University of Dhaka (Unpublished). pp.1-311.
- Heywood, V. H., Brummitt, R. K., Culham, A. and Seberg, O. 2007. *Flowering plant families of the world*. Royal Botanic Gardens, Kew. pp. 1-335.

- Hooker, J.D. 1872-1897. *The Flora of British India*, vols.1-7. Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
- Hossain, M.K. and Pasha, M.K. 2004. An account of the exotic flora of Bangladesh. *Journal of Forestry & Environment* 2: 99-115.
- Huda, H.N. 1967. A Preliminary Taxonomic Report on the Vegetation of Sal Forest of Dacca-Mymensingh. *M. Sc. Thesis*, University of Dhaka (Unpublished).
- Huq, A.M. 1986. *Plants Name of Bangladesh*. Bangladesh National Herbarium, BARC, Dhaka.
- Huq, A. M. and Begum, M. 1984. An annotated list of climbers of Dacca. Bangladesh National Herbarium, BARC, Dhaka. pp. 1-7.
- Hussein, M.M. and Abobakr, M.A. 1975. Secondary Association in *Brassica oleracea* L. *Genetika* 7: 241-250.
- Irwin, H.S. and Turner, B.L. 1960. Chromosomal Relationships and Taxonomic Considerations on the Genus *Cassia*. *Am. J. Bot.* 47(4): 309-318.
- Islam, A.S. and Saha, B. 1951. Chromosome Number of *Gymnopetalum cochinchinensis* Kurz. *Current Sci.* 20(12): 332-333.
- Islam, S. (ed.). 2003. *Banglapedia*, Vol. 2. Asiatic Society of Bangladesh. p. 183.
- Ismail, M. and Mia, M.M.K. 1973. *Studies on some deciduous Sal forest of Bangladesh*.
- Jacson, B.D. 1893-1955. *Index Kewensis*. Oxford at the clarendon press, MDCCCXCV.
- Jacob, K.T. 1940. Chromosome Numbers and the Relationship between Satellites and Nucleoli in *Cassia* and Certain other Leguminosae. *Ann. Bot.* 4(14): 201-226.
- Jash, M. and Sharma, A. 1972. Cytology of Some Indian Asclepiadaceae. *Chromosome Today* 3: 238-247.
- Jor, J.S. and Nair, S.G. 1979. Pachytene Pairing in Relation to Pollen Fertility in Five Cultivars of Cassava. *Cytologia* 44: 813-820.
- Jos, J.S. and Nair, S.G. 1979. Pachytene Pairing in Relation to Pollen Fertility in Five Cultivars of Cassava. *Cytologia* 44: 813-820.
- Kamala, T. 1978. Basic Chromosome Number and the Probable Origin of the Genomes in *Brassica*. *Current Sci.* 47: 128-129.
- Kanjilal, U.N., Kanjilal, P.C. and Das, A. 1934-1938 (rep. 1982). *Flora of Assam*, vols. 1-2. A Von Book Company, Delhi, India.
- Kaur, J. 1966. Chromosome Numbers in Acanthaceae-II. *Sci. & Cult.* 3: 142-143.
- Khan, A.H. 2005. Yearbook of Agricultural Statistics of Bangladesh, 2004. Bangladesh Bureau of Statistics, Ministry of Planning, Bangladesh.

- Khan, B. 1988. Peperomiaceae. In: Khan, M.S. (ed.). *Flora of Bangladesh, Fasc. 37*. Bangladesh National Herbarium, BARC, Dhaka. pp. 1-3.
- Khan, M.S. and Alam, M.K. 1977. Commelinaceae. In: Khan, M.S. (ed.) *Flora of Bangladesh*. Fasc. 4. Bangladesh National Herbarium, Dhaka. pp. 1-42.
- Khan, M.S. and Halim, M. 1987. *Aquatic angiosperm of Bangladesh*. Bangladesh National Herbarium, BARC, Dhaka. pp. 1-120.
- Khan, M.S. and Huq, A.M. 2001. The vascular flora of Chunati wildlife sanctuary in south Chittagong. *Bangladesh J. Plant Taxon.* 8(1): 47-64.
- Khan, M.S. and Rahman, M.M. (eds.). 1989-2002. *Flora of Bangladesh*. Fasc. 40-53. Bangladesh National Herbarium, Dhaka.
- Khan, M.S., Rahman, M.M. and Ali, M.A. 2001. *Red Data Book of Vascular Plants of Bangladesh*. Bangladesh National Herbarium, Dhaka. pp. 1-179.
- Khanam, M. and Ara, H. (eds.). 2007-2008. *Flora of Bangladesh*. Fasc. 56-58. Bangladesh National Herbarium, Dhaka.
- Khanam, M. and Rahman, M.M. 2002. Annonaceae. In: Khan, M.S. and Rahman, M.M. (eds.). *Flora of Bangladesh, Fasc. 52*. Bangladesh National Herbarium, Dhaka. pp. 1-53.
- Khatoon, S. and Ali, S.I. 1993. *Chromosome Atlas of the Angiosperms of Pakistan*. Department of Botany. University of Karachi, Pakistan. p. 28.
- Kiehn, M. 1991. Chromosome numbers and karyological notes on *Paederia* L. (Rubiaceae-Paederiaceae). In: Puff, C. (ed.). The genus *Paederia* L. (Rubiaceae-Paederiaceae): a multidisciplinary study. *Opera Botanica Belgica* 3: 125-132.
- Kirtikar, K.R., Basu, B.D. and An I.C.S. 1933 (rep. 1993). *Indian Medicinal Plants*, vol.1-4. Bishen Singh Mahendra Pal Singh, Dehra Dun, India. pp. 1-2793.
- Krause, O. 1930. Cytologische studies bei den Urticales. *Bor. Dtsch. Bot. Ges.* 48: 9-13.
- Krishnaswamy, N. and Raman, V.S. 1949. A Note on the Chromosome Numbers of Some Economic Plants of India. *Current Sci.* 18: 376-378.
- Krishnaswamy, N., Raman, V.S., Shetty, B.V. and Chandrasekharan, P. 1954. Chromosome Number of Some Indian Economic Plants. *Current Sci.* 23: 64-65.
- Kumar, V. and Subramaniam, B. 1986. *Chromosome Atlas of Flowering Plants of the Indian Subcontinent*, Vol. 1. Dicotyledons. Botanical Survey of India, Calcutta. 1- 464 pp.

- Kumar, V. and Subramaniam, B. 1986a. *Chromosome Atlas of Flowering Plants of the Indian Subcontinent*, Vol. 2. Monocotyledons. Botanical Survey of India, Calcutta. pp. 465-1095.
- Landolt, E. 1986. *The Family of Lemnaceae - A Monographic Study*, Vol. 1. Veröffentl. Geobot. Inst. Eidg. Techn. Hochschule, Stiftng. Rübel, in Zürich, 71 Heft. 566 pp.
- Lawrence, G. H. M. 1951 (Indian ed. 1967). *Taxonomy of vascular plants*. Mohan Primlani, New Delhi. pp. 275-283.
- Lemmens, R.H.M.J. and Wulijarmi-Soetjipto, N. (eds.) 1991. *Plant Resources of South-East Asia*, No. 3. Dye and Tannin Producing Plants. the Netherlands. 196 pp.
- Lewis, W.H., Stripling, H.L. and Ross, R.G. 1962. Chromosome numbers for some angiosperms of Southern United States and Mexico. *Rhodora* 64: 147-161.
- Lubna, A., Begum, R., Noor, S.S., Zaman, M.A. and Alam, S.S. 2004. Reversible fluorescent chromosome banding in three *Crinum* spp. (Amaryllidaceae). *Cytologia* 69(1): 69-74.
- Matsubayashi, M. 1954. Studies on the Characteristics of Triploid Watermelon-1. On Some Morphological Characters of the Triploids Compared with its Diploid Watermelons. *Japanese J. Breeding* 4: 183-188.
- Mayo, S.J., Bogner, J. and Boyce, P.C. 1997. The Genera of Araceae, Royal Botanic Gardens, Kew. pp. 1-170.
- McKay, J.W. 1930. Chromosome Numbers in the Cucurbitaceae. *Bot. Gaz.* 89(4): 416-417.
- McKay, J.W. 1931. Chromosome Studies in the Cucurbitaceae. *Univ. California Publ. Bot.* 16(9): 339-350.
- Mehra, P.N. and Gill, B.S. 1974. Cytological studies in Ulmaceae, Moraceae and Urticaceae. *J. Arn. Arbor: Harv. Univ.* 55: 663-677.
- Mehra, P.N. and Hans, A.S. 1969. In: IOPB Chromosome Number Reports XXI. *Taxon* 18: 213-315.
- Mehra, P.N. and Khosla, P.K. 1969. In: IOPB Chromosome Number Reports XX. *Taxon* 18: 213-221.
- Mehra, P.N. and Vasudevan, K.N. 1972. In: IOPB Chromosome Number Reports XXXVI. *Taxon* 21: 333-346.
- Mehra, S.N. 1983. *Cytology of Orchids of Khasi and Jainta hills*. Pramodh P. Kanpural Ray Bandhu Industrial Company, New Delhi.

- Mia, M.M.K. 1996a. Combretaceae. In: Khan, M.S. and Rahman, M.M. (eds.). *Flora of Bangladesh, Fasc. 50*. Bangladesh National Herbarium, BARC, Dhaka. 19 pp.
- Mitra, K. and Datta, N. 1967. In: IOPB Chromosome Number Reports XIII. *Taxon* 16: 445-461.
- Mukherjee, A. 1981. Chromosome studies on horticultural varieties of *Jasminum*. *Proc. 68th Indian Sci. Congr.* 3: 89.
- Nasir, E. and Ali, S.I. (eds.). 1970-1990. *Flora of West Pakistan*. Fasc. 1-192. Stewart Herbarium, Gordon College, Rawalpindi, Pakistan.
- Pandey, R.N. and Pal, M. 1980. In: IOPB Chromosome Number Reports LXVII. *Taxon* 29: 533-547.
- Panigrahi, G. and Murti, S.K. 1989. *Flora of Bilaspur district*. M.P. Vol. 1. Botanical survey of India..
- Pantula, J.V. 1947. Studies in the Caesalpiniaceae II. Cytological Observation on the Genus *Cassia* *Proc. 34th Indian Sci. Congr. Part 3*. p. 167.
- Patel, G.I. 1952. Chromosome basis of dioecism in *Trichosanthes dioica* Roxb. *Current Sci.* 21(12): 343-344.
- Paul, T.K. and Nayar, M.P. 1988. Malvaceae. In: Nayar, M.P., Thothathri, K. and Sanjappa, M. (eds.). *Flora of India*, Fasc. 19. Botanical Survey of India, Calcutta. pp. 64-283.
- Perry, B.A. 1943. Chromosome Number and Phylogenetic Relationships in the Euphorbiaceae. *Am. J. Bot.* 30: 527-543.
- Petersen, G. 1989. Cytology and Systematics of Araceae. *Nord. J. Bot.* 9: 119-166.
- Phileox, D. 1968. Revision of the Malesian species of *Lindernia* All. *Kew Bull.* 22(1): 1-72.
- Prain, D. 1903 (reprint- 1963). *Bengal Plants*. Vols. 1-2. Botanical Survey of India, Calcutta. pp. 1-1013.
- Radford, A.E. 1974. *Vascular Plant Systematics*. Harper and Row Publishers. New York, Evanston, San Francisco, London.
- Rahman, M.A. 1988. An index of Wallich material of Asclepiadaceae from Bangladesh held in herb. Wall. (K-W). *J. Asiatic Soc. Bangladesh (Sci.)* 14(2): 91-99.
- Rahman, M.A. 1999. Ethno-medico-botanical knowledge among tribal of Bangladesh. *J. Econ. & Taxon. Bot.* 23(1): 89-93.

- Rahman, M.A. 2003. *Ethno-medico-botanical knowledge among tribals of Bangladesh*. In: Ethnobotany and Medicinal Plants of India Subcontinent. Scientific Publication, Jodhpur, India. pp. 89-93.
- Rahman, M.A. (ed.). 2013. *Red Data Book of Flowering Plants of Bangladesh*, Vo. 1. Chittagong. 256 pp.
- Rahman, M.A. and Yusuf, M. 1996. Diversity, ecology and ethnobotany of the Zingiberaceae of Bangladesh. *J. Econ. Taxon. Bot. Ad. series* 12: 13-19.
- Rahman, M. A., Das, S.C. and Willcock, C. C. 2001. Dioscoreaceae of Bangladesh: Diversity, distribution and ethnobotany. *Bangladesh J. Plant Taxon.* 8(1): 19-26.
- Rahman, M.A., Rashid, M.H. and Wilcock, C.C. 2000. Diversity, Ecology, Distribution and Ethnobotany of the Apocynaceae of Bangladesh. *Bangladesh J. Plant Taxon.* 7(2): 57-76.
- Rahman, M.A., Toha, A.M.M. Das, S.C. and Rashid, M.H. 2002. Ethnobotanical uses of aroids and yams in Bangladesh. *Biodiversity Newsletter Bangladesh* 6(1 & 2): 3-4.
- Rahman, M.A., Uddin, S.B. and Khisa, A. 1998. A report on some anti-jaundice plants from tribal community of Hill districts. *Biod. News. Univ. Chitt. Bang.* 2(1): 4.
- Rahman, M. M. and Khanam, M. (eds.). 2003. *Flora of Bangladesh*. Fasc. 55. Bangladesh National Herbarium, Dhaka. pp. 1-11.
- Raizada, M.B. 1941. On the flora of Chittagong. *Indian Forester* 67(5): 245-254.
- Raman, V.S. and Kesavan, P.C. 1963. Chromosome number of some Dicotyledons. *Sci. & Cult.* 29: 413-414.
- Rao, S.S., Kammathy, R.V. and Raghavan, R.S. 1970. Biosystematic studies in Indian Commelinaceae - the chromosome pattern and evolutionary trends. *Bull. Bot. Surv. Ind.* 12(14): 242-254.
- Rizvi, S.N.H, 1969. Bangladesh District Gazetteers Dacca. East Pakistan Govt. Press, Dacca. 550 pp.
- Roxburgh, W. 1814. *Hortus Bengalensis or a Catalogue of the plants growing in the Honourable East India Company's Botanic Garden at Calcutta*. Serampora, India.
- Roy, R.P. and Jha. 1965. Cytological studies in Dipterocarpaceae I. *Journ. Indian Bot. Soc.* 44(3): 387-397.
- Saldanha, C. J. and Nicolson, D. H. 1981. *Flora of Hassan District, Karnataka, India* (second rep. 1978). Amerind Publishing Co. Pvt. Ltd., New Delhi, Bombay, Calcutta and New York. pp. 1-923.

- Sanjappa, M. and Sathyananda, N. 1979. In: IOPB Chromosome Number Reports LXIV. *Taxon* 28: 163-408.
- Santisuk, T. and Larsen, K. (eds.). 1997-2005. *Flora of Thailand*, vols. 6-9. The Forest Herbarium, Royal Forest Department, Bangkok.
- Sareen, T. and Pratap, R. 1975. Chromosome Number in some species of *Cassia* L. *Indian Forester* 101(2): 142-144.
- Sarkar, A.K. and Datta, N. 1980. Cytological Assessment of the Family Euphorbiaceae. II Tribe Phyllanthaceae. *Proc. Ind. Sci. Congr. Part* 67(3): 48-49.
- Sehilling, E.E. and Anderson, R.N. 1990. The black nightshade (*Solanum* sect. *Solanum*) of the India Subcontinent. *Bot. J. Linn. Soc.* 102(3): 257.
- Sen, R. and Datta, K.B. 1975. Sexual Dimorphism and Polyploidy in *Momordica* L. (Cucurbitaceae). *Proc. Ind. Sci. Congr.* 62(3): 127.
- Senn, H.A. 1938. Chromosome number relationship in the Leguminosae. *Bibligr. Genetica* 12: 175-345.
- Sharma, A.K. 1970. Annual Report. 1967-68. *Res. Bull. Univ. Calcutta* 2: 1-50.
- Sharma, B. D. and Sanjappa, M. (eds.). 1993. *Flora of India*, vol.-3. Botanical Survey of India, Calcutta. pp.1-639.
- Sharma, B. D., Balakrishna, N. P., Rao, R. R. and Hajra, P. K. (eds.). 1993. *Flora of India*, vol.-1. Botanical Survey of India, Calcutta. pp.1-467.
- Shetty, B.V. and Subramanyam, K. 1971. In: IOPB Chromosome Number Reports XXXIV. *Taxon* 20: 705-797.
- Shimotsuma, M. 1961. Chromosome Number *Citrullus* Species. *Chromosome Info. Serv.* 2: 14-16.
- Siddiqui, K.U., Islam, M.A., Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Rahman, M. M., Kabir, S.M.H., Ahmed, M., Ahmed, A.T.A., Rahman, A.K.T. and Haque, E.U. (eds.). 2007. *Encyclopedia of Flora and Fauna of Bangladesh*, vol.-11. Asiatic Society of Bangladesh, Dhaka. pp. 1-399.
- Sikka, K. and Sharma, A.K. 1979. Chromosome Evolution in Certain Genera of Brassicaceae. *Cytologia* 44: 467-477.
- Sinclair, J. 1956. Flora of Cox's Bazar, East Pakistan. *Bull. Bot. Soc. Beng.* 9(2): 1-116.
- Singhal, V.K., Gill, B.S. and BG, S.S. 1980. In: IOPB Chromosome Number Reports LXIX. *Taxon* 29: 703-730.
- Sinha, S.S.N., Prasad, R. and Kesuarig, R. 1972. Cytological studies in some medicinal plants of Chhatangpur. *Proc. 59th Indian Congr.* 3: 349.

- Smitinand, T. and Larsen, K. (eds.). 1972-1998. *Flora of Thailand*, vols. 2-6. Applied Scientific Research Corporation of Thailand, Bangkok.
- Styles, B.T. and Vosa, C.G. 1971. Chromosome number in the Meliaceae. *Taxon* 20: 485-499.
- Sujit, S.K. 2010. Studies on the Taxonomy and Biodiversity of the Family Rubiaceae in the Flora of Bangladesh. *Ph. D. Thesis*, Chittagong University, Bangladesh (Unpublished). pp. 1-463.
- Sultana, M. 2012. Taxonomy and ethnobotanical studies on the angiospermic flora of Patuakhali district in Bangladesh. *Ph. D. thesis*, University of Dhaka, Bangladesh (Unpublished). pp.1-565.
- Sultana, S.S. and Alam, S.S. 2007. Differential fluorescent chromosome banding of *Solanum nigrum* L. and *S. villosum* from Bangladesh. *Cytologia* 72(2): 219-231.
- Taiyan, Z., Lianli, L., Guang, Y. and A-Shehbaz, I.A. 2001. Brassicaceae (Cruciferae). In: *Flora of China*, Vol. 8. pp. 1-193.
- Tanaka, R. and Uchiyama, H. 1988. Chromosomes of four species of *Utricularia* in Japan. *J. Jap. Botany* 63(6): 219-223.
- Thombre, M.V. 1959. Chromosome Numbers in Some Common Flowering Plants. *Sci. Cult.* 25: 208.
- Tixier, P. 1953. Données Cytologiques sur Quelques Guttiferales Récolées en Loes. *Rev. Cytol. Biol. Vég.* 22: 65-70.
- Tutul, E., Uddin, M.Z., Rahman, M. O. and Hassan, M.A. 2009. Angiospermic flora of Runtia sal forest, Bangladesh-1. Liliopsida (Monocots). *Bangladesh J. Plant Taxon.* 16(1): 83-90.
- Tutul, E., Uddin, M.Z., Rahman, M.O. and Hassan, M.A. 2010. Angiospermic Flora of Runtia Sal Forest, Bangladesh- 2. Magnoliopsida (Dicots). *Bangladesh J. Plant Taxon.* 17(1): 33-53.
- Uddin, G. 2010. Investigation and analysis of plant diversity of Ramu Upper Rezu reserve forest, Cox's Bazar, Ph. D. thesis, University of Chittagong, Bangladesh (Unpublished). pp.1-374.
- Uddin, M.Z. and Hassan, M.A. 2004. *Flora of Rema-Kalenga Wildlife Sanctuary*. IUCN Bangladesh Country Office, Dhaka, Bangladesh. pp. 1-120.
- Uddin, M.Z., Hassan, M.A. and Khan, M.S. 2003. An annotated checklist of angiospermic flora of Rema-Kalenga Wildlife Sanctuary (Habiganj) in Bangladesh II.a: Magnoliopsida (Dicots). *Bangladesh. J. Plant Taxon.* 10(1): 79-94.

- Uddin, S.N. 2012. Floristic studies on Rampahar and Sitapahar reserve forests, Rangamati, Bangladesh. Ph. D. thesis, University of Dhaka, Bangladesh (Unpublished). pp.1-553.
- van der Vossen, H.A.M. and Wessel, M. (eds.). 2000. *Plant Resources of South-East Asia*, No. 16. *Stimulants*. Prosea Foundation, Bogor, Indonesia. 201 pp.
- van Steenis, C.G.G.J. (ed.). 1948-1986. *Flora Malesiana*, Ser. 1, vols. 4-10. Noordhoff International Publishers, Leyden, The Netherlands.
- Varmah, J.C. and Bahadur, K.N. 1980. *Country Report and Status of Research of Bamboos in India*. Indian Forest Records (New Series) 6. No. 1. Forest Research Institute and Colleges, Dehra Dun, India. 28 pp.
- Verhej, E.W.M. and Coronel, R.E. (eds.). 1992. *Plant Resources of South-East Asia*, No. 2. *Edible Fruits and Nuts*. Prosea Foundation, Bogor, Indonesia. 446 pp.
- Whitaker, T.W. 1930. Chromosome Numbers in the cultivated Cucurbits. *Amer. J. Bot.* 17(12): 1033-1040.
- Zaman, M.A. and Ahmed, M. 1972. Cytogenetics of Commelinaceae I. Meiotic behavior and β -chromosome in *Commelina benghalensis* L. *Bangladesh J. Bot.* 1(1 & 2): 141-148.
- Zaman, M.A. and Matin, A. 1972. Cytogenetics of Commelinaceae II. Nature of quadrivalents and mechanism of speciation in *Setcreasia purpurea* Boom. *Bangladesh J. Bot.* 1(1&2): 168-177.
- Zhang, G-Z. 1987. Studies on the chromosome number of bamboo species with clump rhizomes. In: Rao, A.N., Dhanarajan, G. and Sastry, C.B. (eds.) *Record Research in Bamboos*. The Chinese Academy of Forestry and International Research Center, Canada. pp. 175-178.

INDEX OF SCIENTIFIC NAMES

Sl. no.	Scientific name	Page
1.	<i>Abelmoschus esculentus</i> (L.) Moench	125
2.	<i>Abelmoschus manihot</i> (L.) Medic.	125
3.	<i>Abroma augusta</i> (L.) L.f.	119
4.	<i>Abrus precatorius</i> L.	206
5.	<i>Abutilon hirtum</i> (Lamk.) Sweet	126
6.	<i>Abutilon indicum</i> (L.) Sweet	127
7.	<i>Acacia auriculiformis</i> A. Cunn. ex Benth. & Hook.	176
8.	<i>Acacia caesia</i> (L.) Willd.	177
9.	<i>Acacia catechu</i> (L. f.) Willd.	177
10.	<i>Acacia concinna</i> (Willd.) DC.	177
11.	<i>Acacia mangium</i> Willd.	178
12.	<i>Acacia nilotica</i> (L.) Delile subsp. <i>indica</i> (Benth.) Brenan	178
13.	<i>Acalypha hispida</i> Burm. f.	269
14.	<i>Acalypha indica</i> L.	270
15.	<i>Achyranthes aspera</i> L.	75
16.	<i>Adenanthera pavonina</i> L.	179
17.	<i>Adenosma indianum</i> (Lour.) Merr.	397
18.	<i>Aeginetia indica</i> L.	403
19.	<i>Aegle marmelos</i> (L.) Correa	316
20.	<i>Aerva sanguinolenta</i> (L.) Blume	76
21.	<i>Agave americana</i> L.	608
22.	<i>Ageratum conyzoides</i> L.	443
23.	<i>Aidia oppositifolia</i> (Roxb.) Rahman & Das	424
24.	<i>Ajuga macrosperma</i> Wall. ex Benth.	358
25.	<i>Alangium chinense</i> (Lour.) Harms	263
26.	<i>Alangium salviifolium</i> (L. f.) Wangerin	263
27.	<i>Albizia chinensis</i> (Osbeck.) Merr.	180

Sl. no.	Scientific name	Page
28.	<i>Albizia julibrissin</i> Durazz	180
29.	<i>Albizia lebbeck</i> (L.) Benth. & Hook.	181
30.	<i>Albizia procera</i> (Roxb.) Benth.	182
31.	<i>Alcea rosea</i> L.	127
32.	<i>Allamanda cathartica</i> L.	333
33.	<i>Allium cepa</i> L.	603
34.	<i>Allium sativum</i> L.	604
35.	<i>Alloteropsis cimicina</i> (L.) Stapf	551
36.	<i>Alocasia cucullata</i> (Lour.) G. Don	485
37.	<i>Alocasia fallax</i> Schott	485
38.	<i>Alocasia fornicata</i> (Roxb.) Schott	485
39.	<i>Alocasia macrorrhizos</i> (L.) G. Don	486
40.	<i>Aloe vera</i> (L.) Brum. f.	607
41.	<i>Alstonia macrophylla</i> Wall. ex G. Don	334
42.	<i>Alstonia scholaris</i> (L.) R. Br.	334
43.	<i>Alternanthera bettzickiana</i> (Regel) Nichols.	77
44.	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	77
45.	<i>Alternanthera sessilis</i> (L.) R. Br. ex Roem & Schult.	78
46.	<i>Alysicarpus heterophyllus</i> (Baker) Jafri & Ali	206
47.	<i>Amaranthus blitum</i> L.	79
48.	<i>Amaranthus graecizans</i> L.	79
49.	<i>Amaranthus lividus</i> L. subsp. <i>polygonoides</i> (Moq.) Probst.	80
50.	<i>Amaranthus spinosus</i> L.	80
51.	<i>Amaranthus tricolor</i> L.	81
52.	<i>Amaranthus viridis</i> L.	81
53.	<i>Ammannia baccifera</i> L.	240
54.	<i>Amorphophallus bulbifer</i> (Roxb.) Blume	487
55.	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson var. <i>campanulatus</i> (Decne.) Sivadasan	487
56.	<i>Ampelocissus barbata</i> (Wall.) Planch.	294

Sl. no.	Scientific name	Page
57.	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	294
58.	<i>Anacardium occidentale</i> L.	306
59.	<i>Ananas comosus</i> (L.) Merr.	590
60.	<i>Andrographis paniculata</i> (Burm. f.) Wall. ex Nees	406
61.	<i>Anisomeles indica</i> (L) O. Kuntze	385
62.	<i>Annona reticulata</i> L.	28
63.	<i>Annona squamosa</i> L.	29
64.	<i>Anthurium andreanum</i> Linden	488
65.	<i>Antidesma acidum</i> Retz.	270
66.	<i>Antidesma ghaesembilla</i> Gaertn.	271
67.	<i>Aphanamixis polystachya</i> (Will.) R. N. Parker	310
68.	<i>Aponogeton natans</i> (L.) Engl. & Krause	471
69.	<i>Aporosa dioica</i> (Roxb.) Muell.-Arg.	271
70.	<i>Arachis hypogaea</i> L.	207
71.	<i>Ardisia solanacea</i> (Poir.) Roxb.	171
72.	<i>Areca catechu</i> L.	475
73.	<i>Argemone maxicana</i> L.	50
74.	<i>Argyreia nervosa</i> (Burm. f.) Boj.	360
75.	<i>Aristolochia indica</i> L.	40
76.	<i>Aristolochia tagala</i> Cham.	41
77.	<i>Artemisia caruifolia</i> Buch.-Ham.	444
78.	<i>Artocarpus chama</i> Buch.-Ham. ex Wall.	55
79.	<i>Artocarpus communis</i> J. R. Forster & G. Forster	55
80.	<i>Artocarpus heterophyllus</i> Lamk.	56
81.	<i>Artocarpus lacucha</i> Buch.-Ham.	57
82.	<i>Arundinella bengalensis</i> (Spreng.) Druce	551
83.	<i>Arundo donax</i> L.	552
84.	<i>Asparagus racemosus</i> Willd.	604
85.	<i>Averrhoa bilimbi</i> L.	324

Sl. no.	Scientific name	Page
86.	<i>Averrhoa carambola</i> L.	325
87.	<i>Axonopus compressus</i> (Sw.) P. Beauv.	552
88.	<i>Azadirachta indica</i> A. Juss.	311
89.	<i>Bacopa monnieri</i> (L.) Pennell	398
90.	<i>Bambusa balcooa</i> Roxb.	553
91.	<i>Bambusa bambos</i> (L.) Voss	554
92.	<i>Bambusa jaintiana</i> R. B. Majumdar	555
93.	<i>Bambusa nutans</i> Wall. ex Munro	555
94.	<i>Bambusa tulda</i> Roxb.	555
95.	<i>Barringtonia acutangula</i> (L.) Gaertn.	137
96.	<i>Basella rubra</i> L.	86
97.	<i>Bauhinia acuminata</i> L.	188
98.	<i>Bauhinia purpurea</i> L.	189
99.	<i>Bauhinia vahlii</i> Wight & Arn.	189
100.	<i>Bauhinia variegata</i> L.	190
101.	<i>Benincasa hispida</i> (Thunb.) Cogn.	145
102.	<i>Beta vulgaris</i> L.	72
103.	<i>Bischofia javanica</i> Blume	272
104.	<i>Bixa orellana</i> L.	141
105.	<i>Blumea lacera</i> (Burm. f.) DC.	444
106.	<i>Blumea lanceolaria</i> (Roxb.) Druce	445
107.	<i>Blumea membranacea</i> Wall ex DC.	445
108.	<i>Blyxa auberti</i> Rich.	468
109.	<i>Blyxa octandra</i> (Roxb.) Planch. ex Thw.	468
110.	<i>Boerhaavia diffusa</i> L.	68
111.	<i>Bombax ceiba</i> L.	122
112.	<i>Borassus flabellifer</i> L.	475
113.	<i>Bothriochloa bladhii</i> (Retz.) S.T. Blake	557
114.	<i>Bothriochloa pertusa</i> (L.) A. Camus	557

Sl. no.	Scientific name	Page
115.	<i>Bougainvillea spectabilis</i> Willd.	69
116.	<i>Brachiaria distachya</i> (L.) Stapf	558
117.	<i>Brachiaria reptans</i> (L.) Gard. & Hubb.	558
118.	<i>Brassica juncea</i> (L.) Czern.	161
119.	<i>Brassica napus</i> L.	162
120.	<i>Brassica nigra</i> (L.) Koch	162
121.	<i>Brassica oleracea</i> L. var. <i>botrytis</i> L.	163
122.	<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	163
123.	<i>Brassica rapa</i> L.	164
124.	<i>Breynia retusa</i> (Dennst.) Alston	272
125.	<i>Bridelia retusa</i> (L.) A. Juss.	273
126.	<i>Bridelia stipularis</i> (L.) Blume	274
127.	<i>Bryophyllum pinnatum</i> (Lamk.) Oken	172
128.	<i>Bulbostylis barbata</i> (Rottb.) C.B. Clarke	508
129.	<i>Butea monosperma</i> (Lamk.)Taub.	207
130.	<i>Caesalpinia bonduc</i> (L.) Roxb.	191
131.	<i>Caesalpinia cacalaco</i> Humdb. & Bonpl.	192
132.	<i>Caesalpinia crista</i> L.	192
133.	<i>Caesalpinia cucullata</i> Roxb.	193
134.	<i>Caesalpinia pulcherrima</i> (L.) Sw.	193
135.	<i>Cajanus cajan</i> (L.) Millsp.	208
136.	<i>Caladium humboldtii</i> Schott	488
137.	<i>Calamus latifolius</i> Roxb.	476
138.	<i>Calamus tenuis</i> Roxb.	477
139.	<i>Calamus viminalis</i> Willd.	477
140.	<i>Calliandra portoricensis</i> (Jacq.) Benth.	182
141.	<i>Callicarpa arborea</i> Roxb.	375
142.	<i>Calotropis gigantea</i> (L.) R. Br.	343
143.	<i>Calotropis procera</i> (Ait.) R. Br.	344

Sl. no.	Scientific name	Page
144.	<i>Canavalia ensiformis</i> (L.) DC.	209
145.	<i>Canna indica</i> L.	597
146.	<i>Cannabis sativa</i> L.	53
147.	<i>Canscora decussata</i> (Roxb.) Schult.	331
148.	<i>Canthium parvifolium</i> Roxb.	424
149.	<i>Capparis zeylanica</i> L.	157
150.	<i>Capsicum annuum</i> L.	347
151.	<i>Capsicum frutescens</i> L.	348
152.	<i>Carallia brachiata</i> (Lour.) Merr.	262
153.	<i>Cardiospermum halicacabum</i> L.	302
154.	<i>Careya arborea</i> Roxb.	138
155.	<i>Carica papaya</i> L.	143
156.	<i>Carissa carandas</i> L.	335
157.	<i>Caryota mitis</i> Lour.	478
158.	<i>Caryota urens</i> L.	478
159.	<i>Cassia fistula</i> L.	194
160.	<i>Casuarina equisetifolia</i> Forst.	66
161.	<i>Catharanthus roseus</i> (L.) G. Don	336
162.	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	424
163.	<i>Cayratia trifolia</i> (L.) Domin	295
164.	<i>Celosia argentea</i> L.	82
165.	<i>Celosia cristata</i> L.	83
166.	<i>Celtis timorensis</i> Span.	51
167.	<i>Centella asiatica</i> (L.) Urban	328
168.	<i>Centipeda minima</i> (L.) A. Br. & Aschers.	446
169.	<i>Centotheca lappacea</i> (L.) Desv.	559
170.	<i>Centrosema pubescens</i> Benth.	209
171.	<i>Ceratophyllum demersum</i> L.	44
172.	<i>Cestrum nocturnum</i> L.	349

Sl. no.	Scientific name	Page
173.	<i>Chenopodium album</i> L.	73
174.	<i>Chenopodium ambrosioides</i> L.	73
175.	<i>Chromolaena odorata</i> (L.) King & Robinson	446
176.	<i>Chrozophora rottleri</i> (Geiseler) A. Juss. ex Spreng.	274
177.	<i>Chrysalidocarpus lutescens</i> (Bory) H. Wendl.	479
178.	<i>Chrysanthemum coronarium</i> L.	447
179.	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	560
180.	<i>Cicer arietinum</i> L.	210
181.	<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet	32
182.	<i>Cinnamomum verum</i> J.S. Presl	33
183.	<i>Cissus adnata</i> Roxb.	295
184.	<i>Cissus assamica</i> (Lawson) Craib	296
185.	<i>Cissus rependa</i> Vahl	296
186.	<i>Cissus vitiginea</i> Roxb.	297
187.	<i>Citrullus colocynthis</i> (L.) Schrad.	146
188.	<i>Citrullus lanatus</i> (Thunb.) Matsumura & Nakai	146
189.	<i>Citrus aurantifolia</i> (Christm. & Panzer) Swingle	317
190.	<i>Citrus limon</i> (L.) Burm. f.	317
191.	<i>Citrus maxima</i> (Burm.) Merr.	318
192.	<i>Citrus reticulata</i> Blanco	318
193.	<i>Cleome rutidosperma</i> DC.	158
194.	<i>Cleome viscosa</i> L.	159
195.	<i>Clerodendrum hastatum</i> C. B. Clarke	376
196.	<i>Clerodendrum indicum</i> (L.) O. Kuntze	376
197.	<i>Clerodendrum inerme</i> (L.) Gaertn.	377
198.	<i>Clerodendrum viscosum</i> Vent.	377
199.	<i>Clitoria ternatea</i> L.	210
200.	<i>Coccinia grandis</i> (L.) Voigt	147
201.	<i>Cocculus hirsutus</i> (L.) Theob.	47

Sl. no.	Scientific name	Page
202.	<i>Cocos nucifera</i> L.	480
203.	<i>Codiaeum variegatum</i> (L.) A. Juss.	275
204.	<i>Coix lacryma-jobi</i> L.	560
205.	<i>Colocasia esculenta</i> (L.) Schott	489
206.	<i>Colocasia gigantea</i> (Blume) Hook. f.	490
207.	<i>Commelina benghalensis</i> L.	500
208.	<i>Commelina diffusa</i> Burm. f.	501
209.	<i>Commelina longifolia</i> Lamk.	501
210.	<i>Corchorus aestuans</i> L.	113
211.	<i>Corchorus capsularis</i> L.	114
212.	<i>Corchorus olitorius</i> L.	114
213.	<i>Coriandrum sativum</i> L.	329
214.	<i>Costus speciosus</i> (Koenig ex Retz.) Smith	596
215.	<i>Cotula hemispherica</i> (Roxb.) Wall. ex C.B. Clarke	448
216.	<i>Couroupita guianensis</i> Aubl.	138
217.	<i>Courtoisina cyperoides</i> (Roxb.) Sojak	509
218.	<i>Crateva magna</i> (Lour.) DC.	159
219.	<i>Crescentia cujete</i> L.	417
220.	<i>Crinum latifolium</i> L.	605
221.	<i>Crotalaria dubia</i> Grah. ex Benth.	211
222.	<i>Crotalaria incana</i> L.	212
223.	<i>Crotalaria juncea</i> L.	212
224.	<i>Crotalaria pallida</i> Ait.	213
225.	<i>Crotalaria retusa</i> L.	213
226.	<i>Crotalaria spectabilis</i> Roth	214
227.	<i>Croton bonplandianus</i> Baill.	275
228.	<i>Croton caudatus</i> Geisel.	276
229.	<i>Cucumis melo</i> L.	148
230.	<i>Cucumis sativus</i> L.	148

Sl. no.	Scientific name	Page
231.	<i>Cucurbita maxima</i> Duch. ex Lamk.	149
232.	<i>Curculigo orchiodes</i> Gaertn.	605
233.	<i>Curcuma amada</i> Roxb.	593
234.	<i>Curcuma aromatica</i> Salisb.	593
235.	<i>Curcuma longa</i> L.	593
236.	<i>Curcuma zedoaria</i> (Christm.) Rosc.	594
237.	<i>Cuscuta campestris</i> Yuncker	368
238.	<i>Cuscuta reflexa</i> Roxb.	369
239.	<i>Cyanotis cristata</i> (L.) D. Don	502
240.	<i>Cyathula prostrata</i> (L.) Blume	83
241.	<i>Cyclea barbata</i> Miers	47
242.	<i>Cymbopogon citratus</i> (DC.) Stapf	561
243.	<i>Cynanchum callialata</i> F. Ham. ex Wight	344
244.	<i>Cynodon dactylon</i> (L.) Pers.	562
245.	<i>Cyperus alopecuroides</i> Boeck.	513
246.	<i>Cyperus articulatus</i> L.	513
247.	<i>Cyperus babakan</i> Steud.	514
248.	<i>Cyperus compactus</i> Retz.	514
249.	<i>Cyperus compressus</i> L.	515
250.	<i>Cyperus corymbosus</i> Rottb.	515
251.	<i>Cyperus cuspidatus</i> Kunth	516
252.	<i>Cyperus cyperoides</i> (L.) O. Ktze.	516
253.	<i>Cyperus difformis</i> L.	517
254.	<i>Cyperus digitatus</i> Roxb.	517
255.	<i>Cyperus distans</i> L. f.	518
256.	<i>Cyperus exaltatus</i> Retz.	518
257.	<i>Cyperus flabelliformis</i> Rottb.	519
258.	<i>Cyperus haspan</i> L.	519
259.	<i>Cyperus iria</i> L.	520

Sl. no.	Scientific name	Page
260.	<i>Cyperus laxis</i> Lamk.	521
261.	<i>Cyperus malaccensis</i> Lamk.	521
262.	<i>Cyperus michelianus</i> (L.) Link	522
263.	<i>Cyperus odoratus</i> L.	522
264.	<i>Cyperus pilosus</i> Vahl	523
265.	<i>Cyperus platystylis</i> R. Br.	523
266.	<i>Cyperus pulcherrimus</i> Willd. ex Kunth	524
267.	<i>Cyperus rotundus</i> L.	524
268.	<i>Cyperus squarrosus</i> L.	525
269.	<i>Cyperus tenuispica</i> Steud.	525
270.	<i>Cyperus teuberosus</i> Rottb.	526
271.	<i>Cyrtococcum accrescens</i> (Trin.) Stapf	562
272.	<i>Cyrtococcum patens</i> (L.) A. Camus	563
273.	<i>Dalbergia sissoo</i> Roxb.	214
274.	<i>Datura metel</i> L.	349
275.	<i>Daucus carota</i> L.	330
276.	<i>Delonix regia</i> Rafin.	195
277.	<i>Dendrophthoe falcata</i> (L. f.) Etting.	265
278.	<i>Dentella repens</i> (L.) J.R. & G. Forst.	425
279.	<i>Dentella serpyllifolia</i> Wall. ex Craib	426
280.	<i>Derris scandens</i> (Roxb.) Benth.	215
281.	<i>Desmodium gangeticum</i> (L.) DC.	216
282.	<i>Desmodium gyroides</i> (Roxb. ex Link) DC.	216
283.	<i>Desmodium heterophyllum</i> (Willd.) DC.	217
284.	<i>Desmodium laxiflorum</i> DC.	217
285.	<i>Desmodium motorium</i> (Houtt.) Merr.	218
286.	<i>Desmodium pulchellum</i> (L.) Benth.	218
287.	<i>Desmodium triflorum</i> (L.) DC.	219
288.	<i>Desmodium triquetrum</i> (L.) DC.	219

Sl. no.	Scientific name	Page
289.	<i>Dicliptera bupleuroides</i> Nees	406
290.	<i>Digitaria ciliaris</i> (Retz.) Koeler	564
291.	<i>Digitaria sanguinalis</i> (L.) Scop.	564
292.	<i>Dillenia indica</i> L.	103
293.	<i>Dillenia pentagyna</i> Roxb.	103
294.	<i>Dillenia scabrella</i> Roxb. ex Wall.	104
295.	<i>Dimeria ornithopoda</i> Trin.	565
296.	<i>Dimocarpus longan</i> Lour.	302
297.	<i>Dioscorea alata</i> L.	613
298.	<i>Dioscorea belophylla</i> (Prain) Voigt ex Haines	613
299.	<i>Dioscorea bulbifera</i> L. var. <i>bulbifera</i> L.	614
300.	<i>Dioscorea bulbifera</i> L. var. <i>sativa</i> (Hook. f.) Prain	615
301.	<i>Dioscorea glabra</i> Roxb.	615
302.	<i>Dioscorea hamiltonii</i> Hook.	615
303.	<i>Dioscorea hispida</i> Dennst.	616
304.	<i>Dioscorea kamoonsensis</i> Kunth	616
305.	<i>Dioscorea oppositifolia</i> L.	617
306.	<i>Dioscorea pentaphylla</i> L.	617
307.	<i>Dioscorea tomentosa</i> Koen. ex Spreng.	618
308.	<i>Diospyros blancoi</i> A. DC.	169
309.	<i>Diospyros malabarica</i> (Desr.) Kostel.	170
310.	<i>Dipteracanthus prostratus</i> (Poir.) Nees	407
311.	<i>Dipterocarpus turbinatus</i> Gaertn.	106
312.	<i>Dracaena spicata</i> Roxb.	609
313.	<i>Duranta repens</i> L.	378
314.	<i>Ecbolium ligustrinum</i> (Vahl) Vollesen	407
315.	<i>Echinochloa colonum</i> (L.) Link	565
316.	<i>Echinochloa crusgalli</i> (L.) P. Beauv.	566
317.	<i>Echinochloa stagnina</i> (Retz.) P. Beauv.	567

Sl. no.	Scientific name	Page
318.	<i>Eclipta alba</i> (L.) Hassk.	448
319.	<i>Eichhornia crassipes</i> (Mart.) Solms	600
320.	<i>Ehretia serrata</i> Roxb.	372
321.	<i>Elaeocarpus floribundus</i> Blume	112
322.	<i>Elaeocarpus rugosus</i> Roxb. ex G. Don	112
323.	<i>Eleocharis acutangula</i> (Roxb.) Schult.	527
324.	<i>Eleocharis congesta</i> D. Don	527
325.	<i>Eleocharis dulcis</i> (Burm.f.) Trin. ex Hensch.	528
326.	<i>Elephantopus scaber</i> L.	449
327.	<i>Eleusine indica</i> (L.) Gaertn.	567
328.	<i>Emilia sonchifolia</i> (L.) DC.	449
329.	<i>Enhydra fluctuans</i> Lour.	450
330.	<i>Entada rheedii</i> Spreng.	183
331.	<i>Eragrostis cilianensis</i> (All.) Vignolo-Lutati	568
332.	<i>Eragrostis ciliaris</i> (L.) R. Br.	569
333.	<i>Eragrostis gangetica</i> (Roxb.) Steud.	569
334.	<i>Eragrostis tenella</i> (L.) P. Beauv. ex Roem. & Schult.	570
335.	<i>Eragrostis unioloides</i> (Retz.) Nees ex Steud.	570
336.	<i>Eriocaulon cinereum</i> R. Br.	506
337.	<i>Erythrina stricta</i> Roxb.	220
338.	<i>Erythrina variegata</i> L.	220
339.	<i>Eucalyptus alba</i> Reinw.	246
340.	<i>Eucalyptus citriodora</i> Hook.	247
341.	<i>Euphorbia hirta</i> L.	277
342.	<i>Euphorbia nivulia</i> F. Ham.	277
343.	<i>Euphorbia prostrata</i> Ait.	278
344.	<i>Euphorbia pulcherrima</i> Willd. ex Klotz.	278
345.	<i>Euphorbia thymifolia</i> L.	279
346.	<i>Evolvulus nummularius</i> (L.) L.	361

Sl. no.	Scientific name	Page
347.	<i>Ficus benghalensis</i> L.	58
348.	<i>Ficus benjamina</i> L.	58
349.	<i>Ficus heterophylla</i> L. f.	59
350.	<i>Ficus hirta</i> Vahl	59
351.	<i>Ficus hispida</i> L. f.	60
352.	<i>Ficus racemosa</i> L.	60
353.	<i>Ficus religiosa</i> L.	61
354.	<i>Ficus rumphii</i> Blume	62
355.	<i>Fimbristylis acuminata</i> Vahl	530
356.	<i>Fimbristylis aestivalis</i> (Retz.) Vahl	530
357.	<i>Fimbristylis albobiridis</i> C.B. Clarke	531
358.	<i>Fimbristylis aphylla</i> Steud.	531
359.	<i>Fimbristylis bisumbellata</i> (Forssk.) Bubani	531
360.	<i>Fimbristylis dichotoma</i> (L.) Vahl	532
361.	<i>Fimbristylis dipsacea</i> (Rottb.) C.B. Clarke	532
362.	<i>Fimbristylis falcata</i> (Vahl) Kunth	533
363.	<i>Fimbristylis miliacea</i> (L.) Vahl	533
364.	<i>Fimbristylis ovata</i> (Burm. f.) Kern	534
365.	<i>Fimbristylis quinquangularis</i> (Vahl) Kunth	534
366.	<i>Fimbristylis schoenoides</i> (Retz.) Vahl	535
367.	<i>Fimbristylis squarrosa</i> Vahl	536
368.	<i>Fioria vitifolia</i> (L.) Mattei	128
369.	<i>Flacourtia indica</i> (Burm. f.) Merr.	140
370.	<i>Flacourtia jangomas</i> (Lour.) Raeusch.	140
371.	<i>Flemingia macrophylla</i> (Willd.) O. Kuntze ex Merr.	221
372.	<i>Flemingia strobilifera</i> (L.) R. Br.	222
373.	<i>Fuirena ciliaris</i> (L.) Roxb.	536
374.	<i>Fuirena umbellata</i> Rottb.	537
375.	<i>Garcinia cowa</i> Roxb.	109

Sl. no.	Scientific name	Page
376.	<i>Garcinia xanthochymus</i> Hook. f. ex T. Anders.	110
377.	<i>Gardenia augusta</i> (L.) Merr.	426
378.	<i>Geodorum citrinum</i> Jack.	619
379.	<i>Geodorum densiflorum</i> (Lamk.) Schltr.	619
380.	<i>Glinus lotoides</i> L.	88
381.	<i>Glinus oppositifolius</i> (L.) A. DC.	88
382.	<i>Gliricidia sepium</i> (Jacq.) Kunth ex Walp.	222
383.	<i>Globba marantina</i> L.	594
384.	<i>Glochidion multiloculare</i> (Roxb. ex Willd.) Muell.-Arg.	279
385.	<i>Gloriosa superba</i> L.	606
386.	<i>Glycine max</i> (L.) Merr.	223
387.	<i>Glycosmis pentaphylla</i> (Retz.) A. DC.	319
388.	<i>Gmelina arborea</i> Roxb.	379
389.	<i>Gnaphalium luteo-album</i> L.	451
390.	<i>Gnaphalium polycaulon</i> Pers.	451
391.	<i>Gnaphalium pulvinatum</i> Del.	452
392.	<i>Gomphrena celosioides</i> Mart.	84
393.	<i>Gossypium arborium</i> L.	129
394.	<i>Gossypium hirsutum</i> L.	129
395.	<i>Grangea maderaspatana</i> (L.) Poir.	452
396.	<i>Grewia asiatica</i> L.	115
397.	<i>Grewia hirsuta</i> Vahl	116
398.	<i>Grewia nervosa</i> (Lour.) Panigr.	116
399.	<i>Gymnopetalum cochinchinense</i> (Lour.) Kurz	150
400.	<i>Hedyotis corymbosa</i> (L.) Lamk.	427
401.	<i>Hedyotis diffusa</i> Willd.	428
402.	<i>Hedyotis hermaniana</i> Dutta	428
403.	<i>Hedyotis scandens</i> Roxb.	428
404.	<i>Helianthus annuus</i> L.	453

Sl. no.	Scientific name	Page
405.	<i>Heliotropium indicum</i> L.	373
406.	<i>Hemarthria protensa</i> Steud.	571
407.	<i>Hemidesmus indicus</i> (L.) R. Br.	345
408.	<i>Hewittia sublobata</i> (L. f.) O. Kuntze	361
409.	<i>Hibiscus cannabinus</i> L.	130
410.	<i>Hibiscus rosa-sinensis</i> L.	131
411.	<i>Hibiscus sabdariffa</i> L.	131
412.	<i>Hibiscus surattensis</i> L.	132
413.	<i>Holarrhena antidysentrica</i> (L.) Wall. ex A. DC.	336
414.	<i>Homalomena aromatica</i> (Roxb. ex Sim) Schott	490
415.	<i>Hopea odorata</i> Roxb.	106
416.	<i>Hoya parasitica</i> (Roxb.) Wall. ex Wight.	345
417.	<i>Hydrilla verticillata</i> (L. f.) Royle	469
418.	<i>Hydrolea zeylanica</i> (L.) Vahl	371
419.	<i>Hygrophila phlomoides</i> Nees	408
420.	<i>Hygrophila schulli</i> (Buch.-Ham.) M. R. & S. N. Almeida	408
421.	<i>Hygroryza aristata</i> (Retz.) Nees	571
422.	<i>Hymenachne pseudointerrupta</i> C. Muell.	572
423.	<i>Hymenodictyon orixensis</i> (Roxb.) Mabb.	429
424.	<i>Hyptis brevipes</i> Poit.	386
425.	<i>Hyptis capitata</i> Jacq.	386
426.	<i>Hyptis suaveolens</i> (L.) Poit.	387
427.	<i>Ichnanthus vicinus</i> (F. M. Bailey) Merr.	572
428.	<i>Ichnocarpus furtescens</i> (L.) R. Br.	337
429.	<i>Impatiens balsamina</i> L.	327
430.	<i>Imperata cylindrica</i> (L.) P. Beauv. var. <i>major</i> (Nees) C. E. Hubb. ex Hubb. & Vaughan	573
431.	<i>Ipomoea alba</i> L.	362
432.	<i>Ipomoea aquatica</i> Forssk.	363
433.	<i>Ipomoea batatas</i> (L.) Lamk.	363

Sl. no.	Scientific name	Page
434.	<i>Ipomoea fistulosa</i> Mart. ex Choisy	364
435.	<i>Ipomoea nil</i> (L.) Roth	364
436.	<i>Ipomoea pes-tigridis</i> L.	365
437.	<i>Ipomoea quamoclit</i> L.	365
438.	<i>Ixora chinensis</i> Lamk.	430
439.	<i>Ixora cuneifolia</i> Roxb.	430
440.	<i>Ixora finlaysoniana</i> Wall.	431
441.	<i>Ixora pavetta</i> Andr.	431
442.	<i>Ixora undulata</i> Roxb.	432
443.	<i>Jasminum auriculatum</i> Vahl	394
444.	<i>Jasminum grandiflorum</i> L.	395
445.	<i>Jasminum sambac</i> (L.) Ait.	395
446.	<i>Jasminum scandens</i> Vahl	396
447.	<i>Jatropha curcas</i> L.	280
448.	<i>Jatropha gossypifolia</i> L.	281
449.	<i>Justicia adhatoda</i> L.	409
450.	<i>Justicia gendarussa</i> Burm. f.	410
451.	<i>Kalanchoe blossfeldiana</i> v. Poelln.	173
452.	<i>Kyllinga brevifolia</i> Rottb.	538
453.	<i>Kyllinga bulbosa</i> Beauv.	538
454.	<i>Kyllinga microcephala</i> Steud.	539
455.	<i>Kyllinga nemoralis</i> (J.R. Forst. & G. Forst.) Dandy ex Hutch. & Dalz.	539
456.	<i>Lablab purpureus</i> (L.) Sweet	223
457.	<i>Lactuca scariola</i> L. var. <i>sativa</i> Hook. f.	453
458.	<i>Lagenaria siceraria</i> (Molina) Standl.	150
459.	<i>Lagerstroemia indica</i> L.	241
460.	<i>Lagerstroemia parviflora</i> Roxb. var. <i>benghalensis</i> C. B. Clarke	241
461.	<i>Lagerstroemia speciosa</i> (L.) Pers.	242
462.	<i>Lannea coromandelica</i> (Houtt.) Merr.	306
463.	<i>Lantana camara</i> L.	379

Sl. no.	Scientific name	Page
464.	<i>Laportea interrupta</i> (L.) Chew	64
465.	<i>Lasia spinosa</i> (L) Thw.	491
466.	<i>Lathyrus sativus</i> L.	224
467.	<i>Launaea aspleniifolia</i> DC.	454
468.	<i>Lawsonia inermis</i> L.	243
469.	<i>Leea alata</i> Edge.	291
470.	<i>Leea crispa</i> L.	291
471.	<i>Leea indica</i> Merr.	292
472.	<i>Leea macrophylla</i> Roxb. ex Hornem.	292
473.	<i>Lemna perpusilla</i> Torrey	497
474.	<i>Lens culinaris</i> Medic.	224
475.	<i>Leonurus sibiricus</i> L.	387
476.	<i>Lepidagathis incurva</i> Buch.-Ham. ex D. Don	410
477.	<i>Lepidagathis linearis</i> T. Anders.	411
478.	<i>Lepisanthes rubiginosa</i> (Roxb.) Leenh.	303
479.	<i>Leptochloa chinensis</i> (L.) Nees	573
480.	<i>Leucaena leucocephala</i> (Lamk.) de Wit.	183
481.	<i>Leucas aspera</i> (Willd.) Link	388
482.	<i>Leucas indica</i> (L.) R. Br. ex Vatke	389
483.	<i>Limnocharis flava</i> (L.) Buchen.	465
484.	<i>Limnophila aromatica</i> (Lamk.) Merr.	398
485.	<i>Limnophila sessiliflora</i> (Vahl) Blume	399
486.	<i>Limonia acidissima</i> L.	320
487.	<i>Lindenbergia indica</i> (L.) Vatke	399
488.	<i>Lindernia antipoda</i> (L.) Alston	400
489.	<i>Lindernia ciliata</i> (Colsm.) Pennell	401
490.	<i>Lindernia procumbens</i> (Krock.) Philcox.	401
491.	<i>Linum usitatissimum</i> L.	298
492.	<i>Lipocarpa squarrosa</i> (L.) Goetgh.	539

Sl. no.	Scientific name	Page
493.	<i>Lippia alba</i> (Mill.) Britton et Wilson	380
494.	<i>Litchi chinensis</i> Sonn.	303
495.	<i>Litsea glutinosa</i> (Lour.) Robinson	34
496.	<i>Litsea laeta</i> Wall. ex Nees	34
497.	<i>Litsea monopetala</i> (Roxb.) Pers.	35
498.	<i>Lobelia zeylanica</i> L.	421
499.	<i>Ludwigia adscendence</i> (L.) Hara	253
500.	<i>Ludwigia hyssopifolia</i> (G. Don) Exell apud A. & R. Fern.	253
501.	<i>Ludwigia octovalvis</i> (Jacq.) Raven	254
502.	<i>Ludwigia perennis</i> L.	255
503.	<i>Luffa acutangula</i> (L.) Roxb.	151
504.	<i>Luffa cylindrica</i> (L.) M. Roem.	152
505.	<i>Lycopersicon esculentum</i> Mill.	350
506.	<i>Macaranga denticulata</i> (Blume) Muell.-Arg.	281
507.	<i>Macaranga peltata</i> (Roxb.) Muell.-Arg.	282
508.	<i>Macrosolen cochinchinensis</i> (Lour.) Van Tiegh.	265
509.	<i>Madhuca longifolia</i> (Koeing) MacBride	167
510.	<i>Maesa ramentacea</i> (Roxb.) A. DC.	171
511.	<i>Mallotus repandus</i> (Willd.) Muell.-Arg.	282
512.	<i>Malpighia coccigera</i> L.	299
513.	<i>Malvaviscus arboreus</i> Cav.	133
514.	<i>Mangifera indica</i> L.	307
515.	<i>Manihot esculenta</i> Crantz.	283
516.	<i>Manilkara zapota</i> (L.) P. van Royen	168
517.	<i>Maranta arundinacea</i> L.	599
518.	<i>Marsdenia thyrsiflora</i> Hook. f.	346
519.	<i>Melastoma malabathricum</i> L.	256
520.	<i>Melia azedarach</i> L.	312
521.	<i>Melilotus alba</i> Desr.	225

Sl. no.	Scientific name	Page
522.	<i>Melilotus indica</i> (L.) All.	226
523.	<i>Melocanna baccifera</i> (Roxb.) Kurz	574
524.	<i>Melochia corchorifolia</i> L.	119
525.	<i>Mentha arvensis</i> L.	389
526.	<i>Merremia hederacea</i> (Burm. f.) Hallier f.	366
527.	<i>Merremia hirta</i> (L.) Merr.	367
528.	<i>Merremia umbellata</i> (L.) Hallier f.	367
529.	<i>Mesua ferrea</i> L.	110
530.	<i>Meyna pubescens</i> (Kurz) Robyns	432
531.	<i>Michelia champaca</i> L.	27
532.	<i>Micromelum minutum</i> (G. Forster) Wight & Arn.	320
533.	<i>Mikania cordata</i> (Burm. f.) Robinson	454
534.	<i>Miliusa velutina</i> (Dunal) Hook. f. & Thom.	29
535.	<i>Mimosa diplotricha</i> C. Wright ex Sauv. var. <i>diplotricha</i> Nielsen	184
536.	<i>Mimosa pudica</i> L.	185
537.	<i>Mirabilis jalapa</i> L.	70
538.	<i>Mitracarpus hirtus</i> (L.) DC.	432
539.	<i>Mollugo pentaphylla</i> L.	89
540.	<i>Momordica charantia</i> L. var. <i>charantia</i> C.B. Clarke	152
541.	<i>Momordica charantia</i> L. var. <i>muricata</i> (Willd.) Chakravarty	153
542.	<i>Momordica cochinchinensis</i> (Lour.) Spreng.	154
543.	<i>Monochoria hastata</i> (L.) Solms	601
544.	<i>Monochoria vaginalis</i> (Burm. f.) Presl	601
545.	<i>Monstera obliqua</i> Miq.	491
546.	<i>Morinda angustifolia</i> Roxb.	433
547.	<i>Morinda citrifolia</i> L.	434
548.	<i>Morinda umbellata</i> L.	434
549.	<i>Moringa oleifera</i> Lamk.	166
550.	<i>Morus alba</i> L.	62

Sl. no.	Scientific name	Page
551.	<i>Mucuna pruriens</i> (L.) DC.	226
552.	<i>Mukia maderaspatana</i> (L.) M. Roem.	154
553.	<i>Murdannia loriformis</i> (Hassk.) Rolla Rao <i>et</i> Kamm.	503
554.	<i>Murdania nudiflora</i> (L.) Brenan	503
555.	<i>Murdannia scapiflora</i> (Roxb.) Royle	504
556.	<i>Murdannia spirata</i> (L.) Brck	504
557.	<i>Murraya koenigii</i> (L.) Spreng.	321
558.	<i>Murraya paniculata</i> (L.) Jack	322
559.	<i>Musa paradisiaca</i> L.	591
560.	<i>Mussaenda erythrophylla</i> Schum & Thonn.	435
561.	<i>Mussaenda frondosa</i> L.	435
562.	<i>Mussaenda roxburghii</i> Hook. f.	436
563.	<i>Najas indica</i> (Willd.) Cham.	473
564.	<i>Nechamandra alternifolia</i> (Roxb.) Thw.	469
565.	<i>Nelsonia canescens</i> (Lamk.) Spreng.	411
566.	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	436
567.	<i>Neptunia oleracea</i> Lour.	185
568.	<i>Nerium oleander</i> L.	337
569.	<i>Nicotiana plumbaginifolia</i> Viv.	351
570.	<i>Nicotiana tabacum</i> L.	351
571.	<i>Nigella sativa</i> L.	45
572.	<i>Nyctanthes arbor-tristis</i> L.	380
573.	<i>Nymphaea nouchali</i> Burm. f.	42
574.	<i>Nymphaea pubescens</i> Willd.	42
575.	<i>Nymphaea rubra</i> Roxb. <i>ex</i> Andr.	43
576.	<i>Nymphoides hydrophylla</i> (Lour.) O. Kuntze	370
577.	<i>Nymphoides indicum</i> (L.) O. Kuntze	370
578.	<i>Ochna squarrosa</i> L.	105
579.	<i>Ocimum americanum</i> L.	390

Sl. no.	Scientific name	Page
580.	<i>Ocimum basilicum</i> L.	391
581.	<i>Ocimum gratissimum</i> L.	392
582.	<i>Ocimum tenuniflorum</i> L.	392
583.	<i>Oplismenus burmanii</i> (Rtez.) P. Beauv.	575
584.	<i>Oplismenus compositus</i> (L.) P. Beauv.	575
585.	<i>Opuntia dillenii</i> Haw.	71
586.	<i>Oroxylum indicum</i> (L.) Kurz	417
587.	<i>Oryza sativa</i> L.	576
588.	<i>Osbeckia stellata</i> Buch.-Ham. ex Ker-Gawl.	256
589.	<i>Ottelia alismoides</i> (L.) Pers.	470
590.	<i>Oxalis corniculata</i> L.	325
591.	<i>Oxalis corymbosa</i> DC.	326
592.	<i>Pachyrhizus erosus</i> (L.) Urban	227
593.	<i>Paederia foetida</i> L.	437
594.	<i>Pancratium verecundum</i> Ait.	606
595.	<i>Pandanus fascicularis</i> Lamk.	482
596.	<i>Panicum fasciculatum</i> Sw.	577
597.	<i>Panicum miliaceum</i> L.	577
598.	<i>Panicum notatum</i> Retz.	578
599.	<i>Panicum paludosum</i> Roxb.	578
600.	<i>Panicum repens</i> L.	579
601.	<i>Parthenium hysterophorus</i> L.	455
602.	<i>Paspalidium flavidum</i> (Retz.) A. Camus	579
603.	<i>Paspalidium punctatum</i> (Burm.) A. Camus	580
604.	<i>Paspalum distichum</i> L.	581
605.	<i>Paspalum orbiculare</i> G. Forst.	581
606.	<i>Paspalum scrobiculatum</i> L.	582
607.	<i>Passiflora foetida</i> L.	142
608.	<i>Peltophorum pterocarpum</i> (DC.) K. Heyne	195

Sl. no.	Scientific name	Page
609.	<i>Pennisetum purpureum</i> Schum.	582
610.	<i>Pentapetes phoenicea</i> L.	120
611.	<i>Peperomia pellucida</i> (L.) H. B. & K.	36
612.	<i>Peristrophe paniculata</i> (Forssk.) R. K. Brummitt	412
613.	<i>Persicaria barbata</i> (L.) Hara.	93
614.	<i>Persicaria flaccida</i> (Meissn.) H. Gross ex Loesen.	93
615.	<i>Persicaria glabra</i> (Willd.) Gomez de la Maza	94
616.	<i>Persicaria hydropiper</i> (L.) Spach	94
617.	<i>Persicaria lanata</i> (Roxb.) Hassan	95
618.	<i>Persicaria lapathifolia</i> (L.) S.F.Gray	95
619.	<i>Persicaria minor</i> (Huds.) Opiz	96
620.	<i>Persicaria orientalis</i> (L.) Spach	97
621.	<i>Persicaria tomentosa</i> (Willd.) Sa.	97
622.	<i>Petunia hybrida</i> Hort. ex Vilm.	352
623.	<i>Phaseolus vulgaris</i> L.	227
624.	<i>Phaulopsis imbricata</i> (Forssk.) Sweet	412
625.	<i>Philodendron scandens</i> C. Koch & Sello ex Koch	492
626.	<i>Phoenix acaulis</i> Buch.-Ham. ex Roxb.	480
627.	<i>Phoenix sylvestris</i> Roxb.	481
628.	<i>Phrynium imbricatum</i> Roxb.	599
629.	<i>Phyla nodiflora</i> (L.) Greene	381
630.	<i>Phyllanthus acidus</i> (L.) Skeels	284
631.	<i>Phyllanthus emblica</i> L.	285
632.	<i>Phyllanthus niruri</i> L.	285
633.	<i>Phyllanthus reticulatus</i> Poir.	285
634.	<i>Physalis angulata</i> L.	353
635.	<i>Physalis minima</i> L.	353
636.	<i>Pilea microphylla</i> (L.) Liebm.	65
637.	<i>Piper betle</i> L.	37

Sl. no.	Scientific name	Page
638.	<i>Piper longum</i> L.	38
639.	<i>Piper nigrum</i> L.	38
640.	<i>Piper peepuloides</i> Roxb.	39
641.	<i>Piper rhytidocarpum</i> Hook. f.	39
642.	<i>Pistia stratiotes</i> L.	492
643.	<i>Pisum sativum</i> L.	228
644.	<i>Plumbago capensis</i> Thunb.	101
645.	<i>Plumeria alba</i> L.	338
646.	<i>Plumeria obtusa</i> L.	339
647.	<i>Plumeria rubra</i> L.	339
648.	<i>Polianthes tuberosa</i> L.	609
649.	<i>Polyalthia longifolia</i> (Sonn.) Thw.	30
650.	<i>Polyalthia simiarum</i> (Hook. f. & Thom.) Hook. f. & Thom.	31
651.	<i>Polycarpaea corymbosa</i> (L.) Lamk.	90
652.	<i>Polycarpon prostratum</i> (Forssk.) Aschers & Schweinf	91
653.	<i>Polygala chinensis</i> L.	300
654.	<i>Polygonum effusum</i> Meissn.	98
655.	<i>Polygonum plebeium</i> R. Br.	98
656.	<i>Pongamia pinnata</i> (L.) Pierre	228
657.	<i>Portulaca oleracea</i> L.	85
658.	<i>Portulaca quadrifida</i> L.	85
659.	<i>Potamogeton crispus</i> L.	472
660.	<i>Pothos scandens</i> L.	493
661.	<i>Pouzolzia zeylanica</i> (L.) Benn.	65
662.	<i>Pseudoelephantopus spicatus</i> (Juss. ex Aubl.) Gleason	455
663.	<i>Psidium guajava</i> L.	247
664.	<i>Pterospermum acerifolium</i> (L.) Willd.	121
665.	<i>Pterospermum semisagittatum</i> Buch.-Ham. ex Roxb.	121
666.	<i>Pterygota alata</i> (Roxb.) R. Br.	122

Sl. no.	Scientific name	Page
667.	<i>Pueraria phaseoloides</i> (Roxb.) Benth.	229
668.	<i>Punica granatum</i> L.	252
669.	<i>Putranjiva roxbirghii</i> Wall.	286
670.	<i>Pycreus pumilus</i> (L.) Nees ex C.B. Clarke	540
671.	<i>Pycreus unioides</i> (R. Br.) Urban	541
672.	<i>Pyrostegia venusta</i> (Ker-Gawl.) Miers	418
673.	<i>Quisqualis indica</i> L.	258
674.	<i>Ranunculus sceleratus</i> L.	46
675.	<i>Raphanus sativus</i> L.	165
676.	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	340
677.	<i>Rauvolfia tetraphylla</i> L.	340
678.	<i>Rhaphidophora aurea</i> (Linden & Andre') Birdsey	493
679.	<i>Rhynchospora rubra</i> (Lour.) Makino	541
680.	<i>Ricinus communis</i> L.	287
681.	<i>Rivina humilis</i> L.	67
682.	<i>Rorippa indica</i> (L.) Hiern	165
683.	<i>Rosa chinensis</i> Jacq.	174
684.	<i>Rotala densiflora</i> (Roth ex Roem. & Schult.) Koehne	243
685.	<i>Rotala indica</i> (Willd.) Koehne	244
686.	<i>Ruellia tuberosa</i> L.	413
687.	<i>Rumex dentatus</i> L.	99
688.	<i>Rumex maritimus</i> L.	100
689.	<i>Rumex vesicarius</i> L.	100
690.	<i>Rungia pectinata</i> (L.) Nees	413
691.	<i>Saccharum officinarum</i> L.	583
692.	<i>Saccharum spontaneum</i> L.	583
693.	<i>Sacciolepis indica</i> (L.) A. Chase	584
694.	<i>Sacciolepis myosuroides</i> (R. Br.) A. Camus	585
695.	<i>Sagittaria guayanensis</i> H. B. & K. subsp. <i>lappula</i> (D. Don) Bogin	466

Sl. no.	Scientific name	Page
696.	<i>Sagittaria sagittifolia</i> L.	466
697.	<i>Salvia plebeia</i> R. Br.	393
698.	<i>Samanea saman</i> (Jacq.) Merr.	186
699.	<i>Sapindus saponaria</i> L.	304
700.	<i>Saraca indica</i> L.	196
701.	<i>Schima wallichii</i> (DC.) Korth.	108
702.	<i>Scindapsus officinalis</i> (Roxb.) Schott	494
703.	<i>Schoenoplectus articulatus</i> (L.) Palla	542
704.	<i>Schoenoplectus juncoides</i> (Roxb.) Palla	542
705.	<i>Schoenoplectus littoralis</i> (Schrad.) Palla subsp. <i>subulatus</i> (Vahl) T. Koyama	543
706.	<i>Scirpus lacustris</i> L. subsp. <i>validus</i> (Vahl) T. Koyama	543
707.	<i>Scleria annularis</i> Nees ex Steud.	544
708.	<i>Scleria levis</i> Retz.	544
709.	<i>Scleria psilorrhiza</i> C.B. Clarke	545
710.	<i>Scleria terrestris</i> (L.) Fasset	545
711.	<i>Scoparia dulcis</i> L.	402
712.	<i>Semecarpus anacardium</i> L. f.	307
713.	<i>Senna alata</i> (L.) Roxb.	197
714.	<i>Senna obtusifolia</i> (L.) Irwin & Barneby	198
715.	<i>Senna occidentalis</i> Roxb.	198
716.	<i>Senna siamea</i> (Lamk.) Irwin & Barneby	199
717.	<i>Senna sophera</i> (L.) Roxb.	199
718.	<i>Senna surattensis</i> (Burm. f.) Irwin & Barneby	200
719.	<i>Senna tora</i> (L.) Roxb.	201
720.	<i>Sesamum indicum</i> L.	416
721.	<i>Sesbania bispinosa</i> (Jacq.) Wight	230
722.	<i>Sesbania cannabina</i> (Retz.) Poir.	231
723.	<i>Sesbania grandiflora</i> (L.) Poir.	231
724.	<i>Sesbania javanica</i> Miq.	232

Sl. no.	Scientific name	Page
725.	<i>Sesbania sesban</i> (L.) Merr.	232
726.	<i>Setaria italica</i> (L.) P. Beauv.	585
727.	<i>Shorea robusta</i> Roxb. ex Gaertn. f.	107
728.	<i>Sida acuta</i> Burm. f.	133
729.	<i>Sida cordata</i> (Burm. f.) Borss.	134
730.	<i>Sida cordifolia</i> L.	135
731.	<i>Smilax ocreata</i> A. DC.	611
732.	<i>Smilax perfoliata</i> Lour.	611
733.	<i>Solanum americanum</i> Mill.	355
734.	<i>Solanum melongena</i> L.	355
735.	<i>Solanum nigrum</i> L.	356
736.	<i>Solanum sisymbriifolium</i> Lamk.	356
737.	<i>Solanum torvum</i> Swartz	357
738.	<i>Solanum tuberosum</i> L.	358
739.	<i>Solanum villosum</i> Mill.	358
740.	<i>Solanum virginianum</i> L.	359
741.	<i>Sonchus asper</i> (L.) Hill	456
742.	<i>Sonchus oleraceus</i> L.	457
743.	<i>Sonchus wightianus</i> DC.	457
744.	<i>Sorghum halepense</i> (L.) Pers.	586
745.	<i>Spatholobus parviflorus</i> (Roxb. ex DC.) O. Kuntze	233
746.	<i>Spermacoce articularis</i> L. f.	438
747.	<i>Spermacoce latifolia</i> Aublet	438
748.	<i>Spermacoce stricta</i> L. f.	439
749.	<i>Sphaeranthus indicus</i> L.	457
750.	<i>Spilanthes calva</i> DC.	458
751.	<i>Spinacia oleracea</i> L.	74
752.	<i>Spirodela polyrhiza</i> (L.) Schleid.	497
753.	<i>Spondias pinnata</i> (L. f.) Kurz	308

Sl. no.	Scientific name	Page
754.	<i>Spondias purpurea</i> L.	309
755.	<i>Sporobolus diander</i> (Retz.) P. Beauv.	587
756.	<i>Sporobolus indicus</i> R. Br.	587
757.	<i>Staurogyne polybotrya</i> (Nees) O. Kuntze	414
758.	<i>Stephania japonica</i> (Thunb.) Miers	48
759.	<i>Streblus asper</i> Lour.	63
760.	<i>Strobilanthes scaber</i> Nees	414
761.	<i>Swietenia macrophylla</i> King	312
762.	<i>Swietenia mahagoni</i> Jacq.	313
763.	<i>Synedrella nodiflora</i> (L.) Gaertn.	459
764.	<i>Syngonium podophyllum</i> Schott	495
765.	<i>Syzygium cumini</i> (L.) Skeels	248
766.	<i>Syzygium cymosum</i> DC.	249
767.	<i>Syzygium fruticosum</i> DC.	249
768.	<i>Syzygium jambos</i> (L.) Alston	250
769.	<i>Syzygium malaccense</i> (L.) Merr. & Perry	250
770.	<i>Syzygium samarangense</i> (Blume) Merr. & Perry	251
771.	<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schult.	341
772.	<i>Tamarindus indica</i> L.	201
773.	<i>Tamilnadia uliginosa</i> (Retz.) Tirveng. & Sastre	439
774.	<i>Tapiria hirsuta</i> Hook. f.	309
775.	<i>Tectona grandis</i> L. f.	382
776.	<i>Tephrosia candida</i> DC.	234
777.	<i>Tephrosia purpurea</i> (L.) Pers.	234
778.	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight. & Arn.	259
779.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	259
780.	<i>Terminalia catappa</i> L.	260
781.	<i>Terminalia chebula</i> Retz.	260
782.	<i>Terminalia citrina</i> (Gaertn.) Roxb. ex Fleming	260

Sl. no.	Scientific name	Page
783.	<i>Tetrastigma angustifolium</i> (Roxb.) Planch.	297
784.	<i>Thespesia lampas</i> (Cav.) Dalz. & Gibs.	135
785.	<i>Thevetia peruviana</i> (Pers.) K. Schum	341
786.	<i>Thunbergia grandiflora</i> (Roxb. ex Rottler) Roxb.	415
787.	<i>Tinospora cordifolia</i> (Willd.) Hook. f. & Thoms.	49
788.	<i>Tinospora crispa</i> (L.) Hook. f. & Thoms.	49
789.	<i>Toona ciliata</i> M. Roem.	314
790.	<i>Trachyspermum ammi</i> (L.) Sprague	330
791.	<i>Tradescantia pallida</i> (Rose) D.R. Hunt	505
792.	<i>Trapa bispinosa</i> Roxb.	245
793.	<i>Trema orientalis</i> (L.) Blume	52
794.	<i>Trewia nudiflora</i> L.	287
795.	<i>Trichosanthes anguina</i> L.	155
796.	<i>Trichosanthes dioica</i> Roxb.	156
797.	<i>Tridax procumbens</i> L.	459
798.	<i>Triphasia trifolia</i> (Burm. f.) P. Wils.	322
799.	<i>Triticum aestivum</i> L.	588
800.	<i>Triumfetta pentandra</i> A. Rich.	117
801.	<i>Triumfetta rhomboidea</i> Jacq.	117
802.	<i>Typhonium trilobatum</i> (L.) Schott	495
803.	<i>Uraria lagopus</i> DC. var. <i>neglecta</i> (Prain) Ohashi	235
804.	<i>Urena lobata</i> L.	136
805.	<i>Utricularia aurea</i> Lour.	419
806.	<i>Utricularia stellaris</i> L. f.	420
807.	<i>Uvaria hamiltonii</i> Hook. f. & Thom.	31
808.	<i>Vallisneria spiralis</i> L.	470
809.	<i>Vanda tessellata</i> (Roxb.) Hook. f. ex G. Don	620
810.	<i>Vernonia cinerea</i> (L.) Lees.	460
811.	<i>Vetiveria zizanioides</i> (L.) Nash	588

Sl. no.	Scientific name	Page
812.	<i>Vicia angustifolia</i> L.	235
813.	<i>Vicia faba</i> L.	236
814.	<i>Vicia sativa</i> L.	236
815.	<i>Vigna mungo</i> (L.) Hepper	237
816.	<i>Vigna pilosa</i> (Willd.) Baker	238
817.	<i>Vigna radiata</i> (L.) Wilczek	238
818.	<i>Vigna unguiculata</i> (L.) Walp.	239
819.	<i>Viscum monoicum</i> Roxb. ex DC.	266
820.	<i>Vitex negundo</i> L.	382
821.	<i>Vitex peduncularis</i> Wall. ex Schauer	383
822.	<i>Xanthium indicum</i> Koen. ex Roxb.	460
823.	<i>Xanthosoma violaceum</i> Schott	496
824.	<i>Xyris indica</i> L.	498
825.	<i>Zanthoxylum rhesta</i> (Roxb.) DC.	323
826.	<i>Zea mays</i> L.	589
827.	<i>Zebrina pendula</i> Schnizl.	505
828.	<i>Zehneria japonica</i> (Thunb.) H.Y. Liu	156
829.	<i>Zingiber montanum</i> (Koen.) Dietr.	595
830.	<i>Zingiber officinale</i> Rosc.	596
831.	<i>Ziziphus mauritiana</i> Lamk.	289
832.	<i>Ziziphus oenoplia</i> (L.) Mill.	289
833.	<i>Ziziphus rugosa</i> Lamk.	290