

THE HISTORICAL IMPORTANCE OF ETHNOMEDICINE

THE USE OF MEDICINAL PLANTS AMONG THE NOMAD PEOPLES OF CENTRAL-EASTERN AFRICA

Part One

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The research was made among the Nile-Hamitic peoples, a linguistic and racial group of Ethiopic origin, principally widespread in that area of Central Eastern Africa going to the Upper Nile to the Victoria lake.

The area occupied by these peoples has pre-desertic features, it is barren with quite sparse vegetation and is characterized by the "bush" which only gets green during the poor rain season. The landscape is marked by huge expanses of acacias interrupted now and then by enormous rocks of lavic origin.

Owing to the barrenness of their territory these peoples never devoted themselves to agriculture, therefore their economy is mainly based on stock rearing, which brings about an endless nomadism towards greener and richer areas.

This is the reason why these peoples, originally settled in the Upper Nile region, were gradually obliged to migrate towards the South.

Therefore, for clearness' sake, we shall define these peoples as "primitive", as they did not have the time nor the opportunity to develop themselves from the cultural point of view, owing to specific factors bound to the struggle for survival and above all to their peculiar and incorrigible nomad nature.

The Nile-Hamitic nomads traditionally know about the therapeutic use of more than one hundred herbs utilized mainly as symptomatic remedies, such as purgatives, antipyretics and analgesics.

The use of such remedies is clearly linked to a good taxonomic knowledge of plants, and aims above all at curing the symptoms of the various diseases. This is a result of their archaic and simplistic conception of physiology and pathology, strictly connected to the animal kingdom.

Certainly they do not understand why a given medicinal plant brings about a particular effect, but actually they

almost always use it properly; nor can they say where they draw such a knowledge from. Anyway, they feel that this is an old and far-off notion, also including the inheritance of other tribes.

Similar therapeutic indications are frequently noted among Samburu, Zulu, Masai and Turkana and, at the same time, drugs whose therapeutic efficacy is universally known are easily found at these big markets where different peoples meet. In their opinion the disease, aside from its origin, is a poison that weakens and obstructs the vital organs, starting from the stomach - which includes the whole digestive tract -; therefore the first thing to do is to decongest it, which explains the intensive use of cathartic and emetic remedies.

The Nile-Hamitic peoples make a first distinction among diseases on the base of the location of the symptom; consequently they utilize the remedies at their disposal.

The organs affected more often are the chest and the stomach.

The "chest congestions" give rise to such diseases as cough, bronchitis and tuberculosis, while the "stomach congestions" bring about indigestions, decompensation in the blood circulation, diarrhoea, and intestinal infections.

In order to relieve cough and respiratory disorders they have recourse to some vegetable remedies whose active principles consist mainly of the *saponins of steroidal or triterpenic origin* existing in the bark and in the root of many acacia species.

If the use of *saponins* to obtain an expectorant effect is relevant, it also implies some embarrassing inconveniences linked to their *haemolytic, emetic and cathartic properties*.

Unfortunately the concept of "purging" is part of their medical knowledge: in fact they think that it is necessary to discharge the poisons which bring

about the diseases. That is why they often associate the use of *saponins* with some *ricinoleic acid* derivatives existing in some species of *Ricinus* or *Croton* in order to obtain an even more drastic effect.

Also for the most serious respiratory disorders such as tuberculosis, they use, together with *saponins*, drastic purgatives consisting of *anthraquinonic glycosides*, and mainly the juice of *Aloe secundiflora*, a quite common plant in the savannah. This fact explains the high rate of patients, in hospitals or dispensaries, who are affected with inexplicable and often fatal haemorrhages.

As far as "stomach constipations" are concerned the Nile-Hamitic medicine have recourse to a wide range of purgatives, found in different plants such as *acacia*, *croton*, *rhamnus* or *Cassia acutifolia*.

Here again we have drastic and irritant purgatives of *anthraquinonic* origin (*rhamnus* or *aloe*), or *senna derivatives* and *Croton saponins* or lighter purgatives of glucidic origin (*glucose and mannose polymers*) existing in the gums of certain types of acacias.

If the use of these purgatives is efficacious in the treatment of particular troubles of the digestive tract, their continuous utilization leads to an inevitable decline in the patient as well as to a strong and dangerous dehydration, especially in children. On the other hand, the treatment against strong diarrhoeas seems to be quite pertinent: in fact they use a decoction of *Commiphora africana* bark, a plant with a high content in *tannins* (also of *phenolic* origin) and a proved *astringent and antiseptic effect*.

Also the treatment for intestinal infections due to flat and round worms is relevant: in fact the nomads use the root and the bark of *Albizia anthelmintica*, a plant whose vermifuge

properties are widely recognized. Besides the head-ache itself, they localize in the head all those diseases affecting the mouth, the throat, the nose and the eyes. These "head disorders" are mainly cured by inhalations of different kinds: either with drugs containing antiseptic and healing essential oils of terpenic nature which are present in some species of *Juniperus*, or with irritant resins contained in the *Boswellia* and in the *Ipomea*, or even with such strong drugs as *Catha edulis* or *Solanum*, whose alkaloids have a powerful narcotic effect.

African nomads have a deep knowledge of poisons and they use them to cure also those diseases that they consider as extremely serious, such as the lunacy or the bites of poisonous snakes. Against these diseases they utilize the strong emetics and cathartics contained in the *Cardiospermum* or in the *Rhamnus*. The so-called stimulants are very widespread among them, from the strong snuff, mainly used by married women, to the *Kath*, i.e. the leaves of *Catha edulis* that, when chewed, bring about a *speed* quite similar to the effect of amphetamines and cocaine.

Nile-Hamitic warriors often take these stimulants together with other narcotic drugs such as *Solanum*, *Harrisonia*, *Myrica*, *Myrsine* or *Osiris*, which induce a general shivering called "shaking" followed by (a state of) unconsciousness which requires the intervention of other people in order to prevent the poisoned person from harming himself and other people.

Such a practice has always been quite common among warriors and is linked to battle ceremonies. These are only few aspects of the medical and practical habits of African peoples, and the medicinal plants of these developing countries are still partly unknown; yet, we believe that the ethnomedical indications have been and will always be extremely important in order to achieve satisfying pharmacological results.

If it is clear that these peoples have always dealt with the said drugs in the same way, it is also true that the western medicine, owing to its contacts with the Arabian culture during the centuries, became acquainted and started utilizing drugs of crucial importance for the *matéria medica*.

The different species of the plant called *Boswellia hildebrandtii* (Engl.), for example, which drew its name

from the English botanist ROXBURG in the second half of XVIII century, have been well-known since ancient times as they supply the famous *incense*.

Most incense found in Europe came from the upper Nile area, where the *Boswellia* species are well-known both for their anti-catharral properties and for their medical and religious significance. In fact, the gum or the bark of these trees are burned to give off fumigations against bronchitis and are also utilized during circumcission ceremonies in order to obtain scented and propitiatory smoke.

We now know that the incense, previously used during pagan rites, was gradually adopted by the Christian liturgy. Moreover, the incense was one of the ingredients of old and famous preparations whose inhalations carried out a disinfectant action against bronchial catarrh, such as the *Fioravanti Balsam*. There was another substance imported from the western Arabian coasts and from the slopes of Central and Northern Africa: it was a scented and bitter resin extracted from the different species of *Commiphora*, the *myrrh*. Thanks to its phenolic resins, this drug has astringent and anti-inflammatory properties and was thus widely used in the western world for oral hygiene and against any kind of skin or mucosa inflammations.

Also the dried and concentrated *Aloe* juice came to Europe through the Red Sea and Alexandria and its trade name was *Aloe Socotrina*; an extremely bitter liquid very well known by any medical doctor and apothecary.

There are more than 200 species of *Aloe* growing in Africa and, with the high and brightly coloured plumes of their inflorescences, represent a typical feature of the African landscape. The pharmacological researches carried out on the ingredients of *Aloe* fresh juice explain its popular utilization. Such juice, in fact, mainly consists of a hydrocolloid gel composed for the most part of such sugars as *glucose*, *mannose*, *galactose*, and *arabino-*se, for a small part of a group of *sterols* and a *saponin*, and of many *mineral salts*.

Also the long-living *Dracaena* comes from Africa where it was worshipped by the native people as "dragon tree". Finally we should mention the acacia, a typical plant of the rocky plateaux of Eastern Africa. Local people use it to build their sheds, to fence their villages, to keep wild animals off, to make rudimentary tools

and to draw medicinal remedies. Even though acacias have never grown in Europe, they were known by the Greeks and the Romans; the name itself (*achachia* or *kakia*) is of Greek origin and is referred to by Theophrastus. Later on, the Romans related such term to the word "*acuo*" - maybe connected with the sharpness of its spines - from which the name "*Acacia*" derives.

Pliny himself mentions this plant and its gum: acacias are in fact the trees from which the gum arabic is obtained; and, to quote Mattioli, it is "...that excellent gum as transparent as glass, similar to the pine resin, that has the property of filling and sealing the skin pores and of making the medicines less bitter...". Nowadays the gum arabic, among other uses, is still utilized as an irreplaceable excipient.

Among the numerous species of acacias growing in the Nile-Hamitic regions, three of them are regularly used as medicaments: *Acacia Nilotica*, *Acacia Nubica* and *Acacia Senegal*.

In recent years many pharmaco-chemical researches have been carried out on the active principles of acacias. Such researches contributed to reach remarkable results in the therapy of a parasitic disease affecting the whole Africa: *schistosomiasis*. In conclusion, it is clear that the Third World is a mine of active principles drawn from plants: therefore an effective extractive method together with an adequate commercial production might represent a realistic opportunity for development.

If properly organized, the study of the traditional medicine of these peoples might lay the foundations of a pharmaceutical industry based on the local resources whose production could be used together with the western remedies, according to the chinese example.

As a result, the Third World would not be any longer the rubbish dump for our medicaments. We should also consider that the drug extractive process and the researches on their biological properties are not so prohibitive, or at least not so sophisticated and complex as a synthesis plant is; therefore any University (even one of the Third World) with a good team of technicians could reach meaningful aims. If so, it would represent a great opportunity for the Third World to discover new remedies and to exploit their own natural resources.