

# HERBAL MEDICINE

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## History

The use of plants in medicine dates back to the beginnings of man. Plants being the most abundant and easily accessible, were the first to be tried out in time of sickness. Therefore it is quite understandable how over the centuries plants have made such an important contribution to medicine. The primitive man started to experiment with the plants around him in an attempt to treat injuries and cure diseases. Thus over the centuries, by trial and error, he gradually discovered a number of worthwhile remedies.

As civilization began to develop in Egypt, Mesopotamia, India and China, the therapeutical potential of a large number of medicinal plants were collected and documented. According to one report the earliest documented medicinal plant was Ma-Huang. This plant was first described about 5000 years ago by the Chinese emperor Shen Hung as a remedy for cough and also as a cardiac stimulant. In 1926 European scientists discovered the biologically active compound in Ma-Huang as Ephedrine, which is now used for treating asthma patients. Another report says that early Chinese physicians have used the plant Chang Shang (*Dichora ferbrifuga*) for antifebrile effect and *Artemisia annua* for antimalarial effect. Modern scientific investigations on the two plants mentioned above showed the presence of two very effective antimalarial drugs, Ferbrifugine and Artemisinin respectively.

During the middle ages (11th to 18th century), the widely accepted dogma that nature herself provides a cure for every disease gave added incentive to the search for medicines among the plant kingdom. It was commonly believed that the 'signature' of a disease was impressed upon the plant which could cure that particular disease. Plants with red flowers were used to prevent bleeding, and those coloured yellow were supposed to cure jaundice. The wrinkled kernel of the nutmeg was thought to resemble the brain and so nutmeg was used to treat mental diseases. The serpent shape of *Rauwolfia serpentina* (Sinhala-Ekaweriya) root commonly called snake-root indicated that it should be useful in treating snake bite. The worm shaped embryo of *Chenopodium* or worm seed suggested it to be of value as an anthelmintic.

## Natural Products as drugs

Natural products contained in, or derived from medical plants are used in all countries. In western countries medicinal plants provide raw materials for industrial processing and preparation of pure drugs. In many developing countries such as Sri Lanka, extracts of the various parts of medicinal plants are directly used in all forms of therapy. However it is indeed unfortunate that for many centuries very little emphasis has been placed on the scientific aspect of studies on medicinal plants. As late Dr. John Attygalle has wisely pointed out in his compilation of *Sinhalese Materia Medica* published in 1917 "it is much to be regretted that practitioners of Western Medicine in Ceylon have paid so little attention, if any, to the many useful drugs employed by our native medical men"

The importance of plant-derived drugs in modern medicine is somewhat underestimated. Such useful drugs as quinine (antimalarial) reserpine (antihypertensive), vincalukoblastine (antileukaemic), ephedrine (anti-asthmatic) to mention only a few, represent a broad spectrum of medicinal products isolated from plants. In addition to these purified drugs, the crude drugs derived from plant sources (e.g. crushed dry leaves of foxglove - *Digitalis purpurea* used as a treatment for heart failure) are also utilized by some physicians practising Western medicine. Most of these drugs were discovered as a result of the painstaking research of organic chemists and perceptive physicians who believed that there could be some truth in many of these seemingly "folkloric wonders". They were the first to admit that "jungle lore" may lead to medical triumphs.

## Herbal Medicine in Sri Lanka

The medical wonders performed by King Buddhadasa with herbs which are documented in Mahawansa and Dipawansa provided us strong evidence for the existence of herbal medical practice in ancient Sri Lanka.

In our country we have two main systems of medicines. They are the traditional or indigenous system and the western or the allopathic system. According to the recent survey by World Health Organization (WHO), about 70% of the total population in Sri Lanka depends on the traditional system of medicine for their basic health care. The traditional system of medicine in Sri Lanka can be divided into four different categories, namely Ayurveda, Deshiya chikitsa, Sidda and Unani. The plant and herbal preparations are mainly used in Ayurveda and Deshiya chikitsa. In Ayurveda over 2000 medicinal plants are used while Deshiya chikitsa the number is about 500.

There are several limitations to the use of drugs in the traditional systems of medicine in Sri Lanka. One is the problem of nomenclature, especially the confusion in the local names. There are five *Sida* species in Sri Lanka and they are all sold as Bavila. Similarly, *Adathoda (A. vesica)* is sold as Pavetta (*P. indica*) by Ayurvedic drug dealers. To check this, a pharmacognostic investigation of the sample sold as Pavetta was undertaken. The major alkaloid was found to be vasicine, which is present in taxonomically identified sample of *Adathoda vesica*. The major alkaloid of taxonomically identified *Pavetta indica* was found to be different from vasicine.

The main limitation of drugs in the traditional system is the lack of standardization of raw materials, of processing methods and of the final products and non-existence of quality control criteria. If these limitations could be overcome not only would the majority of Sri Lankans accept these traditional systems of medicine but, there will also be a demand for our traditional drug preparations in western countries which would help to improve our ailing economy.

## Summary

A prescription of a traditional medical practitioner consists of preparations like Arishta, Kassaya, Guli, Kalka, Basna, etc. and contain more than 90% of plant derived material. In the western system of medicine almost 50% of drugs are plant originated. According to a leading European medical journal published in 1990 almost 90% of all organic drugs are based on natural products. Plants are not only the most abundant and easily accessible, but also the most economic source of a number of well established and invaluable drugs. In addition, plants are the source of some chemical intermediates needed for the production of many other pharmaceuticals. Thus, the contribution of herbs and plants to both traditional and western medical systems is inevitable.