Aesthetic values of selected floral elements of Khatana and Waghai forests of Dangs, western Ghats

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Plants are an integral part of Indian life and culture and are worshipped among various tribes in India. Plant worship has also played an important role in the religious history since time immemorial by the Aryan race in India. The ancient Indian culture flourished in the midst of forests. Since plants of forests are the oldest associates of man, they are offered in worship of several deities. Such plants are used for religious performances among all races of mankind. The present article deals with some important and common plants, such as dicots like Aegle marmelos Correa ex Roxb., Ficus benghalensis Linn., Mangifera indica Linn., Ocimum sanctum Linn., Sesamum indicum Linn., Cocos nucifera Linn. and monocots like Musa paradisiaca Linn., Cynodon dactylon Pers. and Oryza sativa Linn.. These plants are found in wild as well as grown in a close vicinity of tribal folk of Khatana and Waghai forests of Dangs forest, which falls on the extreme northern part of western Ghats of India, one of the biodiversity Hotspots of the world. These plants have some special significance with respect to their description in various old scriptures, folk religions, mythologies, folk songs, etc. These plants are also used in offerings, rites, rituals, traditions, customs and decorations. Some sacred plants with aesthetic values have got particular attention as they are worshipped as symbols of Gods and Goddesses in both the forest areas.

Keywords: Ethnomedicine, Western Ghats, Tribals, Aesthetic values, Khatana Forests, Waghai Forests.

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India with a total area of about 3,029 million ha is considered to be one of the 12 megabiodiversity centres of origins and diversity of several plant species in the world. India has over 1,26,188 species of bacteria, fungi, plants and animals. Of India’s 15,000 flowering plant species with 5,000 endemic (33%), there are 4,050 plants with 1,600 endemic (40%) in a 17,000 sq km strip of forests along the seaward side of the western Ghats in Maharashtra, Karnataka, Tamil Nadu and Kerala States. Of which nearly 7,850 species are recorded in Gujarat only, which constitute about 6.22% of the total biodiversity of India.

The floristic diversity of Gujarat shows 2,198 species of higher plants including 27 species of mangroves. However, the Western Ghats today is one of the most significant repositories of biodiversity of India. Only a few thousand species in India are found either on the mountains of Himalayas and the eastern Ghats or the western Ghats. The Dangs forest falls on the extreme northern part of Western Ghats. Our knowledge on the vegetation of western Ghats region is largely derived from the work carried out covering various aspects of floral and faunal diversity, socio-cultural status and ethnobotany in the forests of Khatana and Waghai of Dangs district of Gujarat. Also in past, phytogeographical components in terms of western and eastern elements of Rajpipla forest of South Gujarat have also been investigated. The eastern part of Gujarat State has been extensively studied with respect to the ethnobotanical and medicinal values of various plant species.

Although the previous work had been carried out at a large extent on western Ghats, the in-depth investigation covering multi-disciplinary facets on aesthetic values of prevailing floral diversity of this region has not been worked out. It is, therefore, very necessary to explore certain pockets associated with local inhabitants of forest areas of Dangs district which falls on the extreme northern part of Western Ghats with respect to the utilization of existing floral elements having some prime aesthetic values by local tribe. Hence the present survey was undertaken to study the aesthetic values of some common as well as important plants in selected forests of Khatana and Waghai of western Ghats, India.
Study Area

In the present investigation, two study areas of about 20-25 sq km in the tribal areas of forest was selected, which encompasses both natural as well as human impacted ecosystems, establishing correlation between nature and tribal folk of the region. Fig. 1 shows the location of both forests.

Study Area I-Khatana Forest—It falls under Dharampur taluka of Valsad district of South Gujarat on its Northwestern side of western Ghats. Presently it is being administered by Valsad North Division under Dharampur range vide government notification by Gujarat state Forest Department. It is about 8 km away from Dharampur on its East, and is adjoined by Pati village on its rear and by Karanjveri village on its front. In between these two villages, river Man flows. Geographically, it is situated between 20° 5′ N latitudes and 73° 7′ E longitudes, at an altitude of 150-250 m above sea level. The climate of the area is typical dry deciduous tropical with an average annual rainfall of about 1800 cm. The mean temperature varies from 25°C in winter to 35°C in summer. The vegetation of the area is purely dry deciduous type.

Study Area II-Waghai Forest—It is situated on undulated hilly terrain, about 3 kms away from Waghai village on its western limits on the boundary of Valsad and Dang district. It is being administered by Dangs Forest Division under vide notification of Gujarat State Forest Department. Geographically, it is situated between 20° 30′ N latitudes and 73° 15′ E longitudes, approximately 450-700 m above sea level. The climate of the area is typical moist deciduous tropical, with an average annual rainfall of about 1900 cm. The mean temperature varies from about 20° C° in winter to about 30° C° in summer. The vegetation is of purely moist deciduous type with natural elements like Tectona grandis Linn. f. (Teak) and Dendrocalamus strictus Nees (Bamboo). The entire forest area is dominated by Acacia catechu Willd., Terminalia crenulata Roth and Dendrocalamus strictus Nees in successive pattern.

Methodology

The data collected are the outcome of a series of intensive studies conducted over a period of two years (May 1998 to April 2000) in 12 representative interior tribal pockets with good forest cover. Seven villages represent the tribal pockets of Khatana forest, viz. Khatana, Rajpuri, Pati, Amba, Karanjveri, Moti Dhol Dungri and Moti Kangvi while Waghai forest comprises of five villages viz. Jamlapada, Rambhas, Ambapada, Devipada and Vanarchond. In each beat, 5-7 interior tribal pockets were selected consisting of 4-5 tribal communities. For the selection of such types of hamlets/pockets, the help was sought through Integrated Tribal Development Agency (ITDA) and District Forest Office (DFO). The Census of India, 1981 (village and town directories) was also referred.

The exploration trips were planned in such a way so as to cover the selected tribal areas in different seasons in a year. Each field tour was of 8-10 days duration covering 1-2 tribal pockets per day in both forests.

The first phase of the study in each tribal village was utilized for gathering information from the village head, local herbal doctors, Vaidyas and priests about customs, beliefs, taboos, religious rites, food habits and agricultural practices among various tribal communities such as Bhil Dhodi, Kokna Kolcha and Varli. This information were crosschecked, critically analyzed and documented. The second phase was devoted for collecting information on aesthetic values of plants used by tribal folk residing in interior parts of forest patches and local people in the vicinity of the villages adjacent to the forest.

Discussions were made at times with all possible informants not only for gathering information but also for conforming values and uses of plants recorded from different informants at different places. The
information were also documented with the help of recording through audiocassette recorder on the spot or at the base camp.

Associated with the aesthetic values of plants, local names were collected, which vary from place to place and also at times from tribe to tribe. It was observed that many of the plants bear the same local name throughout the study areas but few of them differ. Discussions and communications were made generally in Gujarati, a mother tongue of Gujarat state to avoid the perplexity in collecting data from local people. In some of the interior parts of lower Dangs region and in core areas of Waghai forest, where the tribes do not speak Gujarati and are accustomed with slang only, local guides were engaged in translating the information at possible extent.

For an appropriate documentation of existing information on interaction between tribal folk and prevailing floral diversity in study areas, the methodology as described by previous workers has been adopted. A systematic position of each recorded floral taxa within the study areas were conformed by reviewing various literature.

Results and Discussion

Plants have profoundly influenced the culture and civilization of man in many countries. In India, traditional tales, mythological stories and events in the epics, religious practices of worship in household and in the temples, in festivals, birth and death are all replete with references to plants. These associations can be traced from the prehistoric times in a virtually unbroken line. Along with material culture like food, medicine and shelter, plants are closely associated with many social customs and mythological rituals of man. Many flowers, fruits or whole plants are themselves worshipped or considered sacred. While some plants are believed to possess magical properties.

The present work deals with some selected plant species, which provide some information on their association with rituals, rites, customs, traditions, etc (Figs 2-32). The plants *Aegle marmelos* Correa ex Roxb. and *Ficus benghalensis* Linn. are considered as temple trees and hold sacred and symbolic of certain Hindu Gods. The rest are plants, which individually or collectively figure in the numerous rituals from birth to death in a Hindu household and mythological episodes. Incidentally, few of them are treated as folk medicines with ethnobotanical significance, which are described in following heads:

**Plants used in folk religion and mythology**

(a) **Dicotyledons**

1. *Aegle marmelos* Correa ex Roxb. (Rutaceae)
   Vernacular names: Bel, Bael, Billi.
   Occurrence: Common in Khatana and Waghai forests
   Morphological characters: Spiny tree with alternate, trifoliate leaves easily recognized by its numerous globose fruits.
   Aesthetic value: The plant is considered as one of the important sacred trees among all local inhabitants of both study areas. Three leaflets resembling the Trishul or Trident are considered symbolic of creation, destruction and preservation, the powers attributed to Lord Shiva. Also the tree is held in great veneration in all Hindus according to Hindu mythology. The leaves of the species serve an essential element in all types of worships in each and every house particularly in Shiva temples. On the occasion of the annual 'Shivratri’ day, an all night vigil is kept and special worship is offered with Bili leaves.

2. *Ficus benghalensis* Linn. (Moraceae)
   Vernacular names: Vad, Vadlo.
   Occurrence: Common in Khatana forest, less abundant in Waghai forest.
   Morphological characters: Very large tree with wide spreading canopy and numerous pillar-like aerial roots supporting the several long transverse branches. It is planted in temples and places of public worship like village yards.
   Aesthetic value: The people of both forests hold the tree in esteem mainly Hindus, which is also worshipped in many parts of India keeping the similar rites and rituals. Sometimes the plant is associated with some Hindu Gods or demons. Such deities are believed to perch on its branches. The young maids in Khatana forest worship the tree for getting good husbands. While in Waghai, females worship this tree in memory of Sati Savitri who brought her dead husband to life by worshipping this tree. This ritual is done mainly on Saturdays during the months of May and June. Often the large trunk of the tree is surrounded by numerous stones, all smeared with vermilion and worshipped as symbols of Lord Shiva for achieving success in litigations and such other matters. This tree species is not cut for fuel wood purpose by any of the tribe of the study areas.

Fig. 14. Bamboo craft (Moulding)

Fig. 15. Bamboo craft (Colouring and Finishing)

Fig. 16. Bamboo crafts ready for sale

Fig. 17. A finished decorative Bamboo handicraft.

Fig. 18. Collection of Madhuca indica seeds by Koicha tribe

Fig. 19. A Cooperative Society for making the Handicrafts.
3. *Mangifera indica* Linn. (Anacardiaceae)

Vernacular names: *Aam, Ambo*.

Occurrence: Common in Khatana forest, less abundant in Waghai forest.

Morphological characters: This large evergreen tree is also widely cultivated throughout both study areas for its edible fruits.

Aesthetic value: *Hindus* of both study areas consider the Mango tree as a sacred species. The plant has occupied great religious significance among tribal communities. According to folk religion and some mythological beliefs, people of Khatana forest believe that this plant is an incarnation of God *Prajapati*, the Lord of all creations. Therefore, in all villages of Khatana and Waghai forests, people use the twigs of the plant in all religious and sacred ceremonies. In almost all houses, the leaves of this tree are tied on a string and hung as a symbol of prosperity in front of gates during social and religious ceremonies in some of the villages like Rajpuri, Pati and Amba of Khatana forest, and Jamlapada, Rambhas and Ambapada of Waghai forest area.

In some villages of both study areas, on the opening of a new shop or after successful completion of any *Pooja* or *Yagna*, the priests chant *Mantras* and sprinkle water with a small twig of Mango tree on the people present at the ceremony. While in some villages like Karanjveri, Moti Dhol Dungri and Moti Kangvi of Khatana forest and Devipada and Vanarchond of Waghai forest, people use branches of a Mango tree in a prophylactic practice to avert diseases. In areas like Rajpuri village of Khatana, and Jamlapada of Waghai, people hold a magical belief that ‘If a man, who first sees the inflorescence, smears it on his hand and inhales for three times, will not be bitten by a snake in that particular year’. Sometimes for soothing effect, some tribes apply the gum of this tree on the cracks of the heels.

4. * Ocimum sanctum* Linn. (Lamiaceae)

Vernacular names: *Jungli Tulsi, Pan Tulsi*.

Occurrence: Common in Khatana and Waghai forests.

Morphological characters: It is perennial aromatic herb grown in earthen pots or pedestals in almost all houses. There are two varieties or cultivars of this species, one with green leaves, which is locally known as *Sari Tulsi*, while the second variety with purple leaves is said to be *Krishna Tulsi* in local language.

Aesthetic value: This plant is believed to be very sacred among almost all the tribes in each and every pocket of both study areas. In some parts of Khatana forest, it is also known as *Haripriya*, which means very much dear to Lord *Vishnu*. Some tribal folk of Karanjveri and Kangvi villages of Khatana forest, and Waghasi forest in Rambhas and Vanarchond villages believe that the evil spirit cannot haunt a place where this plant is planted. *Hindus* of both study areas worship this plant during dawn as well as dusk by placing an oil and *Ghee* lamp before it. According to *Hindu* tradition, a dead body is placed before a *Tulsi* plant or the plant is carried with the corpse up to the cremation ground and planted at funeral place in remembrance of the bereaved person. This plant is never burnt by any of the *Hindu* tribes.

5. *Sesamum indicum* Linn. (Pedaliaceae)

Vernacular names: *Til, Tal*.

Occurrence: Common in both study areas.

Morphological characters: An erect annual herb with purple/white tubular flowers, cultivated throughout the study area. Seeds yield an edible oil known as *Tal nu tel*. Usually tribals grow two varieties of seeds viz. black and white.

Aesthetic value: Black seeds are considered sacred and are used in all religious rites, rituals, trades and customs. *Shraddh* ceremony is also performed with a copious measure of *Til* seeds. All tribal communities of both forests are still performing the same practice. On the occasion of *Shraddh* ceremony, during one phase, which is known as *Til Kanchan*, adequate black seeds of *Til* and a piece of gold is offered to God for eternal peace and rest for the departed soul in heaven. *Til* seeds are also mixed with *Pindas* prepared out of unboiled rice mixed with meshed banana, which is offered to the departed soul with water as food and drink. At the end, the black seed along with fruits of *Terminalia sp.*, locally known as *Sadad*, is used to mark the successful completion of the *Pooja*.

*Bhil* and *Varli* tribes of Waghai forest believe that *Til* seeds have arisen from the limbs of *Rishi Kashyap*, which are capable of removing sins from one’s life.

6. *Cocos nucifera* Linn. (Palmaceae)

Vernacular names: *Nariyel, Nariyed, Kopru, Topru*.

Occurrence: Common in both study areas.
Morphological characters: Tall tree, leaves forming a crown on the top, very large, pinnate, leaflets many, linear-lanceolate, fruits drupe large, fibrous and obovoid. Seed with white endosperm brown testa and full of liquid endosperm, known as coconut milk. This is one of the most important plants mostly found within human vicinity, having a great economic importance. Every part of the plant is useful.

Aesthetic value: Among tribes the plant is considered sacred and a symbol of good fortune for its fruits, which is believed to fulfill one’s desire. Hence, it is offered to God before the commencement of every task. Tribals of Rambahs and Vanarchond of Waghai forest offer a whole green coconut with stalk to the God during religious ceremonies. On wedding and other auspicious occasions, green coconut is placed on an earthen pitcher filled with water in front of the God as a ritual with respect to make one’s wish successful. Dried fruit is also used in major social and religious occasions.

Bride of some tribal communities e.g. Dhodhia and Kolcha of Khatana forest offers a coconut fruit to the bridegroom. He preserves it throughout his life as a symbol of sanctity and sympathy to his better half. Hindus never cut this plant, as this plant is considered to be a seat or Aasan for Lord Narayana. They never use its wood for fuel. The fibers of bark and leaves are used for thatching the roofs of their houses.

(b) Monocotyledons

7. *Musa paradisiaca* Linn. (Musaceae)

Vernacular names: Kela, Kedu, Kelu.

Occurrence: Common in Khatana and Waghai forests.

Morphological characters: Large herb with pseudostems, huge wide spreading leaves and a large bunch of hanging fruits cultivated for its varied economic importance.

Aesthetic value: Every part of the plant is considered sacred. In almost all the houses, two plants on either side of the main entrance are used as decorations and treated as symbols of plenty in socio-religious ceremonies. The presence of a piece of its pseudostem is must during any kind of worship or Pooja. The plant is worshipped during the months of October/November by women with a desire of having a male child. The newly wedded bride is given this fruit as Prasad to assure her successful fertility. As leaves of this plant are considered superior to even silver plates, these are used in offering food during religious and social ceremonies, On the occasion of Jalaram Pooja in the months of October/November, a bunch of bananas with a few betel leaves serves a good omen, especially in Khatana forest area.

8. *Cynodon dactylon* Pers. (Poaceae)

Vernacular names: Darbha, Dharb.

Occurrence: Common in Khatana and Waghai forests.

Morphological characters: Perennial grass

Aesthetic value: The species is believed to be the most sacred among people of both study areas, mainly Hindus. There is a common belief among local people that this species is a favourite tool of Lord Ganesha, which eliminates all the obstacles from one’s life.

9. *Oryza sativa* Linn. (Poaceae)

Vernacular names: Chaval, Chokha, Dhan

Occurrence: Common in Khatana and Waghai forests

Morphological characters: Annual grass cultivated for the grains, known as rice. It is most regular and popular staple food for their daily nutritional requirement.

Aesthetic value: The plant with its inflorescence is held sacred as a symbol of Goddess Laxmi. There is also a taboo among local people that consuming newly reaped rice is a misdemeanor until it is offered to Lord Vishnu. Rice is considered sacred by the Buddhists, as Sujata who had offered him rice prepared in milk saved the life of Siddhartha during his fast.

Paddy is worshipped on all ceremonial occasions. After successful reaping of paddy, people enjoy Dhan Tahewar festival by offering a pinch of newly reaped rice to the respective Gods and exchanging a small amount of the same among people to be acquainted with the various varieties and tastes of rice.

Plants described in folk songs

Plants are an integral part of Indian life and culture and hence all aspects of folk literature, folk songs, folk tales and folk proverbs of the country have profuse references to trees, shrubs, climbers, their flowers and fruits.37.
During our present investigation, references to trees and flowers are found profusely in folk songs especially in songs of worship of plants. In all villages people follow the tradition of singing folk songs in worship of Ficus religiosa Linn. (Peepdo/Peepal) believed to be one of the most religious trees. In some tribal areas of Khatana, folk songs are sung in praise of Mangifera indica Linn. (Mango), Azadirachta indica A. Juss. (Neem), Polyalthia longifolia Thw. Ashoka), Calotropis procera R. Br. (Aakdo) and Ocimum sanctum Linn. (Tulsi). In Waghai forest, people used to sing folk songs in praise of Tectona grandis (Sag), Dendrocalamus strictus Nees (Bamboo) and Cassia fistula Linn. (Garmado). There is a common belief that these plants are the abodes of several Gods and Goddesses.

Flowers, fruits and plants as offerings
Plants are oldest associates of Man are offered in worship of several deities. In Khata forest, people offer fruits and leaves of Aegle marmelos Correa ex Roxb. (Bili), Datura metel Linn. (Dhatura), Mentha piperata Linn. (Betel Leaf) and Cocos nucifera Linn. (Coconut) to Lord Shiva to please him. While people of Waghai forest usually offer flowers and fruits of Puncia granatum Linn. (Dadam), Butea monosperma Kuntze (Khakhro/Palas), Aegle marmelos Correa ex Roxb. (Bili), Michelia champaca Linn. (Champo) and Madhuca indica J. F. Gmel. (Mahudo/Mahua) to various Gods and Goddesses to invoke the blessings for the fulfillment of their wishes.

Trees, flowers and fruits in rites
Ficus religiosa (Peepdo/Peepal), Azadirachta indica (Neem), Ficus benghalensis (Vad/Vadlo) and Ocimum sanctum (Tulsi) have been found a prominent place in the songs of various religious rites and rituals among local inhabitants. In all villages every morning, Hindu women offer flowers and fruits of these trees in temple before God in respect and veneration of that particular deity. Some auspicious occasions like birth of a baby, thread ceremony, marriages and other religious functions are associated with Mandaps/Mandvo, which is made from parts of Dendrocalamus strictus (Man Vaans) and leaves of Musa paradisica (Kela/Kedu). Doors of every porch (Mandap) are decorated with leaves of Mangifera indica (Ambo/Aam). During wedding ceremony, the presence of Butea monosperma Kuntze (Khakhro/Palas) is very essential and is found to be auspicious for the fulfillment of desires.

Trees and flowers in decoration
According to Gujarati folk songs, Lord Rama fell in love with Goddess Sita mainly due to the beautiful floral decoration of her hair. It is a fact that in some parts of Indian subcontinent, women not only use the flowers but also several fruits in personal decoration. The use of flowers in decorating hair is a specialty of Gujarat and several other states of the country. Women usually use flowers of Jasminum sambac (Linn.) Ait. (Mogra), Rosa indica Hook. F. in part (Gulab) and Jasminum officinale Linn. (Jui) for decorating their hair during some special occasion. On matrimonial accession, floral strings are made from flowers of Rosa indica Hook. F. in part (Gulab) and Jasminum officinale Linn. (Jui), which is called Maand or Sahera in local language, and is covered on face of bridegroom. While other women among attendants bind their hair with platelets made from flowers of Jasminum sambac (Mogra). After the completion of marriage successfully, the matrimonial bed is decorated with flowers of Rosa indica (Gulab), Jasminum officinale (Jui) and Jasminum sp. (Mogra). In all tribes, before few days of marriage, a special paste made from flowers of Lowsonia inermis Linn. (Mahendi) mixed with Curcuma domestica Valeton (Haldi) powder, is applied on face of a bride, which is believed to improve the complexion of skin. In some Muslim families of Karanjveri village of Khatana forest, brides use flowers of Lowsonia inermis Linn. (Mahendi) and Mangifera indica Linn. (Aam), mixed with Sandal (Chandan) powder to perfume their bodies. During colour festival Holi, people use colour made from flowers of Butea monosperma Kuntze (Palas) locally known as Kesudo, and thus enjoy their pastime for a recreation purpose.

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