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Systematisation of Plant Nomenclature In Sanskrit

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Abstract:

Since the birth of mankind on the Blue Planet, he is exploiting plants in his surroundings for every necessity of his life. He has to identify plants for this endeavor. He therefore made observations. In later periods, he tried to employ his earlier observations and experience while coining names for different plants. With the advancement in human civilizations, more systematic efforts have been made. This is particularly observed in Sanskrit ancient treatises like Vedas, Samhitas, Nighantus, etc. The present authors presented to unlock the taxonomic parameters employed by the seers of these treatises. Total 50 plants species pertaining to 47 genera and 33 families are examined unlocking the taxonomic parameters embedded in these ancient scriptures. A further need for systematization Sanskrit plant names is felt because additions of many more plant species in recent periods.

Keywords: Sanskrit Plant Names, Systematisation.

Introduction:

Coining of common or vernacular plant names is on account of urge to explore biodiversity by mankind in his surroundings for human welfare. In case of Sanskrit plant names, there has been an early start for plant nomenclature since the Vedic era. Sanskrit plant names are recorded by sages in different periods in India such as in Vedas Puranic, Samhita and Nighantus. All these names help decipher plant identities. Although so, these ancient literary sources have been overlooked in long past and therefore there has been no advancement in revealing the knowledge, experience, observations and wisdom of the concerned seers. These need to be unlocked in this perspective. The present author engaged in revealing this ancient treasure-trove of ancient Indian civilization (*cf*. Patil, 2000, 2006; Patil and Patil, 2002; Patil and Tayade, 2014, 2017, 2018). A further move on this line of research is being made in this communication with a view of revealing systematization of Sanskrit plant names.

Methodology:

Sanskrit plant names from different ancient literary sources such as Vedas, Samhitas and Nighantus are borrowed as mentioned against each Sanskrit plant name. These are enlisted under references. They are equated with their recent botanical (Latin) names and assigned to their respective families. The underlying reasons for coining such names are unlocked etymologically. The data so accrued in interpreted how these names are coined on systematically in ancient period of India.

Systematic Enumeration:

(I) Plant Characters:

1.	S.N.: Sallaki (Bhavaprakash, Raja and Dhanvantari Nighantus) Bot. Name: *Boswellia serrata* Roxb. ex Colebr. (Burseraceae) The tree produces (sal=bark) paper bark peeling off in thin flakes.
2.	S.N.: Kshirvrks (Kurma Purana) Bot. Name: *Plumeria alba* L. (Apocynaceae) The trees are (Kshir=latex, vrks=tree) laticiferous.
3.	S.N.: Vyashankha (Garuda Purana) Bot. Name: *Martynia dicindra* coix (Martyniaceae) The fruit is pronged like (Vyaghra=tiger, nakha=nails) nails of a tiger.
4.	S.N.: Kharapuspa (Bhela Samhita) Bot. Name: *Achyranthes aspera* L. (Amaranthaceae) The floral structures (Khara=rough due spiny floral parts; Puspa = flower) are rough and pungent to touch.
5.	S.N.: Kantakarika (Dhanvantari Nighantu, Bhela Samhita, Charak Samhita, Sushruta Samhita) Bot. Name: *Solanum virginianum* L. (Solanaceae) The plant is (Kantak=spine) Spiniscent.
6.	S.N.: Kshirini (Sushruta Samhita) Bot. Name: *Calotropis procera* (Ait.) R.Br. (Asclepiadaceae) The plants are (Kshir=latex) laticiferous.
7.	S.N.: Varahi (Dhanvantari, Kaivdeo, Shaligram Nighantus) Bot. Name: *Dioscorea bulbifera* L. (Dioscoreaceae) Its tubers are studded with roots resembling to the hair of (Varah=pig) a pig.

(II) Plant Property:

1.	S.N.: Arkah (Charak Samhita, Dhanvantari Nighantu) Bot. Name: *Calotropis gigantea* (Linn.) R.Br. The Sanskrit name refers to the caustic nature of the plant (especially latex).
2.	S.N.: Agnimantha (Charak and Sushruta Samhita) Bot. Name: *Premna corymbosa* Rottl. (Verbenaceae)\ Agni means fire. This tree is believed to have been used to produce fire in the sacrificial ceremonies by rubbing the sticks together.
3.	S.N.: Duralabha (Bhavaprakash Nighantu) Bot. Name: *Tragia involucrata* Linn. (Euphorbiaceae) The plant is studded with stinging hairs (which cause itching on touch) and hence makes the plant or its place (Durlabha=different to obtain) unapproachable.

(III) Plant Product:

1.	S.N.: Karpurah (Raja, Priya, Dhanvantari, Bhavprakash, Ratnakaram Nighantus, Charak Samhita, Bhela Samhita) Bot. Name: *Cinnamomum camphora* (Linn.) Presl. (Lauraceae) The plant yields aromatic substance (Karpur=camphor) called 'camphor'.
2.	S.N.: Gugguluh (Bhavprakash Nighantu) Bot. Name: *Commiphora mukul* (Hook. ex Stocks) Engl. (Burseraceae) The plant yields aromatic brown gun-resin called 'Guggul'.
3.	S.N.: Haridra (Bhavprakash, Kaivdev, Raja Madapal Nighantus). Bot. Name: *Curcuma longa* Linn. (Zingiberaceae) The rhizomes yield (Haridra=turmeric powder) turmeric powder.
4.	S.N.: Hingu (Bhavprakash, Kaivdev, Dhanvantari Nighantu and Charak Samhita). Bot. Name: *Ferula asafetida* Linn. (Apiaceae) The plant yields oleo-resin (Hingu=asafetida) called 'Hingu'.
5.	S.N.: Nilini (Bhavprakash, Raja and Sodhala Nighantus). Bot.Name: *Indigogera tinctoria* Linn. (Papilionaceae) The plant yields a blue (Nil=blue) coloured indigo.
6.	S.N.: Karpasa (Kurma and Vamana Purana) Bot. Name: *Gossypium herbaceum* L. (Malvaceae) Its fruits are studded with (Karpasa=cotton) cottony fibre.
7.	S.N.: Tvak (Bhela Samhita; Brihat Samhita, Charak Samhita, Priya Nighantu)

	Bot. Name: *Cinnamomum verum* J.S. Presel. (Syn. C. zeylanicum Breyn.) (Lauraceae) The spice called 'Dalchini' is derived from its (Tvak=bark), bark.
8.	S.N.: Bhanga (Brihat Samhita, Atharveda, Priya and Madanpala Nighantu) Bot.Name: *Cannabis sativa* Linn. (Cannabinaceae) The female flowers are source of a narcotic substance called 'Bhanga' or 'Ganja'.

(IV) Number of Plant Parts:

1.	S.N.: Saptaparnah (Bhavprakash, Dhanvantari & Kaiyadev Nighantus) Bot. Name: *Alstonia scholaris* (Linn.) R. Br. (Apocynaceae) This tree usually bears (sapta=seven, parnah=leaves) seven leaves in a whorl.
2.	S.N.: Satapuspa (Bhavprakash, Raja, Madanpal Nighantus, Bhela Samhita, Charak Samhitas, Brihat Samhita) Bot.Name: *Anethum graveolens* Linn. (Apiaceae) Its inflorescence has (Sata=hundred, pushpa=flower) several flowers.

(V) Edible Part:

1.	S.N.: Mulakam, Mulak (Bhela Samhita; Sushruta Samhita, Priya and Dhanvantari Nighantu) Bot. Name: *Raphanus sativum* L. (Brassicaceae) Its root (Mula=root i.e., Raddish) is edible.
2.	S.N.: Kharjura (Yajurveda) Bot. Name: *Phoenix dactylifera* L. (Arecaceae) It yields edible fruit (Karjura=Date) called 'Kharjur'.

(VI) Medicinie:

1.	S.N.: Kitamari (Saligram and Sadhala Nighantus) Bot. Name: *Aristolochia bracteolata* Lam. (Aristolochiaceae) The plant is useful against (Kita=worm; mari=killer) intestinal (round) worms.
2.	S.N.: Amrta (Bhavaprakash, Dhanvantari, Raja and Kaiyyadeva Nighantus) Bot. Name: *Tinospora cordifolia* (Willd.) Hook.f. & Thoms. (Menispermaceae) (i) Amrta, in Hindu mythology, meant 'elixir' (which saved the celestial people from senescence and kept them eternally young). (ii) The stem is official part of it is recognized of capacity to impart youthfulness, vitality and longevity to the consumer.
3.	S.N.: Raktachandan (Bhavaprakash Nighantu)

	Bot. Name: *Pterocarpus santalinus* Linn. (Papilionaceae) The Sanrkti name Raktachandan (Rakt=blood; chandan=sandal wood) suggestive of red wood. It is remedial to purify blood, hence the name.
4.	S.N.: Asthisamhara (Priya Nighantu) Bot.Name: *Cissus quadrangularis* L. (Vitaceae) Asthi means bones, and Samhara=cuning, rejoining. The plant is jointed like bones. It is used to rejoin fractured bones.

(VII) Habitat:

1.	S.N.: Vrksadani (Kaivadev Nighantu) Bot. Name: *Dendrophthoe falcata* (Linn.*f.*) Etting. (Loranthaceae) The plant (being parasitic) grows on (Vrksh=tree) trees.
2.	S.N.: Jalavetasah (Bhavprakash Nighantu) Bot. Name: *Homonoia riparia* Lour (Euphorbiaceae) The plants inhabit in or in vicinity of (Jala=water) aquatic bodies or sources like streams and rivers.
3.	S.N.: Jalapippali (Dhanvantari & Priya Nighantu) Bot. Name: *Phyla nodiflora* Greene (Verbenaceae) The plants bear fruiting-heads like Pippali. (Long peper i.e. *Piper longum* L. Piperaceae) but inhabit (Jala=water) aquatic places.
4.	S.N.: Jalkumbhi (Priya Nighantu) Bot. Name: *Pistia stratiotes* Linn. (Araceae) The plant inhabits (Jal=water; Kumbh=water pot) aquatic places and shaped like a pot.

(VIII) Plant Growth:

1.	S.N.: Durva (Bhavaprakash Nighantu) Bot. Name: *Cynodon dactylon* (Linn.) Pers. (Poaceae) The plants grow (Dur=long) extensively with many joints (nodes).
2.	S.N.: Prasarani (Charak and Sushruta Samhita) Bot. Name: *Merremia tridentata* (Linn.) Hall. *f.* (Convolvulaceae) The plants are prostrate, trailing or spreading on ground. The property of this drug of stretching out parts of the body contracted due to paralysis.

(IX) Phenology:

1.	S.N.: Shravani (Dhanvantari Nighantu, Charak Samhita) Bot. Name: *Sphaeranthus indicus* Linn. (Asteraceae) The plant bears flowering heads during (Shrvan month of Hindu calendar = July-August) months of July and August.

(X) Colour:

1.	S.N.: Svarnaksiri (Kaivdev, Sodhala, Raja, Priya Nighantus, Bhela Samhita, Charak Samhita) Bot. Name: *Argemone mexicana* Linn. (Papaveraceae) The plant produces (Svarna=golden, yellow; Ksiri-latex) golden yellow latex.
2.	S.N.: Sinduri (Bhavprakash and Raja Nighantus) Bot. Name*: Bixa orellana* Linn. (Bixaceae) The plant bears (Sinduri-red coloured substance) red pulp of the fruit and the fruit are red when ripe.
3.	S.N.: Dugdhika (Bhavprakash, Kaivdev Nighantus) Bot. Name: *Euphorbia thymifolia* Linn. (Euphorbiaceae) The plant yields white (Dugdha=milky white) latex.
4.	S.N.: Krsnabija (Shaligram & Priya Nighantu) Bot. Name: *Ipomoea nil* (Linn.) Roth (Convolvulaceae) Its fruits contain (Krsn=black; bija=seed) black coloured seeds.
5.	S.N.: Nila Puspa (Linga Purana) Bot. Name: *Clitoria ternatea* L. (Papilionaceae). The climber bears (Nil=blue; puspa=flower) blue flowers.
6.	S.N.: Suvarna (Brihat Samhita) Bot. Name: *Cassia fistula* Linn.) Caesalpiniaceae) The tree bears prolific golden yellow flowers (Suvarna=Golden).

(XI) Odour or smell:

1.	S.N.: Ugragandha (Dhanvantari, Bhavprakash and Raja Nighantus) Bot. Name: *Acorus calamus* Linn. (Arecaceae) Rhizome strongly is aromatic (Ugra-strong; gandha-smell).
2.	S.N.: Ajagandha (Raja, Saligram, Nighantus and Chatak Samhita) Bot. Name: *Cleome viscosa* Linn. (Capparidaceae) The plant emits strong odour (Aja: male goat; gandha=odour) like animals or odour from male goat (which is unpleasant).
3.	S.N.: Madhukah (Bhavprakash, Raja and Dhanvantari Nighantus) Bot. Name: *Madhuca longifolia* (Koenig) Macbride (Sapotaceae)

	The flowers are sweet smelling (madhu-sweet).
4.	S.N.: Sugandhitejana (Yajurveda) Bot. Name: *Vetiveria zizanoides* (L.) Nash. (Poaceae) The roots are (Sugandh=aromatic, fragrant) sweet smelling.

(XII) Taste:

1.	S.N.: Yastimuduh, Madhukah (Bhavprakash, Raja, Kaivdev, Madanpal Nighantus, Garuda Purana and Bhela Samhita) Bot. Name: *Glycyrrhiza glabra* Linn. (Papilionaceae) The underground stems and roots constitute sweet (Madhu, Madhuk=sweet) liquorice.
2.	S.N.: Ambastha (Bhela Samhita) Bot. Name: *Hibiscus sabdariffa* L. (Malvaceae) The calyces of it are used (Ambasta=sour) as souring agent in culinary preparations.
3.	S.N.: Amlika (Dhanvantari & Priya Nighantu) Bot. Name: *Tamarindus indica* Linn. (Caesalpiniaceae) Its fruits are (Amali=sour) sour.

(XIII) Shape:

1.	S.N.: Akhuparni (Charak Samhita, Shaligrama Nighantu) Bot. Name: *Merremia gangetica* (L.) Cufod. (Convolvulaceae) The plant bears (Akhu=rat; parni-leaf) leaf shaped like ear-pinna of a rat.
2.	S.N.: Langali (Charak and Sushruta Samhita) Bot. Name: *Gloriosa superba* Linn. (Liliaceae) Its turberous root-stock is shaped like a plough.

(XIV) Size:

1.	(a) S.N.: Loni (Bhavprakash and Kaiyadeva Nighantus) Bot. Name: *Portulaca quadrifida* L. (Portulaceae) (b) Bruhad Loni (Bhavprakash and Kaiyadeva Nighantu) Bot. Name: *Portulaca oleracea* Linn. (Portulaceae) These two species of a genus *Portulaca* are identificable by their sizes *viz.*, Laghu means small (*P. quadrifida* L.) and Bruhad means larger (*R. oleracea* L.)

Results And Discussion:

Mankind has been dependent on biodiversity in his surroundings for his daily necessities of life since his birth on the Blue Planet. His dependency perforce led him to identify the elements of biodiversity and thereby

classify plants. First, he has to coin a name for the floral element of his necessity and then he refers such names based on certain basis in one group of elements. He thus classifies plants or animals in his early start. Eventually, with the advancement of human civilization, his naming and classification is incorporated in writings. Indian civilization has been enriched in ancient period through literary scriptures such as Vedas, Samhitas and Nighantus authored by seers in ancient past. The present author endeavoured to disclose the observations and wisdom embedded in these ancient sources (Patil, *loc.cit.*; Patil and Patil, *loc.cit.*; Patil and Tayade, *loc.cit.*) An attempt is now being made towards further systemization of Sanskrit plant names comparatively in this communication, consulting various lexicons.

Sanskrit plant names have been selected from various lexicons *viz.*, Samhitas, Puranas and Nighantus. Total 50 plant species pertaining 47 genera and 33 angiospermic families are focused for the present account. Of these, 42 species, 40 genera and 26 families are dicotyledonous taxa, while others are monocotyledonous ones. It appears that total 14 parameters of taxonomic significance have been employed by the ancient seers in coining Sanskrit nomenclature such as plant character, number of plant parts, plant product, plant growth, plant property, edible part, medicine, habitat, phenology, colour, odour or smell, taste and shape. These parameters thus consider plant morphological features, natural observations about behavior of plant species, useful products and others features that easily catch fancy of mankind.

The Sanskrit plant names have been christened in ancient past starting from Vedic to Nighantu periods. Subsequent observations by mankind in all civilizations have added more number of species and many more are being added by recent discoveries. At this background, synonymy in Sanskrit plant names is also witnessed which is a cause of confusion in Sanskrit nomenclature (Patil and Patil, 2021). Although the ancient seers attempted at systemization of Sanskrit plant names in ancient period, they do not help much or rendered doubtful while specific identification. The present authors, therefore urge to have more refinements in systemizing Sanskrit plant names. This is a need of hour (Pawar and Patil, 2012).

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