

Medicinal plants used by the tribals of Tirunelveli hills, Tamil Nadu to treat poisonous bites and skin diseases

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An ethnobotanical survey was carried out among the ethnic groups (*Kani* or *Kanikaran*) in southern western Ghats of India. Traditional uses of 28 plant species belonging to 21 families are described under this study. These tribals are using 14 plants to cure skin diseases and 15 plants to treat poisonous bites. The medicinal plants used by *Kani* tribes are arranged alphabetically followed by family name, local name, parts used, mode of preparation and medicinal uses.

Keywords: *Kani* tribes, Ethnobotany, Ethnomedicine, Tirunelveli hills, Poisonous bites, Skin diseases.

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In Ayurvedic medicine, herbs are used as an integral part of healthcare systems. Besides healthcare, herbs are also used for beautification of the body and for preparation of various cosmetics and colours. Though synthetic chemical compounds have replaced many Ayurvedic plant products, the safety and efficacy of natural products could not find suitable match¹. Herbal medicine has been widely practiced from ancient period throughout the world. Herbal drugs obtained from plants are believed to be much safer in the treatment of various diseases.

Southern western Ghats of India is ethnobotanically very rich having high diversity of medicinal plants. Tirunelveli hills are the southern end of the western Ghats situated towards the South East of the Tirunelveli district lying in the longitudes between 77° 5' - 77° 40' E and latitudes between 8° 5' - 8° 50' N. It covers an area of nearly 1000 sq km. Tamiraparani, the perennial river of southern districts of Tamil Nadu originates from Agasthiyamalai (Pothigaimalai) of southern western Ghats (Fig. 1).

The exact study area is Kalakad Mundanthurai Tiger Reserve Forest (KMTR). The Kalakad Mundanthurai area has been recognized as one of the 'Hot spots' for Biodiversity conservation by the IUCN. Very few ethnobotanical works have been done in this area. However, a medico-ethnobotanical survey among the tribes in some areas of Mundanthurai Sanctuary is reported.²

The sanctuary is developed as a National Tiger Reserve from the year 1988 with a total area of 817 sq km in the South most western Ghat ranges. The nearest stations are Papanasam and Tirunelveli, which are 15 km and 47 km away from the study area respectively. The mountainous undulating topography is the characteristic feature leading to tropical dry deciduous forest on the lower slopes and tropical wet evergreen forests on the upper reaches.

The tribe found in the study area is known as *Kanikaran* or *Kani*. They are traditionally a nomadic community. Indigenous communities living in biodiversity rich areas possess a wealth of knowledge on the utilization and conservation of medicinal plants. This traditional knowledge developed over years of observation, trial and error, inference and inheritance has largely remained with the indigenous people. They lived under rock shades and caves which until recently provided shelter to these people. Each tribal group has a tribal chief. Today they live in several tribal hamlets, each consisting of 5 to 20 families dispersed in and around the forest areas of Tirunelveli hills.

The tribals reside in the following areas: Karayar, Adukkuparai, Chinnamayilaru, Periyamayilaru, Valayar, Inchikuzhi and Kannikatty. *Kanis* still supplement their food by gathering roots and tubers from the nearby forest areas. They eat tubers of *Manihot esculenta* Crantz., *Dioscorea oppositifolia* Linn., *Asparagus racemosus* Willd. etc. They are also engaged in seasonal collection of honey, bee wax and some

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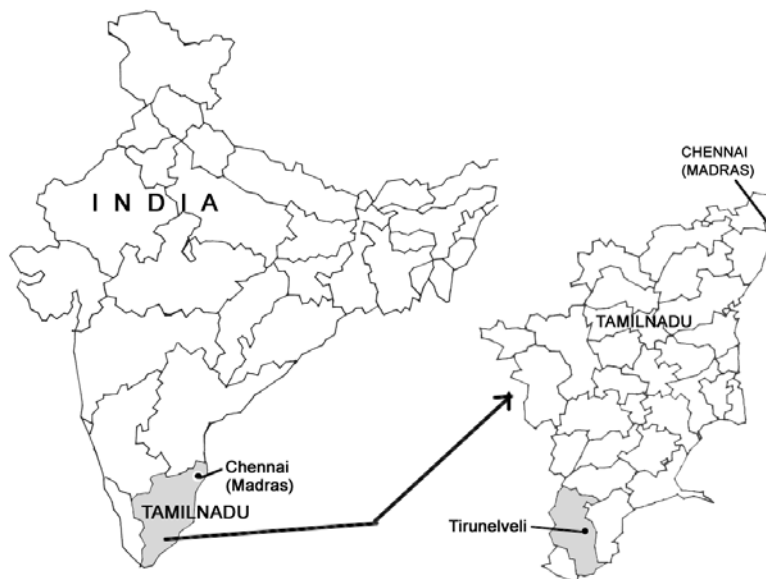


Fig. 1—Location map of Tirunelveli district, Tamil Nadu

minor forest products. They cultivate edible plants like tapioca, banana, millets and cash crops such as pepper, coconut, areca nut and cashew nut.

Methodology

Frequent field surveys were carried out in Tirunelveli hills during different seasons in 2002 & 2003. The ethnobotanical data (local name, mode of preparation, medicinal uses) were collected through interviews and discussions among the tribal practitioners in and around the study area. Data were also collected through questionnaires in their local language. In addition to the vernacular names and medicinal uses, detailed information about mode of preparation (i.e., decoction, paste, powder and juice), form of usage such as fresh or dried and mixtures of other plants used as ingredients were also collected. The medicinal plants were identified (local name), photographed (Fig. 2-17) and sample specimens were collected for the preparation of herbarium.

The collected medicinal plants were identified taxonomically using The Flora of Presidency of Madras³ and The Flora of Tamil Nadu Carnatic.⁴ The identified plant specimens were then confirmed with the herbaria of Botanical Survey of India (MH), southern circle, Coimbatore (Tamil Nadu). The specimens are deposited in the herbarium of Entomology Research Institute, Loyola College, Chennai.

Enumeration of plants

The plants are arranged alphabetically by botanical names, family, local name, method of preparation and

ethnobotanical uses for the treatment of poisonous bites and skin diseases is given below:

1 *Acalypha racemosa* Baill. (Euphorbiaceae)

Local name: *Visha karappan*

Uses: Powder of root and leaf along with seeds of *Strychnos nux-vomica* Linn. is mixed with cold water and applied externally on affected places for 40 days to cure skin diseases.

2 *Aeschynomene indica* Linn. (Fabaceae)

Local name: *Kodi thuvurai*

Uses: Decoction of leaves along with leaves of *Andrographis paniculata* Wall. ex Nees, *Andrographis lineata*, root of *Thespesia populnea* Soland. ex Correa and stem bark of *Strychnos nux-vomica* Linn. are taken internally for 40 days to treat snake bites. The decoction is also mixed with bathing water and used for bath to treat snakebites.

3 *Aglaia roxburghiana* Hiern. var. *courtallensis* Gamb. (Meliaceae)

Local name: *Chokkalai*

Uses: Decoction of leaves and seeds is mixed with the decoction of roots of *Aristolochia tagala* Cham., *Strychnos nux-vomica* Linn. and *Coscinium fenestratum* Colebr. and is taken orally to treat snake and scorpion bites.

4 *Albizia amara* Boir. (Mimosaceae)

Local name: *Usilai*

Uses: Paste of leaf and root bark along with root bark of *Jasminum angustifolium* Vahl and rhizome of *Cyperus rotundus* Linn. is heated with neem oil and



Fig. 2 *Aglaia roxburghiana* Miq. var. *courtallensis*



Fig. 3 *Blepharis petiolare* DC.



Fig. 4 *Cipadessa baccifera* (Roth.) Miq.



Fig. 5 *Aristolochia krisagathra* V V Sivarajan & AK Pradeep



Fig. 6 *Scleropyrum pentandrum* (Dennst.) Mabb.



Fig. 7. *Acalypha racemosa* Bail.



Fig. 8. *Leucas biflora* (Vahl.) R. Br.



Fig. 9. *Crotalaria pallida* Ait.



Fig. 10. *Isonandra lanceolata* Wight.



Fig. 11. *Urena lobata subsp lobata* (L.) Gross, Wal



Fig. 12 *Scutellaria violacea* Heyne



Fig. 13 *Gloriosa superba* Linn.



Fig. 14 *Litsea ligustrina* Hook. f.



Fig. 15 *Biophytum candolleianum* Wt.



Fig. 16 *Tabernaemontana heyneana* Wall.



Fig. 17 *Richardia scabra* Linn.

applied externally on affected places for 10 days to treat snake and scorpion bites and skin diseases.

5 *Neanotis monosperma* (Wt. & Arn.) W. H. Lewis (Rubiaceae)

Local name: *Kodi urinchi*

Uses: Powder of leaf, root and stem along with the leaves and flowers of *Cassia senna* and leaves of *Zizyphus rugosa* Lam. heated with water and applied for 15 days to treat scorpion and insect bites.

6 *Aristolochia krisagathra* V. V. Sivarajan & A. K. Pradeep (Aristolochiaceae)

Local name: *Akaasha karudan*

Uses: Juice of leaf and rhizome along with leaf and rhizome of *Aristolochia indica* Linn., stem bark and unripened fruit of *Melia azedarach* Linn., leaves of *Cryptolepis buchananii* Roem. & Schult. and seeds of *Strychnos nux-vomica* Linn. combined with neem oil is applied externally on skin for 45 days to treat snakebite.

7 *Biophytum candolleianum* W. (Oxalidaceae)

Local name: *Perumani vaatti*

Uses: Leaf powder along with leaves of *Aristolochia tagala* Cham., *Alangium salvifolium*, Wang., stem bark of *Strychnos nux-vomica* Linn., *Wrightia tinctoria* R. Br., *Thespesia populnea* Soland. Ex Correa and roots of *Abrus precatorius* Linn. is heated with water and taken internally for 14 days to treat snake, scorpion and insect bites.

8 *Blepharispermum petiolare* DC. (Asteraceae)

Local name: *Kaattu puthur*

Uses: Powder of leaf and stem bark along with leaves of *Strychnos nux-vomica* Linn., *Pavetta indica* Linn., *Cynodon dactylon* Pers., root of *Sida cordifolia* Linn. and *Hedyotis umbellata* Lam. is taken internally to treat snake bites.

9 *Bridelia retusa* (L.) Spreng. (Euphorbiaceae)

Local name: *Siruvalli*

Uses: Leaf paste along with the leaves of *Curculigo orchioides* Gaertn. mixed with castor, coconut and gingelly oils is applied externally to cure wounds in skin.

10 *Cansjera rheedii* Gmel. (Opiliaceae)

Local name: *Pacchai kodi kanchiram*

Uses: Powder of leaves, root bark and stem bark along with leaves of *Indigofera tinctoria* Linn. and *Dunbaria dolabriforme* is heated with gingelly, castor and coconut oils and taken internally for 40 days to treat poisonous bites.

11 *Cipadessa baccifera* (Roth.) Miq. (Meliaceae)

Local name: *Maramalli*

Uses: Leaf decoction along with the leaves of *Comelina longifolia* and *Aristolochia indica* Linn. is taken internally for 41 days to treat snake, scorpion and insect bites.

12 *Colocasia esculenta* (L.) Schott. (Araceae)

Local name: *Velanchembu*

Uses: Juice of leaves and rhizome along with roots of *Toddalia asiatica* Lam. and root bark of *Crataeva adansonii* is mixed with gingelly oil to prepare syrup and this is applied externally for 21 days to cure skin diseases.

13 *Crotalaria pallida* Aiton. Hort. (Fabaceae)

Local name: *Kooman salangai*

Uses: Powder of leaf and root bark with the leaves of *Wrightia tinctoria* R. Br. and *Tragia involucrata* Linn. is made into a paste with water and applied externally to cure skin diseases.

14 *Erythroxylon monogynum* Roxb. (Erythroxylaceae)

Local name: *Perum semmanai*

Uses: Leaf paste along with leaves of *Cassia senna* and *Jatropha curcas* Linn. is mixed with groundnut flour and applied externally on the whole body before taking bath for 30 days to cure skin diseases.

15 *Gloriosa superba* L. (Liliaceae)

Local name: *Kalappai kilangu / Kanvali poo*

Uses: Powder of tuber along with seeds of *Abrus precatorius* Linn. and flowers of *Cassia senna* is mixed with groundnut flour and applied externally before bath for 30 days to cure skin diseases.

16 *Grewia gamblei* Drum. (Tiliaceae)

Local name: *Karadi kasavu*

Uses: Juice of leaf and root bark along with leaves and roots of *Tragia involucrata* Linn., leaves of *Smilax zeylanica* Linn. and roots of *Datura innoxia* Mill. is mixed with water, filtered and taken internally for 5 days to treat snake and scorpion bites.

17 *Isonandra lanceolata* W. (Sapotaceae)

Local name: *Sirumottai*

Uses: Leaf, unripened fruit and root bark along with leaves of *Andrographis paniculata* Wall. ex Nees, and leaf & root bark of *Thespesia populnea* Soland. Ex Correa is heated with water and made into a decoction and taken internally for 30 days to treat snakebite.

18 *Leucas biflora* (Vahl.) R. Br. (Lamiaceae)

Local name: *Kodi thulasi*

Uses: Paste of whole plant is mixed with coconut oil and applied externally on affected places for 14 days to cure skin diseases.

19 *Litsea ligustrina* Hook. f. (Lauraceae)

Local name: *Kaattu senbagam*

Uses: Powder of leaf, stem bark and flower along with leaves of *Vitex altissima* Linn. f., *Hygrophila auriculata* and *Pavetta indica* is mixed and heated with water and taken internally to treat snake and scorpion bites.

20 *Milusa eriocarpa* Dunn. (Annonaceae)

Local name: *Karu naarai*

Uses: Leaf decoction along with stem bark of *Muraya koenigii* Spreng., leaves of *Terminalia bellirica* Roxb. and *Ziziphus xylopyra* Willd. is heated and taken internally to treat snake bites.

21 *Pouzolzia cymosa* W. (Urticaceae)

Local name: *Perun-karappan*

Uses: Leaf decoction along with leaves of *Naravelia zeylanica* and *Cassia senna* is heated with water and used to take bath for 30 days to cure skin diseases.

22 *Pouzolzia indica* Gaud. (Urticaceae)

Local name: *Visha karappan*

Uses: Powder of leaf, stem, flower along with stem bark of *Melia azedarach* Linn. and *Andrographis paniculata* Wall. ex Nees is mixed with water and applied externally on the whole body before bath for 12 days to treat insect and scorpion bites.

23 *Richardia scabra* L. (Rubiaceae)

Local name: *Pachai-amman paccharisi*

Uses: Leaf paste along with the leaves of *Euphorbia hirta*, *Wrightia tinctoria* R. Br., *Toddalia asiatica* Lam. and *Clitoria ternatea* Linn. combined with the coconut oil is applied externally to cure skin diseases.

24 *Scleropyrum pentandrum* (Dennst.) Mabb. (Santalaceae)

Local name: *Mul kirayan*

Uses: Paste of stem bark and leaf is applied externally to cure skin diseases.

25 *Scutellaria violacea* Heyne. (Lamiaceae)

Local name: *Novu pacchilai*

Uses: Leaf paste is heated and mixed with castor oil and applied externally for three days to cure skin diseases.

26 *Tabernaemontana heyneana* Wall. (Apocynaceae)

Local name: *Kundalam paalai*

Uses: Powder of leaf and stem bark along with the stem bark of *Ficus benghalensis* Linn., *Madhuca longifolia* Macbr., *Strychnos nux-vomica* Linn. and leaves of *Evolvulus alsinoides* Linn. is heated with coconut oil and applied externally to cure skin diseases.

27 *Urena lobata* L. subsp. *lobata* (L.) Bross. Wal. (Malvaceae)

Local name: *Kodi thutthi*

Uses: Leaf paste is taken internally to increase lactation.

Decoction of root along with the leaves of *Adhatoda vasica* Nees, *Alangium salviifolium* Wang. and *Coccinia grandis* is taken internally to treat snakebite.

28 *Urena lobata* L. subsp. *Sinuata* (L.) Bross. Wal. (Malvaceae)

Local name: *Kodi thutthi*

Uses: Leaf powder along with leaves of *Jasminum flexile* Vahl is mixed with water and taken internally for 20 days to cure skin diseases (itching).

Discussion

In the present investigation 28 plants belonging to 21 families were found to be used by *Kani* tribals in traditional medicine system for the treatment of skin diseases and poisonous bites. Among them, 14 plants are used for the treatment of skin diseases and 15 plants are used for the treatment of poisonous bites. Paste of leaf and root bark of *Albizia amara* Boiv. is used to cure both skin diseases and poisonous bites. Some researchers have reported 13 plants for the treatment of skin diseases¹. Among them some of the species are also used to treat hair disorders. Some workers have also reported 24 important plants, which are commonly used by the tribals in the sub-Himalayan Tarai Region of Uttar Pradesh for the treatment of skin diseases⁵.

Tribals of Rajasthan are using leaves of *Azadirachta indica* for the treatment of skin irritation, and *Citrullus lanatus* & *Cocculus pendulus* for the treatment of poisonous bites⁶. Among different plant parts used by *Kanis*, the leaves are mostly used. They use the plant parts in various forms either raw or paste, powder, decoction and juice for curing various diseases. In the above mentioned data 11 plants are used in the form of powder, 8 plants are used in the form of paste, 6 plants are used in the form of decoction and 3 plants are used in the form of juice. In the surveyed plants some plants are used alone and some plants are used in combination.

Kanis use tubers of *Gloriosa superba* to treat skin diseases, but tribals of Aravalli hills (Rajasthan) are using the paste of this tuber for curing wounds, and root paste of this plant is used to treat asthma in children⁷. The knowledge gathered from the tribal practitioners is useful for researchers in the field of ethnobotany, ethnomedicine, taxonomy and pharmacology for further studies. Medicinal uses and ingredients

used by the *Kani* tribals mentioned above are not recorded in any other ethnomedicinal literature of India. The present study shows that Tirunelveli hills have great diversity of medicinal plants with rich ethnomedicinal uses particularly to treat poisonous bites and skin diseases.

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