CHAPTER -4

REVIEW OF LITERATURE
4.1: WORK DONE IN ABROAD

Now though modern medicine is considered superior, many westerners and scientists are looking towards herbal drugs as it has no side-effects. De Lazlo and Hanshaw (1954) and Lal and Lata (1980) worked on the plants used by the primitive people to effect fertility, Wasson (1962) reported on the Hallucinogenic fungi; Bolhm (1962) studied the poisonous plants of Venezuela; Schultes (1963) worked on the Hallucinogenic plants of new world; Effron (1967) reported on ethnopharmacological research for psychoactive drugs; while, Bruhn (1973) reported on the Hallucinogenic Cacti.

George (1974) investigated on the medicinal plants of Samoa; Belcove (1976) worked on Taos of New Mexico; Ayensu (1981) worked on Africa & West Indies. Camazine & Bye (1980) worked on Zuni Indians; Gonzalvez (1980) has reported on the medicinal plants of Colombia; while, Anderson (1985) investigated ethnobotany of Akha tribes of Thailand and reported 121 plant species with their medicinal use.

The modern approach to the science of ethnobotany evolved in U.S.A. and the foremost centre for the botanical aspects is the Botanical Museum of Harvard University in Massachusetts. Here, ethnobotanists like Rachard Evans Schultes, Richard Gordan Wasson, Siri Von Reis Altschul, Timothy Plowman, E. Wade Davis etc contributed in various fields of ethnobotany (Shah, 1987). The Southwest of U.S.A. is the best studied area in the world for ethnobotany (Ford, 1985).

George (1995) studied pharmacopoeia of 108 medicinal plant species from 52 families. 50% of the pharmacopoeia is composed of species indigenous to Tonga, 30% are species introduced by Polynesian settlers, and 20% are species of post-European introduction. The most commonly used plants in Tongan medicine are multipurpose plants. Plants used to treat several types of illness whereas other species are most commonly used to treat a single disease.

The well known ethnobotanist of the world Dr. Richard Evan Schultes conducted ethnobotanical explorations in Oklahoma, Oaxaca, Mexico, Amazon and in other regions. He had to spend almost 12 years among the tribals working on
hallucinogens, medicinal and toxic plants (Schultes, 1938, 1954, 1956, 1962 and 1963). Berlin et al., during several years of field work at Maya-speaking group of the highlands of Chiapas, a state of Southern Mexico, collected and documented many hundreds of folk botanical informations (Berlin et al., 1974).

The pharmacological activities correlated with the medicinal uses of 37 potential medicinal plants employed by the Location among refugees in the twin cities of Minneapolis and St. Paul, Minnesota have been reported. The ethnopharmacological analysis revealed that 92% of these cultivated medicinal plants were highly efficacious and are frequently used in their diet (81%) and medicinal purposes against various ailments (Spring, 1989). Capitanio, et al.,(1989) have reported 100 anti-leucodermic traditional herbal medicines consisting of 80 medicinal plant species being employed by Caucasians in the Mediterranean area.

Ethnobotanical information on 150 plant species used by the Chaumash Indians occupying the mainland and off-shore islands in the vicinity of Santa Barbara, California have been reported by John P. Harrington, is provided. Despite massive deculturation, a great deal of this ethnobotanical knowledge survived. The most valuable sources of Chaumash ethnobotanical information is the extensive, unpublished field notes of John P. Harrington, based on the interviews conducted from 1912 to 1950 (Timprook, 1990).

Bhat et al.(1990) have reported 52 plant species collected during the ethnobotanical survey of Kwara State of Central Nigeria. This first-hand information pertains to the importance of plants to the tribal and modernized people of Central Nigeria.

The traditional and modern uses of 48 native plants growing in the Fort Yukon region of Alaska, have been documented and the medicinal and edible material used by the Gwich in Athabaskan and Caucasian residents have been identified. The present and past values of these plants in Gwich’s culture have been discussed by Holloway & Alexander (1990).

Bhattairai (1990) has reported medico-ethnobotanical information on the 51 empirically accepted prescriptions involving 36 plant species belonging to 36 genera and 27 families, collected from the rural inhabitants of Kabhrepalanchock
District of Central Nepal. The ethnobotanical survey revealed that these prescriptions are much employed for common ailments and the remedies are accepted by the majority of the masses over generations. Ethnobotanical information on the 71 plants from Tharu tribe of Chitwan District, and 86 plant species from Makawanpur District of Nepal were reported by Dangol & Gurung (1991) and Bhattari (1990), respectively. Joshi & Edington (1990) also reported medicinal plants of Central Region of Nepal.

Ethnobotanical information on the 36 plants species of Rarotonga, Cook islands, used by the local healers in various ailments has been reported by Holdsworth (1990). John et al., (1990) have gathered information from the 45 herbalists of the Luo of Siaya District of Kenya independently. They have reported 1120 remedial measures from 330 plant species, of which 49% of the remedies were recorded only once. While, 66 remedies from 49 species were recorded through independent reports collected from three or more herbalists to establish a criteria for evaluating the likely efficacies of the particular remedies.

Mahunnah (1991) has investigated 44 medicinal plants, belonging to 39 genera and 21 families, used by the Hene and Safawa tribes, inhabiting the Southern highlands of Tanzania.

Ethnobotanical information on the 52 plant species of Sengkurong and 29 plant species of Bukti Udal of Darussalam were reported by Haji Mohiddin et al. (1991, 1992) and Holdsworth (1991), respectively.

Abbas et al., (1992) investigated 52 folk medicinal plants used in traditional medicine of Bahrain. Cunningham (1993) studied the African medicinal plants with emphasis on their conservation and primary healthcare.

Ethnobotanical information on the uses of bark of 21 species by the Gitksan, Wet'su, Wet'su and Haisla people of West Central British Columbia is reported. Out of these, 16 species are employed for medicinal purposes (Gottesfeld, 1992).

Yang et al., (1992) compiled ethnobotanical information on the 157 species of Cucurbits of China. Out of these, 63 species are of economic importance. 26 of these 63 species are under cultivation in China.
A brief account of herbal remedies prescribed for various ailments in Sudan is given with mode of application along with precautions, if any (El Rayah, 1993).

Gill et al. (1993) documented 80 plant species belonging to 43 angiospermic families of Esan people of Nigeria. The chemical constituents detected in each plant are presented.

Ethnobotanical information on the 152 plants used by the people of Nicaragua's Atlantic Coast for the treatment of various diseases, is provided. The diversity and prevalence of medicinal plant uses for this region has been reported for the first time (Barrett, 1994).

Bibliography of ethnobotany by Jain et al. (1984) contains about 2000 references covering almost all the major publications on ethnobotany, Indian as well as foreign.

Some of the important foreign books on various aspects of ethnobotany are *Ethnobotany of the Coahuilla Indians* (Barrows, 1990); *Notes on Jamaican Ethnobotany* (Beckwith, 1927); *Ethnobotany of the Thompson Indians of British Columbia* (Steedman, 1930); *Ethnobotany of Western Washington* (Gunther, 1945); *An introduction to Ethnobotany* (Faulks, 1958); *Ethnobotany of the Hawaiians* (Beatrice, 1975); *The nature and status of ethnobotany* (Ford, 1978); *Ethnobotanica Lengua Maskoy* (Arenas, 1981); *Palaeoethnobotany of the Kameda Peninsula Jomon* (Craford, 1983); *Huastec Mayan Ethnobotany* (Alcorn, 1984); *People of the Desert and Sea: Ethnobotany of the Seri Indians* (Felger and Moser, 1985); *Edible wild plants of the Prairie: An ethnobotanical Guide* (Kindscher, 1987); *Thompson Ethnobotany* (Turner et al., 1990); *Ethnobotanical classification* (Berlin, 1992); *Ethics, Ethnological Research and Biodiversity* ((Cunningham, 1993); *Ethnobotany: a methods manual* (Martin, 1995); *Ethnobotany- Principles and Applications* (Cotton, 1996); *Dariene Ethnobotanical Dictionary* (Duke, 1968); *Isthmain Ethnobotanical Dictionary* (Duke, 1986); *Amazonian Ethnobotanical Dictionary* (Duke & Vasquez, 1994).

Bhattacharyya (2000) reported the ethnobotanical wealth of Bhutan. The uses of collected plant species ranges in diverse dimensions like food grains, vegetables, raw materials for hand-made baskets, dyeing of fabrics, fermentation
starter, stick, lac insects, oil seeds/nuts, medicinal, aesthetic purposes, beverages etc.

Siwakoti & Siwakoti (2000) reported 122 plant species belonging to 114 genera and 57 families used as medicine by the Satar tribe of Nepal.

Wangchuk et al. (2008) reported on the high altitude plants used in Bhutanese traditional medicine and 100 medicinal plants used by them. Idu et al. (2008) recorded 44 medicinal plant species belonging to 40 genera and 27 families with details of their ethnomedicinal applications from Edo States of Nigeria.

Signorini et al. (2009) reported on the plants and traditional knowledge in the form of a book: An ethnobotanical investigation on Monte Ortobene.

Ong et al. (2011) enlisted a total of the 52 species of medicinal plants used by the Malay villagers of Kampung Tanjung Sabtu of Malaysia.
Vast ethnobotanical knowledge exists in India from ancient time. Written records of the use of plants for curing human or animal diseases in India can be traced back to 4500-1600 BC. Scriptures of the Hindus, the Rigveda (Jain, 1994). Ayurveda, the Indian indigenous system of medicine, dating back to the Vedic ages (1500-800 BC), has been an integral part of Indian culture (Weiss, 1987). The term comes from the Sanskrit root, Ayur = Life and veda = knowledge. As the name imply, it is not only a science of treatment of illness but coveres the whole gamut of happy human life involving the physical, meta-physical and the spiritual aspects (Sivarajan and Balachandran, 1994).

According to Kirtikar and Basu (1935), in India the ancient Hindus should be given the credit for cultivation what is now called ‘Ethnobotany’.

The scientific study of Indian indigenous drugs was initiated in the early part of the last century when John Fleming published A Catalogue of Indian Medicinal Plants and Drugs (1810). Ainslie published the Materia Medica of Hindustan in 1813 and Fluckiger and Handburg published the Pharmacographia in 1817. But the study of indigenous drugs gained momentum with the publication of Chopra’s book Indigenous Drugs of India (1933).

Studies on ethnobotany was initiated by Dr. E.K. Janaki Ammal as an official programme in the Economic Botany Section of Botanical Survey of India since its very inception in 1954 and published a papers on the subsistence economy of India (Janaki Ammal, 1956).

Survey of the less known plants used by tribals by Pal & Banerjee (1971) triggered the attention and ethnobotanical studies that have been carried out in many institutions. Ethnobotanical uses of 38 plant species were reported from the Orissa state (Rai Chaudhuri et al. 1975). Pal and Srivastava (1976) conducted a preliminary survey of ethnobotany of Singhbhum district.

Banerjee (1977) studied the ethnobotany of Araku Valley in Visakhapatnam. The worship of Ficus religiosa in North Bihar has also been reported. Srivastava & Verma (1981) recorded uses of 110 species of plants from...

Manilal (1981) reported 26 primitive varieties of rice used by the tribals in Malabar having medicinal values. Ramchandranan & Nair (1981) made an ethnobotanical survey of Cannanore District of Tamil Nadu and reported 93 plant species. Other important contributions are Ethnobotanical uses of plant species by the ‘Paaharia’ tribe of Godda District of Bihar (Singh et al. 1992).

Oommachan & Masih (1991) discussed the conservational aspects with reference to folk medicinal plants of the state and reported 233 flowering plants of high medicinal value, found wild in the Orissa.

Some of the notable works of West Bengal are : plants used for food by the tribals in Purulia (Jain and De, 1964); further, they recorded plants of ethnobotanical importance used by Santhals , Bhumij, Birhors and Kherias in Purulia (Jain & De, 1966; Sur et al. 1992); ferns of edible and medicinal value used by the tribals of Darjeeling (Dixit et al. 1978); ethnobotanical survey of Cooch Bihar district (Ghosh, 1986); common herbal medicine practiced in Bankura district (Namhata and Mukherjee, 1989); plants used in different herbal remedies of Lodha tribe in Midanapura district (Pal & Jain, 1989); ethnobotany of West Malda in Dinajpura district (Sur et al. 1990); herbal medicines used as folk remedies by the tribals (Bhumij, Koras, Mahali, Mech, Munda, Kora and Santhals) of Bankura district (Namhata and Ghosh, 1993). The use of 36 plants used for rheumatic pain, chronic acidity and tuberculosis and the productivity and extraction of four important plants under JFM-programme has been reported by Mishra et al. (1997).


Cyanidanol, the active principle of *Acacia catechu* is claimed to be effective in liver diseases by Nirmala et al (1984). Its hepatoprotective effect was studied in rats by establishing models of liver pathologies with the help of carbon tetrachloride. The agent was found to be effective in preventing fibrosis but did not influence the regeneration of parenchymal cells.

Nirmala et al (1984) studied an indigenous agent of *Piper longum* against the hepatic damage induced by the well-known hepatotoxin, carbon tetrachloride. They found that *Piper longum* neither gave protection against the acute damage, nor against the cirrhotic change. However it improved the regeneration process by restricting fibrosis.

Seven constituents were isolated from *Liquidambas formosana* fruits by Chohachi et al (1988). Among the isolated constituents butyronicacid revealed remarkable protective activity on chemically induced cytotoxicity in primary cultured rat hepatocytes.

A survey by Sinha and Nathwat (1988) suggested that many of the herbs used in the treatment of jaundice by laymen, or rural practitioners, are very common, easily available everywhere and also cheaper. Their preparation methods are also simple and convenient in administration. A survey of the people who had taken herbal treatment for jaundice from street healers pointed to some encouraging
results. *Cassia fistula*, *Picrohiza kurroa* and *Tinospora cordifolia*, etc are some of the plants as herbal drugs chosen for the treatment.

Maheshwari *et al* (1990) have described 75 species in ethnomedicine used by Oraon and Kotwa tribes of Surguja and Rajgarh districts of Madhya Pradesh, in Central India.

Goel and Aswal (1990) have gathered information about the medicinal uses of the 12 plants from Northern India. They recommended to verify the efficacy of these plants and their formulations on modern pharmacological lines.

An ethnobotanical study was conducted by Lakshman and Narayan (1990) among the Irulars, the tribal of Anackkatty Hills, north-west of Coimbatore, Tamil Nadu, to collect information on the drugs for birth control and their plant use practices. The data was collected at three different levels i.e., prevention of pregnancy, contraceptive method and abortion.

An ethnobotanical survey of the tribals of Maidanpat and adjoining areas of Laharbag District, Bihar, has been made by Verma and Pandey (1990). Thirty-two plant species have been recorded which are used by the local people for the cure of various ailments.

32 plant species used by the Okpameri tribe in traditional medicine were described by Karatela *et al* (1991). The information was gathered from different sets of people, including village heads, elders and herbalists.

An ethnomedicinal survey of the tribals of Chotanagpur and Santhal parganas of Bihar has been made by Hembrom (1991). A few prescriptions for polio, asthma, tuberculosis, epilepsy, cancer and leprosy are given as examples of the vast ethnomedicinal heritage of the region.

Jain and Saklani (1991) gave a brief account of a few plants used by the primitive people in the Tons valley region in the Uttar Kashi district of the north-west Himalayas.

Considerable phytochemical and pharmacological investigation on various plant species have been carried out by various workers. A number of phytochemical as well as pharmacological reports on a large number of plants are available. A large number of herbs have been chemically investigated by a number of workers
(Kirtikar and Basu, 1933; Chopra et al. 1966; Khetwal, 1983; Trease et al., 1983; Gayton, 1985 and Ambasta, 1986).

Rana et al. (2000) highlighted on the traditional phytotherapy of 28 indigenous medicinal plants for the treatment and control of diabetes among the different tribals and rural population of India. Pal et al. (2000) reported on the 120 medicinal plant species used in children (new born baby to 10 years) diseases among tribals in India.

Multipurpose ethnobotanical uses of *Urtica dioica* L. along with its local name have been described by Narayan (2000). Pandey and Chauhan (2000) worked on the antiseptic property of fruit pulp of *Solanum surattense* Burm.f. & Nitrofurazone, an anti-infective drug on dogs. Mudgal et al. (2000) worked on the ethnobotanical, pharmaceuticals & food values of *Moringa pterygosperma* and its products and compared this plants with some common vegetables for content in them.

Alagesboopati & Balu (2000) worked on the *Andrographis* Wallich ex Nees and reported 10 species of Andrographis by the tribals of Tamilnadu viz. Kader, Malayali, Irular, Toda, Kota, Gouda, Badaga & Kurumba.

Nargas & Trivedi (2000) worked on the traditional and medicinal importance of *Azadirachta indica* Juss. and documented the uses of different parts of Neem plant.

Kumar & Goel (2000) reported 10 ethnomedicinal plant species frequently used by various tribal communities of Bihar with their documented uses for the remedies of 30 ailments.

Panda & Das (2000) worked in Baliguda sub-division of Phulbani district, Orissa, and collected 60 medicinal plants from Kondh, Gond, Lodha, Amanatya and Saura tribes inhabiting the area.

Mohanty & Rout (2000) worked on *Careya arborea* Roxb. and revealed that this plant is used for religious and medicinal purposes from ancient times in India. Unique utilization of this plant is for garment and safe abortion of unwanted pregnancy among the tribals and rural people of Orissa. Subramaniam (2000) collected and documented the medicinal uses of 106 species belonging to 91 genera.
and 54 families from different areas of Chitheri Hill ranges in Dharmapuri district of Tamilnadu. Rosakutty et al. (2000) recorded the uses of 74 plant species belonging to 64 genera and 43 families from Kanyakumari district of Tamilnadu.

Balu et al. (2000) recorded 30 folklore botanical remedies for diabetes in the Cauvery Delta of Tamilnadu. Baburaj et al. (2000) reported 66 cultured plants of the Nilgiri district of Tamilnadu which were found to be useful in the Homoeopathy system of medicine. Girach et al (2000) recorded 58 plant species used by the native of district Bhadrak in skin diseases such as cuts, wounds, boils, eczema, scabies etc.

Banerjee (2000) enlisted 39 plant species having medicinal value from eroded soil of Birbhum, West Bengal. Ethnobotanical uses of plants in veterinary medicine by the tribals of Bankura district have been reported by Ghosh (2000). Some ethnobotanical observations have been made amongst the aborigines of Andaman and Nicobar Islands related to plants used for gynaecological, urinogenital and other related aspects by Dagar & Dagar (2000).

Cross-cultural Ethnobotanical studies on the tribes of Santhal Pargana & Western Ghats have been done by Goel & Rajendran (2000) & they found that 20 plant species have been commonly used by these tribals to cure similar or different ailments.

Topno & Ghosh (2000) correlated the uses of plants used by the tribals of Chotanagpur with other tribals of India in their work. Singh (2000) reported 109 plants species belonging to 41 families and 86 genera found in Kullu district of North Western Himalayas. It revealed that of the total plants, 73 species were found to be used to cure variety of diseases. Pandey et al. (2000) reported 30 ethnoveterinary plants used for treatment of domestic animals by the aboriginal people of Gonda Region.

Prakash et al. (2008) enlisted 15 less known ethnomedicinal plant species belonging to 13 families which are used as effective remedies by the tribals of Agasthiyamalai region of Southern Western Ghats. Rajendran et al. (2008) reported 59 plant species belonging to 28 families of medicinally important plants used by the rural people of Madurai, Dindigul and Theni districts of Tamil Nadu.
Ethnomedicinal information on the 35 plant species used by the tribals for the treatment of diarrhea and dysentery in Bargarh district of Orissa has been reported by Sen & Behera (2008). Ratnam & Raju (2008) have reported on the folk remedies used against the insect bites by the tribal people inhabiting in and around the forests of Gundlabrameswaram wild life sanctuary.

Arya & Agarwal (2008) documented the folk therapy used for the treatment of eczema, bone fracture, boils, sores and gingivitis from Taragtal province at Ganai block of Almora district in Uttarakhal.

Rana & Samant (2011) reported 270 medicinal plants belonging to 84 families and 197 genera and recorded the diversity, indigenous uses and conservation status of these plants in Manali wildlife sanctuary. Negi et al. (2011) documented 63 plants to assess their therapeutic significance in managing various diseases in the villages of Rawain Valley, Uttarkashi, Uttarakhand.
4.3 : WORK DONE IN NORTH EAST INDIA

Assam: The contributions in the field of ethnobotany in Assam has started since 1958 onwards. Some notable contributions are: medicinal uses among Karbi Anglong of Mikir hills (Borthakur, 1976); folklore claims from the Brahmaputra valley (Boissya and Majumder, 1980); ethnobotanical survey of Miris (Hajra and Baishya, 1981); plants related with folklore and folklife of Karbi Hill tribes (Borthakur, 1981a, b); medicinal plants from Texpur district (Puri, 1987); ethnobotanical information on the plants associated with religio-cultural beliefs of the Tai Khamti race of Assam and Arunachal Pradesh is reported by Gogoi and Borthakur (1991).

Plants used by the Miris or Mishings of Assam and plants in the folklore and folklife of the Karbis (Mikirs) is reported by Borthakur (1996). The herbal remedies of Nepalese of Assam is also reported by Borthakur et al. (1996), and the native plant remedies for Jaundice in Golaghat district was reported by Pandey et al. (1996).

Dutta & Nath (2000) reported 71 plant species used among the Tai-Ahoms of Assam. 34 native plant remedies are reported by Sharma (2000) for the treatment of different diseases prevalent among the Nepales of Assam. Bora (2000) recorded 34 plant species used by the Bodo tribe of Sonitpur district of Assam for curing various ailments.

Burah et al. (2003) worked on the ethnomedicinal plants of Darrang district of Assam and reported 25 medicinal plants species from the 7 villages of Daraang district.

Information on ethnomedicinal use of Polygonum strigosum collected from Mishing tribes of Gohpur has been recorded by Saikia (2008). This plant is used since long time for treating amoebic and bacillary dysentery of man and domestic animals.

Saikia et al. (2011) worked on the anti-diabetic activity of ethnomedicinal plant Scoparia dulcis L. Nath et al. (2011) worked on the joint diseases among the
ethnic groups of Assam and recorded the uses of 28 plant species belonging to 26 genera and 22 families in this purpose.

**Arunachal Pradesh**: Medicinal plants of Arunachal Pradesh (Hajra, 1977); medicinal plants of Tirap district (Tiwari *et al.* 1978); ethnobotanical study of plants used by the Monpa tribe of Kameng district (Dam & Hajra, 1981), ethnobotanical survey of the tribals of Subansiri (Pal, 1984); medicinal folklore of Tirap district (Nath & Bordoloi, 1989); Ethnobotanical information on 171 plant species used by the Nishis, the Hill Miris, the Sulungs and the Apatanis of Lower Subansiri district (Gangwar & Ramakrishnan, 1990); ethnobotany of wild edible plants (Haridasan *et al.* 1990) and ethnobotany of Nishis, Karbis, Kacharis and Chakma (Maikhuri & Ramakrishnan, 1992) are important contributions in the field of ethnobotany. Tiwari and Tiwari (1996) contributed some important medicinal plants of the tropical, sub-tropical and temperate regions of Siang, Subansiri and Tirap districts.

Sharma *et al.* (2003) reported 116 species of plants used by the Monpas and Sherdukpens of Kameng and Tawang districts of Arunachal Pradesh. Dutta & Dutta (2005) worked on a number of tribes of N.E. regions viz. Lete, Mikir, Karbis, Miris, Khasi & Jaintia, Garo, Monpas, Nishi, Apatani, Reangs etc and covered a wide range of plants having ethnomedicinal value against some very important diseases.

Sen *et al.* (2008) recorded the use and ethnomedicinal values of 37 plant species belonging to 29 families utilized by the *Khampis* of Arunachal Pradesh.

Benniamin (2011) worked on the medicinal ferns and reported 51 pteridophyte species belonging 28 families used for curing various ailments by the tribes of Arunachal Pradesh. Khongsai *et al.* (2011) worked on the ethnomedicinal plants used by the different tribes of Arunachal Pradesh and reported 28 plant species, mostly herbs, as medicine.

**Manipur**: Elangbam *et al.*, (1989) surveyed the Tangkhul Naga tribes of Ukhrul district and reported medicinal uses of 36 species. Ethnobotanical uses of 931 medicinal plants were recorded by Sinha (1987); Sinha (1990) reported ethnobotanical uses of 27 plant species employed by the Manipuris in their folk

Singh et al. (2000) reported on the 25 medicinal plant species belonging to 13 families ranging from mushroom to higher angiospermic plants used by the traditional Meitei singers of Manipur to enhance their vocalism.

Mao (2000) reported 5 plants with symbolic uses and 6 plants with superstition beliefs in the Mao Naga tribe of Manipur. An ethnobotanical survey for the family Verbanaceae was conducted by Devi & Singh (2008) in Manipur.

Devi et al. (2011) reported 68 plant species belonging to 39 families and 58 genera used as indigenous edible vegetables by Monsang Naga tribe of Manipur.

The ethnomedicinal information of Kabui Naga tribe of Manipur have been recorded by Devi et al. (2011) and reported 74 medicinal plant species belonging to 43 families with 65 genera used for treating various ailments. Devi (2011) reported 55 plant species used by the Meitei communities of Manipur for the treatment of diabetes.

**Maghalaya**: Joseph & Kharkongor (1981) surveyed the Khasi and Jaintia tribes and recorded 100 plant species of ethnobotanical importance. Ethnobotany of Khasi and Garo tribes were also reported by Rao & Neogi (1980). Rao (1989) investigated 30 interesting herbal medicine used by the Garo tribes of Meghalaya. The ethnobotanical uses of 65 weeds belonging to 26 families of angiosperm by the Khasis, Garos and Jaintias are reported by Neogi et al. (1989). Ethnobotanical uses of 33 plants employed by the Khasis, Jaintias and Garos for ichthyotoxic purposes are documented by Chhetri et al. (1992).

Choudhury & Neogi (2000) enlisted 37 plant species belonging to 34 genera and 15 families used as medicinal plants by the Khasi and Chakma tribes of Meghalaya and Mizoram respectively. Ahmed (2003) reported 30 medicinal plants used by the Khasis of Meghalaya with 55 prescriptions of these plants have been recorded.
Nagaland: Rao & Jamir (1982 a, b) recorded plant species used as medicine by the Nagas. Medicinal plant species used by the Angamis of Kohima district were reported by Megoneitso and Rao (1983). Jamir & Rao (1990) reported medicinal plants used by the Zealang sub-tribes. Rao and Jamir (1990) recorded the ethnobotany of Ao and Angami Nagas. Ethnobotanical folk practices and beliefs of the Ao-Nagas have been reported by Sapu and Yogendra (1996). The medicinal herbs utilized by the Naga tribes have been reported by Jamir (1997).

Jamir et al. (2008) investigated ethnomedicinal plants on 53 species used by the Konyak Naga tribes of Mon district of Nagaland.

Sikkim: Plants used by the tribals, wild plants sold in markets and a new source of food have been reported by Bennet (1983), Hajra & Chakraborty (1982) and Uniyal (1980), respectively. Ethnobotanical significance of millet beer prepared by the tribals of Sikkim is being reported by Singh & Jain (2000). The ethnobotanical information of 650 plant species belonging to 416 genera spread over 87 families have been recorded by Chauhan (2003) in Sikkim.

Tripura: Deb (1968) has reported medicinal plants of Tripura. Singh et al. (1997) reported first-hand information on the medicinal plants used by the Tripuri tribals of Tripura state.

Majumdar & Dutta (2011) reported on Leucas biflora (Vahl) R. Br. a less known ethnomedicinal plant collected from West Tripura and recorded several ethnomedicinal values of this plant.

Mizoram: Lorrain (1940) reported a few traditional medicines used by the Lushais (Mizos). Irish (1975) enlisted 90 diseases/ailments with treatments by ethnomedicines. 93 diseases along with medicines (plants/animals) were recorded by Thangchuanga (1979).

Zoram Upa Pawl Thurawn Bu (Anonymous, 1984) may be treated as a milestone in documenting herbal medicine or local medicine. A total of 228 cases of human diseases and 27 diseases of animals along with ethnomedicine used by the different tribes of Mizoram have been documented. Darliahthanga (1989) reported
97 diseases along with herbal medicine. He also mentioned plants and mineral products to cure diseases of animals. Chawngkunga (1996) documented detailed information on about 85 plants, local classification of diseases (250 human and 17 veterinary diseases), information on herbal medicine based on Ayurveda, Siddha and use of wood Charcoal, etc. Lalrampninglova (1992) reported food plants, fruit plants and medicinal plants with respective uses. Ethnobotanical flora in the humid sub-tropical semi-evergreen forests of Mizoram have been reported by Lalnundanga et al. (1997).

Lalrampninglova (2003) reported more than 200 ethnomedicinal plants along with the ones used in combination with ethnoveterinary plants; 65 threatened plants and 62 new ethnomedicinal plants from Mizoram state have been reported by him.

**Barak Valley**: Some studies on ethnobotany have been reported from Barak Valley in the recent past. The valuable information of ethnobotanical aspects of Reang tribes settled in Barak Valley have been known through the works of Dutta Choudhury M., (2000). Dutta & Dutta (2001) reported on the medicoethnobotanical knowledge of the seven tribes settled in Barak Valley. (i.e. Dimasa, Halam, Deb Barma, H’mar, Jaintia, Kuki and Rongmai). Das et al (2002) have reported 72 plant species from 42 families, used against some common ailments of the tea tribes settled in the Barak Valley.

Saha & Dutta (2003) worked on the status of medicinal plants of Barak Valley and revealed that the status of medicinal plants were found to be fairly good in these areas which are inhabited by the tribes and ethnic groups of North Eastern India settled in Barak Valley. Dutta & Dutta (2005) have also reported about the potential of ethnobotanical studies in North East India with special reference to Barak Valley.

Das et al. (2008) reported 72 edible plant species, in different forms i.e., raw, ripe or cooked used by the Reang Tribes of Barak Valley. Ethnobotanical information on 107 plants species used by the different tribes (viz. Barman, Riang, H’mar, Kuki, Vaiphei, Tea tribes) of Cachar district, for the treatment of various
ailments is were recorded by Das et al. (2008). Dutta Choudhury et al. (2008) worked on ethno-medicobotanical studies on Dimasha Kachari of Cachar district, Assam and reported 68 medicinal plant species belonging to 59 genera and 41 families for the treatment of various ailments by them. Das et al. (2009) worked on the ethnomedicinal uses of Drymaria quercifolia (L.) J. Smith in South Assam which revealed that, this plant is especially used for the treatment of heart related problems and for leucorrhoea.

Das et al. (2010) have also published a book on the medicinal plants of Southern Assam covering the tribes settled in the area. Devi & Paul (2011) explored the ethnobotanical, economical and biological importance of Cicca acida & they recorded that this plant is used for 28 types of remedies like cathartic, emetic, cough, hypertension, asthma, skin diseases etc and as a food in the raw form.

Singh et al. (2011) worked on Chiru tribe of Lakhipur subdivision of Cachar district, Assam and reported 15 plant species belonging to 12 families which are found to be utilized in 27 diseases.

Nath et al. (2011) reported 34 medicinal plants belonging to 29 families used for treating various major diseases like diabetes, jaundice, high blood pressure, urinary tract infection, carbuncles, cardia problems, skin cancer, heamaturia etc by the Dimasa tribe of Barak Valley. Choudhury et al (2011) reported 24 ethnotoxic plants belonging to 13 families which were found to be useful in curing various diseases by the peoples of Cachar district.