



REVIEW ARTICLE

Ethnotaxonomy As Mirrored In Sanskrit Plant Names

D. A. Patil

P. G. Department of Botany, L. K. Dr. P. R. Ghogrey Science College, Dhule-424005 (M.S.), India.

Corresponding Author: dapatil10aug@yahoo.com

Manuscript Details

Manuscript Submitted : 17/07/2020
Manuscript Revised : 10/08/2020
Manuscript Accepted : 10/09/2020
Manuscript Published : 15/09/2020

Available On

<https://plantaescientia.com/ojs>

Cite This Article As

Patil D. A. (2020). Ethnotaxonomy as mirrored in Sanskrit plant names. *Pla. Sci.* 2020; Vol. 03 Iss. 05:56-64.

Copyright



© The Author(s). 2020. Open Access
This article is distributed under the terms
of the Creative Commons Attribution
4.0 International License
<http://creativecommons.org/licenses/by/4.0/>

Indexed In

[Crossref](#), [Index Copernicus International \(ICI\)](#), [Directory of Research Journal Indexing \(DRJI\)](#), [Scientific Indexing Services \(SIS\)](#), [CiteFactor](#),

ABSTRACT

The intellectual capacity of mankind for classifying natural objects and even abstract concepts is widely recognized. The rich diversity of the environment is described in sufficient details by the nomenclatural and classification systems even within ancient culture. Sanskrit is thought to be a mother of many other languages and a pristine treasure trove. Presently, it is not a language of any nation and hence remained morbid. Sanskrit literature is replete with references to plants and their utilities in ancient past. This rich Indian heritage still waits revealing its glory and secrets. The present author examined some common names of plants in Sanskrit semantically and taxonomically. The bases of coining names, roots of binomial nomenclature and scientific aspects of plant science in Sanskrit are unearthed and compared with modern phytotaxonomic systems. The merits and limits of developments are comparatively discussed highlighting elements of plant science. Studies on this line will also help earmark economic potential and ethnobotanical significance known to ancient Indians. Common plant names in Sanskrit are thus rich store-house of wisdom, knowledge, experiences and past observations of an ambient natural world.

Keywords: Sanskrit Names, Plant Science, Ethnotaxonomy.

INTRODUCTION

This ethnobotanical endeavor attempts at exhuming the elements and development of plant science hidden in ancient Sanskrit literature. Plants have been studied in India from time immemorial. This is evidenced by many old Indian treatises like *Ayurveda*, *Charaka Samhita*, *Susruta Samhita*, *Nighantu* and others especially from medicine, agriculture and horticulture point of view. Origin and development of plant science is generally traced in the West. Initial progress of plant science is also said to be associated with the western world during last many centuries. On account of western wave, the development of plant science was thought at stake in India. To name an object (plants or animals) is human instinct. Man coined words based on his own knowledge and language. He also enriched his vocabulary in tune with cultural changes in past.

Common plant names especially in pristine language like Sanskrit are very meaningful. But they are not analysed critically because of the reasons stated above. No Indian curriculum includes their study and development and hence they are out of reach of learners. The earlier studies has made some attempts in revealing secrets encoded in Sanskrit names (Patil, 2000, 2006; Patil & Patil, 2002; Patil and Tayade, 2014). However, these investigations have not attempted genesis and development of plant science *vis-à-vis* taxonomy as incorporated in Sanskrit plant names. Philological investigations provide clues and evidence of natural, social and cultural environment prevalent in the past. The present contribution is an attempt to fill in this lacuna apprising the present state of art on this subject matter.

Sanskrit is a pristine language and hence presents a hoarded treasure of the bygone days. It is regarded as a 'mother' of many other languages but is said to be kept out of bounds for the common man. The general prejudice, during pre-independence period of the Western people against the East in general and India in particular, distanced the Indians from the virtues of Sanskrit language. Whatever survival of Sanskrit we observe is mainly due to Vedic literature and *Ayurveda* (which is also repressed and overlooked for several centuries). Sanskrit remained morbid for long period. Presently, it is also not a language of any nation. Particularly development of plant science in Sanskrit (and India) thus lagged behind. Attempts for its development in last few centuries were practically null and void. It is, therefore, thought to study Sanskrit plant names to appreciate India's well-founded claims to cultural superiority during ancient times. Such study will help reveal knowledge, experience, observations of our ancients with particular reference to plant world.

METHODOLOGY

Sanskrit plant names have been selected from literature (Deshpande *et al.*, 1988; Kirtikar and Basu, 1981; Sivarajan and Balchandran, 1994; Warriar *et al.*, 1994-1995; Patil, 2000, 2006; Patil and Patil, 2002; Patil and Tayade, 2014). They are analysed etymologically to find out particularly elements of plant taxonomy and plant science in general. These have been compared critically with classic taxonomic concepts and terms. Plant species have been enumerated based on characteristic features observed in respective species. Scientific plant name, family (in parenthesis), S.N. (Sanskrit plant name), meaning (in parenthesis) and followed by explanation in terse manner.

ENUMERATION OF SANSKRIT PLANT NAMES

(A) Habitat and Similarity of Plant Part

1. *Cochlospermum religiosum* (Linn.) Alston (Cochlospermaceae) S.N.: Silakarpasika (Sila rock; Karpasika-cotton) The plant inhabits rocky places and its seeds, similar to cotton seeds, are covered over with hairs.
2. *Haldina cordifolia* (Roxb.) Ridsdale (Rubiaceae) S.N. : Girikadambah (Giri-mountain; Kadambah-*Anthocephalus cadamba* Miq.) Leaves, flowers, inflorescence and fruits of these two species exhibit close similarities.
3. *Homonoia riparia* Lour. (Euphorbiaceae) S.N.: Jalavetasah (Jala-water; Vetasah-cane) It grows near river-banks and streams. Stem-axes are similar to cane in nature.

(B) Similarity of Plant Parts

1. *Samadera indica* Gaertn. (Simaroubaceae) S.N.: Gucchkaranjah [Guccha-cluster; Karanjah-*Pongamia pinnata* (L.) Pierre] Fruits are similar to those of *P.pinnata* but are borne in clusters.
2. *Caesalpinia bonduc* (Linn.) Roxb, (Caesalpinaceae) S.N. : Kantakikaranjah [Kantak-spine; Karanjah-*Pongamia pinnata* (L.) Pierre] Fruits are similar to Karanjah but are spiny.
3. *Vernonia anthelmintica* (L.) Willd. (Asteraceae) S.N. : Aranyajiraka (Aranya-jungle; Jiraka-cumin) Seeds are similar to the seeds of cumin (*Cuminum cyminum* L.), but it is wild, found in jungles.
4. *Ludwigia octovalvis* (Jacq.) Raven (Onagraceae) S.N.: Bhulaunga (Bhu-the earth; lunga-clove). The fruits resemble cloves. The plants being herbs bear clove-like fruits near ground.
5. *Phyla nodiflora* Linn. (Verbenaceae) S.N.: Jalapippali (Jal-water; Pippali-Long Pepper) The fruiting heads

simulate long pepper (fruits of *Piper longum* Linn.) The plants, however, inhabit watery places.

6. *Spondias pinnata* (L. f.) Kurz. (Anacardiaceae) S.N.: Amrathakah (Amratakah-mango) The fruits resemble those of *Mangifera indica* L.
7. *Vigna radiata* (L.) Willczek. var. *sublobata* (Roxb.) Verdc. (Fabaceae) S.N.: Masaparni (Masa-blackgram i.e. *Phaseolus mungo* L.; Parna – leaves) Leaves of this plant are similar to those of blackgram.
8. *Amaranthus spinosus* L. (Amaranthaceae) S.N.: Tanduliyah (Tanduliyah-resembling broken rice grains) The seeds resemble broken rice grains.

(C) Life-forms

1. *Cuscuta reflexa* Roxb. (Cuscutaceae) S.N.: Akasvalli (Akas-sky; Valli-climber) The climber grows indefinitely.
2. *Tylophora indica* (Burm.f.) Merrill (Asclepiadaceae) S.N.: Latakshiri (Lata-climber; Kshiri-latex yielder) The plant is laticiferous climber.
3. *Uvaria narum* (Dunal) Wall. ex Wight (Annonaceae) S.N.: Nilavalli (Valli-climber) The plant species is a climber.
4. *Trichosanthes cucumerina* L. (Cucurbitaceae) S.N.: Patolah (Patolah-spreading) It usually grows spreading on the floor or on other plants.

(D) Appearance

1. *Cissus quadrangularis* Linn. (Vitaceae) S.N.: Asthisrnkhala (Asthi-bone; Srnkhala-chain) Its stem simulates a chain of jointed bones.
2. *Nardostachys jatamansi* D.Don (Valerianaceae) S.N. : Jatamansi (Tangled hair of ascetic) The roots-mass resembles the tangled hair of an ascetic.

(E) Animals

1. *Elephantopus scaber* Linn. (Asteraceae) S.N. : Hastipadi (Hasta-elephant; Pad-foot) The radical leaves resemble elephant's foot.
2. *Hygrophila schulli* (Buch.-Ham.) M.R. & S.M.Almeida (Acanthaceae) S.N.: Kokilaksah (Kokil-cuckoo; Aksah-eye) The flowers are bluish-purple in colour like the eyes of a cuckoo.
3. *Gymnema sylvestre* (Retz.) R.Br. (Asclepiadaceae) S.N. : Mesasrngi (Mesa-sheep; Srng-horn) The fruits are similar to the horns of a sheep.
4. *Shorea robusta* Gaertn. f. (Dipterocarpaceae) S.N. : Asvakarnah (Asva-horse; Karnah-ear)The leaves resemble ear-pinnae of a horse.
5. *Shorea robusta* Gaertn. f. S.N.: Asvakarnah (Ashva-horse; Karna- ear pinnae) The leaves are shaped like the ear pinnae of a horse.

6. *Mesua ferrea* Linn. (Clusiaceae) S.N.: Bhujungkhya (Bhujung-snake, cobra) The flowers simulate the hood of a cobra.
7. *Martynia annua* Linn. (Martyniaceae) S.N.: Vinchu (Vinchu -scorpion) The fruits are pronged like a sting of scorpion.
8. *Withania somnifera* (Linn.) Dunal (Solanaceae) S.N.: Varahkarni (Varah-pig; Karn-ear pinnae) The leaves are shaped like ear pinnae of a pig.
9. *Merremia emarginata* (Burm. f.) Hall. f. (Convolvulaceae) S.N.: Akhukarni (Akhu-rat; Karna-ear pinna) The leaves are shaped like ear-pinnae of a rat.
10. *Desmodium triflorum* (L.) DC. (Fabaceae) S.N.: Hanspadi, Tripadika (Hans-swan; padi-footed; Tri-three, Padika-footed) The plant is trailing and bears roots at nodes. The trifoliate condition is correlated with the foot of a swan.
11. *Heliotropium indicum* (L.) (Boraginaceae) S.N.: Vrsckali (Vrscka - scorpion) The inflorescence resembles the tail of a scorpion.
12. *Oroxylum indicum* (L.) Vent. (Bignoniaceae) S.N.: Hastidantaphala (Hasti-elephant; Dant-tooth; Phala-fruit) The two elongate dehisced fruit walls resemble ivory.
13. *Dioscorea bulbifera* L. (Dioscoreaceae) S.N.: Varahi (Yaraha-a boar) The tubers are covered by roots and appear like a hairy boar.
14. *Plantago ovata* Forsk. (Plantaginaceae) S.N.: Aswakarnabija (Aswa-horse; Karna-ear pinna; Bija-seed) The seeds are shaped like the ear pinnae of a horse.
15. *Capparis zeylanica* L. (Capparaceae) S.N.: Vyaghranakhi (Vyaghra-tiger; Nakha-nail) The hooked spines of the plant are compared with the nails of a tiger.

(F) Method of Propagation

1. *Kalanchoe pinnata* (Lamk.) Pers. (Crassulaceae) S.N. : Parnabija (Parna-leaf; Bija-seed or propagule) Leaves produce buds on margin which eventually drop off and survive as independent plants.

(G) Taste

1. *Oxalis corniculata* Linn. (Oxalidaceae) S.N.: AmIapatrakah (Amla-sour; Patrakah-leaf) Sour taste of the leaves is denoted in the name.
2. *Allium sativum* L. (Liliaceae) S.N. : Rasona (Lacking one taste) It contains all of the six tastes except sour.
3. *Piper nigrum* L. (Piperaceae) S.N. : Marica (Marica-A name for the Sun) It is named owing to its very hot potency. Seeds are pungent.
4. *Pueraria tuberosa* DC. (Fabaceae) S.N.: Swadukanda (Swadu-sweet, Kanda-tuber) Alluding to the sweetness of its tubers.

(H) Smell

1. *Alpinia galanga* (Linn.) Willd. (Zingiberaceae) S.N. : Sugandhmula (Sugandh-fragrance; Mula-roots or rhizome) The underground rhizome emits spicy fragrance.
2. *Limnophila aromatica* (Linn.) Merr. (Scrophulariaceae) S.N. : Amragandah (Amra mango; Gandah-fragrance) The plant is aromatic like the mango-smell.
3. *Cleome icosandra* L. (Capparidaceae): S.N.: Pashugandha (Pashu-animal; Gandha- smell) The entire plant emits animal smell.

(I) Shape

1. *Clitoria ternatea* Linn. (Fabaceae) S.N. : Girikarnikah (Girl-mountain, Wild; Karnika-ear) The flower is shaped like the ear pinna.
2. *Leucas aspera* (Willd.) Link (Lamiaceae) S.N. : Dronpuspi (Dron-bowl; Pusp-Flower) Theshape of a bowl is visualized in its flower.
3. *Gloriosa superba* Linn. (Liliaceae)S.N.: Langali (Langal-plough) Root-stock is plough-like in shape.
4. *Solanum tuberosum* Linn. (Solanaceae) S.N. : Golakandah (Gol-rounded; Kandah-tuber) It bears rounded tubers.
5. *Canscora decussata* (Roxb.) Schult. (Gentianaceae) S.N.: Shankphuli (Shank-cone; Phul- flower) The flower of the species is cone-shaped.

(J) Colour

1. *Acalypha indica* Linn. (Euphorbiaceae) S.N. : Haritmanjari (Harit-green; Manjari- inflorescence) Its inflorescence is entirely green.
2. *Ventilago maderaspatana* Gaertn. (Rhamnaceae) S.N. : Raktavalli (Rakta-blood; Valli-lianas) It is lianas with vermilion-red inner surface of the bark.
3. *Ipomoea batatas* (Linn.) Lam. (Convolvulaceae) : S.N. : Raktaluh (Rakta-blood; Aluh-tuberous roots) The tuberous roots are usually reddish.
4. *Curculigo orchoides* Gaertn. (Hypoxidaceae) S.N.: Hempushpa (Hem-gold; Pushpa- flower) The plant bears golden flowers.
5. *Securinega leucopyrus* (Willd.) Muell.-Arg. (Euphorbiaceae) S.N.: Pandurphalli (Pandur-white; Phalli- fruited) The fruits of this species are white-colored.
6. *Ipomoea nil* (L.) Roth (Convolvulaceae) S.N.: Krsnabijah (Krsna-black; Bija-seed) Black colour of the seeds is emphasized.
7. *Euphorbia hirta* L. (Euphorbiaceae) S.N. : Dugdihika (Dugdih-milk) This plant produces milky latex, which is denoted in the name.

8. *Indigofera tinctoria* L. (Fabaceae) S.N.: Nili (Nil-blue) The plant is blue-black in colour. It is the original source of natural 'indigo'.
9. *Argemone mexicana* L. (Papaveraceae) S.N.: Swarnakshiri (Swarna-golden; Kshir-milk, here refers to latex) The plant yields yellow or golden latex.
10. *Mallotus philippensis* (Lam.) Muell.-Arg. (Euphorbiaceae) S.N.: Raktaphala (Rakta-blood; Phala-fruit) The fruits are dark red.

(K) Colour and Affinity

1. *Cyathula prostrata* (Linn.) Blume (Amaranthaceae) S.N.: Raktapamargah (Rakta blood; Apamargah-*Achyranthes aspera* L.) This species is similar to *A. aspera* and belongs to the same family. However, in case of *C. prostrata* stem or branches are violet-red.

(L) Specific Chemical Property

1. *Sapindus laurifolia* Vahl (Sapindaceae) S.N.: Phenilah (Phenilah-soap-like or saponaceous juice) Its fruits contain saponin, which are used as a substitute for soap.
2. *Mucuna pruriens* (L.) DC. (Fabaceae) S.N. : Kapikacchu (Kapikacchu - One who scratches the body like a monkey) Pods are studded with 'stinging bristles. On touching, it gives intensive itching sensation.
3. *Lawsonia inermis* L. (Lythraceae) S.N.: Nakharanjak (Nakha-nails; Ranjak-colouring dyeing) Leaf paste is used to dye nails and even hand-palms during some religious and social ceremonies or festivals.

(M) Milky Content

1. *Taraxacum officinale* Weber (Asteraceae) S.N. : Dugdihapheni (Dugdihapheni-milky juice) It contains abundant milky juice in all parts.
2. *Euphorbia thymifolia* Linn. (Euphorbiaceae) S.N.: Dugdihika (Dugdih-milk) The plant when broken or injured yield milky latex.
3. *Aegle marmelos* L. (Rutaceae) S.N.: Shivadruma (Shiva-Lord Shiva of Hindu mythology; Druma-tree, plant) The trifoliate leaves are offered by Hindus to Lord Shiva, hence the name.

(N) Utility of Part

1. *Cinnamomum verum* Presl. (Lauraceae) S.N.: Tvak (Tvak-skin) Bark of the plant is particularly used for medicinal purposes.

(O) Medicinal Property

1. *Aristolochia bracteolata* Lam. (Aristolochiaceae) S.N.: Kitamari (Kita-worms; Mari-killer) The leaves and roots are used to kill intestinal especially round worms.

2. *Terminalia bellirica* (Gaertn.) Roxb, (Combretaceae) (a) S.N. : Krmighna (Krmī--worms; Ghna--indicating killing nature) Seed paste is applied locally against ringworm and other cutaneous affections. (b) S.N. : Bibhitaka (One that keeps you away from the diseases) It alleviates all the 'tridosas' (kapha, vata and pitta).
3. *Plumbago zeylanica* L. (Plumbaginaceae) S.N. : Citraka (One which render discolouration to the skin) Root-skin (Root-bark) is used for depigmentation of the skin.
4. *Psoralea corylifolia* L. (Fabaceae) S.N.: Kusthanasini (Kustha-dermatosis; Nasini-killer) It is one of the best herb in the treatment of various skin disorders.
5. *Aloe vera* L. (Liliaceae) S.N.: Kurnari (Kumari-young, virgin girl) As the herb imparts youthful energy and enhances femininity, hence the name. It also mitigates 'Kumari-roga' (menstrual disorders).
6. *Benincasa hispida* (Thunb.) Cogn. (Cucurbitaceae) S.N. : Kusmanda (Fruit which does not contain heat at all) To alleviate burning sensation, fruit pulp is applied on wounds and burns. Seed-oil is used to massage head, serving the same purpose.
7. *Acorus calamus* L. (Araceae) S.N. : Vaca (meant speaking) It stimulates the power of self-expression and intelligence. It is most renowned herb as a rejuvenative for the brain and nervous system.
8. *Alstonia venenata* R.Br. (Apocynaceae) S.N.: Visaghni (Visa-poison; Ghni-killer) Roots are used as antidote to cobra-bite and other venomous bites.
9. *Aristolochia indica* L. (Aristolochiaceae) S.N.: Iswari (Iswari--having the power to neutralize poison) The plant is an accepted source of a drug widely used against snake bite.
10. *Holostemma kodiense* Schult. (Asclepiadaceae) S.N.: Jivanti (Jiva--liveliness, life). The plant is thought to have the property to bestow health and liveliness on the consumer.
11. *Cassia sophera* L. (Caesalpiniaceae) S.N.: Kasamardah, Kasari (Kasa--cough; Mardan--killer) The plant is often recommended against cough, asthma and other respiratory ailments.
12. *Cleome viscosa* L. (Capparaceae) S.N.: Karnasphota (Karna--ear; Sphota--bursting, i.e. ear ailment) The leaf juice relieves earache and deafness; hence the name.
13. *Chionachne koenigii* (Spr.) Thus. (Poaceae) S.N.: Ashvabala (Ashva--Horse; Bala-- strength) The plant is used as a tonic and aphrodisiac.
14. *Gymnema sylvestre* (Retz.) R. Br. (Asclepiadaceae) S.N.: Madhunasini (Madhu--sweet; Nashini--destroyer) The leaves are medicinal on diabetes and thought reducing sugar in human body.

(P) Medicinal Use and Mythology:

1. *Tinospora cordifolia* (Willd). Hook. f. & Thoms. (Menispermaceae) S.N.: Amrta (Amrta-- immortal, imperishable) The mythical ambrosia was produced at the time of 'Churning of the Ocean' by the gods and the demons. This is supposed to confer immortality and everlasting youth and beauty. It is also called 'amrita'. It is said that Rama killed Ravana. Therefore, Lord Indra was much pleased and he rejuvenated the dead monkeys of Rama's army with the rain of 'amrita'. The plants of *Tinospora cordifolia*, called 'guduchi', came up wherever the drops of amrita fell on the ground.
2. *Caesalpinia bonduc* (L.) Roxb. (Caesalpiniaceae) S.N.: Kuberaksi (Kuber--God of Wealth in Hindu mythology; Aksi--eyes) The seeds are ashy or grey-coloured like the eyeballs of Kuber.

(Q) Medicinal Use and Belief

1. *Putranjiva roxburghii* Wall. (Euphorbiaceae) S.N.: Putranjiva (Putra--son; Jiva--life) The stones of the fruit are strung together to form rosaries by Hindu Brahmans, Fakirs and by parents and put round the necks of their children. They are supposed to preserve the wearer from harm. The plant is also said to be medicinally useful for the ladies whose children die before birth. It helps in settlement of the womb.
2. *Saraca asoca* (Roxb.) Wild. (Caesalpiniaceae) S.N.: Asokah (A--not; Shok--sorrow, pain) The tree is believed to be capable of relieving sorrow of people.
3. *Ipomoea marginata* (Desr.) Verdec. (Convolvulaceae) S.N.: Lakshmana (Lakshmana--one having lucky signs or marks) The leaves have reddish marks.

(R) Life-form and Medicinal Use

1. *Merremia tridentata* (L.) Hall. f. ssp. *hastata* (Desv.) Oost. (Convolvulaceae) S.N.: Prasarani (Prasarani--spreading) It indicates the property of the drug of stretching out parts of the body contracted by paralysis.

(S) Habitat and Medicinal Use

1. *Rotula aquatica* Lour. (Boraginaceae) S.N.: Pasanbheda (Pasan--stone, rock; Bheda-- breaking) It grows in rocky crevices, often breaking them. It is a specific remedy against kidney and bladder stones.

(T) Smell and Shape

1. *Cyperus rotundus* L. (Cyperaceae) S.N.: Sugandhigranthila (Sugandh--smell; Granthi--gland, rounded knot) The roundish root tubers are aromatic and widely used in Indian medicine.

(U) Habitat and Distribution

1. *Curcuma aromatica* Salisb. (Zingiberaceae) S.N.: Vanharidra (Van-forest; Haridra-turmeric) It is a turmeric-like plant but grows wild in forests.
2. *Vetiveria zizanoides* Nash (Poaceae) S.N.: Jalavasa (Jala-water; Vasa-inhabiting) It is found especially along the banks of water courses.

(V) Habitat and Taste

1. *Andrographis paniculata* (Burm. f.) Wall. ex Nees (Acanthaceae) S.N.: Kiratatiktah (Kiratah-forest; Tikth-bitter) The plant is found wild in forested areas and is bitter in taste.

(W) Habitat and Shape

1. *Pistia stratiotes* L. (Araceae) S.N.: Jalkumbhi (Jal-water; Kumbh - a jar, a water pot) The plant is an inhabitant of water bodies and assumes the shape of a pot.

(X) Inconveniences

1. *Achyranthes aspera* L. (Amaranthaceae) S.N.: Apamargah (Margah-path) On account of long spiniscent spikes, this plant hinders the path of pedestrians.
2. *Solanum virginianum* L. (Solanaceae) S.N.: Kantakari (Kanta-spine) The whole plant is studded with spines.

(Y) Numerals

1. *Naregamia alata* Wt. & Arn. (Meliaceae) S.N.: Tripami (Tri-three; Parna-leaf) The leaves are trifoliate.
2. *Adansonia digitata* L. (Bombacaceae) S.N.: Panchparnika (Panch-five; Parna-leaf). The leaves are usually 5-foliate (although they range from 3- to 9-foliate).

(Y) Number of Plant Parts

1. *Sesbania bispinosa* (Jacq.) Fawcett & Rendle (Fabaceae) S.N.: Sataparni [Sata-hundred] (i.e. many); Parna-leaf] The leaves bear many leaflets.
2. *Aegle marmelos* Carr. (Rutaceae) S.N.: Tripatra (Tri-three; Patra- leaf) The plant bear trifoliate leaves.

(Z-1) Size

1. *Amorphophallus paeonifolius* (Dennst.) Nicols. var. *campanulatus* (Decne.) Sivadasan (Araceae) S.N.: Sthulakandaka (Sthul-large; Kandaka-corm, tuber) The plant has a large corm.
2. *Alocasia macrorrhiza* (L.) Schott. (Araceae) S.N.: Mahapatra (Maha-large; Patra- leaf) The plant species bear large leaves.

(Z-2) Miscellaneous Property

1. *Premna corymbosa* Rottl. (Verbenaceae) S.N.: Agnimanthan (Agni-fire) The tree is believed to have

been used to produce fire in sacrificial ceremonies by rubbing the sticks together.

2. *Baliospermum solanifolium* (J. Burm.) Suresh (Euphorbiaceae) S.N.: Danti (Dant-tooth) The stem pieces are used as tooth-brushes.

(Z-3) Learned Person

1. *Sesbania grandiflora* (L.) Poiret (Fabaceae) S.N.: (i) Agasti-Named after the great sage Agastya.
2. S.N.: Munidruma (Muni-sage; Druma-tree, plant) The tree is associated with the name of the great sage Agastya.

(Z-4) Celestial Body

1. *Calotropis gigantea* (L.) R. Br. and *C. procera* R.Br. (Asclepiadaceae) S.N.: Arkah (Arkah-sun) It refers probably to the caustic nature of the plant, especially of its latex.

(Z-5) Peculiar Plant Part

1. *Echinops echinatus* Roxb. (Asteraceae) S.N.: Kantaphala (Kanta-spines; Phala- fruits) The fruiting heads are spiny.
2. *Euphorbia antiquorum* Linn. (Euphorbiaceae) S.N.: Vajrakantakah (Vajra-hard, stout; Kantakah-spine) The plant species is hardy bearing stout spines.

(Z-6) Poisonous Nature

1. *Nerium oleander* L. (Apocynaceae) S.N.: Asvamarakah (Asva-horse; Marakah-killer) The plant is capable of killing horses due to its poisonous content.
2. *Anamirta cocculus* (L.) Wt. & Arn. (Menispermaceae) S.N.: Kakrnari (Kak-crow; Mari-killer) The fruits are poisonous and are used to kill birds or crows, hence the name.

DISCUSSION

During this study, present author earmarked certain semantic dimensions in recognizing elements of plant science and ethnotaxonomy. These are:

(A) Elements of Plant Science

- (1) Life-form: (i) Akasvalli: climber, (ii) Latakshiri: climber, (iii) Nilavalli: tree, (iv) Munidruma : tree, (v) Shivadruma: tree
- (2) Habitat: (i) Silakarpasika: Rocky habitat, (ii) Jalavetasah: Growing near water places, (iii) Jalavasa: Growing near water places, (iv) Pasanbheda : Rocky habitat, (v) Jalkumbhi: Watery places, (vi) Jalapippali: Watery places
- (3) Distribution: (i) Girikadambah : Forest dwellers, (ii) Aranyjiraka: Forest dwellers, (iii) Girikarnika: Forest

- dwellers, (iv) Kirataliktah: Forest dwellers, (v) Vanharidra : Forest dwellers
- (4) Number of Plant Parts: (i) Sataparni: Bearing numerous leaves/leaflets, (ii) Tripatra: Bearing 3-foliolate leaves, (iii) Panchparnika: Bearing 5-foliolate leaves
- (5) Plant Contents: (i) Phenilah: Soap-like / Saponaceous juice, (ii) Dugdhapeni: Milky juice, (iii) Visaghi: Poisonous content, (iv) Iswari: Content that neutralizes poises, (v) Dugdika: Milky content, (vi)Nili: Containing indigo, (vii) Swarnakshiri: Golden/Yellow milky latex, (viii) Kakmari: Poisonous content that kills crows
- (7) Method of Propagation: (i) Parnabija: Propagules born of on leaf margin.
- (8) Poisonous Content:(i) Asvamarakah: Capable of killing horses, (ii) Kakmari: Capable of killing crows.
- (6) Similarity of Plant Parts: (i) Aranyajirak: Similar cumin-bike seed, (ii) Amaratakah: Similar mango-like fruits, (iii) Masaparni: Similar leaves like blackgram, (iv) Tanduliyah: Similar seeds like rice grains, (v) Bhulaunga: Similar clove-like fruits, (vi) Jalapippali: Similar fruiting heads like long pepper.
- (10) Medicinal / Pharmacological Property:(i) Kakamari: Killing intestinal worms, (ii) Krmighna: Killing worms, (iii) Kusthanasini: Curing skin diseases, (iv) Kumari: Medicine against menstrual disorders, (v) Vaca: Having power of self-expression, (vi) Ashvabala: Tonic and aphrodisiac, (vii) Madhunasini: Reducing sugar (antidiabetic), (viii) Jivanti: Bestowing health and liveliness, (ix) Kasamardah: Curing cough and respiratory complaints, (x) Putranjiva: To better son's life, (xi) Pasambheda: Remedial for bladder and kidney stones, (xii) Kusmanda: Alleviates burning sensation, (xiii) Karnasphota: Relieves ear-ache and deafness.

It is to be noted that: (1) Apart from morphological classification, pharmacological classification prevalent in Vedic period, especially in *Rigveda*. However, it was just a beginning (Sharma, 2001). (2) Later, in *Charak and Sushrut Samhita* (1000 B.C.) Pharmacological classification of medicinal plants (drugs) was developed (Sharma, 2001). (3) The common names in Sanskrit also indicate pharmacological classification (and thereby identification) especially of useful or medicinal plants.

- (11) Miscellaneous Property:(i) Agnimanthan: Belief about ability produce fire by rubbing stems/sticks.
- (12) Miscellaneous Uses: (i) Nakharanjak: Leaf paste used to dye nails. (ii) Danti: Stem used as tooth-brush
- (13) Colour: (i) Haritmanjiri: Green, (ii) Raktavalli, Raktaphala: Blood (red) colour, (iii) Krisnabija: Black, (iv) Nili: Blue, (v) Swarnakshiri: Golden (Yellow), (vi) Kuberaksi: Ash/Grey like eyes of Kuber, (vii) Hempuspi: Gonden colour, (viii) Pandurphalli: White.

- (14) Taste: (i) Amla: Sour, (ii) Marica: Pungent.
- (15) Smell / Odour: (i) Pashuganda: Smell of animals, (ii) Sugandh: Aromatic /Fragrant, (iii) Amragandh: Smell of a Mango.
- (16) Gods/Mythology: (i) Kueraksi: Eyes of Kuber (Hindu God), (ii) Lakshmans: Lakshmana (Hindu God), (iii) Shivdruma: Shiva (Hindu God).
- (17) Sages/Learned Persons:(i) Agasti: Sage Agastya, (ii) Munidruma: Muni i.e. Sage.
- (18) Indicative of Wild or Cultivated Species: Vanharidra: (i) *Curcuma aromatica* is wild, (ii) *Curcuma longa* is under cultivation.
- (19) Affinity: (i) Raktapamaragh: *Cyathula prostrata* (Amaranthaceae), (ii) Apamargah : *Achyranthes aspera* (Amaranthaceae) belong to same family (Gana.)

(B) Binomial Nomenclature and Sanskrit Names

Attributing names to plants is as old as the appearance of man on the earth. Probably, the earlier names were based on useful plant part, place of growth, shapes, odour and comparisons with other objects. This practice rendered the names polynomial. Man become more familiar with time and found such descriptive phrases inconvenient. He reduced it eventually to just one or two words. Common names are both. The binary method was also naturally inherent in different societies. It is evident in some common names in 'Flora Svecica' (1745) by Linnaeus, e.g. Rag losta, Ren losta (Linnaeus, 1745). In ancient Sanskrit literature, we can also note several such two-word system e.g. Shiv Druma (*Aegle marmelos*), Bodhi Druma (*Ficus religiosa*). In some cases, these two words are combined in one e.g. Aranyjiraka (*Vernonia anthelmintica*), Akasvalli (*Cuscuta reflexa*), Parnabija (*Kalanchoe pinnata*), etc. Thus this system is closely related and is seemingly akin to the Linnaean system of 'binomial nomenclature'. These names are not simply 'labels'. They are meaningful and serve as a means of reference and a key to information related to certain taxa. However, two names do not stand for unit of classification like genus and species.

(C) Category or Rank in Classification

The present day taxonomists revolve round the categories viz., genus and species. In general, commonality is expressed by a 'genus' and uniqueness by a 'species'. This is evidenced in pristine Sanskrit common names of plants. Nay, the roots of this conceptual development are also discernible in them.

For example:(i) Musta: *Cyperus rotundus* Linn. (Cyperaceae), Bhadramusta: *Cyperus esculentus* Linn. (Cyperaceae), (ii) Brhalloni: *Portulaca oleracea* Linn. (Portulacaceae), Laghu lonika : *Portulaca quadrifida* Linn. (Portulacaceae). Thus 'musta' and 'loni' or 'lonika' are similar in function to

colloquial English genus-level names such as 'oak', 'rose' or 'columbine'.

In a nutshell, roots of plants science and been its development are generally traced back in western culture. However, this is not the final truth. Man is a necessity taxonomist by birth and therefore he has always endeavoured to know the vegetable world in his surroundings. He was also eager for discriminating the elements and virtues of the individual plants. This wisdom and experience in hidden in all human societies. If their languages or dialects are screened semantically, they will always reveal some or other elements of plant science vis-à-vis taxonomy.

(D) Indian Classifications

Since the time of Linnaeus, different taxonomic systems have been devised. Modern period has witnessed more concrete and accurate systems of plant classifications¹¹⁻¹⁵. Ancient Indians also developed systems of plant classifications nearly at par with the aforesaid modern phytotaxonomic systems. They practiced a type of taxonomy in accordance with their acquaintance with a fairly good number of plants, particularly those with consumable and medicinal significance.

An Atharveda (c.1000 BC.), medicinal plants are classified into eight categories according to the type of disease cured (Singh, 1998). Charak in his treatise 'Charak Samhita' (c.4th century) grouped food or edible plants into total 12 categories (Shastri, 1940). Sushrut in his treatise 'Sushrut Samhita' (c. 2nd century) divided plants into 37 classes according to functions (Acharya, 1915). Parasara (1st century BC. or 1st century AD.) in his treatise 'Vrksayurveda' (cf. Sircar and Sarkar, 1996) treated plants into six 'Kanda' (parts), in which the first four Kanda are devoted for origin of life, edapdic factors, distribution of forests and morphology of plant parts. Later Kanda described 'Gana' (modern term 'family'). These families are nearly equivalent to families circumscribed in modern phytotaxonomic systems (Sircar and Sarkar, 1996). Some more literary sources in Sanskrit dealing with the plant-world is avoided here for the sake of precision.

Some readily observable similarities or differences can be noted between Indian systems available in Sanskrit literature and those of modern systems. In modern phytotaxonomy, one maximal taxon, traditionally the 'Kingdom Plantae', is involved. This also finds place in Indian (Sanskrit) systems. There is a finite number of levels in the taxonomic hierarchy in the modern systems (e.g. species, genus, family, order, class, phylum and kingdom). These major and minor categories are discernible, although not fully, in the Indian systems. There are nomenclatural rules by ICBN for making hierarchical levels available for

modern taxonomists. It is not go yet developed by the Indian taxonomists. There is only one valid name for each taxon in modern systems. This fact is not legally available to date in Indian systems, instead synonyms are used for many taxa. Specialised terminology related to parts or phases of plants are quite often used in Indian systems as in modern phytotaxonomies. The modern systems reflect the total diversity of the world's flora in the context of evolutionary relationships, whereas the Indian systems are practical ones of communication.

CONCLUSIONS

Author's all-pervasive examination of Sanskrit plant names shed more light on the subject matter as in the following- Knowledge of technical terms is essential to identify, describe and classify plants. Ancient Indians were versed with: Five fundamental parts (Panchang) viz., root, stem, leaf, flower and fruit and other characterization.

Further development in character was accomplished. Many morphological terms were coined.

Combination of different morphological terms also mirror in plant description.

Apart from morphological features, help of plant contents, utilities, colour, shape, size, smell, comparison with other plant and animal organs, religious and social phenomena, etc. was taken to amplify their knowledge about plants.

Although explicit category of classification like 'genus and 'species' does not appear in vogue, but these concepts are discernible in their naming plants.

Different types of plant habits corresponding to types recognised in modern botany were/are well known.

Abstract and concrete relationships of man with the plant world is reflected also in Sanskrit plant names.

Mythological stories or events do find place in plant science and naming. This also hold true in plant naming in Sanskrit. Habit, habitat and geographical distribution are also incorporated in identification and classification of plants.

Several criteria for plant nomenclature were in vogue. Interestingly, roots of binomial nomenclature are also evident in Sanskrit common name as in the case of 'Flora Svecica' (Linnaeus, 1745).

(a) The ways and means (i.e. bases) generally used in scientific plant names also correspond with Sanskrit nomenclature. (b) Even bases of naming plants in scientific, Sanskrit, Marathi, Hindi, and a dialect in Khandesh are similar.

Consideration of similarities and differences in classical taxonomy is also experienced in definition of taxon/taxa in Sanskrit.

By addition of suffixes and prefixes to the name of a taxon, plants are named and distinguished.

Homonyms, however, are major obstacles in identification of some taxa.

Traditional dependence of plant taxonomy upon comparative exomorphological characters also hold true in case of plant science in Sanskrit.

All characters, vegetative as well as floral, are given weightage in defining taxa.

Quantitative (size, number, length, etc.) characters find place in identification of taxa.

(i) Few qualitative characters are also in vogue. (ii) Field characters e.g. colour, fragrance, taste, etc. are used in plant description and identification.

SUMMARY

Common names have a complex semantic structure, unique particularities in the form of etymology, ability to modify and formation of word in their target language. This is particularly so in case ancient language like Sanskrit, a language which is said to be a mother of other Indian languages. The author unearthed a treasure-trove of Sanskrit plant names divulging thereby development in plant science, in general, and terminology and phytotaxonomy prevalent during ancient times in Indian culture. It is doubtless that common plant names are huge corpus of lexicon which are embedded with wisdom, knowledge and experiences of human ancestors.

FUTURE ISSUES

This realm of common names especially in ancient languages has largely remained neglected. They should be investigated on scientific line which may improvise the present state of knowledge of mankind for his welfare.

ACKNOWLEDGEMENT

I am thankful to the authorities of S. S. V. P. Sanstha for library facilities.

REFERENCES

- Acharya, J. T. (Ed.)(1915). Susruta Samhita (Sanskrit). Nirnya Sagar Press, Bombay, India.
- Bentham, G. and J.D. Hooker (1862-1863). Genera Plantarum. Vol.I-III. L.Reeve. & Co., London, UK.
- Cronquist, A. (1988). The Evolution And Classification Of Flowering Plants. 2nd Edn. New York Botanic Garden, New York, USA. ISBN-13:978-08932733323.
- Deshpande, A. P., Javalkar, R. R. and Subhash, Ranade (1988). Dravyagunvidnyan (Part 1-2). Proficient Publishing House, Pune, India.
- Engler, A. H. G. and K. Prantl (1887-1915). Die Naturalischen Pflanzenfamilien. W.Englemann, Leipzig, East Germany.
- Hutchinson, J. (1973). The Families Of Flowering Plants. 3rd Edn. Clarendon Press, Oxford, UK. ISBN:9780198543770.
- Kirtikar, K. R. and B. D. Basu (1981). Indian medicinal plants. Vol.I-IV. International Book Distributors, Dehradun & Periodical Expert Book Agency (II Ed.) Delhi, India. ISBN:10-81713653.
- Linnaeus, C.(1745). Flora Svecica Ed.1. Stockholm.
- Patil, D.A. and M. V. Patil (2002). Sanskrit plant names in an ethnobotanical perspective-II. Ethnobotany. 14:87-92.
- Patil, D. A. and S. K. Tayade (2014). Sanskrit common plant names in philological and ethnobiological context. The Journal of Biodiversity (Photon) 113:268-271.
- Patil, D. A. (2006). Philology *vis-à-vis* elements of plant nomenclature in Sanskrit. Advances In Biological Sciences. 5:40-51.
- Patil, D. A. (2000). Sanskrit plant names in an ethnobotanical perspective. Ethnobotany. 12:60-64.
- Sharma, P. V. (2001). Drvyaguna-vijnana Vol.I (Basic Concepts) (Repr.Ed.). Chaukhamba Bharati Academy (Publisher & Distributor) Varanasi, India.
- Shastri Haridatta (Ed.)(1940).Charak Samhita (Sanskrit) Vol.1-2. 2nd Edn.Motilal Banarasidas, Lahore, Pakistan.
- Singh, R. (1998). Vedic Medicine. Anmol Publications Pvt.Ltd., New Delhi, India.
- Sircar, N.N. and Roma Sarkar (Ed.)(1996). Vrksayurveda of Parasara (A Treatise on Plant Science). Indian Medical Science Series No.38. Sri Satguru Publications (A Division of Indian Books Centre), Delhi, India. ISBN:81-7030-441-5.
- Sivarajan, V. V. and Indira Balchandran (1994). Ayurvedic Drugs And Their Plant Sources Oxford & IBH Publishing Co.(P.) Ltd., New Delhi, India.
- Takhtajan, A.L.(1997). Diversity And Classification of Flowering Plants.Springer, Netherlands. ISBN:978-94-017-7735-3.
- Warrier, P.K., Nambiar, V.P.K. and C. Ramankutty(1994-1995). Indian Medicinal Plants. Vol.5 Orient Longman, Calcutta, India. ISBN:8125003010.