INTRODUCTION
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The knowledge on the curative value of plants is as old as the human race itself, but an organized beginning in the medicare systems may be attributed to Ayurveda, with over 5000 years old history. Other systems of medicare originated and developed subsequently, and today the allopathic system, modern medicine overshadow the indigenous systems, sidelining Ayurveda as an alternate medicine. However, the herbals provide the foundation for drug development, and therefore the documentation of medicinal wealth and knowledge on medicinal values is on the agenda of attention in the sustainable development of biodiversity, cutting across political and national barriers. Think locally and act globally applies aptly to the medicinal wealth, as it is limited to humankind all over the world.

The third world countries are bestowed with a unique wealth of medicinal plant resources and indigenous knowledge systems. This herbal tradition exists in various forms throughout the country and the preventive and promotive aspects of the traditional herbal system are gaining popularity throughout the world. Thus, the scope for developing plant based drugs for dreadful human diseases assume great significance.

Over 7500 species of plants are estimated to be used by 4365 ethnic communities for human and veterinary health care in India (Rajasekharan and Ganeshan, 2002). The World Health Organization (WHO) has listed over 21,000 plant species used around the world for medicinal purposes. In India, about 2,500 plant species belonging to more than 1000 genera are being used in indigenous systems of medicine. India is tenth among the plant rich countries of the world
and fourth among the Asian countries. The Eastern Ghats and Western Ghats harbours about 5,332 endemic species of higher plants (Lokesha and Vasudeva, 1997). Twenty-five global hot spots have been identified so far, of which the Western Ghats and Eastern Himalayas are located in India are of significance (Myers et al., 2000).

Macro analysis of the distribution shows that medicinal plants are distributed in diverse habitats, with around 70% of the resource are found in the Indian subcontinent spread over Western and eastern Ghats, the Vindhya, Chotta Nagpur plateau, Aravallis, the Terai region in the foothills of the Himalayas and the northeast. Less than 30% of the medicinal plants are found in the temperate forest and higher altitudes (Balasingh et al., 2000; Rajasekharan and Ganeshan, 2002). Micro-ecological studies show that larger percentages of medicinal plants are occurring in dry and moist deciduous forest as compared to the evergreen or temperate forests (Balasingh et al., 2000; Rajasekharan and Ganeshan, 2002).

I. 1. HISTORICAL BACKGROUND OF MEDICAL RECORDS

The togetherness of Man and Nature existed from the time of origin of man, followed by development of community structure and civilizations, with mechanisms for the securities for survival and sustenance, the essential components of which consisted of Health and Habitat. In fact, health is wealth, which is linked with food and habitat. The history of medicinal plants studies and its management is intimately associated with the history of botany. Primitive man lived at the mercy of nature, in constant terror of diseases. From time immemorial, the tribal priests and medicare practitioners used various plants, minerals, and animal organs, usually in association with strange rituals to drive out the evil spirits, which they believed to be
the cause of diseases (Kochar, 1998). This theory of demonical
possession lasted for many centuries and exists even today in areas
where people live in primitive societies.

Records of early civilizations of the world reveal that a
considerable number of drugs used in modern medicine were in use
even in ancient times. The use of plants for curing various diseases
figured in manuscripts such as The Bible, The Rig-Vedas, The Iliad
and The Odyssey and the History of Herodotus (Kochar, 1998). The
ancient Chinese used medicinal plants 6000 years ago. The
Babylonians, Egyptians, Greeks, Romans and Sumerians, all
developed their respective characteristic Materia Medica. On the other
side of the world, the Aztecs, Mayans and Incas had developed
primitive medicines. The oldest and most comprehensive Chinese work
about herbal drugs the "Yellow Emperor's Internal Classic" was dated
300 B.C. Ancient Egyptian textbooks 'Papyri' (such as Edwin Smith
Papyrus and the Ebers Papyrus), written as early as 1600 B.C.,
indicate that the Egyptians had an amazingly complex Materia Medica.
These textbooks contained names of medicinal plants then known and
prescriptions for several diseases.

Hippocrates (460-370 B.C.), Aristotle (384-322 B.C.), Theophrastus
(370-287 B.C.), Pliny and Elder (A.D. 23-79), and Galen (A. D.131-
201) were familiar with many of the present day drugs and they wrote
extensively about medicinal herbs, giving their names along with
description of each plant, healing properties and preparation of
medicine. Dioscorides treatise on medicinal plants De Materia Medica
published in the first century remained the supreme authority for over
sixteen centuries during which the manuscript was laboriously copied
and recopied with a few additions. During the Dark Ages (A. D. 400-
little progress was made on the subject. The botanical progress in general made during the Middle Ages (A.D. 1000-1500) was meager. In the beginning of sixteenth century, several herbals of considerable merit were published such of those Brufels (1530), Bock (1539), Cordus (1681).

Western Scientists were attracted by the richness of Indian medicinal plant wealth long time ago, the first one being Garcia de Orta (1563), a reputed pharmacist, who adopted over a dozen of the Indian species into his personal *Materia Medica*. The Dutch, Governor to Malabar Henderik Adriaan Van Rheed, during the period 1678 to 1693, published *Hortus Malabaricus* in 12 volumes. It contains the description of 791 species, illustrations of 742 species and information on medicinal and other uses of these plants of the Malabar region, and the book is a landmark in Indian botany and medicinal plants.

'Doctrine of signatures' advocated by an eccentric genius Paracelsus (1493-1541) suggested that plants possessed certain signs given by God, which indicated their usefulness in treating diseases of similarly shaped organs in the human body. Plants, for example, with heart shaped leaves were used for heart diseases. The lanecolate leaves of *Sansevieria roxburghiana* with transverse striations have some likeness to the striated body surface of vipers and the plant has been used by the Kani tribes of Kerala as a remedy for snake poison (Jawahar, 1996).

Around 90 percent of the medicines were of plant origin until 1930 (Swain, 1972). The period of chemotherapy began in the 1930s, with the synthesis of sulphonamides. The era of antibiotics began in the following decade, and when the Second World War ended. Since 1960s, over 75 per cent of all standard medicines are of synthetic
origin, lowering medicines of plant origin to a secondary role (Kameswara Rao, 2000).

With the advancement of western medicine, the indigenous systems were overshadowed, although it survived the test of time and competition from vastly popular allopathic system. With the emergence of environment concept and popularization of environment friendly activities, the herbal medicare system also got reprieve with the result that a sudden herbal drug boom has emerged during last three decades (Pushpangadhan and Narayana Nair, 1997; Kameswara Rao, 2000). The western society now recognized the great potential of the herbals in healing many present day ailments. This has now resulted in high-level market demand for such herbs and herbal derived products (Hazel et al., 1999; Uppeandra Dhar et al., 2002).

I. 2. INDIAN HERITAGE OF MEDICINE

The Indian medical heritage came through two streams namely Codified tradition (including Ayurveda, Unani, Siddha, Tibetan systems) and Folk tradition (Uppeandra Dhar et al., 2002). The Folk tradition is purely empirical and does not have a formal base, as the practices are passed on by word of mouth from generation to generation.

Ayurveda is the oldest medicare system with an antiquity between 4500 B.C. and 1600 B.C. with “Rig Veda” providing the richest compendium of knowledge generated by the Indian sages. The “Rig Veda” was followed by “Atharva Veda”, which threw light on the medicoreligious uses of plants in India, the home of Chyavana, Charaka, Susruta, Aryabhatta, and Jeevaka. It may be interesting to record that the “Panchavati” initiative mentioned in “Ramayana” with 5 tree components (Ficus benghalensis, F. religiosa, Aegle marmelos,
Emblica officinalis and Saraca indica) could be the first pre-historic eco-development activity for establishing medicinal plantations (Monier-Williams, 1888).

The Siddha system of medicine is rooted in the Dravidian culture of the pre-vedic period. This system is concerned and practiced by 18 Siddhars. Of the 18 Siddhars, Agasthyar, Tirumular, Bhogar, Ramadevar, Idaikkar, Yugimuni, Karunaver, Theriyar, Konganavar and Pambatti Sidhars deserve a special mention. Siddha system received the patronage of Tamil kings and chieftains as well as the public. It is predominant in Tamil Nadu and popular in other States and outside India.

The Unani system of medicine developed during Arab civilization and was introduced by the Arabs during Islamic rule. Among those who made valuable contributions to this system, to name a few, are Abu Bakr, bin Ali Usman Kashmiri, Bahwa bin Khwaskhan, Ali Geelani, Akbar Arzani, Mohammad Hashim Alvi Khan. The Unani pharmacopoeia has a rich armamentarium of natural drugs, consisting of mostly herbs in addition to materials of animal, mineral and marine origin (Kameswra Rao, 2000). There are over 2,000 species of plants mentioned in Unani Materia Medica, in which many species occurring in India found a place. It is estimated that there are about 400,000 registered traditional medical practitioners in India now working in Ayurveda, Siddha, Unani and Ethnic health care systems (Jason Holley and Kiran Cherla, 1998).

1.3. THE CURRENT SCENARIO

According to World Health Organization (Akerle, 1993), the prevalence of poverty and lack of access to modern medicine accounts for the dependence of about 65-80% of the world’s
population essentially on plants for primary health care, covered by the developing countries, despite the availability of western medicine. The resurgence of public interest coupled with rapid expansion of pharmaceutical industries necessitated an increased demand of genuine herbal materials. Ninety five percent of medicinal plants used in health care system and pharmaceutical industries are collected from the wild. Exploding population, urbanization, shrinking forests, over harvesting, illegal trade and related factors have posed a great danger to these natural resources which are increasingly becoming rare, endangered and even facing extinction in the wild. The World Conservation Union (IUCN) has published a compilation of threatened plants of the world in 1997. This publication enlists more than 34,000 vascular plant species in the threatened category, stating that 12.5% of higher plants are threatened across the globe. In the absence of any systematic estimation of the threatened medicinal flora of our country, it may be reasonable to extend the same proportion on the 8,000 medicinal plant species enlisted in India. This works out to about 1,000 medicinal species as threatened in India. The Foundation for Revitalization of Local Health Traditions (FRLTH), a non-government voluntary agency based at Bangalore has compiled a priority list of 352 medicinal plants of South India, which requires immediate conservation. Of the 352 medicinal plants 110 species have been short listed as most threatened (Ravi Kumar et al., 2000).

Over a long period, many pressing reasons for the study of medicinal plants the world over, have emerged. The study of medicinal plants in detail from various points of view is generally well recognized. The major issues relevant to the study of medicinal
plants are the rescue of traditional knowledge about the medicinal plants that are in imminent danger of extinction, utility of plants in contemporary medicine, conservation and sustainable utilization of medicinal plant resources for socio-economic benefits and health care for every one.

I. 4. SCOPE OF THE STUDY

Plants have played a major role as the basic source for the establishment of several pharmaceutical industries, which are important for stabilizing and enhancing the economy of a developing country like India. The importance of plants as a valuable source for chemical components of medicinal value is well known from ancient times. Several therapeutic properties have been discussed from sources like Herbalism and Folk medicine. The development of this pharmaceutical industry has been linked with proper elucidation of the structure of plant drugs widely used in medicine today. Many medicinal plants occurring in India have yet to be subjected to rigorous chemical, pharmacological, and clinical investigations. Herbs provide the foundation for drug development and therefore the documentation of medicinal wealth and knowledge on medicinal value is crucial for the sustainable development of biodiversity.

It is to be expected that new sources of known drugs will be found and discovered with every exploration and documentation. To undertake such investigations, it is essential that the medicinal flora and floristic diversity of the area ought to be studied thoroughly in the ethnobotanical perspectives, to achieve which floristic studies on small and restricted regions of the state should be prepared with emphasis on medicinal plant biodiversity. There is, however, a still gap in evolving an exhaustive inventory of the medicinal plants and
their traditional use in health care. While there are several ethnobotanical studies made at different scattered geographical pockets in the country, there is no exhaustive and reliable inventory available of all medicinal plants, which are used by indigenous people. In order to derive adequate benefit and to formulate suitable proposal for conservation of plant resources, we need precise information on the medicinal plant distribution, ecology, status and their uses in traditional healthcare systems of the native people. Therefore, studies on medicinal plants of ethnic communities living in different ecosystems will alone provide the tool for sustainable use of the resource. The area selected for the present study is located at the terminus of Southern Western Ghats, a unique ecosystem under threat of environmental degradation. It may be noted that the native people and medicinal healers alike have known the area from ancient times for its medicinal wealth as well as historical and legendary significance (Lawrence, 1959; Nagaraja Pillai and Davis, 1988).

The historical and religious importance of Maruthua Malai hill group provides information of value to highlight the importance of the present study. As per the Gazetteers of India, Maruthua Malai is also known as “Marunduval Malai.” In Tamil, the word Marunduval Malai means “the hill where medicinal herbs live.” The hill has an interesting legend. During the epic battle between Lord Rama and Ravana, Indrajit, the eldest son of Ravana with Nagastra (Serpent arrow) hit Lakshmana the younger brother of Lord Rama. Lakshmana fell down unconscious and Lord Rama was completely perturbed. At this critical stage, Hanuman was requested to bring ‘Sanjeevini’, an antidote to all poisons from the Himalaya. While searching for the herb, Hanuman was unable to identify the Sanjeevni herb. Therefore, he uprooted the
whole Gandamarutha Mountain, brought it to Lanka and saved Lakshmana. While Hanuman was carrying the mountain, a fragment fell down at the present Maruthua Malai spot. This broken piece of mountain is considered to have developed into Maruthua Malai hill group and traditionally been a centre for medicinal herbs through historical times. It is also the place where Lord Indra is said to have done penance for purification from a curse imposed by Ahalya. The hill is also referred by Buddhist Rishies who belonged to the period of Emperor Ashoka as having medicinal and spiritual heritage. Sage Agasthiyar, the foremost of the Siddhars is believed to have lived in the nearby village, which is called Agasteeswaram, taking its name from the sage. It is on record that over the centuries, many sages and medicinal plant collectors gathered valuable healing herbs from this hill and used them successfully.

Devotees from different parts of the country are frequenting the religiously important places situated in different parts of the hill. Among them are Paramarthalingeshwar temple dedicated to Paramarthalingeshwar, Vaikundapathi Nainar Swami temple dedicated to Lord Ganesh and Vaikundanathar Sidhashram dedicated to Vaikundanathar. In the immediate vicinity of the Paramarthalingeshwar temple, there is a perennial spring “Indhrasunai.” “Pillathadam” a natural rock cave located at the top of the main hill is the sacred place serving as the abode of sages today and is the place of pilgrimage. Athiguru Agasthyar, Sage Paramarthalingeshwar, Chattambi Swamikal and many other sages performed meditation in this healing hill region. The place was also patronized by Sree Narayana Guru, who is being worshipped by a large mass of people of Kerala, Tamil Nadu and rest of the world. Besides these, there are a few wells, natural rock caves, sacred ponds, meditation hall, library, etc., located in different places.
of the hill. The hill is also a place of recreation deriving pleasure from a panoramic view of land's end of Indian peninsula and the statue of world famous Tamil poet Thiruvalluvar erected at the confluence of three Seas near Vivekanada Mandapam at Kanyakumari. The other important scenic topography are vast stretches of paddy fields, coconut and palmayara groves, the estuary of the Manarkkudy lake at the mouth of river Pazhayar, vast expanse of salt pans in the village of Manarkkudy, Thamarakulam and Variyoor, wind mills installed at Aaralvaikozhi and Thovalai, and steeples of churches and lofty tower of temples (Plate 1).

The area selected for the present study is under severe threat due to anthropogenic degradation. The medicare value of the medicinal plants of the hill group is being reflected in the traditional healthcare system of the people residing around the villages. Unfortunately, the traditional knowledge about healing of disease with plants in the villages is facing serious threat due to the erosion of ancient knowledge by the impact of modern civilization and faster genetic erosion of plant wealth in the hill group, particularly medicinal plants. It may be noted that Lawrence (1959) had made a preliminary study on the flora of Maruthu Malai. He had recorded about 85 plants along with brief ecological notes on the vegetation. After that, no such study has been undertaken. Hence, a scientific study on medicinal and floristic diversity of the hill group along with traditional knowledge on medicinal plants, which are used by native people in health care system, is warranted. Therefore, the importance and scope of the present study is imperative for the conservation and sustainable utilization of plant resources and traditional knowledge for socio economic benefits.
Plate 1. Views of Maruthua Malai

Maruthua Malai - a general view

Entrance point at the western end

View of a rocky cliff at the western side of the main hill

View from the hill top - plains bordering the western end of the hill group

A cave temple devoted to Lord Siva

Pillathadom cave - interior view
Keeping this in view the present investigation was undertaken with the following objectives:

(i) To document the floral wealth of Maruthua Malai hill range.

(ii) To make an inventory of the medicinal plant resources of the hill group, with notes on ecological characteristics of the vegetation and traditional knowledge in native healthcare system.

(iii) To identify the problems in conservation and sustainable development of the medicinal plant resources and to formulate appropriate management proposals for restoration of species warranting conservation.

(iv) To generate spatial distribution maps for RET category species.

(v) To develop proposals for eco-development of the area and for assigning a heritage status to the ecosystem.