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Standardization in ayurvedic medicine: still a far cry

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Abstract
Plants are known to the common people by their indigenous system of nomenclature. Sanskrit is one such rich language. Sanskrit plant names convey all-pervasive information about Indian culture. The plant names in Sanskrit is one way of determining plant species and thereby a drug used in Ayurvedic system. About 20 Sanskrit plant names are explained etymologically and their help in identifying the taxon under consideration. These help decipher the taxa/drugs adequately. There are also instances wherein it is helpless as they point out different sources of the Ayurvedic drugs. Standardisation of a drug is a must and one has to go not simply by literature but by plant material in hand. Attempts to identify the Ayurvedic drugs are far from the main goal of standardization which is the crying need of the hour.

Keywords: Ayurvedic drugs, Standardization Sanskrit plant names

INTRODUCTION

The indigenous system of Indian medicine is obviously, the Ayuveda. It includes the whole gamut of happy human life involving the spiritual, metaphysical and physical aspects, apart from as a science of treatment of the ill. Ayurveda has been an integral part of Indian culture and dates back to the Vedic period (1500-800 BC.). The foremost exponent Caraka conceived it as the science which instructs about life. Sushruta, another exponent, defined it as the science by which life is known or attained. Ayurveda has developed, over the centuries on the basis of direct perception, inference and words from Seers.

Although tall claims have been made in past about Ayurvedic system, it also received disregard and decline especially when the western medicine were put on the ascending spirals of development. One of the obstacles for the development of Ayurveda has been lack of accurate determination of drug sources, which has not yet received serious or even adequate attention in our country. We have to introspect and to look at our past failures and shortcomings. Prior to proceeding to the task of determination of drugs/herbs, it is the first and most important to go by materials and not by simply literature. Let us know first the literary source in view of its claims/glory or impediment. It is known well that Ayurveda is available in Sanskrit literature. We have to analyse the extent of help received in such an exercise. Etymological study of names of plants in Sanskrit can aid in our understanding. The following is an attempt on this line. In the following, botanical name is followed by family (in parenthesis), Sanskrit name of a plant (S.N.), its etymology and critical note (C.N.) are given separately.

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ETYMOLOGY AS AN AID TAXONOMY

Premna corymbosa Rottl. (Verbenaceae):
S.N. : Agrimanthah
Etymology : The sticks when rubbed together produce fire.
C.N.: This property is used to identify the plant.

Biophytum candolleanum Wt. (Geraniaceae) :
S.N.: Alambusa
Etymology: The leaves close on touch, being sensitive.
C.N.: Its behaviour is just like a bashful person. This is also equated sometimes with *Mimosa pudica* Linn. (Mimosaceae).

Withania somnifera (Linn.) Dunal (Solanaceae) :
S.N.: Balya, Balada, Vajikari.
Etymology : It is capable of importing long life, youthful vigour and good intellectual powers.
C.N.: The properties of the drug help identify it. It is accepted and have no confusion regarding its identity.

Mucana pruriens (Linn.) DC. (Papilionaceae) :
S.N.: Atmagupta.
Etymology: The plant is capable of self-protection as it produces fruits with stinging hairs.
C.N.: It is an accepted source as powerful aphrodisiac.

Oxalis corniculata Linn. (Geraniaceae) :
S.N.: Amalalonika, Amlapatrakah
Etymology: The leaves taste sour.
C.N.: It agrees well with the accepted source of the drug.

Tragia involucrata Linn. (Euphorbiaceae) :
S.N.: Duralabha.
Etymology: The entire plant is studded with stinging hairs and it spreads on the ground. Thus is it rendered difficult to handle and approach to the place where it grows.
C.N.: Different taxa have been equated e.g. *Fagonia arabica* Linn. (Zygophyllaceae). *Alhagi psuedalhagi* (Bieb.) Desv. (Pipilionaceae).

Aristolochia indica Linn. (Aristolochiaceae) :
S.N.: Visaghni, Iswari.
Etymology: It destroys the toxic effects of all poisons, especially snake.
C.N.: In practice, it is widely used against snake bites.

Crotalaria pallida Aiton. (Papilionaceae) :
S.N.: Ghanta, Ghantarava.
Etymology: The fruits, when dried, produce sound.
C.N.: Similar property is also pressed by other taxa viz., *Crotalaria juncea* Linn. *C.retusa* Linn. *C. verrucosa* Linn. All these species are equated with this drug.

Embelia ribes Burm. *f.* (Myrsinaceae) :
S.N.: Krmmighna, Vidangah
Etymology: It is anthelmintic.
C.N. : Its berries constitute the drug. It is wild. Another species commonly found, with similar property, is used in practice *viz*. *E.cecutipetalum* (Hassk.) S.M. & M.r. Almeida.

Andrographis paniculata (Burm.*f.*) Wallich ex Nees (Acanthaceae) :
S.N.: Kiratatiktah, Kiratah
Etymology: It is the plant that grows in the forest.
C.N.: The name does not offer any definite clue for identification. It is therefore, also equated with *Swertia chirayita* (Roxb. ex Flem.) Karsten (Gentianaceae).

Rubia cordifolia Linn. (Rubiacee) :
S.N.: Manjistha
Etymology: It indicates the property of its root for imparting colour. It description agrees well with the plant. It is the accepted source of the drug.

Rotula aquatica Lour. (Boraginaceae) :
S.N.: Pasanabhedah
Etymology: It breaks or destroys stones.
C.N.: It is implied that it is a specific remedy against kidney and bladder stones. Other taxa are so equated with this drug. Similar property e.g. *Saxifraga ligulata* Wall. (Saxifragaceae), *Homonia riparis* Lour. (Euphorbiaceae), *Kalanehoe pinnata* (Lamk.) Pers. (Crassulaceae), etc.

Cassia sophera L. (Ceasalpiniaceae) :
S.N.: Kasamardah.
Etymology: It is useful to treat cough and respiratory diseases.
C.N.: The medicinal property can be verified only after its application.

Merremia emarsginata (Burm *f.*) Hall. *f.* (Colvolvulaceae) :
S.N.: Akhukarni.
Etymology: The leaves are shaped like ear-pinnae of a rat.
C.N.: Morphological features of leaves are helpful to decipher the taxon or drug.

Oroxylum indicum (L.) Vent. (Bignoniaceae) :
S.N.: Hastidantaphala.
Etymology: The fruits resemble the tooth of an elephant.
C.N.: The size and shape may add in determining the drug.

Plantago ovata Forsk. (Plantaginaceae) :
S.N.: Aswakannabija.
Etymology: The seeds are shaped like the ear-pinnae of a horse.
C.N.: The feature of seeds certainly helpful for identification of drug.

Naregamia alata Wt. & Arn. (Meliaceae) :
S.N.: Triparni.
Etymology: The leaves are trifoliate.
C.N.: There are many taxa with similar leaf morphology. e.g. *Aegle mermelos* L. (Rutaceae) and some papilionaceous ones. It does not help critically to identify the drug and thus may misead one to other species.

Euphorbia hirta L. (Euphorbiaceae) :
S.N.: Dugdhika.
Etymology: The plant produce milky latex.
C.N.: Many other species, which are not used as medicine, yield white latex. It may confuse the determination of a taxon.

Amaranthus spinosus L. (Amaranthaceae) :
S.N.: Taduliah.
Etymology: The seeds are similar to broken rice grains.
C.N.: It may lead to another species.

Argemone mexicana L. (Papaveraceae) :
S.N.: Svarnaksiri.
Etymology: The plants yield golden yellow latex.
C.N.: Similar latex is also produced by other taxa e.g. *Euphorbia thomsonians* (Euphorbiaceae).

DISCUSSION

The 'green wave' is gaining momentum in recent times, although we were disillusioned with the synthetic western medicines for some past. Ayurveda, although was confined to Indian territory, now on its way to be an international system. In such circumstances, the foundation of our traditional/indigenous system of medicine must be examined. As stated earlier, still the determination of Ayurvedic drugs of plant origin is an obstacle in development of this system. The present authors projected some sample cases in view of bringing them into limelight. Indians are proud of our Sanskrit language. One can learn science, culture and mythology and such other overviews (C*f*.Patil, 2000; Patil and Patil, 2002). Certainly, it is heritage of India but there should not be overemphasis on Sanskrit nomenclature. There are obvious limitations. The cases of drugs explained above bring to the notice that the language, nomenclature and etymology, in some instances help accurately or sufficiently to identify the drug under consideration. There are also instances wherein we are failed or misled. It is just like the vernacular names. For example, Patil (2001) found many different species belonging to different genera of families Liliaceae and Orshidaceae in the name of 'Safed-musali'. The well debated 'Soma' is another case for varied sources (C*f*. Patil, 2008; Pathy *et al*., 2001). Let us examine an interesting drug of an orchid. In Charaka Samhita (Plate 40, 6th Volume) a figure of orchid is given. It is named as 'Ruha' and has an many as 36 synonyms in Sanskrit. Each name denotes some specific character of the plant. It is interesting to note further that majority of these synonyms stand for the ecological habitat of this orchid (Kaushi, 1983). In ancient India, education was imparted by Rishis, learned scholars of that time, who lived in the deep forests. This situation was very conducive for botanical studies. Our present-day four-walled education system deprived Indians from this unique facility. They are hence unable to identify plants especially on ecological or habital basis. However, one can proceed by morphological studies, the only way now commonly available in present situation. We are neglecting basic

sciences like plant morphology and the applied branches of sciences/technologies are attracting the students/ research workers for obvious reasons. It is, therefore, the goal of standardization in Ayurvedic medicine is still a far cry. It is a dire necessity, in the present times, to identify genuine herbs/drugs. The goal may be achieved through: (i) compilation of state-of-art reports on sources of different drugs, (ii) Compilation of 'National Flora Medica'.

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