



Available Online at EScience Press

# Journal of South Asian Studies

ISSN: 2307-4000 (Online), 2308-7846 (Print)

<https://esciencepress.net/journals/JSAS>

## LEXICAL BOTANY IN AMARAKOŚA

**Raghava S. Boddupalli**

Institute of Sanskrit and Vedic Studies (ISVS), Regd. No: 264 / 80 - 81, Sri Siddhi Vinayaka Temple, Sastry Memorial Hall, Sanjananagar, Bangalore, India.

\*Corresponding Author Email ID: [raghava7boddupalli@gmail.com](mailto:raghava7boddupalli@gmail.com)

### A B S T R A C T

Sanskrit literature abounds in lexicons. *Amarakośa* is the most celebrated and authoritative ancient thesaurus of Sanskrit. There are references to various lexicons in many ancient Sanskrit texts, but none of these except for Dhanvantari's and Amarasiṁha's are extant. Between the two, the latter's work *Nāmalingānuśāsana* popularly known as *Amarakośa* is very familiar to every student of Sanskrit. The actual name of the book '*Nāmalingānuśāsana*' means instruction concerning nouns and gender. It is divided into three *kāṇḍas* (volumes). Each *kāṇḍa* is divided into *Vargas* depending on the subject they deal with. A list of more than 220 plants is mentioned with all the synonyms in the four *Vargas*. The plants that are revealed in the *Amarakośa* can be classified into huge trees, edible fruit trees, shrubs, herbs, creepers, water plants, grasses, pulses, cereals, wild cereals and others. Plants that are generally used for incensing, perfumery and cosmetics for human consumption are mentioned in the *Manuṣhya* *Varga*. In the *Vaiśyavarga* crops of commercial value are included.

**Keywords:** SanskritLexicons, Amarasiṁha, *Amarakośa*, Botanical terms, Flora, Plants.

### INTRODUCTION

Sāyaṇācārya in his *Rgvedabhāṣyopakrama*, defines *Nighantu* as, "a book where the same meaning - synonymous- words are considered as a group". *Amarakośa* is the most celebrated and authoritative ancient thesaurus of Sanskrit. There are references to various lexicons such as those of Kātyāyana, Vācaspati, Vyādi, Vararuci, Bhāguri, Dhanvantari, Amarasiṁha, etc., in many ancient Sanskrit texts, but none of these except for Dhanvantari's and Amarasiṁha's are extant. The word '*Amarakośa*' is derived from the Sanskrit words '*amara*' (immortal) and '*kośa*' (treasure, casket, pail, collection, and dictionary). It is one of the books which an Indian child learning through the Indian traditional educational system memorizes as early as his first year of formal learning. Though it appears as a linear list of words, close inspection of it shows a rich organization of words expressing various relations a word bears with other words. Thus when a child studies *Amarakośa* further, the

linear list of words unfolds into a knowledge web.

### AMARASIṀHA - THE AUTHOR OF AMARAKOŚA

Amarasiṁha, the renowned scholar, is the author of the ancient lexicon '*Amarakośa*', which is clear from the colophon.<sup>1</sup> This is the only information about Amarasiṁha that we get from *Amarakośa*. He didn't mention any information about him anywhere in *Amarakośa*.

### Date and Life of Amarasiṁha

Very little is known about the date and life of Amarasiṁha. King Vikramāditya (4<sup>th</sup> century A.D.) points out in the *Subhāṣita* that Amarasiṁha was one among the nine gems (*Navaratnāni*) in his court. On the basis of all these, it seems fair to assign a date around 450 A.D. for Amarasiṁha. According to Katre (1948), however, Amarasiṁha's date is not certain.

### Classification of *Amarakośa*

The *Amarakośa* is divided into three *kāṇḍas* (volumes). Every *kāṇḍa* is divided into *Vargas* (parts) depending on

the subject they deal with. These *kāṇḍas* are described in detail in the next section. *Amarakośa* contains a total of 11,580 content words from the three *kāṇḍas*. Unique words from all *kāṇḍas* are 9,031. It is not certain how many were originally written by Amarasiṁha and how many have been interpolated at a later stage. Kṣīrasvāmin's commentary (Oka 1913) mentions 1,498 *ślokas* as original and 58 as interpolations. Balasubramanya (1970) includes 1,540 as original *ślokas* without any interpolations.

### **Prathama(1<sup>st</sup>) Kāṇḍa**

The first *kāṇḍa*<sup>2</sup> contains *svargavargaḥ* (heaven), *vyomavargaḥ* (sky), *digvargaḥ* (direction), *kālavargaḥ* (time), *dhīvargaḥ* (cognition), *śabdādivargaḥ* (sound), *nātyavargaḥ* (drama), *pātālabhogivargaḥ* (nether world), *narakavargaḥ* (hell), and *vārivargaḥ* (water).

### **Varga contents**

*Svargavargaḥ*: Heaven, Gods, Demons, their arms, ornaments, symbols or vehicles, and other attributes, Fire, Air, Velocity, Eternity, etc.

*Vyomavargaḥ*: Sky

*Digvargaḥ*: Directions, Deities of the directions, elephants at the points, their female elephants, Cloud, thunder, lightning, rainbow, Rain, hail, rainy day, cloudy day, Moon, types of light, frost, Stars, Planets, sunset, dawn, sunlight, etc.

*Kālavargaḥ*: Time, day, night, variations of the moon, eclipse, second, hour, months, year, Weather, seasons, Happy, Sorrow, Soul, Mind, etc.

*Dhīvargaḥ*: Individuality, consciousness, knowledge, sense, organs, tastes, fragrance, colours, etc.

*Śabdādivargaḥ*: Sarasvatī, voice, word, Vedas, Vedāṅgas, stories, legends, sound, types of sounds, speech, musical sounds, song, ornament's sound, etc.

*Nātyavargaḥ*: Seven musical tones, Musical Instruments, dance, theatrical characters, sentiments, desire, affection, kindness, Festival etc.

*Pātālabhogivargaḥ*: Infernal region, hole, darkness, Snakes, kinds of the serpent, parts of the snake, etc.

*Narakavargaḥ*: Hell, various hells, departed souls, pain, etc.

*Vārivargaḥ*: Water, Ocean, wave, whirlpool, shore, channel, island, boat, voyage, pilot, deep, fish, fisherman, net, fish basket, hook, etc., types of fishes, Aquatic animals, crab, turtle, etc. Well, pond, types of ponds, River, Names of rivers, water plants, lotus, water lily, etc. and parts of these plants.

### **Dvitiya (2<sup>nd</sup>) Kāṇḍa**

It is divided into ten Vargas or parts<sup>3</sup>. They are *bhūmivargaḥ* (earth), *puravargaḥ* (towns or cities), *sailavargaḥ* (mountains), *vanauṣadhi-vargaḥ* (forests and medicines), *simhādivargaḥ* (lions and other animals), *manuṣyavargaḥ* (mankind), *brahmavargaḥ* (priest tribe), *kṣatriyavargaḥ* (military tribe), *vaiśyavargaḥ* (business tribe) and *śūdravargaḥ* (mixed class).

### **Varga contents**

*Bhūmivargaḥ*: Earth, land, soil, clay, world, India, regions, types of lands, country, village, kingdom, hill, roadetc.

*Puravargaḥ*: City, suburb, Market, fort, wall, house, kinds of houses, parts of house, house holdings, building land, etc.

*Sailavargaḥ*: Mountains, kinds of mountains, parts of mountains, caves, etc.

*Vanauṣadhi-vargaḥ*: Forest, garden, tree, parts of tree, flowers, fruits, leaf, shrub, creeper, names of trees, names of shrubs, names of creepers, names of grass, etc.

*Simhādivargaḥ*: Animals, lion, tiger, wolf, deer, kinds of deers, etc. Insects, bee, cricket, birds, hawk, skylark, crow, parrot, etc. parts of birds, wing, beak, etc.

*Manuṣyavargaḥ*: Man, woman, descriptions of woman, blood-relations like son, daughter, husband, wife etc., manhood, different stages of manhood, parts of our body, diseases such as cough, scab, etc., dress, ornaments, cloths, types of cloths, cosmetics, fragrant plants, sandal etc., hair decoration styles, daily usable things etc.

*Brahmavargaḥ*: Tribes, religious states, sacerdotal, scholars, characters and descriptions of priests, their occupations and observances, types of fires, sacrifice, its requisites, alms, worship, austerity, study, hypocrisy, marriage, human, pursuits and objects etc.

*Kṣatriyavargaḥ*: Military tribe, kings, ministers, officers, servants, enemies, allies, requisites of government, means of defence, and of success, revenue, foresight, insignia of royalty, army, elephants, parts and kind of elephants, horses, types of horses, vehicles, chariots, litters, warriors, arms and weapons, bow, arrow, javelin etc. war, slaughter, funeral, prison, life, etc.

*Vaiśyavargaḥ*: Third tribe, professions, husbandman, field, implements of husbandry, corn, pulse, oil-seeds, granary, kitchen, vessels, prepared food, dairy, cattle, traffic, weights and measures, commodities, etc.

*Śūdravargaḥ*: Fourth tribe, mixed classes, artisans, jugglers, dancers, musician, hunters, servants, barbarians, dogs, hogs, theft, nets, fops, loom, plot

for burden, wrought leather, tools, art, images, wages, spirituous gaming, etc.

### **Tṛtiya(3<sup>rd</sup>) Kāṇḍa**

The third kāṇḍa contains adjectives, verbs, words related to prayer and business etc<sup>4</sup>. It is divided into four Vargas or parts. They are, *Viśeṣyanighnavargah* (adjective), *saṅkīrṇavargah* (miscellaneous), *nānārthavargah* (polysemous), *avyayavargah* (indeclinables), *liṅgādisaṅgrahavargah* (gender).

### **Varga contents**

*Viśeṣyanighnavargah*: Epithets of persons, Qualities of things, etc.

*Saṅkīrṇavargah*: Miscellaneous

*Nānārthavargah*: Homonymous and polysemous words

*Avyayavargah*: Indeclinable

*Liṅgādisaṅgrahavargah*: Genders, Masculine, Feminine, Neuter, Masculine and Feminine, Masculine and Neuter, Feminine and Neuter, Three genders, variations of gender.

### **COMMENTARIES ON AMARAKOŚA**

Amarasiṁha's lexicon is the oldest work of the kind now extant. It is of great interest to note that, it has been universally accepted as an authority by the Brahmins and the Jains as well. The fact that it has been commented upon by Buddhists like *Subhūticandra*, by Jains like *Āśādharapāṇḍita* and *Nācirāja*, and by Brahmins like *Kṣīrasvāmin*, *Mallīnātha* and *Appayyadīkṣit* attested to its usefulness to every class of Sanskrit students (Rajan 2016).

The commentaries on *Amarakośa* are available in almost all Indian languages. Translations of the *Amarakośa* into Chinese, Tibetan, Italian, French, Mongolia, Burmese etc. have been recently found. It is difficult to provide the exact number of commentaries on *Amarakośa*, as many of them is not available. In the world of Sanskrit literature, a separate section is dedicated to the study of *Amarakośa* such as commentaries in Sanskrit and other languages, translations in other languages, other *kośas* on the basis of *Amarakośa*, etc. M.M Patkar in his book "History of Sanskrit Lexicography" mentions nearly 60 commentaries (Patkar, 1981: 172-174) on *Amarakośa* and also he tells that "Dr. Aufrecht records not less than forty commentaries on it in his "Catalogus Catalogorum" (Patkar, 1981: 19). There are more than forty commentaries on the *Amarakośa*.

Several well-verses Sanskrit commentaries emerged on *Amarakośa*. Some of these commentaries are

commented from some special point of view. For example, *Vyākhyāsudhā* is commented on the grammatical point of view. *Tīkāsarvasvam* gives more elaborated grammatical details than *Vyākhyāsudhā*. The commentaries of *Kṣīrasvāmin* and *Rāmāśramī* are supposed to be highly informative from the point of view of biological terms and for the present study.

### **AMARAKOŚA TRANSLATIONS IN FOREIGN LANGUAGES**

Chinese translation of *Amarakośa* is written by Guṇaratain 6<sup>th</sup>Century A.D. The Italian translation of *Amarakośa* is published in 1798. French translation by ALA *Loiseleur-Deslongchamps* is published at Paris in 1839-1845. Tibetan translation of *Amarakośa* was done by Kirticandra and *Grags-pargyal-mthsan* of *Yar-luns* at *Yam-bu*, the ancient capital of Nepal (Vogel, 1979) and it is published in 1912 (Ramanathan, 1971). Burmese *Amarakośa* was written (calligraphed) in 1938 by Guṇālāñkāra at the *Shwegu Hall*. Its photo-mechanical reprint is done by Lokesh Chandra, son of the most famous lexicographer Raghu Vira. He mentioned in the introduction of his book that his father has collected *Amarakośa* in different languages of Asia. From them, he reproduced the Tibetan rendering of *Amarakośa*, by Si-Tu the well-known grammarian of the 17<sup>th</sup>century (Chandra, 1984).

### **DISCUSSION**

#### **BOTANY**

Botany as has been proven had its dimension in the Indian classical literature, starting from Vedic texts. But it had never been delineated in a lexicon like *Amarakośa*. Lots of words relating to plants and tree species were listed in patches and even some of them well explained through their uses. But as a sourcebook for botany, we find the content very fascinating. But one has to never forget that many other sources existed prior to this work and is clearly shown in other chapters.

There is no direct reference in *Amarakośa* either to ecological principles or the effect of the environment on plants and animals. However, various physiographic features and basic classification of the land are provided (Rajan, 2016).

#### **Abiotic factors**

Abiotic factors of the environment such as rivers, mountains and such other aspects are mentioned in *Vārivarga*, *Bhūvarga*, *Puravarga* and *Śailavarga*. The

following rivers find a mention – Gaṅgā, Yamunā, Narmadā, Karatoyā, Bahuda, Śatadru, Vipaśā, Śone, Śarāvatī, Vetravatī, Candrabhaga, Sarasvatī, Godāvarī, Bhīmarathī, Kṛṣṇeṇī, Gautamī and Kāverī.

### Biotic factors

The Vārivarga mentions various types of water plants that grow in different regions. Various types of water lilies are mentioned- Saugandhikā – light red; Raktasandhyaka – red lily; Kumuda – white lily; Puṣkara, Rājīva – lotus; Pundarīka – white lotus. Besides, Algae are also mentioned with two names – Jalanīlī and Śaivala. Different types of places are mentioned where various plants grow. The Bhūvarga gives an account of places where plants of different types grow. These are - *Naḍvān, Naḍvala* - Place where reeds grow; *Kumudvā* - Place where lotuses grow; *Vetasvān-* Place where elephant grass grows; *Śādvala*-Place abounding in grasses (probably grassland); *paṅkila* - Place full of silt - muddy country; *Anūpa* - Place with plenty of water probably where hydrophytes grow and *Kaccha* - Swampy or marshy land.

There is also a mention of fields where irrigated (*nadīmāṭrka*) and non-irrigated - rain-fed - (*devamāṭrka*) crops are grown.

### Biodiversity

*Amarakośa* gives a vivid account of the flora and fauna that were available to *Amarakośa*. The description in *Amarakośa* is by no means a comprehensive one and cannot be taken as a true depiction of the total flora and fauna.

### Plant Biodiversity

*Amarakośa* includes water plants in *Vārivarga* while wild plants are listed with their synonyms in *Vanauṣadhi Varga*. Plants of commerce find a place in *Vaiśya Varga*. *Manuṣya Varga* includes herbs used in perfumery and cosmetics. *Vanauṣadhi Varga* totally includes about 300 plants with their synonyms.

### Botanical Terms Described In *Amarakośa*

The *Vanauṣadhibhivarga*, as well as *Vārivarga*, mention different plants and their parts. These are: *Nāla*– The stalk of the lotus flower; *Mṛṇāla, Bisa*– The tubular petioles of lotus; *Karahāṭa, Śiphākanda*– Rhizome of lotus; *Kiñjalka, Kesara*– Androecium (male organ); *Samvartikā, Navadala*– Leaf buds – young leaves; *Bijakosa, Varāṭaka*– The fruit of the lotus; *Praphulla, Utphulla, Samphulla, Vyākośa, Vikaca, Sphuta, Phulla, Vikasita* - Open flower; *Sthānu, Śāṅku*– The trunk of a tree where branches are removed; *Kṣupa*– Dwarf tree;

*Sthamba, Gulma*– Shrubs; *Vallī, Latā*– Creepers; *Vṛkṣa, Mahīruha, Śākhī, Viṭapī, Pādapa, Taru, Anokaha, Kuṭa, Śāla, Palāśī, Dru, Druma, Āgama*– Trees; *Prakāṇḍa, Skandha*– Shoot; *Śākhā, Latā*– Branches; *Skandhaśākhā, Śālā*– The main or principal branch of a tree; *Mūla, Budhna, Aṅghri*– Roots; *Śiphājaṭa*–Fasciculate roots; *Avaroha*– Prop roots (as in Banyan tree); *Śirogra, Śikhara*– Apex of the plant; *Sāra, Majjā*– Heartwood inclusive of pith; *Tvak, Valka, Valkala*– Bark, rind or periderm; *Patra, Palasa, Chadana, Dala, Parṇa, Chada*– Leaf; *Vallarā, Manjari*– A cluster, either of leaves or of flowers; *Pallava, Kisalaya*– A sprout (the term could be used for leaf bud); *Vistara, Vitapa*– Small branches and branchlets; *Sasya*– Fruit or grain; *Vṛṣṭa, Prasavabandhana*– Pedicel, petiole, peduncle, rachis; *Śalāṭu*– Unripe fruit; *Vāna*– Dispersed (withered) fruit; *Gucchaka, Stabaka*– Inflorescence; *Kuṇḍala, Mukula*–Floral bud; *Sumanasa, Puṣpa, Prasūna, Kusuma, Suma*– Flower; *Makaranda, Puṣparasa*– Nectar; *Parāga, Sumanoraja*– Pollen grains; *Kṣāraka, Jālaka*– Ovary; *Kalikā, Koraka*– Ovary immediately after fertilization; *Āsvattha, Vaiṇava, Plākṣa, Naiyagrodha, Aṅgudam, Bārhata*– Hypanthodium(Inflorescence cum fruit of fig plants).

### FOREST AND GARDEN TYPES

In the *Amarakośa*, classification of forests into small forests, *Aranya* etc. and large forests, *Mahāranya* etc. is given right in the beginning of *Vanauṣadhibhivarga*.

The cultivated gardens mentioned are: *Gṛihārāma, Niṣkuṭa*– Kitchen garden; *Ārāma, Upavana*– Public park; *Kṛtrimavan*– A grove with a thick growth of plants resembling a small forest; *Vṛkṣavāṭikā*– A pleasure grove; *Kṛidodyāna*– Royal garden; *Pramadavana*– Royal garden attached to harem.

### FLORA OF AMARAKOŚA

The different categories of plants that are revealed in the four Vargas viz., *Vārivarga*, *Vanauṣadhibhivarga*, *Manuṣyavarga* and *Vaiśyavarga*, are presented here: *Vārivarga* mentions various types of water plants, lotuses, lilies that grow in different regions are mentioned. They are *Saugandhikā* – light red; *Raktasandhyaka* – red lily; *Kumuda* – white lily; *Puṣkara, Rājīva* – lotus; *Pundarīka* – white lotus; *Indīvara, Kuvalaya* – *Nelumbo nucifera*; *Padma, Nalina, Pundarīka* – *Nymphaea nouchali*. Besides, Algae (a non-flowering and typically aquatic plant of a large group that includes the seaweeds and many single-celled forms) are also mentioned with two names – *Jalanīlī* and *Śaivala*.

Different types of places are mentioned where various plants grow. The *Bhūvarga* gives an account of places where plants of different types grow. These are - *Nādvān*, *Nādvala* – Place where reeds grow; *Kumudvā* – Place where lotuses grow; *Vetasvān* – Place where elephant grass grows; *Śādvala* - Place abounding in grasses (probably grassland); *Pāṇkila* – Place full of silt, muddy country; *Anūpa* – Place with plenty of water probably where hydrophytes grow and *Kaccha* – Swampy or marshy land. There is also a mention of fields where irrigated (*nadīmātryka*) and non-irrigated - rain-fed – (*devamātryka*) crops are grown.

*Vanausadhivarga* (wild plants): This Varga consists of a list of more than 220 plants. It is beyond the scope of this summary to list all of them. Dr. Heinrich von Stietencron provided an illustrative manual and descriptions of plants of *Vanausadhivarga* [<http://www.payer.de/amarakosa/amara206.html>]. In general, the plants mentioned are all wild types except for a few like coconut, date palm, areca etc. In the beginning, trees are mentioned followed by shrubs, herbs, creepers and then lastly grasses. Few important and familiar trees are mentioned here: *Bodhidruma*, *Caladala*, *Pippala*, *Kuñjarāśana*, *Aśvattha* – Sacred fig; *Cirabilva*, *Naktamāla*, *Karaja*, *Karañjake* – Pongamia, *Āmra*, *cūta*, *Rasāla* – Mango; *Picchilā*, *Pūraṇī*, *Mocā*, *Cirāyu*, *Śālmali* – Silk cotton; *Sāla*, *Sarja*, *Aśvakarṇa*, *Samvara* – Sal; *Śriparṇikā*, *Kumudikā*, *Kumbī*, *Kaiṭarya*, *Kaṭphala* – Teak; *Udumbara*, *Jantuphala*, *yajñāṅgo*, *Hemadugdhaka* – Wild fig; *Saptaparna*, *Viśālatvak*, *Śārada*, *Viṣamacchada* – Dita tree. Some of the shrubs and herbs are: *Sinduvāra*, *Indrasurasa*, *Nirguṇḍi*, *Indrāṇikā* – Chaste plant; *Sumanā*, *Mālatī*, *Jāti* – Jasmine; *Unmatta*, *Kitava*, *Dhūrta*, *Dhattūra* – Thorn apple; *Kanakāhvaya*, *Mātula*, *Madana* – Poppy; *Atmaguptā*, *Jaha*, *Vyañḍa*, *Kaṇḍūrā*, *Prāvṛṣāyanī*, *Rṣyaproktā*, *Śukāsimbi*, *Kapikacchu*, *Markaṭī* – Cowage plant. Different types of grasses like *Sugandhitējana* – Vetiveria; *Kuśa* – sacrificial grass are mentioned. *Vēṇu* (Bamboo) also finds a place among the grasses. Coconut, Date palm, Areca nut etc. are also included along with the grasses and they are considered ‘*Trnadruma*’ meaning tree-like grasses. In the class of *Manuṣyavarga*, plants that are generally used for incensing, perfumery and cosmetics are listed. They are: *Lavaṅga* (cloves), *Agaru* (aloe wood), *Karpūra* (camphor), *Srigandha* (sandal powder/paste), *Jatiphala* (nutmeg) etc. In the *Vaiśyavarga*, plants generally of commercial value are

included. The list of plants consists of different types of cereals, pluses, spices, condiments and oil yielding plants. Some of these are: Cereals – *Vṛīhi* (Paddy), *Yava* (Barley), *Kodo* (Millet); Pulses – *Tuvarikā* (Tur dal), *Kulmaṣa* (Cowpea), *Māṣa* (Black gram), and *Mudgara* (Green gram); the spicesare: *Marīca*(Pepper), *Jīraka* (Cumins), *Tintriṇī* – (Tamarind), *Kustumbarī* (Coriander), *Sṛngabera* (Ginger), and *Haridra* (Turmeric); Oil yielding plants are: *Harenū*(Peanut), *Jaltila*(Niger seed), *Tila* (Sesame), and *Sarṣapa* (Mustard).

#### ETYMOLOGY AND PLANT CHARACTERS

Here below are few examples in the category of etymology and plant characters. For instance the tree *Alstoniascholaris*of the family Apocynaceae has the following names: *Saptaparnī*- Seven leaves (leaflets); *Viśālatvak*- Wide and thick bark; *Śārada*-Flowers during Śaradṛtu (approximately during October and November); *Viṣamacchada* - The leaflets are unequal in size. The dissection into leaflets is unequal.

#### *Ficus glomerata*

Country Fig-It belongs to the family Moraceae has the following names:*Udumbara* - has a bark or skin that petals off; *Jantuphala*- with flies inside the fruit; *yajñāṅgo*-The tree of branches form a part in the rituals in the sacrificial fire (*Yajña*); *Hemadugdhaka*- The tree on wounding yields golden coloured latex.

#### *Ficus religiosa*

*Bodhidruma*- A tree associated with *bodhisattva*, *Caladala*- leaves oscillate even in slight breeze; *Pippala*-found inland *Pippala*; *Kunjarāśana*- elephant food; *Aśvat'ha* - Horses tied to the tree (like a stable).

#### *Bauhinia galpini*

*Kovidāra*- spreads in-ground; *Camarika*- copper coloured flower; *Yugapatraka*- twin leaflets.

#### *Cassia fistula*

*Āragvadha*- helps to remove enemies; *Rajavṛkṣa*- the king among trees; *Samyaka* – like śami tree because of fruit type; *Caturaṅgula*- four-finger long fruits.

#### Classification of plants based on the sex organs

The classification of plants into flowering and non-flowering indicates the emphasis laid on reproductive organs in the classification of plants. It is this system i.e., classification based on reproductive organs, that is followed even now in modern botany.

#### Parasites and Epiphytes

According to Seal (1915), *vṛkṣādanī* and *vṛkṣaruhā* represent parasites and epiphytes, respectively. This

interpretation seems to be correct in view of the commentary of Kṣīrasvāmin (Oka, 1913). Commenting on *vṛkṣādanī*, Kṣīrasvāmin observes—*vṛkṣamapihaṁtiiti vṛkṣādanī* meaning that which destroys the tree of origin. This surely must be a parasite. While *vṛkṣaruha* according to Kṣīrasvāmin (*vṛkṣerōhatiti vṛkṣaruha*) is that which grows on the tree - meaning an epiphyte.

### **Ecological knowledge**

The mention of different places like *Anupa*, *Pankila*, betrays a primitive knowledge of the importance given to the surroundings in the study of plants (Rajan, 2016).

### **CONCLUSIONS**

The *Amarakośa* is by no means the oldest Sanskrit lexicon, though it is the oldest available one. As many commentators point out Amarasimha has borrowed information from the pre-existing lexicons. Unfortunately, all of them (old lexicons) seem to be extinct now. The list of plants mentioned in *Amarakośa* is not comprehensive, in the sense, it should not be taken as an indicator of the plants known to the people at that time. The lexicon includes only a selected few. From the modern botanical standpoint, the study of *Amarakośa* helps us to arrive at the following conclusions:

Classifying, identifying, comparing and contrasting the plants based on their reproductive characteristics have a long tradition in ancient Sanskrit literature and are being followed even now in modern botany. Etymological analysis of plant names indicates that they are based on different characters of a plant and perhaps were in use in different localities. The various plant parts have been given exact and short scientific names. One of the present difficulties in Indian education, in switching over to Indian languages is said to be the paucity of exact and precise scientific terms. A perusal of *Amarakośa* will clearly help us to collect proper scientific terminology with reference to plants. The precision with which the scientific terms are employed in *Amarakośa* to describe different parts of a plant becomes very evident. With regard to the nomenclature and taxonomic aspects, as is true of a lexicon, *Amarakośa* collects all the synonyms for a plant and mentions them as referring to a single plant.

As is true of a lexicon, *Amarakośa* collects all the synonyms for a plant and mentions them as referring to a single plant. Etymological analysis of these names indicates that they are based on different characters of the plant and perhaps were in use in different localities.

The collection of all these names would in a way serve as a brief taxonomic description of a plant. The different names on etymological scrutiny not surprisingly reveal a close degree of understanding of the plant characters and are indicative of the observational capacity of botanists of that time.

### **ACKNOWLEDGEMENTS**

The author would like to thank Dr. Calyam L. Prabhakar, Director, Vedaadhyayana Kendra (NVAK), Bangalore, for going through the manuscript, suggestions and for encouragement. He also would like to thank Brahmasri Vedam Venkata Rama Sastri for his inspiration. Thanks are due to Mr. Anantasri Boddupalli for his help in various ways during the preparation of the manuscript.

### **REFERENCES**

- Balasubramanya, N. (1970). *Amarasimhana Amarakośa-Prasāraṅga*. Mysore: Mysore University, Karnataka.
- Chandra, Lokesh. (1984). *Amarakosha in Burmese*. Sata-pitaka series, New Delhi: Sharada Rani.
- Katre, SumitraMangesh. (1948). *Amara's Contribution to Indian Lexicography*, Vikrama volume, Ujjain: ScindiaOriental Society, 199-212.
- Oka, Krsnaji Govinda. (1913). *The Nāmalingānuśāsana(Amarakosha) of Amarasimha with the Commentary of Kṣiraswamin*, Poona: Law Printing Press.
- Patkar, Madhuка rMangesh. (1980). *History of Sanskrit Lexicography*, New Delhi: MunshiramManoharlal Publishers Pvt. Ltd.
- Ramanathan, A.A. (1971). *Amarakosa with the unpublished south Indian commentaries, Amarapadavivrti of lingayyasurin and the Amarapadapaarijata of Mallinatha critically edited with introduction*, Adayar: The Adayar library and Research Center, Introduction, p.xvi, Vol.1 & 2.
- Rajan, Sundara S. (2016). *Amarakośa - A Biological Assessment*. *Indian Journal of History of Science* 51(3), 548-555.
- Seal, Brajendranath. 1915. *The Positive Sciences of the Ancient Hindus*, London: Longmans, Green and Co. (reprinted by Motilal Brothers, New Delhi).
- Vogel, Claus. (1979). *Indian Lexicography*. In: *A History of Indian Literature*, Edited by Jan Gonda, Vol. 4 Fasc. 4. Otto Harrassowitz, Wiesbaden, 312-315.

<sup>1</sup> lityamarasimhakṛtaunāmalimgānuśāsanēsvarādikāṇḍaḥsāṅgaēvasamarthitah ||

<sup>2</sup> uktamsvarvyōmadikkāladhīśabdādisanātyakam | pātālabhōginarakaṁvāricaisāṁcasamgatam || 1-10-44 a.k.

<sup>3</sup> lvargāḥprthvīpurakṣmābrdvanausadhimrgadibhiḥ | nr̥brahmakṣatravītśūdraissaṅgōpāṁgairihōditā ||- 2-1-1 a.k.

<sup>4</sup> |virōṣyanidhnaussaṅkīrṇairnānārtharavyayairapi | lingādisaṅgrahairvargāḥsāmānyēvargasamstrayāḥ || - 3-1-1 a.k.

**Publisher's note:** EScience Press remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2020.