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Introduction to Herbal System of Healthcare

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Introduction

The history of medicine in India can be portrayed from the remote past wherein the earliest mention of the medicinal use of plants is described in Rig Veda, perhaps the oldest repository of human knowledge written between 4500 and 1600 B.C. The properties of various drugs mentioned, in detail, in CarakaSamhita, which is also one of the ancient most documents in healthcare system for human beings. Further, CarakaSamhita gives an incredible report on MateriaMedica as it was known to ancient Hindus. The Buddhist period is also known as golden time as considerable progress was made and medicinal plants were cultivated under the direction of highly qualified specialists and association with Greece, Rome and later with Arabia and Persians contributed to the enrichment of Indian Material. (Rashtra Vardhana, 2008 and Chopra *et. al.*, 1956).

The practitioners of various Indian Healthcare systems, in different parts of India, tried to utilize the locally growing plants as far as possible and realized those to be useful after trials for treatment of various ailments and diseases. Information on the use of medicinal plants is scattered and mostly found in books and periodicals and most of which are out of print and not available even in reputed bigger libraries. It indicates the documentation failure of herbal drugs which precipitated as one of the greatest difficulties in struggling the research workers for the paucity of authentic information on the identity, habitat, quality and conditions of collection, preservation and use of medicinal plants.

The history of herbal remedies begins with the advent of human civilization. Indian Ayurveda reports the use of herbs such as turmeric possibly as early as 1900 B.C. The Sushruta Samhita attributed to Sushruta in the 6th century B.C. describes 700 medicinal plants, 64 preparations from mineral sources and 57 preparations based on animal sources.

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The first Chinese herbal book the Shennong Bencao Jing was compiled during, Han Dynasty or may be to a much earlier date, possibly 2700 B.C and lists approximately 365 medicinal plants and their uses including ma-Huang(shrub) that introduced the drug ephedrine to modern medicine. Succeeding generations augmented on the Shennong Bencao Jing, as in the Yaoxing Lun (Treatise on the Nature of Medicinal Herbs) a 7th century Tang Dynasty treatised on herbal medicine.

The ancient Greeks and Romans made medicinal use of plants. Greek and Roman medicinal practices preserved in the writings of Hippocrates and especially - Galen provided the pattern for later western medicine. Hippocrates advocated the use of a few simple herbal drugs along with fresh air, rest and proper diet. Galen, on the other hand, recommended large dosages of drug mixtures - including plant, animal and mineral ingredients.

The Greek physician compiled the first European treatise on the properties and uses of medicinal plants – Materia Medica. In the first century AD, Dioscorides wrote a compendium of more than 500 plants that remained an authoritative reference into the 17th century. Similarly important to the botanists of later centuries was the Greek book that founded the science of botany, Theophrastus' Historia Plantarum, written in the fourth century B.C.

Medicinal plants continue to be an important therapeutic aid for alleviating ailments of humankind. Search for eternal health, longevity and to seek remedy for relieving pain and discomfort prompted the early man to explore his immediate natural surrounding and tried many plants, animal products, minerals and developed a variety of therapeutic agents. Over millennia that followed the effective agents amongst them were selected by the process of trial and error, empirical reasoning and even by experimentation. These efforts are known in the history by the name discovery of 'medicine'. In many eastern cultures such as those of India, China and the Arab/Persian world, this experience was systematically recorded and incorporated into regular system of medicine that refined, developed and became a part of the Materia Medica of these countries. The ancient civilization of India, China, Greece, Arab and other countries of the world developed their systems of medicine independent of each other but all of them were predominantly plant based. The theoretical foundation, insights and in depth understanding on the practice of medicine that we find in Ayurveda is much superior among organized ancient systems of medicine. We learn from the history that in the ancient time India was a place of rich natural resources, knowledge, wisdom and scholarship.

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People from other countries of the world such as China, Cambodia, Indonesia and Baghdad used to come to the ancient universities of India like Takshila (700 BC) and Nalanda (500 BC) to learn health sciences of India, particularly 'Ayurveda'. It is perhaps the oldest (6000 BC) among the organized traditional medicine. It has gone through several stages of development in its long history. It spread with Vedic, Hindu and the Buddhist cultures and reached as far as Indonesia in the east and to the west. It influenced the ancient Greek who developed a similar form of medicine.

India owns a very rich biodiversity of medicinal plants covering its varied geo-climatic areas, land scapes and ecosystems. The biogeography of India is so unique that all known types of ecosystems, ranging from coldest place like the Nubra Valley with a temperature of - 57°C dry cold deserts of Ladakh , temperate and Alpine and subtropical regions of the North-West and trans-Himalayas , rain forests with the world's highest rainfall in Cherapunji in Meghalaya , wet evergreen humid tropics of Western Ghats , arid and semi-arid conditions of Peninsular India , dry desert conditions of Rajasthan and Gujarat to the tidal mangroves of the Sunderbans, provide a diverse habitat to the medicinal plants.

India is rich in all the three levels of biodiversity- such as species diversity, genetic diversity and habitat diversity. There are about 426 biomes representing different habitat diversity that gave rise to one of the richest canters in the world for plant genetic resources. The total number of flowering plant species is although only 17,000, the intra-specific variability found in them make it one of the highest in the world. Out of 17,000 plants, the classic systems of medicines like Ayurveda, Siddha and Unani make use of only about 2000 plants in various formulations. The classical traditions were prevalent in the past particularly in the urban elite society. In India the rural population that constitutes more than 75% of the Indian population and live in about 5, 76,000 villages across the country in different agro-climatic conditions and have their own diverse systems of traditional health management systems. While most of the common ailments are usually managed in the house by home remedies which includes many species and condiments like pepper, ginger, turmeric, coriander, cumins, tamarind, fenugreek, tulsi, etc., more complicated cases were attended by the traditional physicians who practised a large number of plants from the ambient vegetations and some products of animal or mineral origin to deal with the local diseases and ailments.

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These are indeed community-managed systems independent of official or government systems and generally known as Local health Tradition (LHT). The traditional village physicians of India are using about 4500 to 5000 species of plants for medicinal purposes and practices. There is, however, no systematic inventory and documentation about the folk remedies of India. There is an urgent need to document this fast disappearing precious knowledge system. The oral traditions of the villagers use about 5000 plants for medicinal purposes. India is inhabited by a large number of tribal communities possessing a precious and unique knowledge about the use of wild plants for treating human ailments.

A survey conducted by All India Coordinated Research Project on Ethnobiology (AICRPE) during the last decade recorded over 8000 species of wild plants used by the tribes and other traditional communities in India for treating various health problems; Some interesting observations have been made in the study is that the use of the same species found in different regions for the same ailments while some other species are used differently. Around 70% of India's medicinal plants are found in tropical areas mostly in the various forest types spread across the Western and Eastern ghats, the Vindhyas, Chotta Nagpur plateau, Aravalis & Himalayas. Although less then 30% of the medicinal plants are found in the temperate and alpine areas and higher altitudes they include species of high medicinal value. Macro studies have shown that a large percentage of the known medicinal plants occur in the dry and most deciduous vegetation as compared to the evergreen or temperate habitats. Analysis of habits of medicinal plants indicates that they are distributed across various habitats. One third is trees and an equal portion shrubs and the remaining one third are the herbs, grasses and climbers. A very small proportion of the medicinal plants are lower plants like lichens, fern, algae, etc. Majority of the medicinal plants are higher flowering plants.

India is one of the 12-mega biodiversity centres having about 10% of the world's biodiversity wealth, distributed across 16 agro-climatic zones. Out of 17,000 species of higher plants reported to occur within India, 7500 are known to have medicinal uses. This proportion of medicinal plants is the highest known in any other country against the existing flora of that country. Ayurveda, the oldest medical system in the Indian subcontinent, has alone reported approximately 2000 medicinal plant species, followed by the Siddha and Unani medical systems.

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The Caraka Samhita, an age old written document on herbal therapy, reports on the production of more than 340 herbal drugs for various diseases. Today approximately 25% of drugs derived from plants and many others are synthetic analogues built on prototype compounds isolated from plant species in modern pharmacopoeia. (Kala and Sajwan , 2007). Indian flora and fauna, supports 16 major forest types, varying from Alpine Pasture in Himalayas to temperate, sub-tropical forest and Mangroves in the coastal areas with a rich heritage of medicinal plants.

The recorded forest area has 76.5 million hectare or 23.3% of the total geographical area of the country. However, the actual forest cover is 66.34 million hectare of which 26.13 million hectare is degraded. There is another 5.72 million hectare shrub forest in addition to the reported forest area of 63.34 million hectares. Thus in total 31.85 million hectare forests in the country are degraded or open forests. Considering the growing demand for plant based medicine, health products, pharmaceuticals, food supplements, cosmetics in the national and international markets it is obligatory to grow medicinal plants in the degraded forest areas.It is proposed to identify 200 Medicinal Plant Development Areas (MPDA) which will be known as Vanaspati Van extending over one million hectare of open forests. India has recorded forest area of 76.5 million hectares out of which 37.21 million hectare is reported to be in good condition. It is proposed to identify 1 million hectares from such areas to be brought under Medicinal Plant Development Area (MPDA).

All traditional medicines have their roots in folk medicines and household remedies. WHO has listed more than 20,000 medicinal plants used in different parts of the world. Other estimates indicate the number may range between 35,000 and 70,000 worldwide (Lewington, 1993; Bhattarai and Karki, 2004). These organized or codified traditional medical systems employ relatively few species, viz. 500-600 in traditional Chinese medicine, 1100 in Tibetan medicine (Sowangpa), 1500 in the Ayurveda, 450 in the Homoeopathy, 342 in the Unani, and 328 in the Siddha systems. However, a major bulk of the plant species used as medicines remained endemic to certain regions or people due to the lack of communication, intermingling and breeding of ideas and varying ways of life, many of these earlier remedies survived only by word of mouth from generation to generation.

The northern part of India harbors a great diversity of medicinal plants because of the Himalayan range, so far about 8000 species of angiosperms, 44 species of gymnosperms and

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600 species of pteridophytes have been reported in the Indian Himalaya and out of these 1748 species are known as medicinal plants, the maximum medicinal plants 1717 species have been reported from 1800 meter above sea level. On the regional scale the maximum species of medicinal plants have been reported from Uttarakhand followed by Sikkim and North Bengal.