REVIEW OF LITERATURE

Ethno-biology means study of nature and direct relationship of plants, animals and human society or the knowledge of natural environment and direct relationship between living organisms and different races of man. Ethnomedico-botanical studies in human and animal have prime importance in discovering new medicines from plants and find the valuable properties of plants utilized by primitive societies in their wild life (Schultes 1960).

Powers (1874) used the term aboriginal botany to include all the forms of vegetables world which the aboriginals used for medicine, textile, fabrics, ornaments, etc. The term ethno-botany was first used by Harshberger (1896) and originated it with evolution of existence of human beings on this planet. Castetter (1944) pointed out that ethno-botany is primarily concerned with the relationships between primitive man and plants. Faulks (1958) defined the term ethno-botany as total relationship between man and vegetation. Schults (1962) interpreted ethno-botany as study of inter-relationship which exists between people of primitive society and their plant environment.

Ancient Indian literature has heritage of Indian ethno-botany. The first part of documentation of traditional knowledge in relation to herbal medicinal plants was initiated in 1710. This old record about herbal medicine was written on palm leaves from South Baster, Madhya Pradesh (Rao and Jamir, 1982). Indian heritage of medicinal plants originated in classical health care systems like Ayurveda, Siddha and Unani. The creative period of ancient medicines comes to an end with Charaka and Susruta. Ayurveda and Siddha are found in the Indian society in literature form. (Singh, 1998). This literature mentioned common names or Sanskrit names. Unani and Homeopathy are established outside India and widely popularized in many parts of the country. Unani system of medicine has its roots in Greece but has evolved with the Arabians and the Persians. The Homeopathic system of medicine was initiated in 19th Century by German Physician Christian, Samuel Freidrich Hahnemann and widely practiced in Europe and America. (Chandra Kala et al 2000).
On the other hand in each country of the world several tribal communities residing in hilly areas and depend on traditional healers. Barefoot doctors, Bhagats and Vaidus are playing key role in traditional health care systems. These traditional healers consider their work as a sacred duty. They do not demand a fixed fee, instead they accept in kind. These traditional healers have very close association with their own community, their customs, rituals, etc. Their traditional knowledge is passed through generations and practiced without any written format (Hafeel and Shankar, 1999). Tapping of indigenous knowledge from tribal communities has created awareness among scientific community of the world and generated ethno-botanical information in different parts of the world with interdisciplinary approach.

II.1. Ethno-medicinal plants used for human.

Traditional and modern plants available in the Central Australia were used by Alyawara tribes. Five hundred plants were used out of which 92 as food, it includes 36 seeds, 8 roots 26 fruits and 32 flowers, nectar, leaves, resinous extrusions, insect galls or larvae. These people also used medicinal plants, narcotics and few plants for material culture. (James et al. 1983). Yesilada et al. (1999) reported folk medicinal plants from Northwest Australia. Some ant-viral flavonoid plants are reported from aboriginal medicines by Semple et al. (1999). Ethno-medicinal plants were recorded from Edo State in Nigeria by Idu et al. (2008). Gordian, (2005) made survey from South Eastern Nigeria and recorded 44 plant species belonging to 40 genera and 27 families. 35 plant species were recorded for ethno-medicines. Tribals from South Africa use herbal medicine an integral part in their cultural and spiritual point of view. It is estimated that 27 million South Africans use herbal medicines, it includes 1020 plant and 150 animal species. Every year, million of people are diagnosed with cancer, leading to death in a majority of the cases. Current statistics indicates that across all ethnic groups, one in every 31 women in this country is likely to develop breast cancer. It is revealed that 17 plants belonging to 13 families are the most prominent for breast cancer (Koduru et al. 2007). Aregheyan (1996) reported traditional herbal medicines used in PHC at Ibadan in Nigeria. Some Research institutes from South West Nigeria collected ethno-medicinal information and identified some medicinal plants. Lawal et al. (2008) made survey among 120 informants of 35 age group were interviewed out of which 64 were male and 34 female. Total 129 medicinal plants out of which 78% trees, 18% shrubs, 3% herbs, 1% climbers belonging to 39 families and 94 genera. Folk medicinal plants and practices from Bini people are recorded by Gill et al.

Diallo et al. (1996) carried out traditional medicinal plant survey in the Malian Gourma, West Africa. The Malian Gourma is a largest territory of about 46, 600 km, 2 and several ethnic groups in habit the area, the most numerous are Tuaregs, Sonrhais and Fulanis. These tribal people often treated diseases like stomachache, flatulence, constipation, malaria and malaria by traditional medicines. Sixty medicinal plants were used to treat above diseases.

In Mexico the government established a national pharmaceutical industry to make use of the valuable colonial heritage of traditional practices combined with European medical concepts and resources. In 1975 the Mexican Institute for the Study of Medicinal Plants was created to integrate botanical, chemical and pharmacological studies on the Mexican flora. It compiled a database on ethno-botanical information relating to Mexican medicinal plants from the medical literature of the 16th to 19th centuries. A second database contained information on medicinal plants in current use. A medicinal herbarium was established. Taxonomical studies led to classification of the 11,000 voucher specimens in the herbarium and cross-referencing of the information with other databanks. A core group of 1000 plants used in traditional medicine throughout Mexico for almost 400 years was identified. Most of these are used to treat common diseases or basic health problems, usually given orally as decoctions or infusions. 95% of the plants used traditionally are from wild species. Information was collected from almost 3000 small Indian communities over four years on three aspects of traditional medicine - the healer, the disease categories recognized and the therapeutic resources in use. Plants with reported medicinal activity were selected for laboratory screening according to the frequency and commonality of their use, geographical distribution and seasonal availability (Lozoya, 1994). The use of plants by indigenous Americans dates back more than 10,000 years. Long before Europeans came to America, Native Americans, including Mayas, Aztecs and Incas had a well-developed understanding of plants, especially those used for medicine. (Macvean and Eldeiede, 2010).
The Asian region has the richest ethno-botanical treasures in the world which must be fully documented, utilized and conserved. The forests are not only rich in species of plants but several Asian countries are among the most densely populated countries of the world. The Asian region is inhabited by millions of indigenous communities and forest-dwellers whose cultures and economics vary with the ecosystems. Most of the people living in tropical forests are the key communities in understanding, utilizing and conserving plant diversity (Maheshwari, 1996). Chaudhary et al. (1996) enumerated 25 plant species against dysentery and diarrhoea from Bangladesh. Rahman (1999) recorded ethno-medico-botanical knowledge from Bangladesh. Cheryl (2007) evaluated 58 medicinal plants out of which 14 plants for stomach problem and 40 plants used for internal parasites from Trinidad region of Asia. Wande (2010) recorded 13 plant species used as laxative drugs from Thailand. Documentation of ethno-botanical knowledge of important plant species are found in Northern Pakistan. It includes Thandiani, Galiat, Kaghan, Swat, Buner, Dir, Chitral and Northern Areas of Pakistan. A total 135 genera belonging to 66 families of angiosperms and gymnosperms were studied and described. 76 species were known to have traditional and ethno-botanical uses. (Afzal et al. 2009) Iqbal and Mamayun (2005) recorded 175 traditional plants of Malam Jabba Valley, District Swat, Pakistan. In China, local people using medicinal plants for curing various ailments and traditional markets are considered as important places for trading of medicinal plants harvested by rural villagers, which also play a social role of exchanging traditional use of herbal medicine among different cultural and social groups at local level. Market survey is often engaged in ethno-botanical studies for documenting locally used herbal plants and associated traditional knowledge. It was found that 216 plant species are commonly used by local people for curing various diseases, of which 173 species (80.1%) are wild plants and 43 species (19.9%) are home garden plants. A total of 278 records of medical uses in 60 herbal recipes for the treatment of 16 types of common diseases were recorded (Lee et al. 2008). An ethno-botanical survey was carried out to collect information on the use of medicinal plants by the Lisu people who live in the mountainous areas of the Nujiang Canyon (Salween River Valley) in Nujiang Prefecture, northwestern Yunnan Province, China. A total of 52 medicinal plants, belonging to 32 families were reported as being used locally for the treatment of human ailments (Huang et al. 2004). Selected medicinal plants were screened for antibacterial activity from Dist. Manang, central Nepal (Bhattaria et al. 2008). Deokota et al. (2007) reported ethno-botanically important 15 plants from Sunsari Dist. of Eastern Nepal.
Research on ethno-botany in general and several disciplines such as gynaecology, narcotics, pharmacology, medicines, toxicology, ethnobotany of region, genera, species, tribe, etc. in particular are emerging concept in the 20th century in India. (Maheshwari, 1983). Many tribal communities in India are still practicing their Traditional Ethno-botanical Knowledge to cure a variety of diseases and ailments. Dr. S.K. Jain, Director, Botanical Survey of India in 1960 initiated ethno-botanical work in central India (Jain, 1963, 1964, 1965, 1967; Jain & Tarafder 1963) Jain & De (1964) reported ethnobotany of Purulia district from West Bengal. Satapathy and Brahman (1996) reported 400 ethno-botanical entries from Tribals of Sundargarh District, Orissa and out of which 60 claims found promising for drug evaluation. Further intensive field studies were made among the tribals of Southern, Northern, Western and Eastern India by notable workers like Jain and Dam 1979; Katewa et al. 2001; Kshirsagar and Singh 2001; Kala and Sajwan 2007; Sajem et al. 2008; Katewa 2009. Jain (1991) compiled different studies on ethnobotany and medicinal plants in a book form as Dictionary of Indian Folk medicine and ethno botany.

Lalramnginghlova and Jha (1998) described more than 200 ethno-medicinal plants for their efficiency to cure diseases like bleeding from nose, fever, malarial fever, asthma, tuberculosis, calculi, stones in kidney, gall-bladder, urinary troubles, hypertension, diabetes, stomach-ache, stomach ulcer, dysentery, diarrhoea, jaundice, hepatomegaly, fracture of bone, gynoecia disorder and snake bite from Mizoram. The information on 159 medicinal uses of plants belonging to 134 genera and 56 families was collected on the basis of exhaustive interviews with local physicians practising indigenous system of medicine, village headmen, priests and various tribal folks/groups of Mizoram. (Rai and Lalramnginghlova, 2010). The tribes of the Himalayan region also have rich ethno-medicinal traditions for which some literature is available (Bennet 1983; Yonzone et al. 1984; Pandey 1991; Rai and Bhujel 1999). Conservation of ethno-medicinal plant diversity of Garhwal Himalaya has been done by Aswal (1996). Saklani and Jain (1996) recorded ethno-medicinal plants used for 12 ailments from Northwestern Himalaya. Dutta and Dutta (2010) overviewed the ethno-botanical studies from North East India. Collected information from tribal communities like Assames, Manipuris, Mikirs, Naga on medicinal plant utilization and conservation of land races.


The first report on medicinal plants used by Korku tribe was made by Kamble and Pradhan (1980). There are additional survey’s which reveal that the practice of herbal medicine by the Korkus (Bhogaonkar and Devarakar 2002 a, b; Padhye et al. 1992) and other tribes of Melghat area (Chaudhari and Hutke 2002). Age-old knowledge of the plants among Korku and some unique ethno-medicinal uses are recorded by Jagtap et al. (2006). Sharma and Mujumdar (2003) recorded traditional knowledge on plants from Toranmal Plateau of Maharashtra. Bhogaonkar et al. (2007) recorded herbal antidotes used for snake bite by Banjara people of Umarkhed region in Maharashtra. Patil (2008) reported 56 plants used for respiratory disorders in Jalgaon district another survey on wound healing plants was made by Chopra and Mahajan (2009) who enumerated 11 plants. Patil et al. (2010) enumerated medicinal plants used by Pawara and Bhill tribes of Satpura ranges. Ugemuge et al. (2010) carried out ethno-botanical studies in Bhandara District.
II.2. Ethno-veterinary medicinal plants used for livestock.


Traditional medicines occupy an important place among the remedies employed to treat different ailments of livestock in India. Recently, there has been world wide an increasing interest in the research and development of ethno-veterinary pharmacology, especially on scientific validation of ethno-botanicals. A large number of native medicinal plants have been screened for various pharmacological properties, mainly to develop products for human diseases. In contrast, the application and scientific evaluation of ethno-botanicals for the control and treatment of livestock diseases has received minimal attention. The scope of ethno-pharmacolgy for enhancing the health and production of Indian livestock is very bright. (Malik et al. 1997).

Nene (2005) pointed out veterinary science and animal husbandry in ancient India. This indicates that our heritage of traditional knowledge of veterinary science was advanced in ancient India. From the Emperor Ashoka’s Period around 300 BC, veterinary practices existed. During the period constant observation of animals, understanding of day-to-day behavioural patterns, trial and error, and refining the techniques based on the experience made during application. These experiences have been handed down from one generation to the other and many of the practices are time-tested, environment-friendly, cost-effective, readily available and location specific. (Nair, 1997).

II.3. Validation of Ethno-Veterinary Claims.

ANHRA has initiated work community based research on local knowledge systems since 1996 and six community based organizations have been trained to document local knowledge system pertaining to animal health and ethno-veterinary practices, animal nutrition, animal breeding, local production systems and markets. The outcome of the survey was that most of the farmers desired to learn more about the proper use and applications of ethno-veterinary practices as these were economically, socially and culturally more acceptable for marginalized communities (ANTHRA, 1997 ab). Ghotge et al. (2002) have given social approach to the validation of traditional veterinary remedies. Ravikumar et al. (2004) carried out validation of ethno-veterinary practices adopted by farmers in Dindigul district of Tamil Nadu. Non-experimental validation of ethno-veterinary plants and indigenous knowledge used for backyard pigs and chickens in Trinidad and Tobago by Lans, et al. (2007). In this validation, Six plants are used for backyard pigs. Crushed leaves of immortelle (Erythrina pallida, E. micropteryx) are used to remove dead piglets from the uterus. Leaf decoctions of bois canôt (Cecropia peltata) and bamboo (Bambusa vulgaris) are used for labour pains or leaves are fed as a postpartum cleanser. Boiled green papaya fruit (Carica papaya) is fed to pigs to induce milk let-down. The leaves and flowers of male papaya plants (Carica papaya) are fed to de-worm pigs. Sour orange juice (Citrus aurantium) is given to pigs to produce lean meat, and coffee grounds are used for scours. Eyebright and plantain leaves (Plantago major) are used for eye injuries of backyard chickens. Worm grass (Chenopodium ambrosioïdes) and cotton bush (Gossypium species) are used as anthelmintics. Aloe gel (Aloe vera) is used for internal injuries and the yellow sap from the cut Aloe vera leaf or the juice of Citrus limonia is used to purge the birds. Chinthu et al (1997) conducted traditional veterinary treatment on dairy cow in South Kerala. Foot and mouth, Rinderpest, Dysentery, Stomach pain, Cough and external parasites were treated with Azadirachta indica, Brassica juncea, Cuminum cyminm Oxalis corniculata, Aegle marmelos, Piper betel, Curcuma longa, Terminalia chebula, Tinospora cordifolia, etc.
In Maharashtra and Andhra Pradesh major work carried out by ANTHRA group (Ghotge and Ramdas, 1999; Ramdas and Ghotge, 2000, Ramdas et al 2001) Kulkarni and Kumbhojkar (2002) reported 127 plants used by Mahadeokoli tribe for ethno-veterinary practices.

On this background Jain and Srivastava (1999) documented ethno-veterinary plants of India as Dictionary. Ghotge and Ramdas (2008) have made sincere efforts in Maharashtra and Andhra Pradesh for documentation of plants for animal health care and data on validation of plants on local farm along with literature search in a book form.

Considering the earlier research on ethno-medico-botanical studies at International, national and regional levels has become a recognized tool in search for new sources of drugs.