CHAPTER IV

INTRODUCTION
In India, Sanskrit and Vedic literature in the form of 'Samhitas', 'Puranas', 'Nighantus', 'Bhavprakash' etc., embody a vast knowledge regarding multifarious uses of plants. With the emphasis, on their medicinal aspects.

The records about the use of medicinal plants in India can be traced back to 4500 B.C. when sporadic mention of plants was made in 'Rigveda', which seems to be the oldest record available on medicinal plants. Similarly the 'Vrikshayurveda' compiled by sage, Parasara, consists of excellent information about plants and medicinal properties in ancient India (Sen Sarma, 1989). Later in 'Athraveda' it is seen that plant have been used as charms and amulets for the cure of various disease.

With the advancement of civilizations, the knowledge about the uses of plants for various purposes, was depicted in the form of paintings, inscriptions, carvings, symbols, folk songs, folk tales, myths, rhymes, riddles and proverbs etc. In these materials the man-plant relationship of various civilizations such as Assyrians (4000 B.C.), Sumerians (3500 B.C.), ancient Indians (3500 B.C.), Chinese (3000 B.C.) and Egyptians (2500 B.C.) can be seen.

At the time of Mesopotamian civilization the Sumerians (3500 to 1970 B.C.) and then the Babylonians and Assyrians (1970 to 539 B.C.) have used plants as medicines and amulets.
From Mesopotamia, especially from Babylonia physicians of repute were called on to Egypt for treating members of the royal and noble families. \( T-12960 \)

In the oldest Chinese literature 'Erh-ya' (3000 B.C.), a good number of plants have been described with medicinal properties. There are records that a drug 'Ma-Huang' was prepared from species of *Ephedra* by Chinese about 3000 years age. A Hieroglyphic inscription (4500 B.C.) found at the tomb of an Egyptian court. Physician reveals the use of Senna leaves (*Cassia angustifolia*) for bowel movement. 'Eberspapyrus' seems to be the oldest record to Egyptian literature, written about 1500 B.C. in which a good number of plants have been described (Schultes, 1960 and Aikman, 1974).

Hamurabi who ruled over Babylon between 1728 and 1686 B.C. issued 285 mandatory declarations, one of them was particularly referred to medicines. It declared that a man practising medicine must be a bonafide physician. Punishment to medical practitioners was enforced for any gross negligence of duty towards a patient causing death.

The Egyptians were equally advanced in medicine and science like many other countries of the world. Greeks carried in their country the knowledge of science and medicine from the ancient Egyptians and Babylonians. Hippocrates (460 to 372 B.C.), regarded as a great medical man, was called by the Hakims (Mohammedan physicians) as Abu-At-Tab (father of
medicine) Hippocrates laid the foundation of medicine in Greece where from is spread over the whole of Europe.

In Ayurveda, of the eight divisions, 'Charak Samhita' and 'Sushruta Samhita' written about 1000 B.C. are exclusively devoted to medicinal science and this period is said to be the golden period of Indian culture. In both the Samhitas the discovery of medicinal plants by shepherds, cowherds, goatherds and the tribal people have been described. These plants were described by their local or common names. The identify of a large number of plants has been in doubt due to the lack of proper description and illustration; therefore, many of these are riddles even today. The 'Charak Samhita' deals with surgery and the 'Sushruta Samhita' with medicine and its seventh chapter deals entirely with purgatives and emetics and twelfth chapter with "Materia Medica" of the ancient Hindus. The method of administration of the drugs resembles almost that of the present system; even injections were occasionally given in their orthodox way. Anaesthesia was not then overlooked in Susruta surgery before operation was performed. Anaesthetics made surgery painless; proper hallucinogens may one day make it even pleasurable. A good example already available is curare obtained from Brazilian vine Chondrodendron tomentosum which was originally used as hunting poison. It contains tubocurarine which is useful in surgery as muscle relaxant (Vogel, 1970; Maheshwari, 1987). In the treatise 'Bhoja Prabandha' written at a later date mention
have been made of inhalation of medicaments before surgical operation and an anaesthetic called 'Sammohini' is said to have been used in the time of Buddha.

For about 1000 years after the Vedas there is no concrete information on the development of this science in India (Jain, 1968). Even the 'Brahmapurana' and 'Vayupurana' of the prevedic periods comprise information about medicinal plants. The drug 'Sanjiwani' was supposed to be the life saving drug, obtained from *Selaginella bryopteris*. The people from Greece and Rome also contributed to the knowledge of ancient medicinal plants, Theophrastus wrote a book 'History of Plants' and described about 500 plants having medicinal and food values. Elder Pliny wrote a book entitled 'Natural History' and described thousands of medicinal plants (Tippo and Fuller, 1954).

Plants have been studied in India from times immemorial mainly with regard to their properties and identities. Scientific and systematic study of the plants of this subcontinent was first initiated by the Europeans who came to our country. Even before the publication of Linnaeus "Species Plantarum" in 1753, several important records on Indian plants were published which attracted the attention of western workers to the richness of the Flora of India.

The Flora of India is more varied than of any other country of an equal area in the Eastern Hemisphere (J.D.
Hooker, 1904). There is a necessity of studying the Flora of various regions of the country in details, in view of the varied rainfall, temperature, topography, geology, altitude and substratum which influence the vegetation differently.

In 1755 Humphius wrote an important book entitled 'Herbarium Ambonense' which relates about the use of 'Snake root' plant (*Hauvolfia serpentina*) by the natives of Bengal and Malabar (Jain, 1986).

Famous economic botanist Harshberger (1896) coined the term "Ethnobotany" which comprises many interesting and useful aspects of plant sciences, history, anthropology, culture, literature and conservation etc. Faulks (1958) wrote first book on this new subject entitled "Introduction to Ethnobotany". This branch deals with the direct relationship between plants and human societies. Before the term "Ethnobotany" came into existence this branch was described as "Aboriginal Botany" by Powers (1873-1875) and included all forms of the vegetable world which the aboriginals used for food, medicine, fabrics, ornamentals etc. Robbins et al. (1916) considered ethnobotany as the "Study and evolution of the knowledge of all the phases of plant life amongst primitive societies".

This branch has attracted a good number of scientists to entertain further studies in different parts of the world, where small or large portions of population still depend on natural resources in practically indigenous conditions and
impact of modern system of medicine. has not reached to them (Schultes, 1962; Altschul, 1973 and Stewart, 1976). In this
gard, remarkable work has been done on various aspects of
Ethnobotany in the countries like Jamaica (Beckwith, 1927),
Western Washington (Gunther, 1945), China (Cheng, 1965),
Cambodge (Martin, 1971), Samoa (George, 1974), Africa and
Borrows (1900) was the first scientist who received doctoral
degree in Ethnobotany by the University of Chicago. The
development of this science of the human cultural ecology,
has proceeded independently in various countries and various
field surveys have been carried out on various aspects amongst
primitive and tribal populations in several parts of the world.
The papers on ethnonarcotics (Schultes, 1956) and ethno-
pediatrics and ethnogynecology were contributed by Schultes
(1963) and Altschul (1970 a,b) respectively. Further Schultes
(1962) narrated the role of ethnobotany in search of new drug
yielding plants. Turner and Bell (1971) worked on the
ethnobotany of the Coast Salish Indians of Vancouver Islands.
Barrau (1958, 1961) published the information related with
the subsistence agriculture in Honolulu. Vidal (1959, 1960,
1961 a, b, 1962) contributed a series of papers on the uses
of various plants in France. Hartwell (1967-1971) provided a
large compilation of antitumour plants, from old texts and
local folk medicines from all over the world.
Isthmian Ethnobotanical dictionary which includes the information about plants lore in Isthmian America, has been published by Duke, 1986. Chhabra et al. (1987) listed seventy seven Pteridophytic and Angiospermic plants traditionally used as medicinal plants in regions at Eastern Tanzania. They have also isolated constituents and observed pharmacological effects of these plants.

In 19th century, a good number of workers compiled literature regarding the traditional uses of plants by the primitive human societies. Information regarding medicinal plants was gradually being recorded by Sir William Jones (cf. Chakrav 1975). As such type of information was also given by Biswas (1956), and Chakravarty (1975). Observation of selected plants may be considered a starting point in such a direction. John Fleming's 'Catalogue of Indian Medicinal Plants and Drugs' published in 1810. It was followed by 'Materia Medica of Hindustan', 'Pharmacographia' and 'Flora Indica' by Ainslies (1813) and Fluckiger and Handburg (1874) and hoxburgh's (1874) respectively. Royal et al. (1839) later tried to resolve the vast names of unclassified botanical materials gathered towards a scientific line. This was followed in 1841 by O'Shaughnessy's. The Bengal Despensatory 'Pharmacopoeia' which was the first book of its kind dealing with the properties and uses of medicinal herbs. A good account of medicinal plants was published by Waring (1868) in "Pharmacopoeia of India" which is considered as a new epoch towards
the understanding of indigenous medicinal plants.

As quite a number of Indian drugs were not incorporated in Waring's work, a 'Supplement to the Pharmacopoeia' in India was then published by Mohidden Sheriff (1869). Based on the Mohidden's work Materia Medica of Madras written by Hooper gives a good account of the drugs of Madras Presidency (cf. Chakravarty, 1975). Translation of this 'Materia Medica' in Sanskrit by Dutta in (1877) brought to light the drugs used by the Hindu physician. Another good contribution to indigenous drugs is 'Pharmacographia of India' written by Hickiger and Handburgs (1879). Dymock's (1883) "Vegetable Materia Medica of Western India" and "Pharmacographia Indica" (Dymock et al., 1890-93) are more consolidated works in the field. The most elaborate and significant work, was however, produced by Sir George Watt (1889-1899) under the title 'Economic Products of India' in 6 volumes covering over six thousand pages on the information of the vast vegetable resources of the country. Other publications in this field are Dey's 'Indigenous Drugs of India' (1896). Indian Medicinal Plants of Basu (1918) and revised by Kirtikar and Basu and completed in 4 volumes. Bodding (1925) studied folklore and medicinal plants used by Santhal. According to them the ancient Hindus should be given the credit for cultivating what is now called ethnobotany. 'Indigenous Drugs of India' published by Chopra et al. in 1958 must be considered significant landmark of the present century. Lastly Wealth of India published in eleven volumes
(Anonymous 1948-1972) under the auspices of CSIR is a fine example of our attainment after a publication of 'Indian Materia Medica' by Nadkarni (1976) 'Vanaushachi Chandrodaya' by Bhandari (1951-57) and 'Glossary of Indian Medicinal Plants' by Chopra et al. (1968). Ambasta et al. (1986) compiled an important book entitled "The useful plants of India" giving sufficient information about a good number of plants.

All herbal remedies had their origin in Indian folklores at least for initial treatment. Tribals and villagers all across the country, possess a good knowledge about the uses of local flora for a number of ailments which they derived from their ancestors, living in deep forests offer considerable scope for such studies. Survey and study of ancient or unnoticed published or unpublished literature have also provide a good source of ethnobotanical data particularly on medicinal plants. Indian subcontinent represents one of the greatest emporia of ethnobotanical wealth; hence, it gives a fruitful ground for ethnobotanical investigation.

Schultes (1960), a professor of Natural Science at Harvard (US), has rightly pointed out that there is an urgent need to find out ways and means to salvage some of the ethnobotanical lore before it becomes for ever entombed with the culture that gave it birth. Thus, considering the importance of ethnobotanical investigations, several ethnobotanical
surveys were carried out in different part of the country by various workers and a number of valuable data on the use of indigenous medicinal plants were recorded by Ahluwalia (1952), Gupta (1960, 1962), Jain and Tarafer (1963, 1970), Jain (1963a, b, c, 1965), Shah and Joshi (1971), Jain et al. (1973), Raghunathan (1976a, b), Maheshwari et al. (1980), Tiwari et al. (1980a, b), Rao and Neogi (1980), Kharkongor and Joseph (1981) and Patel et al. (1981).

During the last two decades work on ethnobotany has been carried out by the various Institutions such as National Botanical Research Institute, Lucknow (NBRI), National Bureau of Plant Genetic Researches, Delhi (NBPG), Central Council for Research in Ayurveda and Siddha (CCHRAS), Unani Medicine, Central Drug Research Institute, Lucknow (CDRI), Central Institute for Medicinal and Aromatic Plants (CIMAP) Lucknow, Central Council for Research in Indian Medicine and Homeopathy (CCRIM), and also in different Universities and laboratories are actively engaged and contributed much in this field. Ethnobiological studies made in joint collaboration of National Botanical Research Institute, Botanical Survey of India with other Laboratories, have been analysed and summarised in Annual Report (Anonymous, 1984) of "All India Coordinated Research Project on Ethnobiology". In 1981 the Society of Indian Ethnobotanists was established with a view to keep this branch alive. Two seminars on Recent Researches in Ethnobotany and Human Welfare first in 1981 and second in
1982 were also conducted in India through this society.

In India, studies on ethnobotany, however, were initiated by Janaki Ammal an official programmer of Botanical Survey of India and workers. In the field of ethnobotany, the efforts done by Dr. S.K. Jain (a former director of Botanical Survey of India and then Professor Emeritus, NBRI, Lucknow and his co-workers) are quite inspiring and attracted the attention of scientists in India and abroad by carrying out a lot of work in this field (Jain 1963a-b, 1964a-c, 1965a-b, 1967a-b, 1981a, 1986, 1988; Jain and De 1964, 1966; Jain and Tarafder 1963, 1970; Jain and Rao 1983; Jain et al., 1973, 1984, 1989; Jain and Sinha 1988). Amongst these, the "Glimpses of Indian Ethnobotany" (Jain, 1981) is the important contribution. This first book on the subject ethnobotany deals with various ethnobotanical aspects of tribals of various states of India and describes about 3000 uses of 1500 plants along with conservational and other aspects of tribal life. About 2000 references regarding the ethnobotanical studies made in India and abroad have been compiled in "Bibliography of Ethnobotany" (Jain et al., 1984). Training courses and workshops on ethnobotany were also organized at Lucknow and based on this, Jain (1987) has published the proceedings 'A Manual of Ethnobotany'. Recently Mudgal (1987a,b) has compiled literature on ethnobotanical works carried out in India and abroad. In the presidential address during 10th Botanical Conference held at department of Botany, University
of Patna, Jaisingh (1967) has mentioned the Ethnobotanical concepts including a variety of interdisciplinary approaches (which are by no means exhaustive) and quoted the important work done in discipline under the following heads:

(i) Ethnobotany of certain ethnically distinct primitive or otherwise interesting human societies, e.g. on the Mihir of Assam by Jain and Borthakur (1980), on Bhils of Rajasthan by Joshi (1982), on Tharus of Uttar Pradesh by Maheshwari et al. (1981), on Cuna Indians by Duke (1975), on Hawaiians by Beatrice (1975) and on Zuni Indians of New Mexico by Camazine and Bye (1986).

(ii) Ethnobotany of any specific geographical region, which may have one or more distinct ethnic groups, e.g. on Central India by Jain (1963, 1981); on Kumaon by Shah and Joshi (1971), on Lahul in Punjab by Koelz (1979), on Araku Valley in Andhra by Banerjee (1977), on Santhal Pargana by Goel et al. (1984), on Mirzapur by Maheshwari et al. (1986), on the Amazon basin by France (1972), on Cambodia by Martin (1971), and on Panama by Duke (1986).

(iii) Ethnobotany of particular utility groups of plants, like food, medicine, hallucinogens etc. A few examples are on food by Jain (1964), Bhandari (1974), Arora (1981), Arnott (1976), Barrows (1931), Aarouson (1986), Barrau (1959), and Gaur (1977); on medicine by Bodding (1925), Jain (1963), Belcove (1976), Morton (1975, 1977, 1980), and Schultes (1962); on narcotics
by Schultes (1956), and on hallucinogens by Schultes (1963, 1983), Effron (1967), and Bruhn (1973).

Further specificity is also seen in some publications, e.g. plants in particular diseases, like papers on ethno- and Sahni (1982), bynaecology by Taraider (1983); on ethnodermatology by Khan and Chaghatai (1982), on ethnopediatrics by Altschul (1970), on rheumatism by Hemadri et al. (1980); on snakebite and ethnoorthopaedics by Jain (1963, 1967) and on contraceptive herbs by Schultes (1963) and by Billore and Audichya (1978).

(iv) Ethnobotany of a particular plant, genus or family of plants, e.g. on Bauhinia by Jain et al. (1973), on Coptis by Mudgal and Jain (1980), on Dioscorea spp. by Ayensu and Coursey (1972), on Cannabis by Schultes (1973), and Rubin (1975), on Poppy by Merlin (1984), on Cuscuta by Brondeguard (1978-79), on Achillea by Chandler et al. (1982), on Selaginella by Dixit (1982), on Coix by Jain and Banerjee (1974), and on Amanita ('Soma') by Wasson (1968).

(v) Many Ethnobotanists have given attention to the diverse tools, appliances, gadgets and articles of personal adornment, which the primitive man has been designing and using since ancient times and even today. Most ethnographers have dealt with them. They aptly prove the dictum necessity is the mother of invention. There are reports of a single-pan balance among the Mikirs of Assam, a variety of cattle traps among Gonds and Bhils (Jain, 1964); a heat-proof
water bottle among marias (Jain, 1964), and a large variety of musical instruments (Izikowitz, 1935; Parmar, 1978, Jain, 1965); containers and utensils (Jain, 1986); articles of agricultural tools; personal adornment, Mehra et al. (1975).

(vi) Ethnobotanical aspects of conservation and management of plant resources include studies on preservation of primaeval forests in form of sacred groves. The villagers and tribals of the Western Ghats have religious beliefs and respect for sacred groves. Indians are accustomed to dedicate forest pockets to various deities and various components of vegetable are supposed to be under the protection of the local deity of that forest grove. Such dedicated practices have led to preservation and conservation of forests and forest products. These sacred groves are living museums of plants and resources to carry out relevant research. These groves supply fresh medicinal plants to villagers (Vartak et al., 1984). Vartak and Gadgil 1981; Hajra, 1981), of individual species (Sen Gupta, 1965), and of plant genetic diversity (Arora, 1973, 1977; Arora and Nayar, 1984), and of ecological implications of traditional agriculture (Ramakrishnan et al., 1981).

(vii) The study of mythological associations or faith in plants among the folk is a fascinating area with immense possibilities of insight into the causes of these associations. Many authors have studied tree worship (Sen Gupta, 1965), plants in offerings (Jain, 1963), plants depicted on carvings
in temples (Gupta, 1987), and plants in Indian epics (Agarwal, 1981; Gupta, 1987).

(viii) Another category of publications deals with rather miscellaneous subjects like local names of plants and their etymology (Hoeg, 1961; Jain, 1963; Manilal, 1980; Huntingford, 1976), folk taxonomy, resource concepts (Alcorn, 1984); and Semiotics (Seblok, 1976; Van den Broek, 1987).

(ix) Balapure et al. (1987) studied about 203 plants of Ramayana one of the two great epics of India, is a work of great antiquity. This epics have a large number of plants and the names of trees, shrubs and climbers and tubers and fruits are scattered throughout its text. This study will be useful to the botanists palaeobotanists, ethnobotanists, foresters, naturalists and environmentalists as well.

(x) Clinical trials: Commiphora wightii, a commonly known as 'Indian beelium' or Guggal an oleo-gum-resin mentioned by Sushruta 3000 years ago as being a valuable drug in Ayurveda (Joshi, 1980) has been studied clinically by Suresh Kumar and Vinod Shanker (1982) from the Indian desert. Though it is recognised as an important drug in the ancient Indian system of medicine, they have clinical trials and established the efficacy of Guggal for the treatment of arthritis rheumatism, hypercholesterolemia and hyperlipidemia.

(xi) Pharmaceutical Aspects: The phenomenon of drug interaction has to be studied and explained in to the scientific
world when two drugs are administered simultaneously they may have some interaction and form a third compound. It may be either having a desired action, adverse effect or no effect. If the interaction of the drug is known it can be manipulated to our advantage such perspectives in Pharmaceutical Aspects of Indian Medicinal Plants have been studied by Baxi (1984).

In India there is a vast scope of work in this field. The total forested hilly tracts and forests in Assam, Chotanagpur plateau in Bihar, areas in the Himalayas and tribal areas in M.P., Andaman and Nicobar Islands and many other places in India provide ample opportunities of work for Indian Ethnobotanists. Recently the Central Council for Research in Indian Medicine and Homeopathy conducted several medico-botanical surveys in some important ethnic and tribal regions of the country.

The important observations made in various states are given in the following pages:

The Himalayan hill-ranges, Jammu and Kashmir, Himachal Pradesh and North-East States like Assam, Arunachal Pradesh, Meghalaya, Tripura, Mijoram are inhabited by a large number of tribals with their distinct way of life, beliefs, traditions, dialects and cultural heritage. These tribal populations have been learnt to utilise local herbs in their different ailments after centuries of trials, even after at the risk of the loss of human life. Studies in the ethnobotany

Importance of the folklore claims on medicines and treatment was worked out by Tiwari et al. (1980) in district of Kamrup of Assam which lies in the North-Eastern region of the country. In the other states of Eastern India, the important contributions on ethnobotany have been made by Biossy and Majumdar (1980), Bhattacharjee et al. (1980), Jain and Borthakur (1980), Rao (1981a), Rao and Jamir (1982 a,b), Baruah and Sharma (1984), Sinha (1986), Nath and Bordoloi (1989), Elangbam et al. (1989), Chandra (1989), Uniyal (1980), Hajra and Chakraborty (1982) and Bennet (1983).

In Jammu and Kashmir, Kapoor and Sarin (1977), Kaul and Atal (1983), Virjee et al. (1984a, b), Dar et al. (1984) and Kaul et al. (1985) have made important contribution in this field.


Chaudhari and Pal (1975, 1978) reported the magico-religious belief about plants among Lodhas of Midnapur district (West Bengal); Pal's (1981) work though, mainly based on plant species used in domestic animals (cattles and birds), he has also described some plant species used by the Adivasis
for food and medicine. Observations on newer plant resources and intimate relationship of the tribals with their environment in Eastern India is going on and importance of the ethnobotanical works has already been emphasised by several workers of repute viz., Jain and De (1964, 1966), Pal (1981), Chaudhary and Pal (1975, 1979), Yonzone and Mondel (1982), Pal et al. (1989a) and Mondal (1990) etc.

The ethnobotanical surveys in Western India were carried out by Bhanžari (1974), Bedi and Bennet (1978), Joshi et al. (1980) recorded medicinal uses of about 82 plant species by the tribals of Dangs in Dangs district Gujrat. Shah et al. (1981) has given detailed account of the ethnobotany of Saurashtra in Gujrat state. Patel et al. (1981) collected the folklore data from Vaidayas, farmers and villagers etc. of Bhavnagar district (Gujrat) and reported 62 important medicinal plants having laxative properties. From same place Vora et al. (1982) has also reported about 42 species of plants being used for the treatment of Jaundice.

In Rajasthan, Singh and Pandey (1982) observed magico-religious beliefs among tribals. Important studies have also been made by Mishra and Billore (1983), Sebastine (1984) and Sinha (1988).

Bhandari (1974) observed some plants used as famine food in Rajasthan. Joshi et al. (1980) and Joshi (1989)
reported over 50 Angiospermic species used in nearly 25 ailments of children and related situations by the Bhils, Garasias, Damors, Kathodias and Sahariyas from the Aravallis and parts of Kota district of Rajasthan. In fact some work on modern medical system has came to light in the last decade by Billore and Audichya (1978).

In Maharashtra, Majumdar et al. (1978), Kamble and Pradhan (1980), Rao (1981a,b), Saxena and Vyas (1983) and Vartak and Ghate (1990) have made ethnobotanical observations on various aspects. Studies on sacred groves and their role in conservation have been made by Gadgil and Vartak (1981) and Tetali and Gunale (1990).

The ethnobotanical surveys in Western India were carried out by Ghate and Vartak (1984) who have suggested 47 arboreal medicinal plant in afforestation programme from Pune and neighbouring districts of Maharashtra state with a view that inclusion of these species in plantation programme will enrich the indigenous forest wealth for future and will help in uplifting the rural economy. Vartak et al. (1981) reported 26 wild medicinal plant used by tribal communities to cure human ailments from Western Maharashtra and Goa. He has also studied on sacred groves of this area, and inventory of the 233 sacred groves of Maharashtra.

The state of Uttar Pradesh particularly sub-Himalayan Terai region has the largest concentration of tribal people
in the state. Although, number of workers (Shah, 1982; Joshi et al., 1982; Kalakoti and Pangtey (1984) have reported on the herbal folk medicine of the different regions of the state, however, the interesting and important work done on the tribes of Terai region are those of Maheshwari et al. (1980, 1981) and his co-workers. The sub-Himalayan Terai region of Uttar Pradesh in inhabited by two scheduled tribes namely, the Tharus and the Bhojas. The Tharus are one of the important tribes in the Dun valley of West Champaran in Bihar in a compact belt extending from Wainital in the West to Darjeeling in the East (Prasad, 1978). An ethnobotanical survey team, consisting of Dr. J.K. Maheshwari, Dr. K.K. Singh and Sri S. Saha (1981) carried out the survey and field work in 24 Tharu villages and an inventory of more than 300 plants and plant products used by the tribals in their daily life was prepared. The team collected a number of medical claims, taboos, totems and folklore, therapies and orings to light new interesting, informations on the Tharu and Bhojas tribes of the Terai region. They observed the tribes namely Tharus and Bhojas are about the only tribals who could survive in the malaria affected areas of the Terai region. They have been struggling hard to survive against the natural forces for centuries and have lead a secluded life. Even today, the Tharus depend upon the outside world for only such articles such as salt, kerosene and cloth. They make use of many plant species to meet with their day to day needs (Maheshwari
et al., (1981). Some important ethnobotanical references concerning with different tribal regions of the state are Shah 1975 (hill districts of U.P.), Joshi et al., 1982 (Audranath, Buggal, district Chamoli), Shah, 1975, 1982 (Northern India); Maheshwari and Singh, 1983 (Kols tribe of Allahabad district) and 1987 (Kol tribe of Banda district), Kalakoti and Pangtey, 1984 (Bhatia tribe of Kumaun Himalaya), Gupta, 1960 (Nainital); Hasan, 1972 (Kols of Patha); Shah and Joshi, 1971 (Kumaun region), Mishra and Shukla, 1981 (Allahabad district).

Bodding (1925 and 1927) has started ethnobotanical work for the first time on Santhals tribes in the Santal Pargana district of Bihar who had spent well over thirty years among the Santhal and his work was significant, as very little else has been written on the medicinal plants lore at the aboriginal people of India. Though his work was very valuable and original and was published in the Memoirs of the Asiatic Society of Bengal (Volume 10 No. 1: 1-132, 1925 and No. 2: 133-426, 1927), it was remained for forty years almost unnoticed by workers on Indian medicinal herbs and this had not been cited by some of the most important and comprehensive publications on the subject by Burkill, 1935; Chopra, 1958; Chopra et al., 1956; Daniel et al., 1959; Dastur, 1951; Kirtikar and Basu, 1935; Mhaskar and Caines, 1931; Mooss, 1953; Nadkarni, 1976; Uphof, 1959; Wealth of India, 1948-62 and Maheshwari and Singh, 1964.

In Orissa, information about medicinal plants and their uses have been recorded by Jain and Tarafder (1963); Panigrahi (1963); Pal and Banerjee (1971); Mudgal and Pal (1980), Rath (1981), Saxena et al. (1981), Trivedi et al. (1982); Pal and Mudgal (1985) and Das and Misra (1987).

In Andhra Pradesh, ethno botanical observations have been made by Pal and Banerjee (1971, 1977); Hemadri et al. (1980); Nagraju and Hao (1989); and Vedavathy and Hao (1990).

In Karnataka, Razi and Subramaniam (1978) and Yoganarasimhan et al. (1982) have studied a good number of medicinal plants.

Ramachandran and Nair (1981a), Apparananthan et al. (1982) and Vishwanathan (1989) have studied tribal societies and plant lore of Tamilnadu. Janaki Ammal and Prasad (1984) noted some important findings among Konikkors of this state.

In Kerala, Ramachandran and Nair (1981b), Manilal

Medicinal plants of Andaman and Nicobar Islands have been studied by Thothathri (1974 and 1980) and Yoganarasimhan et al. (1983 and 1984). The Unge tribe the great Andamanese, the Nicobarese, the Shompen and Burman, aborigines of the Andaman and Nicobar Islands has been surveyed by Bhargava (1981, 1983).

The total number of Scheduled tribes in India is 563, of which about 60-70 are inhabited in different districts of Madhya Pradesh. In the state, the role of medicinal plants become very vital and significant because of 2 important regions (1) The flora of this state is highly rich in medicinal plants due to good climatic conditions and secondly it is the most undeveloped state where many tribal communities are inhabited in remote places and depend upon world resources from forest plants present around them.

In Madhya Pradesh, more than fifty per cent of the total tribal population of India resides at various places. They form about one-fourth of the population of the State and
in certain parts such as in Māndla, Bastar and Balaghat
districts, the tribals constitute even three-fourths of the
population. Surprisingly however, only a few ethnobotanical
investigations have been carried out in this vast tribal rich
state of the country.

Although, lot of work has been done on the vegetation
and floristic studies in different districts of Madhya Pradesh
(Hole, 1904; Maheshwari, 1963 and 1963a, 1966; Oommachan, 1976;
Sahu, 1991) there appears to be no exhaustive ethnobotanical
work done in the state except for some report of Grigson
(1949), Kaufmann (1961), Jain (1963, a,b); Sahu (1982, 1983),

The only extensive work in the state was initiated for
the first time by Jain in Bastar district and subsequently
in the other districts of the state (1962, 1963, 1964a, 1965a,
1978, etc.). Some folk medicines or remedies practised by
tribals of Bastar have discussed by Hemadari and Rao (1989).

Ethnobotanical survey of Bundelkhand region was done
for the first time by Saxena (1977), and Saxena and Vyas (1981)
and Sahu and Sahu (1982). Many districts of this region, Banda,
Hamirpur, Jhansi, Lalitpur, Sagar, Damoh, Panna, Chhatarpur
are inhabited by certain aboriginal tribes including mainly
Gonds, Gujars, Kole, Lodha, Sapere etc., who more often use many common local plants for the treatment of ailments.


Bhatnagar et al. (1973) surveyed the rural area of Barai of Gwalior district and suggested the use of 'Sadabahar' plant against breast cancer. Some floristics and ethnobotanical studies in Chambal and Gwalior divisions, have been made by Kaushik (1973) and Jain (1978). Pandey et al. (1973) and Jain (1988a, b) have done preliminary observations on important medicinal plants used by Sahariya tribals. More recently Sharma (1991) has made ethnobotanical survey in Sahariyas tribes of Chambal regions, in Morena district.

Central India, is one of those important regions in India where the tribal population and forest dwellers form a
considerable part of the population (Jain, 1981). The main
tribe in Central India are the Gonds which are further
divisible into several tribes like Maria. Gonds, Kuria
Gonds and Baigas depending on their culture and beliefs etc.
Further the habitat of the tribals also distinguishing them
such as the hill marias and the marias of plains. The
ethnobotany of these tribals has been studied by Elwin (1947,
1950) and Grigson (1949).

Tribal cultures are fast changing in the country due
to urbanization, industrialization and acculturation, with
the consequent loss of knowledge and traditions. The
habitat and the environment where the tribals experienced
and learnt useful lore are also fast disappearing on account
of deforestation and intensive farming. It is, therefore,
important that before the oral folklore about plants and
plant resources is lost for ever, it must be presented and
properly documented. In view of this a reserved forest of
Noradehi Sanctuary which derives area from Sagar, Damoh and
Narsinghpur districts was selected, where no ethnobotanical work
has been done.