



## Stem and stem bark used medicinally by the Tribals Irulas and Paniyas of Nilgiri District, Tamil Nadu

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Received 22 August 2000; Revised and accepted 30 September 2000

### Abstract

**Objective:** To study the medico-ethnobiology of the tribals, Irulas and paniyas of Nilgiri district. **Materials and methods:** Field survey method was used. **Results and conclusion:** A list of twenty four flowering plants belonging to twenty three genera in sixteen families whose stem and stem bark are used by the tribals Irulas and Paniyas of Nilgiri district, Tamil Nadu with their local names, ethnomedicinal usages, dosage and mode of application have been presented.

**Key words:** Medicinal usage (stem and stem bark), tribals, Irulas and Paniyas, Nilgiris, Tamil Nadu

### 1. Introduction

During intensive study of the medico-ethnobiology of the tribes, Irulas and Paniyas inhabiting the forests of Nilgiri district, Tamil Nadu, surveys were conducted on ethnobotanical information of a number of plant species used by them for various ailments. District Nilgiri is situated in the north-west corner of Tamil Nadu and lies between 11° , 12' and 11° , 43' N latitude and 76° , 14' and 77° , 1' E longitude. The total area of the district is 2545.40 Sq. Km. and is bordered in the north by Karnataka state in the south by Coimbatore district of Tamil Nadu, in the east by Erode district of Tamil Nadu and in the west by Kerala state.

It is one of the most botanically as well as anthropologically investigated areas of peninsular

India since preindependent periods. The district is blessed by nature with a diversified and rich flora and is characterized by the presence of different ethnic groups like, Todas, Kotas, Kurumbas, Irulas, Paniyas and Kattunayakkas [1]. These tribal groups have peculiar religious customs and practices of their own. It has been noted from the earlier records that ethnic groups have inhabited the Western Ghats from 700 B.C. [2] and in Nilgiris from 1200 B.C. [3].

The general topography of the area consists of undulating hills and elevated land with elevations ranging from 400 - 2623 m above mean sea level. The elevated regions form a temperate climate zone with low temperatures at night fluctuating

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with moderate to high temperatures diurnally. The temperature varies from 0° C to maximum of 30° C ( in low altitudinal regions) the hottest part of the year is from March to May. The monsoons both south-west and north-east contribute to the annual rain fall ranging from 300 - 4520 mm per annum.

## 2. Ethnography

The origin of Irulas at the moment remains enigmatic. However, there is copious supply of conjecture as to their origin. Many researchers believe that the word Irula most likely would have been derived from the Tamil word Irul which denotes black complexion of these group of people or the dark forests in which they traditionally live in [4] & [5]. The word Paniyan literally means a worker in Tamil and in Malayalam.

The origin of the Paniya tribals is a subject of endless academic debate. It is suggested that Paniyas would have originated from Ippimala hills of Tamarasseri [6] of Kerala. The Paniyas are closer to other australoid populations and are also dark-skinned, short in stature with broad noses and frizzly hair [4]. Both the tribes are living in the lower altitudinal areas of the district, in isolated pockets. They have their own social customs, and traditional beliefs and practices.

## 3. Methodology

The medico-ethnobotanical data for the present study forms the collection of plants during field work carried out between 1995-99. In the enumeration, the correct name of the species is followed by its local name and family. A brief description of the plants is also provided.

The ethnobotanical information and medical application of the plant is given first for Irulas followed by Paniyas. The tribal names have been abbreviated as Ir.: Irulas and P.: - Paniyas. Voucher specimens of these medicinal plants have been deposited in the herbarium of Survey of Medicinal Plants and Collection Unit (SMPCU), Udthagamandalam and are cited as exsiccata.

## 4. List of Plants

### 4.1 *Anacardium occidentale* Linn.

P.: Kappalendi [Anacardiaceae]

A large tree up to 8 m Tall. Leaves alternate, obovate, and leathery. Flowers greenish with red lines. Fruit immature green. Planted.

P.: The stem bark is made into a paste and applied over whole body of children to cure fever. Once daily for 3 days. The fresh latex from fruit is applied on warts and corns for reducing them. Daily once for 5 days.

Exsiccata Examined: S. Rajan, 7000 dated 30.1.2000 and 7081 dated 11.4.2000.

### 4.2. *Azadirachta indica* A. Juss.

Ir.: Veppamaram,

P.: Veppa [Meliaceae]

Large, evergreen trees. Leaves odd or even-pinnate. Leaflets sub opposite 3-5 pairs, ovate-lanceolate, cuneate-serrate. Flowers white. Fruits oblong-void, mature yellow. Common.

Ir.: The dried stem bark powder is applied on the site of ache tooth (early morning) to relieve toothache. Two to three days daily once or until cure.

Neem oil (10 ml) plus an earthworm (*Megascollex sp.*) is boiled and the filtrate oil given orally (ca. 1 teaspoon full) to arrest post-natal complications (*Eclampsia*) only one time.

Exsiccata Examined: S. Rajan, 6990 dated 23.1.2000.

### 4.3 *Bauhinia racemosa* Lam.

Ir.: Mara avara [Caesalpiniaceae]

A deciduous tree. Leaves alternate, ovate-orbicular. Flowers white; fruits flat, twisted. Rare.

Ir.: The stem bark is made into a paste and applied on swollen regions and also on boils for quick healing (boils will suppress) for 3 days or until cured.

Exsiccata Examined: S. Rajan, 6673 dated 12.10.1999.

### 4.4 *Cassia fistula* Linn.

Ir.: Gaggai pattai, Konnai mara

P.: Kani konnae [Caesalpiniaceae]

A deciduous tree up to 8m tall. Leaves alternate, leaflets 4-8 pairs, sub-opposite, oblong-broadly ovate. Flowers yellow. Fruits cylindrical, pendulous, maturing black. Rare.

Ir.: A small bit of bark is chewed and eaten, or a small piece is made into a paste and given orally to person suffering sudden "sicknesses" caused by evil spirits. Once early in the morning for 2-3 days. The bark of this plant and the bark of *Mangifera indica* (ca. 50g each) are made into a paste, mixed with water and 100 ml given orally to arrest diarrhoea and stomach pain. Once daily for 3 days early in the morning in empty stomach.

P.: Stem bark (ca. 25 g) and stem bark of teak wood (*Tectona grandis*) equal quantity and crushed with water. The filtrate 100ml. Given orally to arrest diarrhoea, thrice daily for one day only.

Exsiccata Examined: S. Rajan, 6742 dated 4.11.1999.

4.5 *Dalbergia sissooides* Graham ex Wight & Arn.  
Ir.: Veetimara [Fabaceae]

A large deciduous tree up to 15m tall. Leaves alternate; leaflets opposite, 7-9, elliptic-ovate, obovate, shining. Fruit a pod, 1-3 seeded, flat. Common.

Ir.: Stem bark of this plant and stem bark of Ir.: Pennae pattae (*Pterocarpus marsupium*) ca. 25 g Both are made into a paste, with water and given orally (ca. 100 ml.) to arrest acute diarrhoea with blood. Once daily, early in the morning for 3 days.

Exsiccata Examined: S. Rajan, 6685 dated 12.10.1999.

4.6 *Erythroxylum monogynum* Roxb.  
Ir.: Jeevathalimara [Erythroxylaceae]

An evergreen tree up to 7 m. tall. Leaves alternate, obovate, rounded. Fruits conical ovoid. Common.

Ir.: A bark is made into a paste and applied to scabies and other skin diseases for quick healing. The treatment is to be continued twice daily (morning and evening) for 7 days, after which bath can be taken.

Exsiccata Examined: S. Rajan, 6492 dated 3.6.1999 and 6664 dated 11.10.1999.

4.7 *Holoptelea integrifolia* Roxb. Planch  
Ir.: Vellaya [Ulmaceae]

A deciduous tree up to 8 m Tall. Leaves, elliptic, oblong, glabrous. Flowers brownish. Fruits winged, pale yellow. Rare.

Ir.: The stem bark is made into a paste and applied on swellings for quick healing. The swellings will suppress after applying for 3 days daily once.

Exsiccata Examined: S. Rajan, 7083 dated 6.4.2000.

4.8 *Mallotus philippensis* (Lam). Muell. Arg  
Ir.: Chaneri mara [Euphorbiaceae]

A tree up to 10 m tall. Leaves alternate, ovate-lanceolate, red-glandular beneath. Flowers in spike brownish with 3 long style. Rare.

Ir.: The stem bark (ca. 100 g) is pounded with water and the filtration given orally (ca. 50 ml.) to cure stomach pain and diarrhoea. Coffee, tea and chilly should be avoided. Twice daily (morning and evening) for 3 days.

Exsiccata Examined: S. Rajan, 6885 dated 9.12.1999.

4.9 *Mangifera indica* Linn.

Ir.: Maavae pattae [Anacardiaceae]

Large, evergreen, branched trees, leaves, alternate, oblong or oblong-lanceolate. Flowers white. Fruit sub-ovoid, immature green. Cultivated.

Ir.: A piece of stem bark (10 g) is ground with water filtered and the filtrate is (50-100 ml.) given orally to relieve stomach pain twice or thrice or until cured. Coffee, tea, chilly should be avoided at the time of treatment.

Exsiccata Examined: S. Rajan, 6571 dated 4.9.1999.

4.10 *Millettia splendens* Wight & Arn.  
Ir.: Manalikodi [Fabaceae]

Large climbing, shrub. Leaves alternate, 5-9 foliolate, lanceolate. Flowers mauve, buds velvety. Rare.

Ir.: The stem is cut into pieces (ca. 45 cm length) and taken to a near by river or pond. The pieces are crushed and pounded. The milky latex is spread on the water and fishes float up and can be collected (as a stupefying agent).

Exsiccata Examined: S. Rajan, 6451 dated 28.5.1999 and 7066 dated 6.4.2000.

4.11 *Moringa concanensis* Nimmo ex Dalz. & Gibson.

Ir.: Kattu murukka [Moringaceae]

Tree up to 8m tall. Leaves pinnate; Pinnae 4-8 pairs opposite, leaflets, broad-ovate. Flowers white. Fruit cylindrical, long, green, bitter. Rare.

Ir.: The stem bark plus a pinch of salt plus pepper (*Piper nigrum*) one tea spoonful is mixed and given with water orally as abortifacient (in the first trimester).

Exsiccata Examined: S. Rajan, 6935(a) dated 11.1.2000.

4.12 *Moringa oleifera* Lam.

P.: Murunga [Moringaceae]

A medium size tree. Leaves alternate, leaflets 3 pinnate, round. Flowers white. Cultivated.

P.: The stem bark is crushed and the juice is applied at the site of dog or scorpion bite to remove poison and also for quick healing of wound. The same treatment is repeated for 7 days daily twice (morning and evening).

Exsiccata Examined: S. Rajan, 6936(a) dated 11.1.2000.

4.13 *Murraya paniculata* (L.) Jack.

Ir.: Chedichi [Rutaceae]

Small tree up to 5 m Tall. Leaves alternate, ovate or ovate-elliptic. Flowers greenish, small. Rare.

Ir.: The stem bark is chewed at the side where the teeth pains as a cure for toothache. Once daily for 3 days.

Exsiccata Examined: S. Rajan, 6453 dated 28.5.1999.

4.14 *Musa paradisiaca* Linn.

Ir.: Vazhai, P.: Vazha [Musaceae]

An erect tree like herb. Leaves spiral oblong. Spike pendulous, bracts dark purplish. Fruits fleshy yellow when ripe. Commonly cultivated.

Ir.: The stem juice is applied on burns, or scales due to hot water and to relieve burning sensation and it will not allow to become a blister and enables quick healing. The treatment is to be continued until cured.

P.: The inner stem juice is crushed and given orally (2 tea spoonful) to arrest acute diarrhoea. Once only at a time.

Exsiccata Examined: S. Rajan, 6478 dated 31.5.1999.

4.15 *Pandanus odoratissimus* L. f.

P.: Kaithae [Pandanaceae]

A much branched shrub or small tree. Leaves linear - ensiform, prickles of leaf margin white. Flowers fragrant, white. Common.

P.: Young stem plus mud from the ant hill of termites plus (Ir.:) Muriyotti (*Spermacoce hispida*) is mixed, made into fine paste and tied over a fracture site. After 12th day the tied band aid should be removed. The lengthy leaf is taken and put inside the hot ash and left over night. In the early morning the leaf is taken out, made into a roll, and then worn as an earring.

Exsiccata Examined: S. Rajan, 6630(a) dated 9.10.1999.

4.16 *Pterocarpus marsupium* Roxb.

Ir.: Pennae pattae [Fabaceae]

A large, semi evergreen tree up to 15 m tall. Leaves leaflets opposite, 3 pairs, elliptic-oblong. Flowers yellow. Fruits winged, curved. Rare.

Ir.: The stem bark (ca. 50 g). is crushed and the juice (ca. 100 ml.) one full glass is given as an abortifacient up to the first trimester. Daily morning for 5 days on an empty stomach.

Exsiccata Examined: 6630 (c) dated 10.10.1999.

4.17 *Ricinus communis* Linn.

Ir.: Kottamuthu [Euphorbiaceae]

An evergreen shrub, leaves alternate, palmatifid, 6-10 lobed, lanceolate. Flowers greenish. Fruits 3-lobed, frickly. Common.

Ir.: The bark is made into a paste with water and given orally (ca. 25 ml.) to pregnant women ( which delivery is near) for quick delivery. Once only.

P.: The same combination is made into a paste and given as a fomentation for healing sprains. Daily once for 5 days. The oil is taken and after manthra chanting is applied on the chest to cure breathing problems. This treatment is given before going to bed at night for 5 days.

Exsiccata Examined: S. Rajan, 6630 (d) dated 10.10.1999.

#### 4.18 *Santalum album* Linn.

Ir.: Santhana mara [Santalaceae]

A small tree up to 5 m tall. Leaves opposite below, alternate above, elliptic-ovate to lanceolate. Flowers brownish purple. Fruits globose, immature green. Rare.

Ir.: The heartwood, is made into a paste with water, and applied over the whole body as refrigerant, for only once. The stem bark is made into a paste and applied externally for skin diseases (prickles due to heat) for 3 days daily once or until symptoms disappear.

Exsiccata Examined: S. Rajan, 6646 dated 11.10.1999.

#### 4.19 *Schleichera oleosa* (Lour.) Oken

Ir.: Jagada mara [Sapindaceae]

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

Ir.: The aqueous extract stem bark is mixed with a piece of jaggery (10g) from panai (*Borassus flabellifer*) and given (ca. 50 ml.) orally in the first trimester pregnancy. Daily morning for 3 days as an abortifacient

Exsiccata Examined: S. Rajan, 6490 dated 3.6.1999.

#### 4.20 *Spondias pinnata* (L. f.) Kurz

Ir.: Kattu Maa [Anacardiaceae]

Deciduous glabrous, large, branched trees. Leaves alternate, long, leaflets 3-5 pairs, oblong. Flowers pinkish green. Common.

Ir.: Bark from the main trunk (100 g.) is ground with water and the filtrate given orally (ca. 100 ml.) to arrest acute diarrhoea. Only once if not stopped next day early morning on an empty stomach the next dose can be given.

Exsiccata Examined: S. Rajan, 6630 (c) 10.10.1999.

#### 4.21 *Strychnos nux-vomica* Linn.

Ir.: Yetti [Loganiaceae]

A deciduous, large tree. Leaves opposite, broadly elliptic, shining. Flowers greenish-white. Fruit globose, orange-red when ripe. Rare.

Ir.: The stem bark (ca. 5 gms.) or half of a seed is made into a paste and given orally to cure acute stomach pain. Once only at the time of pain.

Exsiccata Examined: S. Rajan, 6773 dated 20.11.1999.

#### 4.22 *Tamarindus indica* Linn.

Ir.: Puli [Caesalpinaceae]

A large, branched tree, leaves pinnate, leaflets oblong. Flowers yellowish with pink stripes. Planted.

Ir.: The fruit is made in to a form of rasam (an Indian culinary preparation) is given to nursing mothers for inducing more secretion of milk. Once daily in the evening for 2 days. Powder from stem bark kadukka powder (*Terminalia chebula*) are mixed (each one teaspoon full) with coconut oil and applied on sites of eczema for quick healing and it will stop the itching sensation.

Exsiccata Examined: S. Rajan, 6774 dated 20.11.1999.

#### 4.23 *Tectona grandis* L. f.

Ir.: Thekku [Verbenaceae]

A tall deciduous tree. Leaves opposite, entire, large, broadly elliptic. Flowers yellow. Fruit globose. Planted.

Ir.: The stem bark is made into a paste with water 1/2 tumbler (ca. 50 ml.) and given orally for relieving constipation. Only once.

Exsiccata Examined: S. Rajan, 6708 dated 14.10.1999.

#### 4.24 *Ziziphus mauritiana* Lam.

Ir.: Yelluchi maram [Rhamnaceae]

A small tree with hooked spines. Leaves alternate, orbicular, upper dark lower white. Flower greenish. Fruits immature, green, globose. Common.

Ir.: Bark from the main trunk (ca. 50 g) is made into a paste and given orally (mixed with water ca. 100 ml.) to relieve stomach pain due to gastric disturbance. Only once.

Exsiccata Examined: S. Rajan, 6771 dated 13.11.1999.

### 5. Conclusion

The dependence of the tribals on plants growing in their surroundings or nearby forests for their daily needs and for the treatment of various ailments or as prophylactic agents is essential for discovery of newer drugs. The advent of modern medicine has not been able to eradicate the traditional or folklore medical systems that are still in vogue among them.

An account of 25 plant species with 43 medicinal applications by these two tribes inhabiting the lower altitudinal area of the district has been recorded, to conserve the tribal culture and to bring out their traditional medicinal knowledge and beliefs.

The therapeutically significant plants should be cultivated in organized form to meet Indian system based pharmaceutical industry and to prove pharmacologically the utility of folklore claims. These recordings always have the potential of developing newer and more effective drugs for many of the resistance evolving microorganisms being isolated worldwide in contemporary times.

### 6. Acknowledgements

The authors S. Rajan and D. S. Baburaj thank Dr. R.N. Shaw, Director, Central Council for Research in Homoeopathy, New Delhi for the encouragement and facilities and MS and SP are thankful to the Vice Chancellor, Tamil University, Thanjavur for encouragement. Our sincere thanks to Dr. V. Ramsundar, Project Officer (Tissue Culture), Government Botanical Garden, Udthagamandalam for various help during the course of study.

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