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Floristic Composition and Ethanobotanical Practices of the Sacred Groves of Nemmara, Palakkad District, Kerala

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ABSTRACT

Conservation of plants and animals by the indigenous people is very common. They believe trees are the places of gods. Sacred groves are the example of this conservation. These are locked information sites, but the secret of herbs and their medicinal uses are known by the people residing near it. Field studies on floristic composition and ethanobotanical practices of the sacred groves of in and around Nemmara village, palakkad district, Kerala was undertaken. A total of 50 plants species belonging to different families were recorded. The mode of mythical and therapeutic uses and conservation practices of these plants by the local people have been recorded from eight sacred groves.

Keywords: floristic, ethanobotanical, Nemmara, Palakkad, sacred groves.

1. INTRODUCTION

Sacred groves of India are forest fragments of varying sizes, which are communally protected, and which usually have a significant religious connotation for the protecting community. Hunting and logging are usually strictly prohibited within these patches. Other forms of forest usage like honey collection and deadwood collection are sometimes allowed on a sustainable basis. Sacred groves did not enjoy protection via federal legislation in India. Some NGOs work with local villagers to protect such groves. Traditionally, and in some cases even today, members of the community take turns to protect the grove. However, the introduction of the protected area category community reserves under the Wildlife (Protection) Amendment Act of 2002 has introduced legislation for providing government protection to community held lands, which could include sacred groves.

In Kerala it is the common practice among Hindus to assign a part of their land near the Tharavadu or house as the abode of goddess Durga or Serpent God Naga or Shasta and the place is called Kavu or Sarpakavu. Sacred Grove represents the major effort to recognize and conserve biodiversity (ethnic diversity) traditionally. The age old system of every village having a temple, a tank and associated sacred grove explains the ancient method of water harvesting and sharing and may be considered as the backbone of village economy. People were prohibited from felling trees and even removing a twig was considered as taboo. Some of the trees such as *Borassus, Alstonia scholaris, Antiaris toxicaria, Hopea parviflora, Strychnosnux-vomica, Ficus religiosa* etc are being worshipped in many sacred groves. On a rough estimate Kerala has about 1500 sacred groves which are distinct and unique in biological diversity. Most of the sacred groves represent the relics of once gregarious and abundant low lying evergreen forests of the Western Ghats. Only very few are reported from the foothills and the high ranges. The size of the sacred grove in Kerala varies as small as one cent to 20 or more hectares.

In olden days, when joint family system (tharavadu) was in vogue, maintenance of kavu was easy. Same is the case with the temple trusts; many temples were owned by ancient big families. As the families declined in wealth and power, due to various reasons, especially following partition, the fate of sacred groves was at stake. In many instances the whole land was sold to others who may not have any faith in the religious practices. In many cases, the presiding deity is still worshipped but without grove. The original tree cover is removed and new temple constructed. All the rituals are performed but in a modified form. This is mainly to minimize the extent of area meant for the purpose. The land thus carved out is utilized for cultivating economic crops. Thus tapioca, rubber, coconut etc. are planted extensively in temple premises, replacing the virgin sacred groves.

At a time when evergreen forests have been dwindling at an alarming rate in the Western Ghats, preservation and management of these sacred groves are unavoidable, for each of this is a treasure house of rare species, germplasm collection of all the plants in an area, and abode of rare, medicinal and economically important plants.This paper is perhaps the first record on the floristic composition and ethanobotanical practices on the unreported sacred groves of Nemmara Village, Palakkad District, Kerala. Objectives of the present study are to find the plant diversity in the study area and to know the ethanobotanical practices of the village men.

2. MATERIALS AND METHODS

The study area Nemmara is located in Palakkad District in Kerala. We recorded the details regarding the Geo co-ordinates and altitudes of Nemmara Gramapanchayath using GARMIN 5 GPS (GLOBAL POSITIONING SYSTEM). The place lies between the latitude 10^0 35’ 45” North and longitude of 76^0 34’ 69” east with an altitude of 106 meters.

Field studies on the sacred groves (locally called as Kavu) in and around Nemmara Village, Palakkad District were undertaken during June 2012 to October 2012. Most of the information was collected from the elderly people, village head, headman of the groves and

also people well-versed with the diverse uses of plants. The plant materials were collected and identified. Nemmara and its surroundings have rich vegetation and biodiversity of its conservation practices are done in small thatches. A number of sacred groves are located around in this village. Nemmara is divided into 20 different wards. The tribals who have used these medicines prepared by local ethnic medicine men were also interviewed to document ethanobotanical information of age group from 16-70 years.

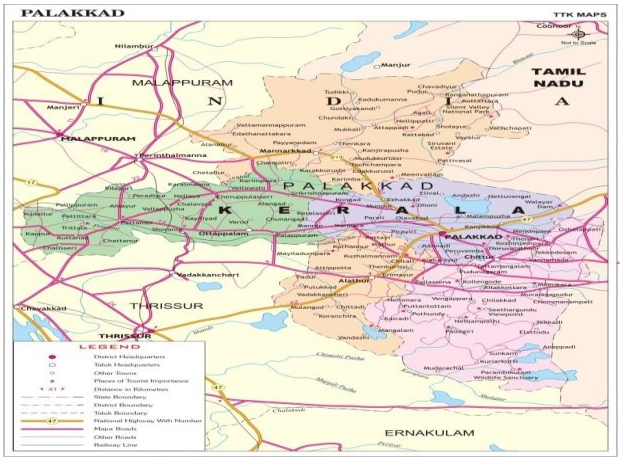

FIGURE - 1

MAP SHOWING THE PALAKKAD DISTRICT

TABLE 1 : SHOWING THE NEMMARA PANCHAYATH BEING DIVIDED INTO DIFFERENT WARDS

Sl.No.	Ward No.	Name of the Ward
1	(I)	Ayinampadam
2	(II)	Puthanthara
3	(III)	Vallangi
4	(IV)	Pulikalthara
5	(V)	Nemmara Padam
6	(VI)	Koshanipallam

7	(VII)	Vithanassery
8	(VIII)	Pazhathara Kadu
9	(IX)	Nellipadam
10	(X)	Ayinampara
11	(XI)	Pothundy
12	(XII)	Mattai
13	(XIII)	Nellikkad
14	(XIV)	Chathamangalam
15	(XV)	Pezhumpara
16	(XVI)	Palapparambu
17	(XVII)	Nemmara
18	(XVIII)	Vakkavu
19	(XIX)	Kallumukku
20	(XX)	Chenangode

3. RESULTS

There were 8 sacred groves observed and 50 plants species are identified. Based on utilization 100% of the species were use as medicinal plants. And some among them are considered as sacred plants. Some groves are owned and management by several families which protect the plants of the groves from one generation to another for their ritual believes. Human activities like gracing and cutting trees are prohibited in these groves. Village people living near the sacred groves are poor and less educated. They depend on these groves to meet their domestic needs, certain edible leaves and vegetables, medicinal plants etc. These sacred groves acted as a reservoir for various medicines. Other uses involved a source of honey and fruits. These groves are often associated with ponds and streams and meet water requirements of local communities. In modern times sacred groves become biodiversity rich areas, as various species seek refuge in the areas due to progressive

habitat destruction and hunting. Sacred groves often have many plant, animal and birds species. Therefore they harbor great genetic diversity.

TABLE NO : 2

LIST OF PLANT SPECIES RECORDED IN THE SELECTED SACRED GROVES OF NEMMARA PANCHAYATH

Sl.No.	Plant Name	Family	Parts used	Therapeutic uses
1	*Abrus precatorius* L.	Fabaceae	S, L	External wounds
2	*Abutilon indicum* (L.) Sweet	Malvaceae	L, R	Cold, stops bleeding in wounds
3	*Acalypha fruticosa* Forskal	Euphorbiaceae	L	Dyspepsia, stomach trouble
4	*Acalypha indica* L.	Euphorbiaceae	L	Skin disease, purgative
5	*Adhatoda vassica* Nees.	Acanthaceae	L	Cough and asthma
6	*Annona squamosa* L.	Annonaceae	L, Fr	Leaf paste used for skin infection, young fruits used for piles and diarrhea
7	*Azadirachta indica* Adr. Juss.	Meliaceae	WP	Multipurpose, considered as a Goddess tree
8	*Bambusa arundinacea* (Retz.) Willd.	Poaceae	WP	Used in religious functions
9	*Biophytum sensitivum* (L.) DC.	Oxalidaceae	WP	Wound healing, skin diseases, inflammation
10	*Blepharis maderaspatensis* (L.) Roth	Acanthaceae	AP	Cut wounds, muscles joining
11	*Butea monosperma* (Lam.) Kuntze	Fabaceae	WP	Sacred tree
12	*Cardiospermum halicacabum* L.	Sapindaceae	WP	Rheumatism
13	*Cassia auriculata* L.	Caesalpiniaceae	L, Flr	Leaves and flower used for diabetes, used in religious function
Sl.No.	**Plant Name**	**Family**	**Parts used**	**Therapeutic uses**
14	*Cassia fistula* L.	Caesalpiniaceae	L	Ring worm, considered as a sacred tree
15	*Cassia occidentalis* L.	Caesalpiniaceae	L, S	Skin infection, purgatives
16	*Cassia tora* L.	Caesalpiniaceae	L, S	Skin infection, purgatives
17	*Catharanthus roseus* (L.) Don.	Apocynaceae	Flr	Sacrificed plant
18	*Cissampelos pareira* L	Menispermaceae	R	Stomachache

19	*Cissus quadrangularis* L.	Vitaceae	WP	Stomach problem, join the broken bone
20	*Cymbopogon citrates* (DC.) Stapf.	Poaceae	WP	Used in religious function
21	*Cymbopogon martini* (Roxb.) Wats.	Poaceae	WP	Used in religious function
22	*Cymodon dactylon* (L.) Pers.	Poaceae	WP	Blood purifier, considered as god Ganapathy
23	*Delonix regia* (Hook.) Raf.	Caesalpiniaceae	WP	Sacrificed tree
24	*Dodonaea angustifolia* L.	Sapindaceae	L, S	Inflammation, bone fracture
25	*Ervatamia divaricata* (L.) Alston	Apocynaceae	Flr	Sacrificed plant
26	*Ficus benghalensis* L.	Moraceae	R, Ltx	Gum bleeding, mouth ulcer
27	*Ficus religiosa* L.	Moraceae	Fr	Fruits edible, considered as a god Ganapathy
28	*Glycosmis pentaphylla* (Retz.) Correa	Rutaceae	L, Fr	Fruits edible, aromatic leaves used for skin infection
29	*Jatropha curcas* L.	Euphorbiaceae	Ltx	Skin infection
30	*Lantana camara* L.	Verbenaceae	L	Skin infection, rheumatism
31	*Melia azedarach* L.	Meliaceae	L, Flr	Stomach pain
32	*Mimosa pudica* L.	Mimosaceae	R, L	Snakebite, knee pain
33	*Morinda coreia Buch.* Ham.	Rubiaceae	L	Join the broken bone
34	*Murraya koenigii* (L.) Sprengel.	Rutaceae	L, Fr	Stomach problems
35	*Nerium oleander* L.	Apocynaceae	Flr	Sacrificed plant
36	*Ocimum tenuiflorum* L.	Lamiaceae	L	Cold, cough
37	*Opuntia stricta* (Haw.) Haw.	Cactaceae	Flr, Fr	Flower used for skin diseases, fruits edible
38	*Pongamia pinnata* (L.) Pierre	Fabaceae	L, B, Flr	Skin diseases, sacred tree
39	*Ricinus communis* L.	Euphorbiaceae	S, Oil	Purgative, rheumatism
40	*Sapindus laurifolius* Vahl.	Sapindaceae	Fr	Cleaning the cloth
Sl.No.	**Plant Name**	**Family**	**Parts used**	**Therapeutic uses**
41	*Sida cordifolia* L.	Malvaceae	L	Cut wounds
42	*Solanum torvum* Sw.	Solanaceae	L, Fr	Leaves used for skin diseases, fruits as vermifuge
43	*Strychnos nux-vomica* L.	Loganiaceae	S, Oil	Rheumatism, sacrificed plant
44	*Syzygium cuminii* (L.) Skeels	Myrtaceae	Fr, S	Fruits edible, seed used for

				diabetes
45	*Tamarindus indica* L.	Caesalpiniaceae	L, Fr	Dysentery, muscular, joints pain
46	*Tephrosia purpurea* (L.) Pers.	Fabaceae	R	Stomach pain
47	*Terminalia arjuna* (Roxb.) Wight & Am.	Combretaceae	B	Blood pressure, sacrificed tree
48	*Thespesia populnea* (L.) Sol. Ex Corr.	Malvaceae	Flr, B	Skin diseases
49	*Tinospora cordifolia* (Wild.) Miers. Hook. F. Thomson	Menispermaceae	L, S	Rheumatism
50	*Vetiveria zizanioides* (L.) Nash	Poaceae	R	Cooling, hair growth

T – Tree, S – Climber, H – Herb, G – Grass, L – Leaves, S – Seed, Fr – Fruits, Flr – Flower, B – Bark, WP – Whole Plant, R – Root, Rhi – Rhizome, Blb – Bulb, Ltx - Latex

Based on habit classification, 50 plants were classified into trees, herbs, shrubs, climbers and grasses. Plants belonging to different families such as Moraceae, Rutaceae, Euphorbiaceae, Verbenaceae, Meliaceae, Mimosaceae, Rubiaceae, Apocynaceae, Lamiaceae, Cactaceae, Fabaceae, Sapindaceae, Malvaceae, Solanaceae, Loganiaceae, Myrtaceae, Caesalpindaceae, Verbenaceae, Combretaceae, Menispermaceae, Vitaceae and Poaceae. Four species – *Cynodon dactylon, Azadirachta indica, Ficus benghalensis* and *Pongamia pinnata* were recorded in all groves.

4. DISCUSSION

The study of mythological associations or faith in plants among the people is a fascinating area with immense possibilities of insight into the causes of these associations. In the present preliminary work, survey of floristic composition and practices of some unreported sacred groves of Nemmara Panchayath, Palakkad District. Various communities in India follow nature worship based on the premire that all creations of nature have to be protected. Sacred groves still possesses a great heritage of diverse gene pool of many forest species having socio-religious attachment and possessing medicinal values. These are gradually shrinking in size and number due to civilization in the areas, land requirements, agricultural practices, monsoon failure and no rain fall, education and literacy to the rural (Trivedi, 1997, Vartak and Godgit, 1997).

The legal status and management of sacred groves in the country need to be examined and there is an urgent need to preserve and acknowledge the efforts of the people of this area in preserving the other small sacred patches of the forest as local biodiversity (Sasikumar., 2004).Aji., (2012) presented a preliminary report on Iringole kavu, a miniature forest, which is located in Perumbavoor of Ernakulam District, Kerala. The total area of the '*Kavu'* is about

110 acres. It lies at 100 10" North latitude and 760 30"east latitude. The climate is hot and humid so that a very rich flora and fauna include valuable herbs; medicinal plants, monkeys, squirrel and mynah are seen in the region. Anthwal *et al.*, (2006) described India as a rich tradition of nature conservation as well as a vigorous official program of nature reserves developed over the last 40 years. Sacred groves are forest patches conserved by the local people intertwined with their socio-cultural and religious practices. Chandrashekaran and Sankar (1998) investigated in Kerala, based on management systems, sacred groves can be categorised into three groups namely those managed by individual families, by groups of families and by the statutory agencies for temple management (Devaswom Board). Ollur Kavu, S.N. Puram Kavu and Iringole Kavu which represent above mentioned management systems, respectively, were studied for their tree species composition and vegetation structure.

Plate :1 Sacred groves in Nemmara

Photograph showing water reservoirs around the sacred groves

5. CONCLUSION

The sacred grove of Nemmara village has been partly disturbed by the biotic interference at the periphery for the past few decades for various socio-cultural reasons. These climax natural forest are being preserved because they encompass village Gods within the grove, which are worshipped as religious beliefs and taboos of the people weaken, the pressure on these forest increases. This is also happening in many other sacred groves in Kerala. The temples within the grove are still enjoying the place of worship but the forest surrounding it become relatively unimportant. In many places no strong taboos exist against biomass extraction. Invariably the biomass extraction is limited to cutting and chopping of lower branches. However, this is done under the cover of darkness. It is important that people realize the values of these patches of forest and make low levels of resource extraction in a regulated manner, which would facilitate sustainable resource use. But the local administration of the scared groves is averse to this idea because according to them it may further weaken the religious faith and belief. Sacred grove's traditional conservation management needs to be supported and strengthened by other appropriate institutional inputs.There were eight sacred groves in the study area and 50 plants species were identified. All local people believe the neem tree (*Azadirachta indica* Adr. Juss.) as a form of Goddess. It is because of its therapeutic properties. The old *Ficus benghalensis* L. trees are home of birds, insects, honey bees and small animals.

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