

CHAPTER-I



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1.1 GENERAL CHARACTERISTICS OF MONOCOT PLANTS

Flowering plants with covered seeds are included in the class Angiosperms is the largest division of plants containing more than 250,000 of different plant species. Angiosperms are further divided into two groups, based on the number of their cotyledons. The plants typically containing only one embryonic leaf or cotyledons are termed as Monocotyledons (Monocots), and those with two cotyledons are termed as Dicotyledons (Dicots).

Monocots have almost always been recognized as a group, but with various taxonomic ranks and under several different names. The Angiosperm Phylogeny Group (APG) III system of 2009 recognises a clade called Monocots, but does not assign it to a taxonomic rank. According to Radford (1986) the morphological data of plants are easily observable and obtainable, and are thus used most frequently in taxonomic studies. The evidence from the external morphology provides the basic language for plant characterization, identification, classification and relationships (Radford, 1986).

Monocot plants are easily observed some distinct features such as roots, stems, leaves, flowers, pollen grains and embryos. These can be explain as follows-

Roots: While Monocots start of with a tap root, these tap roots tend to die soon after germination and are replaced by adventitious roots. Adventitious roots look fibrous and are spread widely throughout the soil in many different directions. They tend to occupy the upper layer of soil.

Stems: Generally, Monocotyledons are small and herbaceous. Monocots have lost the ability to increase their diameter by producing wood and bark through secondary growth. The only growing point of a Monocot stem is at the top of the stem. It has various kinds of underground stems.

Leaves: In Monocots, the leaves are long with sheathing bases. The family of Cyperaceae and Poaceae exhibit grass habit having slender tufted leaves which are arising from aerial stems and rhizomes.

Leaf venation: Venation refers to the pattern of veins in a leaf blade. In Monocots, these veins are arranged in a parallel like pattern.

Flowers: In Monocots, the flower parts are trimerous i.e. its arranged, structure, or numbered in multiples of three (3×3) usually with one stigma, three stamens, three petals and a calyx formed by the sepals in numbers less than or equal to the number of petals.

Pollen grains: The pollen grain of a Monocot has a single furrow or pore through the outer layer.

Embryos: The plant embryo is the part of the seed. Monocots are characterized by having one (mono) cotyledon in the seed, and one leaf emerging from the cotyledon. The seed pod of a Monocot is also trimerous (in parts of three), because the carpel from which they grew also consisted of three parts.

Spikelet of family Poaceae: It contains (i) empty glumes, usually two, sometimes more, sometimes fewer; then a variable number of flowers, of which the lowest and the last often empty, but consisting of (ii) a flowering glume, generally similar to the empty glumes; (iii) the palea, which is usually keeled or convolute and embraces; (iv) the lodicules, which vary in number and sometimes absent; (v) the stamens which are three, four, six or more in each flower, and (vi) the ovary, surrounded by the style and stigmas.

Uses: There are approximately 60,000 species of Monocots in the world. The largest and regarded as the most advanced family in the flowering plants as a whole by number of species are the orchids (family Orchidaceae), with more than 20,000 species. About half as many species belong to the true grasses (family Poaceae), which are economically the most important family of Monocots. In agriculture the majority of the biomass produced comes from Monocots. These include not only major grains (rice, wheat, maize, etc.), but also forage grasses, sugar cane, and the bamboos. Other economically important Monocot crops include various palms (family Arecaceae),

bananas and plaintains (family Musaceae), gingers and their relatives, turmeric and cardamom (family Zingiberaceae), asparagus (family Asperagaceae), pineapple (family Bromeliaceae), water chestnut (family Cyperaceae), onion, garlic and leeks (family Amaryllidaceae). Many houseplants are Monocot epiphytes (family Orchidaceae) and most of the horticultural bulbs, plants cultivated for their blooms, such as lilies, irises, cannas, daffodils, amaryllis, tulips, bluebells, etc. are also monocots.

The gifted of plants or nature are unlimited where the variety of useful products are obtained from the plant kingdom. The primary needs of mankind i.e. food, cloth and shelter are supplied directly or indirectly by the plants. Monocot plants are most important plants among the other plants in economically and culturally. Many of them occur in a natural state, particularly in forest, while a good number of them are cultivated for food, industry and medicine. The world's food crops are obtained mainly from Monocot plants like rice, wheat, maize, barley, sorghum, sugarcane, coconut, banana, etc. According to Brouk (1975) economically important plants on the basis of their uses has divided into seven classes: (i) plants consumed by man (cereals, vegetables, beverage plants, fruits, pulses and legumes, etc.), (ii) shelter plants, (iii) ornamental plants, (iv) industrial plants, (v) animal fodder plants, (vi) medicinal plants, and (vii) semantic plants.

1.2 BODO COMMUNITY

There are many communities who are living in the area with distinct culture and tradition since time immemorial but the Bodos form the majority of the Udalguri district of BTAD, Assam. The following is a general account of all Bodos of the Udalguri district:

The Bodo (Pronounced- bo: ro:) is an ethnic and linguistic group of the Brahmaputra valley in the northeast part of India. They are recognized as a plains tribes in the Sixth Schedule of the Indian Constitution. The Bodo people are one of the indigenous ethno-linguistic groups of present North Eastern India belonging to Indo-Mongoloid origin of Tibeto-Burman language family. The Bodo people form the

largest indigenous group in the present demography of the region. Linguistically the Rabha, the Garo, the Dimasa, the Hajong, the Sonowal, the Deori, the Tiwa and the Borok of Twipra (Tripura), and many other cognate tribes are part of this great Bodo race.

Origin: The Boro people are believed to be the migrants of Chinese origin and their language belonging to the Tibeto-Burman language family. They are proud in calling themselves as the Boro. They identify themselves as the Boro-Phisa, meaning children of the Boro race. According to Endle (1911), Grierson (1903-1928), Anderson (1895) and others argue that the exact sound of the term is represented by spelling it Bada or Bara or by Boro or Bodo (the O has the sound of English O in hot). Nath, on the contrary, put forward a hypothetical theory by which he traces the origin of the term Bodo, in the Tibetan word Bod, used for their country in the ancient time. Even in Boro language, the logical meaning of the term Boro means man. The Bodo group includes the most numerous tribes, occupying not only the hills parts but also the valley parts from Dhubri to Sadiya.

Language: The indigenous Bodo tribal dialects of the district has a script named Devanagri of its own.

Society: The Bodo society is a patriarchal one, father being the fountain head, sole authority and the complete owner of the family property. However, the mother and other female members of the family are not neglected. The Bodo society is egalitarian in character so far as sharing of properties, access to education and other developmental opportunities are concerned. The Bodo society is divided into a number of Maharis or Clans based on totemism. According to traditions, originally, there had been as many as twelve Maharis or Clans in the Bodo society. These twelve Clans still exist. These are Daimaroi, Basumataroi, Mosaharoi, Hajoaroi, Borgoaroi, Narjaroi, Kerketaroi, Khakhlaroi, Sorgoaroi, Ramchiaroi, Sampramaroi and Laharoi. The Bodo Clan system appears to have emerged from the profession they were attached to their life. For instance, the Basumatarois were the lords. The Sorgoarois were the priestly group of people who devoted themselves to priestly activities. The Daimarois in fishing, the Mosaharois engaged themselves in hunting, etc. However, in the present

day Bodo society, those clannish title signify only the surname of a group of people. The Clan system had no other implication on their inter-marriage, inter-dining and other social activities.

Religion: Bodos traditionally practise Bathouism, which is the worship of forefathers known as Obonglaoree. The shijou plants, *Euphorbia nerifolia* L. (Sehund) of family Euphorbiaceae is taken as the symbol of Bathou and worshiped. It is also claimed as the supreme God. In Bodo language, Ba-means five and Thou-means deep. As Bodos believe in five mighty elements of God, which are land, water, air, fire and sky. Therefore, five (Ba-) has become a significant number in the Bathou religion. The shijou plant is encircled with eighteen pairs of designed bamboo sticks and five pairs of ring of bamboo with a shape of 'Dove-Heart' in front of it.

Economy: 99% of the Bodo population lives in the country side villages and therefore agriculture is the main stay of their economy. The plot of land they hold is indispensable to them for their livelihood. As a result, they remained dependent on the plot of land they held. The Bodo populated area covering almost all the districts of the Himalayan foothill of Assam are immensely endowed with natural resources. It has vast forest areas and water resources that can be tapped for irrigation, fishing, keeping poultry, piggery, agriculture for all kinds of crops, plantations of betel nut, coconut, banana, tea, rubber, etc. and other possibilities.

Culture: The Bodo culture is the culture of Assam in India is influenced by the land where they currently live. For a long time, Bodo have been farmers with a strong tradition of fishing, keeping poultry, piggery, paddy (rice), mustard, corn, jute cultivation and banana, coconut, betel nut plantation. They make their own traditional attires.

Bodo people are mainly into Bathouism religion from ages. In recent decades, they have been influenced by social reforms under Brahma dharma, Assamese sarania and the spread of Christianity.

Bodo Ethnic Wear: Dresses and ornaments of the Bodos are the symbol of their traditional art and culture. Since ancient time, the indigenous people like Bodos were accustomed with the production of cloths from the thread of Eri and Muga known as

Endishi (Eri chadar in Assamese). Bodo women are expert in rearing the Endi Emphou (Eri worm) and Muga Latha (Muga worm) and find out threads from them. They weave different kind of cloths like Dokhna, Phali, Aronai, Jwmgra, Gamsha , Rumal, Hishima, Jolonga, etc. out of the threads of Eri and Muga. Previously Bodo old man used to wear wooden footwear known as Khorom (Karam in Assamese). The favourite colours of the Bodos are generally Gwmw (yellow), Gwthang (green) and Bathogang (parrot's colour).

Bodo used varied types of ornaments for nose, ears, neck and hands are Phulkhuri, Japkhing, Boula, Dul, Phuti in ear; Nakhaplul, Nolot, Buluki, etc. in nose; Zinziri in neck and also wear ornaments of the hands are Ashan.

Music and Dance: The Bodos traditionally dance Bagurumba with Bagurumba Song. Among many different msical instruments, the Bodos use-Sifung (a long flute), Serja (a kind of violin), Tharkha (a block of bamboo split), Kham (a long drum), Khawang, Jotha, etc.

Food and Vegetables: The main traditional items or dishes of food and vegetables are Oma-bedor (pork), Napham (grinding smoked fish), Onla (rice powder), Maikharai (green leaves with soda), Narzi (dried jute leaves), Zumai (rice wine), Serep (abeverage by distillation), etc.

Festivals: The Bodos have a rich tradition of festivals. Bodo people both men and women wear colourful traditional attires and they can sing melodious falk songs and colourful folk dances in the festivals. Festivals of the Bodos can be divided into- seasonal and agricultural, religious, ritualistic and ceremonial. Further the seasonal or agricultural festivals can be divided into Baisagu, Domashi and Katrigacha. Relgious festivals of the Bodos include Kherai, Marai and Garja

1.3 RABHA COMMUNITY

The following is the general account of Rabhas and it is also seem to be same characters like other district in the Rabha people of the Udalguri district of BTAD, Assam:

Ethnographic Accounts: The Rabha speaking community belongs to the Tibto-Burman stock of the Sino-Tibetan or Tibeto-Chinese family. The tribe is a branch of the Bodo group of the Mongoloid race. According to Waddle (1900): “the Rabhas are the off shoot of the Kachari tribe”. In the opinion of Grierson (1903), the term “Rabha” is a Hindu name of the Kacharis. The Rabhas belong to the great Bodo group of the Mongoloid race. The Rabhas are one of the plains tribes of Assam. They are mostly concentrated in the districts of Kamrup, Goalpara, Dhubri, Kokrajhar, Bongaigaon, Darrang and Sonitpur. The word “Rabha” seems to have been derived from the word “Rabha”, which means “to bring”. Since the Rabhas were brought to earth by their Risi, the supreme God, from the Rongkrang i.e. heaven, they are called Raba or Rabha. The Rabhas no doubt have cultural similarities and also ethnic affinity with a number of ethnic groups.

Khel (sub-group or sect) or Faid (lineage gotro): Rabhas are mainly divided into eight different khel or sub-groups. Out of these three groups still hold on to their language which are Maitoria, Rongdania and Chonga (Kocha Rabha, Koch, Chunga). Those groups which forgot their language completely are five Assam groups i.e. Pati, Dahari, Bitoliya, Totla and Hana. These five Aryan khels (sub-groups) use Lemakatha i.e. Rabhamiz (Rabha + Assamese) at their homes to express themselves. The Totlas represented sub-groups of the tribe in North Kamrup area and in the northern belt of Darrang district particularly around Udalguri, Rawta and Hugrajuli.

Dwellings and Livelihood Patern: The Rabhas like to live in compact blocks comprising of 50 to 100 families in each block. The dwellings of a Rabha household consist of four houses viz. one main house, one guest house, one outer house for the adult family members and a fourth one for using as a cook-shed. In addition to these, cow-shed, a granary and a poultry house if possible are separately constructed. The main house where the head of the family resides is constructed in the northern side of the courtyard maintaining its length in east-west direction. Facing immediately this is the ‘Batghar’ or the guest house and the courtyard being in between the two. The other two houses are constructed usually facing each other.

Like all other plain tribes, the Rabhas also derive their livelihood mainly from agriculture. They undertake cultivation of both Ahu and Sali along with some amount of pulses, mustard seeds and jute. Rice is the staple food of the tribe with an inherent liking for dried and powdered fish, pork and rice-beer.

The Rabha women are expert both in spinning and weaving and seem to be more active than their men folk. The women's attires consist mainly of Rifan, Kambung and Khodabang. The weaving excellence of Rabha women is further testified by their intense knowledge in dying yam purely by indigenous process.

Language: Rabha people living in forest villages speak the language as the same of their name and they have many similarities with the other tribes such as Garo, Kochari, Koch, etc. Although the people of Dooars claim themselves as Rabha but some of them refer to themselves as Koch. The people of Rabha community that lives in Assam and West Bengal speak the local Assamese and Bengali language.

Religion and Culture: Rabha people traditionally practice a few animistic rituals. However, today they more often follow a faith, which is a blend of some Hindu and a few animistic rituals. Rabha people's religious world is pervaded with various spirits and natural objects. The main deity of the Rabhas is called Rishi. He is also known as Mahakal.

Economy and way of living: Agriculture is the main occupation of the Rabhas. Besides agriculture, handloom weaving is the traditional occupation of Rabha women. Now a days these people have taken the occupation of government jobs but their development is quite low in respect of other communities.

Festivals: Traditionally Rabhas were animists and they follow the religious practices of greater Bodo community. These Rabha tribes celebrate all the main festivals of the Indian Territory. These include Durga Puja, Diwali, Janmastomi, the birth and death anniversaries of the Srimanta Sankardev and Madhabdev. Apart from these, the Rabha people celebrate the Baikhu Festival and the Farkhanthi Festivals. Singing (Girkay) and dancing are an integral part of Rabha culture. They used musical instruments like the Karra, Singa, Flute and Nolkara.

Marriage: The Rabhas are exogamous. No marriage can take place between the boy and a girl belonging to the same clan (Mahari or Barai). The marriage function is held at the house of the bridegroom. Dowry is unheard of in Rabha society till date.

Disposal of the dead and death rites: In an unnatural death caused either by epidemic or suicide, the dead body is buried and not burnt. In a normal death, the dead body is washed with sanctified water (Santi Jal) and after that the dead body is dressed with new garments and kept in an outer house for a night for enabling the distant relatives to arrive for the last rites. It is customary for the whole village not to take food till the dead body is taken to the cremation ground.

Social life: The basic structure of the Rabha tribe is governed by the ethologic ideas contained in the Pandulipis or the local customary laws. These Pandulipis have been framed by the consensus of the village people on the basis of customs, traditions, usages, religious belief, birth and death rites, marriage, power of the society, etc.

1.4 DISEASE CONCEPTS, DIAGNOSIS AND REMEDIES OF BODO AND RABHA COMMUNITY OF UDALGURI DISTRICT

Among the Bodos and Rabhas of the Udalguri district, there is a strong belief that a link between diseases and supernatural power exists. For the treatment of minor injuries and illness they use local medicinal herbs, which grow in abundance in their natural surroundings. The Bodo and the Rabha people of the district have indigenous methods for treatment of different kinds of disease with the help of local herbal medicines given by “Kobiraj” or “Ojah” or “Bej”. Ethnobotany is the practical uses through the traditional knowledge and customs of a people concerning plants and their medical, religious and other uses. It is the study of how people of a particular culture and region make the use of indigenous plants. Many works done in recent past by scientists and researchers of Assam in India published about the use of plants by aboriginal people of the region were C.L. Boissya and R. Majumdar (1980); C.L. Boissya *et al* (1981, 1982); P. Baruah and G.C. Sharma (1984, 1987); P.K. Hajra and A.K. Baishya (1990); M. Dutta and S.C. Nath (1998); R. Gogoi and S.K. Borthakur (2001); K.N. Barua *et al* (2003); J.P. Bora (2003); R. Gogoi and M.K. Das (2003); R.

Gogoi *et al* (2003); S.K. Borthakur *et al* (2004); A.A. Mao *et al* (2009) and S.C. Nath (2011). Plants have profound influenced over the culture and civilization of men in many ways. On the early stages of life of human beings of these communities were remain fully dependent on plants for survival. A rich in biodiversity of Udalguri district hold a fairly good traditional knowledge on the utilization of its resources. The knowledgeable ethnic communities especially Bodo and Rabha tribes of the region are the primary group of people who possess a broad knowledge on plants and the use of natural resources, as they like to live in the forests. Their culture is deeply interwoven with the nature. They completely depend on forests for their day to day lives such as shelter, food, industry and medicine. Their (Bodos and Rabhas) traditional knowledge is proved as invaluable and has contributed in formulating traditional remedies for dreadful diseases such as insect stings, animal bites, bleeding, swelling, cold, cough, fever, malaria, gastric, dermal, dental, pain and gynaecological and many others. This precious knowledge is passed on orally to the successive generations and need to be documented.

1.5 PRESENT CONCEPT AND SCOPE

The people living in remote area still depend upon to a great extent on the indigenous system of medicine and cultivation. There is no baseline information available as to what is the present status of vegetation and flora of Udalguri district. Therefore, the present work was undertaken with a view to fillup the existing lacunae on the Monocot flora of Udalguri district with special emphasis on ethnobotany of Bodo and Rabha tribes. The mighty river Brahmaputra flows through the whole length of Assam valley which adds alluvial fertile soil during the inundation. Assam is a land of rivers, hills and plains of the most flora rich region of the country. The region is botanically very interesting due to the occurrence of varied kinds of the rich representation of primitive angiospermic taxa in the forest of Assam, these forests are considered by Takhtajan (1969) to be the *Cradle of Angiosperms*. Various kinds of valuable tree species, bamboos, climbers, orchids and other epiphytes are abundant in its forests. There is also a rich growth of herbaceous Monocot plants having medicinal,

aromatic and other economic values. So the area is enough for Monocot floral study in its rich vegetation. Due to rich with its floristic composition has attracted botanists, environmentalists, agriculturists and the scientific explorers of different fields. Although some of the plant species have been locally identified but a good number of them are left unidentified. There is no record of having proper scientific exploration and studies towards full compilation of plant species either by the former British Scholars or by the past and present Indian Botanists. Keeping all these aspects in view, the present investigation has been undertaken with the aim to collect all Monocot plants of Udalguri district by making intensive field studies has been extended from 2014-2017. The emphasis has been given to study the analytical drawings of live Monocot plants, photographs depicting vegetation along with taxonomic treatment relating to their correct nomenclature, key characters for easy identification of families, genera and species including infraspecific taxa followed by brief description and medicinal usages of Bodos and Rabhas have been provided so as to bring out an illustrative account on “Studies on Monocot flora of Udalguri District, BTAD, Assam, with special reference to ethnobotany of Bodo and Rabha”.

1.6 AIMS AND OBJECTIVES

The present study has explored repositories of Monocot flora of Udalguri district, BTAD, Assam and mapped out their probable utilization by Bodo and Rabha tribes. The present study has attempted to achieve the following objectives:

- i) To study the Monocot flora in details along with their habitat and other phonological data of the district.
- ii) To identify and documentation of Monocot flora.
- iii) To evaluate ethonobotanical uses of Bodo and Rabha communities.
- iv) To work out the RET (Rare, Endangered and Threatened)-Monocot plants and conservation prospect in the area if any.