INTERNATIONAL JOURNAL OF ENVIRONMENT
Volume-3, Issue-2, Mar-May 2014 ISSN 2091-2854
Received:6 May *Revised:13 May* *Accepted:15 May*

PLANT TAXONOMY AND BIODIVERSITY RESEARCHES IN BANGLADESH: TRENDS AND OPPORTUNITIES

M. Atiqur Rahman
Department of Botany, University of Chittagong
Chittagong 4331, Bangladesh
Corresponding author: atiquerahman125@hotmail.com

Abstract

The progress, problems and prospects of biodiversity and plant taxonomic researches conducted in Bangladesh during the last two decades have been analyzed. The inventory of the flora, threatened taxa and family wise itemization in all groups of plants are progressing at a very slow rate. Only 11.6% of the estimated species (*c*.5000) were inventoried and only 6.2% of the threatened taxa were listed for conservation management. National Conservation Strategies could not be framed and implemented duly for environmental management. Results of the survey of floristic diversity, inventory of threatened taxa for Red Data Book and discovery of new taxa are discussed and up to date data are presented.

Key words: Biodiversity, inventory, taxonomy, threatened taxa, conservation management

Introduction

The flora of Bangladesh was previously known as the flora of the then East Pakistan until its independence in 1971. The flora within the territory of presently formed Bangladesh was the part of undivided Bengal, and the vegetation was explored initially by William Roxburgh, the father of Indian Botany, since his appointment as the Superintendent of the then East Indian Company's Museum and Botanic Garden at Calcutta in 1773. Among his successors, a number of British and Dutch pioneer explorers, like F.B. Hamilton, N Wallich, J.D. Hooker, T. Thomson, C.B. Clarke, S.G. King, W. Griffith, J. Leister, W.S. Kurz, J.S. Gamble, D. Prain, R.L. Heinig, J.M. Cowan, M.B. Raizada and others have made extensive survey and collections from Sylhet, Chittagong, Chittagong Hill Tracts, Cox's Bazar, Sundarbans, Noakhali, Feni valley, Dhaka, Jessore, Dinajpur and other areas of Bengal. Some of the noteworthy contributions of that period are *Hortus Bangalensis* (Roxburgh, 1814), *Flora Indica* (Roxburgh, 1832), *A Numerical list of dried specimens of plants in the East Indian Company's Museum* (Wallich, 1828-49), *The flora of British India* (Hooker, 1872-1897), *Bengal Plants* (Prain, 1903a) and *The Flora of Sundarbans* (Prain, 1903b).

There had been also a few independent published reports of taxonomic and floristic works on the flora until independence of Pakistan in 1947. These are: *List of Plants of Chittagong Collectorate and the Hill Tracts* by Heinig (1925); *The Flora of Chakaria Sundarbans* by Cowan (1926), *The trees of Northern Bengal including shrubs, woody climbers, bamboos, palms and tree ferns* by Cowan and Cowan (1929) and *On the flora of Chittagong* by Raizada (1941).

After 1947, taxonomic and floristic researches on the flora of the then East Pakistan have began independently by Islam (1952) with the publication of *A preliminary report on the Ferns of East Pakistan* followed by Datta and Mitra (1953), *Common plants in and around Dacca*; Sinclair (1956), *The Flora of Cox's Bazar, East Pakistan*; Khan (1957), *Studies in Ricciaceae of East Pakistan*; Islam (1965), *Taxonomic study of the species of Dichotomosiphon and Vaucheria found in East Pakistan;* Khan and Afza (1968), *A taxonomic report on the angiospermic flora of Teknaf and St. Martin's Island;* and Khan and Banu (1969), *A taxonomic report on the Angiospermic flora of Chittagong Hill Tracts-1* (*Monocotyledons*); Islam (1969), *A preliminary report on the phytoplankton and other algae of Chittagong Hill Tracts*; Khan and Halim (1975, 1977), *Taxonomic studies in Labiatae of Dhaka and its surrounding* (1 & 2 respectively).

In fact, the taxonomic researches on the flora of Bangladesh have practically and systematically began from Dhaka University by M. Salar Khan, Professor of Botany, on the angiosperm flora and A.K.M. Nurul Islam, Professor of Botany, on algal flora during the then Pakistan period.

M. Salar Khan, besides teaching Botany in Dhaka University, for the first time initiated the floristic survey (Flora Project) by his own effort and continued until May 1970, and thereafter he started a Government project "**Botanical Survey of East Pakistan**" under the Agricultural Research Council of Pakistan. After independence, the project was sustained by the Government of Bangladesh until 1973 while it was taken up as a contract project under the newly named Bangladesh Agricultural Research Council (BARC). He was assisted in very many ways by M. Ismail, Professor of the same department and eminent ecologist of then period.

M. Salar Khan in association with a few of his co-workers, like, A.M. Huq and M. Halim continued the survey of floristic diversity, collection of specimens and writing of the Flora with a limited fund and facilities, and published the first volume (Fasc.1) of the *Flora of Bangladesh* in 1972 based on the inventory of five angiosperm families (authored by M.S. Khan and A.M. Huq), each with a single species, and these are: Caricaceae, Casuarinaceae, Hydrophyllaceae, Martyniaceae and Phytolaccaceae. Since then, M. Salar Khan in association of A.M. Huq, M.K. Mia, M. Rahman, M. Halim, M.K. Alam, S. Nahar, M. Begum and others had been conducting the floristic survey throughout the flora and collection of specimens for family wise inventory and taxonomic itemization for publication of the *Flora of Bangladesh*. Until 1990, He was able to make complete inventory of 57 families containing 121 genera and 225 species, and published in 45 Fascicles (Nos.1-45) of the Flora of Bangladesh (Table 1). The inventory of these 57 families were made by M.S. Khan, A.M. Huq, M.K. Mia, M.M. Rahman, M. Halim, M.K. Alam, M.M. Mirza, M. Begum, H. Ara, S. Nahar, B. Khan, H. Hassan and M. Mahfuzur Rahman.

Besides, researches on taxonomy and biodiversity of Bangladesh had also been conducted during that period in the Botany departments of Dhaka, Chittagong, Rajshahi and Jahangirnagar Universities by the teachers and postgraduate research fellows, and contributed to the taxonomy of Bangladesh by publications of a good number of articles in all groups of plants including local floristic diversity, new records, checklists etc. Some noteworthy contributors of that period in different areas of Botany are:

Phycology: Number of teachers of the department of Botany, Dhaka University and their research students have made excellent contributions in the field of phycology through research and publications. The pioneers of this field are A.K.M. Nurul Islam, M.R. Khan, M. Zaman, Z.N. Tahmida Begum, A. Aziz, K. Maniruzzaman and H.M. Irfanullah (DU), A. Khair and S.C. Chowdhury (CU), S. Naz (RU), and others. A good number of new species and new records have been reported from Bangladesh.

Mycology: In the field of mycology, an outstanding contribution has been made by A.Z.M. Nowsher Ali Khan of the department of Botany, Dhaka University.

Bryophytes: S.A. Khan, S. Hadiuzzaman of Dhaka University and others have contributed much to the research and publications in the bryophyte flora of Bangladesh.

Pteridophytes: Taxonomic researches and publications in pteridophytes have been made in that period by a number of workers. Some noteworthy contributors are: A.S. Islam (1952) and A.K.M. Nurul Islam (DU), M.K. Pasha and A.U. Mallik (CU), M.K. Alam and R. Chakraborty (BFRI) and M.M. Mirza (BNH).

Angiosperms: A number of workers have made outstanding contributions in the progress of angiosperm biodiversity and taxonomy researches and publications including floristic inventory. Among them, M.S. Khan, A.M. Huq, M.A. Hassan, Mahbuba Halim, M.M.K. Mia, F. Banu, M.M. Rahman, N. Huda (BNH), A.B.M. Enayet Hossain (JU), A.T.M Naderuzzaman (RU), D.K. Das, M.K. Alam (BFRI), M.K. Pasha, M.A. Rahman (CU), C.C. Wilcock (ABD), B.M. Rezia Khatun, B. Khan, O. Rahman, S.N. Uddin (BNH), M. Yusuf (BCSIR) and others are noteworthy.

Some other notable taxonomic publications of that period are:

Medicinal plants of Bangladesh (Khan and Huq 1975), *Annotated list of Trees of Rajshahi* (Naderuzzaman and Islam, 1984), *Flora of Moheshkhali Island* (Huq and Khan, 1984), *Plant names of Bangladesh* (Huq, 1986), *Homestead flora of Bangladesh* (Khan and Alam, 1986), *Aquatic Angiosperms of Bangladesh* (Khan and Halim, 1987).

M. Salar Khan (1991) gave an excellent account of the progress of research and explorations on angiosperm taxonomy in Bangladesh and adjacent regions over two hundred years (until 1990s). The trends of taxonomic research in all plant groups in Bangladesh for the period of 1972-2002 has also been discussed by Irfanullah (2003). The present paper, therefore, makes an

attempt to update our knowledge up to 2012. It, however, focuses mainly on angiosperm taxonomy.

Trends, opportunities and progress of taxonomic research in the last two decades (1991-2000 and 2001-2012)

Opportunity of conducting taxonomic research was extremely limited until 1990 due to lack of sufficient number of trained taxonomists, adequate fund for field trips, Herbarium facilities and relevant books and journals. Trends of taxonomic research and its progress during the last two decades are evaluated by consulting available taxonomic literature, such as, Flora, Revisions, Journals, Bulletin, Checklists, Manuals, Reports and unpublished postgraduate Dissertations etc. (Khan, 1972-1987; Khan and Rahman, 1989-2002; Islam, 1991; Islam, 2003; Irfanullah, 2007; Rahman, 2012) and focused with brief discussions under several sub-heads.

Floristic research and Flora of Bangladesh Project

Bangladesh National Herbarium (BNH): At the beginning of last decade of 20th century, Bangladesh National Herbarium recruited some taxonomists and expanded its activities to make complete inventory of the flora of Bangladesh through systematic floristic survey, collection, preservation and identification of specimens, and Flora writing. M. Salar Khan (Founder Advisor of BNH) and his co-workers carried out extensive survey throughout the country and collected more than 100,000 specimens which have been preserved at the National Herbarium (BNH). He was engaged with BNH until his last breath in 2002 and carried out identification of his collected specimens and Flora writing towards complete inventory of the flora.

Although expected number of trained taxonomists were not produced until ninetieth decade, a good number of plant taxonomists in the field of angiosperms and a few in phychology were produced by the first decade of 21st century and have made remarkable contributions in exploring the flora and collecting huge number of specimens from all over Bangladesh including marine algae of the Bay of Bengal.

During the last two decades (1991-2010), complete inventory of only 15 angiosperm families containing 152 Genera and 355 species have been made to date and published in 15 Fascicles (Nos. 46-60) of the *Flora of Bangladesh* (1991-2010) from Bangladesh National Herbarium which is very slow and low progress for a long 20 years research. The inventory of these 15 families have been made by M.S. Khan, H. Ara, M.A. Rahman, C.C. Wilcock, M.M.K. Mia, M.M. Rahman, M. Khanam, Chand Mia, S. Hossain and S.N. Uddin (Table 2). In association of Bangladesh National Herbarium, taxonomists working in the University departments of Botany, Bangladesh Forest Research Institute, Chittagong (BFRI) and Bangladesh Council for Scientific and Industrial Research, Chittagong (BCSIR) have made significant contributions during this period to the progress of this inventory work.

Besides, a good number of family-wise checklists, new records, taxonomic revision of genera, medicinal and ethno-taxonomic reports etc. have been published during this period. For example, studies on the floristic diversity of: *Teknaf game reserve* (Khan *et al*., 1994), *Chunati wildlife sanctuary* (Khan and Huq, 2001); Generic revisions of: *Panicum* L. (Rahman, 1994); *Combretum* Loefl. (Mia 1995); *Pavetta* L. (Das *et al.* 2009); *Morinda* L. (Das and Rahman 2011);

Checklists of: Cucurbitaceae (Rahman, 1996), Verbenaceae (Mia and Uddin, 2000), *Gomphostemma* Wall. *ex* Benth. (Khanam *et al*., 2003); *Medicinal plants of Bangladesh-past, present and future* (Khan, 2003) etc.

However, it is only about 11.6% of the estimated number of species (*c*.5000) of the flora have been inventoried and the remaining 88.4% species belonging to more than 320 families are yet to be inventoried (Rahman, 2010).

Although excellent opportunity of research has been opened up at the newly built well equipped National Herbarium from the beginning of the first decade of 21st century, the trend of taxonomic and biodiversity research is not found to be progressive due to retirement of a number of experienced and dedicated workers from the Herbarium whom could not be replaced yet.

Bangladesh Association of Plant Taxonomists (BAPT) and Bangladesh Journal of Plant Taxonomy (BJPT)

In order to speed up taxonomic research towards complete inventory of the flora, a common platform to integrate taxonomists of Bangladesh belonging to all plant groups, although few in numbers, has been established in 1992 in the name of **Bangladesh Association of Plant Taxonomists (**BAPT) under the leadership of Prof. MS Khan at Bangladesh National Herbarium, BARC Complex, Farmgate, Dhaka. The BAPT at its beginning under taken the responsibility of production of a biannual taxonomic journal in the name of **Bangladesh Journal of Plant Taxonomy** (BJPT) which has been started by publication of its first issue in 1994 with 7 articles from the results of taxonomic researches of the members of the BAPT. During the last two decades a total of 37 issues of 19 volumes appeared with more than 320 articles on Bangladesh taxonomy belonging to all plant groups and about70 foreign articles (Table 3). The BAPT passed its glorious journey of two decades through, few but historic, activities under active direction and handsome management of two eminent taxonomists of the sub-continent, M. Salar Khan, who is regarded as the father of Bangladesh taxonomy, and A.K.M. Nurul Islam, who is regarded as the father of Algal taxonomy of Bangladesh. Until the last day of their lives, 2002 and 2006 respectively, both of them were involved with the BAPT as subsequent President and BJPT as subsequent Chief Editor. M. Salar Khan hold the positions at a time as first President of BAPT and first Chief Editor of BJPT until 2002. Thereafter A.K.M. Nurul Islam (DU) acted as the President of BAPT as well as Chief Editor of BJPT from October 2002 to June 2006. Afterwards, S. Hadiuzzam (DU) became the President of BAPT in 2006 and continued until 2011) and lastly M.A. Hassan (DU) took the position of President at the beginning of 2012. A.B.M. Enayet Hossain (JU) hold the position of Chief Editor of BJPT during 2006-2007 (vol. 13/2-14/2). Thereafter M.A. Hassan (DU) became the Chief Editor of BJPT in 2008 and continuing the responsibility at his earnest effort. During the last two decades of the BAPT, the responsibilities of its General Secretary have been performed subsequently by M.M. Rahman (1992-2004) and Mahbuba Khanam (2005-2007) of BNH and M Oliur Rahman (2008-2011) of DU.

BJPT is run by BAPT in a very successful way of management by producing quality papers maintained international standard, so far, for which it gained much more oversees response and Impact Factor of 0.674.

The BAPT, during these two decades, performed very limited activities due to some reasonable causes, such as, fewer number of members, lack of enough senior members to spare time, lack of enough fund and adequate facilities to provide to its members for carrying out taxonomic researches. Only one International Conference entitled 'Role of Plant Taxonomy in Herbal Medicine and Conservation Policy of Floral Diversity' was organized by BAPT at the Bangladesh National Herbarium, Dhaka, 17-19 March 2003. BAPT holds a number of one-day AGM with Key note speech. M. Salar Khan, A.K.M. Nurul Islam and A.B.M. Enayet Hossain were the key persons of presenting Key Note Speeches in several Annual Conferences of BAPT.
M. Salar Khan and M.M. Rahman had been able to obtain fund to carryout floristic survey through National Conservation Strategy (NCS) Implementation Project-I under BNH and BAPT and attracted foreign donors to build a modern and well equipped Herbarium Building. M. Salar Khan built up networking among taxonomists of other institutions for collaborative research, and successfully conducted NCS Implementation Project-I.

Botanical Explorations and Contributions of other Institutions

Since independence of Bangladesh, botanists of the Universities of Dhaka, Chittagong and Rajshahi, Bangladesh Forest Research Institute and Bangladesh Council for Scientific and Industrial Research have been conducting botanical explorations independently as part of their academic and research activities throughout the flora but no systematic survey had been made towards the complete inventory of the flora. During the last two decades, university botany departments have produced a very good number of quality taxonomists whom we could not engage in the expected fields.

Bangladesh Forest Research Institute Herbarium (BFRIH): D.K. Das and M.K. Alam of BFRI have made excellent contributions to the field of angiosperm taxonomy during the last two decades through their extensive survey of the forest flora, collection and preservation of a large number of specimens. A good number of taxonomic publications including many new records have been made, such as, *Trees of Bangladesh* (Das and Alam, 2001).

Bangladesh Council for Scientific and Industrial Research Herbarium (BCSIRH): Taxonomic research on medicinal plants, floristic survey and collection of specimens have been made from the Herbarium of BCSIR, Chittagong by M. Yusuf, J.U. Chowdhury and others, and excellent contributions through publications on new records and generic revisions have also made. Some of the noteworthy contributions of them are: *Medicinal Plants of Bangladesh* (Yusuf *et al*., 1994, 2009). Taxonomic Revisions of: *Crotalaria* L. (Yusuf and Alam, 1994), *Alpinia* Roxb. (Yusuf *et al*., 1999) etc.

Dhaka University Salar Khan Herbarium (DUSH): Remarkable taxonomic studies, mostly on floristic diversity and a few systematic study on families, have conducted in the postgraduate research projects for production of Dissertations, at the department of Botany of Dhaka University

under supervisions of MS Khan, MA Hassan and M Begum. A large number of taxonomic publications on floristic diversity, family-wise checklists, new records and discovery of new species have made during this period which are much more potential and provide valuable data for inventory works. For instance, publications on the studies of floristic diversity of: Bhawal National Park (Rahman and Hassan, 1995), Sitapahar at Kaptai (Uddin *et al*., 1998), Rema-Kalenga Wildlife Sanctuary (Uddin *et al*., 2002, 2003); Lalmai Hills (Hossain *et al.,* 2005), Runctia Sal Forest (Tutul *et al*., 2009, 2010), Lawachara National Park (Uddin and Hassan, 2010), Satchari National Park (Arefin *et al*., 2011) and Rampahar reserve forest-Lilliopsida (Uddin and Hassan, 2012) have been made. Besides, systematic studies on the families, such as, Portulacaceae (1999) and Bignoniaceae (2010) etc. have been made in postgraduate research projects. Recently also works on the genera *Senna* Mill. and *Desmodium* Desv. have been carried out by two postgraduate students with M. Begum and M.O. Rahman respectively in 2012. Besides, notable contributions in the field of ethno-taxonomy have also been made by M.A. Hassan, M.O. Rahman and M.Z. Uddin (Hassan, 1988; Hassan and Khan, 1986, Uddin *et al*., 2004).

During these two decades the department has produced more than 40 angiosperm taxonomists of which a few are actively engaged in taxonomic researches in the Department of Botany, DU and Bangladesh National Herbarium. In the recent years the taxonomic researches, conducted in the department, are highly qualitative and contributions are proved to be excellent in the field of Bangladesh taxonomy.

Chittagong University Herbarium (HCU)

As part of postgraduate research projects on taxonomy, innumerous floristic survey and collection of specimens from throughout the flora, specially the south-east part, have made during this period from the department of Botany, University of Chittagong. Botanical explorations for collection of specimens have also been conducted under Aberdeen University (UK)-Chittagong University (BD) Biodiversity Link Project co-ordinating by M. Atiqur Rahman, Professor of Botany. The project was initially funded by DFID managed by the British Council of Dhaka for three years only (1997-1999) and thereafter by Bangladesh Agricultural Research Council for two years and currently no external funding is in exist. Very recently, the Ministry of Science & Technology and the Ministry of Education allocated two separate funds for the project to continue taxonomic researches on the flora. Under this AU-CU Biodiversity Link Project, M.A. Rahman has been able to produce a team of well trained taxonomists, including foreign training with Doctoral Degrees, who are actively engaged in conducting floristic and ethno-taxonomical researches since 1997. The Link Project has been producing biannual issues of *Biodiversity Newsletter Bangladesh* and *Biodiversity Bulletin Bangladesh* since 1997 with taxonomic reports and new records.

Systematic studies of more than 20 families for inventory of taxa, have conducted during this period by postgraduate research students under supervision of M.A. Rahman for production of their Dissertations, these are: Acanthaceae, Apocynaceae, Asteraceae, Araceae, Convolvulaceae, Cucurbitaceae, Dioscoreaceae, Labiatae, Malvaceae, Orchidaceae, Rubiaceae, Scrophulariaceae, Solanaceae, Vitaceae, Zingiberaceae, etc. Besides, studies on the floristic diversity in many reserve

forests of the south-east part of Bangladesh have also been made. A large number of taxonomic publications on floristic diversity, family-wise checklists, new records and discovery of new species have also been made during these periods which are most valuable in providing taxonomic data for the inventory works and Flora writing. For instance, research carried out and publications made on floristic diversity of: Sitakundu (Rahman and Uddin, 1997), Himchari National Park (Uddin and Rahman, 1999), Hazarikhil reserve forest (M. Uddin 1996), Ramu upper rezu reserve forest (G. Uddin, 2010), Dopachari reserve forest (Biswas, 2010), Rampahar reserve forest-Magnoliopsida (Rahman *et al.,* 2012) etc. Some remarkable contributions to the taxonomy of Bangladesh made by M.A. Rahman and his co-workers through publications on the discovery of new taxa, new records, generic revisions, family-wise checklists and ethno-taxonomic reports etc. are: Checklists of: Apocynaceae (Rahman *et al.,* 2000), Asclepiadaceae (Rahman, 1989), Dioscoreaceae (Rahman and Das, 2001), Rubiaceae (Rashid *et al*., 1999), Vitaceae (Rahman *et al.,* 2003), Orchidaceae (Huda and Rahman, 1999) and Zingiberaceae (Rahman, 1996); New taxa and Revisions (Rahman and Wilcock, 1990, 1991, Rahman and Yusuf, 2002, 2012a, 2013, Yusuf and Rahman, 2003, Yusuf, 2004, Rahman *et al*., 1998, Das *et al*., 2002, 2009, Das and Rahman, 2011). Ethno-medicinal and ethno-taxonomic researches have also been developing since 1997 and gained a notable attainment by 2012 with production of some ethno-taxonomists and publication of more than 30 articles (Rahman, 1999, 2003a, 2008, Rahman *et, al*., 1998, 2000a).

During the last two decades, the Department of Botany has successfully produced more than 30 angiosperm taxonomists and outstretched its taxonomic research and floristic survey and enriched its Herbarium with deposition of more than 12000 angiosperm specimens and accumulation of a wide range of taxonomic literature. The Herbarium has opened up the opportunity of conducting taxonomic research and made excellent progress during the recent years under active participation of M.A. Rahman, M.K. Huda, M.H. Rashid, S.B. Uddin, S.C. Das, M.E. Rashid, C.K. Dey and others in Angiosperms and M.K. Pasha in Pteridophytes. Some of the notable publications, made during this period, are: *An enumeration of tree species of Chittagong* (Dey *et al*., 1998), *Annotated list of climbers of Chittagong* (Rahman and Rashid, 1999), *Plant diversity in Bangladesh and current nomenclature of Roxburgh plants from Bengal* (Rahman, 2001).

Department of Botany, Jahangirnagar University: The trend of taxonomic research conducted at the Jahangirnagar University Botany Department during the last two decades is, although not notable, seemed to be progressed satisfactorily but stand still after 2009 due to retirement of A.B.M. Enayet Hossain, an eminent taxonomist, who has made excellent contributions to the Botany in diverse field but made little contributions in floristic and systematic researches towards the inventory of the flora. However, some potential publications of Hossain and co-workers (Hossain, 2002, 2004; Hossain and Hassan, 2005; Hossain *et al*., 2001) are noteworthy.

Department of Botany, Rajshahi University: Although it is an old department, the trend of its taxonomic research is not progressive. A.T.M. Naderuzzan, an well known weed taxonomist of Bangladesh, has made some notable contributions to the taxonomy of weed flora of North Bengal

area. From the middle of current decade, virtually no taxonomic article on angiosperm flora from Rajshahi University is seemed to be appeared in the BJPT.

New Discovery and Endemics

At least 20 species have been discovered from the flora of Bangladesh which are new to Plant Sciences. 28 taxa endemic to Bangladesh have been recognized with determination of conservation status (Rahman and Rashid, 2013). Some of the published *sp. nov*. are:

Ampelygonum salarkhanii Hassan (1991) - Family Polygonaceae;
Bidaria indica Rahman & Wilcock (1989) - Asclepiadaceae;
Boesenbergia islamii Yusuf & Rahman (2003) - Zingiberaceae;
Curcuma roxburghii Rahman & Yusuf (2012) - Zingiberaceae;
Curcuma wallichii Rahman & Yusuf (2012) - Zingiberaceae;
Curcuma wilcockii Rahman & Yusuf (2012) - Zingiberaceae;
Cuscuta chittagongensis Sen Gupta, Khan *et* Huq (1983) - Cuscutaceae;
Globba rahmanii Yusuf (2004) - Zingiberaceae;
Gomphostemma salarkhaniana Khanam & Hassan (2003) - Lamiaceae;
Gymnema acuminata var. *glabrum* Rahman & Wilcock (1989) - Asclepiadaceae;
Mantisia salarkhanii Rahman & Yusuf (2002) - Zingiberaceae;
Oxystelma secamone var. *wallichii* Rahman & Wilcock (1990) - Asclepiadaceae;
Periploca acuminata Rahman & Wilcock (1991) - Periplocaceae;
Persicaria eciliata Hassan (1996) - Polygonaceae;
Tylophora indica var. *intermedia* Rahman & Wilcock (1989) - Asclepiadaceae;
Zingiber salarkhanii Rahman & Yusuf (2013) - Zingiberaceae.

The distribution of these new taxa outside Bangladesh is not yet known.

Production of Red Data Book

M. Salar Khan for the first time initiated the inventorying of threatened plants of the flora and produced first volume entitled "**Red Data Book of Vascular Plants Bangladesh**" (Khan *et al*., 2001) with 106 threatened species which covered only 2% of the total species estimated by Khan (1977).

The inventory of threatened species with full details for the production of Red Data Book has also been reinitiated since 1997 under Aberdeen University-Chittagong University (AU-CU) Biodiversity Link Project and published a first report with 18 threatened species (Rahman, 2001), second report with 58 species (Rahman *et al*., 2010), third and fourth reports with 306 and 58 threatened species respectively (Rahman, 2012a; Rahman and Das, 2012). Finally, the first volume of the **Red Data Book of Flowering Plants of Bangladesh** has been published with 235 threatened species of various categories from complete inventory of 13 families, and reported 45.19% taxa of these families as threatened and facing environmental threats at various degrees in the wild (Rahman, 2013), and the second volume with 351 species is under publication (Rahman, 2014).

Encyclopedia of Flora and Fauna of Bangladesh

In the recent years, the Asiatic Society of Bangladesh has published the *Encyclopedia of Flora and Fauna of Bangladesh* in 28 volumes, of which 7 volumes (6-12) deal with the angiosperms containing 3,611 species in 199 families, and 4 volumes (2-5) deal with the entries of different groups of Cryptogames and Gymnosperms (Ahmed *et al*, 2008, 2008a, 2008b, 2009, 2009a, 2009b; Siddiqui *et al.*, 2007). It was also made possible by only the joint efforts of taxonomists of the Dhaka University, Chittagong University, Rajshahi University, Jahangirnagar University, Bangladesh National Herbarium, Bangladesh Forest Research Institute and Bangladesh Council for Scientific and Industrial Research which was carried out under a 5-year project of the Asiatic Society of Bangladesh funded by the Ministry of Environment and Forest and the Ministry of Finance of the Government of Bangladesh. Among the contributors, the members of BAPT made major contributions providing almost all entries of the Encyclopedia.

Remarks

It is revealed from the evaluation of trends of taxonomic research, determination of problems and prospects in the progress of inventory of the flora and analysis of the activities of Bangladesh National Herbarium and Bangladesh Association of Plant Taxonomists that the Bangladesh is experiencing a bit serious crisis and difficulties in the development of taxonomic research in all groups of plants due to some acute obstacles, such as, lack of trained and experienced taxonomists; lack of adequate fund and facilities; lack of interest and job facilities; inadequate scholarships and overseas training support for higher studies in taxonomy; insufficient networking of the Herbarium (BNH) and Association (BAPT) to attract foreign donors and foreign partners to carry out **Flora Project** like Bhutan, Nepal, Sri Lanka, Singapore, Thailand and Malaysia; lack of initiatives to create training facilities and collaborative taxonomic research projects; ignorance of the appropriate authority of the Government about the importance of taxonomic research in the discovery of plant wealth and its conservation for sustainability of the environment. Making complete inventory of taxa towards the production of complete **Flora of Bangladesh** at the current rate, so far assessed, is almost uncertain within next two decades before disappearing of its vulnerable and endangered species unless otherwise BNH and BAPT take magical attempts to overcome the addressed problems by attracting foreign donors and foreign research partners like BM, E & K, and building up of strong networking. In spite of that, it is seemed to be promising since we have a good number of enthusiastic young researchers who can the challenge of change the scenario of taxonomic researches through strong networking.

Dedications and contributions of two pioneers, M. Salar Khan and A.K.M. Nurul Islam, are so outstanding and driving inspiration to the present researchers to give much attention and emphasis to the development of taxonomic research towards the complete inventory of the flora before disappearance of its vulnerable taxa within a shortest possible time.

Table 1. Publication details of the Flora of Bangladesh the during the period 1972-1990.

Fasc. no.	Family	No. of Genera	No. of Species	Author/s	Edited by (pbl. year)
1	a) Casuarinaceae	1	1	MS Khan & AM Huq	MS Khan (1972)
	b) Phytolaccaceae	1	1		
	c) Hydrophyllaceae	1	1		
	d) Martyniaceae	1	1		
	e) Caricaceae	1	1		
2	a) Moringaceae	1	1	MS Khan & AM Huq	MS Khan (1973)
	b) Polemoriaceae	1	1		
	c) Pedaliaceae	1	1		
	d) Baselliaceae	1	1		
	e) Butomaceae	1	1		
3	a) Ochnaceae	1	1	MS Khan & AM Huq	MS Khan (1973)
	b) Turneraceae	1	1		
	c) Fumariaceae	1	1		
	d) Tropaeolaceae	1	1		
	e) Flagellariaceae	1	1		
4	Commelinaceae	13	27	MS Khan & MK Alam	MS Khan (1977)
5	Sphenocleaceae	1	1	MS Khan and AM Huq	MS Khan (1977)
6	Onagraceae	1	6	MS Khan & S Nahar	MS Khan (1977)
7	Rhizophoraceae	5	9	MS Khan	MS Khan (1978)
8	Haloragaceae	1	2	MS Khan & M Halim	MS Khan (1978)
9	Nymphaceae	5	8	MS Khan &M Halim	MS Khan (1979)
10	Ceratophyllaceae	1	2	MS Khan & M Halim	MS Khan (1979)
11	Zannichelliaceae	1	1	MS Khan & M Halim	MS Khan (1979)
12	Sonneratiaceae	2	5	MS Khan	MS Khan (1980)
13	Buddeejaceae	1	1	MS Khan & AM Huq	MS Khan (1980)
14	Cannabidaceae	1	1	MS Khan & M Halim	MS Khan (1980)
15	Oxalidaceae	2	4	MS Khan & M Begum	MS Khan (1981)
16	Zygophyllaceae	1	1	MS Khan & AM Huq	MS Khan (1981)
17	Molluginaceae	2	3	MS Khan & M Halim	MS Khan (1981)
18	Averrhoaceae	1	2	MS Khan & AM Huq	MS Khan (1982)
19	Ruppiaceae	1	1	MS Khan & M Halim	MS Khan (1982)
20	Salicaceae	1	1	AM Huq	MS Khan (1982)
21	Orobanchachaceae	2	4	M Begum and AM Huq	MS Khan (1983)
22	Punicaceae	1	1	M Halim	MS Khan (1983)
23	Dichapetalaceae	1	1	AM Huq	MS Khan (1983)
24	Pontederiaceae	2	3	MM Rahman & M Halim	MS Khan (1984)
25	Dipterocarpaceae	5	8	MS Khan	MS Khan (1984)

26	Linaceae	2	2	MMK Mia & AM Huq	MS Khan (1984)
27	Trapaceae	1	2	MS Khan & M Halim	MS Khan (1984)
28	Hydrocharitaceae	6	9	MS Khan & M Halim	MS Khan (1985)
29	Juncaceae	1	1	MMK Mia & AM Huq	MS Khan (1985)
30	Convolvulaceae	15	59	MS Khan	MS Khan (1985)

Table 2. Publication details of the Flora of Bangladesh during the period 1991-2010/2.

Fasc. no.	Family	No. of Genera	No. of Species	Author/s	Edited by (pbl. year)
31	Aviceniaceae	1	3	MK Alam & BMR Khatun	MS Khan (1986)
32	Stylidiaceae	1	2	AM Huq	MS Khan (1986)
33	Loranthaceae	7	15	MK Alam	MS Khan (1986)
34	Aizoaceae	2	2	MS Khan & M Halim	MS Khan (1987)
35	Bixaceae	1	1	MS Khan & M Halim	MS Khan (1987)
36	Burseraceae	2	2	AM Huq & H Hasan	MS Khan (1987)
37	Peperomiaceae	1	1	B Khan	MS Khan (1988)
38	Burmanniaceae	1	1	AM Huq	MS Khan (1988)
39	Elatinaceae	2	4	MS Khan & M Halim	MS Khan (1987)
40	Potamogetonaceae	5	5	MS Khan & M Halim	Khan & Rahman (1989)
41	Stemonaceae	1	1	AM Huq & MM Mirza	Khan & Rahman (1989)
42	Plumbaginaceae	2	4	MS Khan & B Khan	Khan & Rahman (1989)
43	Cassythaceae	1	1	MS Khan & H Ara	Khan & Rahman (1989)
44	Hydrocotylaceae	2	2	AM Huq & MM Rahman	Khan & Rahman (1990)
45	Costaceae	1	1	MMK Mia & MM Rahman	Khan & Rahman (1990)
46	Xyridaceae	1	2	MS Khan & H Ara	Khan & Rahman (1991)
47	Periplocaceae	6	7	MA Rahman, CC Wilcock	Khan & Rahman (1991)
48	Asclepiadaceae	26	56	MA Rahman, CC Wilcock	Khan & Rahman (1995)
49	Menyanthaceae	1	4	M Khanam	Khan & Rahman (1995)
50	Combretaceae	6	20	MMK Mia	Khan & Rahman (1996)
51	Menispermaceae	14	16	MMK Mia	Khan & Rahman (1996)
52	Annonaceae	15	42	M Khanum & MM Rahman	Khan & Rahman (2002)
53	Solanaceae	13	34	MS Khan & C Mia	Khan & Rahman (2002)
54	Malvaceae	14	40	MS Khan & S Hossain	M Rahman (2003)

55	Cuscutaceae	1	6	MS Khan & M Khanum	Rahman & Khanam (2003)
56	Dilleniaceae	2	5	SN Uddin	Khanam & Ara (2007)
57	Capparaceae	4	13	MMK Mia, H Ara, B Khan	Khanam & Ara (2007)
58	Lamiaceae	34	83	M Khanum & MA Hassan	Khanam & Ara (2008)
59	Sapindaceae	12	21	SN Uddin,	Ara & Khan (2009)
60	Lecythidaceae	3	6	H Ara & MA Hassan	Ara & Khan (2009)

Table 3. Publication details of BJPT (37 issues of 19 volumes) during the period of 1994-2012.

Vol. No.	Year of publication	No. of articles in					
		Phycology	Bryophytes	Pteridoph	Angiosp.	Medi-Ethno-taxo	Foreign
1(1)	1994	1	1	-	5	-	-
1(2)	1994	1	1	-	4	-	1
2(1&2))	1995	-	-	-	6	-	-
3(1)	1996	-	1	1	6	--	--
3(2)	1996	1	2	1	4	1	1
4(1)	1997	1	-	1	10	-	-
4(2)	1997	-	1	1	7	-	-
5(1)	1998	1	-	-	6	-	2
5(2)	1998	2	2	-	2	1	1
6(1)	1999	-	-	-	7	-	-
6(2)	1999	1	-	1	3	-	3
7(1)	2000						
7(2)	2000	2	-	1	8	-	-
8(1)	2001	1	1	1	11	1	-
8(2)	2001	2	-	1	9	-	1
9(1)	2002	1	-	-	3	-	2
9(2)	2002	2	-	2	7	-	-
10(1)	2003	2	1	-	5	-	-
10(2)	2003	2	1	-	9	-	-
11(1)	2004	2	1	1	10	-	-
11(2)	2004	2	1	-	6	1	-
12(1)	2005	1	1	-	5	-	-
12(2)	2005	3	1	1	4	-	-
13(1)	2006	-	1	2	3	2	-
13(2)	2006	-	1	1	7	-	-
14(1)	2007	1	1	2	3	-	2

14(2)	2007	2	-	-	1	2	3
15(1)	2008	-					
15(2)	2008	4	-	-	4	-	1
16(1)	2009	3	-	1	2	-	6
16(2)	2009						
17(1)	2010	2	1	-	6	1	3
17(2)	2010	3	-	-	1	-	5
18(1)	2011	-	-	-	-	-	9
18(2)	2011	-	-	-	4	-	8
19(1)	2012	1	1	-	3	2	7
19(2)	2012	4	1	1	3	-	-
20 (1)	2013					2	2
8							
20 (2)	2013					3	-
9							

References

Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (eds.)., 2008. *Encyclopedia of Flora and Fauna of Bangladesh* **6**: 1-408. Asiatic Society of Bangladesh, Dhaka.

Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (eds.)., 2008a. *Encyclopedia of Flora and Fauna of Bangladesh* **7**: 1-546. Asiatic Society of Bangladesh, Dhaka.

Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (eds.)., 2009. *Encyclopedia of Flora and Fauna of Bangladesh* **8**: 1-478. Angiosperms: Dicotyledons (Fabaceae-Lythraceae). Asiatic Society of Bangladesh, Dhaka.

Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A. (eds.)., 2009a. *Encyclopedia of Flora and Fauna of Bangladesh* **9**: 1-488. Asiatic Society of Bangladesh, Dhaka.

Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A. (eds.)., 2009b. *Encyclopedia of Flora and Fauna of Bangladesh* **10**: 1-580. Asiatic Society of Bangladesh, Dhaka.

Ahmed, Z.U., Hassan, M.A., Begum, Z.N.T., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (eds.)., 2008b. *Encyclopedia of Flora and Fauna of Bangladesh* **12**: 1-505. Angiosperms: Monocotyledons (Orchidaceae- Zingiberaceae). Asiatic Society of Bangladesh, Dhaka.

Arfeen, M.K., Rahman, M.M., Uddin, M.Z. and Hassan, M.A., 2011. Angiospermic flora of Satchari National Park, Habiganj, Bangladesh. *Bangladesh J. Plant Taxon*. 18 (2): 3117-140.

Biswas, S., 2010. Taxonomic studies and investigation of plant diversity in Dopachari reserve forest, Chittagong, Bangladesh. Unpublished MS Thesis of CU.

Cowan, J.M., 1928. The Flora of Chakaria Sundarbans. *Rec. Bot. Surv. Ind*. 11(2), 119-225. Calcutta.

Cowan, A.M. and Cowan, J.M., 1929. The trees of Northern Bengal - including shrubs, woody climbers, bamboos, palms and tree ferns. Bengal Secretariat Book Depot. Calcutta. pp. 178.

Das, D.K. and Alam, M.K., 2001. Trees of Bangladesh. Bangladesh Forest Research Institute, Chittagong. pp. 342.

Das, S.C. and Rahman, M.A., 2011. Taxonomic Revision of the Genus *Morinda* L. (Rubiaceae) of Bangladesh. *Bangladesh J. Bot.* 40(2): 113-120.

Das, S.C., Rahman, M.A., Rashid, M.H. and Wilcock, C.C., 2002. Notes on the Rubiaceae 1: Four new records for Bangladesh. *Bangladesh J. Plant Taxon.* 9(1):67-75.

Das, S.C., Rashid, M.H. and Rahman, M.A.**,** 2009. Taxonomic Revision of the Genus *Pavetta* L. (Rubiaceae) of Bangladesh. *Plant Archievs* 9(2): 813-820.

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., 1998. An Enumeration of the tree species of Chittagong district. *Biodiversity Bulletin Bangladesh* 1: 1 - 81.

Hassan, M.A., 1988. Bangladesh Lokaj Banwsadhi, Hassan Book. House, 65 Pary Das Road. Banglabazar, Dhaka, Bangladesh.

Hassan, M.A., 1991. A new species of *Ampelygonum* D. Don (Polygonaceae) from Bangladesh. *Bangladesh J. Bot*. 20(2): 245.

Hassan, M.A., 1996. A new species of *Persicaria* (Tourn.) *ex* Mill. (Polygonaceae) from Bangladesh. *Bangladesh J. Plant Taxon*. 3(2): 87-89.

Hassan, M.A., Khan, M.S., 1986. Ethnobotanical records in Bangladesh-I: plants used for healing fractured bones. J. Asiatic Soc. Bangladesh (Sc.) XII (1&2): 33-39.

Heinig, R.L., 1925. List of Plants of Chittagong Collectorate and the Hill Tracts. The Bengal Government Branch Press, Darjeeling, India. pp. 84.

Hooker, J.D. (1872-1897). The Flora of British India, Vols. 1 – 7. L. Reeve & Co. Ltd., Kent, England. Bishen Singh Mahendra Pal Singh, Dehra Dun, India.

Hossain, A.B.M., 2002. A taxonomic report on the genus *Dendrobium* Sw. (Orchidaceae) from Bangladesh. *Bangladesh J. Plant Taxon*. 9 (2): 47-55.

Hossain, A.B.M., 2004. Taxonomic structure of the Nelsonieae (Acanthaceae)-I: Generic circumscriptions and their interrelationships. *Bangladesh J. Plant Taxon*. 11 (1): 19-30.

Hossain A.B.M. and Hassan, M.A., 2005. *Wedelia trilobata* (L.) A.S. Hitchc. (Asteraceae) – a new record for Bangladesh. *Bangladesh J. Plant Taxon*. 11 (1): 61-65.

Hossain, A.B.M., Gani, M.T., Khan, S.A. and Hossain, G.M., 2001. The importance of the floral biological characters in the systematic of the genus *Nympahea* (Tourn.) L. (Nymphaeaceae) from Bangladesh. *Bangladesh J. Plant Taxon*. 8 (1): 1-6.

Hossain, M.M., Hassan, M.A. and Uddin, M.Z., 2005. Checklist of angiospermic flora of Lalmai Hills, Comilla, Bangladesh. *Bangladesh J. Plant Taxon*. 12 (2): 85-96.

Huq, A.M., 1986. Plants Names of Bangladesh. Bangladesh National Herbarium (BARC), Dhaka.

Huq, A.M. and Khan, M.S., 1984. A preliminary taxonomic report on the angiospermic flora of Moheskhali Island-1. *Dhaka. Univ. Stud.* Part B 32(2): 19-31.

Irfanullah, H.M., 2002. Studies on aquatic vascular plants in Bangladesh: An appraisal. *Bangladesh J. Plant Taxon*. 9(1): 85-116.

Irfanullah, H.M., 2003. Present trends of plant taxonomy in Bangladesh and its future. Bangladesh Journal of Plant Taxonomy 10(1), 99-111.

Irfanullah, H.M., 2007. National Prof. A.K.M. Nurul Islam and his achievements. *Bangladesh J. Plant Taxon*. 14(1): V- XX.

Irfanullah, H.M., 2011. Conserving threatened plants of Bangladesh: miles to go before we start? *Bangladesh J. Plant Taxon*. 18(1): 81-91.

Islam, A.S., 1952. A Preliminary report on the ferns of East Pakistan. *Pak. J. Forestry* 3: 280-282.

Islam, A.K.M.N., 1965. Taxonomic study of the species of *Dichotomosiphon* and *Vaucheria* found in East Pakistan. *Proc. Pak. Acad. Sci.* 2(1): 47 – 56 + 9 pls.

Islam, A.K.M.N., 1969. A preliminary report on the phytoplankton and other algae of Chittagong Hill Tracts. *J. Asiatic Soc. Pak*. 14(3): 343 – 363 + 13 pls.

Islam, A.K.M.N., 1991. Two Centuries of Plant studies in Bangladesh and adjacent regions. *Asiat. Soc. Bangladesh.*

Islam, A.K.M.N., 2003. Late Prof. Md. Salar Khan: His achievements. *Bangladesh J. Plant Taxon*. 10(1): 1- 14.

Khan, M.S. (ed.)., (1972-1987). Flora of Bangladesh. Fasc. 1-39. Bangladesh National Herbarium, Dhaka.

Khan, M.S., 1991. Angiosperms. In: Two Centuries of Plant Studies in Bangladesh and Adjacent Regions (*ed*. Islam, A.K.M. Nurul), Asiatic Societyof Bangladesh, Dhaka, pp. l75−194.

Khan, M.S., 2003. Medicinal Plants of Bangladesh-Past, Present and Future. Presented in Bangladesh National Museum 1999.

Khan, M.S. and Afza, S.K., 1968. A taxonomic report on the angiospermic flora of Teknaf and St. Martin's Island. *The Dacca Univ. Stud.* 16(B): 25-30.

Khan, M.S. and Alam, M.K., 1986. Homestead Flora of Bangladesh. BARC, International Development Research Centre. Village and Farm Forestry Project. SDC.

Khan, M.S. and Banu, F., 1969. A taxonomic report on the angiospermic flora of Chittagong Hill Tracts-1 (Monocotyledons). *J. Asiatic Soc. Pakistan* 14(2): 217-224.

Khan, M.S. and Halim, M., 1975. Taxonomic studies in Labiatae of Dacca and its surroundings-1. *Bangladesh J. Bot.* 4 (1 & 2): 37 – 47.

Khan, M.S. and Halim, M., 1975a. Taxonomic studies in Labiatae of Dacca and its surroundings-2. *Bangladesh J. Bot.* 6 (1 & 2): 99 – 108.

Khan, M.S. and Halim, M., 1987. Aquatic Angiosperm of Bangladesh. Bangladesh Agricultural Research Coucil.

Khan, M.S. and Huq, M.A., 1975. Medicinal plants of Bangladesh. Bangladesh Agricultural Research Coucil. pp.1-27.

Khan, M.S. and Huq, M.A., 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. 179.

Khan, M.S., Rahman, M.M., Huq, M.A., Mia, M.M.K. and Hassan, M.A., 1994. Assessment of Biodiversity of Teknaf Game Reserve in Bangladesh focusing on economically and ecologically important plant species. *Bangladesh J. Plant Taxon*. 1 (1): 21-33.

Khan, S.A., 1957. Studies in Ricciaceae of East Bengal. 1. New and Little known species of *Riccia*. Bryologist, 60: 28 – 32.

Khanam, M., Khan, M.S. and Hassan, M.A., 2003. Revisionary study of the genus *Gomphostemma* Wall. *ex* Benth. (Lamiaceae) from Bangladesh. *Bangladesh J. Plant Taxon*. 10(2): 1 – 9.

Khanam, M. and Hassan, M.A., 2003. Gomphostemma salarkhaniana Khanam & Hassan, a new species for Bangladesh. *Bangladesh J. Bot.* 32 (1): 63-64.

Mia, M.M.K., 1995. A taxonomic revision of the genus *Combritum* Loefl. (Combretaceae) from Bangladesh. *Bangladesh J. Plant Taxon*. 1(1): 1 – 20.

Mia, M.M.K. and Uddin, S.N., 2000. An annotated checklist of Verbinaceae in Bangladesh. *Bangladesh J. Plant Taxon*. 7(2): 27 – 45.

Naderuzzaman, A.T.M. and Islam, M.A., 1984. An Annotated list of trees of Rajshahi. *Rajshahi University Studies* (Part-B) 12: 1 – 27.

Prain, D., 1903a. Bengal Plants, Vols. 1 & 2. Botanical Survey of India, Bishen Singh Mahendra Pal Singh, Dehra Dun, India.

Prain, D., 1903b. The Flora of Sundarbans. *Rec. Bot. Surv. Ind*. 2(4): 231-270.

Rahman, M.A., 1996. Distribution, diversity and taxonomy of the family Zingiberaceae in the flora of Bangladesh. *J. Econ. Taxon. Bot. Additional Series* 19:13-19 (India).

Rahman, M.A., 1999. Ethno-medico-botanical knowledge among tribals of Bangladesh. *J. Econ. and Taxon. Bot.* 23(1):89-93 (India).

Rahman, M.A., 2000. A catalogue of plant specimens of Bangladesh collected under AU-CU Biodiversity Link Project held at the Herbarium of Chittagong University. *Biod. Bull. Bangladesh* 3: 1- 46.

Rahman, M.A., 2003. Some threatened forest species- IUCN Red List Categories. *Biod. Newsletter Bangladesh*. 7 (1& 2): 1-2.

Rahman, M.A., 2003a. Ethno-medico-botanical knowledge among tribals of Bangladesh. In: *Ethnobotany and Medicinal Plants of Indian Subcontinent*. Scientific Publisher, Jodhpur, India. pp.89-93 (India).

Rahman, M.A.**,** 2010. Indigenous knowledge of herbal medicine in Bangladesh 3: Treatment of skin diseases by tribal communities of the Hill Tracts districts. *Bangladesh J. Bot.* 39(2): 169-177.

Rahman, M.A., 2012. Flora of Bangladesh Project - Progress, Problems and Prospect. Presented in the "Int. Conf. on Global Ecosystems, Biodiversity, Environmental Sustainability in the 21st Century". Held at Assam University in February 15-17, 2012.

Rahman, M.A., 2012a. Inventory of Threatened Vascular Plants of Bangladesh for Conservation and Production of a Red Data Book. A report submitted to the Ministry of Education, Bangladesh.

Rahman, M.A., 2013. Red Data Book of Flowering Plants of Bangladesh. Chittagong, Vol.1, pp. 256.

Rahman, M.A., 2014. Red Data Book of Flowering Plants of Bangladesh. Chittagong, Vol.2. Manuscript under publication.

Rahamn, M.A. and Yusuf, M., 1996. Diversity, Ecology and Ethnobotany of the Zingiberaceae of Bangladesh. *J. Econ. Taxon*. Additional series 12.

Rahman, M.A. and Wilcock, C.C., 1990. Notes on tropical Asian Asclepiadaceae III. Blumea 34(2): 519 – 520.

Rahman, M.A. and Wilcock, C.C., 1991. A new species of *Periploca* (Periplocaceae) from Bangladesh. *Bot. J. Linn. Soc*. 110: 373 – 377. London.

Rahman, M.A. and Uddin, S.B., 1997. Assessment of plant diversity of Sitakunda in Chittagong. *Bangladesh J. Plant Taxon*. 4 (1): 17-36.

Rahman, M.A. and Rashid, M.H., 1999. An annotated check list of climbers of Chittagong. *Biod. Bull. Bangladesh* 2: 1-54.

Rahman, M.A. and Rashid, M.E., 2013. Status of endemic plants of Bangladesh and conservation management strategies. International Journal of Environment (IJE), Nepal. 2(1): 231-249.

Rahman, M.A., Khisha, A., Uddin, S.B. and Wilcock, C.C., 2000a. Indigenous knowledge of plant use in a Hill Tracts tribal community and its role in sustainable development. In Paul Sillitoe's *Indegenous knowledge development in Bangladesh,* pp. 75 - 78. The University Press Limited, Dhaka, Bangladesh.

Rahamn, 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): 59-76.

Rahamn, M.A. and Das, S.C., 2001. Dioscoreaceae of Bangladesh: Diversity, Distribution and Ethnobotany. *Bangladesh J. Plant Taxon*. 8(1): 19-26.

Rahman, M.A. and Yusuf, M., 2002. *Mantisia salarkhanii* Rahman and Yusuf, a new species of Bangladesh. *Saud. J. Biol. Sci*. 9 (2): 105.

Rahman, M.A. and Das, S.C., 2012. Threatened rubiads of Bangladesh and their conservation management. Paper presented in the "Int. Conf. on Biodiversity, Conservation and Environmental Health" held at Assam, India in March 16-17, 2012.

Rahman, M.A. and Yusuf, M., 2012a. Three new species of Bangladesh. *Bangladesh J. Plant Taxon*. 19(1): 79-84.

Rahman, M.A. and Yusuf, M., 2013. *Zingiber salarkhanii* (Zingiberaceae), A new species from Bangladesh. *Bangladesh J. Plant Taxon*. 20(2): 239-242.

Rahman, M.A. and Rashid, M.H., 2013. Status of endemic plants of Bangladesh and their conservation management. *Int. Jour. Env.* 2(1): 231-249.

Rahman, M.A., Uddin, S.B. and Khisha, A., 1998. A report on some anti-jaundice plants from tribal community of Hill tracts districts. *Biodiversity Newsletter Bangladesh* 2(1): 4.

Rahman, M.A., Rashid E. and Wilcock C.C., 2003. Diversity, distribution and ethno-botany of the Vitaceae of Bangladesh. *J. Saudi Soc. Agric. Sci.* 2(1): 15-35.

Rahman, M.A., Das, S.C. and Rashid, M.E., 2010. The IUCN Red List Categories Angiosperm Plants of Bangladesh and their Conservation. *J. Taxon. Biodiv. Res*. 4: 17-34.

Rahman, M.A., Das, S.C. Yousuf, M. and Wilcock, C.C., 1998. Three new records in the Dioscoreaceae from Bangladesh. *Bangladesh J. Pl. Taxon*. 5(1): 77 – 83.

Rashid, M.H., Rahsid, M.E. and Rahman, M.A., 2014. Environmentally threatened plants of Bangladesh and their conservation management. *Int. Jour. Env.* 3(1): 2051-2054

Rahman, M.A., Uddin, M.N., Rashid, M.E., Uddin, M.N. and Islam, M.M., 2012. Floristic Diversity in Rampaher reserve forest of Kaptai, Rangamati. *Biod. Bull. Bangladesh*. 6: 1-31.

Rahman, M.M., 1994. A taxonomic revision of the genus *Panicum* L. (Gramineae) from Bangladesh. *Bangladesh J. Plant Taxon*. 2(1 &2): 7-24.

Rahman, M.O., 1996. An annotated checklist of Cucurbits of Bangladesh. *Bangladesh J. Plant Taxon*. 3(1): 57 – 65.

Rahman, M.O. and Hassan, M.A., 1995. Angiospermic flora of Bhawal National Park, Gazipur (Bangladesh). *Bangladesh J. Plant Taxon*. 2 (1 & 2): 47-80.

Rashid, M.H., Rahman, M.A. and Khan, M.S., 1999. A checklist of the Rubiaceae of Bangladesh. *Bangladesh J. Plant Taxon*. 6(1): 97-109.

Raizada, M.B., 1941. On the flora of Chittagong. *The Indian Forester* 67(5): 245-254.

Roxburgh, W., 1814. Hortus Bengalensis (*num. nud*.). Boerhaave press, Leiden (Holland). pp.105.

Roxburgh, W., 1832. Flora Indica or Description of Indian Plants. Carey, W. (ed.). Vol. 3. Mission press, Serampore, Calcutta, India.

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., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U. (eds.)., 2007. *Encyclopedia of Flora and Fauna of Bangladesh* **11**: 1-399. Angiosperms: Monocotyledons (Agavaceae-Najadaceae). Asiatic Society of Bangladesh, Dhaka.

Sinclair, J., 1956. The Flora of Cox's Bazar, East Pakistan. *Bull. Bot. Soc.Beng.* 9(2): 1- 116. Botanical Society of Bengal, Calcatta, India.

Tutul, E., Uddin, M.Z., Rahman, M.O. and Hassan, M.A., 2009. Angiospermic flora of Runctia Sal Forest, Bangladesh-I. 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 Runctia Sal Forest, Bangladesh-II. 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 (unpublished). Chittagong University.

Uddin, M., 1996. Investigation and Assessment of Plant diversity in Hazarikhil, Chittagong. Unpublished M. Sc. Thesis, Chittagong University.

Uddin, M.Z., Hassan, M.A. and Khan, M.S., 2002. An Annotated Checklist of angiospermic Flora of Rema-Kalenga Wildlife Sanctuary. (Habiganj) in Bangladesh-I. Liliopsida (Monocots). *Bangladesh J. Plant Taxon*. 9 (2): 57-66.

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-IIa. Magnoliopsida (Dicots). *Bangladesh J. Plant Taxon*. 10 (1): 79-94.

Uddin, M.Z. and Hassan, M.A., 2010. Angiospermic diversity of Lawachara National Park (Bangladesh): A preliminary assessment. *Bangladesh J. Plant Taxon*. 17 (1): 9-22.

Uddin, S.B. and Rahman, M.A., 1999. Angiospermic flora of Himchari National Park, Cox's Bazar. *Bangladesh J. Plant Taxon*. 6 (1): 31-68.

Uddin, S.N. and Hassan, M.A., 2012. Angiospermic flora of Rampahar Reserve forest under Rangamati district in Bangladseh.I. Liliopsida (Monocots). *Bangladesh J. Plant Taxon*. 19 (1): 37-44.

Uddin, S.N., Khan, M.S., Hassan, M.A. and Alam, M.K., 1998. An Annotated Checklist of angiospermic flora of Sitapahar at Kaptai in Bangladseh. *Bangladesh J. Plant Taxon*. 5 (1): 13-46.

Uddin, S.N. Uddin, M.Z., Hassan, M.A. and Rahman M.M., 2004. Preliminary Ethnobotanical plant Suevey in Khagrachari District, Bangladesh, *Bangladesh J. Plant Taxon*. 11 (2): 39-48.

Wallich, N. (1828-1849). A Numerical list of dried specimens of plants in the East Indian Company's Museum, *Ined.*

Wilde , W. J. J. O. de., 1979. *Knema bengalensis* (a new species) Blumea 25(2): 413.

Yusuf, M., 2004. *Globba rahmanii* Yusuf (Zingiberaceae) - A new species from Bangladesh. *J. Econ. Taxon. Bot*. Vol. 28 No. 1.

Yusuf, M. and Alam, M.K., 1994. A taxonomic study in the genus *Crotalaria* L. from Bangladesh. *Bangladesh J. Plant Taxon*. 1(1): 43 – 60.

Yusuf, M. and Rahman, M.A., 2003. *Boesenbergia islamii* Yusuf & Rahman (Zingiberaceae) *sp. nov*. - a new species from Bangladesh. *Saudi J. Bio. Sci.* 10(1): 51-55. (KSA).

Yusuf, M., Wahab, M.A., Chowdhury, J.U. and Begum, J., 1994. Medicinal Plants of Bangladesh. BCSIR Laboratories, Dhaka, Bangladesh.

Yusuf, M. Rahman, M.A. and Hossain, A.B.M.E., 1999. Taxonomic studies in the genus *Alpinia* Roxb. (Zingiberaceae) from Bangladesh. *J. Econ. Taxon. Bot*. Additional series 19: 13-19 (India).

Yusuf, M., Begum, J., Hoque, M.N. and Chowdhury, J.U., 2009. Medicinal Plants of Bangladesh. Revised and Enlarged, 2nd edition. BCSIR Laboratories, Dhaka, Bangladesh.