Contribution to the Flora of Barak Valley: Conservation Status and Economic Potential of Herbaceous Plant Resources of Cachar District of Assam, India

M. K. Baruah[1*], G. Chakraborty[1] and M. Dutta Choudhury[2]

[1]Department of Botany, Cachar College, Silchar, Assam (788 014), India
[2] Department of Life Science and Bioinformatics, Assam University, Silchar, Assam (788 014), India

Article History

Manuscript No. c190
Received in 26th October, 2012
Received in revised form 4th February, 2013
Accepted in final form 18th May, 2013

Correspondence to

E-mail: mkb_taxonomy@rediffmail.com

Keywords

Herbaceous flora, conservation, economic potential, Cachar, Barak Valley

Abstract

The present paper focuses on the Contribution to the Flora of Barak Valley and their conservation status and Economic potential of herbaceous plant resources of Cachar district of Assam, India. Using traditional taxonomic techniques species have been collected from the study area during 2009-2012 and an attempt has been made to collect information on the economic uses of this species from the field through personal communications with the inhabitants of the remote villages and also collated from the earlier authentic works and available literature. In this study a total of 465 herbaceous species including cultivated ones under 116 families have been collected. Out of 465 species, about 242 economically important species have been recorded here which are used by the local people in different ways. Various anthropogenic activities and encroachment of forest leading to deforestation was observed frequently in many areas of the district and it is the main cause to destroy the habitat of herbaceous vegetation. Due to lack of accessibility, some of the floristically rich areas of the district remained totally unexplored. It is therefore important that conservation strategies be directed to protect the important forest areas of the district and special measures may be taken to explore the unexplored areas so that the rich herbaceous flora of the district could be documented and preserved.

1. Introduction

North-east India is regarded as the Bio-geographical gateway for its varied kinds of biological resources and comprises of eight states i.e. Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura is predominantly tribal region has a tremendous scope for ethno-medicinal works or study. The north-east India is the 12th mega biodiversity region of the world and its ecosystem vary from tropical to wet evergreen moist deciduous, sub alpine, alpine forest and grassland to numerous fresh water lakes, rivers, wetlands and swamps. Topographically the region is mostly hilly and the climate varies from sub tropical climate in the plains of Assam, Tripura and Manipur to temperate climate in parts of Meghalaya, Nagaland and Arunachal Pradesh. The region receives a high precipitation that makes the area an ideal place for the survival for a large numbers of plants and animal species. The varied physiography of north-eastern region together with rich vegetation cover and floristic diversities has made the region a *hot spot* of the country. In this region we find mountainous terrain, plateaus and plains and this is a distinct geographical entity having variegated natural landscape with diverse colorful ethnic communities and they have profound knowledge in traditional ethno-medicinal plants. Such a rich biodiversity in the area has provided an initial advantage to its inhabitants for observing, and scrutinizing the rich flora and fauna to develop their own traditional knowledge. Over the years, they have developed a great deal of knowledge on the use of plants and plant products in curing various diseases and ailments. Therefore, it is necessary to study the plants and gather the information on the plant species used by the tribal groups and similar studies need to be carried out across the various tribal communities for comparison as well as documenting the knowledge which is under threat due to the influence of modernization.

The region covered in the present study i.e. the southern most Cachar district is one of the oldest districts of Assam, India. The district covers an area of about 3,786 km^2. which constitute 4.83% of the total area of Assam. Geographically, the district is bounded on the north by Borail Reserve Forest and Jaintea Hill Ranges, on the south by the state Mizoram, on the east by

Manipur state and on the west by two districts-Hailakandi and Karimganj district of Barak Valley of Assam and Tripura state. The area has been an altitude of 26-27 amsl and this fall under $24^0 8'$ and $25^0 8'$ N latitude and $92^0 15'$ and $93^0 15'$ E longitude. Out of the total area of 3,786 km^2 area, the Reserve Forest (R. F.) area covers an area of about 82,857.5 hectare. The different reserve forests are: Borail R.F. (7302 ha), Sonai R.F. (3553 ha), Upper Jiri R.F. (3600 ha), Barak R.F. (20,203 ha), Katakhal R.F. (640 ha) and Inner line part (49,568 ha) (Statistical Hand Book, Govt. of Assam, 2002). But this is only a tentative statistical account as heavy encroachment is in progress in Reserve Forest areas, open areas and even in marshy areas; as a result rapid urbanization and industrialization has effected the area. The district is important both due to its unique geographical location and its floristic diversity and the district experiences a damp and warm humid weather with frequent rainfall. The rainy season starts from April to September, while the months of December and January exhibit very dry weather in Cachar district. The relative humidity is 95% in the morning and 52% in the afternoon. The pH of the soil ranges from 4.5 to 6.0. The ecological weather variation contributes to the growth of the luxurious forests in the district. The high lands are planted with tea, while the lower levels are covered with rich crops of waving paddy. The river Barak flows from east to west through the centre of the plain valley. Although Barak is the main river of Cachar, a number of tributaries i.e. Jiri, Chiri, Madhura and Jatinga are on the north and Sonai, Dholeswari and Katakhal are on the south.

The *Flora of Assam* volume I-5, by U. N. Kanjilal et al. (1934-40), is the pioneer and most important contribution to the floristic works of this region, which paid special attention to woody or arborescent plants. Recently *Assam's Flora -Present status of Vascular Plants* by Choudhury, 2005 added our more knowledge to the flora of Assam. Quite a good number of research works related to flora and ethno-botany have been carried out by several workers in the district which give valuable information. Some of the district level floristic studies in Cachar district includes- Malakar, (1995) worked on *Aquatic Angiosperms of Cachar district, Assam* Ph.D. thesis, GU, Guwahati; Bhattacharya et al., (1998) worked on A *survey of the Pteridophytic flora of Cachar district of Assam*; Sharma, G. D. et al., (2002) has recorded 10 genera of Bryophytes, as many as 34 species of Pteridophytes and 165 species of Angiosperms from Cachar district in his survey work *Status of plant biodiversity of Cachar district and its conservation;* Das, (2007) recorded a total of 108 species of Ferns and fern allies belonging to 57 genera and 36 families from southern Assam. She has also recognized ethno-medicinal utility of 70 species out of 108 species. The exact number of herbaceous species occurring in the study area is uncertain due to inadequate exploration. In view of this, the present study Contribution to theflora of Barak Valley: Conservation status and Economic potential of herbaceous plant resources of Cachar district of Assam, India has been undertaken to fill this gap and to provide a comprehensive list of herbaceous plants present in the district with various habitats and their conservation.

2. Materials and Methods

To enumerate the Contribution to the Flora of Barak Valley: Conservation status and Economic potential of Herbaceous plant resources of Cachar district of Assam, intensive field visits were undertaken in study area throughout the year during 2009-2011. A substantive amount of species have been collected from the study area and critically studied them in their natural habitats. The collected specimens were pressed, dried and after poisoning the species were mounted on the herbarium sheets. Herbarium methods and techniques were followed as recommended by Jain and Rao, 1977. For authentic identification, the collected specimens were identified mainly with the help of *Flora of Assam* volumes 1-5 by Kanjilal et al. (1934, 1936, 1938 and 1940) and other standard works and finally confirmed by consulting experts of Herbarium of Botanical Survey of India, ERC, Shillong; ethnimedicinal uses information gathered from the local people.

3. Results and Discussion

In the present study a total of 465 species of herbaceous plants belonging to 322 genera and 116 families were collected which includes 34 species of pteridophytes under 27 genera and 21 families and 278 species under 181 genera and 66 families are dicot and 153 species of 114 genera under 29 families are monocot of angiosperms (Table 1). It is observed that plants belonging to Asteraceae (37 species) and Poaceae (31 species) are dominant in angiosperms and the family Pteridaceaec (06 species) and Polypodiaceae (04 species) are in Pteridophytes in comparison to others. The ten dominant families are Asteraceae, Poaceae, Orchidaceae, Papilionaceae, Cucurbitaceae, Solanaceae, Araceae, Lamiaceae, Scrophulariaceae and Zingiberaceae etc (Figure 1). Among them *Solanum* (9 spp.) is the largest genera. Whereas others dominating genera are *Dendrobium* (08 spp.), *Brassica* (06 spp.), *Polygonum, Pteris* (05 spp.), *Ocimum, Ipomoea*, *Cucurbita*, *Cassia* and *Musa* (04 spp.) etc. Some families of herbaceous angiosperms viz.

Table 1: Comparative data of Pteridophytes, Dicot and Monocot species

Groups		Family	Genera	Species
Pteridophytes		21	27	34
Angiosperms	Dicot	66	181	278
	Monocot	29	114	153
Total		116	322	465

Nelumbonaceae, Papaveraceae, Portulacacaeeae, Sterculiaceae, Sapindaceae, Rosaceae, Crassulaceae, Trapaceae, Caricaceae, Boraginaceae, Evolvulaceae, Cuscutaceae, Thunbergiaceae Baselaceae, Cannabinaceae, Costaceae, Bromeliaceae, Amaryllidaceae etc, are represented by single species where as in pteridophytic herbs most of the families are represented by single species. Out of total species recorded from the study area, 405 species are terrestrial, 28 species are aquatic and only 32 species are epiphytic. It also observed that a total of 53 species are climbers or climbing herbs.

During the field survey, different aspects of economic uses

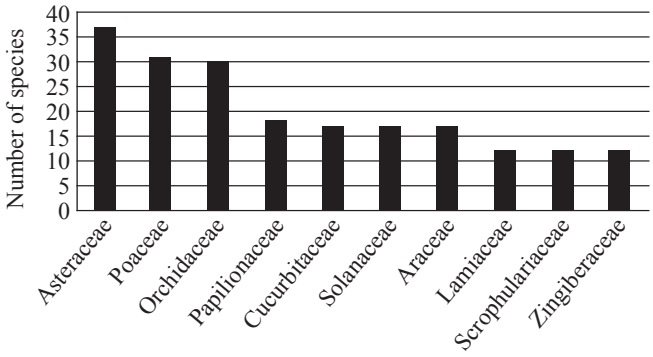

Figure 1: The ten dominant families of the study area.

Table 2: The different modes of utilization of plants

Mode of uses	Pteridophytes	Dicot	Monocots	Total	(%)/242
Plants with medicinal value	07	147	48	202	43.44
Plants with food value (vegetables, fruit and spices)	03	91	112	116	24.94
Miscellaneous uses (fibre, dye, ritual etc)	-	16	05	21	04.52
Total	10	173	59	242/465	51.18

Table 3: List of economically important plants arranged alphabetically with Botanical names, families, collection numbers, vernacular names (Local Bengali names) and their mode of uses.

Botanical names, Family and collection numbers	Vern. Name	Mode of uses
Abutilon indicum (L.) Sweet [Malvaceae]-MKB022	Patari	Medicine, fibre,
Achyranthes aspera L. [Amaranthaceae]-MKB086	Apang	Medicine, vegetables
Acorus calamus L. [Araceae]-MKB017	Bosh	Medicine
Aerides multi-flora Roxb. [Orchidaceae]-MKB243	Por gasha	Medicine
Ageratum conyzoides L. [Asteraceae]-MKB042	Sial murti	Medicine
Aglaolnema hookerianum Schott. [Araceae]-MKB117	-	Medicine
Allium cepa L. [Liliaceae]-MKB434	Rasun	Medicine, Vegetable, Spice
Allium hookeri Thw. [Liliaceae]-MKB196	Zenam	Vegetable
Allium sativum L. [Liliaceae]-MKB435	Piyaj	Medicine, Vegetable, spice
Alocasia fornicata (Roxb.) Schott. [Araceae]-MKB169	Mankochu	Food and Vegetable
Alocasia indica (Lour.) Koch. [Araceae]-MKB 325	Mankochu	Medicine, vegetable,
Aloe barbadensis Mill. [Lilaceae]-MKB198	Ghrito kumari	Medicine
Alpinia malaccensis (Burm. f.) Rosc.[Zingiberaceae]-MKB062	Deo tara	Medicine
Alpinia galanga (L.) Willd. [Zingiberaceae]-MKB060	Tara	Medicine
Alternanthera sessilis (L.) R. Br. ex DC. [Amaranthaceae]-MKB316	Chanchi	Medicine, vegetable
Amaranthus spinosus L. [Amaranthaceae]-MKB301	Kanta notey	Medicine, vegetable
Amaranthus tricolor L. [Amaranthaceae]-MKB429	Denga	Vegetable
Amaranthus viridis L. [Amaranthaceae]-MKB428	Bon notey	Medicine, vegetable
Amorphophallusbulbifera (Roxb.) Bl. [Araceae]-MKB345		Medicine, vegetable
Amorphophallus campanulatus Bl. [Araceae]-MKB200	Ol kochu	Medicine, vegetable
Ananas cosmosus (L.) Merr. [Bromeliaceae]-MKB008	Anaros	Medicine
Andrographis paniculata (Burm.f.) Wall. ex Nees [Acanthaceae]-MKB049	Kalmegh	Medicine
Anisomeles indica (L.) O. Kuntze [Lamiaceae]-MKB373	Rujanta	Medicine, vegetable

Continue

Argemone maxicana L. [Papaveraceae]-MKB205	Shial Kanta	Medicine
Arisaema tortuosum (Wall.)Schott [Araceae]-MKB457	Jongli kochu	Food and Vegetable
Artemesia maritime L. [Asteraceae]-MKB414	-	Medicine
Asclepias curassavica L. [Asclepiadaceae]-MKB259	-	Medicine
Asparagus racemosus Wild. [Liliaceae]-MKB325	Satamul	Medicine
Bacopa monnieri (L.) Penn. [Scrophulariaceae]-MKB265	Brahmi	Medicine, Food, Vegetable
Basella alba L. [Basellaceae]-MKB374	Pui	Medicine, vegetable
Begonia palmata D. Don [Begoniaceae]-MKB028	-	Medicine
Beta vulgaris L. [Chenopodiaceae]-MKB424	Beet	Vegetable
Bidens pilosa L. [Asteraceae]-MKB 416	-	Medicine, vegetable
Blechnum orientale L. [Blechnaceae]-MKB002	-	Medicine
Blumea lacera (Burm.f.) DC. [Asteraceae]-MKB	-	Medicine
Boerhaavia diffusa L. [Nyctaginaceae]-MKB051	-	Medicine, vegetable
Borreria articularis (L.f.) Will. [Rubiaceae]-MKB120	Lonka bon	Medicine
Brassica campestris L. [Brassicaceae]-MKB404	Sarisha	Medicine, Food, Vegetable
Brassica juncea (L.) Czern. [Brassicaceae]-MKB403	Lai shak	Food and Vegetable
Canavalia cathertica Thou. [Papilionaceae]-MKB465	Sim/uri	Vegetable
Canna indica L. [Cannaceae]-MKB268	Sarbajay	Medicine
Cannabis sativa L. [Cannabinaceae]-MKB484	Bhang	Medicine, fibre
Capsicum frutescens L. [Solanaceae]-MKB334	Morich	Medicine
Cardiospermum helicacbum L. [Sapindaceae]-MKB-046	Photphoti	Medicine
Carica papaya L. [Caricaceae]-MKB238	Pepe/papaya	Medicine, vegetable
Cassia alata L. [Caesalpiniaceae]-MKB156	Sonali	Medicine
Cassia occidentalis L. [Caesalpiniaceae]-MKB211	Kalkasunda	Medicine
Cassia sophera L. [Caesalpiniaceae]-MKB130	Jhonjoni gach	Medicine
Cassia tora L. [Caesalpiniaceae]-MKB131	Bon medelua	Medicine
Catharanthus roseus (L.) G. Don [Apocynaceae]-MKB258	Nayantora	Medicine
Celosia cristata L. [Amaranthaceae]-MKB500	Murga phul	Medicine, vegetable
Centella asiatica (L.) Urb. [Apiaceae]-MKB251	Boro thankuni	Medicine, vegetable
Chenopodium ambrosioides L. [Chenopodiaceae]-MKB491	Hidri	Vegetable
Chenopodium album L. [Chenopodiaceae]-MKB426	Bathua sak	Medicine , vegetable
Chlorophytum arundinaceum Baker [Liliaceae]-MKB066	-	Medicine
Chromolaena odorata (L.) King & Robinsons [Asteraceae]-MKB047	-	Medicine, vegetable
Chrysanthemum corronerium L. [Asteraceae]-MKB190	-	Medicine
Cissampelos pareira L. [Menispermaceae]-MKB230	-	Medicine
Cissus quadrangula L. [Vitaceae]-MKB310	Harjura	Medicine
Cleome viscosa L. [Cleomaceae]-MKB364	Hurhuria	Medicine, vegetable
Cleome gynandra L. [Cleomaceae]-MKB246	Bhut mula	Medicine
Clerodendrum viscosum Vent. [Verbanaceae]-MKB336	Batu	Medicine
Clitorea tarnatea L. [Papilionaceae]-MKB249	Aparajita	Medicine
Coccinia grandis. (L.) Voigt [Cucurbitaceae]-MKB234	Jongli kundaru	Medicine, vegetable
Colocasia esculenta (L.) Schott [Araceae]-MKB305	Mukhi kochu	Medicine, vegetable
Commelina benghalensis L. [Commelinaceae]-MKB269	Kansara	Medicine, vegetable

Continue

Convolvulus arvensis L. [Convolvulaceae]-MKB332	Gondal	Medicine
Corchorus aestuans L. [Tiliaceae]-MKB367	Naliya	Medicine, vegetable, fibre
Coriandrum sativum L. [Apiaceae]-MKB407	Dhania	Medicine, spice
Costus speciosus (Koenig) Sm. [Costaceae]-MKB007	Keuya	Medicine, vegetable
Crassocephalum crepidioides (Benth.) Moore [Asteraceae]-MKB029	-	Medicine, vegetable
Crotalaria striata DC. [Papilionaceae]-MKB116	Jhunjhunia	Vegetable
Croton sparsiflorus Morong. [Euphorbiaceae]-MKB158	-	Medicine
Curculigo orchioides Gaertn.[Hypoxidaceae]-MKB065	-	Medicine
Cucumis melo L. [Cucurbitaceae]-MKB390	Khira	Medicine
Cucumis sativus L. [Cucurbitaceae]-MKB396	Sasha	Medicine, vegetable
Cucurbita lagenaria L. [Cucurbitaceae]-MKB396	Pani lau	Vegetable
Cucurbita maxima Duch. [Cucurbitaceae]-MKB395	Misti kumra	Medicine, vegetable
Cucurbita pepo L. [Cucurbitaceae]-MKB397	Kumra	Vegetable
Cucurbita hispida Benth. [Cucurbitaceae]-MKB400	Chal kumra	Vegetable
Curcuma caesis Roxb. [Zingiberaceae]-MKB388	Kalo halud	Medicine
Curcuma domestica Valet. [Zingiberaceae]-MKB266	Haldi	Medicine, dye
Cuscuta reflexa Roxb. [Cuscutaceae]-MKB083	Swarna lota	Medicine
Cymbedium aloefolium (L.) Sw. [Orchidaceae]-MKB074	-	Medicine
Cynodon dactylon (L.) Pers. [Poaceae]-MKB160	Durba	Medicine
Cyperus rotundus L. [Cyperaceae]-MKB136	Motha	Medicine
Datura stramonium L. [Solanaceae]-MKB264	Sada Dhutura	Medicine
Daucus carota L.[Apiaceae]-MKB405	Gajor	Medicine, vegetable
Desmodium laxiflorum DC. [Papilionaceae]-MKB117	Bhuter sira	Medicine
Desmodium triflorum (L.)DC. [Papilionaceae]-MKB025	Salpani	Medicine, vegetable
Dichrocephala latifolia DC. [Asteraceae]-MKB410	-	Medicine
Dicranopteris linearis (Burm.)Underwood [Gleichniaceae]MKB090	-	Medicine
Dioscorea alata L. [Dioscoreaceae]-MKB353	Kham alu	Vegetable
Dioscorea pentaphyla L. [Dioscoreaceae]-MKB303	Suar alu	Vegetable
Diplazium esculentum (Retz.) Sw.[woodsiaceae]-MKB377	Paloi sak	Vegetable
Drynaria quercifolia (L.f.) Sm.[Polypodiaceae]-MKB124	-	Medicine
Dysophylla auricularia Bl. [Lamiaceae]-MKB373	-	Medicine
Echinochloa crusgalli (L.) Beauv. [Poaceae]-MKB270	Bara shama	Medicine
Eclipta prostrata L. [Asteraceae]-MKB256	Bhringaraj	Medicine
Eichhornia crassipes (Mart.) Solms. [Pontederiaceae]MKB283	Kachuri pana	Vegetable, Fibre
Elephantopus scaber L. [Asteraceae]-MKB	Hosti podo	Medicine
Elettaria cardamomum Maton [Zingiberaceae]-MKB	Bon elachi	Medicine
Enhydra fluctuans Lour. [Asteraceae]-MKB255	-	Medicine, vegetable
Erigeron annus (L.)Pers. [Asteraceae]-MKB114	-	Medicine
Eryngium foetidum L. [Apiaceae]-MKB136	Naga dhonia	Medicine, spice
Euphorbia neriifolia non L. sensu Hook f. [Euphorbiaceae]-MKB101	Sij	Medicine
Euphorbia hirta L. [Euphorbiaceae]-MKB157	Barokarni	Medicine, vegetable
Fagopyrum esculentum Moench. [Polygonaceae]-MKB209	Bon chukka	Vegetable

Continue

Flemingia macrophylla (Willd.) Prain. [Papilionaceae]-MKB026	-	Medicine
Floscopa scandens Lour. [Commelinaceae]-MKB097	Kanasimul	Medicine, vegetable
Goodyera procera (Wall. ex. Ker) Hook. f. [Orchidaceae]-MKB058	-	Vegetable
Gossypium herbaceum L. [Malvaceae]-MKB227	Kapash/Tula	Fibre
Gymnopetalum cochinchinense (Lour.) Kurz [Cucurbitaceae]-MKB408	Bon Kundri	Medicine, vegetables
Hedychium spicatum Buch.Ham.ex Sm. [Zingiberaceae]MKB077	-	Medicine
Hedychium coronarium Koenig [Zingiberaceae]-MKB175	Bon haldi	Medicine
Hedyotis verticillata (L.) Lamk. [Rubiaceae]-MKB119	-	Vegetable
Helianthus annuus L. [Asteraceae]-MKB187	-	Medicine
Heliotropium indicum L. [Heliotropaceae]-MKB031	Hosti sura	Medicine
Hibiscus esculentus L. [Malvaceae]-MKB365	Bhendi	Vegetable
Hibiscus sabdarifa L. [Malvaceae]-MKB024	Soelfa/Mesta	Medicine, vegetables
Homalonema aromatica Schott [Araceae]-MKB340	Gondhi kochu	Medicine, Food, Vegetable
Houttuynia cordata Thunb. [Saurauiaceae]-MKB318	Mosondari	Medicine, spice
Hydrocotyle javanica Thunb. [Apiaceae]-MKB253	Thankuni	Medicine, Vegetable
Hydrocotyle rotundifolia Roxb. [Apiaceae]-MKB295	Ponathankuni	Medicinal, Vegetable
Impatiens balsamina L. [Balsaminaceae]-MKB129	Gouri Shankar	Medicine, Vegetable
Imperata cylindrica (L.) Beauv. [Poaceae]-MKB096	Ulu	Medicine
Ipomoea aquatica Forssk. [Convolvulaceae]-MKB261	Kolmi	Medicine , Vegetable
Ipomoea batatas (L.) Lamk [Convolvulaceae]-MKB262	Misti alu	Vegetable
Ipomoea fistulosa Mart. ex Choisy [Convolvulaceae]-MKB039	Kalam	Medicine
Jatropha gossypifolia L. [Euphorbiaceae]-MKB100	Bhotera	Medicine
Justicia adhatoda L. [Acanthaceae]-MKB009	Basok	Medicine
Kalanchoe pinnata (Roxb.) Pers. [Crassulaceae]-MKB250	Pathorkuchi	Medicine
Leonarus sibiricus auct. non L. [Lamiaceae]-MKB236	Lal drono	Medicine
Leucas aspera Spreng. [Lamiaceae]-MKB168	Doron	Medicine
Leucas linifolia (Roth) Spreng. [Lamiaceae]-MKB492	Sweta drono	Medicine
Ludwizia octovalvis (Jacq.) Raven. [Onagraceae]-MKB293	Lalbonlabangra	Medicine
Luffa acutangula (L.) Ronb. [Cucurbitaceae]-MKB391	Jhinga	Medicine, vegetable
Luffa aegyptiaca Mill. Ex Hook. f. [Cucurbitaceae]-MKB402	Purol	Medicine, vegetable
Lycopersicum esulentum Mill. [Solanaceae]-MKB448	Tomato	Vegetable
Lycopodium cernum L. [Lycopodiaceae]-MKB004	-	Medicine
Lygodium flexuosum (L.) Sm.[Schizaeaceae]-MKB018	-	Medicine
Lygodium japonicum (Thunb.) Sw.[Schizaeaceae]-MKB076	-	Medicine
Melastoma malabathricum L.[Melastomaceae]-MKB006	Lutki	Vegetable, dye
Melilotus alba Lamk. [Papilionaceae]-MKB466	Sada methi	Food and Vegetable
Melochia corchorfolia L. [Sterculiaceae]-MKB206	Bon pat	Vegetable, Fibre
Mentha arvensis L. [Lamiaceae]-MKB194	Pudina	Medicine, spice
Mikania micrantha Kunth ex H.B.K. [Asteraceae]-MKB043	Refujee lot	Medicine, vegetable
Mimosa pudica L. [Mimosaceae]-MKB132	Lojjyaboti	Medicine
Mirabilis jalapa L. [Nyctaginaceae]-MKB171	Krishnakoli	Medicine

Continue

Momordica charantia L. [Cucurbitaceae]-MKB394	Titha kerela	Medicine, vegetable
Momordica dioca Roxb.ex. Willd. [Cucurbitaceae]-MKB393	Kakrul	Medicine, vegetable
Monochoria vaginalis (Burm.) Presl. [Pontederiaceae]MKB287	Nanka	Medicine, vegetable
Monochoria hastaefolia Presl. [Pontederiaceae]-MKB284	Nukha	Medicine, vegetable
Musa balbisiana Colla [Musaceae]-MKB015	Athi kola	Medicine,Vegetable
Musa paradisiaca L. [Musaceae]-MKB014	kola	Medicine, vegetable
Musa sapientum L. [Musaceae]-MKB088	Kach kola	Vegetable
Nasturtium indicum (L.) DC. [Brassicaceae]-MKB	Bil rai	Vegetable
Nelumbo nucifera Gaertn. [Nelumbonaceae]-MKB362	Padma	Medicine, vegetable
Nymphaea pubescens Willd. [Nymphaeaceae]-MKB363	Sapla/Shaluk	Medicine, vegetable
Nymphaea rubra Roxb.ex. Andrews.[Nymphaeaceae]MKB291	Lal sapla	Medicine, vegetable
Nymphaea stellata Burm.f. [Nymphaeaceae]-MKB363	Sapla	Medicine, vegetable
Ocimum americanum L. [Lamiaceae]-MKB172	Kalo tulsi	Medicine
Ocimum basilicum L. [Lamiaceae]-MKB300	Bon tulsi	Medicine
Ocimum gratissimum L. [Lamiaceae]-MKB045	Ram tulsi	Medicine
Ocimum sanctum L. [Lamiaceae]-MKB037	Tulsi	Medicine
Onychium siliculosum (Desv.) C.Chr. [Pteridaceae]-MKB	-	Medicine
Opuntia vulgaris L.[Cactaceae]-MKB294	Phoni monosa	Fibre
Oryza sativa L. [Poaceae]-MKB272	Dhan	Food
Osbackia nepalensis Hook. f. [Melastomaceae]-MKB081	-	Medicine
Oxalis corniculata L. [Oxalidaceae]-MKB 252	Amrul shak	Medicine, Vegetable
Oxalis corymbosa (DC.)Lour. [Oxalidaceae]-MKB248	Amboli	Medicine, vegetable
Paederia foetida L. [Rubiaceae]-MKB112	Bandhali lota	Medicine, vegetable
Parthenium hysterophorus L. [Asteraceae]-MKB115	-	Medicine
Peperomia pellucida (L.) H. B. K. [Piperaceae]-MKB152	Lucipata	Medicine, vegetable
Phaseolus mungo L. [Papilionaceae]-MKB467	Mati kalai	Food and Vegetable
Phragmatis karka (Retz.) Trin. ex Steud. [Poaceae]-MKB342	Nal khagra	Medicine
Physalis minima L. [Solanaceae]-MKB140	Bon Tepari	Medicine, vegetable
Phytolacca acinosa Roxb. [Phytolacaceae]-MKB013	-	Vegetable
Piper betle L. [Piperaceae]-MKB317	Paan	Medicine
Piper longum L. [Piperaceae]-MKB376	Pipoli	Medicine
Piper nigrum L.[Piperaceae]-MKB375	Gol morich	Medicine, spice
Pistia stratiotes L. [Araceae]-MKB094	Toka pana	Medicine
Pisum sativum L. [Papilionaceae]-MKB472	Motor	Food and Vegetable
Plantago major L.[Plantaginaceae]-MKB204	Isobgol	Medicine, vegetable
Plumbago zeylenica L. [Plumbaginaceae]-MKB082	-	Medicine
Pogostemon amaranthoides Benth. [Lamiaceae]-MKB052	Patchouli	Medicine
Polygonum hydropiper L. [Polygonaceae]-MKB035	Pani morich	Medicine
Polygonum oriantale L. [Polygonaceae]-MKB155	-	Medicine, vegetable
Polystichum aculeatum (L.) Schott [Dryopteridaceae]MKB019	-	Vegetable
Portulaca oleracea L. [Portulacaceae]-MKB309	Nunia sak	Medicine , vegetables
Pothos scandens L. [Araceae]-MKB128	Hosti lota	Medicine
Pteris ensiformis Burm. f. [Pteridaceae]-MKB288	-	Vegetables
Quamoclit pinnata Bojer. [Convolvulaceae]-MKB 449	Kunjalota	Medicine, Vegetable

Continue

Raphanus sativus L. [Brassicaceae]-MKB464	Mula	Medicine, vegetable
Rauvolfia serpentina (L.) Benth. ex Kurz. [Apocynaceae]-MKB387	Sarpogondha	Medicine
Rhynchostylis retusa (L.) Bl. [Orchidaceae]-MKB214	-	Medicine
Ricinus communis L. [Euphorbiaceae]-MKB087	Bherenda	Medicine
Rumex maritimus L. [Polygonaceae]-MKB483	Chuka	Medicine
Rungia repens Nees. [Acanthaceae]-MKB 144	-	Medicine
Rungia pectinata (L.) Nees. [Acanthaceae]-MKB050	-	Medicine
Saccharum spontaneum L. [Poaceae]-MKB093	Khagra	Fibre
Saccharum officinarum L. [Poaceae]-MKB271	Kushiar	Medicine, Food, Vegetable
Sagittaria sagittifolia L. [Alismaceae]-MKB278	Pani kochu	Medicine, vegetable
Salvia coccinea L. [Lamiaceae]-MKB170	-	Medicine
Scoparia dulcis L. [Scrophulariaceae]-MKB141	Bon Dhoney	Medicine
Sesamum orientale L. [Pedaliaceae]-MKB048	Til	Food
Sida cordifolia L. [Malvaceae]-MKB109	Lal berela	Medicine, fibre
Sida rhombifolia L. [Malvaceae]-MKB329	Berela	Medicine, fibre
Smilex zeylenica L. [Smilacaceae]-MKB226	-	Medicine
Solanum ferox L. [Solanaceae]-MKB298	Bonbegun	Medicine, vegetable
Solanum khasianum Cl. [Solanaceae]-MKB118	Kontokari	Vegetable
Solanum melangena L. [Solanaceae]-MKB421	Begoon	Medicine, vegetable
Solanum nigrum L. [Solanaceae]-MKB297	Kak manchi	Medicine, vegetable
Solanum torvum Sw. [Solanaceae]-MKB033	Brihati	Medicine, vegetable
Solanum tuberosum L. [Solanaceae]-MKB420	Alu	Medicine, vegetable
Sonchus arvensis L. [Asteraceae]-MKB418	-	Medicine
Spilanthes paniculata Wall. ex DC. [Asteraceae]-MKB040	-	Medicine
Spinacia oleracea L. [Chenopodiaceae]-MKB427	Palang	Medicine,vegetable
Stachytarpheta jamaicensis (L.) Vahl. [Verbanaceae]-MKB001	-	Vegetables
Stellaria media (L.) Vill. [Caryophyllaceae]-MKB247	Morolia	Vegetable
Stephania japonica (Thunb.) Miers [Menispermaceae]-MKB235	-	Medicine
Tagetes petula L. [Asteraceae]-MKB192	-	Medicine
Tephrosia purpurea (L.) Pers. [Papilionaceae]-MKB027	-	Medicine
Thunbergia grandiflora (Rottb.)Roxb. [Thunbergiaceae]-MKB202	-	Medicine
Thysanolaena maxima (Roxb.) O. Ktze [Poaceae]-MKB308	Jharo	Broom
Tinospora cordifolia (Willd.) H00k. f. & Th. [Menispermaceae]-MKB231	Gulancha	Medicine
Trapa natans L. [Trapaceae]-MKB240	Singara	Medicine, Food
Trichosanthes dioica Roxb. [Cucurbitaceae]-MKB388	Patal	Medicine, vegetable
Tridex procumbens L. [Asteraceae]-MKB257	-	Medicine
Trigonella foenum-grecum L. [Papilionaceae]-MKB469	Methi	Medicine, food
Triticum aestivum L. [Poaceae]-MKB439	Gom	Food and Vegetable
Triumfetta rhomboidea Jacq. [Tiliaceae]-MKB023	Akra	Medicine, fibre

Continue

Typhonium trilobatum (L.)Schott. [Araceae]-MKB327	Jongli kochu	Medicine
Urena lobota L. [Malvaceae]-MKB108	Bon okra	Medicine , fibre
Vernonia cinerea (L.) Less [Asteraceae]-MKB041	-	Medicine, vegetable
Vigna sinensis (L.) Savi & Hassk. [Papilionaceae]-MKB474	barbati/ramaiz	Medicine, vegetable
Wedelia chinensis (Osb.) Merr. [Asteraceae]-MKB411	-	Medicine, dye
Xanthium straumarium L. [Asteraceae]-MKB479	Gogra	Medicine, vegetable
Zea mays L. [Poaceae]-MKB438	Mokoi/ Bhutta	Medicine, Food, Vegetable
Zehneria umbellate Thw. [Cucurbitaceae]-MKB387	Kundaro	Vegetable
Zingiber officinale Rosc. [Zingiberaceae]-MKB011	Ada	Medicine, Food, Vegetable
Zingiber zerumbet (L.) J.E.Sm. [Zingiberaceae]-MKB010	Jongli ada	Medicine

of the species have been studied and found that the district is a rich repository of economically important plant resources as regards to medicinal plants, food, vegetables, spices and other miscellaneous uses. The economic uses of the species enumerated have been categorized based on comparative studies with the available published literature and direct interaction with local rural people living in the periphery of the study area (Table 3). A total of 202 species are used as medicine, 116 species are used as food, vegetables and spices and 21 species are used in other purposes. The different modes of utilization of plants with their percentage and groups are shown in the Table 2.

Various species of Epiphytic fern *(Lycopodium phlegmerium, L. squarrsum), Orchids (viz. Arundina graminifolia, Goodyeera procera, Phaias tankervillea, Rhynchostylis retusa, Dendrobium nobile, D. ancep, D. linleyi, D. moschatum etc), Dipteris wallichii,Onychium siliculosum, Trapa natans, Salvinia natans, Eurayle ferox, Flamingia macrophyla, Fragraria indica, Solanum eryanthrum, Andrographis paniculata, Piper nigrum, Acorous calamus, Rauvolfia serpentina, Asparagus racemosus, Asclepias curassavica, Solanum ferox, Datura fastuosa, Ocimum americanum, Begonia roxburghi* etc are rare in the district. These are the result of mainly human intervation and enchroachment.

4. Conclusion

Due to anthropogenic activities and encroachment of forest leading to deforestation was observed frequently in many areas of the district and it is the main cause to destroy the habitat of herbaceous vegetation. Other major factors of depletion of species and floristically rich areas are rapid urbanization, expansion of roads, agricultural activities, soil cuttings from hillocks, frequent floods and over grazing etc. Various species of Epiphytic fern have become are rare in the district and need proper conservation of these species immediately in order to save the plants from extinction from the district.

5. Future Strategy

It is therefore important that conservation strategies be directed to protect the important forest areas of the district. The encroachment in the forest areas may be checked. The developmental activities should be environment/forest friendly. Special measures may be taken to explore the unexplored areas so that the rich herbaceous flora of the district could be documented and preserved. Emphasis may be given to conserve the RET taxa. Capacity building initiative for young generation in taxonomic studies is the most important need of the hour. Educational Institutions, government and NGOs may take pro active measures to build capacity and generate awareness among all sections of the society more particularly young generation.

6. Acknowledgement

The authors are grateful to Forest Department of Cachar for permission to carry out the studies and thankful to Botanical Survey of India, Regional Circle, Shillong for identification of the species. Thanks are also due to local people and ethnic groups for sharing their valuable folk knowledge on herbaceous pants and the local people who helped during the field trip and collection of data.

7. References

Bhattacharya, M.K., Astapati, A.D., Banik, G., Dutta Choudhury, M., 1998. A survey of the Pteridophytic flora of Cachar district, Assam, N. E. India. Journal Indian Fern 15, 80-88.

Das, B., 2007. Fern Flora and Fern allies of southern Assam with reference to ethnomedicobotanical studies and certain conservation aspects; Ph.D. thesis, A. U., Silchar, Assam, India.

Govt. of Assam, 2002. State Population Census Report: Statistical Hand Book, Cachar, Silchar. Deputy Director of Economics & Statistics, Cachar. Silchar. Govt. of Assam.

Jain, S.K., Rao, R.R., 1977. A Hand book of Field and Herbarium methods. Today and tomorrow's Printers and Publishers, New Delhi.

Kanjilal, U.N., Kanjilal, P.C., Das, A., Purtayastha, C., 1934. Flora of Assam. Vol. I. Assam Govt. Press, Shillong, India.

Kanjilal, U.N., Kanjilal, P.C., Das, A., Purtayastha, C., 1936. Flora of Assam. Vol. II. Assam Govt. Press, Shillong, India.

Kanjilal, U.N., Kanjilal, P.C., Das, A., De, R.N., 1938. Flora of Assam. Vol. III. Assam Govt. Press, Shillong, India.

Kanjilal, U.N., Kanjilal, P.C., Das, A., De, R.N., 1940. Flora of Assam. Vol. IV. Assam Govt. Press, Shillong, India.

Malakar, N.C., 1995. Aquatic angiosperm of Cachar district. Ph.D. Thesis, G.U., Guwahati, Assam, India.

Sharma, G.D., Bhattacharjee, S., Sinha, M., Das, A.K., 2002. Status of Plant Bio-diversity of Catcher district and its Conservations. Journal of economic and taxonomic botany 25(1) 94-101.