

SECTION-II

ETHNOBOTANICAL STUDIES

CHAPTER-1

INTRODUCTION

Introduction :

Plants have fed the world and cured its ills since times immemorial. The use of plants in curing and healing is as old as human being itself. There is practically no human activity in which plants do not play direct or indirect role. Man's interest in plants was first for food, shelter and protection. Next he sought among them remedies for his injuries and ailments. In the early ages, man began his livelihood with crude and unskilled means. The primitive human societies have thrived initially on flora naturally growing in their abodes. Numerous cultivated and wild plants have known to be used by human being over generation by experience and practice. Even today, man still gather wild and semi-wild plant parts like fruits, leaves, seedsnuts and wood etc. for various purposes. Plants are silent seekers of natural energy, their nutrition, development and products are highly useful for mankind. Man depends more upon the plants than anything else.

The relationship between man and plant has gradually evolved with the beginning of civilization. The relationship between man and plant kingdom can be said to fall under four broad categories : (i) Relationship useful to man and plants (ii) Relationship useful to man but harmful to plants (iii) Relationship harmful to man but useful to plants (iv) Relationship harmful both to man and plants. The numerous uses of plant and plant human inter-relationships are showed by various aspects i.e., by history, by physical and social environment and by

inherent qualities of plant themselves. Man's life has always been intimately connected with plants around him and his curiosity to the study of plants, dates back to the earliest days of the human history, because plant served his day to day necessities. Numerous aspects of plants were studied by men since times immemorial very keenly and one of them is "Ethnobotany". Ethnobotany broadly means, all aspects of direct relationship of plants with man. The word "Ethnobotany" was first coined and used by William Harshberger, in 1896 to denote the use of plant by the aboriginals. Subsequently, different workers (Robbin, *et. al.*, 1916; Schultes, 1962) defined the subject and greatly enlarged the scope, making it an inter-disciplinary science for holistic approach to man plant relationships. However, Faulk (1958), Richard (1978) and others have used the term to include the relationship between primitive societies and their plants surroundings in the widest sense. Power (1973-75) had coined a term 'aborigin botany' to refer a study of the vegetable world i.e., plants which the aborigines use for medicine, food, textile, ornaments etc. Ford (1978) defined it as the "totality of the plants in a culture".

According to Jain (1987) probably ethnobotany is the first knowledge which might have acquired by sheer necessity, observation and experimentation. Usage of plants by human being found place in an ancient Sanskrit, Greek, Arabic literature, ethnographies, travelogues, herbals etc. Plotkin (1981) described that 'Ethnobotany' is basically an amalgam of interdisciplinary study of man's

interaction with plants, particularly his utilization of plant kingdom and its drawn on various fields, including botany, anthropology, biochemistry, medicine, agriculture, science, ecology etc. Wicken (1990) distinguish ethnobotany as "The study of useful plants prior to their commercial exploitation and eventual domestication". The word ethnobotany is derived from two words "Ethnic" mean races and "Botany" mean knowledge of plant. The term today come to denote the entire realm of direct relationship between plant and man. The archaeological evidences regarding plant cultivation and use of any plant product by an early man for food, house building etc. and references to herbal medicine in ancient scriptures reveal a very long history of ethnobotany. Rig-Veda says that man learned to distinguish edible plants from poisonous plants by observing animals. In recent time, interest in plants has passed to scientific and aesthetic aspect also. Janki Ammal, (1974) in his attempt to produce plant of his liking to meet many requirements developed horticulture, breeding and genetic engineering. In order to obtain genes man has now once again turned to the "gene pool" of wild plants available in nature and which are still utilized by pimitive tribes all over the world.

Man in turn influencing the vegetation also to a great extent, while helping to propagate and disseminate plants, he is also destroying several types of vegetation and unique species. Exploitation of traditional knowledge of medicinal plants is another key issue the world over.

From times immemorial man is trying to combat diseases. Medicine is the science and art of healing disease. It seeks to save lives and relieves suffering. Man is curing his diseases from historical past by the utilization of natural surroundings around him, mostly from plant products. Ethno-medicine is the system of medicine which gives the initial medicinal information about a particular plant and represents more insight and importance through those plants which are used in medicine and industry. So, ethnobotany can also be defined under two main series : (a) abstract and Concrete. The abstract relationship of man with plants include faith in the good and bad powers of plants, taboos, avoidances, sacred plants worship and folklore. The folklores include not only fables or verses about, or having references to, plants but also similies and metaphors based on plants. The concrete relationship include mainly the material used such as in food, medicine, house building, agricultural operation, other domestic uses, trade or barter, plants in fine arts and culture like paintings, carvings and house decoration, conservation etc.

Ethnobotany is a rapidly expanding science. In the last three decades, it has considerably expanded both in its concept and scope. During the last half century ethnobotany has been recognised as a valid discipline that can play an important role in the aspect of scientific sociology and historical studies. The term has been often considered synonymous either with economic botany or with traditional botany. It is not only medicine, it include study of food, fibre, dyes and

other useful and harmful plant toboos, avoidance, origin and even medico-religious belief about plants. Therefore, ethnobotany has linkage with almost every other science and field of knowledge. The linkage of ethnobotany with some of the important disciplines such as Food and Nutrition, Defence and Survival, Sociology and Culture, Religion, Medicine, Art and Literature, Mythology, Archaeology, Anthropology, Forestry, Agriculture, Economics, Language, History and Politics, Ecology and Conservation etc. as suggested by Manilal (1989). The recent discovery of the remarkable medicinal properties of certain plants, such as species of *Rauvalofia*, *Ephedra*, *Panax*, *Podophyllum*, *Comiphora* and *Dioscorea* gave new impetus to ethnobotany (Jain, 1983).

Ethnobotanical studies which are confined to special group of plant like pteridophytes and bryophytes are subdiscipline of ethnobotany and have been named as ethnopteridology and ethnobryology etc. This subject gained importance during last few decades under many respective interdisciplines such as ethnoecology, paleoethnobotany, ethnomedicine, ethnobiology, ethnoagriculture, ethnonarcotics and ethno-taxonomy etc. (Jain, 1987).

Ancient Hindus were well informed regarding the medicinal uses of various plants to cure different diseases, without the knowledge of scientific phenomenon involved in it. India is rich in its floristic wealth. It has its own place in ancient period and there was a well established vegetational medicine system like Indo-Aryan, Charak etc. The real era of medicinal science started with the development

of Ayurveda, (2500-900 B.C.). Ayurveda is looked as a form of traditional medicine and in foreign countries it is known as herbal treatment and Ayurvedic physician as herbalists. Ayurveda plays the role of milestone in the field of ethnobotany i.e. ancient medicinal plant science. Charak and Sushruta mentioned about 700 plants as therapeutic agents, out of which about 500 plants are mentioned in Indian flora, though a few of them came from Rigveda (450-1600 B.C.). Rigveda is considered to be the oldest available record of some medicinal plants. Atharvaveda, another religious book of Hindus has described about 200 plants. Scientific research started on the plants used in traditional medicine when investigations were carried out on "Digitalis" (Withering; 1975) to the late 18th century. Later during the Budhisht period considerable progress was made under the direction of highly qualified specialist such as Bhikshu, Atreya, Patanjali, Narajun, Madhavakar, Chakradatia, Sarangadhur, Sankra and Banga Sen (500-100 B.C.) who expanded the vegetable "Materia medica of Hindus" contact with Greece and Rome and with Arabia & Desia contributed to the enrichment of Indian Materia Medica" and large number of vegetables and other products come into the use for the treatment of diseases. (Chopra *et. al.* 1956). Atharvaveda, Samhita and Niganthus contain valuable dynamic information about the ethnomedicinal use of plants. Later on there have been a number of workers from time to time who have described the medicinal importance of plants, namely Charak, Watts, Kirtikar and Basu, Chopra, Nadkarni etc. Some British workers

like Johens Fleming, Anislie, Roxburgh Byock etc. had studied medicinal plants and open new era. "An Introduction to Ethnobotany" by Faulk (1958) is the first book on ethnobotany of present world.

Early origin of traditional medicines must had their roots in ethnobotanical lore. All indigenous remedies, whether traditional or modern have been originated directly or indirectly from folk lore, ritual magic and superstitions. Folk medicine is an age old system of health cure practised by primitive people living in the remote villages and forest and play an important role among the inhabitant of remote, inaccessible areas. Folk medicine consisting of a simple method of treatment developed by trial and error method, hold an important place in all societies. Folk medicine has its own diagnostic tools and in villages, "Vaidyas" or "Medicine Men" known these plants which are used in different diseases.

Practical knowledge of medicinal use of plants has descended through generations and survived through time among the aboriginal tribes. Today, traditional medicinal system must have incorporated through several well organised distinct systems of diagnosis and cure. In India alone, various traditional systems of medicine namely, Ayurveda, Unani, Naturopathy, Yoga, Sidha, Homoeopathy, Tibetan and Chinese etc. are in practice. Actual work among primitive and rural societies, study of old literature, note on collection in herbaria, musea and evidences from archaeological sites are main source of ethnobotanical data. With the development of folk medicine into a drug,

therapeutic importance is exemplified by *Rauvolfia serpentina*. The root of this plant has been used in Indian medicine to cure high blood pressure, epilepsy and insanity.

Various ethnobotanical studies have been carried out through different approaches on plant kingdom for chemical and pharmacological search and to develop new formulation which will be pharmacologically active and free from side effects. Now a days plants are used in medicine for curing various chronic diseases. During the last decades, works on ethnobotanical studies have been carried out by various institutions such as National Botanical Research Institute (NBRI), Lucknow; National Bureau of Plant Genetic Resources (NBPGR), Delhi; Central Council for Research in Unani Medicine and Central Council for Research in Ayurvedic and Siddha (CCRAS), Central Drug Research Institute (CDRI), Lucknow; Central Institute for Medicinal and Aromatic Plants (CIMAP) Lucknow and also in different laboratories and Universities. The society of ethnobotanist was established in India in 1981 and has conducted two seminars on "Recent Researches in Ethnobotany and Human welfare" in 1981 and 1982 respectively. "All India coordinated Research Project on Ethnobotany" : 'Annual report' have been analysed and summarised by Anonymous, (1984). Ethnobiological studies made in joint collaboration of 'National Botanical Research Institute' and four centers of Botanical Survey of India at Howarah, Shillong, Coimbatore and Port-Blair. Training courses and workshops on Ethnobotany were organised at

Lucknow and the proceedings entitled 'A manual of Ethnobotany' by Jain (1987) were published. Mudgal (1987a,b) has compiled literature on ethnobotanical works carried out in India and abroad.

On account of its great fundamental and applied importance, the study of plants and their uses with the help of tribal people is now receiving much attention from botanists and other research workers throughout the world. A number of organisations are turning back to nature, particularly towards the study of traditional medical lore. The term aboriginal or primitive refers to the indigenous people of the region with little or no technological development. Till today, tribal people have retained their customs and regulations. All the indigenous remedies whether traditional or modern have originated directly or indirectly from folk lore. India is the 2nd largest tribal population country in the world, only next to Africa. There are more than 630 tribes sub-divided into groups spread throughout India. The tribal people of India, mostly live in forests, hills and are known by several names such as adivasi (original settlers), Adim-Niwasi (oldest ethnological sector of the population), Adim jati (primitive caste) Aboriginal (indigenous), Girijan (hills men), Vanya jati (forest castes), Vanvasi (forest inhabitants), Janjati (fold communities), Anusuchit Janjati (scheduled tribes) and several such other names signifying either ecological or economical or historical or cultural characteristics. The most popular name Adivasi is known as Anusuchit Janjati or (Jain, 1987). According to (1981) census, scheduled tribal population in the

country was 53.9 million belonging to 427 communities living in various parts of the country. Tribal areas comprises of about 15% of the total geographical area of the country (Gupta, 1987).

Madhya Pradesh being situated in the heart of the country has maximum concentration of tribals, they belong to about 60 tribal communities and constitute about 24% of the total population of the state. Every 5th tribal of the country lives in Madhya Pradesh. The use of plants and mode of administration of the drug extracted from plants lead one to conclude about the inter relationship between the tribes and medicinal plants. The deep forest valleys and some localities provide a good scope for the study of folklore. Sagar district of Bundelkhand region in M.P., India is rich in medicinal plants and inhabited by various people secluded from urbanization and modern technological development provide a good scope for further ethnomedicinal studies. The tribes of this region are Sore, Soori, Lodhi etc.

Folk lore findings have great importance to present world. As for as Sagar region is concerned, fragmentary or very small information is available in literature and also very little work is being done in the field of ethnomedicinal study of plants. Moreover under pressure of civilization and rapid growth of modern medicinal system, the traditional and folk lore medicine had confined only to some traditional families in some particular localities from generation to generation. Therefore, the most urgent task to keep this form of medicine alive,

is the documentation of the knowledge held by traditional practitioners, training of taxonomic botanists, conservation of ecosystem and medicinal plants. People are also turning back to the traditional system of medicine due to the high cost and various side effects of modern drugs. The available data and literature shows that there is great scope for further studies in this field of science i.e., ethnobotany and to establish an authentic relationship between 'aboriginals' or tribals and 'medicinal plants'.

CHAPTER-2

REVIEW OF LITERATURE