

A BRIEF INTRODUCTION TO AYURVEDIC SYSTEM OF MEDICINE

PROBLEMS AND PROSPECTS OF DATABASE

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1. Introduction

Today the medical world is posed with complex challenges. Thus time demands an integrated and pluralistic approach towards healthcare to cope effectively with this situation. There has been a growing interest in Ayurveda in the past few years. To initiate fruitful dialogues between Ayurveda and modern science, an in-depth understanding of both the systems becomes an essential prerequisite. Such an exercise should emerge from a standpoint accepting that there are different world views existing in the world, Ayurveda being one among them. This may sound quite contrary to the common belief that the science is only one as expressed in modern scientific paradigm. Both Modern science and Ayurveda have universal attributes and share the common objective of well-being of mankind. But they are quite different in their philosophical and epistemological foundations, conceptual framework and practical outlook. So, let us see what are the fundamental differences between *Sastra* (Ayurveda) and the Modern science.

Table 1. Foundational difference between *Sastra* and Modern science

Levels	Ayurveda	Modern science (Western science)
Philosophy (<i>Tatva</i>)	<i>Sankhya, Nyaya, Vaisesika darsana</i>	Logical positivism and later schools, Cartesian philosophy
Conceptual frame work (<i>Sastra</i>)	<i>Panca mahabhuta siddhanta, Tridosha siddhanta</i>	Atomic theory, phyto-chemistry, pharmacology
Practical outlook (<i>Vyavahara</i>)	Holistic Individualized	Fragmented Specific

From the above table it is clear that both these systems are entirely different. Ayurveda is based on the *Sankhya, Nyaya and Vaisesika* philosophical schools whereas Modern science is based on Logical positivism, Cartesian philosophy and later schools. Ayurveda uses concepts

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like *Panca mahabhuta siddanta*, *Tridosha siddanta*, where as Modern science uses atomic theory, phyto-chemistry, pharmacology etc. At the practical level the Ayurvedic outlook is holistic and individualized and Modern science's approach is fragmented and specific. (Table 1.) So far, the modern studies on Ayurveda has been restricted to exploration of drug sources, sociological, anthropological studies, etc., and no rigorous foundational correlation has been attempted. This predisposes the need of a strong foundational dialogue. From this perspective let us go into some of the basic constructs of Ayurveda.

1.1. What is Ayurveda

Ayurveda is the knowledge of life and longevity. The term *veda* denotes knowledge and *Ayus* can be defined with the following verse.

“*Tatrayusceti cetananuvrtih jivitam anubandho dhari cha*”.

Ayus is the continuance of consciousness (*Cetananuvrtti*), animation (*Jivita*), continuous flow (*Anubandha*), sustaining the body (*Dhari*). Thus ayurveda encompasses the knowledge of different facets of life. With such a broad definition Ayurveda advocates various means to protect health and to alleviate disorders. Ayurveda is the knowledge that indicates the appropriate (*Hita*) and inappropriate (*Ahita*), happy (*Sukha*) and sorrowful conditions (*Dukha*) of living what is appropriate and inappropriate for longevity as well as the measure of these. The core objective of Ayurveda is to have happy life (*Sukhayu*), sustainable happiness in life (*Hitayu*), longevity of life (*Dirghayu*).

This knowledge exists in two major schools. They are the medical and surgical schools. *Caraka Samhita*, a classical text of 1500BC-200AD, represents the medical school and *Susruta Samhita* of 1500BC-300AD, represents the surgical school. While going through the Ayurvedic classical texts, one can see that there are eight different specializations in Ayurveda. They are *Kaya cikitsa* (Internal medicine), *Bala* (Paediatrics), *Graha* (Mental disorders & afflictions), *Urdhvanga* (Diseases of ear, nose, throat and eye), *Salya* (Surgery), *Damstra* (Toxicology), *Jara* (Geriatrics/Rejuvenation), *Vrsa* (Reproductive health, Eugenics).

1.2. What is health according to Ayurveda

To be established in oneself or one's own natural state is defined as *Svasthya* (perfect health in Ayurveda). For this, a person should have a “Structural” and “Physiological” equilibrium (*Samadosa*), equilibrium of metabolic processes (*Samagni*), equilibrium of body tissues (*Samadhatu*), equilibrium of eliminative system (*Samamalakriya*), equilibrium of senses (*Prasannendriya*), equilibrium of mind (*Prasannamana*), State of pure awareness or a contented self (*Prasanna atma*).

There are three different treatment methods adopted in Ayurveda to achieve the above state. They are: *Daiivavyapasraya* - Treatment by doing rituals, wearing auspicious gems, chanting

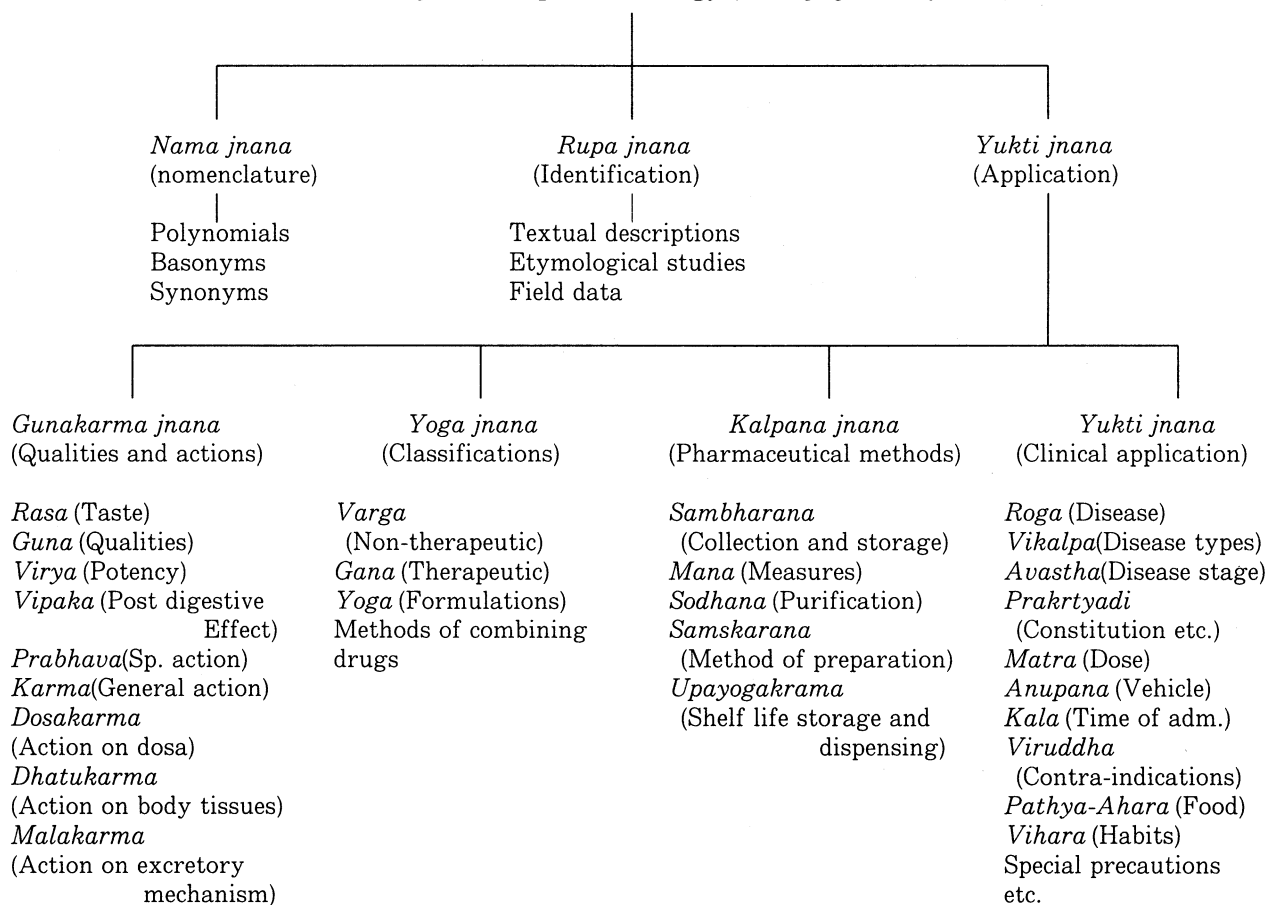
mantras, etc. *Satvavajaya*- Control of mind through practices of *yoga*, meditation etc. *Yuktivyapasraya*- Treatment with drug materials such as plants, animals, minerals and metals. Thus, in the *Yuktivyapasraya* method of treatment, Ayurveda uses different drug materials. Now let us see how these drug sources are understood in Ayurvedic pharmacopoeia.

1.3. The three levels of understanding of a drug material

The *Dravyagunavijnana* is the section of Ayurveda dealing with drug sources. This is divided into *Padarthavijnana* and *Dravyavijnana*. The entire edifice of the Ayurvedic knowledge stems from the view of similarity of man and nature, or in other terms microcosm and macrocosm, both having constituted by the basic fundamental principles. This is understood at six levels known as *Padarthas*. *Padarthavijnana* is the science which deals with the study of these basic existential principles. i.e. *Dravya* (substratum), *guna* (qualities), *karma* (actions), *samanya* (generic), *visesa* (specific), *samavaya* (inherence).

Dravyavijnana is the detailed pharmacology. This is divided into three sub-topics named *Nama*, *Rupa* and *Yukti jnana* which constitutes the three-tier understanding of *Osadha* (drug materials). The flow chart below gives an idea about the structure of Ayurvedic pharmacology.

Table 2. Ayurvedic pharmacology (*Dravyaguna vijnana*)



1.3.1. *Nama jnana* and *Rupa jnana* (Understanding of Nomenclature and Identification):

The nomenclature of Ayurveda is not a binomial system as adopted by the modern botany. In Ayurveda, there are many names for a single entity and a single name is used to denote many plants. So it is essential to understand the way Ayurvedic nomenclature works. The total number of names pertaining to medicinal sources may be approximately 20,000 to 25,000. A particular plant will have a group of synonyms which may range from one to approximately fifty. Each name focuses on a very specific aspect of the plant. So these names give a good picture of the various aspects of the plant including morphology, habit, habitat, qualities, biological actions, therapeutic uses and so on.

This naming system was primarily designed to help a physician to select a plant for medical purposes. It was not designed to establish the taxonomical identity of a plant. The nomenclature of Ayurveda is therefore a therapeutic nomenclature based on a polynomial system of naming. In the literature the names are categorised as *Svarupa bodhaka* (revealing the form) or *Guna bodhaka nama* (Revealing the quality). *Guna bodhaka namas* are names pertaining to qualities, actions, specific action in relation with therapeutic conditions, etc. The different types of names highlight all the three aspects of the drug sources.

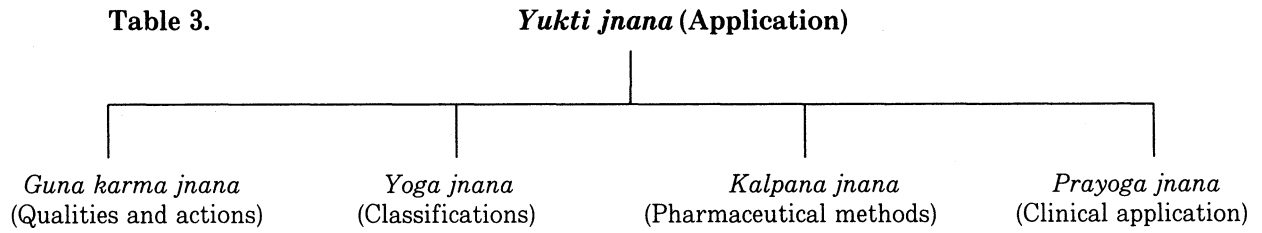
Let us consider a detailed example of the various meanings of the plant *Tinospora cordifolia* which is known in Sanskrit as *Guduci* along with several other synonyms. This will provide an idea of the Ayurvedic nomenclature.

Names describing external characters (*Svarupa bodhaka*) are *Amrtavalli* - weak stemmed plant, *Cakralaksana* - wheel like appearance on cross section, *Mandali* - circular shape, *Kundali* - stem gets entangled in with twiner, *Nagakumari* - twining nature comparable to a snake, *Tantrika* - spreading nature, *Madhuparni* - honey like leaf juice, *Chadmika* - thick foliage, *Syama* - smoky hue of the stem, *Vatsadani* - eaten by calves, *Dhara* - longitudinal grooves on the stem, *Visalya* - no thorns, appendages, *Chinnaruha* - capacity of cut stems to regenerate fast, *Abdikahvaya* - growing near a reservoir of water.

The terms describing qualities (*Guna bodhaka*) are *Amrta* - an elixir, *Guduci* - that which protects, *Vayastha* - rejuvenative nature, *Juarari* - anti-pyretic property, *Soumya* - benevolent in action

There are common terms used as synonyms for different plants. The similarity in reproductive characters, physical characters, qualities, action etc. are the reason for this. Here in the above example the term *Vayastha* is a synonym for *Embllica officinalis* (*Amalaki*), *Amrta* is a synonym for *Terminalia chebula* (*Haritaki*) because of similar characteristics.

1.3.2. *Yukti jnana* (Application) :



The ***Guna karma***(qualities and actions of a drug source is known through different steps. They are *Rasa*(taste), *Guna*(attributes or qualities), *Virya* (power of action), *Vipaka*(post digestive effect), *Prabhava* (specific action), *Karma* (general action), *Dosa karma* (action on dosa), *Dhatu karma* (action on body tissues) and *Mala karma* (action of eliminative system). Detailed profile of each drug is available in the Ayurvedic pharmacopoeia.

The knowledge of combining individual drugs to make a formulation is known as ***Yoga jnana***. This includes non-therapeutic classifications, therapeutic classifications and formulations. While making formulations different factors like drug compatibility, drug interaction, synergism, potentiation, bio-availability etc., are taken into consideration.

Kalpana jnana mainly deals with *Bhaisajya kalpana*, the pharmaceutical preparation of drugs. There are approximately 70 - 80 varieties of preparations in Ayurveda as drugs and food supplements. A few among them are: *Kasaya* (decoction), *Ghrta* (medicated ghee), *Taila* (medicated oil), *Gutika* (tablet), *Curna* (powder), *Leha* (linctus), *Arista* and *Asava* (fermented preparation), *Panaka* (syrup). Thus this topic includes *Kalpana jnana* (pharmaceutical methods) which includes, *Sambharana* (collection and storage), *Mana* (measures), *Sodhana* (purification), *Samskarana* (method of preparation), *Upayoga krama* (shelf life, storage and dispensing) etc.,

Yukti jnana (clinical application) includes understanding of *Roga* (disease), *Vikalpa* (disease types), *Avastha* (disease stage), *Prakrtyadi* (constitution etc.), *Matra* (dose), *Anupana* (vehicle), *Kala* (time of administration), *Viruddha* (contra-indication), *Pathya* (regimens), *Ahara* (food), *Vihara* (habits and routines), special precautions etc.

2. Current status of Ayurveda

Around 70 percent of the health care needs of India is still being catered by Traditional systems of Medicine including Ayurveda, which highly depend on the natural resources. It is estimated that the world has about 250,000 plants to which India's contribution is about 50,000 plants of all groups including about 20,000 flowering plants and conifers. It is estimated that out of these 7,000 plants are used in the Traditional Systems of Medicine and according to a recent survey it is reported that 1,700 plants are used in the Ayurvedic system of medicine. However, the number of vegetable drugs actually used by various Ayurvedic practitioners in

India and available in different markets, is around 700.

The drugs sold in the Indian market bear vernacular or regional or trade names which vary from region to region in India thanks to its multilingual character. There are around twenty one official languages and innumerable dialects in India. Though the original names of the Ayurvedic drugs as given in the classical literature are in Sanskrit, in the trade they are known in the regional or vernacular names like Hindi, Bengali in the northern, eastern and western India while in south India, they are known by Tamil, Kannada, Telugu and Malayalam names. The plethora of languages prevailing in India has contributed to considerable confusion in the Botanical identity of the drug.

3. Sources of medicine in Ayurveda and controversy in their identity

Subsequent to the publication of these floras, efforts were undertaken to link the description of Ayurvedic drugs given in classical Sanskrit literature like *Caraka samhita*, *Susruta samhita*, *Astanga hridaya* and *Astanga samgraha*, to the scientific botanical names. Though the Sanskrit literature have provided accurate description, confusion in the identification of botanical sources of these drugs was probably brought about by poor understanding of the Sanskrit literature and misinterpretation by various commentators. This confusion has become confounded by the existence of several names to one drug and several drugs having one common name.

Non availability of a species, poor or distorted understanding, parallely evolving knowledge systems, are the three major reasons for looking for alternatives and wrong and multiple identities added to them, result in controversy. Thus a high percentage of plants used in the present day Ayurvedic practice have some controversy attributed to them.

3.1. Non-availability: Due to non-availability or high cost in the market, there are chances of substitution or adulteration of drugs. If this practice continues for long time the original identity of a plant may become obscure and the substitute will be considered as the original. For example, the plant referred to *Sankhapuspi* in the earlier texts of Ayurveda is no more available. There are many legitimate substitutions to this plant. In Kerala tradition, *Clitoria ternatea* and in Northern India, *Convolvulus microphyllus* are being used as *Sankhapuspi*. Similarly *Canscora decussata*, *Canscora diffusa*, *Evolvulus alsinoides*, *Lavandula bipinnata*, *Woodfordia fruticosa*, *Cannabis sativa* have been correlated to *Sankhapuspi* but do not match with the original descriptions of *Brhatrayi* (3 major earliest classical works of Ayurveda).

Non availability also results in looking for similar morpho-variants and thus result in alternatives. For example *Sarpagandha* is correlated to *Rauwolfia serpentina*. Now since this plant is not commonly available, *Rauwolfia tetraphylla* has been used as a candidate. Thus

alternatives are made and controversy is generated in due course.

3.2. Poor understanding is another major reason resulting in wrong identities. A drug can also become controversial when the information available on the species is limited. Poor understanding of the nomenclature intricacies, misinterpretations, poor deciphering of the classical texts, poor field identification skills, wide chronological gaps between the different classical texts, all lead to wrong identity.

Nomenclature issues and peculiarity of Sanskrit being the major language of the literature, if not understood properly may mislead the reader. For example, in some cases the gender of the words play a very important role. The word *Pippala* denotes *bodhivrksa* when used in male gender and the same in female gender denotes long pepper (*Pippali*). Likewise *Mrnala* is lotus and *Mrnali* is *Lamajjaka* (touch me not). When the same word becomes *Amrnala* it denotes *Usira* which is another feature of the language. Etymological intricacies and grammar have to be clearly understood to internalise these dynamics.

There are also chances of misdirections in the commentaries or subsequent literature. *Brahma suvarcala* a plant described in *Caraka samhita* and *Susruta samhita* in the *Divyaousadhi* group of drugs has been later correlated to *Mandukaparni* by *Indu* a commentator on *Astanga samgraha*, a classical text of 6th cent AD. According to the descriptions available in *Caraka samhita*, *Brahmasuvarcala* is a herb with golden latex and lotus like leaves. This does not at all match with the present day available *Mandukaparni* (correlated to *Centella asiatica*). So either the *Mandukaparni*'s present day identity is controversial or the description by *Indu* is not valid.

Poor deciphering of the texts is another reason resulting in wrong identities. Poor identification skills at the level of collector, trader or end-user also result in wrong identities. This is primarily because of the alienation from the field/natural habitat. *Puskaramula* is a plant which finds mention in the earliest available classical text. This is correlated to *Inula racemosa* by many authors. According to market trader in Kerala, *Puskaramulla* (a type of jasmin) is being used for the last 30 years. Similarly the flower of *Terminalia chebula* has replaced the identity of *Karakatakasrangi* since almost 50 years in the market.

Wide chronological gaps between the texts in the evolutionary history of Ayurveda or lack of enough materials for filling these gaps have also led to wrong identification. This has also created a vast gap between practice and the classical theoretical Ayurveda. Plants like *Asvavati*, *Somavati*, *Urjayanti*, *Udojas* which find their mention in the *Vedas* have become obscure. A group of plants called *Divyousadhi* having powers like that of soma were included during the period of *Caraka samhita* and *Susruta samhita*. But later they were dropped by *Vagbhata*. This may be because of the difficulty in accessing their identities.

Due to similarity in the morphological characters or specific features two different species may be known by the same name in the vernacular languages thus resulting in wrong identity. For example in Tamil, both *Cressa cretica* and *Drosera indica* are known by the same name *Azhukanni* because of the similar feature of presence of dew like substance on the leaves.

3.3. Parallely evolving knowledge systems have generated multiple identities to a large extent. Availability of morpho-variants, identifying species with partly similar or fully similar properties, inherent qualities of accent and dialects, diverse non medical literature describing flora and etymological intricacies are few among them.

Similarity in the morphological characters, clinical applications or textual descriptions may generate new candidates. For example, *Brahmi* is a plant correlated by most of the Ayurvedists to *Bacopa monnieri*. But in the North Indian tradition, *Centella asiatica* is used as *Brahmi*. This is because of the similarity in the clinical properties. Similarly *Woodfordia fruticosa* has been correlated to *Sankhapuspi*, may be because its flower has the shape of a conch.

Inherent qualities in vernacular languages, diverse dialects and accent also lead to multiple identities. For example *Matala* in Tamil refers to *Punica granatum*, whereas in Kannada it pertains to *Citrus medica*. Likewise *Aralimara* is the Kannada name for the *Ficus religiosa* but in few specific locations of Karnataka (a Southern state of India), *Ficus* is known as *Ragi mara*. *Ragi* is the popular name for the cereal *Eleusine coracana*. *Pasanabheda* is the term which means breaking the stone. *Pasanabheda* of Northern, Eastern, Southern India are different according to Bapalal Vaidya a pioneer in the research of controversy of medicinal plants.

Non medical literatures also contribute to multiple identities or wrong identities. For example *kamala*, *utpala*, *kumuda*, *kalhara*, all are at times referred to the same species in poetical interpretations.

The polynomial nomenclature is one of the major issues which make a lot of confusion to many of the authors and readers. The same plant having many names or the same name applied to different plants. As mentioned earlier in this paper, there are around 60 synonyms of *Amrta* (correlated to *Tinospora cordifolia*) and *Amrta* is also a synonym for *Haritaki* (*Terminalia chebula*). If this is not properly understood it may cause confusion. This is primarily because of lack of understanding of nomenclature dynamics of Ayurveda.

In present day's sources of botanical correlations, many inaccuracies have crept in, since the authors have not been critical and fully oriented to this issue of controversy. Thus identifi-

cation of drug sources becomes the first step to do any research or further study of any drug source.

3.4. Drugs of confused identity: A few examples

1. One classical example is the drug **Brahmi**. This drug is reported to possess properties of improving memory and intellect. The clinical trials have shown significant results in the learning capacity of the mentally retarded children. A few drugs like "Mentat" and "Memory Plus" have been developed from *Brahmi* by the Central Drug Research Institute in India and are marketed by chemists.

Botanical Sources of *Brahmi*:

Two different plants are known by the same name - *Brahmi*

1. *Centella asiatica* (LINN.) URBAN (Apiaceae)
2. *Bacopa monnieri* (LINN.) PENNELL (Scrophulariaceae)

In many of the Indian markets, *Centella asiatica* is sold in the name of *Brahmi* whereas in some markets, especially in Bengal and Southern India, *Bacopa monnieri* is sold as *Brahmi*.

View of Classical literature on *Brahmi*:

A study of classical literature on *Brahmi* reveals that the original source of *Brahmi* is *Bacopa monnieri*, whereas *Centella asiatica* constitutes the botanical source of another Ayurvedic drug called *Mandukaparni*. This is included by *Caraka* in his *Vayasthapana* gana- the group of drugs capable of maintaining the youthful vigour and strength. It is also capable of improving the receptive and retentive capacity of mind.

2. Another drug of confused identity is **Rasnapatti**. This drug is aperient and purgative. Six different plants are known by this name.
 - (a) *Pluchea lanceolata* C.B.CLARKE
 - (b) *Inula helenium* LINN.
 - (c) *Inula racemosa* HOOK.f.
 - (d) *Vanda tessellata* ROXB.
 - (e) *Acampe pappilosa* LINDL.
 - (f) *Alpinia galanga* WILLD.
 Except *Pluchea lanceolata* C.B.CLARKE, all the other drugs are root drugs. The well accepted source of the drug **Rasna** is *Pluchea lanceolata* including the classical literature.
3. **Jivanti**:

Roots of the drug is useful in rejuvenating health and cures all the three humours, i.e., *Vata*, *Pitta* and *Kapha*. Botanical sources are (a) *Leptadenia reticulata* (RETZ.) WT. (Asclepiadaceae). (b) *Ephemerantha macraei* (LINDL.) HUNT & SUMMERHAYS (Orchidaceae). (c) *Holostemma ada-kodien* SCHULTS. The accepted source of this drug, botanically and according to the classical literature, is: *Leptadenia reticulata*. However, in Kerala

(Southern India), the last named plant is used.

Such examples have brought the focus on research not only on their botanical sources but also on their clinical and pharmaceutical applications.

3.5. Substituted and adulterated drugs - causes and reasons

Over exploitation of a drug source results in the depletion of the source, affecting not only the environment but also resulting in substituted and adulterated drugs. Non-availability in abundance of a drug source in its natural habitat also forces us to accept substituted drug-source. For example, the original source of the barberry root, useful in curing jaundice, haemorrhoids, urinogenital disorders and skin diseases, known in Ayurveda as *Daaruharidra*, is *Berberis aristata* HOOK.f. & THOMSON or *B. asiatica* ROXB., whereas, for want of enough raw materials of these species, another species of the same genus, *B. lycium* ROYLE is used as a common adulterant, and in Southern India it is substituted by *Coscinium fenestratum* (GAERTN.) COLEBR.

Some traders resort to adulteration when the genuine or substituted drug source is not available. Sometimes the adulterated material is mixed with the genuine samples. For example, *Crocus sativus* LINN. (saffron), is often adulterated with the skins of *Allium cepa* LINN. (onion) and the ray florets of *Carthamus tinctorius* LINN. (safflower)

3.6. Problems and prospects of cultivation of drug sources

A way of obtaining genuine crude drug samples is to cultivate them. But cultivation also has its own problems which are explained here.

3.6.1. Prospects

By cultivation there is an assurance of continuous supply of genuine drug sources. Further, it does not disturb the environment, rather contributes to it.

3.6.2. Problems

- i. It is not possible to cultivate all the drug sources.
- ii. Farmers are not ready to take up cultivation of non-remunerative medicinal plants, in the place of cash crops like rice, sugarcane, pulses and vegetables, unless the Government gives them incentives and protects them from financial loss, which cover issues like benefit sharing and the Intellectual Property Rights. One such example is the cultivation of *Trichopus zeylanicus* GAERTN. (Dioscoreaceae), in Kerala, in south India involving tribal people in its cultivation. The plant, locally known as *Arogyapaccha*, meaning, that which provides good health and vigour, is reported to provide a general health tonic which may be equivalent to ginseng.

- iii. Further, sometimes, the cultivated samples are different in their morphology and efficacy as a drug from its wild relative. A typical example is the source of the Ayurvedic drug—*Asvagandha*—which is *Withania somnifera* DUNAL, used as an ingredient of several Ayurvedic formulations as an aphrodisiac and tonic. It is a constituent of BR 16-A, used in the treatment of hypercholestroemia, mental disturbances and convulsions. The cultivated drug, in this case, is quite different in its morphology, odour etc. from its wild source and though both the cultivated and wild samples are reported to possess similar chemical constituents, they are however reported to differ in their pharmacological effects, the wild one being more potent.

4. Conclusion

4.1. The need for an integrated research

All these examples emphasize the need for an objective research on crude drugs encompassing the fields of classical literature, botanical sources, pharmacognosy, pharmacology and clinical aspects. It is not a question of which is the correct botanical source of a drug but which is more potent in curing a disease. This can be achieved by comparative analysis of all the botanical sources of a drug. Such a coordinated research programme will render far reaching benefits not only in standardizing the drugs but also in generating user friendly databases.

4.2. Importance of Database on Ayurveda

In this context, to initiate rigorous research on these issues, Databases become an important tool for providing easy access to information. There have been attempts to create such Databases in India and following are a few among them.

1. Asian Health Environment and Allied Databases (AHEAD)-NISCOM, Delhi
2. Asia Pacific Information Network on Medicinal & Aromatic Plants (APINMAP)-nodal agency-NISCOM, Delhi
3. Current Research on Medicinal & Aromatic Plants (CROMAP)-CIMAP, Lucknow
4. Databases on Multiple aspects of Traditional Medicine—FRLHT, Bangalore
5. Database on Alternate Systems of Medicine & Allied Topics for SAARC Countries, including Tibetan System of Medicine, INSDOC, Delhi.
6. Database on Traditional Medicine-MSSRF, Chennai

4.3. ETHMED database of Institute of Natural Medicine, Toyama, Japan

ETHMED is one of the rare kind of databases in the world, because it includes knowledge-source beyond the frontiers of Japan. It is based on a huge collection of very good samples from almost all parts of the world representing different systems of medicine. Thus ETHMED provides ample scope for comparative analysis of different systems of medicine based on the samples and the database.

As we step into the 21st. Century, it is visualised that the 21st. Century will be an era of the Integrated Systems of Medicine, assimilating knowledge from all the Traditional Systems of Medicine. Such a database would provide scope for treating patients based on the merits of the disease, whether the patient would require the Chinese, the Tibetan, Ayurvedic or the Allopathic treatment. To enable selection of the mode of treatment one should have access to the knowledge and information on the Traditional Systems of Medicine and the Institute for Natural medicine provides exactly the same in the form of ETHMED that will be highly useful in the 21st Century.

All the botanical sources of Ayurveda have not been thoroughly investigated, pharmacologically and clinically. Mostly, they have been in the form of case studies. Therefore, the Database on Ayurveda , as an additional knowledge-base to ETHMED, would provide scope for this type of study in the Institute for Natural Medicine.

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