GLORY OF SYNONYMS OF PLANTS IN AYURVEDA WITH SPECIAL REFERENCE TO NAMARUPA VIJNANAM- A REVIEW

1Dr Chetana B S 2Dr Satish Pai
1P G scholar, 2Reader, Department of Dravyaguna Vijnana, JSS Ayurveda Medical College, Mysuru-Karnataka

INTRODUCTION
People had a close association with nature and were dependent on plants for their basic needs such as food, medicine and shelter since ages. This relationship exists even today as 65% of the Indian population especially in rural areas uses medicinal plants to help meet their primary health care needs. Ancient physicians recorded the names and usage of the plants by assigning the names pertaining to their morphology, habitat, mythology, indication for a particular disease, commercial importance and many more. As there was no proper system of nomenclature of plants, they used to give different names to them which might be one of the tools for passing the knowledge to their disciples. Namarupa vijnana is a special branch of Dravyaguna vijnana which exclusively deals with the study of Name i.e. names of the plants and Rupa, (the forms) i.e. appearance or morphology. Names, forms and indications of medicinal plants used in Ayurveda come under the scope of this branch.

Concept of Basonym – Synonym:
The Basonym is defined as the earliest validly published name of a taxon whereas the word synonyms is defined as one or more words or expressions of the same language that have the same meaning in some or all senses. In Namarupa vijnana, Basonym is the original name of the plant which is termed as Nirukta or Moolanama and the synonym is termed as Paryaya.

Evolution of plant nomenclature and usage of synonyms:
There are no references and documentation of plant nomenclature during Pre-Vedic and Vedic periods. But there some reference regarding the names of plants which are the names of Gods such as Mahabala and Muchakunda which support the opinion that...
plants were named based on their mythological background. There are references regarding the usage of synonyms during this period. There were 2 kinds of synonyms used i.e. Naighantuka and Ekapadika. ‘Naighantuka’ refers to the number of synonyms to a single plant whereas Ekapadika refers to the single synonym used for many plants.

Later, during Samhita period there emerged Bruhatraaye – the 3 important treatises of Ayurveda i.e. Charaka Samhitha, Sushruta Samhitha and Ashtanga Hridaya which marked the revolution in the field of Ayurveda. These treatises also used the synonyms for describing the plants. Charakacharya used a single synonym strictly for every plant he described in his treatise, but Sushrutha acharya and Vagbhatacharya coined newer synonyms.

Acharya Priyavat Sharma states that each of Bruhatraaye has a separate glossary of names and synonyms of plants named as Nighantu. The ancient Nighantus like Saushruta nighantu, Ashtanga nighantu and Chamatkara nighantu contained only names and synonyms of the plants whereas further down the time Nighantu like Dhanwantari nighantu, Madanapala nighantu and Raja Nighantu started mentioning even the actions, indications and contra-indications of the plants. This nighantu period marked the revolutionary development in the field of Dravyaguna vijnana as these works coined plenty of newer synonyms which aided in the identification of plants.

Raja Nighantu, written by Raja Narahari Pandit described the basis plant nomenclature based on 7 factors namely,

1. **Rudhi:** Some plants were simply named, which had no specific meaning. The names are just practiced traditionally. Examples include: Guduchi (Basonym of Tinospora cardifolia) and Pacham-pacha (Synonym for Berberis aristata).

2. **Swabhava or Prabhava:** Some plants were named based on their properties, Examples include: Kushtagni- which is considered as a remedy for skin diseases (Acacia catechu) and Dadrughni—which is the best remedy for ringworm (Cassia tora).

3. **Deshokta:** Some plants were named based on their place of origin or habitat. Examples include: Dravidi- which belongs to Dravida desha (South India) and Kampillaka- which is native to Kampilla desha (Mallotus philippinensis).

4. **Lanchana:** plants were also named based on the morphological signs like color of the flower, shape of the leaf, special characteristics of the plant and the odour. Examples include: Deerghaphala - having long fruits (Cassia fistula and Sesbenia grandiflora) and Rakta pushpa-Red colored flowers (Saraca asoka and Butea monosperma) (Table number 1)

5. **Upama:** Some plants were named based on the simile i.e. the visual similarity between few objects/animals. Examples include: Shrungi- Horn shaped roots of Aconitum heterophyl and Kimshuka - Flowers resembling the parrot’s nose (Butea monosperma) (Table number 1)

6. **Veerya:** Some plants were named after their respective Veerya like ushna and sheeta. Examples include: Ushana (pepper – Piper nigrum), sheeta (Sida cordifolia) and Sheetavalkala (Udumbara-Ficus racemosa ).
7. **Itarahwaya:** includes other factors. There are numerous other factors considered while naming and giving synonyms for a plant. Vaidya V M Gogte has stated that factors such as shape, habitat, morphology, taste, smell, appearance, touch, sound, leaf, flower, fruits, historical names, therapeutic description, and disease producing, resembling body parts and resembling animals. Examples are:

- **Shape:** *Shrungi* - horn shaped root (*Aconitum heterophyllum*) and *Chakralakshanika* - transverse section of stem resembling wheel (*Tinospora cordifolia*).

- **Habitat:** *Upakulya* - grows near water bodies, *Magadhi* and *Kutaja* - Grows in hilly regions (*Holarrhena antidysentrica*).

- **Taste:** *Rasona* - deficient of one rasa (*Allium sativum*) and *Swadu phala* - fruit with sweet taste (*Vitis vinifera*).

- **Smell:** *Ugragandha* - intense smell (rhizome of *Acorus calamus*) and *Madagandha* - smell, which is so intense that it causes intoxication (flowers of *Alstonia scholaris*).

- **Appearance:** *Raktachandana* (*Pterocarpus santalinus*) and Chitrabeeja seeds with mottled surface (*Ricinus communis*).

- **Touch:** *Lajjalu* - which is sensitive to touch (*Mimosa pudica*) and *Kharapatra* - rough leaves (*Nyctanthes arborstris*).

- **Leaf:** Saptaparna - pinnate leaf with 7 leaflets *Alstonia scholaris* and *Tarmapallava* - young leaves are coppery (*Saraca asoka*).

- **Flower:** *Shankapushpi* - Conch shell shaped flowers (*Convulvulus pluricaulis*) and *Raktapushpi* - red colored flowers (Saraca asoka, Butea monosperma). (Table number 1)

- **Fruits:** *Katinaphala* - hard fruit (*Feronia limonia*) and *Brihatphala* - big fruit (*Benincasa hispida*).

**Historical background:** *Bodhidruma* - tree under which Gautama Buddha was enlightened (*Ficus religiosa*) and *Devadhupa* - used as an incense to worship God (*Commiphoramukul*).

**Therapeutic usage:** *Ashmantaka* and *Kushtavairi* - fights against skin diseases (*Hydnocarpus laurifolia*).

**Disease causing:** *Kesha hantri* - causes hair fall (*Prosopis cineraria*) and *Arushkara* and *Shopakrit* - which causes blisters and edema over skin (*Semecarpus anacardium*).

**Health promotion:** *Arogyashimbi* - pod that safeguards health (*Sesbania grandiflora*) and *Abhaya* - which eliminates fear of diseases (*Terminalia chebula*).

**Resembling body parts:** *Amashayaphala* - fruits resembling the stomach (*Artocarpus heterophylla*) and *Hritpatree* - leaf resembling the heart (*Digitalis purpurea*).

**Resembling animals:** *Vyaghrapuccha* - resembling the tail of lion (inflorescence of *Ricinus communis*) and *Matsyashakala* resembling the scales of fish (*Picrorhiza kurroa*).

Dr K Nishteshwar states few more factors namely- Weight, nodes, latex, spines, and action on animals. Examples:

- **Weight:** *Akshaphala* (*Terminalia bellerica*)

- **Granthis** (Nodes): *Shadgranthi* - 6 nodes - rhyzome of *Acorus calamus* (Table number 1) and *Shatagranthi* - with hundreds of nodes (*Cynodon dactylon*).
-**Latex:** Hemadugdha- with golden colored latex (Ficus racemosa) and Payasaya- milky latex (Ipomea digitata)

-**Spines:** Teekshnakantaka- sharp spines (Balanites egyptica) (Table number 1) and Deerghakantaka- long thorns (Acacia arabica).

**DISCUSSION**

As plants were the only sources of medicine during earlier days, it was very necessary for them to identify the plants and differentiate them from the non-medicinal and poisonous ones. There was no standard protocol to study, name and classify a plant. To overcome this issue, ancient physicians used synonyms to describe, remember and to document the usage of medicinal plants. Synonyms of plants provide knowledge of a plant’s place of origin, morphological signs including shape, color, size, description of flowers, fruits, seeds and all other parts responsible for the action. Many synonyms included by Acharyas helped in plant identification from garden to kitchen.

‘Oleandrin’ – is a metabolite from oleander responsible for toxicity in animals causes heart arrhythmias that lead to cardiac arrest and death. Death is caused due to ventricular fibrillation\textsuperscript{11}. This toxicity is not only recorded in humans but also the animals like horses which were well documented with the use of synonym: Hayamara- the plant which is poisonous to horse (Yellow Oleander). Plants which cause ill effects and are poisonous not just for humans but also for the animals were recorded by means of synonyms. Though there was no sophisticated instrumentation and facilities for animal studies then, they recorded the toxicity of plants in animals which is merely by consistent and persistent observations. Plants belonging to a particular habitat were also recorded by means of synonyms, which provide direct references for the source of collection of certain plants. Plants have synonyms like Nadeya and Nadisarja mean that they alongside the rivers which provides us information about the habitat and availability.

As the days passed, the availability of plant declined due to over-exploitation which might have caused the need for substitution and adulteration in the field of pharmaceutics in Ayurveda. That is when the Nighantukaaras like Bhavamishra mentioned about Pratinidhi dravyas (Substitutions) in case of non-availability of plants.\textsuperscript{12} But calling many plant by same name has undoubtedly given rise to many controversies, which needs to be addressed. Nighantukaras started using numerous synonyms for one particular plant and started using the vernacular names, names of varieties of the plants as synonyms, which created huge confusion among the people regarding the identity of plants. Initially during samhitha period, synonyms used were very few whereas the number was increased during Nighantu period which was very much beneficial to the students of Ayurveda in order to identify and to use the plants using those synonyms. Need for plant identification tools were hardly felt in those days as people lived in close vicinity with nature.

Synonyms not only provide the basis for plant identification, but also other details related to the plant. In case of confusion regarding the identity, one can consider the
context and then refer the original authentic materia medica and flora of that particular area to confirm the identity of a plant.

**CONCLUSION**

Naming a plant provides a means of communication and a reference system. One must note that, in modern era synonyms alone are not reliable tools of plant identification. Apart from synonyms provided by earlier scholars, botanical classification should also be considered before confirming identity of a particular plant.

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**CORRESPONDING AUTHOR**

Dr Satish Pai
Reader, Department of Dravyaguna
JSS Ayurveda Medical College, Mysuru-Karnataka
E-mail: satishayurveda@gmail.com

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