

Cultural Richness of Green Pharmacy

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The people in India have an outstanding knowledge of medicinal plants acquired over centuries. A passion for studying medicinal plants is evident both in folk and scholarly traditions. The indigenous mode of understanding and using plants is different from the modern scientific way. It includes botanical, medical, astrological and spiritual elements.

Indians obviously care for medicinal plants because they know so many of them, so much about them and have worked extensively on their application. It is a remarkable fact that the use of medicinal plants is still a living tradition in the form of a million village-based folk carriers. These traditional birth attendants, bonesetters, herbal healers and wandering monks are invisible to policy makers and therefore not taken into account as a public health resource. Apart from these specialised folk healers there are also millions of women and elders with traditional knowledge of food and nutrition and herbal home-remedies. The revitalisation of this vast and diverse folk tradition does not appear on the Governments agenda, however.

and doctrines are similar to ayurveda. The unani system, with its origin in Greece, has a long and impressive record in India. It was introduced by the Arabs and Persians around the eleventh century. In India, the unani system closely interacts with ayurvedic and other local medical systems. Tibetan medicine in India is primarily a regional manifestation of ayurveda in the Trans-Himalayan regions and in parts of north-eastern India. The largest number of medicinal plants is used in the folk traditions (4671 species), followed by ayurveda (1769 species), siddha (1121 species), Tibetan (279 species), homeopathy (182 species), modern bio-medicine (105 species) and unani (59 species).

Bridge between traditions

there is no 'reliable bridge' between Dravya Guna Shastra and chemistry and pharmacology, or vice versa, although functional links have been established.

Some of the basic biological parameters along which plants are studied in the ayurvedic medical system are *rasa* (taste), *vipaka* (metabolic property), *guna* (qualities), *prabhava* (specific biological effect) and *virya* (potency). Possibly a correlation could be established between the taste, or *rasa*, of a plant and its biochemistry and biological effects. The ayurvedic tradition indicates that sweet, sour and salty tastes contribute to building body tissues, while bitter, pungent and astringent tastes support processes of breaking down body tissues. The traditional understanding of the effect of taste, is based on both empirical experience as well as the theory of *rasa*.

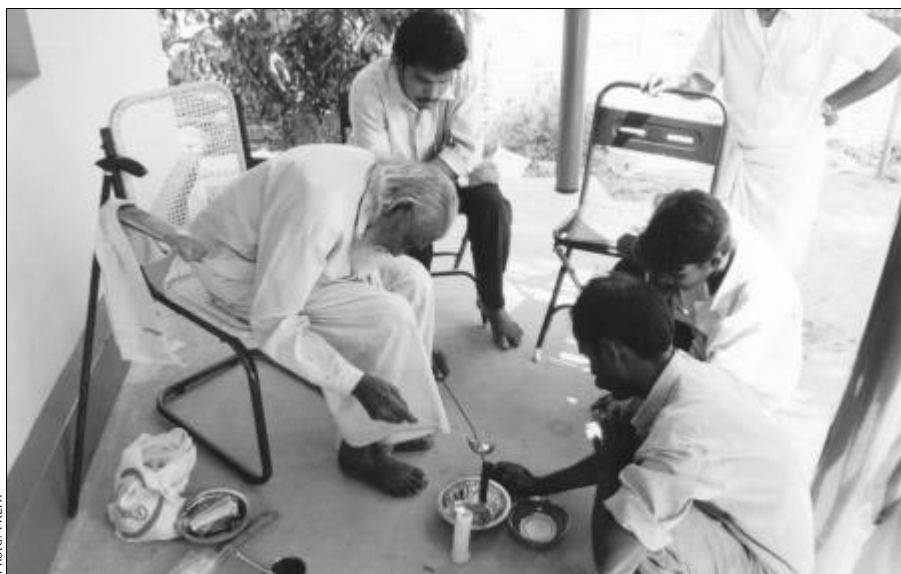
In modern nutrition, taste is primarily used for the purposes of identification. Further conclusions on the basis of taste to validate the ayurvedic medical theory would require experiments with the biological and bio-chemical effects of substances with these different tastes.

Ayurvedic Materia-Medica

The in-depth study required about a plant before it can be admitted into the indigenous Materia-Medica is quite impressive. This includes aspects like nomenclature, parts used, methods of purification, contra-indications, effect on physiological systems, effect on body tissues, effect on organs, effect on excretory system, qualities, metabolic activity, post-digestive effect, drug therapeutic class and processing strategies.

On the basis of these parameters, the pharmaceutical activity and therapeutic applications of thousands of plants have been worked out. In the codified tradition this has resulted in around 25,000 brilliantly designed plant drug formulations. In the folk system it is suggested that over 50,000 herbal drug formulations have been developed for a very wide range of applications by India's 4600 ethnic communities.

The value of folk knowledge can be illustrated with the example of *Phyllanthus amarus*, a plant used in Southern India for treating jaundice. The effectiveness of this plant in treating viral hepati-



Practical demonstration and oral teaching conducted by a traditional healer

Medical traditions

The Indian system of medicine consists of two major tendencies: the folk and the codified traditions. Folk traditions are handed over orally from generation to generation. The codified tradition consists of medical knowledge with sophisticated theoretical foundations expressed in thousands of manuscripts covering all branches of medicine. Examples are ayurveda, *siddha*, *unani* and the Tibetan tradition. Siddha is one of the oldest systems of medicine in India, largely therapeutic in nature and specialises in pharmacy. Its principles

It is interesting to observe that Indian knowledge about plants and plant products is not based on the application of western categories and approaches like chemistry and pharmacology. It is based on indigenous knowledge categories called *Dravya Guna Shastra*, the Science of Biological Properties of Natural Materials.

Establishing a bridge between western biomedical science and Dravya Ghuna Shastra is complex. Unfortunately, there is a lack of rigorous cross cultural studies and, in fact, a well accepted methodology for such studies is still missing. Therefore

tis-B was validated by an American Noble prizewinner who later patented this knowledge. Quinine extracted from the cinchona bark was traditionally used in Peru to cure malarial fevers. In South India the jelly of the *Aloe vera* plant, known locally as Korphad Kumari, is applied to burns and wounds and is taken orally for gynaecological problems.

In the province of Karnataka, a decoction of the bark of the *Alstonia scholaris*, locally called Sapta Parni, is used in virtually every household at the onset of the monsoon to prevent malarial fevers. *Boerhavia diffusa*, locally called Punarnava, is commonly used in the treatment of oedema and anaemia, particularly during pregnancy, and is often eaten as a vegetable.

Understanding a disease

The folk tradition often uses symbolic language to popularise the understanding of a disease. Modern sociologists do not understand this symbolism and tend to interpret symbolic expressions literally. We will give the example of curing chicken pox with neem leaves. Everybody in the local culture knows about the angry and hot temperament of the Mother Goddess Kali. Human chicken pox is attributed to Mother Kali, therefore it is also called 'Mother's disease'.

According to ayurveda, chicken pox is caused by excess heat generated in the body. This may be due to eating spicy, sour, fried or stale food or to changes of temperament, especially anger. The imbalance results in an excessive increase in body heat, or *Pitha*. As a treatment neem leaves are used externally as a cooling paste and internally, to cool down the physical body. At the same time neem leaves are offered to the goddess Kali, to cool down the person's temperament. The mental change is bound to have a physical effect. (Box 1)

Researching folk medicine

In South India, under the Compas-FRLHT project, we are studying folk health traditions. We found that, on average there is one healer for every 100 households. This is very impressive when you compare it with the modern doctor-population ratio

in rural India, which is one doctor for every 1000 households. Health conditions treated by folk healers range from fevers, colds, coughs, skin diseases and jaundice to bone fractures, birth, gynaecological conditions, mental diseases and paralytic conditions. Our survey has shown that most rural households are engaged in self-help healing of physical complaints that including menstrual problems, fever, diarrhoea, migraine and simple eye infections. FRLHT is seeking to legitimise local health traditions by drawing public attention to them. It presents factual reports on their presence and pinpoints the wide range of health conditions managed by local health practices. We are also pointing out to the fact that while on the one hand the local health traditions are being ignored by policy makers, on the other hand scientists and commercial firms are taking the trouble to document them.

We also denounced several examples of what is being termed as 'bio-piracy'. In India the troubles with patents on popular medical plants like Neem, Turmeric, *Phyllanthus Amarus*, *Piper longum* and, more recently, common vegetables like bitter melon, are increasingly recognised. All these controversies relate to folk practices.

Moreover, FRLHT is engaged in the assessment exercises of local health traditions. After the documentation in one area, we select certain practices in consultation with the communities. Then we invite medical professionals from various codified systems of medicine, like ayurveda, siddha, unani and modern medicine. Together with the communities the views on these practices are shared and documented. This way the project is presently working on a 'rapid assessment' methodology for evaluating the local health practices through cross-cultural medical dialogue.

Spiritual dimension

The spiritual dimension of local health traditions is included in communal meetings with folk healers and communal households. This way we can share the understanding that the traditions work in a holistic way. In our field studies in Southern India we have observed the spiri-



Photo: A. Hefeeel

On average, there is one folk healer for every 100 families in rural India

tual dimensions of healing. For example, some human disease conditions, particularly chronic skin ailments, are believed to have both material and spiritual causes. The physician usually advises patients to make a particular offering to the Snake God before starting the herbal treatment. In the treatment of conditions caused by 'wind disorders in the body' the healers recite a special *mantra*, a kind of prayer, before starting the treatment with roots of four different plants.

In traditional Indian literature too, the spiritual dimension of the use of plants is emphasised. For example, it is advised that the physician recites the following hymn when collecting herbs: "O, benevolent herb, relieve the sufferings by your power and radiance and do the patient good". The physician is advised to perform auspicious rites and fast the night before collecting the herbs from good places and in the proper season.

It is obvious that including the spiritual dimension is essential to understand the complexities and the potentialities of local health traditions in rural India.



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	Folk understanding	Ayurvedic understanding
Disease	Chicken pox (<i>Ammayi noi</i>);	Chicken pox (<i>Visphota</i>)
'Symbolic' expression of cause	Anger of Mother Goddess Kali who has a fiery and hot temperament	Cause: Excessive heat in body. Symbolism: The deity's angry expression is of hot nature and
Treatment	Neem leaves consumed and applied on body. "Kali" worship with neem leaves on Tuesday, Thursday and Friday and patient lies with his head in	Appraisal of folk treatment: The neem is cold in potency and has anti-pitha properties

Box 1: Folk and ayurvedic understanding about Chickenpox