REVIEW OF LITERATURE

People have used various plant resources suitable for their purposes and usually more by the healers of different ethnic communities from time immemorial. Ethnobotanical investigations on medicinal plants in ethnobotanically rich human societies have been undertaken by various ethnobotanists of modern world as well as local communities in an attempt to preserve and document the vanishing knowledge and to introduce the use of medicinal plants abroad and in India.

International Status:

In early periods many workers like Heines (1910); Nelson (1944); Gregson (1949); Russel & Hiralal (1916) etc. Browning (1985) studied on home gardens in USA. The modern approach to the science of Ethnobotany started in the United States and foremost centre in the Botanical Museum of Harvard University of Massachusetts reported the ethnobotanical importance about the different tribes and communities. Investigations on Ethnobotany of medicinal plants have been undertaken by various ethnobotanists from other countries. Few significant contributions are described below.

Ethnobotanists such as E. Wade Davis, Richard Gorden Wasson, Rachard Evans Schulte, Sir Von Reis Altschul, Timothy Plowman and others contributed in various fields of Ethnobotany. The medicinal uses of 121 plant species which grow in the Akha tribal zone of Thailand has been documented by Anderson (1985). Indigo obtained from aerial parts is used to dye their traditional clothes, and the roots & leaves are used as medicine. The ancient heritage of Vedic literature in India dates back to1000 to 2000 B.C., which contain valuable information regarding medicinal plants.

Manandhar (1991) reported on the medicinal plant-lore of Tamang Tribe of Kabhrepanchok district of Nepal. Maheshwari (1996) studied the Ethnobotany of Asian countries and reported the number of plant species used in different ways i.e. as food (3,900), medicine (7,500), fibre & Cordage (525), fodder (400), pesticides (300), gums, resins & dyes (300), incense & perfume (100) and other materials & cultural requirements (700). Rahman & Yusuf (1996) reported 46 Zingiberaceae plants used by the tribal and local people of Bangladesh. Choudhury et al., (1996) also reported 42 folk medicinal plants used for the treatment of dysentery and diarrhea. Bhattacharya (2000) did ethnobotanical study in Bhutan.
and published 43 plant species which are used in folk medicine. Mahato & Chaudhary (2008) documented 115 ethnomedicinal wild plants from the Palpa district of Nepal.

**National status:**

Many books on the Ethno- medicine by different authors have been published since the colonial days of 1563. Some important books are ‘Dictionary of Economic Plants’, ‘Indian Medicinal Plants’ by Basu (1933), ‘Medicinal plants of India and Pakistan’ Glossary of Indian Medicinal Plants ‘by Chopra et al. (1956), CSIR publication of wealth of India series on “Raw Materials”, Medicinal Plants by Jain (1985), “A catalogue of Indian medicinal plants and drugs” by Fleming (1810) etc. Janaki Ammal initiated ethnobotanical study as an official programme in the Economic Botany section of Botanical Survey of India in 1954. She (1956) published a paper on the subsistence economy of India. Jain (1963a, b, 1964a, b, c &1965) started sporadic work among the tribals of central India and published a good number of papers on Ethnobotany. During the last few decades many ethnomedicinal works have been reported regarding the informations on medicinal plants from different parts of the country Jain & Mitra (1997). Chopra et al. (1949) reported on poisonous plants of India. Mhaskar & Cafus (1931) published a list of plants used as antidote in their paper “Indian Plant Remedies in Snake Bite” etc.

In India, there are about 50 million people of different ethnic groups distributed in different states. Rao and Henry (1996) published their work in ‘ the Ethnobotany of Rajasthan, India’ Several India workers like Jain (1991, 1999) have made good contributions to the Ethnobotany of India. Recently some pioneer research worker like Jain (1991) has laid more emphasis on certain interesting and useful information on the less known and unrecorded uses of plants including Ethnobotanical aspects and streamlined the subject as one of the major botanical researches in India. Hajra (1981) reported on the nature of conservation in Khasi folk beliefs and Taboos.

Jain (1963a) intensively studied the Gond tribe of Madhya Pradesh which represents about 54% of the total population of the state. He described about the plants which are used as vegetables, medicine, fibers, fish poison, decoration etc. and as agricultural crops in shifting cultivation. He also described plants used as myths, beliefs and witch crafts. He grouped 34 plants mentioned in magico-religious beliefs in several categories of uses. Again Jain (1964a) recorded 88 wild edible plants under 10 groups used by the tribes of Bastar
district of M.P. Among them 101 are medicinal plants divided into 35 groups of ailments with 8 methods employed in the preparation of medicine for different treatments.

Jain (1965) reported 9 timber yielding plant species used in making different musical instruments used by the Gonds and 20 species by Kondh & Savara tribes of Ganjam and Phhulbari in Orissa used for magico-religious purposes. Maheshwari & Singh (1965) published “Dictionary of Economic plants in India”. Such ethnobotanically important plant species needs conservation and sustainable utilization which can help in the development of new pharmaceutical industries. Jain (1968 & 1991) published 2 books of ethnobotany called “Medicinal plants” and “Dictionary of Indian folk medicines and Ethnobotany”.

Besides the classical Indian works, much data on the uses of plants including the medicinal plants have been systematically gathered and compiled. Some worth mentioning illustrious books such as ‘Dictionary of Economic Plants’, ‘Indian Medicinal Plants’ by Kritika and Basu (1933), ‘Medicinal plants of India and Pakistan’, of “Glossary of Indian Medicinal Plants” by Chopra et al., (1969), CSIR publication of wealth India series on “Raw Materials”, etc. All these works dealt elaborately with the use of plants and more recently researches on Ethnobotany have been given due importance by a number of workers.

Manilal (1981) reported ethnobotanical account of the resemblance in shape of the dolmens to that of mushroom in several localities of Kerala. Goel & Rajendra (1999) reported 225 plant species used by the tribal of Sankhals and Paharia localities of Santal Pargana. Gangwar & Ramakrishnan (1990) reported 171 medicinal plant species used by the Nishis and Sulung tribes of Arunachal Pradesh.

The importance of Ethnobotanical researches is keenly felt as it represents one of the best ways for searching new plants for medicine. The world health organization has started sponsoring several research programmes on traditional medicine in developing countries. Institutions like Botanical Survey of India, Central Institute of Medicinal and Aromatic plants and number of other institutions are deeply engaged in Ethnobotanical researches. Man-plant interaction in natural environment is clearly visible among the various indigenous people commonly designated as tribes (Gupta, 1995). Various researchers worked on the ethnobotanical field in many places of the world like Morie (1985); Saxena (1986); Kumar et al. (1996); Mahato & Chaudhary (2005).
Kapoor & Singh (1996) published 88 species of traditionally important plants in Udhampur district of Jammu. Changkija (1999) presented 109 plants used as medicine by the different tribes of India. In India various researches have been carried out in many ethnobotanical studies. They published about the different plant species used for different purposes by the tribes viz., Rana et al. (2000) reported 28 plants used in diabetes; Viswanathan (2000) reports 33 folk medicinal plants; Kirn et al., (2000) reported 8 species of gymnospermic medicinal plants; Sharma & Rana (2000) reported 27 species of medicinal plants from Himachal Pradesh; Pandey & Pande (2000) reported 17 gymnospermic medicinal plants from Kumaun Himalaya.


**North East India:**

During the last three decades ethnobotanical surveys have been undertaken in the N.E. states with a view to prepare resource inventories of plants used by the tribals. Natural resource including numerous plant species of medicinal, fibre yielding, edible, dyes, aromatic and other economic value abounds the North-East India. Floras of this region are gradually facing danger for its existence even without receiving a scientific scrutiny. But there has been some resurgence of interest in the study of medicinal plants and some regional accounts of medicinal plants have been published by many authors. Clarke (1889) extended his ethnobotanical work up to Kohima and Manipur. Some significant ethnobotanical works are; Arora & Mehra (1977); Jamir (1977&1999); Dam & Hajra (1981); Rao & Jamir (1982 & 1991); Nayer (1989 & 1994); Arora (1995); Rawat & Chaudhury (1998); etc. Deb (1981) worked on the economic and medicinal plants of Tripura. Traditional medicinal plants used by some tribes of Jalpaiguri are reported by Choudhury et al., (1982).

Ethnobotany of North-East India with special reference to Naga tribes has been studied by Rao (1990) and he reported 28 medicinal plants, 58 wild edible plants, and 36 plants of miscellaneous uses. Borthakur (1981a & b) reported on the folk-lore and
masticatory plants used by the Karbis of Assam. Some authors documented various ethnobotanical works viz., Arora (1981) reported about the medicinal plants used by the Khasi & Jaintia tribes of Meghalaya and Monpas of Kameng district. Hajra and Baishya (1981) reported the conservation in Khasi folk beliefs and taboos. Rao (1989) reported an account of plants used by the Garos of Meghalaya. Hajra (1981) investigated about the plants related to folk beliefs and Taboos of Khasi. Rao (1981) studied about the medicinal plants used by Khasi & Garo tribes of Meghalaya. Reports of ethnobotanical plants were published by different authors from north-east India viz., Kumar et al., (2000); Archana (2000); Awasthi & Goel (2000); Chaudhury & Neogi (2000); Dutta & Nath (2000); Baishya (2001); Bora et al., (2001); Chauhan (2001); Dutta & Dutta (2001); Gogoi (2001); Handique (2001); Majumdar et al., (2001); Nath & Sarma(2007); Galav et al., (2007) etc. Some threatened medicinal plants from the North-Eastern India has been reported by Majumdar, (1991).


Das (2006) reported the medicinal plants use by the different communities of Cachar district of Assam. He reported 245 medicinal plants consisting 13 pteridophytes and 232 angiospermic plants. Kar & Borthakur (2008) reported on the tribal communities of Assam like Bodo, Karbi, Dimasa, Mishing, Garo, Khasi, Jaintia, Rabha, Kuki, H’mar, Zeme Nagas, and Rengma Nagas etc. Nath et al., (2011) reported 34 medicinal plants used in different ailments by the Dimasa tribe of Barak Valley. Nath & Dutta (2011) published 41 plants species used in the major ailments by the Jaintia & Rongmei Naga tribes settled in Barak
Valley. Renchumi et al., (2011) reported 98 species wild edible fruits from Dimapur district of Nagaland.

Tribal communities of North-East India are either unexplored or under explored with regard to their floral wealth with their ethnobotanical knowledge (Rethy et al., 2010). Chakraborty et al. (2010) reviewed the ethnobotanical studies in Barak Valley. Das et al., (2010) published a book about the medicinal plants used by the tribal people of Southern Assam. Dutta et al., (2010) reported 26 antipyretic plants used by the Manipuri community of Barak Valley. Basak et al., (2010) reported 34 Zingiberacious medicinal plants of North–East India specially of Arunachal Pradesh.


**Manipur:**

Several workers have studied on different parameters of Ethnobotany in Manipur. Deb (1961) reported 45 plant species (excluding common cultivated plants) used by the people for different purposes. The first book “Medicinal plants of Manipur” was published by Sinha in (1996). Elangbam et al., (1989) reported 35 ethnobotanically useful plants found in Ukhrul district of Manipur. Bhatia (1981) published a list of plants of Loktak Lake including the floating mat (Phumdi) having 14 floating, 15 submerged, 5 rooted and floating plants. Most of the plants are ethnobotanically important. Reddy (1996) studied on Achyranthus aspara L. used by the Manipuri & Bengali people to treat different diseases like skin eruption, urinary trouble, stomachache, piles, boils, appetizer etc.

species belonging to 30 families used in the extraction of dyes by the Meitei community of Manipur along with the method of extraction and their uses. Khan (2005) studied on the ethnomedical aspect in Thoubal district, Manipur.

Banaraj (2007) reported 41 plant species used as spices and condiments by the people of the valley district of Manipur. Sandhyarani et al., (2009) described 63 species of edible flowers belonging to 34 families found in the valley district of Manipur. In Tamenglong District 14 species of Zingiber are used as spices or medicine (Damei & Kumar, 2011). Many authors have reported various ethnomedical works in different fields. Pinokiyo et al., (2012) published 250 species of lichens found in Manipur. Padmabati et al., (2012) reported on the different varieties of Calamus sp. used in the handmade handicraft products.

Numerous relevant literatures on the Ethnobotany of the tribes are gathered from the Libraries of Tribal Research Centre, Manipur University and Assam University, Silchar. Journals, related books, websites and Departmental library of Ecology and Environmental Science, Assam University, Silchar, Assam and by consulting the literature in the Library of Manipur University. Literatures from the libraries at Botanical Survey of India (BSI) Central National Herbarium, Howrah and Botanical Survey of India (Eastern Regional Centre), Shillong. Maps and other relevant details of the state and study sites were acquired from the Department of Earth Sciences, (Manipur University), State Forest Department (Manipur) and Census Department of Manipur. Thanga & Rjketan (2008) in their book “Chirugi Wari Shingbun-Kangchup Chiru” published by the Cultural Research Centre, Manipur mentioned the folklore of the Chiru tribe by giving minute reports on the folktales of the tribe with special reference to the Kangchup Chiru. They also studied the various inhabitants of Chiru tribes in the Manipur State giving details of the population, literacy percentage and percentages of sex, cultural diversities, ethnobotanical implications, etc.

TLFWPK (1980) gave a very detailed work of the Chiru tribe encompassing the settlement, clans, power and functions of each and every clan, socio-religious functions, festivals, marriage systems, etc. The full form of TLFWPK is “The League of the Fourth World People, Kangleipak.

**Ethnophytochemical:**

Many scientists in our country carried out phytochemical analysis of several medicinal plants. It is impossible to mention all the ethno-phytochemical works being carried in India.
Chemical constituents of different plant species were examined initially by Kapoor et al., (1969, 1971, 1972 & 1975); Saxena & Dutta (1975); Behari & Andiwal (1976); Cox (1990 & 1994); Rao & Brahman (1985); George et al., (1985); Suresh et al., (1995); Chen et al., (2001) carried out some phytochemical work. However, qualitative & quantitative variations of such phytoconstituents depend upon the geographical variations of the phytoconstituents in different plant parts (Arnold et al., 1977; Tentanyi, 1978; Ishinguro & Okul), 1997 etc.). Biochemical studies of different plants parts yielded 11 different bioactive compounds like Flavonoids, carotinoids, anthocyanins, terpertinoids, saponins etc. (Reddy, 1996). Works on the biochemical screening of plants and prospects of new drugs from higher plants have been carried out by Farnswarth & Bingel (1997) and Zang et al., (2004).

Qualitative phytochemical screening of some medicinal plants of Cachar district was carried out in Assam (Das, 2006). As per the findings by Sathiskumar et al., (2009) secondary metabolites of medicinally important bio-active compounds viz., alkaloids, Flavonoids, saponins and tannins are present in the medicinal plants with antibacterial and anticarcenigenic properties. Sandhyarani (2010) studied on the biochemical aspects of some plant species of Lamiaceae in Manipur.

Phytochemical analyses (qualitative) of a few selected medicinal plants which are used by the Chiru tribe as medicine as well as vegetable and easily available in their localities were taken up for the study to ascertain whether the above mentioned bio-active compounds are present or not as the plants are believed to be having medicinal properties.

Keeping in view the importance of ethnobotanical studies, the present study has been undertaken to bring out and document a detailed account of the ethnobotanical knowledge of the Chiru tribe of Manipur.