

Classification of Flowers as Gleaned from Ancient Indian Literature and Culture

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Abstract

Nature's diversity has fascinated humans from the ancient times. Plant and Animal diversity constitutes the foundation for sustainable livelihoods and happiness. Among plants, it is the flower that is the most attractive part which bewitches with its beautiful harmony, colors and fragrance, and thus symbolizing the blossoming of Universal Consciousness and the smile of spirit hidden in Nature. Poets of ancient India have described the glory and beauty of these flowers in their works. As the six seasons constitute the year, different flowers display their beauty by blooming at different times. Importance of flowers was recognized since ancient times and was classified based on many factors. These modes of classification have been discussed from Vedic period to the Post-Vedic texts and are presented in this paper. Flowers have therapeutic uses, religious uses and other general uses. Several texts are devoted only to them in the epics, Ayurvedic texts as well as those dealing with flowers.

Ancient Indian sages had commendable knowledge of the Plant kingdom of India. They had an intimate knowledge of habitat, form, color, varieties, fragrances, and uses of different flowers. People adored these flowers and also used them for worshipping Gods. They were also used in various rituals, ceremonies, feasts and festivals that Indian literature is replete with their use and properties (Kashyap, 2001). The Art of making garlands using flowers was one of the 64 arts that enhanced the beauty of the wearer or a deity (Sheshadri, 2014). The present paper brings out a mode of classification of flowers as gleaned from ancient Indian literature.

Flowers in Vedic and Epic texts

Even as early as *Rigveda* (RV) (Arya and Joshi, 2005), several flowers are mentioned. RV [10.84.3] mentions that *Ashvinikumaras* wore a garland of lotus flowers. The Goddess *Sri* is mentioned as being born out of a lotus (*Padmasambhava*), being lotus eyed (*Padmaakshi*) and having color of lotus (*Padminivarna*). Several flowers such as *Plaksha* (fig tree), *Kasturi* (wild turmeric flowers), *Brahmi* (Indian pennywort), *Ajashringi* (Indian Ash tree) are mentioned in the *Atharvaveda* (Joshi, 2004). It also refers to medicinal and cosmetic

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Sage *Valmiki's Ramayana* (Mudholakara, 1991) mentions about beauty of flowers in various groves and forests especially in the *Aranya Kanda*. Flowering trees like *Lodhra* (Loch tree), *Nipa* (Burflower tree), and *Tilaka* (Red bead tree) abound in the tropical deciduous forests of *Chitrakuta*. The hermitage of sage *Sutikshna* had rafts made of flowers floating in river *Mandakini*. *Panchavati* was located amidst a belt of various flowering trees that bloomed all year around. The forests of *Panchavati* had various kinds of lotuses,

Champaka (Champak tree), *Ashoka* (Ashok tree), *Nipa* (Burflower tree) and other flowering trees that have been discussed in literature (Krishnamurthy, 1996). Several flowers like *Malati* (Royal Jasmine), *Mallika* (Sambac Jasmine), *Vasanti* (Butter ginger lily), *Madhavi* (Helicopter flower), *Champaka* (Champak tree), *Kimshuka* (Bastard teak), *Ankola* (Sage leaved Alangium), *Kuranta* (Porcupine flower), *Muchukunda* (Maple leaf Bayur tree), *Kovidara* (Mountain Ebony), and *Paribhadra* (Indian coral tree) bloomed in the dry and moist deciduous forests of *Kishkinda*. The *Pampa* lake was filled with lotuses. The plant diversity of these forests of *Dandakaranya*, *Kishkinda* and *Lanka* has been studied by scholars attempting to learn the flora described by Sage Valmiki (Amirthalingam and Sudhakar, 2013). The descriptions of *Ashokavana* in the *Sundarakanda* of the text also have details of various flowers. Various varieties of *Ashoka* (Ashok tree) of different colors, *Champaka* (Champak tree), *Chandana* (Sandalwood), *Kalpavriksha* (Silk cotton tree), lotuses, and lilies abound in these exquisite evergreen forests of *Lanka*. The hermitage of Sage *Matanga* abounded in various flowers which were never plucked and even if plucked never fade and remain fresh always.

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Sage *Vyasa's Mahabharata* (Mishra, 1988) is also no less in its description of Flora. Heavenly flowers were abounding in the mountain ranges of *Himalaya*, *Gandhamadana* and *Mandara*. The *Vana Parva* of the text describes several flowers like *Ashoka*, *Amra* (Mango tree flowers), *Indivara* (Blue lotus), *Utpala* (Indian Blue lotus), *Kamala* (Indian lotus), *Karnikara* (Maple leaved Bayur tree), *Kahlara* (White water lily), *Kunda* (Oleander), *Kumuda* (Blue water lily), *Kurabaka* (Red or yellow Amaranth), *Kokanada* (Red water lily), *Kovidara* (Mountain Ebony), *Kharjura* (Silver date palm), *Champaka* (Champak tree), *Dadima* (Pomegranate), *Tamarasa* (lotus), *Nalini* (Lotus), and *Nipa* (Burflower tree) that bloomed in *Gandhamadana* Mountain ranges. It also states how *Damayanti* went to search *Nala* in *Ashokavana* abounding in flowers. Heavenly lotuses (*Saugandhika*) have been mentioned along with different varieties of lotuses in the areas surrounding *Kailasa* Mountains close to residence of *Kubera*. The *Mahabharata* also mentions the flora of *Dvaitavana*, *Kamyakavana*, those at the hermitages of Sage *Rishyashringa*, Sage *Agastya*, *Himalayas* and so on that have been discussed in literature (Mehendale, 1986).

Flowers in *Purina's* and *Kavyas*

The *Purina's* have a classification of

The Vana Parva (Mahabharata) of the text describes several flowers like Ashoka, and Amra (Mango tree flowers).

flowers based on the deity being worshipped. The *Padma Purna* (Desponded, 1992) states that *Dura* (Bermuda grass), *Rambha* (Plantain flowers), *Bilva* (Bael), *Tulsi* (Holy Basil), White and Red flowers are dear to Lord *Ganapati*. *Malati* (Royal Jasmine), *Kunda* (Oleander), *Mandara* (Indian Coral tree), and *Kumuda* (Blue Water lily) are dear to Goddess *Sarasvati*. The largest list of flowers enlisted by *Puranas* are those for worshipping Lord *Vishnu* as stated in *Skanda Purana* (II.5.7.17) (Bhatt, 1993), *Vamana Purana* (68.12–14) (Gupta, 1968; Bimali and Joshi, 2005), *Agni Purana* (202.12 –13) (Joshi, 2001) and *Narada Purana* (XIII.97) (Tagare and Shastri, 1998). The *Shiva Purana* (5.51.48) (Shastri, 1970) quotes a large list of flowers used to worship Lord *Shiva*. Several *Purina's* also list the myth and legends concerning flowers. The *Kalika Purana* (Shastri, 1991) describes several flowers used in worship of Goddess *Kali* and Her forms. The *Simhasiddhantasindu* of *Gosvami Shri Shivananda Bhatt* (Phatasimha, 1970), a work on various aspects of worship culled from the *Purina's*, *Tantras* and other works quotes certain *Puranas* on classification of flowers. It quotes the *Bhavishya Purana* on certain flowers that are to be used for worshipping all Gods, rejecting those that are not used. The text also quotes *Narasimha Purana* and *Garuda Purana* on use of flowers for worshipping Lord *Vishnu*. The *Linga Purana* and *Bhavishya Puranas* are quoted in mentioning the flowers to be

used for worshipping Lord *Shiva* while the *Devi Purana* is quoted for worship of *Devi Durga*. Flowers that are not to be used for any worship are quoted from *Vishnudharmottara Purana*, *Brihannaaradiya Purana*, and *Skandha Puranas*.

Many poets recognize several types of flowers and their uses. They distinguish the varieties, colors and time of blooming. *Kalidasa* in his various works denotes several flowers. His *Abhijnana Shakuntala* (Kale, 2010) speaks of Sage *Kanva's* hermitage abounding in several varieties of flowers. The *Shireesha* flower, jasmine and several varieties of lotuses are mentioned in his works. About 30 different words based on varieties of lotuses are used by him such as :

- (a) Blue lotus – *Indivara, Kuvalaya, Neelotpala, Pushkara, Rajeeva, Utpala, Vanaja*
- (b) Red lotus – *Aravinda, Kokanaada, Taamarasa*
- (c) White lotus—*Pundareeka*
- (d) Golden colored lotus—*Kanakakamala*

Several species of flowers blooming in different seasons are described in *Kalidasa's Ritusamhara* (Kale, 2002). *Magha* has beautifully described the blooming of *Kamala* and closing of *Kumuda* at sunrise simultaneously in his work *Shishupalavadha* (II.64) (Shastri, 2013). *Rajashekhara* in his work

'*Karpooramajari*' discusses about the blossoming of different flowers while experiencing different perceptions (Durgaprasad and Parab, 1887). His other work '*Kavya Mimamsa*' [Chap.18] (Mishra, 1934) classifies flowers according to their usage.

Shobhaandhogandharasaih
phalaarchanaabhyaam cha / Shodaa
darshitametata syaatsaptamamanupayogi//

'They are classified as decorative flowers, those for food, scent, honey, fruit, for worship, and those that are not used'.

The commentary by Madhusudhan Mishra gives examples for each of them such as *Bandhuka* [(Midday flower) for decoration], *Sthalakamala* [(Changeable rose) as food], *Bakula* (Indian medlar), *Malati* [(Royal jasmine) for scent], *Shireesha* [(East Indian walnut) for honey], *Kharjoora* (Silver date palm), *Panasa* (Jackfruit), *Jambu* (Black berry), *Amra* (Mango), *Priyala* [(Chironjia tree) for fruits], *Navamallika* [(Shrubby Jasmine) for worship], and other flowers that are not used. *Bana's Kadambari* (Shastri, 1961) is also rich in description of various flowers like *Parijata* (Night Jasmine). King Harsha in his *Naishadiyacharitam* speaks of several flowers like Lotus, *Kuvalaya* (Fragrant water lily), *Champak* (Champak tree) and so on that adorned hands and other parts of Queen *Damayanti* (Shastri, 1984)

Classification of flowers in Agamas and Tantras

A vivid description of various flowers and their classification is given in *Pancharatra* and *Vaikhanasa Agamas*. They specify special combinations of flowers that are to be used for worship and those that are to be discarded. The *Samurtarchanadhikara* (Atri Samhita) (Bhattacharya *et al.*, 2001) in its 44th chapter classifies flowers as –

*Daivikam maanusham braahmam
patrikam bhautikam tathaa// Yaaksham
gaandharvikam tadvaadaasuram
raakshasam tathaa/ Paishaacham
mishrakam chaapi pushpamevam
prakeertitam//* – [XLIV.1–2]

“Flowers are classified as *Daiva*, *Maanusha*, *Braahma*, *Patrika* (pertaining to *Pitrs* or manes), *Bhautika* (pertaining to *Bhutas*), *Yaksha*, *Gandharva*, *Asura*, *Rakshasa*, *Pisacha*, and *Mishra* varieties”.

The description of these varieties is stated as–

*Utpaatitaani pushpaani chaasuraaneeti
lakshayet/ haritaaharitaanyeva daivikaani
vidurbudhaah/ Sakantakaanaam
vrikshaanaam pushpaani parivarjayet/
proktaani raakshasaaneeti tesaam
graahyaani poojane// Chinnaaram
bhinnamastishkam yaakshikam
parikeertitam/ ekaratroshitam pushpam
gandharvaanaam prakeertitam//
griheetaparischeernam cha bhutaanaam
cha vidurbudhaah// narenaashuchina
sprishtam chandaalaih pulkasaistathaa//*

*vidyaadharaanaam tadvidyaadarchitang
am vidurbudhaah/*

“Flowers that are torn are to be regarded as *Asura* class, those that are fresh and new are *Daiva*, those with thorns on trees are to be discarded for worship as they belong to *Rakshasa* class, those that are ugly or having holes or being cut are *Yaksha* class, those that look burnt or not fresh when kept for a night are *Gandharva* class, those that fade away when plucked belong to *Bhuta* class, those that are touched by men who are not clean or by *Chandalas* are termed to belong to *Vidyadhara* class.”

The list is also upheld by *Vaikhanasiya Kashyapa Jnaanakanda* [Chp. 72]. The *Kashyapa Jnaanakanda* (Parthasarathi, 1998) also enlists the flowers that are dear to Lord *Vishnu*, *Shri* and *Bhu Devi*, *Brahma*, *Rudha*, *Surya*, *Mahakali*. A list of flowers that are also not to be used for worship is given by the text. The classification of flowers given by *Samurtarchanadhikara* is also upheld by it. In fact the *Kashyapa Jnaanakanda* describes each of them as follows.

*shvetapeetakrishnaraktacaturvarnaani
trivarnaani ca daivikaanyuktamanutt
amani/*

*dvivarnaani madhyamaani/ ekava
rnaanyadhamaani/*

*raatrau saphullaani tadaahni saady
askaani tatkaalotphullaani arcane
shreshtaani/* [Chap. 72]

“Flowers that are torn are to be regarded as Asura class, those that are fresh and new are Daiva, those with thorns on trees are to be discarded for worship as they belong to Rakshasa class, those that are ugly or having holes or being cut are Yaksha class, those that look burnt or not fresh when kept for a night are Gandharva class, those that fade away when plucked belong to Bhuta class, those that are touched by men who are not clean or by Chandalas are termed to belong to Vidyadhara class”.

Those flowers that are white, yellow, bluish (dark hued) and red and those flowers that possess either four or three of these colors are *Daiva* class and considered to be best, those that are of two colors are medium and those that are of single color are considered to be of low class. Those that bloom at night and spread out in daytime or that bloom quickly are considered to be best for worship”.

The description of *Daiva*, *Asura*, *Gandharva* and other classes of flowers are identical to the *Atri Samhita*. The *Vaikhaanasa Khiladhikara* (Parthasarathi and Bhattacharya, 1997) of sage *Bhrigu* also gives a list of flowers that are to be used for worship of deities and those that are to be discarded [Chap. 33]. The auspicious and inauspicious times to be noted for plucking of flowers are also given

by the text [XXXII.38–40] and quotes the views of Sage *Mareechi* on conducting of *Pushpayaga* (sacrifice using flowers). The *Padma Samhita* (Sampath and Padmanabhan, 1974; 1982) states that one must stand before the *Pushpavana* (forests where flowers grow) with folded hands offering his salutations to the deity of the forest and then proceed to collect flowers. It adds that one must not collect flowers that are fallen and withered, black in color, dry, those that are torn, bought in a tied cloth, touched by evil people, those that are already smelt, those bereft of scent, those touched by feet, and those that are yet unblossomed (*Charya Pada*, Chap. XII). Further the text enumerates seven prominent flowers of *Kalpavriksha* (Silk cotton tree), *Parijata* (Night jasmine), *Harichandana* (Red sandalwood), *Santanavriksha* (Progeny tree), *Mandara* (*Indian Coral tree*), *Saughandhika* (Heavenly lotus), and *Palasha* (Flame of the forest) that give more results of worship than ordinary flowers and each of them gives more than the following in the list. A similar aspect regarding different varieties of lotuses and lilies is also mentioned.

The *Kamika Agama* (Sabharatnam, 2015), a principle *Shaiva Agama* source for worship, temple construction and rituals related to Lord *Shiva* has some information about flowers. A long list of flowers suitable for worshipping Lord *Shiva* is given by the text [*Purvapaada, Kriyaapaada*, Chapter V – *Archanavidhi*]. It states that flowers rendered unsuitable by hairs, worms and insects, those that have

withered, dried, fallen to the ground and which are damaged should be abandoned. If suitable flowers are not available, leaves could be used or they could be supplemented by fruits, grass, herbs in their absence. Flowers made of gold, one of the nine gems (*Navaratnas*) or diamonds give greater fruit of worship when they are used. The text further states that one should worship the Lord with flowers collected from his own garden or those blossomed in the forest. He should not worship with the flowers and other materials brought for money –

Aatmaaraamodbhavaih pushpaih athava vanasambhavaih/

Dravyakreetaih prasoonadyaiah archayed anyathaa na cha //

– [Kriyaapaada, V.65]

The *Meru Tantra* [Prakasha III] (Shastri, 2014) speaks about another classification of flowers as –

Pushpam panchavidham proktam param cha aparameva cha/ Uttamam madhyamam hinam teshaam vakshyaami lakshanam//

Param suvarnapushpam syaat tat sadaa yogyamevahi/ Abhyangapoorvakam deyamarchanaarham punarbhavet//

Aparam raajatam pushpam taamrajam cha parikeertitam/ Sadaa yogyam chedamapi trivarsham chaikavarshakam//

Tulasi ketaki padma karaveeram cha maalati/

Panchaitaanyuttamaanyaahurmadhyama ani tathaa dasha/

Mallikaakundamandaaratagaraarjunaki mshukaah/ Paarijaatamashokam cha bilvam champakameva cha//

“Flowers are classified into five types namely – *Para*, *Apara*, *Uttama*, *Madhyama*, and *Adhama*. Golden flowers belong to *Para* class and can be used before bath to the deity as well as for worship. Silver and copper flowers belong to *Apara* class and can be used one or three years. *Tulsi* (holy Basil), *Ketaki* (Fragrant Screw Pine), *Padma* (Lotus), *Karaveera* (Indian Oleander), and *Malati* (Royal Jasmine) belong to *Uttama* class. Those of *Madhyama* class are ten in number namely *Mallika*, *Kunda*, *Mandara*, *Tagara*, *Arjuna*, *Kimshuka*, *Parijata*, *Ashoka*, *Bilva*, and *Champaka*. Those that are leaves or aquatic flowers are considered to be *Adhama*”

The *Mundamala Tantra* [Patala IX] (Rai, 2010) enlists several flowers used in worship of Goddess *Parvati*. The *Simhasiddhanta Sindhu* (Phatasimha, 1970) also quotes several *Tantras* on flowers. Of these the classification of flowers is mentioned by quoting the '*Mantratantraprakasha*' similar to the *Meru Tantra* as below:

Pushpam panchavidham proktam munibhirnaradaadibhih/ paraparottamam chaiva madhyamam cha tathaadhamam//

sauvarnam paramityuktamaparam chitravastrajam/

*Vrikshagulmalataapushpamuttamam
parikeertitam//*

*adhamam patratoyaadi madhyamam tu
phalatakam/ utsrushtam na
kriyaayogyam sadaa yogye paraapare//*

– *Simhasiddhanta Sindhu* [IV.10–12].

“The Sages like *Narada* and others have spoken of flowers as being of five classes namely *Para*, *Apara*, *Uttama*, *Madhyama*, and *Adhama*. Golden flowers belong to *Para* class, those of multicolored cloth (made artificially) belong to *Apara* class, those that grow on trees, creepers and climbers are best (*Uttama*), Those that bring about fruits (later) are medium (*Madhyama*) class, and those that are leaves and grow in water bodies are of low (*Adhama*) class.”

In case of worship of *Durga*, the list of flowers to be used is quoted from several *Puranas*. The *Yogini Tantra* is quoted mentioning the flowers not to be used for worship of *Mahalakshmi* while the *Varahi Tantra*, *Kulaavali Tantra* are quoted in context of flowers that are to be discarded and not used in worship of Goddess *Tripura*. The *Jnanamala Tantra* is quoted for flowers used in worshipping Lord *Vishnu*. Likewise the *Jnanarava Tantra* is also quoted for its views on flowers that are not used in worship. The *Brihat Nila Tantra* [II.71–81] (Kak and Shastri, 1938) also describes a list of flowers used in the worship of Goddess in her manifest forms. It also mentions about *Vajrapushpa* (Diamond flowers), *Suvarnapushpa*

(Golden flowers), *Kulapushpa* (those belonging to particular class) in various sections. Flowers (*pushpa*) has a similar meaning in Sanskrit to English, and are taken by some texts like the *Matrikabhedha Tantra*, the *Mahakalasanghita* and other texts, to refer to menstrual blood. These are classified in different ways, depending on age and the qualifications of a *Shakti*. The *Matrikabhedha Tantra* (Magee, 2011) [Chapter XII] upholds 1000 Golden flowers as being superior than a broken *Bilva* leaf offered to worship of Lord *Shiva*. Several *Tantric* texts upheld three aspects of the Goddess (*Shakti*) being *Para Vidya*, *Apara Vidya* and *Parapara Vidya*. Likewise the *mantras* used to propitiate the divine form of Goddess are also classified as *Uttama*, *Madhyama*, and *Adhama*. Based on this aspect probably a five-fold classification developed with Flowers made of gold and jewels (*Para class*), those of silver or copper or cut pieces of variegated cloth (according to some texts) (*Apara class*), and other three varieties as mentioned above.

The *Ishanashivagurudevapaddhati* [ISGP] (Shastri, 1990) is a compendium of encyclopedic nature based on *Shaiva Agamas* and other *Tantric* works

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composed by Kerala author *Ishanashiva* dated to 12th c. AD. The text is divided into four parts in 119 chapters. It mentions briefly of a special classification of flowers not traced in other texts. Flowers are classified firstly into three classes named *Agneya*, *Saumya* (related to Soma), and *Saumyaagneya*. Further they are classified based on the three *Gunas* (predominant characters) of Indian philosophy namely *Sattvika*, *Raajasika* and *Taamasika* [ISGP, *Saamanyapaada, Section on Flowers*, vv.59–61]. The text states that flowers that are white are *Sattvika*, those that are reddish belong to *Raajasika*, while those that are dark hued are *Taamasika*. Flowers that are yellow (*Raajasattva*) and black or dark hued (*Tamoraja*) are also mentioned indicating a combination of *Gunas*. A long list of flowers that are suited for worship of *Shaiva*, *Shakta*, and *Vaishnava* rituals is given. The text also states that one must reject flowers bereft of fragrance, touched by impure men, those that have been stolen from somewhere, that have marks of nails or worms, those that are covered by spider webs around them, that have been already worn on head of someone, those that have faded and are old [*Saamanyapaada, Section on flowers*, vv.67].

Flowers in some Post–Vedic texts

Several Post Vedic texts also offer certain details of classification of flowers. The *Brihat Samhita* of *Varahamihira* (Bhat, 1991), dated to about 6th c. AD devotes a chapter on *Kusumalatadhyaya*. Works of medicine provide various information regarding curing, healing and therapeutic

applications of flowers (Kashyap, 2001). These include *Sushruta Samhita*, *Charaka Samhita*, *Bhela Samhita*, *Ayurveda Saukhya of Todaranda*, and *Ashtangahridaya* of *Vagbhata*. The *Koshas* and *Nighantus* also offer certain classification of flowers. The *Rajanighantu* (Tripathi, 1998) classifies flowers into two types namely,

Praphullam meelitam cheti dvididham pushpamishyate||

Those that are fully opened or expanded (noted by synonyms such as *Smita*, *Vinidra*, *Unnidra*, *Vikasita*, *Phulla* and so on) and those that are closed or unblown (noted by synonyms such as *Sanidra*, *Supta*, *Meelita* and so on).

The *Madanaparijata* as quoted by text of *Simhasiddhantasindhu* mentions a list of flowers that are used in worship of Lord *Vishnu*. *Bharata's Natyashastra* (Kavi, 1956) also mentions several applications of flowers in rituals connected with dance, gestures and so on. Sage *Parashara* in his *Vrikshayurveda* (Sircar and Sircar, 1996) classifies flowers based on various factors. They are mentioned as below.

Based on stem. Flowers that develop singly or in clusters at leaf axil are *Kuksipusha*. Those borne singly or in clusters on stem are *Kandapushpa*. Those borne on inflorescence at stem terminal are *Vallari pushpa* [V.44–46].

Tatraadhishitaaanabhedena pushpantu trividham vidyaat/

*yathaa kukshipushpancha
kaandapushpancha vallaripushpancheti//*

Based on sterility. Flowers having presence of ovary are called sterile flowers [*Saphala*]. Those having absence of ovary are sterile flowers [*Nishphala*].

Based on blossoming. Those flowers in which stamens protrude out with opening of petals are *Vyakta* (open) flowers. Those that are closed with stamens in corolla tube and not visible are *Avyakta* (closed) flowers.

Based on dominating influence of Sun or Moon. Flowers blooming at night when Moon has its influence are called *Chandraakanta pushpa*. Flowers which bloom during day when sun dominates are called *Ravikaanta pushpa*.

Based on petals and stamens. Flowers are classified into *Samaganiya pushpa* (Isomerous– having equal numbers of petals and stamens) and *Vishamaganiya* [Heteromerous having unequal number of petals and stamens].

Based on position of ovary (on the thalamus). Flowers are classified into four types on this basis. They are *Tundamandala* (Hypogynous) [petals and stamens below the ovary], *Kumbha Mandala* (Epigynous) [petals, stamens above ovary], *Tungamandala* [Perigynous] [petals, sepals, stamens on circular disc like thalamus with ovary fused with it] and *Vaatyamandala* [petals, stamens united forming a column round the style].

Based on blooming. If they bloom throughout the year they are called *Sadaa pushpa* and if it blooms at particular time of a year they are called *Ritu pushpa* (seasonal flowers)

Based on petal arrangements. If petals are free from another it is called *Muktadala* (polypetalous) and when they are united it is termed *Yuktadala* [gamopetalous]. If petals are arranged embracing each other it is termed *Sansprishtadala* and if petals are separate from one another it is called *Sansphutadala*.

Another Ayurvedic text namely the '*Kalyana Karakam*' (Doshi, 1940) of *Ugradityacharya* quotes a work '*Pushpayurveda*' that prescribes preparation of *Rasayana* medicines with 18000 kinds of flowers. Jain *Munis* stand in forefront as pioneers of floral therapy [*Pushpayurveda*]. One such text by *Samantabhadrasvami* has been quoted by *Ugradityacharya*. Likewise the encyclopedic cryptographic text '*Siribhoovalaya*' (Shastri, 2003, 2006) by *Kumudenu Muni* a Jain author of Karnataka in Kannada numerals has extensive details of *Pushpayurveda*. In the seventh chapter, the text mentions 24 flowers used for *Rasasiddhi*. '*Siribhoovalaya*' [Chap. 9 and Chap.14] also deals on *Pushpayurveda*. The text [Chap.14] refers to *Pushpayurveda* being developed by *Jinadatta*, *Devendra Yati*, *Amoghavarsha* (the king), and *Samantabhadra*. Referring to

Samantabhadra's text on *Pushpayurveda*, *Kumudendu* states that based on these flowers, *Rasasiddhi* was achieved and therefore terms it as '*Ahimsa Ayurveda*'. He gives a long line of teachers including the previous *Teerthankaras* who propagated *Pushpayurveda*.

King *Bhoja* of *Dhara* in his excellent treatise '*Charucharya*' (Shukla, 2000) dated to 11th c. AD mentions several kinds of flowers to be used during different seasons throughout the year. He also mentions the blossoming and fluorescence period of different flowers, their medicinal properties and thus upholds the benefits of *Pushpayurveda*. The *Kshemakutuhalam* (Lakshmithathachar and Alwar, 2009) of *Kshemasharma*, a work on dietetics and well-being dated to 16th c. AD also devotes a section to wearing of flowers mentioning a long list of flowers describing their effects in alleviating the *doshas* [V.32–54]. *Someshvara's* '*Manasollasa*,' (Gondekar, 1925–39) a text by the Western Chalukyan king devotes a section to different types of flowers in crafts, types of flowers used in garlands for the king and royal nobles. The *ShivattatvaRatnakara* of *Keladi Basavaraja* (Ramashastry and Shastry, 1969) an encyclopedic text on various subjects deals on descriptions and properties of various flowers that should be adorned by a king in different seasons as well as those flowers that are strung in garlands for his decoration [VI. 16. 28–47].

Tamil Sangam literature is also rich in description of several flowers. The Tamils

classified flowers into four categories, namely, *Kottupu*, *Kodippu* (Jasmine varieties), *Neerpu* (Water flowers like Lotus, Lily), and *Nilappu* (Land flowers). They divided their lands into five natural geographical areas giving the names of dominant flowering trees such as *Mullai* (a variety of Jasmine – Forest area), *Kurunji* (a mountain flower – Mountainous regions), *Marutham* (a tree with red flowers – Pastoral regions), *Neytal* (a water flower – Sandy Sea shore areas), and *Palai* (evergreen tree flowers in arid areas). The Tamils also wore particular flowers during military raids in ancient times and is a queer custom not found anywhere else in India. These include *Vetchi* (Scarlet ixora–provocation of war through attack and cattle raids), *Karanthai* (East Indian Globe thistle– defending cattle raids), *Vanchi* (Rattan palm – invasion of enemy territory), *Nocchi* (Chaste tree– defence of fort), *Thumbai* (Bitter toombay– frenzy of battle), *Vaakai* (Siris tree Woman's tongue – victory) (Swaminathan, 2012). About seven stages of flower development were recognized and each stage in the order of development was indicated by terms such as *Nanai* (floral primordium), *Arumbu* (young floral bud), *Mugai* (mature bud with scent), *Podhu* (mature bud), *Malar* (open flower), *Alar* (pollinated flower), *Vee* (fertilized flower in which all parts other than the ovary are about to fall). The flowers were also classified based on their color, texture, shapes and structure. Poet *Kapilar* in the *Sangam* work "*Kurunchipattu*" (Chellaiah, 1985a)

enumerates about a 100 flowers [vv. 62–97]. Likewise the Tamil work “*Maduraikanchi*” (Chellaiah, 1985b) mentions about the festival *Onam* celebrated in old Tamil *Chera* kingdom (present Kerala) with gigantic flower decorations on the ground in order to honour King *Bali* who is believed to visit them on that day.

Some treatises exclusively devoted to flowers

Ancient Indian literature is also replete with several texts dealing exclusively on flowers although many have not seen the light of publication. Many of them are still deposited in various manuscript repositories all over India. A brief description of some of these are given below.

- ***Pushpachintamani*** – (Shastri, 1905–1915) 16 Fols, *Nagari* script, 484 *shlokas*, Catalogue of palm leaf manuscripts in Durbar library, Nepal, HP Shastri (ed.) – Deals on description of various flowers that are auspicious or inauspicious for worship of Lord *Shiva*, Lord *Vishnu*, *Durga*, *DakshinaKali*, *Nilasarasvati*, and also those that are not to be used, the fruits of worshipping these deities with special flowers.
- ***Pushpa Maahaatmyam*** (Varnekar, 1988) – Deals on different types of flowers to be used or not to be used,

auspicious, inauspicious, which month which flowers to be used for worship of Paschimamnaya, Uttaramnaya, Siddhalakshmi, Urdhvamnaya, Neela Sarasvati, Dakshinamnaya.

- ***Pushparatnakara Tantram*** by ***Bhupalendra Narasimha*** – (Varnekar, 1988) – In 8 Patalas deals on flowers to be used and discarded for worship.
- ***Parijatamanjari*** (Hultsch, 1981) – Text inscribed at Dhara [Epigraphia Indica, VIII]. It mentions Chitraprayoga denoting technique of getting different flowers on different trees.
- ***Pupphajoni Sattha [Pushpayoni shastra]*** (Jain, 2004) – It deals on budding of flowers.
- ***Pushpayurveda*** of Jain author ***Samantabhadra Svami*** (Jain, 1981) – It is supposed to have been written in 3rd c. BC and deals on 18000 flowers.

Recent literature (Varadan, 1985; Sharma, 2015) also has elaborated on the science of *Pushpayurveda* that much needs to be researched for the origins of the science from ancient Sanskrit literature, especially the Vedic, Epic, Puranic sources. All these texts deal on various types of flowers. For the convenience of readers the Sanskrit name of flower / flowering tree, common English Names and botanical names are presented in table 1.

Table 1. Names of flowers with their common English and Latin botanical equivalents.

Sanskrit Name of flower/flowering tree	Common English Name	Botanical Name
<i>Ajashringi</i>	Indian Ash tree/ Gurmar	(<i>Gymnema sylvestre</i>)
<i>Amra</i>	Sweet Mango	(<i>Mangifera indica</i>)
<i>Ankola</i>	Sage leaved Alangium	(<i>Alangium savifolium</i>)
<i>Apamarga</i>	Prickly Chaffflower	(<i>Achyranthus aspera</i> L.)
<i>Arjuna</i>	Arjun tree	(<i>Terminalia arjuna</i>)
<i>Arka</i>	Crown flower	(<i>Calotropis gigantea</i>)
<i>Ashoka</i>	Ashoka tree	(<i>Saraca asoca</i>)
<i>Ashvagandha</i>	Indian ginseng/Poison gooseberry	(<i>Withania somnifera</i>)
<i>Bakula</i>	Indian Medlar/ Spanish cherry	(<i>Mimusops elengi</i>)
<i>Bandhuka</i>	Midday flower/ Scarlet Mallow	(<i>Pentapetes phoenicea</i> L.)
<i>Bilva</i>	Bengal quince/Bael	(<i>Aegle marmelos</i>)
<i>Brahmi</i>	Indian pennywort/ Thyme leaved gratiola	(<i>Bacopa monieri</i> L.)
<i>Champaka</i>	Champak tree	(<i>Michelia champaca</i>)
<i>Chandana</i>	Sandalwood tree	(<i>Cinnamomum zeylanicum.</i>)
<i>Dadima</i>	Pomegranate	(<i>Punica granatum</i>)
<i>Doorva</i>	Bermuda grass	(<i>Cynodon dactylon</i>)
<i>Girikarnika</i>	Wild guava/Ceylon Oak	(<i>Careya arborea</i>)
<i>Harichandana</i>	Red Sandalwood	(<i>Pterocarpus santalinus</i> , Linn)
<i>Indivara</i>	Blue lotus	(<i>Nymphaea stellata</i> Willd.)
<i>Jambu</i>	Black plum/Black berry	(<i>Syzygium cumminini</i> L.)
<i>Japa</i>	China rose	(<i>Hibiscus rosa sinensis</i> L.)
<i>Kadamba</i>	Bur flower tree	(<i>Neolamarckia cadamba</i> / <i>Anthocephalus cadamba</i>)
<i>Kalpavriksha</i>	Silkcotton tree	(<i>Terminalia bellerica</i>)
<i>Kamala</i>	Indian lotus	(<i>Nelumbo nucifera</i> , Gaertn.)
<i>Kahlara</i>	White Water lily/Nilofar	(<i>Nymphaea alba</i> L.)
<i>Bilva</i>	Bengal quince/Bael	(<i>Aegle marmelos</i>)
<i>Brahmi</i>	Indian pennywort/ Thyme leaved gratiola	(<i>Bacopa monieri</i> L.)
<i>Champaka</i>	Champak tree	(<i>Michelia champaca</i>)
<i>Chandana</i>	Sandalwood tree	(<i>Cinnamomum zeylanicum.</i>)
<i>Dadima</i>	Pomegranate	(<i>Punica granatum</i>)
<i>Doorva</i>	Bermuda grass	(<i>Cynodon dactylon</i>)
<i>Girikarnika</i>	Wild guava/Ceylon Oak	(<i>Careya arborea</i>)

Continued...

Table 1 *Continued*

Sanskrit Name of flower/flowering tree	Common English Name	Botanical Name
<i>Harichandana</i>	Red Sandalwood	(<i>Pterocarpus santalinus</i> , Linn)
<i>Indivara</i>	Blue lotus	(<i>Nymphaea stellata</i> Willd.)
<i>Jambu</i>	Black plum/Black berry	(<i>Syzygium cumminini</i> L.)
<i>Japa</i>	China rose	(<i>Hibiscus rosa sinensis</i> L.)
<i>Kadamba</i>	Bur flower tree	(<i>Neolamarckia cadamba</i> / (<i>Anthocephalus cadamba</i>)
<i>Kalpavriksha</i>	Silkcotton tree	(<i>Terminalia bellerica</i>)
<i>Kamala</i>	Indian lotus	(<i>Nelumbo nucifera</i> , Gaertn.)
<i>Kahlara</i>	White Water lily/Nilofar	(<i>Nymphaea alba</i> L.)
<i>Kanakakamala</i>	–	(<i>Euphonia thomsoniana</i>)
<i>Karanthai</i>	East Indian Globe Thistle	(<i>Sphaeranthus indicus</i> L.)
<i>Karnikara</i>	Maple leaved Bayur tree / Kanaka Champa	(<i>Pterospermum acerifolium</i>)
<i>Karavira</i>	Indian oleander	(<i>Nerium indicum</i>)
<i>Kasturi</i>	Wild turmeric	(<i>Moschus moschiferus</i> L.)
<i>Ketaki</i>	Fragrant screw Pine	(<i>Pandanus odoratissimus</i>)
<i>Kharjoora</i>	Silver date palm/Toddy palm	(<i>Phoeni dactylifera</i> l.)
<i>Kimshuka</i>	Bastard teak/ Bengal kino	(<i>Butea monosperma</i>)
<i>Kokanada</i>	Red Water lily	(<i>Nymphaea rubra</i>)
<i>Kokanada/Aravinda</i>	Lotus flower	(<i>Nelumbo nucifera</i>)
<i>Kovidara</i>	Mountain Ebony	(<i>Bauhinia variegata</i>)
<i>Kumuda</i>	Blue Water lily	(<i>Nymphaea nouchali</i> Burm f.)
<i>Kunda</i>	Star Jasmine	(<i>Jasminum multiflorum</i> <i>pubescens</i>)
<i>Kurabaka</i>	Red /Yellow Amaranth	(<i>Barleria prionitis</i> L.)
<i>Kuranta</i>	Porcupine flower	(<i>Barleria prionitis</i>)
<i>Kurunji</i>	Neelakurunji	(<i>Strobilanthes kunthiana</i>)
<i>Kuvalaya</i>	Fragrant water Lily/Blue lotus	(<i>Nymphaea esulenta</i> L.)
<i>Lodhra</i>	Lodh tree	(<i>Symlocus eracemosa</i>)
<i>Madhavi</i>	Helicopter flower	(<i>Hiptage benghalensis</i> , L.)
<i>Mallika</i>	Sambac jasmine	(<i>Jasminum sambac</i>)
<i>Malati</i>	Clove scented echites	(<i>Aganosma calycina</i>)
<i>Mandara</i>	Indian Coral tree/ Tiger's claw	(<i>Calotropis gigantea</i>)
<i>Marutam</i>	Indian Laurel tree	(<i>Terminalia tomentosa</i>)
<i>Muchukunda</i>	Hathipaila	(<i>Pterospermum acerifolium</i>)
<i>Mullai (Belle of India/Grand Duke</i>	Arabian Jasmine	(<i>Jasminum sambac</i> L.)/ <i>Jasminium auriculatum</i> /

Continued...

Table 1 Continued

Sanskrit Name of flower/flowering tree	Common English Name	Botanical Name
<i>of Tuscany/ Maid of Orleans</i>		<i>Jasminium trichotomum</i>
<i>Nalini</i>	Lotus flower	(<i>Onosma echioides</i> , L.)
<i>Navamallika</i>	Shrubby Jasmine	(<i>Jasminum arborescens</i> L.)
<i>Neelotpala</i>	Blue lotus	(<i>Nymphaea stellata</i> Willd.)
<i>Neytal</i>	Red and Blue water lily	(<i>Nymphaea stellata</i> Willd.)
<i>Nipa</i>	Burflower tree	(<i>Neolamarckia chinensis/ Adina cordifolia</i> Roxb.)
<i>Nocchi</i>	Chaste tree	(<i>Vitex negundo</i>)
<i>Palai</i>	Pala Indigo plant	(<i>Wrightia tinctoria</i> Roxb.)
<i>Panasa</i>	Jackfruit	(<i>Artocarpus heterophyllus</i> Lam.)
<i>Paribhadra</i>	Indian Coral tree	(<i>Erythrina orientalis</i>)
<i>Parijata</i>	Night Jasmine	(<i>Nyctanthus arbortristis</i> L.)
<i>Plaksha</i>	Peepul / Fig tree	(<i>Ficus infectoria</i> Roxb.)
<i>Priyala</i>	Chironjia tree	(<i>Buchanania latifolia</i> R.)
<i>Pundareeka</i>	Lotus flower	(<i>Nelumbium speciosum</i>)
<i>Pushkara</i>	Lotus Flower	(<i>Nelumbo nucifera</i> Gaertn.)
<i>Rajeeva</i>	Blue lotus	(<i>Nymphaea stellata</i> Willd.)
<i>Rambha</i>	Banana/Plantain	(<i>Musa paradisiacal</i> L.)
<i>Santanavriksha</i>	Progeny tree	(unknown)
<i>Saugandhika</i> (<i>Stapf.</i>)	Heavenly Lotus	(<i>Cymbopogon citrates</i>)
<i>Shireesha</i>	Woman's tongue	(<i>Albiza lebbeck</i>)
<i>Sthalakamala</i>	Changeable Rose	(<i>Hibiscus mutabilis</i>)
<i>Tagara</i>	Indian valerian	(<i>Valeriana jatamansi/ Valeriana wallichii</i>)
<i>Tamarasa</i>	Lotus	(<i>Nelumbo nucifera</i> Gaertn.)
<i>Thumbai</i>	Bitter toombay	(<i>Leucas aspera</i> Willd.)
<i>Tilaka</i>	Red bead tree	(<i>Adenanthera pavonina</i>)
<i>Tulasi</i>	Holy Basil	(<i>Ocimum sanctum</i>)
<i>Utpala</i>	Indian Blue lotus	(<i>Nymphaea stellata</i> Willd.)
<i>Vanaja</i>	Cowpea/Horsegram plant	(<i>Dolichos biflorus</i> , L.)
<i>Vaakai</i>	Siris tree Woman's tongue	(<i>Albizia lebbeck</i> L.)
<i>Vanchi</i>	Rattan palm	(<i>Calomus rotang</i> L.)
<i>Vasanti</i>	Three live caper	(<i>Crataeva nurvala</i>)
<i>Vetchi</i>	Scarlet ixora	(<i>Ixora coccinea</i> L.)

Tamil Sangam literature is also rich in description of several flowers. The Tamils classified flowers into four categories, namely, Kottupu, Kodippu (Jasmine varieties), Neerpu (Water flowers like Lotus, Lily), and Nilappu (Land flowers).

Conclusions

From the above discussion, it is seen that the literature available on floricultures and flowers is vast. Flowers were produced in great diversity by planting them and were categorized on basis of botanical state, nature, characteristics, colors and feeling they generated in individuals. Classification of these flowers and their usage has been well dealt in ancient treatises. These may shed new light on cultural history of various periods and bring about new avenues in the preservation and promoting of these flower species in localities if researched well.

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