

# Medicinal Plants Diversity and their Folklore Uses by the Tribes of Nilgiri Hills, Tamil Nadu, India

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## Research Article

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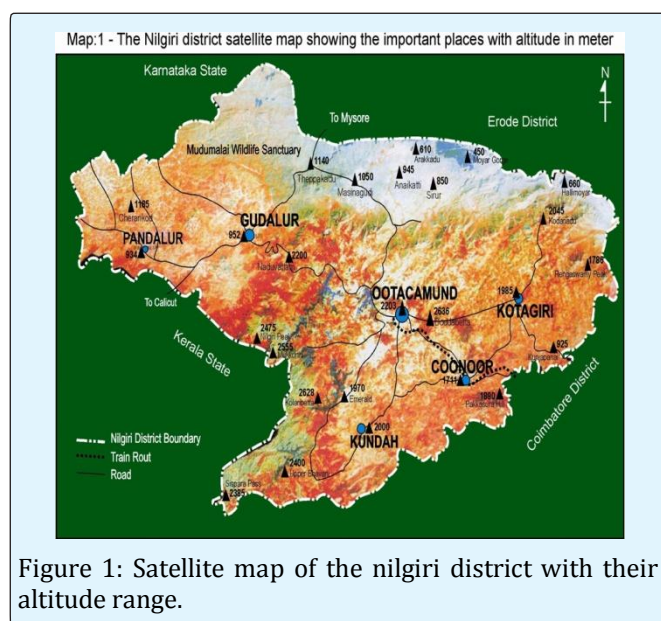
## Abstract

Traditional medical practices and their usage of plants as crude drug for various common ailments were recorded from Nilgiri tribes namely; Todas, Kotas, Irulas, Kurumbas, Paniyas and Kattunayakas are given. Their botanical name, common tribal name, of various plants and uses are discussed. This study comprises the medicinal uses of 40 species belonging to 38 Genera and 31 families of medicinal plants have been reported. Based on the survey and report, the most commonly used medicinal plants were selected for the study.

## Introduction

The present environmental circumstances and maintenance of health care system, the plant medicines contribution and prevailing disease conditions to mankind are enormous. The scientific investigation for pharmacologically, as well as active and therapeutically useful constituents reported in herbal drugs is an ongoing research activity in many fields. These plants and their main resource of raw drug plant materials are the major source of our biodiversity. The Nilgiri District in Tamil Nadu is part of the Western Ghats and lies between 11 °, 12' and 11 °, 43' north and 76 °, 14' and 77 °, 1' east in the north of western part of Tamil Nadu (Figure 1). It represents an authentic treasure house for ethno biological belongings having tropical to temperate climatic zones contain both indigenous and exotic plant species of therapeutic potential. The district is encircled by tropics and having temperate zones at higher altitude region without snow fall may be possible for housing many rare and endangered medicinal plants and is also feasible for introduction and successful

cultivation various exotic medicinal plants by plant tissue culture.



Tribes live in harmony with nature in the Nilgiri hills. Nilgiri district is rich not only in floristic elements but also for its ethnic and cultural diversity. Tribes are scattered from parts and interior of forest and hills. They live in varied ecological habitats in the district. As such, they are well acquainted with medicinal flora. Tribes are well versed in herbal therapeutics. They employ a wide range of botanicals for curative purposes. They are endowed with skills in discerning the character of various plants and flowers and their beneficial properties [1].

Previously the following studies have been carried out in the Nilgiris deserve a place here [2-6]. The objective of this work is to disseminate useful ethnomedical data concerning six tribal communities are discussed here.

## Ethnography

### Todas

The Toda are known by several names like Tudas, Tudavans and Todar. They are found only in Nilgiri district. The Government of India has identified the Toda as one of the six Primitive Tribal groups of Tamil Nadu. The name Toda is supposed to be derived from the word 'tud', the sacred tud tree of Todas. The Linguist Emeneau(1958: 47 - 50) said that, "Toda dialect is an independent language of the Dravidian family affiliated with Tamil and Malayalam. The uniqueness of the half-barrel shaped houses given speculations regarding their origin ranged from Rome to Sumeria. The Toda village is called a mund, means a herd or cattle. It is usually a collection of three or five half barrel shaped huts each 18 feet long by 9 feet in length and by 10 feet in height with a small doorway measuring only 32 inches by 18 inches. Besides the huts, the mund has another hut with a smaller doorway, called 'Tirierl' or dairy temple. The vicinity of the mund is the cattle - pen. Toda people are white (fair) in color, being tall, strong built and well shaped. The striking feature of the women is the arrangement of their hair, which is dressed in ringlets and flows waving down to the shoulders. The traditional garment of a Toda is known as put - kuli, which is made up of thick white cotton cloth with red and blue stripes in which they are embellished further embroidery by the Toda women, is thrown around the body by the men and women like 'Roman toga'. Both men and women wear jewelry.

They are professional dairymen and pastoralists. Their houses are known as Munds. They are divided into two endogamous moieties namely Tartharoland Teivalioland several exogamous clans. They are lacto-vegetarians. Put-Kuli is the name given to their traditional costume. They perform elaborate funeral

ceremonies. On such occasions, they sacrifice a number of buffaloes. Toda rituals and religion revolves round dairy, sacred buffaloes and priest.

### Kotas

The Kotas are one of the small tribal communities thought to be indigenous to the Nilgiri Hills of Tamil Nadu in south India. The Indian government classifies the Kotas as a Scheduled Tribe. Their name "Kota" was given by outsiders. They call themselves Kov. Although the Kotas are few in number they have wide visibility in the urbanizing in nilgiris. Once kotas were looked down upon as servants and eaters of carrion and buffalo flesh and they have managed to succeed in a number of occupations outside their traditional domain. By shunning service relationships with the Badagas and Todas they have also removed the source of, what they considered ill treatment on the part of these two local communities.

Kotas speak the Kota language or Ko-v Ma-nt, a Dravidian language closely related to Toda and also having strong linguistic affiliations with early Tamil and Malayalam. All Kotas speak Badaga and Tamil languages also, as historically they have had to communicate with outsiders in languages other than their own. They are good musicians and excellent craftsmen. Iron working is their favorite work. Kotas are distributed in the seven villages of the Nilgiri district. They practice Keri exogamy. Members in the same Keri (row of houses) are considered as brothers and sisters and hence no marriages are permissible. They are non-vegetarian in their dietary habit. Kota costume is called Varad and they worship Hindu deities besides their own family Gods.

### Irulas

The Irulas are the pre Dravidian inhabitants of the scrub jungles of Southern India. Hunter-gatherers by tradition, their expertise in catching snakes is legendary. Prior to the Indian Wildlife Protection Act of 1972, the Irulas were one of the leading suppliers of snake skins to the global exotic skin industry. So successful they were hunting of snakes for their skins were eventually banned in 1972 to prevent the local extinction of several species. This deprived them of their main source of livelihood and initially the outlook for these skilled hunters was bleak. They are distributed in the lower altitudes of the Nilgiri district. They form second largest tribe in Tamil Nadu and are distributed in ten districts. In the Nilgiris, Irulas living in the southern part are called Muduvars and northern part living group are called Kasabas. They are dark complexioned people whose chief occupation is wage-earning as plantation workers. Their settlements are

called Arai. They have several exogamous clans and are non-vegetarians. They are hunters, minor forest produce collectors and shifting cultivators.

### **Kurumbas**

The Kurumbas, who live in the mid-ranges of the Nilgiris, entertain a confusing and mysterious identity. Several factors add to the popularity of these tribal people. Like the mountain ranges, the word kurumba is found in the adjoining states of Tamil Nadu, Karnataka, and Kerala. The tribes themselves are sometimes called Kuruba and sometimes confused with other tribes of similar names like Kuruman.

They are heterogeneous tribe having as many as six distinct tribes within it. They are Alu Kurumbas, Mudugas, Betta Kurumbas, Jenu Kurumbas, Mullu Kurumbas and Urali Kurumbas. Each tribe has its own distinct socio-cultural, linguistic and religious identity. They are hunters and food gatherers. They are believed to possess good skills in sorcery and magico-religious practices. Their settlements are called Motta. Basket weaving is popular craft with them.

### **Paniyas**

A vast majority of tribes in Kerala state hail from the Paniya tribal settlement. Paniyas inhabit in the regions of Wayanad and the neighboring parts of Kannur and Malappuram. The etymological meaning of the term 'Paniya' indicates that they earn their livelihood from labor as the term 'Pani' in Malayalam means 'labor'. Thus the word 'Paniya' literally means laborer or worker.

They are dark-skinned people living in bamboo huts at the junction of bordering places in Tamil Nadu and Kerala. They work as laborers with Wynaad Chettis. The economic status and literacy levels are very low in them. In the Nilgiri Paniyas are confined only Gudalur taluk. Their settlements are known as Paddis. They employ a variety of plant barks for stupefying purposes. The extended families of Paniya tribe are of avunculocal type.

### **Kattunayakas**

Kattunayakas live in the interior forests of Nilgiri district. They are nomadic in nature. Many scholars believe that the term "Kattunayaka" and "Sholanayaka" is interchangeable. They claim autochthonous of Western Ghats. Their hamlets are conventionally totemisms are in vogue among them.

They are found only in the Gudalur taluk of the district. They are hunters and gatherers who lead a

nomadic way of life. Their settlements are called Padi. They bury the dead very close to their habitation. It is believed that they destroy the hut in which death has occurred. They worship Bairavan who is a Hindu God. Their staple foods are rice, leafy vegetables and tubers. The concepts of animism and animatism are part and parcel of their religious beliefs and customs.

### **Study area**

The Nilgiri hills referred to as "the blue mountains" lies between 11°, 12° to 11°, 43' North to 76°, 14' and 77°, 10' East in the Western Ghats of Tamil Nadu. The hills are part of mountain ranges, spanning an area of 2,543 sq. km. The general topography of the area consists of undulating hills and elevated lands with elevation varying from 350 to 2623 m above sea level. It is characterized by rich and diversified flora and fauna distributed over the tropical to temperate zones [7]. The floristic composition of Nilgiri district is highly diverse, rich in indigenous and exotic flora. The Nilgiri district shelters a matrix of six anthropologically well-defined ethnic groups, spread in a mosaic of habitats. It is noted from the records that these ethnic groups have inhabited the Western Ghats and in the Nilgiri hills since 700 and 1200 B.C. respectively [8,9].

### **Materials and Methods**

Ethno medical information was collected from tribal settlements located in the Nilgiri district. Elderly persons who have knowledge of employing plants as medicines in folk therapy were interviewed. The medicinal plants were identified and authenticated by Rajan S [1], Survey of Medicinal Plants and Collection Unit, Central Council for Research in Homoeopathy, Ministry of AYUSH, Government of India. Open-ended discussion with tribal healers was held to elicit most of the data on plant drugs that are popular and most commonly used within them. Bilateral discussions include both plant-based and disease-based exchange of information with the community people in respect of folk practices.

The plants were collected in the flowering and fruiting stages [10]. As far as the plants are concerned, the method, time of collection, parts used, mode of application and other details, if any, were also noted. They are examined and identified by the second author with the help of local floras [11-13]. All plants are further crosschecked by consulting with the authentic specimens for correct identification. The voucher specimens of all the plants are deposited in the herbarium of Survey of Medicinal Plants and Collection unit, Ministry of AYUSH, Government of India. Udhagamandalam, India, for future reference.

**Phytomedicines used by Todas (T. :)****Anaphalis elliptica (DC.); T.: Nees (Asteraceae)**

**Description:** An erect, much branched, soft, white-woolly herb. Leaves are white, oblong or obovate, broad, three ribbed from base. Flowers are white or pink in color.

**Distribution:** Indigenous to Western Ghats; found at temperate regions of the district; 2000 – 2500 m altitude ranges.

**Part Used:** Leaves

**Used by Todas:** The leaves are made into a paste (without adding water) and applied externally to reduce inflammation/swellings. Daily twice in the morning and evening for three days or until swellings reduce.

**Arisaema schenaultii (Blume); T.: Putvasack; Kr.: Amugidageddai (Araceae)**

**Description:** An erect tuberous herb up to 4 feet high. Leaves are compound, radiately divided; leaflets 5–12, elliptic-oblong to obovate-lanceolate, narrowly acuminate, base cuneate, pinnately veined. Flowers are greenish with white stripes. Fruit have a berry, which are red when ripening.

**Distribution:** Indigenous to Peninsular (endemic) India; found in temperate regions of the district.

**Part Used:** Tuber

**Used by Todas:** The fruits are used as abortifacient (according to their folk belief). The seed paste is placed in the cotton cloth and is applied on the vagina. The whole plant with tuber extract is used as a remedy for antiseptic purposes in buffaloes. The tuber made in to paste and applied on the site of snakebite to relieve poison as well as rapid wound healing. At the time of snakebite and thereafter daily once for three days or until wound is healed.

**Used by Kurumbas:** The fresh bulbs are ground with ten numbers of peppers (*Piper nigrum*) and the filtrate is given orally an empty stomach for snakebite. At the time of snakebite and there after daily thrice for three days.

**Berberis tinctoria (Lesch.) T.: Thikmul (Berberidaceae)**

**Description:** A shrub or small tree up to 15 feet high. Leaves when young are purplish, obovate, entire or with few spiny teeth, glabrous. Flowers are yellow. Fruit looks like a berry, which is purplish-red turning to dark blue.

**Distribution:** Indigenous to Southern India; found at subtropical to temperate regions of the district.

**Part Used:** Leaves

**Used by Todas:** The leaves (one handful) along with leaves of Indian Raspberry (*Rubus ellipticus*) are made into decoction and the filtrate is given (Ca 50 ml) orally as a cure for fever and gastric problems. Daily twice in the morning and evening for three days. The leaf decoction is given (100 ml) orally as a cure for snakebite. The leaf paste is applied externally as a snakebite site as a wound healing.

**Habenaria longicornu (Lindl.) T.: Chalamastry Kelangu (Orchidaceae)**

**Description:** A terrestrial small herb up to 20 cm high with slender stem. Leaves are mostly from near the base, narrow. Flowers are white and are spirally arranged.

**Distribution:** Indigenous to Western Ghats (endemic); found temperate regions (shola grass land) of the district; 2000 – 2600 m altitude ranges.

**Part used:** Tubers

**Used by Todas:** The fresh tubers (two to three bulbs) are eaten as such by the adult peoples as an aphrodisiac and also used as nutritive. Daily once before bed for seven days.

**Habenaria rariflora (A. Rich.) (Orchidaceae); Toda Name: Chalamastry Kelangu**

**Description:** An erect, bulbous herb up to 15 cm high. Leaves are radical or sub-radical, variable, linear to oblong or lanceolate, acute. Flowers are white in color.

**Distribution:** Indigenous to Western Peninsula (endemic); found subtropical regions of the district.

**Part Used:** Tubers

**Used by Todas:** The fresh tubers (two to three bulbs) are eaten as such by the adult peoples as an aphrodisiac and also used as nutritive. Daily once before bed for seven days.

**Mahonia schenaultii (Wall. ex Wight & Arn.) Takeda T.: Thoori (Berberidaceae)**

**Description:** A shrub or small tree up to 10 feet high. Leaves are pinnate; leaflets opposite, oblong, ovate-lanceolate, margin serrately and spiny. Flowers are yellow in color with long spikes. Fruit are globose, dark blue when ripe; single seed.

**Distribution:** Native of India (Peninsular) above 1500m; Common in both subtropical and temperate sholas.

**Part Used:** Root

**Used by Todas:** The fresh stem barks made into paste and given (25 ml) orally to women as a cure for postnatal problems. Daily once in the morning for seven days. The stem bark is made into decoction and the filtrate is given orally to women as a cure for fever, cold and coughs. Daily thrice in the morning, afternoon and evening for three days. The fresh stem bark is squished and the juice is directly pored to the aching tooth as cure. Daily twice in the morning and evening for three days or until pain reduce it.

**Rhamnuswrightii (Wight & Arn.)T.:Kakaikai; K.: UlappulamaraKr.: Kattupala(Rhamnaceae)**

**Description:** A large, glabrous shrub. Leaves are alternate, ovate-oblong, acuminate, and serrate. Flowers are axillary and yellowish in color. Fruits are globose, reddish-purple when ripe.

**Distribution:** Native of India (W Peninsular, Nilgiris) and Sri Lanka; found throughout the district.

**Part Used:** Leaves and stem bark

**Used by Todas:** The fresh leaves (one handful) are crushed with five pieces of the small variety of onion bulbs (*Allium cepa*) are made into paste and applied to abscesses and sores. Daily once in the morning for three to five days. The immature fruits are made into paste and applied externally to cuts and wounds for rapid healing. Daily once in the morning for three days.

**Used by Kotas:** The leaves are made into paste and applied all over the body for any type of skin diseases. Daily once in the morning application and followed by bath in the evening for seven days.

**Used by Kurumbas:** The fresh stem bark is made into decoction and given (Ca 25 ml) orally as a cure for diarrhoea and dysentery. Only once at the time of dysentery if not arrested one more doses may be given for the same purpose. The leaves and stem bark paste is applied as a cure for toothache. Daily once at night (before bed time) for three days.

**Phytomedicines used by Kotas (K. :)**

**Cynoglossumzeylanicum (Vahl ex Hornem.;Thunb. ex Lehm.)K.: Guntut (Boraginaceae)**

**Description:** An erect, branched, annual herb with angular stem. Leaves are alternate, thin, elliptic-lanceolate, usually acute, hairs stiff and short arising from small bulbous base, base narrowed and decurrent. Flowers are pale lilac or light blue, small. Fruit a depressed pyramid of 4 nutlets; seeds straight or little curved.

**Distribution:** Native of India (W Peninsula); found throughout the district, 900-2400m altitude ranges.

**Part Used:** Leaves

**Used by Kotas:** The leaves are made in to paste and applied externally for skin diseases as a cure. Daily once in the morning and evening before bath should be taken for seven days. The same leaf paste is also applied externally for cuts and wounds on rapid healing. Daily twice in the morning and evening for three days or until the wound is healed.

**Euphorbia rothiana (Spreng.)K.: Kapsi; T.: Kopot(Euphorbiaceae)**

**Description:** An erect, glabrous herb up to 2 feet high. Leaves are alternate below, whorled above, and linear to lanceolate, base alternate, apex obtuse to shortly apiculate. Flowers are greenish in color. Fruit have a capsule; seeds are globose.

**Distribution:** Native of India and Sri Lanka; found throughout the district; 1500-1200 m ranges.

**Part Used:** Whole plant

**Used by Todas:** The fresh latex is applied externally to cure sores and also used to reduce the inflammations. The latex is also rubbed on the head to promote hair growth. The whole plant when kept under the bed to repel the bed bugs (insect repellent).

**Used by Kotas:** The leaves (q.s.) along with leaves of *Rubusellipticus* (Kota name Penmulp) and *Rubusracemosus* (Kota name Gundmulp) equal quantity are chewed together to relieve symptoms to sudden sickness and giddiness may be caused by evil spirits. Only once at the time of sickness or if the symptom persists one more dose may be given.

**Gaultheria fragrantissima (Wall.); K.: Ameerpan (Ericaceae)**

**Description:** A bushy much-branched shrub. Leaves are alternate elliptic, thick coriaceous, gland-dotted, base acute to obtuse margin serrate, apex acute or obtuse, gland reddish. Flowers are white tinged with pinkish. Fruit are blue when ripe, globose, 5-valved; seeds many, pyramidal.

**Distribution:** Native of India (Himalayas), Burma; found throughout the district form altitude 1500-2400m altitude ranges.

**Part Used:** Oil from leaves

**Used by Kotas:** The leaf paste is applied externally to forehead as a cure for headache. Daily once at the time of headache if pain persists one more time may be continued. The leaves are boiled in water and used for bathing to relieve body pain and sprains.

**Leucaslavandulifolia (J. E. Smith)K.: Malathumba (Lamiaceae)**

**Description:** An erect, foetid, annual herb with quadrangular stem. Leaves are opposite, linear, linear-lanceolate or lanceolate, acute at apex, narrowed at base, distinctly serrulate. Flowers are white in color. Fruit are oblong or ovoid, nut lets dark brown.

**Distribution:** Distributed to India, South East Asia, Malaysia and Mauritius; found in subtropical to temperate regions of the distinct; 1000-2500m ranges.

**Part Used:** Leaves

**Used by Kotas:** The fresh leaves are made into poultice and applied externally to cuts and wounds as rapid healing and to arrest bleeding. Daily twice in the morning and evening for three days or until the wound is healed. The same leaf paste is also applied externally to all type of skin diseases (particularly scabies) as a cure. Daily once in the morning and followed by bath in the evening for seven days. The fresh leaves are squished and the juice is directly applied on forehead as a cure for chronic headache. Daily twice in the morning and evening for three to five days.

**Mirabilis jalapa (L.)K.: Sajanamalligida; Kr.: Andhimalligida (Nyctaginaceae)**

**Description:** An erect herb with tender branches and swollen nodes. Leaves are opposite, triangular-ovate to elliptic, truncate to shortly decurrent, apex acute to acuminate. Flowers are of various colors, crimson yellow, white, magenta. Fruit are leathery, ribbed.

**Distribution:** Native of Peru; introduced and cultivated or sometimes run wild throughout the district.

**Part Used:** Leaves and root.

**Used by Kotas:** The leaves and root (one handful of each) made into paste and applied externally in boils to suppress the same. Daily twice in the morning and evening for three to five days or until suppress the boil.

**Used by Kurumbas:** The fresh leaves are crushed and the juice is applied externally to cuts and wounds. Daily twice in the morning and evening for three to five days. The bruised leaves (q.s.) is mixed with coconut (q.s.) oil (*Cocosnucifera*) and applied externally to boils and abscess for suppressing the same.

**PolygonumchinenseL.K.:Kakkarambu; T.:Kongal; Kr.:Billaeganigallu; Ir.:Kakkakarumbu (Polygonaceae)**

**Description:** A rambling herb or under shrub, semi scandent over bushes. Leaves are alternate, elliptic ovate, acute or shortly acuminate, the margin entire or crenulate, petioled auricled. Flowers are white or pink.

Fruit are trigonous and have nut lets.

**Distribution:** Native of Sumatra, Java, Philippines, China and Japan; found throughout the district.

**Part Used:** Whole Plant

**Used by Todas:** The fresh stem is made into extract and the filtrate is given orally as a cure for fever. Daily once in the evening (before bed time) for three days.

**Used by Kotas:** The whole plant juice is given (10 ml) orally as well as the leaf paste is applied externally to forehead as a cure for giddiness and facial paralysis. Daily once in the evening for seven days. The fresh stem is made into extract and the filtrate is given orally as a cure for fever. Daily once in the evening (before bed time) for three days.

**Used by Kurumbas:** The fresh stem is chewed and the juice is taken internally as a cure for stomachache. Only once at the time of stomach pain.

**Used by Irulas:** The fresh leaves are made into paste and is mixed with lemon (*Citruslimon*) juice (5 - 10 drops) is applied all over the head to stop giddiness. The twigs are made into extract and the filtrate is administered (Ca 100 ml) orally as a cure for stomachache. Only once at the time of stomach pain if not arrested the pain one more dose may be given for the same purposes.

**Rubiaccordifolia (L.)K.: OttumurchediKr.: Ootukodi; Ir.: Savalikodi; Ka.:Manjettivalli (Rubiaceae)**

**Description:** Large, climbing herbs with 4- gonous stem. Leaves are whorled, obovate or ovate, 5- nerved from base, sticky. Flowers are white in color. Fruit are globose, dark blue when ripe, fleshy; seed, single, adnate to epicarp.

**Distribution:** Native of Africa, Asia, India to Malaysia, found in throughout the district up to 900 - 1200m altitude ranges.

**Part Used:** Stem and root

**Used by Kotas:** The juice is extracted from fresh root (Ca 10 gms) and the juice is mixed with goat's milk (half glass) and given orally as cure for jaundice. Daily twice in the morning and evening for five to seven days. The fresh stem (q.s.) is made into decoction and the filtrate is given (Ca 25 ml) orally as a general tonic to children, below the age of nine as a restorative. Daily once in the evening for three days.

**Used by Kurumbas:** The whole plant is made into decoction and given (Ca 25 ml) orally as cure for stomachache, giddiness followed by headache. Daily twice in the morning and evening before food for three days. The root is made into decoction and given (Ca 10 ml) orally in an empty stomach as a cure for one to two

spoonfuls once or twice a day in empty stomach for stomachache with dysentery. Daily twice in the morning and evening for three days.

**Used by Irulas:** The whole plant (one handful) including root is made into a paste and applied externally on skin to cure skin diseases. Daily once in the morning application and followed by bath in the evening for seven days or until cure.

**Used by Kattunayakas:** The fresh leaves are made in to paste and applied externally to cuts and wounds for rapid healing. Daily twice in the morning and evening for three days. The fresh root (q.s.) is made in to paste and mixed with lime (Citrus limon) juice (half fruit) and applied externally to face to remove pimples. Daily once at night (before bed) for five days or until cure. The dried whole plant (one handful) is kept in the pocket while traveling through forest to keep away from evil spirits on their path (as a magico religious practice).

#### Phytomedicines used by Irulas (Ir.:

**Antidesmamenasu (Mig. ex Tul.)Ir.: Echa (Stilaginaceae)**

**Description:** Small tree up to 5 m. tall. Leaves are alternate, long, broadly oblong, dark green in color. Flowers have long spikes.

**Distribution:** Indigenous to India (Peninsula); found throughout the district, altitude ranges from 500-1800m.

**Used by Irulas:** The leaves are made into a paste and applied for the snakebite. Twice daily (morning and evening) for 3 days.

**Brugmansiasuaveolens (Willd.Bercht. & J. Presl) Ir.: Oomathae (Solanaceae)**

**Description:** An evergreen shrub. Leaves are alternate, ovate-oblong. Flowers are white in color, calyx 5-toothed.

**Distribution:** Indigenous to Southeast Brazil; introduced and found subtropical to temperate regions of the district.

**Used by Irulas:** The dried flower powder is used as a cigarette for bronchial asthma. It is smoked daily in the morning and evening for 10 – 15 days (anti-asthmatic).

**Euphorbia milii (Des Moul.)Ir.: Mullu allugida (Euphorbiaceae)**

**Description:** A procumbent herb with milky latex. Leaves are simple 1-3 per node, obovate. Flowers are reddish-pink, with long peduncle. Commonly planted as a hedge plant.

**Distribution:** Native to Madagascar; introduced and planted as garden ornament in subtropical – temperate regions.

**Used by Irulas:** The latex is applied on scars or white patches occurring in the face. It is also useful for scorpion and other insect bites. Once daily at bedtime.

**Plantagoerosa (Wall.)Ir.:Ulukkugida; T.:P-etts; K.: Itchasoppu; Kr.: Neergida (Plantaginaceae)**

**Description:** A perennial herb with stout rootstock. Leaves are rosettes, elliptic-ovate, 3-5 nerved from base, base rounded to acute. Flowers are cream color. Fruit have a capsule ellipsoid; seeds many, peltate, mucilaginous.

**Distribution:** Native of Malay Island, Afghanistan and West Atlantic; found as a common weed in temperate regions.

**Part Used:** Leaves and seeds

**Used by Todas:** The whole plant with root is made into paste and applied on cuts and wounds. Daily twice in the morning and evening for three to five days. The leaf juice is taken internally (Ca 10 ml) as a cure for burning sensation of stomach. Daily once in the morning for three days.

**Used by Kotas:** The fresh leaves are smeared with coconut (Cocosnucifera) oil and slightly warmed and applied on cuts and wounds. Daily once in the morning for three to five days or until heal the wound. The leaves are made into paste and applied externally to all over the body as a cure for all type of skin diseases. Daily once in the morning application and followed by bath in the evening for seven days.

**Used by Kurumbas:** The seeds are made into extract and the filtrate is mixed with goat's milk and given (one glassful) orally in an empty stomach as a cure for urinogenital tracts infections. Daily once in the evening (before bedtime) for five days.

**Used by Irulas:** The fresh leaves (Ca 100 gms) are made into paste and applied on the chest of infants (2-4 month old child) as a cure for chest pain. Daily once in the evening (before bed) for five to seven days.

**Sapindusemarginatus (Vahl)Ir.: Soppukai (Sapindaceae)**

**Description:** A medium size tree. Leaves are alternate, odd pinnate; leaflets 6-foliolate, elliptic-lanceolate. Flowers are brown color. Fruits are dark green, 3 – lobed, velvety.

**Distribution:** Native to India (Peninsular), Sri Lanka and Burma; found in tropical regions; 800-1900m attitude ranges.

**Used by Irulas:** The fruit is crushed with water and the filtered juice is given orally (ca. 50 ml.) to relieve constipation (laxative). The fruits are crushed and thrown into stagnant water for stupefying fish.

**Schleicheraoleosa (Lour.) OkenIr.: Jagadamara (Sapindaceae)**

**Description:** A tree up to 10 m. tall. Leaves are opposite, paripinnate, 6-8 pairs (lower leaves very small), oblong-elliptic. Fruits are immature green, globose, beaked, mature yellow.

**Distribution:** Java, Sri Lanka, SE Asia, Malaysia and India (tropical Himalayas); found throughout sub-tropical regions of the district.

**Used by Irulas:** The aqueous extract of the stem bark is mixed with jaggery (ca.25 gms.) from panai (*Borassusflabellifer*) and given (ca. 50 ml.) orally during the first trimester pregnancy. Once daily morning for 3 days as an abortifacient (uteroactive)

**Phytomedicines used by Kurumbas**

**Acacia chundra (Roxb. ex Rottl.) Willd.Kr.: Karungolimara (Mimosaceae)**

**Description:** A small-armed tree. Leaves are alternate; pari-pinnate, pinnae 10 – 20 pairs; leaflets 35 – 50 pairs, elliptic, rachis with glands at the basal and the uppermost pinnae, thorns short, hooked. Flowers are white. Fruit have a thinpod, flat, glabrous, strongly nerved; seeds 6, ovoid.

**Distribution:** Native to India (Peninsula), Sri Lanka and Burma; found in tropical regions of the Nilgiris.

**Part Used:** Gum

**Used by Kurumbas:** The gum (q.s.) is mixed with the drumstick gum (*Moringaoleifera*) and honey (one teaspoon full) in hot water (250 ml) or cow milk is given orally to men as an aphrodisiac and also as restorative. Daily once in the morning in an empty stomach for 15 days.

**Biophytumsensitivum (L.) DC. Kr.: Neer gida; Ka.:Pasaelikeera (Oxalidaceae)**

**Description:** An erect, stout or slender herb. Leaves are crowded into a rosette of the top of the stem; leaflets opposite, 6-15 pairs, the terminal pair the largest, oblong, obliquely rounded and apiculate at the apex. Flowers are yellow. Fruit have a capsule, ellipsoid; seeds ovoid transversely striate.

**Distribution:** Native of tropical Asia, Africa and America; found in Mudumalai Wild Life Sanctuary areas.

**Part Used:** Whole plant.

**Used by Kurumbas:** The whole plant is made into decoction and the filtrate is given (50 ml) orally as a cure for chest Pain. Daily once in the evening before bedtime for seven days. The same decoction is also given as a cure for stomachache. Daily twice in the morning and evening for three days. The seeds are made into paste and applied externally on abscess for suppression. Daily once in the evening for three days or until the abscess suppress.

**Used by Kattunayakas:** The whole plant is crushed and the extract is given (50 ml) orally to men as a cure for sexually transmitted diseases. Daily once in the evening at bedtime for seven days. The same paste is applied externally as wound healing (once daily in the morning for eleven days).

**Garciniagummi-gutta (L.) Robson Kr.: Kopot (Clusiaceae)**

**Description:** A medium sized tree. Leaves are elliptic-obovate, to ovate lanceolate. Flowers are white to pink. Fruit are globose, smooth yellowish; Seeds kidney-shaped.

**Distribution:** Indigenous to Peninsular India; found in Devala region; 900m altitude range.

**Part Used:** Fruit

**Use by Kurumbas:** The dried fruit rind is made into decoction and given (Ca 25 ml) orally to arrest diarrhoea and dysentery. Three times in a day with three hours interval.

**Lobelia leschenaultiana (Presl) Skottsb.Kr.: Kadupogaiyeelai; T.: Thudiks (Lobeliaceae)**

**Description:** A tall, annual or biennial herb up to 6 feet high. Leaves are alternate, oblanceolate, obovate or elliptic very large at base, smaller above, soft, finely toothed; stem hollow. Flowers are white pink tinged with dense long spike. Fruit globose, enclosed in the calyx tube.

**Distribution:** Native of Nilgiris (India) found commonly throughout the district.

**Part Used:** Leaves

**Used by Todas:** The fresh leaf juice is applied on cuts and wounds as a cure. Daily twice in the morning and evening for three days or until the wound is healed. The same leaf juice is directly pored (two to three drops) to eye to cattle as cure for eye diseases. Only once at the time of eye problem (any type of infections).

**Used by Kurumbas:** The dried leaves are made into small pieces and smoked as a cigarette as relief for chest congestion (asthmatic problems). Daily once in the evening (before bed) for fifteen days. The fresh leaves



are made into paste and mixed with water and sprinkled in the side the house as insect repellent.

**Passifloraleschenaultii (DC.)Kr.: Thatpootannuballi (Passifloraceae)**

**Description:** A climbing shrub. Leaves are semi-circular, rounded at base, broadly truncate and 3-cuspidate above, tendrils axillary. Flowers are white in color. Fruit are fleshy indehiscent berry, yellowish when mature; seeds many pitted.

**Distribution:** Native of India (Nilgiris, Palani hills and Khasia); found in subtropical to temperate regions, 1400-2400, altitude ranges

**Part Used:** Leaves

**Used by Kurumbas:** The fresh leaves are made into decoction and the filtrate is given (25 ml) orally to reduce the blood pressure followed by giddiness. Only once at the time of pressure or giddiness.

**PsydraxdicoccosGaertn. Kr.: Kadunibae (Rubiaceae)**

**Description:** A small, unarmed tree. Leaves are opposite, decussate, coriaceous, elliptic-ovate or oblanolate. Flowers are cream colored. Fruit are ellipsoid-globose.

**Distribution:** Distributed to India, Sri Lanka, Southeast and east Asia, Malaysia; found subtropical regions.

**Part Used:** Leaves and stem bark

**Used by Kurumbas:** The fresh stem piece is made into paste and mixed with gingelly oil (*Sesamumindicum*), slightly warmed and dipped in a piece of cloth and placed over the fractured site for bone setting. Once applied after on 11th day only the bandage should be removed.

**Sidacordata (Burm. f.) BorssumKr.: Kurunthotti (Malvaceae)**

**Description:** An erect, woody herb or sub shrub. Leaves are basal sub orbicular; upper ones cordate-ovate, stellate-tomentose, margin crenate, apex acuminate. Flowers are yellow. Fruit have 5mericarp, with short beaked; seeds ovoid, 3-gonous.

**Distribution:** Tropical Africa, America and India; found in Mudumalai Wild Life

Sanctuary areas of the district.

**Part Used:** Leaves

**Used by Kurumbas:** The leaves are made into paste and applied externally as cure for cuts and wounds.

Daily twice in the morning and evening for three days. The leaves are made into decoction and the filtrate is given orally to pregnant women for easy delivery. Daily twice in the morning and evening for three to five days before delivery.

**Phytomedicines used by Paniyas (P. :)**

**Anacardiumoccidentale (Linn.) P.: Kappalendi (Anacardiaceae)**

**Description:** A large tree up to 8 m. tall. Leaves are alternate, obovate, and leathery. Flowers are greenish with red striations. Fruit are immature when green.

**Distribution:** Native to tropical America from Mexico to Peru and Brazil; cultivated tropical regions of the district.

**Part Used:** Stem bark

**Used by Paniyas:** The stem bark is made into a paste and applied all over the body of children to cure fever. Once daily for 3 days (febrifuge). The fresh latex from this fruit is applied on warts and corns for shrinking them.

**Artemisia nilagirica (C. B. Clarke) Pamp. P.: Kaminspachai (Asteraceae)**

**Description:** A tall shrub up to 3 m. tall. Leaves are deeply lobed, oblong-lanceolate, white tomentose below. Flower heads are greenish in color.

**Distribution:** Native of India (Peninsula); found commonly from subtropical to temperate regions. Up to 500 - 2400m altitude ranges.

**Part Used:** Leaves

**Used by Paniyas:** The leaf decoction is given orally (ca. 50 ml.) to reduce fever. Once daily at bedtime for 3 days (febrifuge). The leaves are burnt and used as an insect repellent.

**Canavaliagladiata (Jacq.DC.)P.: Thambatta (Fabaceae)**

**Description:** A large climbing shrub without hairy. Leaves are alternate, 3-foliolate. Flowers are light pink with violet tinged. Fruits have a flat pod 40cm and green when immature.

**Distribution:** Native to Indo-Malaysia region; found Gudalur regions.

**Part Used:** Pods

**Used by Paniyas:** The Paniyas consider the pods as highly nutritious and stimulant. It is used as vegetable.

**Canthiumcoromandelicum (Burm. f.) Alston P.: Kara (Rubiaceae)**

**Description:** Armed shrub up to 3m tall. Leaves are opposite elliptic-ovate to obovate. Flowers are greenish. Fruits are globose, orange when ripe and are Rare.

**Distribution:** Native of India, South East & East Asia, Malaysia; found subtropical regions of the district.

**Part Used:** Fruits

**Used by Paniyas:** The fruits are crushed and thrown in stagnant (small lake or pond) water as fish stupefying agent (ichthyotoxic agent).

**Cryptostegiagrandidiflora R. Br. P.: Malamukki (Periplocaceae)**

**Description:** A large climbing shrub. Leaves are opposite, elliptic-ovate to obovate. Flowers are cream drying to yellow in color. Fruits have follicles, cylindrical and are Rare.

**Distribution:** Native in Madagascar; found in Nilgiris.

**Part Used:** Leaves

**Used by Paniyas:** The root paste applied to the snakebite as external application to remove poison and quicken the healing. Once daily for 7 days (wound healing).

**Rutachalepensis Linn. P.: Aruthae (Rutaceae)**

**Description:** An aromatic woody herb or sub shrub. Leaves are alternate ovate. Flowers are yellow. Fruits are globose, immature green mature brown.

**Distribution:** Native of Iran and N. Africa; cultivated for its aromatic leaves.

**Part Used:** Leaves

**Used by Paniyas:** The leaves are mixed with one teaspoonful of coconut oil (*Cocosnucifera*), which is made into a paste. It is applied on the forehead of children to stop continuous crying without any reason due to evil spirit (magically active). The leaf paste is mixed with water and 2 drops are given orally to children for cold. Thrice a day for three days.

**Scopariadulcis (Linn.) P.: Kalloori (Scrophulariaceae)**

**Description:** An erect herb up to 45 cm tall. Leaves are whorled (sweetish) simple. Flowers are white. Fruits are greenish, globose.

**Distribution:** Native of Tropical America; found in subtropical regions of the district.

**Part Used:** Leaves

**Used by Paniyas:** The leaf decoction (q.s.) is given (ca. 25 ml.) orally as a cure for fever, cold and cough. Once

daily at bedtime for three days. The decoction is also given orally as a cure for kidney stone. Once daily for seven days.

**Phytomedicines used by Kattunayakas****Aeridesringens (Lindl.) C. Fischer Ka.:Ottuchedi (Orchidaceae)**

**Description:** An epiphytic, woody herb up to 30cm long. Leaves are long, loriform, twisted, thickly coriaceous, keeled, base dense, imbricate. Flowers are whitish- pale pink.

**Distribution:** Distributed to Sri Lanka and Deccan Peninsular India; found subtropical regions of the district.

**Part Used:** Stem

**Used by Kattunayakas:** The fresh stem is squished the outcome of juice is directly pored (three to five drops) to the achy ear to relieve earache. Daily once in the evening for three days.

**BombaxceibaL. Ka.:Mara illava (Bombacaceae)**

**Description:** A tall deciduous tree with spreading branches; covered with sharp conical spines. Leaves are large; leaflets 3-7, lanceolate or oval, acute base. Flowers are bright red. Fruits have a long capsule, 5-valved; seeds many and black.

**Distribution:** Indigenous to Indo-Malaya, Sri Lanka; cultivated at tropical regions of the district.

**Part Used:** Root

**Used by Kattunayakas:** The fresh root extract is given (Ca 10 ml) orally to arrest diarrhea with bleeding. Daily twice in the morning and evening for two days. The extract is also used as restorative purposes.

**HelicteresisoraL. Ka.:kavir (Sterculiaceae)**

**Description:** A shrub or small tree. Leaves are alternate, oblong obovate-roundish, cordateand serrate. Flowers are red in color. Fruit have a follicle, leaked, linear twisted; seeds numerous angular.

**Distribution:** Indigenous to Indian subcontinent, Malay Peninsula, Sri Lanka, Australia; commonly growing in the lower altitude of the district.

**Part Used:** Whole plant including root

**Used by Kattunayakas:** The fresh stem bark extract (5 ml) is given orally as a cure for stomach pain. Daily twice in the morning and evening for three days. The fresh root is made in to decoction and given (10 ml) orally to arrest diarrhea and dysentery. Daily thrice in the morning, noon and evening for three days.

**Maesaindica (Roxb. DC.)Ka.:Kaivilangum; Kr.:Kadumenasu (Myrsinaceae)**

**Description:** A shrub or small tree. Leaves are alternate, elliptic to obovate, narrowed at the base, acute or shortly acuminate with sharp triangular serration. Flowers are white. Fruit are small, green with light yellow tinge, globose, fleshy; seeds angular.

**Distribution:** Native of Sri Lanka, India (lower Himalayas), Malaysia; found subtropical regions of the district.

**Part Used:** Leaves, berries and root.

**Used by Kurumbas:** The fresh leaf extract is administered orally (five to ten drops) as a cure for stomachache. Only once at the time of stomachache or the pain is not relieved one more dose may given. The fresh root extract is administered orally (five to ten drops) to arrest dysentery. Only once at the time of dysentery if not arrested one more dose may give for the same. The fresh root (q.s.) is made into paste and mixed with goat's milk (*Capra acquagrushircus*) is given orally (50 ml) as cure for syphilis. Daily once in the evening (before bed) for seven days.

**Used by Kattunayakas:** The fresh root (q.s.) is made into paste and mixed with half lemon juice (*Citrus limon*) and applied on boils to ripen and burst. Daily twice in the morning and evening for three days or until ripen the boils. The fresh leaf extract is administered (5 drops) orally to children to cure cold and cough. Daily once in the evening for three days.

**Murraya paniculata (L. Jack) Ka.:Karippamaram; Kr.:Kadukarivaplia; Ir.: Chedichi (Rutaceae)**

**Description:** An evergreen shrub or small tree. Leaves are opposite; leaflets 3-7, alternate, terminal leaflets is the largest, ovate obovate or rhomboid. Flowers are white. Fruit have a berry, which are oblong or ovoid, pointed; seeds 2, red when mature.

**Distribution:** It is distributed to India, Sri Lanka, South East Asia, and Malaysia to Australia; found in subtropical regions of the district.

**Part Used:** Whole plant

**Used by Kurumbas:** The fresh leaves are squished and the juice is given orally to arrest diarrhea and dysentery. Daily twice in the morning and evening for three days. The leaves are boiled with gingelly oil (*Sesamumindicum*) or coconut oil (*Cocosnucifera*) used as hair tonic.

**Used by Irulas:** The fresh root juice (three to five drops) is mixed with few drops of lemon (*Citrus limon*) juice and applied on the aching tooth as a cure for toothache. Daily twice in the morning and evening for three days. The stem bark is chewed on achy tooth as a cure for toothache. Daily once in the evening (before bed) for three days.

**Used by Kattunayakas:** The fresh root (q.s.) is made into decoction and given (50 ml) orally as cure for paralysis. Daily once in the morning for seven days. The fresh leaves are made in to paste and mixed with one egg and applied externally to the fractured site as a bone setting. Once made the bandage after 11th day should be removed.

**Stephania japonica (Thunb.) MiersKa.:Panikattu; Kr.: Kattunballi; Ir.: Kalakodi; P.: Pavettai (Menispermaceae)**

**Description:** A climbing slender shrub. Leaves are peltate, thinly coriaceous ovate or sub-deltoid, acute, round at the base, glabrous. Flowers are minute, greenish. Fruits have solitary and are obovoid.

**Distribution:** Distributed to Malaysia, tropical Africa and Australia; found in subtropical regions; 600 – 1200m altitude ranges.

**Part Used:** Root and Leaves

**Used by Kurumbas:** The root is made into decoction and the filtrate is given (Ca 50 ml) orally as cure for fever. Daily once in the morning application followed by bath in the evening for three days.

**Used by Irulas:** The leaves (Ca 250 gms) are made into a paste and is placed in lower abdomen and tied with a cloth as a refrigerant (cooling agent) and to increase urination. Only once at the time of urinary problem.

**Used by Paniyas:** The tuber (one number) is made into a paste and mixed with water given (Ca100 ml) orally to arrest diarrhoea with stomach pain. Only once at the time of pain with diarrhea (anti-diarrheal).

**Used by Kattunayakas:** The fresh leaf juice is applied externally on fore head as a cure for burning sensation of eye (due to more heat of the body). Daily twice in the morning and evening for two days.

## Results

A list of 40 plant species used medicinally by the six primitive tribes of nilgiri is given under each tribal name. The plants are arranged in the alphabetical order by each tribe with valid botanical name, author citation, Tribal name(s), family and uses by tribes. The description, distribution, part used and mode of preparation and administration is given in detail.

## Discussion

The details presented here indicate a rich folk knowledge of medicinal utility of plants by the six tribes of nilgiris. They are even to this time dependent mainly on plant materials taken from the wild for their treatment. The onset of modern medicines has not been able to eliminate the time honored folk herbal practices that are still part of their day-to-day existence. The Todas use plants for various disease conditions like,

inflammation, aphrodisiac, cough and Cold, fertility regulation, fever and wound healing. The Kotas use for inflammation, body pain, fever, giddiness, headache, jaundice, and wound healing. The Irulas employ for chest pain, constipation, snake bite, scorpion sting, asthma and antifertility. The Kurumbas utilize for inflammation. Aphrodisiac, asthma, body pain, bone setting, diarrhea and post natal problems. The Paniyas employ cough, gastrointestinal problem, fever, stimulant and fish stupefying agent. The Kattunayakas use for inflammation, bone setting, diarrhea, earache, eye problem and wound healing. The cross cultural anthropology has been alkalized by using similar plant for different disease condition and different plant used for same disease condition. In conclusion, it is stated that these observations provide a good potential for future ethno-pharmacological research and drug development.

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