

## Traditional/Folk practices of Kerala Case studies- Part V: Healing Art of Tribal communities of Kerala

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Case study-16

### Introduction

Traditional Knowledge (TK) plays an important role in the day-to-day life of tribal communities and it has become necessary to document, conserve and sustainably utilize this valuable knowledge for the benefit of Nature and its inhabitants as a whole. In this context, current studies carried out by Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) revealed that TK from the oral health tradition, especially the plants used for food and medicine in Kerala is fast disappearing. JNTBGRI has developed formats and prepared methodologies for the systematic documentation of TK associated with medicinal and food plants used by the different tribal communities of Kerala effectively. Prior Informed Consent (PIC) is also taken for the systematic documentation, before obtaining the TK from the knowledge providers/holders/custodians with a view to implement Access and Benefit Sharing as per the Biological Diversity Act (2002) and Biological Diversity Rule (2004) in the true spirit.

In continuation to the earlier communications, the authors highlight two case studies 16 & 17 revealed by Lakshmikutty (*Kani* tribe)

on *Amrithapala* for the treatment of peptic ulcer, cancer-like afflictions and also as a tonic and stamina booster and *Kattumulla / Kattupichi* (*Jasminum azoricum* and *Jasminum grandiflorum*) used as an effective remedy for headache, giddiness palpitation and chest pain.

The health tradition of the *Kani* tribe inhabiting the forests of Agastyar hills, Kerala is having a rich and unique knowledge system on tribal medicine. They are also custodians of diverse cultural expressions. The herbal lore of this tribal community is a veritable storehouse of hitherto unknown information on the medicinal value of a large number of wild plants (Pushpangadan *et. al* 1988).

*Kani* tribes are of mixed racial origin, having features of dravidian, veddoid and negrito. In height, they are short and having receding forehead. Their colour varies from light to dark brown. A few of them have curly hairs and some of them have the features of the non-tribal people.

There are two main clans among the *Kani* tribes; *menillam* and *mootillam*. The clans were constituted mainly for the convenience of the administration and better co-ordination. ‘Il-

*lampallimuthan*’, ‘*Keruthalakalandamuthan*’, ‘*Oruurakkamuthan*’, ‘*Orazhimuthan*’, ‘*Thruvaykarakkan*’ and ‘*Choyamballimuthan*’ (tribal chiefs) were the builders of their constitution. As per the unwritten law that prevailed among them, no individual in a clan is allowed to choose his/her spouse from the same clan. They believe that all the members in a clan are blood related and the sexual relationship between them is sin before the God.

Traditional occupation of *Kani* tribe include craft work like basket making, mat making using *Ochlandra* stem, cane work, etc. They are also engaged in seasonal collection of minor forest products that include honey, bee wax, medicinal

plants and python fat.

*Kani* tribes are inhabited in Paruthippalli, Kottur, Amburi of Thiruvananthapuram district and Kulathupuzha, Thenmala, Aryankavu, Eroor of Kollam district. They are also inhabited in the Mundanthurai and Kalakkad forest areas of Kanyakumari district of Tamil Nadu. According to the census 2011, the total population of *Kani* tribe is estimated as 21,251 (9975 male; 11276 female) and the latest population may exceed more than 25,000. Around 50% of the tribes are residing in the deep forest areas of Agastyar hills. It is estimated that 70% of the tribes are literate and some of them are employed in the Government service.



Fig. 1: Typical Kani hut.

### **Ethnic legend**

According to an interesting *Kani* legend, Smt. Lakshmikutty narrated the historical and cultural perspectives of the plant *Amrithapala*, one of the divine plants brought by Hanuman along with other divine medicinal plants like *Visalyakarani*, *Sandanakarani* and *Mrithasanjeevani* from

the orders of Chiranjeevi Jambavan to revive Lakshmana who became unconscious after the Nagapasa (magical noose made of poisonous snake to entangle and make the enemy unconscious during the war between Lord Rama and Ravana as narrated in the great Indian epic, Ramayana). It is said that Hanuman (the trusted

aid and lieutenant of Lord Rama) drunk the milky juice of *Amrithapala* to relieve himself from fatigue and restlessness that he experienced from his strenuous journey to bring the medicinal plants from Himalaya to Lanka, the war site where Lakshmana was lying unconscious.

### **Etymology**

The *Kani* tribes call this plant “*Amrithapala*” meaning the plant which gives the milky ambrosia or nectar of immortality. ‘*Amritha*’ means ambrosia or nectar of immortality and ‘*Pala*’ means milk. *Amritha* is also the mythical antidote potion against poison. According to Smt. Lakshmikutti, the plant is named as *Amrithapala* on account of its great medicinal properties. (Pushpsngadan *et. al.* 1990)

### **Search on the identity or reference of the plant in Ayurveda literature**

A thorough search was made to find out any possible reference of this plant in the classical Ayurveda literature. But no direct reference about this plant could be found in classical Ayurveda works of Charaka, Sushruta or Vagbhata. However, the descriptions of a divine drug growing in similar habitat (growing on rocky crevices where there is deposition of some sand/soil), shape of the leaves (like that of *Arayal* – *Ficus religiosa*) and aroma of the tuberous roots (like that of *Sariva* – *Hemidesmus indicus*) as given in the Oushadhi Nighantu (Lexicographic on Medicinal Plants) of Tayyil Kumaran Krishnan (1906) shows striking resemblance to *Amrithapala*. In Oushadhi Nighantu, the plant has been named variously as *Mrithasanjeevani*, *Sanjeevani* or *Thanprarasayani*. (Pushpsngadan *et. al.* 1990).

### **Tribal claims**

The *Kani* tribe considers the plant *Amrithapala* as a very important drug with wonderful curative properties. Expressed juice or pounded mass of the fresh tuberous root is mixed with equal quantity of the expressed juice of fresh coconut kernel. The mixture is then boiled for some time to attain a semi-solid form which after cooling is administered in the dose of 10-15 ml. twice daily for 15-30 days to cure all kinds of peptic ulcers and related cancer like afflictions. It is also recommended as a roborant, coolant and blood purifier. (Pushpsngadan *et. al.* 1990)

### **Botanical identity and morphology**

*Amrithapala* is identified as *Janakia arayalpathra*, a rare and endemic monospecific genus of the Family Periplocaceae. The plant was first described by Joseph and Chandrasekharan of Botanical Survey of India in 1978. As the plant was found out to be an entirely new genus of the family Periplocaceae, Joseph and Chandrasekharan who first located this plant at Kurisumalai near Trivandrum in Kerala named the genus as *Janakia* in honour of the great Indian Botanist Dr. E. K. Janaki Ammal. The specific epithet is after the resemblance of its leaves with that of the *Arayal patra* (*Arayal* is the local name for *Ficus religiosa* Linn. Family, Moraceae and *Patra* means leaf, i.e. the leaf of *Ficus*). *Janakia arayalpathra* Joseph et Chandrasekharan is a perennial under shrub with milky latex. Roots, moniliform, tuberous, highly aromatic and 30 cm. long in clusters. A single healthy plant yields upto 5 kg of fresh roots. Leaves decussate, long petioled; lamina broadly lanceolate to ovate, acuminate; lateral nerves parallel arching below the margin and getting united or not to form a submarginal vein, colour of the petiole varies

from greenish yellow to deep red on maturity. Cymes shorter than the leaves, flowers small, bracteate, pedicellate sepals 5, quinquincial with glands at the base within. Corolla tube much shorter than the leaves. Lobes 5 with epipetalous scales with thick discs. Filaments free from the scales, short: anthers elongate with an apical

tetragonal appendage; pollen grains arranged in tetrads. Stigma pentagonal, convex. Follicles double; Seeds flat, coma, terminal. (Lekshmi *et al.*, 1992). Currently, *Janakia arayalpathra* has been renamed as *Decalepis arayalpathra*, belonging to the family Apocynaceae based on APG IV classification.



*Decalepis arayalpathra*

*Jasminum grandiflorum*

*Jasminum azoricum*



### Edavaleth Kakkat Janaki Ammal

#### Scientific investigations

**Chemistry:** From the hexane, chloroform and methanol extracts of the roots of *Janakia*

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*arayalpathra*, eight compounds have been isolated. These compounds have been characterized as  $\alpha$ -amyirin acetate, 4-methoxy

salicylaldehyde, magnificol (12,20(29)-lupadien-3-ol),  $\beta$ -sitosterol, 3-hydroxy-p-anisaldehyde, naringenin, kaempferol and aromadendrin (Chako *et. al.*, 2000). studied the root aroma of *D. arayalpathra*. The volatile oil isolated from the root had 2-hydroxy-4-methoxybenzaldehyde (96.8%) as the major compound which has a characteristic vanilline like odour (Verma *et. al.*, 2014).

## **Pharmacology**

### **Immunomodulatory and anti-tumor activities of *J. arayalpathra*.**

The *Janakiya Arayalpathra* Root Suspension (JARS) was found to stimulate the immune system in mice. JARS 500 mg/kg elicited an increase in humoral antibody titre and antibody secreting spleen cells. It also enhanced sheep RBC-induced delayed hypersensitivity reaction in mice. Furthermore, the members of blood granulocytes and peritoneal macrophages were found to be increased in JARS treated mice. Treatment with JARS protected mice from Ehrlich ascitic carcinoma cell growth (Subramoniam *et al.* 1996).

### **Gastric antisecretory and antiulcer activities of *D. arayalpathra*.**

The ethanol extract of DA roots significantly decreased the pepsin secretion at a dose of 250 mg/kg and the gastric juice volume and acid output at a dose of 500 mg/kg in pylorus ligated rats. Pretreatment with the extract (500 mg/kg, p.o.) provided significant protection against the peptic ulcerogenic effect of ethanol administered individually or in combination with indomethacin or hydrochloric acid. The study also revealed that pre-treatment with DA significantly decreased malondialdehyde levels and increased gastric wall mucus production and

the protein concentration of the stomach wall of ethanol-treated rats at a dose of 500 mg/kg. The gastroprotective effect of DA observed in the current study may be attributed to its effect on stimulating protein concentration and mucus production of the stomach wall. In addition to its gastric antisecretory activity, DA exerts a cytoprotective effect, which could be partly due to the presence of antioxidant phytochemicals like flavonoids (Shine *et. al.* 2007).

### **Antibacterial activity of *D. arayalpathra*.**

The leaf and callus extracts of *D. arayalpathra* revealed the presence of secondary metabolites. The methanolic extracts possess higher antibacterial activity compared to other solvent extracts. However, further studies have to be carried out for the isolation and identification of antimicrobial compounds against pathogens (Raveesha and Ashalatha, 2017).

### ***Kani* tale of Lord Agastya as narrated by Lakshmikutty**

Legend is that, Agastyarkoodom, one of the highest peaks (1868 m) in southern Western Ghats, was named after Sage Agastya. The seer had come down from his home in the Himalayas to Kerala, on the invitation of Sage Parasurama (who created the land of Kerala), to participate in a *Yagna* (sacrifice), specially conducted for attaining the stability of the newly created land and for the welfare of living beings. While accepting the invitation, Sage Agastya demanded that a '*Nadapanthal*' (shady bower, along the foot path) be erected, and a '*Nadapalaka*' (wooden planks along the footpath) be laid from the Himalayas to Kerala, for the holy visit. Honoring



the request, the wise Sage Parasurama provided an ‘*olakkuda*’ (an eco-friendly umbrella made of palm leaves) as ‘*Nadapanthal*’ and ‘*Methiadi*’ (eco-friendly wooden footwear) was provided as ‘*Nadapalaka*’ instead of creating shady bower, along the foot path and wooden planks along the footpath to avoid the huge destruction of biodiversity (Rajasekharan *et al.* 2005). In fact, it was a test for Sage Parasurama to see whether he destroyed the large extent of biodiversity to meet his demands. But, Sage Parasurama was so clever and took a wise a step and it was highly appreciated by Sage Agastya. Before conducting the *Yagna*, another demand raised by Sage Agastya was to involve the local tribal community known as *Malavedar*. Later, Sage Agastya renamed them as *Malayar* (now known as *Kanikkar*) inhabited

in the forest areas to conduct the *Yagna*. After the *Yagna*, Sage Agastya extended thanks for their whole hearted support to the *Malayar*, who were totally dependent on the forest bioresources and engaged in hunting by using the bow and arrow for their sustenance. Sage Agastya was not so happy with the practice of the tribes as they were always damaging and destroying the plants and animals in the forest. He took an immediate action and asked them to surrender their bows and arrows and tribes obeyed the orders and accepted the advice given by Sage Agastya. As a token of appreciation, Sage Agastya provided them a musical instrument known as ‘*Kokkara*’ and asked them to study the medicinal plants in and around the forest and utilize the same for the healthcare and welfare of human beings.



### **Chattupattu**

‘*Chattupattu*’ embodies a series of ritualistic music performed by the *Kani* tribe during various

religious and other functions. ‘*Chattu*’ means to sanctify and ‘*pattu*’ means song. There are no authentic documented records on *Chattupattu*

available. It is an oral tradition, practiced and traditionally transmitted through generations. At present, it is confined to the elder members of the *Kani* tribes. The musical instrument called '*Kokkara*' is used in '*Chattupattu*'. It consists of a hollow medium iron pipe with a long chain and a needle. The pipe is not completely fused length wise and there is a width of 0.5 cm. The length of the tube is 25 cm and that of chain and needle is 40 cm and 15 cm respectively. The instrument is held in the left hand by the singer and the needle is rubbed on the instrument from top to bottom in a rhythmic style (from low pitch to high pitch and then in reverse order). '*Chattupattu*' ceremony, is performed on different occasions. For example, '*Chavuchattu*' for the departed souls, '*Chattu*' for curing diseases, '*Chattu*' for the removal of bad effects of natural calamities, '*Chattu*' for propitiating the hill deities, '*Onachattu*'

performed during the onam festival and '*Chattu*' for untouchability. '*Chattupattu*' is also classified on the basis of region as '*Vadakkan Chattu*' (practiced in the northern region) and '*Thekkan Chattu*' (practiced in the southern region). Some of the popular *Chattupattu* are '*Pinichattu*' (to cure common ailments and to pacify family problems), '*Thudichattu*' (performed exclusively for pregnant woman during the seventh month of pregnancy to protect the mother and foetus and also to ensure safe delivery), '*Nayattuchattu*' (performed before the hunting), '*Rasivettichattu*' (to remove the negative energy released from the peculiar planetary position), '*Mannazhichuchattu*' or '*Theevrangichattu*' (to enhance lifespan of an individual), '*Karinkalichattu*' (to propitiate *Karinkali* to prevent evil spirit), '*Rogasamanachattu*' (to cure disease), etc.



Fig. .. Performing Chattupattu

Some of the medicinal plants used by the Kani tribal communities of Kerala (Karunakaran, 2000)

Sl. No	Local Name	Scientific Name	Parts used	Method of preparation	Disease
	Manhalvalli	<i>Coscinium fenestratum</i> (Gaertn.) Colebr.	Stem (Fresh)	Prepared in the form of paste (External application)	Acute head ache
	Valiyarayan	<i>Aristolochia acuminata</i> Lam.	Root (Dry)	Prepared in the form of paste and administered orally along with human urine twice or thrice daily. (Avoid excess intake of food)	Snake bite (Cobra)
	Cheriyarayan	<i>Aristolochia indica</i> L.	Root	Prepared in the form of paste and administered orally along with human urine twice or thrice daily. (Avoid excess intake of food)	Snake bite
	Thodali	<i>Ziziphus rugosa</i> Lam.	Root, Bark	Prepared in the form decoction (Avoid excess intake of food and cold water)	Pneumonia Chest pain
	Kalthamara	<i>Begonia albococcinea</i> Hook.	Fresh leaf, and stem	Prepared in the form of paste and applied externally	Itching and various dermatological conditions
	Kazhanji	<i>Caesalpinia globulorum</i> Bakh.f. & van Royen	Seed	Prepared in the form decoction or powder. 30 ml thrice daily before food. Powder- one teaspoon full along with luke warm water.	Hernia
	Kasthoorimanhal	<i>Curcuma aromatica</i> Salisb.	Rhizome	Prepared in the form decoction (30 ml twice daily before food)	To enhance stamina and vitality.
	Chilanthipacha	Reuveliya pattula	Leaves	20 gm fresh leaves prepared in the form of paste and administered orally along with milk (120 ml) twice daily for seven days. (avoid hot food and salt, taking bath twice daily is recommended )	Spider poison
	Amruth	<i>Tinospora cordifolia</i> (Willd.) Miers.	Leaves	Prepared in the form of paste and administered orally along with milk (120 ml)	Chest pain, Cough, Pneumonia
	Venga	<i>Pterocarpus marsopium</i>	Resin	15 ml resin administered orally along with three drops of saline water	Vomiting, Diahorrea and dysentery
	Plavu	<i>Artocarpus integrifolia</i>	Petiole (Fresh)	Prepared in the form of paste and applied affect parts.	Tooth ache and inflammation



	Adalodakam	Adathoda	Leaves	Expressed juice obtained from the fresh leaves. 15 ml Thrice daily	Body ache
	Vettila	Piper betle	Petiole (Fresh)	Prepared in the form of paste and applied affect parts.	Tooth ache and inflammation
	Kacholam	Kapheria kalanga	Rhizome (Fresh)	Prepared in the form of paste and applied externally over the bitten part	Snake poison (Viper)
	Kurumthotti	Sida cordifolia	Frash leaves	Pounded mass applied externally over the whole body during the bath and also used like a shampoo to wash hair.	To improve the complexion of skin and peripheral circulation of blood.
	Pullathali	Cyclea peltata	Fresh leaves	Prepared in the form of paste and applied over the scalpel.	To relieve fever in children and also malaria
	Karinochi	Vitex nigandu	Fresh leaves	Expressed juice obtained by the Fresh leaves administrated orally 15 ml thrice daily	Cough and inflammation
	Naruneendi	Hemidesmis indicus	Tuberous root	Prepared in the form of pounded mass 205 gm along with milk	Body ache
	Paranda	Entada reedi	Kernel	Put the kernel in water and kept overnight and prepared in the form of paste 3-5 gm and administrated orally along with coconut milk	Chest pain and heart diseases
	Kadukka	Terminalia chebula	Fruit rind	Prepared in the form of ash and mixed with coconut oil and applied externally over the affected part	Eczema and skin diseases

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