

THE USE OF MEDICINAL PLANTS IN THE HUMAN CIVILISATIONS

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Abstract. Since time immemorial, humans have used for their existence natural resources coming from the vegetable and animal world. During numerous successive generations, humans have identified besides edible plants and the ones that had positive effects on their health, the toxic ones. It is estimated that the entire evolution of human development is connected to the art of curing diseases, through the use of herbs in order to treat various health conditions.

Keywords: medicinal plants, human civilisations, medical literature.

INTRODUCTION

The history of medicine has its origin in ancient times, since the use of herbs by humans. Identifying the herbs with therapeutic effects has worked its way through a difficult path as many of them are also poisonous. Healing diseases through the use of herbs has become a constant preoccupation that later on has underlain a material sustenance and a scientific base.

Since the very beginning of treating diseases up to nowadays scientific medicine, the healing process of human beings has not grown apart any moment from the compartment of herbs. The knowledge about herbs was conveyed from generation to generation, at first verbally, then in written, the first documents dating from the Sumerian age (millennium IV – III BC), Akkadian age (millennium III BC) and Babylonian age (Muntean et al., 2007).

THE HERBS IN THE ANCIENT HUMAN CIVILISATIONS

The ancient human civilisations have contributed to the knowledge and use of a growing number of herbs (Păun et al., 1986). From the ancient Orient, from the Babylonians and the Egyptians, from the Greeks and the Romans, from the populations that have lived before our era, we have archeological traces and writings that confirm the use of herbs for the purpose of healing diseases since very old times.

It is estimated that the number of plants used as a medicine by the antique populations has reached about 12.000 species. The use of such a large number of plants in order to heal the most various kinds of health conditions since the beginnings of human civilisations has become little by little a usual activity that has fully contributed to the development of pharmacy and medical science.

Ancient India. We find references about herbs in the renowned **Vede** (The Holy Books), elaborated between 4500-1600 BC. Within the writings following the Vede, the remedies of the local people are described in detail which is considered to be the basics of the ancient Indian medicine.

Ancient China. Emperor Sen Nong is considered to be the founder of the Chinese traditional medicine. He has sent missions everywhere in order to collect samples of plants

and minerals, to which he would check the therapeutical qualities on himself. Thus the first Chinese pharmacology treatise was drawn up, in which were recorded 365 drugs, their majority being of vegetable origin.

The Chinese were using anesthesia with the help of plants in order to temporarily soothe the pain or before surgery.

Assyrians and Babylonians have drawn up about 5000 years BC a herbs dictionary and have founded in the city of Ninive a garden of aromatic plants and herbs.

From the vestiges held by British Museum in London we understand that Assyrians were growing poppy since 2700 BC.

Ancient Egypt. The ancient Egypt medical literature is included within five papyrus that have recorded numerous recipes with herbs, one of these, **The Ebers Papyrus** is mentioning over 200 different herbs. This is the oldest medical text of the world, dating from year 1600 BC.

The Ebers Papyrus is a 110 pages parchment of 20 meters of length, still is the most famous medical encyclopedia based on herbs. In this document it is consigned that herbs had a very important role in the Egyptian medicine. Many of their herbs were immersed in wine and then used as an oral drug.

Egyptians were eating garlic and raw onions for strengthening their immunity and in order to cure asthma as well as other lungs and bronchial conditions. The garlic cloves were peeled, crushed and macerated in a mixture of wine and vinegar, used for swills in the case of swollen throat and tooth aches.

The Egyptian civilisation was aware of the healing power that was conferred by the use of bee honey. The first official recognition of the importance of honey is dating since the first Egyptian dynasty.

Homer wrote in his *Odyssey* the following lines: *"In Egypt, men are the most skilled in medicine than any other human being"* and *"The Egyptians were more skilled in medicine than in any other art"*.

Egyptians were familiar with approximately one third of the natural remedies that we know today. In some Egyptian manuscripts it is specified the use of the following plants, as safe remedies: juniper, garlic, cumin, castor oil or poppy.

The Egyptian medicine has reached a very high standard and its reputation has spread to the neighboring countries.

Ancient Greece. The most outstanding physician of the Ancient times, Hippocrates (460-375 B.C.), referred to as "the father of medicine", has described a number of 236 herbs. He was the founder of rational medicine, has supported the role of nature in the curing process of diseases, as the physician had the task of helping the nature.

Theophrast (372 – 287B.C.), Aristotle's disciple, referred to as "the father of botanic", has described over 500 species of plants and Dioscorides, the author of a vast medical botanic have brought their significant contributions to this discipline of science.

Dioscorides was a Greek physician, pharmacologist and botanist who lived in Rome during the reign of Emperor Nero. As he was a surgeon with the Emperor's Army he had the opportunity to travel extensively as well as gather information about substances of medical use.

His book, **De Materia Medica**, a five volumes work, remains the precursor to all modern pharmacopeias as well as one of the most significant botanical atlases in history. The importance of this book also consists of the recording of a series of names of plants

in other languages than Greek and Latin. Within its pages there are records of some herbs in the Dacian language (photo 1).



Fig. 1. De materia medica

The Aztec Civilization. The Aztecs also knew an impressive number of preparates made of plants.

The spanish physician Francisco Hernandez, the representative of the Spanish Crown on medical research in the West Indies, has described in his sizeable treatise **The Natural history of the New World**, a number of 1200 remedies used by the Aztecs.

This ancient people had not only priests but also pharmacists and medicine men that were treating their patients with phytotherapeutic remedies.

Ancient China. Among the vestiges of the Ancient China were discovered a few treatise of phytotherapy, among them the famous work **Pen Tsao Kang Mu**, containing detailed illustrations for each plant, written by Li Shih-Chen (photo 2).

4000 years ago the chinese medicine men were using the *Ephedra sinica* plant for cough and lung diseases. Many of the syrups used today against cough contain ephedrine, which is the active substance extracted from this plant.



Fig. 2 The Pen Tsao Kang Mu

The most popular hinese remedy is the Ginseng root, used as a general tonic. The scientific research have shown that this root contains substances with mild stimulant action.

Ancient Rome. Along with the arrival of the Roman Empire, a number of personalities have come to the fore, amongst whom a refference name is Plinius the Older with his book **Naturalis historia** (77 A.D.) that consists of 37 volumes (photo 3). Part of the volumes are dedicated to medical botanics and comprise the presentation of a large number of herbs.

The work has encyclopedic characteristics and in order to elaborate it, Plinius had stated that he had had consulted over 2000 books. *Naturalis Historia* synthesizes the knowledge of his time in the fields of geography, mathematics, anthropology, zoology, mineralogy and plastic arts.



Fig. 3. *Naturalis historia*

Middle Ages. During this time, the knowledge about phytotherapy was kept in monasteries. One of the famous treatise from this age, written in the year 820 and housed at The St. Gall Abbey's Library in Switzerland, begins like this: *"In the Name of The Christ lies the foundation of the art of healing"*.

The Renaissance. Amongst the most renown savants that have worked on herbs during The Renaissance is Theophrastus Bombastus von Hohenheim (1493-1541), also known as Paracelsus. While working as a professor at Basel Unniversity, he stated the fact that not the entire plant, but the active substance contained by it is the one that has healing properties, naming it *"arcanum"* or *"quinta esentia"* thus prefiguring the notion of *"active principle"* that was to be used in the modern times.

The foundation of the real scientific research in the field of phytochemistry and of active principles of plants was set by the Swedish chemist and pharmacist C. W. Scheele (1742-1786), who has extracted of plants a series of crystallized substances (malic, citric, oxalic acids etc).

A remarkable moment in the development of phytotherapy and of the interest for herbs was the isolation of morphine (1806) and its use in soothing the pain as well as of the alkaloids from the rye ergot fungus.

An important contribution to phytotherapy was brought by Carl von Linné who eased the development of pharmacognosis through his works with scientific nomenclature and specialty books like **Plantae Officinalis**, **Amoenitatea academicae** etc. He discovered

new herbs and he removed from the pharmacopoeia of his time a number of mystical cures.

THE HERBS IN THE MODERN TIMES

During this age, phytotherapy and research in this field know a new development. The progress that was recorded on the improvement of methods of extraction, identification and establishment of chemical structure of organic compounds produced by the vegetable cells, have led to the discovery of new natural substances of biomedical importance.

Nowadays, about half of the pharmaceutical products of the chemical-pharmaceutics are based on herbs and moreover a number of products are used for the preparation of teas in various industries.

The practice of phytotherapy nowadays must have a scientific base, to be sustained by deep knowledge of phytochemistry and modern treatment systems. It must be known that vegetable origin products are not entirely lacked of toxicity. There are numerous active principles that are very toxic (the glycosides extracted from *Digitalis lanata*, the aconitine, the alkaloids from rye ergot fungus etc) that in dosage of a few mg to one gram, can cause death.

At present, phytotherapy has its own means of treating diseases, trained specialists in this direction, specialized publications as well as specialized scientific events. The medicine of nowadays phytotherapy is no longer the infusion, the decoction or the tincture but the dry standardized extract or only one separate fraction of that extract.

The extracts represent the true raw material used in the pharmaceutics industry in order to obtain the drugs, that in order to correspond to today's requirements, are following the rigors of processing, conditioning, analysis and control as the synthetic drugs do.

The natural therapy ensures a long-term state of well being because it takes into account the lifestyle of the person and it is approaching him or her as an entirety – body, mind and spirit – treating more than just the pathological symptoms.

Scientific phototherapy is and will stay a main branch of medical science being sustained by the development of other sciences among which are organic chemistry, cellular pharmacology, microbiology, virusology etc (Muntean et al. 2007).

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