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# Leaf Litter

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**Cover photo:** Scattered among the litter of bamboo and  
phalsa leaves are two saplings of *Dioscorea oppositifolia*.



A mahua party!

## The spirit of it!

Alcohol consumption is viewed by most mainstream cultures in India with disdain. Drinking, like smoking, tends to assume a moral tinge, with parents of prospective brides (and increasingly also grooms) wanting a non-drinking match for their child. Legal drinking age varies from 18 to 25 across the country. There are dry states and dry days in otherwise wet states. There are licenses available for drinking with preference given to NRIs. Utter confusion and hypocrisy prevails when it comes to alcohol and drinking, as in so many areas where economics and feigned morality come to a head.

Various surveys give varying figures about the percentage of Indians consuming alcohol. The lowest of these is 14.6%, the highest is around 30%. But what seems certain is the increase in alcohol consumption over the last decades as well as the lower ages of both boys and girls when they first taste liquor. The five southern states consume almost 45 % of the alcohol produced in the

country, fulfilling around 15% of the state revenues. Drinking is one of the essential pillars of our economic system. During the initial periods of lockdown when the liquor shops were shut down this was as much, or more, of a concern than the pandemic itself for these states.

In much of non-tribal India, the dubious morality attached to drinking drives this practice out of homes. Drinking along roadsides en route to the hill stations is a typical Tamil Nadu phenomenon – the state has the distinction of leading the country in alcohol consumption – though not restricted to it. The out-of-home drinking has made it a predominantly stag event, noisy, often rowdy and aggressive, unconcerned with even the minimum of social norms and leaving behind a whole lot of garbage in its wake. In stark contrast, drinking in adivasi societies is governed by an etiquette that we could learn from. These are societies that have an intimate knowledge of the liquor they brew or distil, the processes and materials involved in making a drink that is suitable



to consume regularly. These practices have evolved over many, many generations, and the methods as well as the best way to enjoy a drink has been perfected, without the confusion of morality hampering clarity of purpose.

Despite a more than 2000 year history and experience with alcohol (from the Arabic al-kuhl, come to us via French or Medieval Latin) and a rich tradition of various drinks produced within India we have succumbed to foreign liquors. The several palm toddies, mahua, handia, chang, urrak, maad, raksi, suram and landa are a few that are commonly known. Almost without exception, these drinks are culturally embedded and come with specific ways of drinking and experiencing them, unlike the IMFL brands we buy across the counter. The excise laws of our country prohibit alcohol production and sale, allowing only the IMFLs and a few licensed brands like feni and, more recently, a specific mahua. In effect, anyone who wants a drink is forced by law to buy from a 'licensed' shop selling IMFL liquor. This is

motivated solely by the revenue that alcohol brings in to the state. Nothing else matters, not the quality of the liquor produced, not the health of the consumers, nor the impact of consuming bad-quality IMFL stuff on the rural families. By banning local liquors we throw out not only the many indigenous and healthier drinks but also the etiquettes and customs linked to our peoples.

Why can't we be truly atmanirbhar on this front too, and more than just economically, and allow people to make and drink what they want? And where is the pride in being truly Indian in this most important of matters that pertains to a state of mind? To be stranded in reality all the time is definitely not something to look forward to. But do we need to pay the state – or anyone else – for brief ventures to other worlds?

Madhu Ramnath  
December, 2020



Scene at a TASMAL outlet, Tamil Nadu

# Mahua

Mangruram Kashyap and Arjun Nag  
Legal Environmental Action Foundation (LEAF)

(translated by Madhu Ramnath)

Bastar is one of the regions of the country with adequate native forests and a large amount of forest produce (NTFPs) which contribute to the livelihoods of the indigenous and forest peoples there. One of the NTFPs is mahua, the flowers edible as well as distilled into a liquor known by the same name, mahua. It is known as ‘mand’ in Bhatari and Halbi; ‘kal’ in some Koitoor languages, ‘darango’ in Abujmarh, and ‘mel’ in Durwa.

## The mahua tree

The scientific name of the tree is *Madhuca longifolia* and it is found abundantly in the plains of central India where it grows well, reaching up to 30 m in about 10 years. It is an evergreen tree. The flowers are used as a scarcity or emergency food when not used to distil liquor. The mahua flowers provide a lot of energy when consumed as food; the seed (known locally as tora) yield an edible oil; the leaves are used to fashion leafcups.

The local taxonomy of mahua is based on the way the flowers drop from the tree: those that have their flower-fall at night (between 6-8 pm) and those that have it through the day (between 9 am- 4 pm). This is further divided into:

Donga mahua: trees that have flower-fall both during the day and night; these flowers are bigger in size than the average as well as contains more juice  
Madhya mahua: these trees have characteristics between the last one and the one below, with the flowers falling both in the day and the night, but moderately, and not as juicy as the last one. Sukli mahua or Semdi mahua: these trees have flowers



Mahua distilling

that bloom but remain attached to the branches until they dry. They ultimately fall only in strong winds or if they are dropped by knocking the branches with a stick.

## Collection and tradition of mahua

Before the collection of flowers from trees in the fields the ground is swept clean of litter to make mahua collection easier. In the forest area too safeguards need to be followed as it is then the time of leaf-fall and the danger of fire spreading into the forest is high: the people are careful to protect their NTFPs as well as the wildlife in the area.

After the collection of the fresh mahua flowers they are not distilled into liquor before the offerings to the local gods. In some parts of Bastar there are two rituals performed. One, by the challan of the village, asking for a good season of mahua; and the second, by the matipujari, to allow the commencement of distillation.

## Storage and trade

As most adivasi people do not have sufficient facilities to store the mahua they collect they usu-



A Mahua party!

ally sell it to cooperatives or to middlemen at low rates, keeping only as much as they can accommodate in their homes for their personal use. What is stored at home is stored in large bamboo baskets known as ‘paal dolangi’ in Bhatari and ‘vedri dikki’ in Durwa. The baskets are lined with kusum leaves (*Schleichera oleosa*) and the mahua flowers, after being dried in the sun, packed into these baskets. Any household which owns 20-25 mahua trees would be guaranteed of a minimum of Rs 50,000 annually. But this does not happen as the adivasi people have little storage space and pressing needs: this makes them sell the mahua to middlemen who buy the mahua from the collectors and store them in cold storage centres. When the season is done and the adivasi has consumed all his mahua they middlemen sell their stock at twice the price – they to the original collectors!

Origin

According to Lacchuram from Awnrabhata, a long time ago there was a large mahua tree with a hollow. In this hollow a lot of flowers had fallen and, as the sun shone down on it, began to ferment and turn the mixture into ‘pas’ (which is later distilled into the proper mahua drink as is known now. The birds which drank their water from the hollow were noticeably noisier and unusually active than the rest of the birds in the vicinity. A passer-by noticed this new behaviour in the birds and went up to the hollow in the tree from which the birds were drinking. He made himself a small leafcup and had a drink from the hollow and felt the intoxicating effect and he realized that a mixture of mahua flower and water produces this effect. With this new knowledge he returned to his village and told the people about his experience. The people then gathered mahua and began to try the process of mahua making in their homes.

The people of Bastar consider the mahua tree one of the most important trees in their lives. The birth rituals as well as the rituals of death are accompanied by mahua. All occasions of mahua drinking are preceded by the offering of a few drops of mahua to the earth in the name of the ancestors.

Marriages

Though there are many ative and useful trees in Bastar’s forest the mahua tree is considered to be the most important and holy by the people of Bastar. A reason for this is that both the fruit as well as the flowers are used by the people. In fact the mahua tree is known by two names, as the mahua tree and also as the tora tree, the latter being the fruit that can be pressed into oil. The mahua flower is the bride and the fruit is the groom. During marriages a branch of the mahua tree is brought and planted as a ‘mandap’ under which the priest and the elders perform all the rituals of the wedding. And mahua liquor is offered to the gods.

Preparation of mahua

Material required: An earthen pot to hold the mahua according to the amount of liquor to be distilled (5 kg of mahua flower will yield approximately 7 beer bottles of the drink, of fairly potent quality), a 20-25 litre earthen pot, an smaller earthen pot with an outlet for the condensed mahua to pass through, a 10 litre capacity metal vessel, a thick piece of cloth



*Making mahua by the stream*

or gamcha that can go around the pot with the mahua to be distilled, 2 drums of 40 litre capacity each (one filled with water and one empty), a fireplace and sufficient firewood.

Method:

1. The mahua flowers are filled in the earthen pot and sufficient water filled along with it; the quantities are dependent on the requirement, according to the equivalents given above. This is called ‘pas bharna’.
2. After the ‘pas’ step it takes 3-5 days, depending on the weather, for the bubbling action in the pot to quieten down. In summer this may happen in 3 days, in winter this may take 4 or 5 days. This is why in winter the pot with the pas is kept close to a chula that is used as it is warm in that area.
3. Once this ‘khamir’ which is the thickened ‘pas’ is formed it is poured into a metal container of 20-25 litre capacity.
4. A fire is lit in the chula and the container with the khamir is set on it to cook.
5. On top of this is placed the earthen pot with an outlet.
6. On top of this is placed a metal container with cold water.
7. A wet cloth is then placed carefully around the mahua pot where the pot with the outlet is placed. This is to prevent any vapour from escaping from the mahua pot.
8. The fire should be kept low and steady; the water in the topmost container felt to know how warm it is.
9. As the water on the topmost container gets warm the mahua begins to form and pour from the middle pot with the outlet; this is collected in a vessel using a bamboo length or a cycle tube.
10. The warm water is removed bit by bit and replaced with cold water.
11. The entire water is replaced 3 times through

the mahua-making process.  
12. The collected mahua is very pure and an equal amount of water is added to it.  
13. As mentioned, 5 kg mahua flowers yield 3.5-5 litres of mahua.  
Mahua is traditionally sipped out of sal leafcups and in company; however in many places steel tumblers as well as plastic disposable cups are used.



Mahua sold in a haat

The most preferred side-dish for mahua is red-ants with their eggs ('chapda' in Bhatari and Halbi, 'kenil' in Durwa). Other dishes include chicken and mutton, crab and fish, chickpeas, beans, and various cooked grams and pulses.

Colour, taste, fragrance, effect

Mahua has no colour and can pass off as water. It's taste is difficult to describe but some mahua-lovers talk of pure mahua (known as 'phuli') as 'rusrusa'; when too much water is added to mahua it is called 'pochka' or 'puchpucha'. When the mahua is distilled after the due date it usually tastes sour, despite maintaining its potency.

Pure mahua has a strong smell; diluting it may bring the smell down but most people can figure out a person who has consumed mahua.

The effect mahua has on a person is general intoxication, a high feeling, and then a feeling of strength, as if one is twice as strong as usual. For a while mahua has the ability to stall hunger. And of course, one begins to speak as if one is extremely intelligent!

Welcoming a guest

A traditional welcome to any guest is with a lot of water for the guest to wash his or her feet. And after that the guest is asked to sit down and entertained with some mahua. Mahua is served just like tea is served among non-tribe people. Whatever the meal that is cooked a full welcome and honour is not complete if mahua is not served.

Visiting relatives and kinsmen with mahua

At least once in a year people visit their relatives and close kinsmen, usually on the occasion of 'Nua

khani', the festival when the new grain is harvested and eaten. One either visits a relative or visits them (on the pretence of dropping them home) and it is usual for both sides to bring along a bottle of mahua. Apart from these occasions, the elders of the family offer prayers to the village deities for the well-being of the village and the people, and offerings are also made to the clan gods and ancestors, as well as to the village goddess (mati mata). In all these events every one drinks mahua and listens and talks about the old days, about traditions, and good and bad times, unhurriedly, and in detail.  
Reasons mentioned for drinking mahua:

- To overcome fatigue
- To pick up a fight
- To turn enmity into friendship
- To honour somebody
- As a medicine (in small quantities)
- As a habit
- As a lover of mahua
- For entertainment
- To overcome loneliness

The good and bad qualities of mahua

It is believed that regulated quantities of mahua does not harm the body physically; beyond certain amounts and over-drinking causes the body to weaken and even hasten death.

Good qualities:

- A few drops of mahua brings relief to an ailing stomach
- It can convert enemies into friends
- It can stall hunger for brief periods
- It prevents loneliness
- Increases one strength to perform hard work

Bad qualities:

- The influence of mahua makes one pick up a fight unnecessarily
- It makes one squander one's money and brings the family economy down
- Falling prey to mahua makes one susceptible to illnesses
- Hardened mahua drinkers begin to talk to themselves

A couple of mahua riddles

Ki-ki-ki karato, karato upre ki-ki nato  
Jag-jag-jagar pani, dongri upre jharan pani  
(Answer: Describes the material arrangement of mahua-making and the atmosphere around it)

Agan nagar timas dandi, chima luar paar  
Kenda ke piche guda ochaishi, bhuie deisi gaar  
(Answer: Describes the mahua flowers falling to the ground)

## What's brewing in the Nilgiris!

Anita Varghese  
Keystone Foundation

*(These notes are based on a conversation that took place with a Kurumba elder).*

Her earliest memory of alcohol was of her in-laws drinking, and preparing their own brew. About 30 years ago nobody bought alcohol: everyone just distilled their own brews and shared it with family and friends. Some people also sold it to neighbours and local people outside of the village.

*“Several tree barks were an important part of the recipe. These were soaked for a couple of days and mixed with jaggery, and when ready distilled to produce ‘sarae’ as it was known among the people. Trees of the Naaval (Syzygium), Vela (Hardwickia), Kottai (Zizyphus), Selai vinji, Gonjai (Bridelia) were commonly used. All these trees are found in the dry and moist deciduous forests in the Nilgiris. The liquors of fruits like Naaval (Jamun), Nellikai (Amla), Vazhapazham (Banana) and Pela (Jackfruit) are highly preferred and considered a delicacy almost. The fruit is soaked and then used to brew the alcohol. One of the people also known to Keystone Foundation – who died in an encounter with an elephant – was a famous brewer. He could distil alcohol from many materials, and one of his famous brews was made from coconut coir!*

*When asked about why no one tapped toddy from Caryota palms, despite there being so many in their homesteads, she said that people wanted ‘quick money’. And since the inflorescence from these palms, used to decorate wedding pandals, fetches a good price, nobody thought of tapping it anymore for its sap. Not many knew the technique of tapping toddy either.*

*Then drinking was a part of life, though not all the time. Most people, including women, drank only in the evenings after a hard day's work. A glass of the brew made from Vela bark was given to mothers' post-delivery and believed to relieve pain and aid in the repair of internal muscles. During religious festivals it was important to abstain from drinking till the ceremonies were over. However, the musicians would not play until they received their share of the brew. The priests conducting the rituals were expected to refrain from alcohol. Much of this has changed and most people just buy alcohol from the government run shops (TASMAC) as it is now illegal to brew at home.*

*It was impossible to brew at home because that was an open invitation to elephants and bears to come and raid the mud pots in which the fruit or bark was soaked for fermentation. The master brewers from the village always did the distilling in the forest, on top of rocks and hills where the elephants could not reach. It was not always possible to find such places*

*and many times the elephants ransacked the whole distillation set up if they found it.*

*Drinking and being happy was the way of the past. Today everybody drinks and cause a lot of fights inside the village. In the past there was plenty of healthy food to eat and the alcohol didn't make us so unhealthy, but today it is different. People are dying from drinking too much.”*

Towards the end of the interview, when asked what her favourite drink was, she said she didn't drink, and that she doesn't want her name mentioned in this article. When I asked if it was alright to mention the name of the community in the article she had no hesitation. Finally, with a smile and a twinkle in her eye, she asked me if I had ever tasted the brew they make from honey combs filled with pollen. When I asked her if it was her favourite drink she was quick to remind me that she didn't drink, almost as if to tell me she could not be caught off-guard!

I have an invitation to her village and a promise that my daughter and I will be served their best brew.

# Palm toddy, the common man’s elixir

Hemalatha Nalla  
Kovel Foundation

The sugary sap called toddy can be obtained from the young inflorescence of the *Borassus flabellifer*, either male or female. Obtaining the sap involves tapping the top shoots and collecting the dripping juice in hanging earthen pots; in some regions plastic or bamboo containers are used. The juice is collected three times a day and, after some fermentation, becomes sour and gains in alcoholic content. It is a famous beverage called “Thaati Kallu” in Telugu. The sap is also used in preparing jiggery and known as “Thaati Bellam”.

## Season/s

Male Tree: Nov-Feb  
Female Tree: Mar-May



After commencement of tapping the sap is not consumed for the first 3 to 5 days due to its bitterness and thickness. This is called “Tholi Odupu Kallu” in Telugu. Once regular tapping begins, the sap is collected thrice a day. For the first month the sap yield is about 2 to 3 litres daily; then it increases to 5 to 8 litres (male trees) and 8 to 10 litres (female

trees), depending on the number of Inflorescences. The given quantities are calculated assuming 4 producing inflorescences.

Tapping involves slicing the inflorescence (stalk) and keeping it clean to allow the sap to flow unhindered. The knife is sharpened using “hing” (*Ferula asafoetida*) which is believed to help increase the sap flow. Tribal people believe that this drink cools the body, reduces body-ache and prevents insomnia.

## Rituals associated with toddy

The tribal people who collect palm toddy celebrate “Chettu Pandaga” which is festival specific to the male tree. This is celebrated annually after tapping season is over. As part of this ritual, a group of 8 to 10 men go and climb the tree in turn and come down. Then they offer prayers and sacrifice a pig or goat or a rooster, and feast with the meat. The tribal people also offer palm toddy along with other special dishes while worshipping the deities on the occasion of the Telugu New Year (Ugadi). An extract of toddy concentrate is prepared by boiling the mix of week long fermented and fresh toddy, in 3 and 2 measures respectively. This extract is called “Chiguru” and much relished by the people; it is also used to light lamps while worshipping Lord Shiva. During marriages in the toddy season the bride’s family is expected to offer 2 to 3 pots of toddy to the groom’s family, which then offers it to the guests. Toddy is also offered and consumed at home as well as in the burial ground in case of death. It is offered to the dead along with their favourite dishes to satisfy the spirit.

Birds, bees, squirrels and rats are all known to drink the sap from the tree especially during hot days and water scarcity. Many bird species build their nests in the tree as they are well protected due to the height.

## Other facts about the Borassus palm

Scientific Name: *Borassus flabellifer*  
Family: Arecaceae  
English Name: Palmyra palm  
Vernacular Names  
Telugu : Thaati/Thaadi Chettu  
Tamil: Panamaram  
Kannada: Taalegari

*Borassus flabellifer* is a robust tree and can reach a height of 30 metres (98 ft). The trunk is grey, strong and ringed with leaf scars; old leaves remain attached to the trunk for several years before falling. The leaves are fan-shaped and 3 m (9.8 ft) long, with pointed black teeth on the petiole margins. Like all *Borassus* species, *B. flabellifer* is dioecious with male and female flowers on separate plants. The male flowers are less than 1 cm long and form semi-circular clusters, which are hidden beneath scale-like bracts within the catkin-like inflorescences. In contrast, the female flowers are the size of a



golf ball and solitary, sitting upon the surface of the inflorescence axis. After pollination, these blooms develop into globose fleshy fruits 15–25 cm wide, each containing 1-3 seeds. The first flowering happens after about 15 to 18 years. The fruits are black to brown with sweet, fibrous pulp and each seed is enclosed within a woody endocarp. The species is abundantly spread in all coastal districts of Andhra Pradesh.

Uses

**Leaves:** The leaves are used for thatching, to make mats, baskets, fans, hats, umbrellas, Diwali crackers, toys, decorations and as writing material.

**Fibre:** A fibre obtained from the petioles which is used to make string, strong ropes, as fences, etc. The fibre obtained from the base of the petioles, or the sheathing leafstalks, is stiff, harsh and wiry. It is used to make brushes and mats.

**Trunk:** The black timber is hard, heavy, and durable and is highly valued for construction and for making of catamarans. The trunk is also used in making of bridges to cross streams.

**Crown:** When the crown of the tree is removed, the segment from which the leaves grow out is an edible cake, known as “Thati Adda”.

**Sprouts:** In Andhra Pradesh, Telangana, Tamil Nadu & Bihar, the seeds are planted and made to germinate and the fleshy stems (below the surface) are boiled/ roasted and eaten. It is very fibrous and nutritious. It is known as “Thegalu” in Telugu.

**Fruits :** The top portion of the fruit must be cut off to

reveal the sweet jelly seed sockets, translucent pale-white, similar to that of the lychee but with a milder flavor and no pit. The sweet jelly seed sockets occur in combinations of two, three or four seeds inside the fruit. The jelly part of the fruit is covered with a thin, yellowish-brown skin. These are known to contain a watery fluid inside the fleshy white body. The conventional way this fruit is eaten is when the outer casing is still unripe while the seeds are eaten as the fruit. But if the entire fruit is left to ripen, the fibrous layer of the palm fruits can also be eaten raw, boiled, or roasted. This is also used to prepare pan-cakes mixed with jaggery. The dried seed sockets are peeled and used as one of the ingredients in preparing a pudding with sesame; this is offered during “Nagula Chavithi” (a festival of Snakes) and celebrated 4 days after Diwali.

# Gift of the Gods: toddy from the Fish-tail Palm

Pravat Kumar Mishra with inputs from Sudarshan Sahu  
Regional Centre for Development Cooperation (RCDC)

The Salapa tree is commonly known as the Fish-tail Palm, (*Caryota urens*), and is seen in much of central India, including Odisha. The sap that is tapped from the inflorescence is known by the same name. Other names for it are tadi (Durwa) and gorga (Koi-toor) among the adivasi people and suplhi in Hindi. In Bastar's local parlance it is also referred to as Akaashvani! Like most toddy's it too is allowed to ferment until it acquires a certain amount of bitterness and alcohol content before being consumed. Most adivasi communities in Odisha try and cultivate some of these palms near their home, usually in their backyards. It could very well be an indicator of the power of the household near which the palms are located.



The Salapa palm is linked to the way of life of the people, their cultures and tradition. Often outsiders look down upon the people who consume toddy. Some households also sell the salapa they tap for an income; but this is difficult in Odisha as the local liquor vendor informs the police to harass them, and to prevent them from hampering their liquor business.

A Salapa tree starts flowering after 10 to 12 years. Once this happens, a bamboo ladder is prepared and fastened to the tree; a pot is hung at the tip of the stalk that is tapped in which the sap collects.. The tapper climbs up the ladder regularly twice a day to tap the flowering stalk; a special knife is used for the purpose. If necessary the pot is covered with a cloth or a bamboo mat specially woven for this



purpose.

According to Aranchu Sabar, a young Salapa tree can yield between 10 to 15 litres of toddy daily; an older mature tree could yield up to 20 litres. The first harvest and drink is usually a communal affair, a kind of celebration, for which the toddy is allowed to collect for about 24 hours. Salapa drinking ensures community cohesiveness and love towards each other and cements the bonding of relationships. Early morning toddy is refreshing and often sweet; as the day wears on the drink becomes slightly bitter and stronger.

The Kondh people of Raygada district treat the Salapa tree as an asset and take pride to have some growing them around their homes. When a baby is about three weeks old they give it the first drink by applying a drop to its lips. The Kondh believe that Salapa provides energy to work hard and to climb hill slopes. Salapa is a drink of marriage ceremonies, festive occasions, used during worship of gods, and at death rituals.

Salapa palms are economically useful. A person with 10 trees could be assured of up to Rs 1 lakh annually through the sale of toddy. During marriages an exchange of salapa between the families is an indication of agreement between the parties. During death too the bereaved family offers toddy to the clan which then pools in money and other resources to help with the funeral ceremonies.

## Legal aspects

In Scheduled Areas, the Gram Sabha has the authority to enforce prohibition or to regulate or restrict the sale and consumption of any intoxicant. A village/hamlet has the right to decide on its affairs according to its traditions. In the case of Salapa, the collection, storing, consumption and sale, they are legally allowed to do as they please. However, this is not widely known. Hence the police and the local liquor vendor (who has a licence to sell liquor) harass or frighten the tribal communities and extort money. In many adivasi areas spurious liquors, available in plastic pouches, are sold freely and one may find it difficult to get some local toddy.

In the above context, Sumani Jhodia from Rayagada district, was appointed as the adviser by Biju Patnaik in the 1990s. She enjoyed the powers of a Superintendent of Police (SP), and had helped tribal women wage a fight against liquor traders. Though she was reluctant to shoulder the responsibility Patnaik had instilled a sense of confidence in the group, by promising that the entire administration would support her and the colleagues in their endeavour to stop the trade of illicit liquor. The government should ban foreign liquor in tribal areas. Instead, they should promote Salapa to allow the people to derive the maximum pleasure out of it. Any form of legal intervention in tribal culture that controls and curtails their freedom goes against their customary and intellectual property rights and traditions.



# Goan elixirs: Urrack, Feni and Maad

Pandurang Hegde  
PRAKRUTI

Both domestic and international tourists visiting Goa yearn for two things. The excellent beaches and the local liquor ‘feni’, made from the abundant cashew trees grown in the state.

The Portuguese introduced cashew in Goa and they distilled the fruit juice from the cashew apple to make the Feni. With 42-45 % alcohol it is a strong drink, with an intense odour and aftertaste; many outsiders do not like this strong taste. It’s one of the love-it-or-hate-it kind of drink. And after a Feni evening the odour lingers on in the toilet for at least 24 hours! Despite this minor drawback, the beauty of this drink is that it does not leave a hangover the next day, regardless of the amount of Feni consumed the previous night.

The art of making Feni has been passed across successive generations – and it is a venerated cultural

heavy boulders, and the collected juice stored in an earthen pot underground. After fermentation, the liquid goes through three rounds of distillations until it becomes strong, smooth, and attains an aromatic flavour with 45 % alcohol by volume. A misconception prevails that the word ‘feni’ is introduced by the Portuguese. In fact it is a word with Sanskrit roots, pheni meaning “fourth”.

The distillation of Feni involves three distinct processes. After fermentation, the first distillation is called Urrack, which is neither pungent nor aromatic. This is further distilled into what is known as Cazulo that has intoxicating qualities. The third and the final distillation produces the refined ‘feni’, the final product. Traditionally it is kept in glass bottles in the bottom of the well, and as ageing takes place, it is prized for its medicinal properties, believed to control cold, cough, and relieve respiratory ailments.

Though Urrack has only 15 % alcohol, the ‘high’ is achieved in a relatively short time. This is usually available when the distillation process is happening, only during March and April. The taste of fresh Urrack and lemon in the hot days of summer is really refreshing.



tradition. For ordinary Goans it is normal to have a shot or two of Feni during evenings, or with the fish curry. The culture and food habits are interwoven into this locally made liquor. Cashew planters, big and small, employ local labourers with the requisite skills for cashew harvesting and the distillation process, and sell the liquor themselves.

Feni makers collect fallen cashew apples and crush them underfoot, akin to the traditional process of making wine. The pulp is then pressed between

Urrack, a milder version after the first distillation is consumed in large quantities during the summer months when the cashew trees are full of fresh fruits, though it cannot be kept for long. Fresh Urrack is a craze among Goans.

Fortunately, despite the Covid restrictions this year, our well-wisher from Goa was able to send us a five-litre can of fresh Urrack to keep up our spirits in midst of gloomy pandemic.

Even before the Portuguese arrived on the coast in Goa, the abundance of coconut palms on the coast motivated the locals to distil the sap from coconut trees. It was called Maad. Unlike cashew fruits, which do not require climbing the trees to collect the fruits, only the toddy tapers are able to shin up coconut trees and collect the sap every day. Maad is much smoother than Feni, and has the added advantage of not having the strong odour of the latter. This allows the production of different flavours of Maad, like the Jeera Maad, famous for its taste and smoothness. Maad is more popular in southern Goa. Traditionally, Maad was the drink of lower classes, the agricultural labourers, as it was cheaper than 'feni'. However, the future is bleak for Maad as in recent times lack of skilled toddy tappers has led to decrease in Maad production, but despite this there is strong local market for good quality Maad in Goa. Many outsiders have not heard of this as it is not as popular as Feni, which is a blessing in disguise! You are bound to get good quality Maad in the local market.

Historically, drinking was not a taboo among Christian families whereas among Hindus, it was a taboo. However, lower caste Hindus did drink Maad. Times have changed as Hindus are drinking more than Christians, and it is the tourists who are drinking too much in this tiny state. They come here to get drunk, rather than to enjoy the taste of this ethnic product.

Though Feni is a popular Goan drink, its tag of 'country liquor' has negative implications to make a dent in the the IMFL (Indian Made Foreign Liquor) market. Though it is a favourite of tourists, overall the IMFL market is steadily increasing in Goa leading to drop in the production of Feni in recent years. Lack of standardisation in distilling Feni is one of the reasons that have impacted the lower production and sales paving way for the expensive IMFL brands, where the big liquor barons make huge profits, as local brands like Feni languish in the backyard.

In 2009, Feni received protected "Geographical Indication" status, meaning that true Feni must come from Goa. Probably this is the only alcohol in the country with GI status! The designation has sparked efforts to standardize hygiene and quality, but many argue that mass-production yields a harsher, less authentic product. Large-scale Feni might be more hygienic, but it lacks the unique variations that make the drink truly local.

In addition to GI tag Feni has also got the status of 'Heritage Drink' in Goa to boast its status as a local, ethnic drink. Despite all these governmental interventions, the modern day Goans, instead of serving this traditional drink during the festivals and marriage ceremonies, now serve IMFL, considered higher in prestige than Feni.

Through organising 'Feni Festivals' some individuals and the tourism industry is trying to regain the status of this ethnic drink. They have a long way to go.





Pots displayed in a haat

## महुआ का उपयोग

- **महुआ – एक परिचय**

भारत में बहुत कम ऐसे वृक्ष हैं जो कि उपयोगिता की दृष्टि से अत्यंत महत्वपूर्ण हैं, जिसमें महुआ का वृक्ष प्रमुख है तथा इस वृक्ष का प्रत्येक अवयव आर्थिक रूप से उगने वाले स्थान के निवासियों के लिए अतिरिक्त आय का साधन रहता है। एक मध्यम आकार का बड़ा वृक्ष लगभग पूरे भारत में शुष्क अथवा मिश्रित उष्ण कटिबंधीय वन क्षेत्रों में समुद्र तल से लगभग 1200 मीटर ऊंचाई तक पाया जाता है। प्राकृतिक रूप से नदियों और जल स्रोतों के किनारे इसे अत्यंत प्रिय है।

- **महुआ का विभिन्न भाषाओं में नाम**

इंग्लिश – इण्डियन बटर ट्री, महावाश ट्री

हिन्दी – महुआ, मोहवा, मोवरा

संस्कृत – मधुका, गुडपुष्पा

बंगाली – महुवा माहुला, मौल

मराठी – मोहदा, मोहवरा, महावा

गुजराती – महुवा, महुदो

तेलगू – इप्पै पुवू

तमिल – इल्लुपईएइल्लुपी, कटलुपई

कन्नड – हिप्पे, हिप्पेनाराय, यप्पीमारा, इप्पा, हिप्पेगिदा

मलयालम – इलुपा, पूनम, इरिप्पा, इल्लिपा, इल्लुपाई

उडिया – महुला, मोहा, मदगी

महुआ के फूल एवं फल भारत में जनजातीय समुदायों एवं ग्रामीणों के लिए न केवल भोज्य रूप से प्रयोग में आये जाते हैं बल्कि गर्मी के मौसम में जब भोजन एवं जीविकोपार्जन के साधन अपनी न्यूनता पर रहते हैं, तब ये इन वनवासियों की आय के अतिरिक्त साधन भी होते हैं।

- **महुआ का इतिहास –**

महुआ भारत के जनजातीय समुदाय का महत्वपूर्ण भोज्य पदार्थ है। महुआ के फूल एवं फल ग्रीष्म ऋतु में उस समय प्रकृति में उपजते हैं। जबकि जनजातीय समुदाय के पास चावल व अन्य भोज्य पदार्थों का स्टॉक लगभग नगण्य रहता है। मध्य भारत एवं पश्चिमी भारत के दूरदराज वन अंचलों में बसे ग्रामीण आदिवासी जनों के लिए रोजगार के साधन एवं खाद्य रूप से महुआ वृक्ष का महत्व बहुत अधिक है।

- **महुआ फूल**

इसके फूल वृक्ष की शाखाओं के अंत में गुच्छों के रूप में लगते हैं। ये फूल देखने में सुन्दर, चमकीले एवं स्वाद में मीठे होते हैं। इन फूलों में काफी मात्रा में शक्कर, विटामिन एवं कैल्शियम होती है। फूल, जानवरों के लिए भी एक अच्छा भोजन होते हैं। एक पूर्ण रूप से विकसित पेड़ से औसतन 50 किलो सूखे फूल प्राप्त होते हैं।

- **महुआ फल**

इस पेड़ का फल गूदेदार व हरा रंग लिये रहता है। यह एक पकता है तब इसका रंग पीला अथवा नारंगी-बादमी हो जाता है। इसके एक फल में 1-4 बीज होते हैं जिसमें से तेल निकाला जाता है।

- **महुआ बीज**

महुआ के बीजों से तेल निकाला जाता है जिसका उपयोग सीधे खाना पकाने, घी में मिलाने, प्रकाश करने, साबुन एवं मोमबत्ती बनाने में होता है। इस दृष्टि से ग्रामीणों के जीवन में महुआ बीज का भी बहुत महत्व है। एक बीज में दे मींगियां होती है। गिरे हुए एवं हिलाकर गिराये गये फलों को हाथों से बीना जाता है। यह संग्रहण कार्य दो से तीन हफ्तों में पूर्ण करना होता है। गूदे को हाथों से हटाया जाता है तथा उसे 5-6 घण्टों तक पानी में डुबोकर रखा जाता है। इस प्रकार भी हुए बीजों को पत्थरों पर पीटकर अलग किया जाता है। एक वृक्ष से 20-40 किलोग्राम बीज डोलमा प्राप्त होता है।

- **महुआ फूल का संग्रहण**

महुआ फूल का पारम्परिक संग्रहण – सुबह 5 बजे से प्रारंभ होकर दिन के 12 बजे तक चलता है। फूलों के गिरने की तीव्रता गर्मी के ऊपर निर्भर करती है। यदि धूप तेज है, तो फूल जल्दी गिर जाते हैं। वहीं बादलों में धीमी गति से गिरते हैं, तथा मात्रा भी घट जाती परिवार के छोटे बड़े सदस्य मिलकर, झाड़ों के नीचे के पत्तों को जलाकर या समेट कर साफ कर देते हैं, तथा महुआ फूलों का चुन-चुनकर इकट्ठा कर लिया जाता है। पर जिसके पास अधिक झाड़ है वे अन्य को अधिया में अन्य लोगों से बिनवाते हैं, या पूरा फूल झाड़ के नीचे ही पड़ा रहने देते हैं, तथा बाद में झाड़ू से बटोर लिया जाता है।

- **महुआ के बने उत्पाद**

महुआ फूल से निर्मित व्यंजन एवं अन्य उत्पाद बनाने की विधि – महुआ फूल एवं फल के वैज्ञानिक तकनीक से संग्रहण कर विधिपूर्ण उपचारण करते हुये, सुखाकर अच्छे तरीके से बाजार प्रस्तुतिकरण करने से हमें अच्छी दरें मिल सकती हैं, जिससे समितियों को लाभ की संभावनाओं में वृद्धि होगी। महुआ फूल का मूल्यवर्धन कर इनसे निर्मित खाद्य उत्पाद एवं व्यंजन स्थानीय रूप से निर्मित किये जा सकते हैं। महुआ फूलों से निर्मित व्यंजनों की निर्माण तकनीक से कतिपय सुधारों के साथ देशी एवं विदेशी बाजार में जिसकी विधि यहां नीचे दी गई हैं –

1. **रसकुटका –**

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल

विधि – अच्छी गुणवत्ता का महुआ फूल लेकर महुआ से कचड़ा साफ करना चाहिए तथा सूखाने के लिए रख देना चाहिए। उसके बाद उसकी कुटाई (पिटाई) की जाती है, फिर बाद में अनुमानित मात्रा में पानी लेकर फुला दिया जाता है। जब महुआ फूल जाता है तो छान लिया जाता है, छानने के बाद जो रस निकलता है उसे रख लिया जाता है, एवं किसनी में घिस लिया जाता है, घिसने में जो रस निकलता है उसे पहले वाले रस में मिलाकर (रस औटी) शीरा अथवा चाशनी जैसा रस बना लिया जाता है। रस निकलने के बाद महुआ फूल की घिसन को छोटे-छोटे टुकड़े में अच्छी तरह से सुखा लिया जाता है। सुखाने के बाद चावल की तरह पैना पर चढ़ाया जाता है, (पुटकी बर्तन के ऊपर) भापाने के लिये और जब भापा जाता है तो पैना से उतारने के बाद ठण्डा किया जाता है एवं जो रस औटाये गये शीरे में इसे मिला दिया जाता है। अच्छे बर्तन में बन्द करके रख दिया जाता है। इस तरह से रस कुटका तैयार हो जाता है।

## 2. लाटा

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल एवं 300 ग्राम सफेद तिल।

विधि – अच्छी गुणवत्ता का महुआ फूल लेकर महुआ से कचड़ा साफ करना चाहिए तथा धोकर सुखाने के लिए रख देना चाहिए। कपड़े में उसे अच्छे प्रकार से भूँजा जाता है एवं गर्म-गर्म ही महुआ फूल की कुटाई (पिटाई)की जाती है, फिर कुटाई करने के बाद (आप को जो मिलना हो) जैसे तिली आदि इस तरह मिलाने के बाद लड्डू की तरह बना लिया जाता है। इस विधि से आप लाटे का मजा ले सकते हैं। यह बन्द डिब्बे में रखने पर महीनों चल सकता है।

## 3. डोभरी

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल।

विधि – ताजा गिरे हुए महुआ फूल से कचड़ा साफ करना चाहिए तथा धाने के बाद तरछी (मिट्टी के बर्तन) में आग में चढ़ाकर महुआ फूल को पानी डालकर पकाया जाता है। पकने के बाद जो व्यंजन बनता है उसे हम डोभरी कहते हैं। यह एक दिन के बाद खराब हो जाता है।

## 4. महुआ खोल्ली

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल।

विधि – अच्छी गुणवत्ता का महुआ फूल लेकर महुआ से कचड़ा साफ करना चाहिए तथा धो लेना चाहिए तथा धोने के बाद तरछी (मिट्टी के बर्तन) में भूँजा जाता है, भूजने के बाद महुआ के दाने अलग-अलग रहते हैं यह एकदम सूखा होता है, इसे चने जैसे चबाया, खाया जा सकता है। इसी को महुआ खोल्ली कहा जाता है। यह 15 दिन तक उपयोग कर सकते हैं।

## 5. घोईटा

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल।

विधि – अच्छी गुणवत्ता का महुआ फूल लेकर महुआ से कचड़ा साफ करना चाहिए एवं सूखने के लिए रख देना चाहिए। इसके बाद पानी में फुला देना चाहिए, जब महुआ फूल जाता है तो फिर धो लिया जाता है, धाने के बाद तगाड़ी (मिट्टी का गोरसा) में आगे में चढ़ाकर डाऊआ के माध्यम से चलाकर भूँजा जाता है। पकने (भूजने) के बाद जो व्यंजन तैयार होता है, उसे घोईटा कहा जाता है।

## 6. महुआ बिस्कट

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल, 3 किलोग्राम मैदा, 250 ग्राम तिल एवं 100 ग्राम काजू, बेकिंग पाउडर चुटकीभर।

विधि – महुआ फूल अच्छे गुणवत्ता का 3 किलोग्राम लेकर पानी से अच्छे तरीके से तीन-चार बार धुलाई की जाती है जिससे महुआ का कचड़ा एवं मिट्टी निकल जाये, फिर इसके बाद महुआ का कचड़ा एवं मिट्टी निकल जाये, फिर इसके बाद महुआ का रस कपड़े से निचोड़कर रस निकाला जाता है, तथा रस को आग में गर्म कर सिरा बना लिया जाता है तथा सिरा को 3 किलोग्राम मैदे में मिलाकर गुथा जाता है, तथा साथ में तिल डालकर एवं काजू की पिसाईकर काजू मिलाकर मिठे तेल में पका लिया जाता है। इस तरह से महुआ बिस्कट तैयार हो जाता है इसमें शक्कर मिलाने की आवश्यकता नहीं होती है एवं इसी विधि से महुआ का खुरमा भी तैयार किया जाता है।

## 7. महुआ सलोनी

सामग्री – 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल एवं 1 किलोग्राम मैदा में स्वादानुसार सेंधा नमक, काला नचक, बेकिंग पाउडर चुटकीभर।

विधि – महुआ अच्छे गुणवत्ता का 1 किलोग्राम लेकर पानी से अच्छे तरीके से तीन-चार बार धुलाई की जाती है जिससे महुआ का कचड़ा एवं मिट्टी निकल जाये, फिर इसके बाद महुआ का रस कपड़े से निचोड़कर रस निकाला जाता है, एवं रस निकालने के बाद जो महुआ बचता है उसकी पिसाई की जाती है, तथा पिसे हुए महुआ को सिरा के साथ 1 किलोग्राम मैदा में स्वादानुसार सेंधा नमक, काल

नमक, हल्का बेकिंग पाउडर, मिलाकर गुथा जाता है, फिर सलोनी काटकर मिठे तेल में छान लिया जाता है। इस तरह से महुआ सलोनी तैयार हो जाती है।

**8. महुआ मखानी**

सामग्री — 2 किलोग्राम अच्छी गुणवत्ता के महुआ फूल, 400 ग्राम मखाना, 400 किशमिश, 400 ग्राम काजू, पीसी हुई हल्दी और काला नमक, सेंधा नमक।

विधि — महुआ चूरे गुणवत्ता का 2 किलोग्राम लेकर पानी से अच्छे तरीके से तीन-चार बार धुलाई की जाती है जिससे महुआ का कचड़ा एवं मिट्टी निकल जाये। फिर इसके बाद महुआ को साफ कपड़े पर धूप में सुखाया जाता है। सुखाने के बाद महुआ को मीठे तेल में कम आग पर गरमकर छाना जाता है, जिसे लाल हो जाने के बाद निकाला जाता है तथा 400 ग्राम मखाना, 400 ग्राम किशमिश, 400 ग्राम काजू को धीमी आग में मीठे तेल में छान कर निकाला जाता है, इन सब सामग्री को इकट्ठा कर लिया जाता है तथा पीसी हुई हल्दी भुंजकर और काला नमक, सेंधा नमक मिलाकर महुआ मखानी तैयार की जाती है। लाभ — इसको सुबह-शाम नाश्ते के समय लेने पर किसी भी व्यक्ति को बात, दर्द और लू एवं ठण्ड से बचाता है तथा चोट में महुआ की पुटकी बनाकर सिकाई की जाये तो दर्द तुरंत समाप्त हो जाता है, एवं शुगर फ्री होता है तथा साथ में शरीर को फुर्तीला भी रखता है।

**9. फरा**

सामग्री — 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल, 400 ग्राम गेहूं का आटा/बेसन एवं 300 ग्राम सफेद तिल, 600 ग्राम घी, आवश्यकतानुसार दूध।

विधि — 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल फुलाकर रस निकाल लें। गेहूं आटा को घी डालकर भुंज लें, और ज बवह ठण्डा हो जाये तो महुआ का रस मिलाकर आटे को गूथ लें। बचे रस को कड़ाही में चढ़ाकर शीरा बनाये और ज बवह उबलने लगे तो नमकीन बनाने वाले झारे को उस पर रख कर आगे/बेसन की नमकीन झार दें। जब अच्छी तरह से पक जाये खीर जैसे गाढ़ा हो जाये तब उपयोग करें। स्वाद बढ़ाने के लिए दूध भी मिलाया जा सकता है।

**10. कतरा या काची**

सामग्री — 1 किलोग्राम अच्छी गुणवत्ता के महुआ फूल एवं 500 ग्राम गेहूं/बेसन/ज्वार का आटा, 500 ग्राम घी।

विधि — गेहूं/बेसन/ज्वार के आटा को घी में डालकर लाल-लाल भुंज कर महुआ के रस निकाल कर उस रस को आटे में डालकर घोल बना लें। फिर चूल्हे में चढ़ाकर उसको खूब औटा ले, जब यह गाढ़ा हो जाये कड़ाही छोड़ने लगे। तब इसे थाली में बर्फी जैसे फैला दे फिर इसे चाकू से टुकड़ों में काटकर निकाल लें और दूध के साथ या ऐसे ही खायें।

**11. भुकनी/भुरकुड**

सामग्री — 1 किलोग्राम अच्छी गुणवत्ता वाले महुआ फूल, भूजा चना और तिली।

विधि — महुआ को साफ करके मिट्टी के बर्तन में भूजा लें। भूजा चना और तिली इन सबको मिलाकर ठण्डा करके थोड़ा मोटा-मोटा और कूट लें।

**12. महुआ जैम**

सामग्री — 1 किलोग्राम उत्तम श्रेणी का महुआ फूल, दो नींबू, 5-6 दाल चीनी के टुकड़े, 5 ग्राम छोटी इलायची।

विधि – 1. महुआ फूलों को साफ कर हल्के पानी से धाएं फिर हल्का सुखा लें। फूलों में से पुंकेसर अलग लें तत्पश्चात् 500 ग्राम शक्कर की दो तार चासनी में इसे इतना पकायें की बिल्कुल गल जाये। जब महुआ फूलों के सभी अंश आपस में घुलमिल जाये तो इसमें दो नींबू निचोड़कर ढंडा करें। ढंडे मिश्रण में दालचीनी और इलायची पीसकर इसमें डाल दें। इसे शीशे की खुले मुंह की बोतल में भरकर रखें। लम्बे समय तक भण्डारण के लिए लगभग 2.5 ग्राम पोटेशियम बेन्जोएट मिलाया जा सकता है।

### 13. महुआ आचार

सामग्री – 1 किलोग्राम उत्तम श्रेणी का महुआ फूल, 100 ग्राम सरसों तेल, 10 ग्राम हींग, 10 ग्राम लाल मिर्च, 50 ग्राम राई, 30 ग्राम नमक, 20 ग्राम काली मिर्च, चुटकी भर हींग, हल्दी, 50 ग्राम हरा अदरक, 100 ग्राम हरी मिर्च।

विधि – चूने हुये महुआ फूलों को साफ कर तथा आवश्यकतानुसार धोकर हल्का सुखा दें। फिर कढ़ाई के अन्दर सभी मसालों का मिश्रण मिलाकर अच्छी भूंज लें और उसे शीशे के पात्र में डाल दें। इसके बाद हल्के सूखे हुये महुआ फूल, हरी मिर्च बीच से काटकर व छोटे-छोटे टुकड़ों में अदरक भी डाल दें। शीशे के पात्र का मुख ढककर या बंद कर एक सप्ताह तक धूप में रख दें। इस मध्य प्रत्येक दिन मिश्रण को हिलाते रहें व धूप लगाते रहें।

### 14. महुआ से बना सिरका

सामग्री – 1 किलोग्राम उत्तम श्रेणी का महुआ  
महुआ विनेगार/सिरका

### 15. महुआ तेल

बीजों को सुखाया जाता है और डिकोर्टिकेटर/शेलिंग मशीन अथवा सुखाने से इसके अन्दर की मिंगी को अलग कर लिया जाता है। बीज के अन्दर की मिंगी का वजन बीज के वजन का 70 प्रतिशत रहता है। महुआ बीज को घानी व अन्य वैज्ञानिक प्रसंस्करण से तेल निकाला जाता है, जिसमें तेल की मात्रा बीज में लगभग 35 से 38 प्रतिशत पाई जाती है। बीज से प्राप्त तेल को महुआ बटर या कोको बटर के नाम से जाना जाता है जिसका उपयोग शोधन करके खाने के, कन्फेक्शनरी व चॉकलेट उद्योग के द्वारा भी प्रयोग में लाया जाता है।

- इसके तेल की लुब्रीकेटिंग ग्रीज के निर्माण, जूट उद्योग तथा मोमबत्ती उद्योग में बड़ी मात्रा में प्रयोग में लाया जाता है। इसका मुख्य उपयोग कपड़े धोने वाले साबुन व घटिया श्रेणी के सौन्दर्य प्रसाधनों में भी किया जाता है।
- महुआ तेल का औषधीय उपयोग त्वचा रोगों, गठिया व सिरदर्द में भी किया जाता है। इसको लेक्जेटिव, रेचक के रूप में पुराने कब्ज, अर्श, भगंदर इत्यादि रोगों में भी प्रयोग किया जाता है।

### 16. महुवा दारू :

#### 1. महुवा दारू सामाजिक परिपेक्ष :

राजस्थान में महुवा दारू की पहचान प्रमुख रूप से दो समुदाय के साथ में जुड़ी है वो है आदिवासी समाज एवं राजपूत समाज महुवा दारू बनाने एवं इसके उपयोग करने के लिए जाने जाते है इसको सामान्यतया – “महुडी”, “ ठरा “ , “ खाट्यो”, “रजवाड़ी”, “सोमरस” “मेवाड़ी व्हिस्की” एवं कुछ लोग इसको “धोरा व्हिस्की” (चूँकि ये ज्यादातर खेत के धोरे में बनाया जाता

हे ) राजस्थान गंगानगर शुगर मिल द्वारा भी महुवा से देशी दारू बनाने का प्रयोग किया गया हे जो की “हेरिटेज लिकर ” के नाम से जानी जाती हे इसकी कीमत अधिक होने से ये आम आदमी द्वारा उपभोग नहीं की जा सकती हे, लेकिन इसको बनाने का मेरा अपना व्यक्तिगत अनुभव भी हे एवं अवसर मिले तो आज भी बना सकते हे , महुवा दारू के उपयोग को लेकर के भी एक मान्यता थी की इसका उपयोग आदिवासी समाज एवं राजपूत समाज द्वारा ही किया जाता हे जबकि आज के इस माहोल में हर कोई इसका उपयोग करता हे

आदिवासी समाज : आदिवासी समाज में परम्परागत रूप से महुवा दारू का उपयोग हर प्रकार के सामाजिक कार्यक्रम में किया जाता हे, इस समाज द्वारा दारू ज्यादातर स्वयम के उपयोग के लिए एवं कुछ परिवार अपनी आजीविका के लिए बनाते हे , आदिवासी समाज की हर एक गतिविधि में देशी दारू का अपना प्रचालन हे जिसमे जन्म से लेकर के मृत्यु तक के रीतिरिवाज एवं सभी प्रकार के तीज त्यौहार एवं मेले शामिल हे जिसमे देशी महुवा दारू का उप योग प्रचालन में हे , आम धारणा ये हे की इसी दारू के कारन आदिवासी समाज में पिछड़ापन हे , जबकि ये वास्तविकता नहीं हे ,

राजपूत समाज :

*“दारू पीओ और रंग करो ने राता राखो नेण,  
साथी थारा जल मरे तो सुखी पावे से सेण”*

राजपूत समाज में दारू का अपना महत्व हे इसका उपयोग ज्यादातर किया जाता हे , विशेषकर के मेहमान नवाजी के लिए दारू पीना पिलाना एक परम्परा के रूप में स्थापित हो गया प्राचीन समय में यह देशी दारू का उपयोग किया जाता था लेकिन वर्तमान में इसका स्थान भारत निर्मित विदेशी मदिरा ने ले लिया , किसी भी मेहमान के आगमन पर इसका उपयोग किया जाता था , इसको बनाने वाले कलाल जाती के लोग होते थे जिनकी आजीविका इसी काम पर टिकी रहती थी, जिसका एक गाना आज भी प्रचलित हे और आज भी समाज के महफ़िल में गाया एवं बजाया जाता हे जिसमे जन्म से लेकर के मृत्यु तक के रीतिरिवाज एवं सभी प्रकार के तीज त्यौहार एवं मेले शामिल हे जिसमे देशी महुवा दारू का उप योग प्रचालन में हे , आम धारणा ये हे की इसी दारू के कारन समाज में पिछड़ापन हे, एवं हवेलिया बिक गई हे , जबकि ये वास्तविकता नहीं हे ,

*“कलाली थारो दारू मारा अन्नदाता पिदी रे ”*

*“पाल माथे पिपली कलालन हिंदो डाल्यो सा आवे ला बादिला भंवर सा ने थोड़ो थोड़ो दीजे रे दारू – दाखा रो ”* समाज में दारू का परमुख उपयोग मेहमानों की आव भगत में किया जाता था जो आज भी प्रचलित हे

## 2. महुवा दारु आर्थिक परिपेक्ष में :

महुवा दारु ग्रामीण क्षेत्र में एक गाँव में कई परिवारों का पालन पोषण करता है , इसका बहुत ही आर्थिक महत्व है, सामान्यतया एक बोतल देशी दारु 50 से 150 रुपये में मिलती है, लेकिन पुलिस के डर से अब इसको बनाने का काम बहुत ही सुदूर क्षेत्र में कहीं कहीं होता है चूँकि पुरे देश में महुवा दारु बनाने पर लगभग प्रतिबन्ध है एवं सभी को भारत में निर्मित देशी शराब एवं भारत में निर्मित विदेशी शराब का उपभोग करने के लिए बाध्य किया जाता है इस कारण से एक परिवार जहाँ वर्ष भर के लिए महुवा एकत्र कर खुद के लिए महुवा दारु बना लेता था जो थोड़ी सी मेहनत ही लगती थी , लेकिन अब एक परिवार पुरे साल में लगभग 8 से 10 हजार रूपया दारु पर खर्च करता है , यदि महुवा से दारु बनाने की अनुमति मिल जावे तो लाखों रूपया गाँव में ही बच सकता है , साथ ही महुवा संग्रहण कर्ता को भी अधिक संग्रहण दर मिल सकती है महुवा फूल जब ग्रामीण द्वारा मार्च अप्रैल में नकद आवश्यकता की पूर्ति हेतु एकत्र कर दुकान पर बेचा जाता है तो उसको केवल 15-20 प्रति किलो भाव मिलता है जबकि वही फूल अगस्त के बाद में बाजार से खरीदने पर 50-60 रूपया के भाव में मिलता है यानी की मात्र 4 माह के भंडारण से तीन गुना आय व्यापारी को हो जाती है यदि हर व्यक्ति अपनी अपनी उपज खुद भंडारण कर के रखे तो प्रति वर्ष हजारों रूपया की बचत हो सकती है

## 3. महुवा दारु स्वास्थ्य के परिपेक्ष में :

एक तरफ सभी शराब की बोतल पर हानिकारक होने का लेबल लगाया जाता है , लेकिन हमारा अनुभव बताता है की महुवा की दारु से कोई विशेष हानि नहीं होती है , भारत में निर्मित विदेशी मदिरा विशेष फार्मूला से केमिकल के उपयोग से बनाई जाती है जबकि देशी दारु सिर्फ महुवा फूल के उपयोग से ही बनाई जाती है ऐसा माना जाता है की यदि महुवा दारु का उपयोग लम्बे समय तक भी किया जावे तो स्वास्थ्य के लिए नुकसान नहीं होता जबकि विदेशी मदिरा का पान करना स्वास्थ्य के लिए हानिकारक है

## 4. महुवा दारु पर्यावरण के परिपेक्ष में :

महुवा का देशी दारु बनाने से पर्यावरण के लिए कोई नुकसान नहीं है क्योंकि इसमें लगने वाला पानी खेत की पिलाई के वक्त ही खेत में काम आ जाता है , इसको बनाने के लिए सुखी लकड़िया जंगल से लाकर के उपयोग की जा सकती है , इसका वेस्टेज पशु आहार में काम आता है इसलिए कहीं भी फेंकना नहीं पड़ता है महुवा फूल भी अपने पेड़ पर आसानी से उपलब्ध है एवं संग्रहित करके रखा जा सकता है

## 5. महुवा दारु एवं महिलाएं :

वेसे तो दारु को महिलाओं का दुश्मन कहा जाता है लेकिन आदिवासी समाज में महिलाओं द्वारा इसका उपयोग करना आम है , वही राजपूत समाज में महिलाओं द्वारा कहीं कहीं इसका

सेवन करने का प्रचलन है जो अब लगभग समाप्ति की ओर है , दारू पीकर के पुरुषों द्वारा किया जाने वाला मारपीट, गली गलोज एवं अत्याचार इसका इसको प्रमुख दुश्मन का रूप देता है , दारू से कई घर बर्बाद होने से पुरे परिवार की जिम्मेदारी महिला एवं बच्चों पर आ जाती है इसलिए दारू को महिला एवं बच्चों का दुश्मन माना जाता है

#### 6. बनाने का तरीका:

महुवा दारू बनाने का मुख्य तरीका आसवन विधि ही है जिसका उपयोग हर क्षेत्र में किया जाता है , इसके आसवन के लिए आधुनिक मशीन का भी उपयोग किया जा सकता है

- सादा दारू :
- पहली धार
- दुबारा दारू :
- तिबारा दारू :
- राजसी दारू / हेरिटेज लिकर / रजवाड़ी दारू

#### दारू बनाने का विवरण एवं उपयोग सामग्री

| दारू का प्रकार                            | विवरण                                     | इसको बनाने में उपयोग प्रमुख सामग्री                            | 25 किलो फूल से प्राप्त दारू की मात्रा | मूल्य रुपया में प्रति बोतल | उपभोग व्यक्ति |
|-------------------------------------------|-------------------------------------------|----------------------------------------------------------------|---------------------------------------|----------------------------|---------------|
| सादा दारू : ठरा                           | जो समान्यतया आदिवासी इलाको में मिलाता है  | महुवा फूल एवं गुड,                                             | 40 बोतल                               | 80 से 100                  | 1 से 2 लोग    |
| सामान्य दारू                              | ग्रामीण क्षेत्र में ज्यादातर उपलब्ध       | महुवा फूल एवं गुड,                                             | 25 बोतल                               | 200 से 250                 | 2 से 3 लोग    |
| पहली धार :                                | सबसे पहली बार में मिलने वाली एक बोतल      | महुवा फूल एवं गुड,                                             | 1+ 24 बोतल                            | 300                        | 3 से 4 लोग    |
| दुबारा दारू :                             | निकली हुई 25 बोतल को पुन निकलना           | 25 बोतल दारू , सोंफ, इलायची , केसर , काजू , किशमिश आदि         | 12 से 15 बोतल                         | 500 से 700                 | 6 से 8 लोग    |
| तिबारा दारू                               | निकली हुई 15 बोतल को फिर से निकालना       | 15 बोतल दारू , सोंफ, इलायची , केसर , संतरा , काजू , किशमिश आदि | 6 से 8 बोतल                           | 800 से 1000                | 12 से 15 लोग  |
| राजसी दारू / हेरिटेज लिकर रजवाड़ी / दारू: | राजस्थान गंगा नगर शुगर मिल द्वारा निर्मित | RGSM फार्मूला                                                  | -                                     | 1500 - 1800                | 12 से 15 लोग  |



### Heritage Liqueur

The Rajasthan State Ganganagar Sugar Mills (RSGSM) acquired recipes of the brews from the erstwhile royal families in 2003 to keep them alive. Eight brands of heritage liquor, whose recipes came from three royal families, were produced between 2003 and 2008 and then the production stopped because the company failed to clear its inventory. In 2018, the pending stock was sold and inventory cleared.

Twelve years later, the sugar mills, which manufactures country liquor, is restarting production of four brands – Royal Chandr Haas, Royal Kasturi, Royal Saunf and Royal Jagmohan.

Thanks and Regards :

Kamlendra Singh  
Samarthak Samiti, Udaipur

# Tamil culture, alcohol and the decline of kundapanai (Caryota urens)

Madhu Ramnath

In India there are 96 species of palms belonging to 26 genera, one of them being Caryota. There are about 13 species of Caryota in the world and less than 5 species in India. Of these, Caryota urens, or kundapanai as it is known in Tamil, is found all over

dance in the region: use seems to go hand in hand with regeneration.

Unfortunately, the Caryota palm is not tapped in Tamil Nadu. The culturally proud state promotes only Indian Made Foreign Liquor (IMFL), sold through its Tamil Nadu State Marketing Corporation Ltd. (TASMAC) outlets in order to completely eliminate the sale of contraband, spurious and non- duty paid liquor<sup>1</sup>; an additional concern for the state is that such unauthorized liquor can affect the public health of the liquor consuming public. This decision of the state has achieved a total elimination of local liq



A solitary palm and what people do to it!

peninsular India. The kundapanai has a wide range, through India, Vietnam, Sri Lanka and Myanmar. It is also known as the Fish Tail Palm, or Kitul, or Tad, as it is the source of toddy, as well as the kitul fibre used in delicate work. In recent times it has become a common native ornamental tree, popular with landscape architects as it requires little maintenance. The palm is planted in many parks and gardens in India, such as the Lodhi Gardens in Delhi, and residential areas of cities like Bangalore.

In most of the central Indian states – Madhya Pradesh, Odisha, Chhattisgarh – the toddy from the palm is relished. Tapping a palm over several years – from one flowering stalk after another – does eventually cause the palm to ‘dry up’ and die. But the adivasi people who know the taste and flavour of this toddy also actively plant them, fence them and nurture them, and watch over them attentively for years to know exactly when to begin tapping. The toddy is also sold in villages and in local haats and can be fairly remunerative. So despite the active tapping of the Caryota palm they are in abun-

uors from peoples’ lives: it would not be an exaggeration to say that the Caryota palm as a source of excellent toddy has quite disappeared from the Tamil peoples’ consciousness. In effect, the kundapanai flowers are seen as little more than decoration, and treated as something dispensable. Every public or private event worth it’s status, whether marriage, temple function, or the welcoming of a visiting politician, is bound to have a pandhal with the flowering stalks of the palm at the entrance. The drooping stalks with the long array of seeds are lopped off; the seeds are seldom allowed to mature and there is little or no regeneration. Palms that come of age and send out flowering stalks are sought after by traders; the price is as high as Rs 3000 for a pair of stalks! In the coffee estates of the Palani Hills and in other forest areas of the Western Ghats where the palm is found one also comes across the Common Palm Civet or Toddy Cat: palms are one of its favourite shelters. Elephants too are known to forage on the palm leaves; in fact the fodder for the 60 elephants of the Guruvayur temple in Kerala goes from the palms in Tamil Nadu. Quite predictably,

marauding bands of people scout the forested hills in small ‘pick-up’ vehicles in search of the stalks and the fronds: as most of the remaining palms are in ‘no-man’s’ lands nobody prevents this destruction.



A marriage pandal with the flowering stalks on either side

Though the kundapanai or Caryota urens is not listed in any “critical” list of the IUCN – which gives its world-level status – in Tamil Nadu it has become highly threatened. Unlike in central India and Sri Lanka, where the toddy from the palm is consumed or made into jaggery or palm-sugar syrup, the palm in Tamil Nadu is exploited for a convoluted cultural practice that has lost its historic roots and ecological sense.

A more general threat to the Fishtail Palm is loss of habitat that results from changing land use – meaning logging and forest clearance – to plant banana, chow-chow, beans and other cash crops. The natural regeneration of the palm is threatened, with mature individuals rarely seen. Fortunately, this palm is cultivated widely in other parts of its range, especially in tribal central India, on account of its usefulness, especially toddy-drinking. The seeds take anything between 45 days to 6 months to mature; the flowers hang down in about 10 years after which the toddy is available if tapped. There may be lessons to be learned.



There is no afforestation programme in Tamil Nadu that includes the Caryota palm despite the concerned departments being aware of their decline in numbers all over the state. It would be helpful if the Forest Department and the local panchayats spread awareness about the value of this palm and prevent the lopping of the flowering stalks and the destruction of seeds. Palm nurseries could be encouraged to promote this plant that is fast disappearing from the Tamil landscape.

Footnote:  
1. <http://tasmac.tn.gov.in/TASMAC%20-%20Profile.htm>

A flowering stalk just before being tapped (left) and Palm flowers on the ground by an untapped tree (right)



# Handia: The popular adivasi food and drink.

Deepak Pani

In marriages, festivals and in the daily life of the adivasis of Mayurbhanj, Odisha, handia takes the centre stage, both as food and drink. In the adivasi heartland of eastern India women selling handia in weekly haats by roadsides is a very common sight. Rice is fermented with the aid of a yeast comprising a few plants, known as bakhar, to produce handia and rasi. Handia is the thicker gruel and rasi is the liquid top layer. Formerly, bakhar (also known as ranu) was prepared with more than 20 plants but with the depletion of many species it is now limited to less than 10. These are roots of samarkani, ankanadi, chaulia,kanga alu, patal garuda, habin jhad and bark of sal bisal, kuluchi with the whole plant of kalibahu. Equal quantities of these ingredients are ground together and sun-dried for an hour; the mixture is then dried in shade for few days, after which small tablets are prepared.



Cissampelos pareira

The first step in making handia is to cook rice in water in 1:2 ratio; the cooked rice is then sun-dried, then stored in an earthen pot. Then 2-3 bakhar



Asparagus racemosus

tablets are added per kilogram of rice in the pot, the pot closed and left in semi-darkness. In a few days, depending on the weather, the content of the



Rauwolfia serpentina

pot ferments, making a hissing sound, then settles down, signaling that the process is over.

The liquid layer, the rasi is separated and consumed directly or diluted, depending on the preference. The semi-solid handia is filtered using a bamboo or metal filter and served, again adding water if required. Handia is best accompanied by a chutney of

| Local name     | Botanical name                            |
|----------------|-------------------------------------------|
| Kader          | Asparagus racemosus                       |
| Andia kidula   | Cissampelos Pareira L                     |
| Saram lutur    | Clerodendrum serratum                     |
| Ranuran        | Dipteracanthus suffruticosus              |
| Hadem ran      | Elephantopus scaber L                     |
| Bhurlu         | Gardenia gummifera L.f.                   |
| Guluchi        | Holarrhena antidysentrica                 |
| Bhuineem       | Andrographis paniculata                   |
| Patal garud    | Rauwolfia serpentine/Rawolfia tetraphylla |
| Khara ranu ran | Orthosiphon rubicundus                    |
| Kitah          | Phoenix acaulis                           |
| Atkir          | Smilax macrophylla                        |
| Iche           | Woodifordia fructicosa                    |
| Dhurmodhur     | Xantolis tomentosa (Roxb) Rafin           |



*Clerodendron serratum*

tamarind, chilli and salt. Bakhar is reputed to have several medicinal properties, especially against malaria, against liver ailments, blood pressure and dysentery. Both handia and rasi are health drinks and the adivasi people believe that it keeps them cool and protects them from jaundice. Incidentally, the production and consumption of handia creates employment for many and is quite remunerative and supports many adivasi families.



*Elephantopus scaber*

A nagging worry is the unsustainable collection of the plant ingredients that go into making bakhar. No conscious effort has been made for the propagation or conservation of these important plants. In the regions without forests the adivasi people now consume handia that has been prepared by using adulterated bakhar; in some places the plants used for bakhar are smuggled out. With the increasing amount of adivasis moving into town and cities the knowledge about bakhar and handia is further threatened. It is time that these serious threats, to a cultural and health drink of the adivasi, are given immediate attention.

## Nature notes

Satheesh Muthu Gopal

### The remaining grasslands of Palani hills

Bangalore is a fast-growing city, also known as the Silicon Valley of India. The revolution in information technology created more job opportunities for young people in India and the city keeps on growing in all directions. Skyscrapers have become a common part of the landscape of the city. Bangalore is very close to the Western Ghats which is home to myriad species: the wetlands and shrub forest in and around the city provides a suitable habitat for many bird species.

It was a monsoon day and I was about to start my lunch on the 5th storey in one of the modern architecture buildings in south Bangalore. I saw a bird which I couldn't identify as it flew away between the building where I was and the 15 storey structure just opposite. This is a secured IT hub zone in the outskirts of Bangalore; there is no road between these two buildings, and it is quiet except for the techie's chit chat in the coffee corners. I was not sure whether it's a lifer for me. For any birder, a lifer is a stirring experience<sup>1</sup>. But one thing was certain. It was definitely a raptor.

The next day while having the lunch I ensured that I sat facing the window, just to catch the glimpse of the bird, if I'm lucky. My wish was granted. The bird flew in from a long distance but fortunately it landed on an ideal perch on the building across. There were extended metal bars on each floor of the building. The bird landed on the 14th floor. I neither had a camera nor binoculars to look closely at the bird. But this time I observed the bird's flight and concluded it must be a falcon. Until I finished my lunch the bird sat in the same place and, of course, I couldn't concentrate on my lunch. Though I had more than 300 lifers in India, I had never seen a falcon before.

There are 4 different types of falcons in South India: the Red-necked Falcon (*Falco chicquera*), the Peregrine Falcon (*Falco peregrinus*), the Laggar Falcon (*Falco jugger*) and the Amur Falcon (*Falco amurensis*). I know Amur is a migrant which travels all way from East Asia to Africa via India, though sighted only in winter. I rule out Amur Falcon from the list. I came back to the pantry for a coffee around 4 PM and I found the perch empty. It's gone away already. Do I need to wait for the next day? Does the bird really come here on daily routine? Why? I had many questions in my mind and resolved to continue my vigil the next day. During lunch, I saw the bird was sitting in the same perch. Since it was a secured work environment I was allowed neither binoculars nor a camera. So I had to go about identifying the bird with plain sight only. It was difficult. I went to the pantry every hour that day and fortunately had

a close look when the bird took off from the perch and flew across the two buildings, before flying off into the distance. I had observed the black barred rufous belly and the black mustachio stripe. I called my friend Ashwin Viswanathan, a well-known ornithologist and excellent in identifying the bird species by their call or silhouette. When I explained my observation he ruled out Laggar Falcon from the list.

The other two options were Red-Necked Falcon and Peregrine Falcon. The Red-necked Falcon is a resident bird but Vishwanathan said that it preferred a natural perch. The only other option is the Peregrine Falcon, which can be found in all the five continents. But this falcon migrates to India only during the winter. So what is this bird? I thought it may be difficult to identify it until I photograph it. I had a mobile phone but that hardly helped. I had to wait for a chance to get an even closer look at it. I start watching the bird every day and I found it came to the same building.

This continued through the next week as well. I decided to go to the building and seek permission to picture the bird. Based on the window position and perch location, I calculated the specific that place would give me the closest look at this bird. Even a mobile phone camera should be enough to take a good picture if I could reach that location. I went to the 13th floor and approached the security guard to allow me to take a photograph of a bird but he denied me access. The next day the bird was sitting one floor below, close to the washroom ventilation. I saw a rope hanging from the top of the building and a knot in it indicated that the bird's perch was a few feet away. I wanted to ensure I reached the correct floor. I went to the 12th floor and entered the washroom and from within saw the knot of the rope between the slides of the ventilation. The bird was sitting very close to the wall of the washroom, just below the ventilation. I couldn't see it. But I knew the bird was not more than 3 feet from the washroom. I came out of the building and saw both the knot and the bird.

I keep watching the bird every day. One day, surprisingly, the bird changed its perch to the adjacent side of the building. I rushed there immediately, to the pantry on the other side. Finally, I had a closer look of the bird. I took a picture with my mobile. It was a Shaheen Falcon (*Falco peregrinus peregrinator*), a cousin of the Peregrine Falcon. The Shaheen Falcon is a subspecies of the Peregrine which is resident in India. I shared the picture with my friend and came to know that the Shaheen falcons are attracted by Pigeons which the urban landscape supports. The Peregrine Falcon is the fastest flying bird in the world and can fly at 330 km/hr. They are especially skilled at hunting swoops and are able to survive in the alpine highlands as well as in lowland cliffs. It can be found in the desert, the tropics, in islands and in other habitats. Unfortunately, due to the introduction of DDT, they were on the brink of extinction. However, thanks to ornithologists, envi-

ronmentalists and activists who all fought against DDT, these birds are enjoying a resurgence again. The Shaheen Falcon I saw every day stayed in that place between 1pm to 4pm, just sitting on its perch. It was there at least for a couple of months. On weekdays, I watched the bird at the lunchtime. The Falcon made my lunchtime precious and something I looked forward to.

Footnote:

1. a first-ever sighting of a bird species by an observer (Wikipedia)

## The remaining grasslands of Palani hills

Over millions of years the earth has evolved and created unique eco-systems, one of which is the Shola forest and montane grasslands of the Western Ghats. Palani Hills are a part of ecosystem and located in Tamil Nadu, and where the Paliyar people settled many centuries ago. The American missionaries visited the hills and grasslands in the mid-1800s and found it a suitable spot for their summer retreat: Kodaikanal emerged from these interests.

Once the undulating landscape of the upper Palani Hills was rich with grasslands and sholas and had the capability of storing the monsoon rains. While the northern slopes generate the tributaries of the river Cauvery, the Southern slopes generate the tributaries of the Vaigai. However, the landscape changed due to the development of Kodaikanal town, along with increasing tourism, roads etc. A huge area of the grasslands and forests were converted to agriculture and plantations. The introduction of exotic tree species such as Eucalyptus, Wattle and Pine by the British into the grasslands invaded the hills and challenged the natural eco-system. The forest department, unaware of the mistakes made by its predecessor, continued on the same path. The grasslands were converted into plantations of exotic species. The inhabitant species like the Nilgiri Tahr (*Nilgiritragus hylocrius*), the Indian Gaur (*Bos gaurus*), the Nilgiri Marten (*Martes gwatkinsii*), and many more, lost their habitats.

According to a recent study by Robin from IISER (Indian Institute of Science Education and Research, Tirupati), only 15% of the grasslands are left in the Palani Hills. The change in eco-system now fails to capture the monsoon rains, leaving most of the tributaries of the Vaigai and the Cauvery in plains dry, the river-beds with many stagnant waterholes and rocky outcrops.

Due to the forest fragmentation and loss of habitats, the gaurs are now seen wandering about in Kodaikanal town. In 2016, while dining in a restaurant near the Kodaikanal bus stand, a busy part of town, I saw a herd of guars walking in the middle of the road. People moved to the pavement and made way for the guars. Such scenes are not so uncommon in this hill town nowadays. The hill town attracts more tourists each year and to gratify them

new tourist spots are created. The “Pine Forest” is once such spot where people can be seen horse riding and where native birds and butterflies are absent. Neither the tourism board nor the forest department educates the tourist about the ecological changes in the landscape.

Berijam is an artificial lake in the upper hills, surrounded by the exotic trees. I have visited Berijam numerous times to look for birds in this region. I saw the Nilgiri Pipit (*Anthus nilghiriensis*) only once in 2013. The Nilgiri Pipit is endemic to Western Ghats which has lost most its natural habitat now.

The state animal of Tamil Nadu, the Nilgiri Tahr, especially skilled in navigating the mountain cliffs, is under serious threat. They are pushed to fragmented cliffs where grasslands are left. Most of the freshwater streams have lost the Small-clawed Otters (*Aonyx cinereus*), once common in the hills. Water pollution due to the development of Kodaikanal town and the pesticides used for agriculture has pushed this species to the brink of extinction. The population of Nilgiri Marten, another endemic species here and which has been observed by a few naturalists, is uncertain now.

The restoration of grasslands is important for many native flora and fauna but it is a difficult task. As there are only a few grasslands left, the forest department and the NGO's need to identify the remaining patches and monitor them regularly to protect from the invasive species. The weeds need to be taken out from the grasslands annually and more attention required to push back the invasives.

In 2017 I visited Berijam with my friend ornithologist friend Raveendran and stayed for a couple of days. En route, we stopped at the watchtower and watching the lake from the distance. The misty afternoon made magical changes in the landscape. A Nilgiri Wood Pigeon (*Columba elphinstonii*) flew across the hilly landscape. We stayed in the forest guest house. There was neither a phone signal nor electricity and the evening was beautiful because of the silence around us. The night was pitch dark and freezing cold. The person who accompanied us prepared dinner. We were told that the gaurs came down to the lake every night for water and so we finished dinner and waited for them. A herd came down from the hills and a majestic bull, glistening in the dark, moved slowly towards the lake. Unfortunately that they had to forage in a forest where there was scant food left for them. Later we found a Large Scale Pit Viper (*Trimeresurus macrolepis*) basking in the middle of the road; it is also endemic to Western Ghats.

The next morning the lake surface was covered with mist. We heard the call of the Sambar deer on the other side and waited long to get a glimpse of it. As the sun came up we saw the Pied Wagtail (*Motacilla maderaspatensis*), the Jungle Myna (*Acridotheres fuscus*), the Red Whiskered bulbul (*Pycnonotus jocosus*) near the lake. Then we went for

a forest walk to understand the ecological changes that had happened. We went to the Mathiket-tan shola and headed downwards with some forest department staffs. The entire range was filled with wattle trees and the ground was littered with wattle seeds ready to sprout. We climbed up and returned to the road. A few tourists were making noises, enjoying the sound echo in the hills. A Nilgiri Langur (*Semnopithecus johnii*) was calling deep from the forest and the tourists were mimicking the call. We requested them to stop doing this but they misunderstood our intentions. It is a pity that our education system does not teach students how to behave in the forest. However, we moved away from the place and the forest department warned them. On our return we saw a few bird species such as the Long Tailed Shrike (*Lanius schach*), the Pied Bushchat (*Saxicola caprata*), and the Grey Headed Canary Flycatcher (*Culicicapa ceylonensis*) near the lake. Hill Swallows were active. While coming back to the forest guest house we found Indian scimitar babbler, which was a lifer for me. I was happy I could get a lifer.

On another occasion in 2014, I trekked from Kookal Shola to Kuthirayar dam in the foothills. The two-day long trek helped me understand another problem which the forests are facing. It was April and the grasslands were destroyed by forest fire, the scars black and depressing. Forest fires are man-made in the Western Ghats. The cliffs in Kookal supports few Nilgiri Thar, though I did not spot any that day, and I wondered at their plight when the grasslands are fired. I had a long walk that first day and stayed in one of the estate guest houses which was in the middle elevation. The climate and terrain are different here from the upper hills.

As I set off the next day I saw the The Bonelli's Eagle (*Aquila fasciata*), heading high to upper hills where the grasslands are already burnt.