CHAPTER 1

INTRODUCTION
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From times immemorial, medicinal plants have attracted considerable attention of man including medical professionals. The use of crude drugs in medicine dates to antiquity. Ever since the dawn and subsequent march of civilization, man has not been able to dissociate himself from plants rather the use of plants has rapidly increased, as food, clothing or decoration. The use of various parts of certain widely growing plants to cure specific diseases has also been in vogue in our indigenous medicine from ancient times. The medicinal uses of plants for human beings as well as for animals in India dates back to the pre-vedic age. According to Ayurvedic “Materia Medica” there is no plant on the planet Earth which has got no medicinal value. The indigenous system of medicine from the Vedic ages has been an integral part of Indian culture and tradition. The valuable information regarding the medicinal plants in India can be traced back to 4500-1600 BC. in the ancient scriptures of Hindus. In Rig Veda (Jain 1994), and in Atharva Veda medicinal use of several plants have been described. Valuable information is also available in ancient treatises like “Charak Samhita” (1000-800 BC.), “Sushrut Samhita” (800-700 BC.), Ayurveda, the indigenous system of medicine which dates back to the Vedic ages (1500-800 BC). The Unani system is originated in Greece in about 400 BC. and the Siddha system, from about 2000 BC. But with the advancement of civilization man’s requirements also increased and the different communities developed their own tradition, culture, customs, cults, religious rites, taboos, totems, legends and Myths, folk tales and songs, food, in medicinal practices etc. Numerous wild and cultivated plants have played a very important and vital role among these cultures and this inter-relationship has evolved over generations of experience and practices. The people of each ethnic group of different communities had distinct in-depth knowledge on the different uses of plants and their properties. Ethno-botany has been recognized as a distinct branch of natural sciences during the present century and there has been an increasing interest in the scientific study of man-plant interaction. The term “Ethno-botany” was first coined by J.W. Harshberger of Pennsylvania University, Philadelphia in 1896 to the study of Plants used by the primitive and aboriginal people. Subsequently, Jones (1941), and Schultes (1960, 1962, 1963) had in their own ways introduced the subject in the widest sense as the study of the total relationship between primitive people and the plants used by them. The term Ethno-botany deals with “study of plants used
by primitive and aboriginal people" (Anonymous, 1895). Various workers have given different definitions and explanations of the term "Ethno-botany". A few definitions are worth mentioning as follows – a) the study of the relations between human and their ambient vegetation (Gilmour, 1932; Castetter, 1944); b) the interrelations between the culture and the usage of plants (Jones, 1941); c) the study of direct relationship between humans and plants (Ford, 1978); d) the study of the use of plants in primitive societies in both modern and ancient times, e) technological manipulation, classification, indigenous nomenclature, agriculture systems, magico-religious concept, conservation techniques and general sociological importance of the flora in primitive societies (Schultes, 1992); f) the study of plants by human beings, and their use as food, medicine, building material and for many other economic applications (Farnsworth, 1994); and g) the total direct relationship between human beings and plants (Jain, 1994). Changes in the interpretation of Ethno-botany are given in tabular form as follows (Table: 1).

Table: 1. Interpretation of Ethno-botany:

<table>
<thead>
<tr>
<th>Date</th>
<th>Interpretation of Ethno-botany</th>
<th>Sources</th>
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</thead>
<tbody>
<tr>
<td>1873</td>
<td>Aboriginal Botany - the study of all forms of vegetation which aborigines used for commodities such as medicine, food, textiles and ornaments.</td>
<td>Powers 1873 (in Castetter, 1944)</td>
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<tr>
<td>1895</td>
<td>Ethno-botany – the use of plants by the aboriginal people.</td>
<td>Harshberger (1896)</td>
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<tr>
<td>1916</td>
<td>Not just recorded plant use, but the traditional impressions of the total environment as revealed through custom and rituals.</td>
<td>Robins et al. (1916) (in Castetter, 1944)</td>
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<tr>
<td>1932</td>
<td>Not only tribal economic botany, but the whole range of traditional knowledge of plants and plant life.</td>
<td>Gilmour (1932)</td>
</tr>
<tr>
<td>1941</td>
<td>The study of the relations which exist between human and their ambient vegetation.</td>
<td>Schultes (1941) (in Castetter, 1944)</td>
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</table>
The study of the interrelations between Primitive human and plants.

The study of the direct relationships between human and plants.

All studies (concerning plants) which describe local people’s interaction with the natural environment.

However, the endeavours in the first four decades have designed this subject as multidimensional science which requires interdisciplinary efforts to disclose every aspect of direct man-plant relationship. It involves a holistic approach to understand the total reciprocal and dynamic aspect of human interaction with plants. Since plants are involved in all aspects of human life, the relationship is studied by a number of disciplines like botany, medicobotany, phytochemistry, pharmacology, sociology, anthropology, etc.

In spite of this convincing concept there have been attempts to include economic botany in the ambit of Ethno-botany. Many Ethnobotanists still continue to bring to light, some additional plant species for food and medicine by tapping the heritage of tribal communities. Faulks (1958) considered Economic botany, (including modern usage of plants) to be very much a component of Ethno-botany. Ford (1978) once again insisted to include the modern economic uses of plants within Ethno-botany.

Interdisciplinary aspects of Ethno-botany are revealed in the form of Ethno-pharmacology, Ethno-gynaecology, Ethno-orthopaedics, Ethno-pathalmology, Ethno agriculture, Ethno-horticulture, Ethno-silviculture, Ethno-toxicology, Ethno musicology, Ethno-chemistry, Ethno-technology etc. As far as subdisciplines of Ethno-botany are concerned, the Ethno-mycology, Ethno-algology, Ethno-lichenology, Ethno-pteridology, Ethno-ecology, Ethno-taxonomy, Ethno-archaeobotany, Ethno-phytochemistry, Ethno-palaeobotany, Ethno-medicobotany etc. deserve mention. The named subdiscipline have earned the greatest quantum of importance and interest since they have opened new vistas in medical science and have given us the key to the treasure house of medicinal plants for optimum sustainable use. In Ethno-botany, the use of the word "Primitive" is not accepted by many Ethnobotanists of the world. S.K. Jain (1994) has
suggested to remove the word “Primitive” from the definition of Ethnobotany. The Mayan Ethno-botany is based on literate traditions.

One of the interesting plant species ‘tobacco’ was rolled and smoked by the native of Cuba which was previously unknown to the Europeans (Cotton, 1996). In 1900s the new era of Ethnobotanical studies has began to flourish and different Universities and institutions started their activities. David Barrows was first awarded a Ph.D. degree in Ethno-botany in 1900. It was Prof. Edward Castetter who introduced a post graduate degree programme in Ethno-botany at the University of New Mexico in 1930, he even expanded the study to include animals in the field of Ethnobiology (Castetter, 1944). In 1930 Dr. Melvin R. Gilmour founded Ethnobotanical laboratory at the University of Michigan (Museum of Anthropology) to primarily study the plant remains of the archeological sites (Ford, 1986). Ethnobotanical data were rapidly accumulated, and widely accepted / recognized in United states of America by the 1980s.

In 1981, a society of Ethnobotanists was founded in India, with the publication of the Journal of Ethno-botany. An institute of Ethnobiology was established in 1995 in India at the N.B.R.I (National Botanical Research Institute), Lucknow. The publications in Ethno-botany in between 1990 and 1994 have almost doubled compared to the previous five years (Cotton, 1996). In recent times as many as 420 research papers and 14 books of Ethno-botany have been published from India covering Ethnobotanical investigation of about 250 ethnic groups (Rao, 1996).

Out of the 17000 species of angiosperms found in India 1500 species with medicinal properties have been recorded in ‘Wealth of India’ vol. I – XI (1948 – 1976), 1400 species have been mentioned by Chopra etal. (1956, 1969) and 1600 species with medicinal properties have been recorded by Nayar etal. (1989, 1994.)

The latest count by Asolkar etal. (1992) have recorded 1780 species of plants belonging to 850 genera.

Commercial prospect of Indian medicinal plants is also quite appreciable. There are 542 species of plants used in 1675 medicine, which are formulated by 170 pharmaceutical companies. Many of these therapeutically proved medicinal plants owe their origin to Indian folk or tribal medicines. Presently, we have a long list of information about the use of medicinal plants. But, verification of the information has been completed in some cases only (Pushpagandhan, 1994).
The influence of modern civilization forced most of the primitive societies to break away from many of their cultural and traditional beliefs and practices. Importance of traditional and folk medicines in the treatment of various human ailments is well known. Several selected plants are used by the tribals / other communities for curing these ailments. For many centuries the aborigines had a traditionally self managed system of folk medicine mainly based on the herbal remedies. Modern medical facilities have not reached in the remote and far flung areas as yet. Ethnic people have strong belief in the traditional system of native folklore – medicine for remedies and they rely exclusively on their own herbal care system. With the opening of new vistas of Ethno-botanical studies, the scope of Ethno-botany has been enlarged, both in terms of its theoretical contributions to an understanding of man-plant relationship, as well as for the practical applications of the biological knowledge of tribal / other communities in medicine, agriculture, health and industry. The ultimate aim of Ethnobotanical research is validation of the knowledge of the primitive communities and their practices and preparations. Deforestation has threatened not only the biological resources but also the traditional culture and Ethnobotanical knowledge.

The world health organization estimates that about 80% of the rural people rely almost exclusively on traditional medicine for their primary health care. It is also assumed that about 80% of the 5200 million people of the world live in less developed countries. Health and diseases are parameters of the effectiveness with which human groups adopt to their environment. With increased concern about rising health care costs, some governments are encouraging the use of indigenous forms of medicine rather than expensive imported drugs. This has been a strong reason for the resurgence of herbal products.

Herbal medicines include herbs, herbal materials, or herbal preparations and finished herbal products that contain active ingredient, parts of plants, or other plant materials or combinations. Traditional use of herbal medicine refers to the long historical use of these medicines. Since medicinal plants are the backbone of traditional medicine, it can be said that more than 3300 million people in the underdeveloped countries utilize medicinal plants on a regular basis (Farnsworth, 1994).

The north eastern region of India is one of the richest biodiversity zones and it has diverse Ethnic communities settled here since long time. It is the store house of medicinal herbs which are naturally grown and available in the forests but presently some of the plants have become rare i.e. *Angiopteris evecta* (Forst.)

The diverse Ethnic communities are gradually losing their traditional culture, uses of medicinal plants etc. Therefore, there is urgent need to record such information regarding the properties and utilization of these plants in order to cure different ailments. It is also important to conserve such types of plants and to vitalize the traditional culture/knowledge and beliefs. Thus, it is a very important task for the scholars & research workers to record the medicinal plants, and to help to conserve them so that they do not disappear completely. This task remains with the different scientists / Ethnobotanists of the North East India.

The Cachar district of Assam has received very little attention on the survey of medicinal plants till date. Therefore, there is urgent need for the documentation of the medicinal plants used especially by the tribal and non-tribal communities from this biodiversity rich area. This required for the purpose of the development of new drugs; and to explore the flora of Cachar district at large for their inventorization and conservation.

Therefore, the present investigation is designed to cover the following objectives / aspects.

a) As there is no specific flora or any specific work on the medicinal plants of Cachar district available till date, a detailed survey of the medicinal plants will be carried out in the present study.

b) Information on the Ethno-medicinal plants used by the different communities of Cachar district of Assam will be recorded (i.e. Barman, H’mar, Riang etc.)

c) The information gathered from the different communities will be cross checked and verified.

d) The medicinal plants used by the selected communities will be collected and identified. The phenological study of the plants and soil analysis of the study area will also be carried out.

e) Herbarium of the collected plant species will be prepared.
f) Screening of the active ingredient from some of the selected plants will be done for assessing their potential for clinical use. However, due to lack of laboratory facilities only preliminary phytochemical analysis will be carried out.

g) Biological screening of the extracts of few selected plants will be carried out against a few selected bacteria e.g *Staphylococcus* sp. and *Streptococcus* sp.