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WORSHIP AND TREES IN INDIA

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Trees are significant in many of the world's mythologies and religions and have been given deep and sacred meanings throughout the ages. In India, large numbers of herbs, shrubs and trees are traditionally worshiped and most of them are known for their uses in worship of several lords. India is a country showing diversity in religion and it is believed, that there are more than 33 million Gods and Goddesses worshiped in various traditional ways throughout the year. The trees and their products are part of Indian rituals and ceremonies and various Gods and Goddesses are associated with different trees. In Indian culture trees are believed to have consciousness similar to humans so they can feel pain as well as happiness like us. Human beings, observing the growth and death of trees and the annual death and revival of their foliage, have often imagined them as powerful symbols of growth, death and rebirth. The people in India believe that life cannot exist without trees. Trees are the main natural sources of solar energy vital for our existence that bring flowers, fruits, wood and medicines. Therefore, tree worship is one of the most widespread forms of popular religion in India. Indians worship offering roots, stem, leaves, flowers, fruits and seeds to God since time immemorial and this is done as a symbol of gratitude because they believe that life cannot exist without trees. Present communication provides botanical names and families of more than 60 angiosperm trees used in worship of various Gods and Goddesses. The trees have been listed and their significance has been considered. Gymnosperms used in worship have also been discussed. Selection of plantation site and day, time, month of worship, list of flowers and plants prohibited in worship and interesting description of trees worshiped as per the zodiac signs have also been given.

Keywords: *God, Goddess, mythology, rituals, ceremonies, zodiac signs, woody plants.*

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INTRODUCTION

India is a vast country with a total area of 3287 million km². It exhibits a great deal of diversity in its geography, climate, languages, food, cultural traditions, traditional clothes, customs, religion, e. g. Hinduism, Islam, Christianity, Sikhism, Jainism, Buddhism and large number of castes and sub-castes. Having diverse climatic and edaphic characteristics across Straddling, Palearctic and Indo-Malayan realms, India is one of the 17 mega-diversity countries of the world, with Himalayas and Western Ghats being globally recognized biodiversity hotspots. The biodiversity of India is comprised

of 58 815 known floral species, including fungi and lichens. This is about 8 % of global biodiversity found across a wide range of ecosystems ranging from rainforest to deserts characterizing India as a mega diverse country (Faizi, 2017).

India has 28 states (Fig. 1). 21.05 % of its land area is covered by forest (Forest Survey..., 2011) and is regarded as the tenth largest country for forest coverage. A wide variety of forests, from wet ever-green to dry deciduous, are found in the country (Faizi, 2017). No matter what their religion is, children are taught to love nature and preserve biodiversity, first by mothers' mythological stories, and then by teachers. But people are destroying plants



Fig. 1. Map of India showing 28 states.

and animals for their growing needs, which results in climate change.

Our bio-wealth is under unprecedented threat and most of these plants are at the verge of extinction not only because of changing environmental conditions, but also due to human activities, such as over-harvesting, destructive collection techniques and conversion of habitats to crop-based agriculture,

urbanization, industrialization, over exploitation of herbal wealth and increasing traditional activities, including tourism (Chauhan S. V. S., Chauhan S., 2017).

Large numbers of trees, shrubs and herbs are traditionally worshiped and used in the worship of several gods. India is a country showing diversity not only in climate, flora and fauna, but also in re-

ligion, languages, food, traditional dresses, culture and customs. It is believed that in India, more than 33 million Gods and Goddesses are worshiped in various traditional ways. Sometimes they say that there are more than 33 million Gods and Goddesses in India, which is actually a myth, as only 33 Gods are mentioned in the Vedas (Williams, 2008). Trees are the main converters of solar energy, which is vital for the existence of plants, flowers, fruits.

The philosopher Manu considered that the plants were conscious, like humans, and felt pleasure and pain (Framarin, 2014). Indians worship trees from time immemorial and offer roots, stems, leaves, flowers, fruits and seeds to the gods. This work is aimed at listing the trees used in ceremonies and worship, as well as relating Gods and Goddesses with various trees.

LIST OF TREE SPECIES ASSOCIATED WITH WORSHIP

The tree species associated with worship of various Gods and Goddesses in different parts of India on different occasions have been described alphabetically in the following paragraphs.

1. *Adansonia digitata* L., Malvaceae. The best example is the worshipping of two revered trees in Rajasthan that are more than 800 years old. In Hindu mythology, *A. digitata* is a divine tree that fulfills desire. There is a legend that the sage Durvasa was meditating under this tree, and the daughter of Lord Shiva, Ashok Sundari, was created from it to ease his loneliness (Chadare et al., 2008).

2. *Aegle marmelos* (L.) Corrêa, Rutaceae, is known as bael, golden apple, stone apple or wood apple. They are considered as the residence of the Goddess Lakshmi, the deity of wealth and prosperity (Panda, 2002). These trees grow near Hindu temples and are used in ritual ceremonies. It is said that Lord Shiva is pleased when the leaves of bael tree are brought to him (Fig. 2, a).

3. *Annona squamosa* L., Annonaceae is mentioned in «Rig Veda» which is considered to be one of the oldest manuscripts written around 2000 B. C. (Prasad et al., 2010). The showy flowers are used to decorate places of worship. The leaves and the wood are also used for *worshipping* fire.

4. *Areca catechu* L. (Arecaceae) commonly known as supari or areca nut symbolizes Lord Ganesu (the elephant God). Areca nut is taken together with betel leaves in religious ceremonies (Gupta, Ray, 2004; Heatubun et al., 2012). It is known as the «fruit of divine origin» used in Hindu religious ceremonies and is a vital component of idol worship.

5. *Artocarpus heterophyllus* Lam., Moraceae. Leaves are used as a dish in religious festivals in Meghalaya, North-East India.

6. *Azadirachta indica* A. Juss., Meliaceae, usually called neem. Besides its medicinal effect, the tree is highly revered by the Hindus as a manifestation of the «Goddess Durga» (Sikarwar, 2016). Neem is worshipped in various states of the Indian subcontinent (Tamil Nadu, Maharashtra, Odish). In the coastal state of Odisha in eastern India, the famous sacred object of the Jagannath temple is the core of the neem tree and some essential oils and powders.

7. *Bambusa vulgaris* Schrad. ex J. C. Wendl, Poaceae. Bansuri, a flute made of bamboo, was a constant companion of Lord Krishna, also called Murali or Muralidhar (Fig. 2, b). Bamboo is revered in India because it is associated with Lord Krishna. According to the legend, in the small town of Vrindavan, in the Mathura region of Uttar Pradesh, Krishna as a child saw one of his comrades playing the flute and he also wanted to have it.

8. *Bauhinia racemosa* Lam., Fabaceae, commonly known as aapta or sonpatta. In Maharashtrian families, it is customary to exchange the leaves of the tree on Hindu holiday Dussehra. On this day, Ram killed Ravana, and the act of exchanging leaves means exchanging gold and indicating the particular importance of the plant on that day.

9. *Bauhinia variegata* L., commonly called kovidara. It has been frequently described in the Ramayana (famous mythological book describing the life history of lord Rama). Bharat's (younger brother of Rama) chariot is symbolized by the flag with a govindra emblem.

10. *Bixa Orellana* L., Bixaceae. The tree is known as a source of annatto, a natural orange-red condiment made of wax, which is coated with its seeds. The plant is used to worship Gods and Goddesses in various socio-religious rites of the Hindu tradition in Nalbar and Sonitpur districts of Assam (Sarma, Devi, 2015).

11. *Boswellia serrata* Roxb., Burseraceae. Resin of this species has long been used as incense at religious and cultural ceremonies in all worship services in churches of Assam (Moussaieffa, Mechoulam, 2009). In Rajasthan logging and burning wood of *B. serrata* is completely prohibited.

12. *Bryonopsis laciniosa* (L.) Naudin, syn. *Diplocyclos palmatus* (L.) C. Jeffrey, Cucurbitaceae, commonly called bryony, lingini, lingika, ishalingi, shivalinga, shivlingi. Flowers are offered to lord Shiva, as the floral morphology resembles the deity of the lord called Shivalinga (Chauhan, Dixit, 2010).



Fig. 2. Deities decorated with leaves and flowers: *a* – Lord Shiva decorated with trifoliate leaves of *Aegle marmelos* and flowers of *Nyctanthes arbortristis* and marigold; *b* – Lord Krishna with his musical instrument, the flute made of bamboo; *c* – Lord Ganesha (Elephant God) decorated with garlands of jasmine and of flowers *Calatropis gigantea*; *d* – Lord Hanuman (Monkey God) with the garland of *Calatropis gigantea* leaves.

13. *Bombax ceiba* L., syn. *Ceiba pentandra* Gaertn., Malvaceae, commonly known as cotton tree, silk-cotton or kapok. The myths are associated with the tradition of cutting and burning branches of the tree in Holi, the religious festival of flowers. This causes enormous damage to the survival of the species in the Udaipur region. It is said that *B. ceiba* is a hellish tree, and because of its prickly appearance, it was called Yamadruma, the Pit tree, the tree of the ruler of hell (Jain et al., 2009).

14. *Butea monosperma* Lam. (Taub.), Fabaceae, commonly known as flame-of-the-forest and in Hindi as palash (dhak) or palasa because of the abundant crimson bloom in summer. In the Vedas it is mentioned that its trifoliate leaves represent the Hindu triad: Brahma on the left, Vishnu in the middle and Shiva on the right. In Telangana its flowers are used in the worship of Lord Shiva on Shivratri. In Theravada Buddhism *B. monosperma* was used to achieve enlightenment (Cowen, 1950).

15. *Calotropis gigantea* (L.) W. T. Aiton, Asclepiadaceae, is known as madar in Hindi (Sikarwar, 2016). According to Shivpuran (a religious book about Lord Shiva), the flowers of *C. gigantea* are admired by Lord Shiva. The garlands of white flowers with a bluish tint are offered to Lord Shiva for peace, prosperity and stability in society (Upadhyay, 2014) and for the sake of Lord Ganesha (Fig. 2, c), while the garlands of leaves are presented to Lord Hanuman (Fig. 2, d).

16. *Cascabela thevetia* (L.) Lippol., syn. *Thevetia peruviana* (Pers.) K. Schum., Apocynaceae, commonly called as peeli kaner (yellow oleander). Shiva is fond of them, similar to other poisonous flower. Bright yellow flowers of this plant are used to worship Hindu deity Shiva.

17. *Cassia fistula* L., Fabaceae. It is known as the golden rain tree. Flowers have ritual significance at the celebration of Lord Vishnu in Kerala. They are used as offerings in the temple and to decorate houses in the New Year as symbols of happiness and good luck.

18. *Cedrella toona* Roxb. ex Rottl. & Willd., syns. *C. sinensis* Juss., *Toona ciliata* M. Roem, Meliaceae. It is commonly known as the red cedar, toon or toona. The wood is delicately scented and is burnt in temples as incense sticks in Manipur state. Incense sticks are used for religious purposes in order to express faith and devotion to the almighty God.

19. *Cettiscinua menum* (author and family unknown) commonly known as heikreng. Being of great value, it is grown in the sacred groves in Manipur. It is a valuable gene pool playing an im-

portant role in wildlife conservation. People from Meitei tribe of Manipur use it for pleasing God (Parratt S. N. A., Parratt J., 1997).

20. *Cocos nucifera* L., Arecaceae, coconut or narial in Hindi. In India *C. nucifera* uses is employed in Hindu rituals. Coconuts are offered in temples to please Gods and Goddesses (Dallapiccola, 2002). A pot with water, mango leaves and coconut is symbols of Goddess Lakshmi. In the temples of the city of Palani, before worshipping Murugan for Ganesh, coconuts are broken in a designated place. It is also considered that the fruit represents Lord Shiva, and the three black marks on the shell are his eyes.

21. *Couroupita guianensis* Aubl., Lecythidaceae. It is commonly called cannonball tree. The plant has cultural and religious significance in India, Sri Lanka, and Southeast Asia (Al-Dhabi et al., 2012). In India, it is believed that hooded flowers of *C. guianensis* look like snake naga and the plant is grown in the temples of Shiva.

22. *Crateva religiosa* G. Forst., syn. *C. adansonii* subsp. *odora* (Ham.) Jacobs, Capparaceae. It is called three-leaved caper or barna tree in Hindi and is also known as a sacred garlic pear or temple tree. The leaves of *C. religiosa* are used to worship Lord Shiva, especially in Mahashivaratri. The tree is also sacred due to its relation to the Planet of Neptune – Rahu, one of nine planets or Navagrams (Matthew, 1983).

23. *Diospyros melanoxylon* Roxb., Ebenaceae. It is commonly called as tendu (biripatta). Before the battle between Lord Ram and the Demon's king Ravana from Lanka, in order to save princess Sita, Ram sent Hanuman (Monkey God) to inspect the formidable city of Lanka. Hanuman, son of Vayu, tied a piece of cloth, soaked in oil, to his tail and lit it. Then he jumped from the tops of the houses setting the city on fire. After he returned to safety, he wiped his blackened hands on a tendu tree, and since then the tree has turned to be ebony (Verma, Singh, 2017).

24. *Dolichandrone falcata* (Wall. ex DC.) Seem., Bignoniaceae. Singh (2017) mentioned the presence of a large number of trees in the premises of several devasthans (temples). *D. falcata* is one of such trees under which a temple to Lord Devanarayan was built in Kota (Rajasthan).

25. *Elaeocarpus ganitrus* Roxb., Elaeocarpaceae. The seeds are traditionally used to make rudraksha, prayer beads employed in Hinduism and Buddhism (Stutley, 1985). Rudraksha is a Sanskrit compound consisting of the name Rudra («Shiva») and aksha («Tear Drops») which implies Lord Shiva.

26. *Erythrina subumbrans* Merr., Fabaceae, commonly called coral bean. In Hinduism, *E. subumbrans* flowers are used in Hindu worship and for decorating hair. In Hinduism, the Mandara tree in Lord Indra's garden in Svarga (Heaven) is named *E. stricta* Roxb. The same motif is found in Tibetan Buddhism. The seeds of another coral bean (*E. latissima* E. Mey.) are used in for medicinal purposes.

27. *Eugenia jambolana* Lam., Myrtaceae, commonly known as jamun tree, jambolan, jambu. It is considered sacred to both Lords Krishna and Ganesha. As mentioned in Srimad-Bhagavatam, Sri Rupa Chintamani and Ananda Chandrika, Lord Krishna has four symbols of the fruit of jambu on his right foot.

28. *Ficus bengalensis* L. (Moraceae). It is called the banyan tree (Bargad-Wat Vriksh). In India, temples are often built under this tree. The banyan tree is sacred to such Hindu Gods as Shiva, Vishnu, Brahma, Kali, Lakshmi and Kubera (the Lord of Wealth). This tree is a symbol of Trimurti: bark is associated with Vishnu, roots stand for Brahma and Shiva is related with branches (Sikarvar, 2016). The banyan tree is so sacred that only in exceptional cases people may collect its leaves. It is believed that its ashes can eradicate sin. In Northern India, women often tie a banyan tree trunk with cotton threads of yellow and red colors 108 times, praying about long healthy lives of their husbands (Gopukumar, Praseetha, 2015) (Fig. 3, a, b).

29. *Ficus benjamina* L. It is commonly known as a crying fig, a Benjamin fig, or sami tree. The tree is considered to be the abode of Lord Hanuman, the son of the God of wind.

30. *Ficus krishnae* C. DC. The species is named after Lord Krishna. He used the leaves of this tree as an ideal dish (Fig. 3, d) to carry stolen butter called mahan (Tiwari et al., 2015). A researcher from Bishkek (Kyrgyzstan) working for the Indo-Kyrgyz cultural exchange programme and also studying for doctorate degree on «Causes of degradation of biodiversity of Braj mandal (Districts of Mathura, Agra & Bharatpur area) and its conservation» under the supervision of Prof. S. V. S. Chauhan, former Director of Life Science Institute, Agra University, observed a tree of this species at Khanealam Nursery, Taj Mahal, Agra (Nurmira, 2002).

31. *Ficus racemosa* L., syn. *F. glomerata* Roxb, known as cluster fig tree, Indian fig tree, goolar (gular) or udumbara in Sanskrit. In the mythological book «Atharva Veda», special attention is paid to this tree because it promotes prosperity and victory over enemies. In Theravada Buddhism, the plant

was used to achieve enlightenment (bodhi) of the 26th Lord Buddha of Konaagama.

32. *Ficus religiosa* L., sacred fig or peepal. The tree is considered sacred by the followers of Hinduism, Jainism and Buddhism; it provides a connection between earth and Heaven. In some parts of India, young women are symbolically married to peepal trees for a long family life (Fig. 3, a, e). Gautam Buddha attained enlightenment (bodhi) by meditating under this tree.

33. *Garcinia xanthochymus* Hook. f., Clusiaceae. The plant is called tamala or mysore gamboge. The baby Krishna is compared to the recently unfolded leaf of tamala. Lord Caitanya meditated under this tree (Teron, Borthakur, 2012).

34. *Hibiscus rosa-sinensis* L., Malvaceae. The local name for this species is gurkhal or Chinese rose. It is grown in temples of Chitrakoot District, India. The famous couplet in honour of the Sun God begins with the name of this plant. Flowers are used as garlands in the worship of Goddess Durga. Her radiant complexion is compared to *Hibiscus* (Mehra et al., 1975).

35. *Magnolia champaca* (L.) Baill. Ex Pierre, Magnoliaceae, is known as champak. The fragrance of *M. champaca* is highly revered by the followers of Hinduism and Buddhism. It is said that in Theravada Buddhism champak was used to achieve Bodhi of Lord Buddha, whose name was Aththadassi. According to Tibetan beliefs, the Buddha of the next era will find enlightenment under the white flowers of champak tree.

36. *Mangifera indica* L., Anacardiaceae. It is called mango or aam in Hindi. This tree is of importance in the Hindu religion and is regarded as a impersonation of Prajapati God, the lord of all creatures. Mango leaves are used to decorate the rooms for marriage ceremonies, while wood is used during funerals (Rana et al., 2016).

37. *Millingtonia hortensis* L. f., Bignoniaceae. It is known as Indian cork. when worshipping, Hindu priests place the garlands of sweet-smelling flowers of Indian cork upon the idol. It is a tree grown in the premises of the temples in Tamil Nadu (Amirthalingam, 1998). The flowers of this tree are offered to the deities of lords in the temples.

38. *Mimusops elengi* L., Sapotaceae, commonly known as bokul. The leaves, branches and flowers of the tree are used in the worship of Goddess Kali in Assam (Kadam et al., 2012).

39. *Musa paradisiaca* L., Musaceae. The trunk of banana is used for the construction of a hospitable gate, the leaves are used to construct a parade pavilion. It is considered that the offering of banana



Fig. 3. Trees and their parts used in worship: *a* – *Ficus religiosa* adorned with floral garlands, religious threads; *b* – a large number of women decorating *Ficus bengalensis* with cotton threads when praying for longer life of their husbands; *c* – *Ficus bengalensis* decorated with numerous garlands and a toy temple; *d* – bowl-shaped leaf of *Ficus krishnae*; *e* – an earthen lamp is lit under *Ficus religiosa* tree; *f* – *Anthocephalus chinansis* in full bloom.

leaves pleases Lord Ganesh. Banana fruit is offered to Lord Vishnu and Lakshmi.

40. *Myristica fragrans* Houtt., Myristicaceae. This evergreen tree is indigenous to the Moluccas Islands of Indonesia. An important condiment called as jaifal (fruit of joy) and the fruits of the tree are used as a spice with warming effect and also used in worshipping (Anibijuwon et al., 2013).

41. *Neolamarckia cadamba* (Roxb.) Bosser, Rubiaceae, commonly called as kadam or kadamba. This tree is mentioned in the Bhagavata Purana. In North India *N. cadamba* is associated with Krishna, and in South India it is known as the «Parvati tree». It is assumed that Radha and Krishna enjoyed their love game in the shade of the Kadam tree (Sikarvar, 2016). *Anthocephalus chinensis* (Roxb.) Miq. (the same family) is called English kadam (Fig. 3, f).

42. *Nyctanthes arbor-tristis* L., Oleaceae, night-flowering jasmine or parijat. Legend has it that this tree was brought to earth by Lord Krishna. There was a quarrel between the wives of Krishna Satibhama and Rukmini. One more romantic story is connected with Princess Parijat, who fell in love with the sun. When the sun deserted her, she committed suicide and the tree rose from the ashes. Flowers of this small tree are also offered to lord Shiva (Verma, Singh, 2017).

43. *Pandanus odoratissimus* L., Pandanaceae. It is commonly known as kewda. Pandan flower extract is added to drinks and desserts in Indian cuisine and in religious ceremonies.

44. *Phyllanthus emblica* L., Phyllanthaceae is called amblic, Indian gooseberry or amla. This tree is worshiped on the 11th day of every month and is considered sacred as the deity Vishnu. In Hindu legends it is believed that amla was acquired from drops of nectar, accidentally spilled on the ground in the battle of Gods and demons after ocean churning. It is claims that this tree cures almost all diseases and makes one's life longer.

45. *Plumeria rubra* L., Apocynaceae. It is commonly known as Indian magnolia or temple tree with fragrant yellow flowers used in religious ceremonies. Lord Krishna considered it to be sacred (Sarma, Devi, 2015).

46. *Polyalthia longifolia* Sonn., Annonaceae, commonly called deodar and sometimes is incorrectly identified as the ashoka tree (*Saraca indica* L., Fabaceae) due to close similarity of these two species. The leaves are used to decorate places of worship.

47. *Prosopis cineraria* (L.) Druce, Fabaceae, called shami, is highly revered among Hindus. Sha-

mi is honoured on the 10th day of Dasahra, the day when Ravana was killed (Crooke, 1915).

48. *Prunus amygdalus* Batsch, Rosaceae, almond. Fruits and seeds are used for worshipping worship and are offered to please numerous Gods in India, especially in Jammu and Kashmir. In the Bible this tree is mentioned ten times.

49. *Pterocarpus santalinus* L. f., Fabaceae, red sanders, red sandal wood, and as Raktachandan in Hindi. The stem is used to worship Lord Shiva, Goddess Durga and also in some other religions (Sarma, Devi, 2015).

50. *Putranjiva roxburghii* Wall., Euphorbiaceae. It is usually called Putra Kalpa Vriksha. Rosary beads are made of the fruit stones of this tree which are used by Hindu fakirs and brahmins. Parents put them around their children's necks, as they are believed to produce a protective effect, so in Sanskrit it means «child's life».

51. *Salvadora oleoides* Decne., Salvadoraceae. It is a small bushy evergreen tree often called Pillu. It has been mentioned in the mythological book «Mahabharat» along with the other species *S. persica* L.

52. *Santalum album* L., Santalaceae. It is known as Indian sandal or chandan. Sandal plays an important role in the worship of Gods, its paste and oil are used for incense and religious ceremonies and for cleansing holy places (Kumar et al., 2012). The tree has been praised in Vedic texts and the core is considered sacred. It is claimed that Goddess Lakshmi lives in the sandal tree; and the wood is used to worship God Shiva.

53. *Saraca asoka* (Roxb.) Willd., Fabaceae, is known as ashoka tree or «merciless». Ashoka is one of legendary sacred trees in India. It is considered that Shakyamuni Buddha was born under this tree in the garden of Lumbini. In Ramayana it is said that Queen Sita spent her sorrowful days under the ashoka tree in Ravana's garden after being abducted by devil king of Lanka (Zimmer, 1946).

54. *Senegalia catechu* (L. f.) P. J. H. Hurter & Mabb., Fabaceae. It is also called kher, catechu, cachou, catch tree, black catch, black catechu. In Rajasthan state women often worship this tree. Cutting is totally prohibited and punishable.

55. *Shorea robusta* S. F. Gaertn., Dipterocarpaceae, also known as sal, sala or shala tree. To demonstrate his strength, Ramachandra bent his bow and shot arrows at seven trees, among which was sal. An arrow pierced the trees and returned to the quiver. The tree of Sala was associated with Vishnu, and Ramachandra was his incarnation. Therefore, the Hindus consider it sacred. According

to Buddhist tradition, Maya held on to the branch of the tree in blossom when she gave birth to Lord Buddha. Therefore, this tree is revered by Buddhists all over the world (Nyanatusita, 2010; Buswell, Lopez, 2013).

56. *Stereospermum chelonoides* DC., Bignoniaceae. The beautiful flowers of this tree are the favourite ones of the Gods and are used to decorate hair of Goddesses and maidens (Sivalingam et al., 2016).

57. *Syzygium aromaticum* (L.) Merr. & L. M. Perry, Myrtaceae. The dried flower buds are offered to fire puja and the smell pleases Goddess Durga (Gupta et al., 2015).

58. *Tamarindus indica* L., Fabaceae. In the rainy season, Sita cooked food under a tree, but the rain put out the fire. Lord Ram ordered his younger brother Lakshmana to send a letter of protest to the Rain God asking him to stop the rain. Lakshmana tied the letter to the arrow and shot it to the sky. The tree personifies the God of Rain. It is worshiped for people to have a good season during Pasarupanduga holiday (Verma, Singh, 2017).

59. *Tamarix aphylla* (L.) H. Karst., Tamaricaceae. This tree is used in some religious ceremonies (Mehra et al., 1975). Leafless tamarisk was twice mentioned in the Bible. Abraham planted tamarisk in Beersheba to establish a direct connection between man and God (Musselman, 2007; Evans, 2014).

60. *Tectona grandis* L. f. (Lamiaceae). It is locally known as sagun or saigun. According to Hindu mythology, when the world was divided into Dvipas or islands surrounded by the Sea of Milk, one of them was named Shaka after the Teak tree that grew there. Jainism was the earliest religion to focus on ahimsa with the highest amount of plants being used for religious purposes (Jain, 2016; Verma, Singh, 2017).

61. *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn., Combretaceae, arjuna, is one of the sacred trees in India. Leaves and flowers are offered to Lord Vishnu and Lord Ganpathi (Sikarvar, 2016).

62. *Vitis vinifera* L., Vitaceae. It is commonly called grape vine. Juicy and sweet grape fruits are offered to various Gods and Goddesses (Savo et al., 2016).

63. *Xylosma longifolia* G. Forst. Clos, Salicaceae. Commonly known as nongleisang, brushhollies, xylosmas, or, more ambiguously, «logwoods». Wood of this species is burnt in the temples. It is grown in sacred groves in Manipur (Khumbongmayum et al., 2004).

64. *Ziziphus mauritiana* Lam. and *Z. jujuba* Mill., Rhamnaceae, red date, Chinese date or Indian date. The tree is associated with Lord Shiva. When worshipping it, the red dates are offered, especially during the Maha Shivaratri festival («Night of Shiva»). This is the wedding day of Lord Shiva and Mother Paravati (Sikarwar, 2016), which is celebrated in February-March (Phalgun).

The flowers of some trees are not to be used in the worship rites. For example, siris tree [*Albizia lebbbeck* (L.) Benth.] cannot be used in the religious ceremonies devoted to Lord Ganesa, or vijayasar (*Pterocarpus marsupium* Roxb.) in the worship of Lord Siva. The wood bael (*Aegel marmelos*), bargad (*Ficus bengalensis*), shami (*Prosopis cineraria*), palasa (*Butea monosperma*) and peepal (*F. religiosa*) is never used as fuel because it may cause the wrath of the Gods.

Conifers traditionally are traditionally used in Russian and Indian culture. These evergreen trees are symbols of immortality, for example *Taxus baccata* L. Spiritual powers are also attributed to *Cedrus libani* (A. Rich). The species *Thuja plicata* Donn ex D. Don (Western red cedar), *Araucaria bidwillii* Hook. (Bunya pine), *Agathis australis* (D. Don) Lindl. (kauri) are of great importance for local people, they have been worshiped since ancient times. *Ginkgo biloba* L. (Maiden hair tree) is an ornamental plant that is widely worshiped in Buddhist temples in China and Japan. In Japan, it is believed that eating ginkgo seeds provides strength (Bhatnagar and Moitra, 1996).

SACRED GROVES

In India 14 000 sacred groves were registered. Experts considered that the total number of sacred groves is much higher and can range from 100 000 to 150 000, the maximum number, about 5000-, allocated in the state Himachal Pradesh (Malhotra, 1998; Guha, 2000; Malhotra et al., 2001). The total area under the sacred groves is estimated amounts to 0.01 % (33 000 ha) of the territory of India. But the actual area can be 42 000 ha within 4.415 sacred forests (Gokhale et al., 1998). Of this, only 138 ha of the forests support completely untouched vegetation, and about 3188 ha are referred to under different names in different parts of India. Currently, there are many areas in remote areas that are significantly dependent on forest resources, and their normal state is preserved for different types of plants that provide food, vegetable fiber, shelter, or medicines.

All the forms of cultural and religious practice are established to preserve nature (Khan et al., 2008). The sacred groves of India are fragments of various sizes that play an important religious role in society. They are often associated with temples, monasteries, shrines or burial grounds. They are scattered throughout the country and are called differently in different parts of India. These groves face serious problems in connection with urbanization and over-exploitation of resources. Various changes in people's attitudes towards religion lead to a decrease of forest biodiversity and its degradation. Forest sites and sacred groves contribute to biodiversity conservation and stimulate religious belief (Khan et al., 2008; Amirthalingam, 2016). Hunting and logging are usually strictly prohibited in these places (Gadgil, Vartak, 1975).

TREES WORSHIPED AS PER THE ZODIAC SIGN. SELECTION OF PLANTATION SITE. DAY, TIME AND MONTH OF WORSHIP

There are 12 zodiac signs. The sign of the zodiac is determined by the positions of the planets, the Sun and the Moon on the Ecliptic at the time of birth and at a certain period of life. A person belonging to any of these zodiac signs should worship a particular tree.

Aries and Scorpio are influenced by *Mars*. According to Vedic astrology, people born under these signs should pray to *Senegalia catechu*.

Taurus and Libra are associated with Venus. To appease the Lord Shukra Dev (the teacher of the demons), people born under these signs should worship the *Ficus racemosa*.

Gemini and Virgo are controlled by Mercury. People born under these zodiacs must offer water to *Achyranthes aspera* L. to receive the blessings of the Lords of the planet (Budh Dev).

Cancer is influenced by Moon. The people born under this sign of zodiac should worship the *Butea monosperma*.

Leo is controlled by Sun. People born under this sign of the zodiac should worship and offer water to *Calotropis gigantea* (madar).

Sagittarius and Pisces are controlled by the planet Jupiter. The lord of this planet is Brishaspati Dev (Teacher of lords). People should offer prayers and water to *Ficus religiosa*.

Capricorn and Aquarius are associated with Saturn. According to Vedic astrology, the Lord of Saturn is Shani Dev. Prayers and water should be offered to *Prosopis cineraria*.

Mythological books provide guidelines for the placement of sacred trees. In agreement with these, *Ficus lyrata* L. (wavy tree or itti) should be planted in the north and *F. bengalensis* (banyan tree) – in the eastern part of the house. *Mangifera indica* and *Phyllanthus emblica* should be planted in the south, *Saraca asoka* in the southeast and *Aegle marmelos* and *Ficus religiosa* in the west. Favourable stars for planting these species are Swati, Hasta, Rohini, Shravana, Mula (Gupta, 1971).

Worship of the sacred trees should be performed at certain periods, days and months. So, bael and gular should be offered prayers in July–August (month of Sravana), amala and peepal in October–November (Kartika). Kadam is worshipped in June–July (Asadha), sami in September–October (Asvina), bargad in May–June (Jyestha). At present many trees in India are still used in religious and social ceremonies. Leaves of five most sacred trees (*Ficus religiosa*, *F. racemosa*, *F. lacor* Buch.-Ham., *F. bengalensis* and *Mangifera indica*) are commonly used for prayers and offerings.

DISCUSSION AND CONCLUSION

There are many sacred groves in various states of India (Kerala, Karnataka, Jharkhand, Himachal Pradesh, Maharashtra, Meghalaya, Rajasthan, Tamil Nadu, Manipur) (Parratt S. N. A., Parratt J., 1997; Gokhale et al., 1998; Malhotra, 1998; Amirthalingam, 2016). The description of the religious trees has also been given in the Bible and the Quran (Musselman, 2007; Evans, 2014). Trees are being used to worship Gods and Goddesses in India and other parts of south-east Asia since time immemorial. N. Singh and S. V. S. Chauhan (2002, 2004) registered the plants, the leaves of which are used in worship of various Gods and Goddesses. They also studied their significance. On Diwali, a festival of lights (lamps) and a day after the festival, people in North India prepare a dish containing roots, stems, leaves, flowers, fruits and seeds of a large number of plants.

One more publication of these authors is devoted to the trees that are used in the worship of Lord Shiva (Singh, Chauhan, 2012). There are six very ancient temples of Lord Shiva in the city of Agra, including famous Taj Mahal, one of the seven wonders of the world. To please the Lord, he is offered several quintals of the plants of numerous species; more or less all over the year, especially on Mondays and on every day of the month Shraavan (July–August) and on a sacred day called «Shivratri» (in February). It was suggested that this plant material

should be used in the preparation of compost to be utilized in kitchen gardens (Chauhan, 2005).

Plants are also used for decorating temples, marriage halls and on various social occasions. There is another very important festival of colours called «Holi», in which Hindus throw dry or splash wet colours on each other. This festival is associated with camp fire, which may be fraught with a danger of burning of green trees and destruction of biodiversity. Thus, there is a huge loss of biodiversity due to such activities and wild species are facing a danger of their extinction.

Other activities, e. g., pilgrimage have become a very common practice in our country. They are associated not only with religious practices but also with tourism. Most of the temples devoted to Gods and Goddesses are situated on mountains at a high altitude. In order to reach these locations, roads have been constructed, which was connected with the removing of important trees. Hence, a great loss of biodiversity has been caused. Trees like *Taxus baccata* found at 10,000 feet above sea level are at the verge of extinction (Chauhan S. V. S., Chauhan S., 2017). Sustainable tourism and pilgrimage should promote planting new species instead of destroyed plants.

Based on the study of Indian mythological literature and botanical descriptions, it has been concluded that the use of trees in worship is a long-standing tradition in India. On the one hand, this leads to the degradation of biodiversity due to the use of plants to worship Gods and Goddesses. On the other hand, religious beliefs prohibit the destruction of trees, which contributes to the conservation of biodiversity.

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ДЕРЕВЬЯ В КУЛЬТОВЫХ ТРАДИЦИЯХ ИНДИИ

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Древесные растения играют огромную роль во многих мифах и религиях мира и на протяжении веков почитались как священные. В Индии большое число видов травянистых и древесных растений традиционно являются культовыми и большинство из них используется в поклонениях различным владыкам с незапамятных времен. Индия – традиционно многоконфессиональная страна: по различным оценкам, здесь насчитывается более 33 млн богов и богинь. Деревья и древесная продукция являются частью индийских ритуалов и церемоний, и разные боги и богини связаны с различными деревьями. В индийской культуре считается, что деревья обладают сознанием, как и люди, поэтому они могут чувствовать боль, а также радость, подобно нам. Люди, наблюдая за сезонным ростом и развитием деревьев, за листопадом и вегетацией, часто рассматривали их как мощные символы роста, смерти и возрождения. В Индии считается невозможным существование жизни без деревьев. Деревья являются основными природными модификаторами солнечной энергии, жизненно важной для нашего существования, и дарят нам цветы, плоды, древесину, лекарства. Поэтому поклонение деревьям – одна из наиболее распространенных форм народной религии в Индии. Индийцы поклонялись или подносили дары богам в виде корней, стеблей, листьев, цветов, плодов и семян с незапамятных времен, и это делается с благодарностью, потому что они верят, что жизнь без деревьев невозможна. В статье представлено ботаническое описание более 60 видов покрытосеменных древесных растений, использующихся в культовых поклонениях различным богам и богиням, и семейств, к которым они принадлежат, описана их роль в богослужении. Также перечислены голосеменные растения, используемые в поклонении. Приведена информация по отбору плантационных участков, указаны день, время и месяц поклонения, перечислены виды растений, цветы и древесина которых запрещены к использованию в богослужении. Сделано описание деревьев, почитаемых по знаку зодиака.

Ключевые слова: *Бог, Богиня, мифология, ритуалы, церемонии, знаки зодиака, древесные растения.*