CHAPTER-10

GENERAL DISCUSSION
Ethnobotanical knowledge is very ancient in India and this traditional knowledge of use of the plants as medicine had their roots in ethnomedicine but yet organized studies in ethnobotany are very recent. During the last thirty years ethnobotany of a particular plant groups known to a specific tribe of a particular region has aroused interest among the researchers to probe the problem with an inter-disciplinary approach. The current thrust of ethnobotanical research includes ethnobotanical surveys; documentation and inventorisation of plants used in tribal societies; ethnobotany of geographic regions, ethnopharmacology and search for new drugs and therapeutic agents; folk biology including folk taxonomy; plant domestication and the study of plant remains from archaeological sites etc. WWF, UNESCO and the Royal Botanical Garden, Kew, have launched a major new programme in ethnobotany and sustainable use of wild plant resources under the heading “People and Plants Initiative” whose objectives are to undertake surveys of wild plant resources and to work with the local people to identify the conservation issue and seek remedies; to empower local communities so that they are fully involved in land planning and land management and lastly to increase the number of ethnobotanists especially from developing countries, actively working with the local communities on conservation issues. There has been a rapid and widespread interest in recent years in ethnobotanical studies, mainly because of the search for potentially important new medicine. Modern researches have been often borne out from the efficiency of many of the crude plant drugs used by the aboriginals.

The indigenous knowledge of forest resources is the local knowledge that is unique to a given culture or a human society. Traditional knowledge is basically related with the socio-cultural activities of a particular community that includes health care, food security and natural resource management in rural communities etc.

Keeping the great potential for production of natural indigenous drugs and because of the lack of any previous work done on the ethnobotanical studies on the Dimasa tribe of Barak Valley, the present work was taken up to explore their knowledge on the indigenous
plant resources, specially to explore the knowledge of plants having medicinal values by the Dimasa tribe, who are settled in Barak Valley of Southern Assam since a long time. During the course of work several field surveys were carried out covering all the seasons to document the traditional knowledge of the tribe and mainly to record the detailed accounts on the ethnobotanical knowledge of the tribe. During the survey it is recorded that a total of 104 Dimasa inhabiting villages are there in Barak Valley. But among the three districts of the Valley, there is not a single Dimasa inhabiting village in Karimganj district and in Hailakandi district there are only 3 Dimasa inhabiting villages, whereas the rest 101 villages are found in the Cachar district of the Valley.

The Dimasa population is about 3.4% of the total ST population of Assam. They are the inhabitant of Assam since very early times. In the North-eastern region the Dimasa first established their capital at Dimapur (present Nagaland) from there they extended their capital along the south bank of the Brahmaputra, but being gradually driven away by the Ahoms they shifted their capital to Maibong and lastly to Khaspur and the last Kachari king who reign from Khaspur was Gobinda Chandra Narayan and the ruins of their capital still remains in Khaspur.

The Dimasas are living in the forest based remote villages, far away from the modern civilization and are deprived from all types of modern facilities. They don’t have proper communication facility, water supply facility, electricity facility, higher education facility and even proper medication facility. Some villages are far away from the main road side like Chuta-nuncherri, Dolicherra, Dholcherra, Paschim-murtacherra, Chandrapur etc., who are mainly facing problems for poor communication facility as the only way to come to the main road from their villages is either on foot or by using bicycle but as there are small streams across the villages, use of bicycle is not the proper solution of their problems. It is also observed that in and around the villages, only primary education facility is available but in the maximum villages it is found that school building are there but without proper education facility and for high and higher education they have to cross a fairy good distance. It is interesting to observe that only a few tribal people are there who realize the value of education and want to provide their child with higher education. In few villages it has also been observed that some families are highly educated and occupy respectable jobs and they have shifted to their working places.

The Dimasa tribe have rich traditional heritage and use of plants in their day to day life is not only for edible purposes but also for rituals, ceremonies, magico-religious believes, for making household materials, handloom-textiles etc. and they also have
knowledge of use of plants for the treatment of domestic animals. Some plants are worshiped by the tribe such as Ocimum sanctum, Aegle marmelos, Streblus asper etc. as sacred plants and are not destroyed and in this way they are conserving the plants. Clerodendrum indicum is used in the funereal as traditional believe, whereas Musa paradisiaca is used in marriage ceremony. While Euphorbia tirucalli is used as magico-religious believe and is planted in the home gardens with the belief that no evil spirit will enter in their home provinces and at the same time nobody will be able to do any evil things with the family members of the family. In this way by the traditional rituals and believes the tribe is conserving some of the plant resources in their surroundings.

One interesting characteristic of the plant Sarcococca pruniformis is recorded during the survey and is cross checked by interacting with the different people of the different villages. They suggest that if the curry of the leaf of the plant is taken orally with rice before going to the forest then no leech and insects will attack the person again on returning from the forest they also used to take the same vegetable to drive away their tiredness and body pain that might have occurred due to walking to a long distance or for hard labour. It is also important to mention here that the leaves of the plant are also used by the tribe as insecticide.

During the survey it has been observed that the tribe under study have immense knowledge on the property and action of the medicinal plants and they use plants to cure several types of difficult diseases i.e. cancer, piles, carbuncle, jaundice, tumor, kidney stone etc. In every village there is one or two persons who has the knowledge of using plant resources for the treatment of ailments, who are called medicine-men but often medicine-men are conservative in nature to share the knowledge with others and they are also superstitious with the believe that if they disclose their knowledge of medicinal plants in front of others, the action of the plant will be diluted and other reason lying behind this type of attitude of the medicine men of this tribe is that it is a way of earning name, fame and money for them and if they disclose the same to others the knowledge may be transferred to the common people and their name and fame may decline. It was very tough to convince the medicine men but they were convinced that the information parted by them will not be misused and their rightful earnings will not be shared with the people of the same community or the other community. They were promised that the information that were collected from them will be used only for research purposes and in this regard convincing the medicine-men or to collect information regarding their socio-cultural aspects, first of all it is necessary to convince the Headman of every village, who made the
survey work easy and comfortable. But in few Dimasa inhabiting villages it is also observed that the villagers, medicine-men and headman are interested and feel proud to share their knowledge for the research purposes. It is also noticed that use of plants to cure some common diseases such as cuts, wounds, headache, cough, toothache, boils, bowel complaint etc. are known by almost all the general people even the children also know the use of some plants for the cure of some common diseases. Women also have knowledge on medicinal plants which are mainly used for the treatment of stomach disorder and as postmartern tonic as vegetable and are mostly grown in the kitchen garden so that they can be collected easily. Tribal women are also very conscious about their beauty and they take care of their beauty by using different types of plants.

During the course of study, relevant information on the herbal medicines were collected from the tribe and the collected data on a particular species was verified discussing about the plant with the procedure of preparation of medicine and administration with the other people of the same village or of the other villages. The study has been carried out adopting the approaches and methodologies of Ethnomedicobotanical studies as suggested by Jones (1941), Schultes (1960, 1962), Ford (1978) and Jain (1964a, 1968) and indigenous plant species which are used by the Dimasa tribe comprising of Thalophytes, Pteridophytes and Angiosperms were collected time to time for detailed study on their ethnobotanical potential for the benefit of the people of the region at large.

The established reports on the utilization of each plant species have been consulted from a number of published accounts like kirtikar & Basu (1933); Nadkarni (1954); Chopra et al., (1956); Anonymous (1948-1976); Ambasla (1986); Nayar et al. (1989); Pal & Jain (1998); Asolkar et al. (1992); Anonymous (1992); Rawat & Chowdhury (1998); Dutta Choudhury (1999); Bhattacharjee (2001); Sharma et al. (2002); Sharma (2003); Das et al. (2010).

From the present study it is also revealed that the tribe does not have any written record about the use of medicinal plants. The knowledge of the indigenous plants as herbal medicine is simply inherited from one generation to another through oral communication only from their ancestors. They have their own system of diagnosis of the diseases and the indigenous way of preparation and method of administration of plants or plant parts for curing the diagnosed diseases. They prefer their own indigenous herbal medicine in comparison to the available modern medicinal treatment.
Due to South-west monsoon, moderate temperature, rainfall, humidity and other meteorological parameters, the Valley is blessed with the luxuriant growth of tropical semi-evergreen to moist evergreen vegetation which has been giving the tribe a constant source of useful plants. But the tribe does not misuse or destroy the plant species, they use the plants in sustainable way. It is noticed that the useful plants are grown near or inside the tribal inhabiting villages and are protected for their further use by their traditional ways and believes. In many cases it is reported that the tribe never uproot the whole plant or all the leaves or all the fruits or all the flowers for their use and even at the time of collection of the underground parts of plants, they leave some reproductive part for regeneration in the believe that the collection of the whole plant may cause sin. Such indigenous believes and restrictions of use of plants play an important role in the conservation of plant genetic resources in the tribal areas. Recently indigenous knowledge of plant resources draws much attention of modern ethnobotanists and several research works have been carried out in India including North-east region i.e., ethnomedicinal plants used by Gond tribe of Madhya Pradesh (Rai et al., 2000); documentation of folk knowledge on edible wild plants of North Karnataka (Rajasab & Mahamad, 2004); traditional folk herbal medicine from Rajasthan (Katewa & Galav, 2005); sustainable use of phytodiversity by Kanha tribe of Orissa (Panda et al., 2005); medico-ethnobotanical studies of some North-east tribe (Dutta & Dutta, 2000); ethnobotanical studies among Naga tribes in Nagaland (Jamir, 2000); medicinal plants used by different tribes of Cachar district (2008); Ashalata et al. (2005) worked on medicinal plants used in skin diseases from Manipur; traditional medicinal knowledge of Zeme (Naga) tribe (Routh et al., 2010); ethno-toxic plants of Cachar district (Choudhury et al., 2011a).

The observation during the study suggest that more emphasis should be given to promote the propagation and conservation of the plants known to be having medicinal value as well as the plants required as a raw material for medicinal purposes. The suggestion conforms with the observations made by other workers (Gogoi & Ahmed, 1999; Kharduit, 1999; Syiem et al., 1999).

During the market survey, it is also observed that the tribe has scope for the commercial exploitation of some medicinal plants which may help in the socio-economic development of the indigenous people of this region. The plants which are used for the purpose are *Andrographis paniculata*, *Asparagus racemosus*, *Centella asiatica*, *Clerodendrum colebrookianum*, *Homalomena aromatica*, *Lasia spinosa*, *Phyllanthus emblica*, *Terminalia chebula*, *Tinospora cordifolia*; *Vitex negundo* etc.
Some interesting and rare medicinal plant species were also reported from the study area and they are Acanthus leucostachyus, Angiopteris evecta, Caesalpinia bonduc, Casearia vareca, Inula polygonata, Cyclea wallichii, Cymbopogon citratus etc.

The traditional folk medicines of the world have brought to light some of the rare wonder herbs which makes big promise to salvage the mankind from some of the deadly modern human diseases. History is evidence of the fact that many valuable drugs of modern medicine have been discovered by knowing that a particular plant was used by the ancient folk-healers in one or more of the ancient cultures of the world for the treatment of some kind of ailments.

Since time immemorial man has used various parts of plants in the treatment and prevention of many ailments. Historically all the medicinal preparations were derived from the plants whether in simple form of plant parts or in the more complex form of crude extracts, mixtures etc. (Ayanar & Ionaicimuthu, 2009). Plant derived medicines are widely used because they are relatively safe compared to the synthetic alternatives, they are easily available and cheaper (Iwu et al., 1999). At present, many pharmaceutical companies are taking interest in acquiring knowledge of many of the plant species for screening programmes for medicine. Farnsworth (1985), Director of WHO Collaborating Centre for Traditional Medicine has strongly recommended that all those plants used by the primitive, folk-healers and ethnic societies of the world should be scientifically investigated. Based on this, in the present survey out of the 284 collected plant species 5 plants viz., Chrysopogon aciculatus (Ritz.) Trin., Entada pursaetha DC. ssp. sinohimalesis Grierson & Long, Polygonum hydropiper L., Sarcococca pruniformis Lind. and Tinospora cordifolia (Willd.) Hook.f. & Thomson, were selected for phytochemical screening and 4 plants viz., Chrysopogon aciculatus (Ritz.) Trin., Entada pursaetha DC. ssp. sinohimalesis Grierson & Long, Polygonum hydropiper L., and Sarcococca pruniformis Lind. were selected for microbiological screening. The results of the phytochemical and microbiological screening of plants under review show that the plants have immense medicinal properties and it supports the prescription of the traditional medicine-men.

The importance of ethnobotanical work in North East India including Barak Valley has already been emphasized but in comparison to the existence of a large number of tribes in this region, very few tribes have been touched upon in relation to ethnobotanical studies in general. Survey of literature indicates that there are many tribal areas which remained ethnobotanically unexplored and the reasons lying behind this may be due to
peculiar geographical distribution and location of the hilly areas, due to which those areas and the tribes inhabiting in those areas remain in extreme isolation and out of reach for ethnobotanical studies.

The present observation revealed that Barak Valley is rich in important biodiversity including drugs yielding plants, spices, aromatic plants, vegetables etc. Being deprived from the blessings of modern civilization, the study shows that the Dimasa tribe of Barak Valley still maintains a rich heritage of medicinal plantlore and they have rich ethnobotanical knowledge on the utilization pattern of the plant diversity. But the practice of herbal medicine among the Dimasa tribe is on the verge of decline. The major reasons behind that are the gradual decline of interest in the new generation about the traditional medicinal practices; progressive work on the establishment of modern health centre in many Dimasa inhabiting villages; popularity of modern allopathic medicine; over exploitation of forest resources in many places resulting to the destruction of plant resources affecting the local biodiversity. Cleaning of jungles for construction of their hutments resulting to the depleting in forest areas and also change in climatic conditions. Flood, soil erosion, frequent change in the course of rivers etc. are the results of destruction of the forest areas. For the conservation and preservation of valuable plant species of the study area, awareness should be created among the local people about the usefulness of plants in general and economically important plants in particular, to raise their interest in the conservation of forests so that they can raise their voice against their destruction. Another important step towards conservation of plant biodiversity is the establishment of tissue culture laboratory for the quick multiplication of endangered but economically important plant species for future generation. Government should come forward with liberal grants for raising ethnobotanical plant gardens used by the tribes of the Valley under strict supervision of experts in the field. This will be much fruitful with regard to conservation of ethnobotanically important plant species. Tribal people should be encouraged about the value of their traditional knowledge regarding the use of indigenous drugs so that the tribe continuously practices the indigenous knowledge of traditional drugs so that the valuable knowledge are saved for the benefit of the future generation.

Although the gradual urbanization is wiping out the knowledge of the herbal medicine but village elders still have a good faith and trust on indigenous knowledge on the use of medicinal plants. Therefore, it can be suggested that the ethnobotanically important plant species of this region should be conserved and the information on the
medicinal plants must be preserved and it is the duty of the modern ethnobotanists to save and document the indigenous knowledge of useful plants and traditional practices before they are lost.

Keeping the above in view the present work has been carried out to explore the potential of the plant resources (medicinal and other beneficial plants) used by the Dimasa tribe settled in Barak Valley (Southern Assam), so that their indigenous knowledge can be documented for the benefit of the future generation at large.