Traditional knowledge of Kani tribals in Kouthalai of Tirunelveli hills, Tamil Nadu, India

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Abstract

An ethnobotanical survey was carried out among the ethnic groups (Kani/Kanikaran) in Southern Western Ghats of India. Traditional uses of 54 plant species belonging to 26 families are described under this study. In this communication, the information got from the tribals were compared with the already existing literature on ethnobotany of India. The documented ethnomedicinal plants were mostly used to cure skin diseases, poison bites, wounds and rheumatism. The medicinal plants used by kanis are arranged alphabetically followed by family name, local name, major chemical constituents, parts used, mode of preparation and medicinal uses.

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Keywords: Kani tribals; Ethnomedicine; Tirunelveli hills; Western Ghats and traditional knowledge

1. Introduction

India is having a rich vegetation with a wide variety of plants, because of the extreme variations in geographical and climatic conditions prevailing in the country. Plants have been used since ancient times for the treatment of various ailments. The traditional systems of medicine together with folklore systems continue to serve a large portion of the population, particularly in rural areas, in spite of the advent of the modern medicines. Out of about 15,000 species of higher plants in India, medicinal uses have been attributed to 1500 species (Handa, 1998). In India, Southern Western Ghats has rich vegetation compared to other areas of Western Ghats. It is situated in the Southern end of the Western Ghats and lies between the longitudes 77° 5′–77° 40′ E and latitudes 8° 5′–8° 30′ N. Nearly 1800 species of plants are listed to be present in the Tirunelveli hills (Maini, 2003).

Ethnobotany tries to study the relationship between humans and nature. Ethnic people are highly knowledgeable about the plants and their medicinal values. This knowledge is passed through oral communication from generation to generation. Over the last century, ethnobotany has evolved into a specific discipline that looks at the people–plant relationship in a multidisciplinary manner, such as ecology, economic botany, pharmacology, public health and other disciplines as needed (Balick, 1996). Tribal population provides considerable information about the use of many plants or plant parts as medicine. Today according to the World Health Organization (WHO) as many as 80% of the world’s people depend on traditional medicine for their primary healthcare needs (Azaizeh et al., 2003). There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases. In a report recently published by the World Bank, Lambert et al. (1997) pointed out that preserving and enhancing the plant knowledge and use was equivalent to ‘rescuing a global heritage’.

Traditional medical practices are an important part of the primary healthcare system in the developing world (Sheldon et al., 1997). Herbal medicines are comparatively safer than synthetic drugs. Plant-based traditional knowledge has become a recognized tool in search for new sources of
The sanctuary is developed as a National Tiger Reserve (KMTR) India’s 17th Tiger Reserve under Project Tiger in the Southern Dry Mixed Deciduous forests in Tamil Nadu.

It is located in the Kalakkad Mundanthurai Tiger Reserve Forest (KΜTR) of Tirunelveli hills; it is a representative area of the Southern Dry Mixed Deciduous forests in Tamil Nadu. KMTR is India’s 17th Tiger Reserve under Project Tiger and the sanctuary is developed as a National Tiger Reserve from the year 1988 with a total area of 817 km² in the south most Western Ghats ranges. Geographically, it is a part of South Western tip of the Western Ghats, a region that is known for its species richness, diversity and high degree of endemism.

This sanctuary is very popular with botanists and ornithologists as it has a great variety of fauna and flora. Among the animals found in this place are tiger, panther, jackal, chameleon, hog, mongoose, elephant, porcupine, yak, bonnet macaque, langurs, slender loris, sloth bear, sambar deer and wild dogs, while the reptile population includes the king-cobra, cobra, python and several other poisonous and non-poisonous snakes. KMTR was declared a forest preserve in 1988. It is a natural reserve for the rare lion-tailed macaque, which can easily be spotted here. Tamirparanur, the perennial river of Tamil Nadu originates from Agasthiamalai (Pothigaimalai) and flows through this sanctuary.

The exact study area is Kouthali, which is situated on the bank of river Tamirparanur and surrounded by Kannikatty, Mayilani, Inchikuzhi and Karayar. The elevation ranges from 300 to 900 m and the annual rainfall is 1500 mm. Ignacimuthu et al. (1998) made a medico-ethnobotanical survey among the tribals in some areas of Mundanthurai Sanctuary. The KMTR area has been recognized as one of the ‘hot spots’ (areas of high species richness or of high endemism, which are of high priority for protection) for Biodiversity conservation by the IUCN. Some of the ‘red-listed species’ (red list is a compilation of endangered wildlife species by IUCN) in the KMTR are Adenia hondala, Cycas circinalis, Drosophyllum indica, Kingiodendron pinnatum, Gloriosa superba, Pseuderanthus viscidula and Santalum album. Some of the ‘rare plant species’ (species facing a difficulty in maintaining the viable population) found in the KMTR are Begonia malabarica, Aristolochia tagala, Smilax zeylanica, Garcinia gummigutta, Trichopus zeylanicus, Hopea parviflora, Calophyllum inophyllum and Alstonia scholaris.

2. Study area

Tamil Nadu is situated in Southern end of India, east of Kerala and south of Andhra Pradesh and Karnataka states. Several folds of Southern Western Ghats separate the states of Tamil Nadu and Kerala. The area of investigation (Fig. 1) is located in the Kalakkad Mundanthurai Tiger Reserve Forest (KMTR) of Tirunelveli hills; it is a representative area of the Southern Dry Mixed Deciduous forests in Tamil Nadu. KMTR is India’s 17th Tiger Reserve under Project Tiger and the sanctuary is developed as a National Tiger Reserve from the year 1988 with a total area of 817 km² in the south most Western Ghats ranges. Geographically, it is a part of South Western tip of the Western Ghats, a region that is known for its species richness, diversity and high degree of endemism.

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3. Kani tribals

The tribe found in the study area is known as Kanikaran or Kani. They are traditionally a nomadic community. Kanikaran tribes speak Tamil and Malayalam as their language. They are short in nature; usually dark skinned and carry a self-sustaining existence based on farming. Earlier they lived under rock shades and caves, which provided shelter to these people. Their habits and manners have undergone changes due to outside contacts. Every tribal group has a tribal chief. They are today living in several tribal hamlets, each consisting of 5–20 families disbursed in and around the forest areas of Tirunelveli hills in Tirunelveli district. As per the 1981 census of Tirunelveli district, the Kanikaran population is 0.35% of the total population (district population—3,65,932) of the district. The Kanikarans of Mundanthurai Sanctuary seem to be the migrants from Thiruvanathapuram of Kerala state and they may have entered into Tamil Nadu through the Courtallam pass (Ignacimuthu et al., 1998).

Healers commonly begin their training as children or teenagers working as assistants to their mothers, fathers and to other relatives who are recognized healers. After having trained for a number of years, the apprentice will be ceremonially granted the authority to use a given treatment. This individual will be recognized by others in their culture as having mystical power to heal, as well as having the proper training to use medicinal plants. Most of the Kani tribals have a general knowledge of medicinal plants that are used for first aid remedies, to treat cough, cold, fever, headache, poisonous bites and some other simple ailments. Many plant remedies are known by some local people, especially by the elder who is not necessarily a traditional healer. The healers are more frequently men than women.

The tribals residing in the deep forest areas are still dependent on medicinal plants for their primary healthcare and treatment of various diseases. Kanis still supplement their food by gathering roots and tubers from the nearby forest areas. They eat tubers like Manihot esculenta and Dioscorea oppositifolia, etc. They are extremely hard working and can survive without the help of modern facilities. They are socio-economically backward and most of them are very poor. They are also engaged in seasonal collection of honey, bee wax and some minor forest produce. They cultivate edible plants, like tapioca, banana, millets, and cash crops, such as pepper, coconut, areca nut and cashew nut.
4. Methodology

Frequent field surveys were made in Kouthalai hills during different seasons in 2002 and 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 languages (Tamil and Malayalam). Information were collected through interview with five persons aged between 40 and 78, who had
the traditional knowledge of plants. In addition to the vernacular names questions were also asked about each plant prescribed, such as part of the plant used, medicinal uses, detailed information about mode of preparation (i.e., decoc-
tion, paste, powder and juice); form of usage either fresh or dried, and mixtures of other plants used as ingredients were also collected. The medicinal plants were identified (local name), photographed and sample specimens were collected for the preparation of herbarium.

The collected plant species were identified taxonomically using The Flora of Presidency of Madras (Gamble, 1935) and The Flora of Tamil Nadu Carnatic (Matthew, 1983). The identified plant specimens were then confirmed with the herbaria of Botanical Survey of India (BSI), Southern Cir-
cle, Coimbatore, India. The specimens were deposited in the herbarium of Entomology Research Institute, Loyola Col-
lege, Chennai (India). The tribal information is also kept in the same institute. Voucher specimen numbers along with other details are given in Table 1.

5. Results and discussion

The present investigation revealed that the Kani tribes of Kouthalai region were using 54 species of plants belonging to 26 families (Table 1) for medicinal use. Among them 19 were herbs, 12 were shrubs, 7 were small trees, 6 were big trees and 10 were climbers. The most commonly represented fam-
ilies were Asteraceae (7) and Fabaceae (5). They were using these plants to cure diseases like skin disorders, cold, fever, cough, headache, rheumatism, fertility problems, tooth diseases, stomach ache, wounds, ischaemia, hair falling and poison (snake, scorpion and insect) bites. This is con-
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321
345
368
391
414
437
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483
506
529
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575
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621
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667
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713
736
759
782
805
828
851
874
897
920
943
966
989
246
249
252
255
246–255
246
### Table 1

<table>
<thead>
<tr>
<th>Botanical name (voucher specimen number)</th>
<th>Family</th>
<th>Local name</th>
<th>Parts used, mode of preparation, ethnomedicinal uses and some other plants used as ingredients</th>
<th>Major chemical constituents *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ageratum conyzoides L. (T11)</td>
<td>Asteraceae</td>
<td>Mookuthi poo</td>
<td>Juice of leaf along with the leaves of Cocculus hirsutus is taken to cure diarrhoea</td>
<td>Coumarin, friedelin, β-sitosterol, stigmasterol, tertiary quarternary alkaloids, conyzorigun and etc.</td>
</tr>
<tr>
<td>Aglaia roxburghiana Hiern. var. courtallensis, Gamb. (T181)</td>
<td>Meliaceae</td>
<td>Chokkalai</td>
<td>Decoction of leaves and seeds is mixed with the decoction of root of Aristolochia tagala, Strychnos nuxvomica, Cocculus hirsutus. The paste is applied to the swellings. Latex is used for abortion</td>
<td>Triterpenes—roxburghiadiol A and B</td>
</tr>
<tr>
<td>Alstonia scholaris R. Br. (T223)</td>
<td>Apocynaceae</td>
<td>Elilaip-palai</td>
<td>Paste of leaf and stem bark is mixed with the leaves of Vitex negundo and Dodonaea angustifolia. The paste is applied to the swellings. Latex is used for abortion</td>
<td>/H9252-sitosterol, alkaloids-scholaricine, picrinine, alstonamine and scholarine</td>
</tr>
<tr>
<td>Alysicarpus vaginalis DC. (T157)</td>
<td>Fabaceae</td>
<td>Siru kodiveli</td>
<td>Decoction of leaves along with the leaves and flowers of Cassia senna is heated with water and applied to cure scorpion and insect bites</td>
<td>Not available</td>
</tr>
<tr>
<td>Betelum palma L. (T107)</td>
<td>Asteraceae</td>
<td>Kutthan pacchilai</td>
<td>Leaf juice along with the leaves of Aloe vera and Plectranthus mollis combined with honey and ghee is taken to cure stomachache</td>
<td>Aesculetin, behenic acid, /H9252-sitosterol, butanedioic acid, caffeine, tannic acid, vanillic acid and etc.</td>
</tr>
<tr>
<td>Biophytum candolleanum W. (T166)</td>
<td>Oxalidaceae</td>
<td>Perumanivatti</td>
<td>Paste of leaf along with the leaves of Aristolochia tagala, Toddalia asiatica and rhizome of Cynodon dactylon combined with castor, coconut and gingelly oils is applied externally to cure venereal diseases</td>
<td>Not available</td>
</tr>
<tr>
<td>Borreria ocymoides DC (T09)</td>
<td>Rubiaceae</td>
<td>Kodi-amman pacchanim</td>
<td>Juice of leaf is mixed with the leaves of Garcinia pinnata and stem bark of Syzygium cumini and heated with the gingelly oil to prepare a paste and applied on affected places to cure wounds</td>
<td>Isohamnetin</td>
</tr>
<tr>
<td>Carmona retusa (Vahl.) Masam. (T135)</td>
<td>Euphorbiaceae</td>
<td>Siruvalli</td>
<td>Leaf powder is used as tooth cleaning powder. Powder of leaves, dried fruit and root is mixed with the leaves of Ajuga reptans, Piper betle and seeds of Areca catechu and used to cure toothache and give strength to the teeth</td>
<td>Triterpenes, ketone and tannins</td>
</tr>
<tr>
<td>Caryota urens L. (T54)</td>
<td>Arecaceae</td>
<td>Kundal panni</td>
<td>Paste of young plant stem along with the fruits of Phyllanthus emblica and rhizome of Curculigo orchioides is taken to strengthen the body</td>
<td>Sucrose, reducing sugar, alcohol and acetic acid</td>
</tr>
<tr>
<td>Cayratia pedate Juss. (T76)</td>
<td>Vitaceae</td>
<td>Siru valli kodi</td>
<td>Powder of leaf, fruit and stem is taken with the leaves of Ocimum basilicum, rhizome of Alpinia galanga and Withania somnifera to get relief from gastric complaints</td>
<td>Sterols, tannins, sugars and potassium</td>
</tr>
<tr>
<td>Cephalocereus candidolobatus L. (T163)</td>
<td>Cactaceae</td>
<td>Perum-kodi</td>
<td>Decoction of leaf and stem is taken with the leaves of Viola nesjoid, stem bark of Thapsia pentaphylla and Aristolochia tagala twice a day to cure one-sided headache</td>
<td>Steroids, polyphenols, sugars and potassium</td>
</tr>
<tr>
<td>Cipadessa baccifera Miq. (T01)</td>
<td>Rubiaceae</td>
<td>Maramalli</td>
<td>Detection of leaves is taken with the leaves of Trapa moulana and Aristolochia tagala to cure scorpion, insect and snake bites</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Table 1 (Continued)

| Botanical name (voucher specimen number) | Family | Local name | Parts used, mode of preparation, ethnomedicinal uses and some other plants used as ingredients | Major chemical constituents
|----------------------------------------|--------|------------|-----------------------------------------------------------------------------------------------|-----------------------
| Cissus rhombifolia Lam. (T147)         | Vitaceae | Muvvali kodi | Powder of leaf and root is mixed with the stem bark of *Citrullus colocynthis*, stem of *Cucumis melo*, *Ficus retusa*, and seeds of *Abra peregrina*. The mixture is heated with castor, coconut and gingly oil and applied externally to treated skin diseases | Not available
| Croton decipiens Aiton. Hort. (T139)   | Fabaceae | Kosman salangai | Powder of leaf and root bark is taken with the leaves of *Wrightia tinctoria*, and *Trogia retusa* to make paste and is applied externally to treat skin diseases | Galactomannan and crinol
| Derris elliptica Blanco (Retz.) Merr. (T145) | Apocynaceae | Kasthuri thirani | Paste of leaf is applied externally along with the leaves of *Aloe vera* and *Scilla indica* to prevent falling of hair | Phenylalanine, salvinoid, hordenine, tyramine, cardinene and cholesterol
| Diospyros ebenum L. (T178)             | Ebenaceae | Beedi clai | Powder of whole plant is taken along with the leaves and fruits of *Trichosanthes zeylanica*, *Nanajjinsia ovata*, and fruits of *Phytiumbus emblica*, *Terminalia bhitara*, and honey to strengthen the body | Ceryl alcohol, lupel, betulin, β-sitosterol, diospyric acid, triptene and carbocyclic acid
| Echinol violase (Forsk.) Aiton in Trimen. (T126) | Acanthaceae | Pachai anagabaram | Juice of leaves along with leaves of *Nanajjinsia zeylanica*, *Oxalis corniculata* and *Cryptolepis bharatensis* is applied on head to reduce heat in the body and to cool the eye | Orientin, vitexin, isoorientin and isovitexin
| Elephantopus scaber L. (T143)           | Asteraceae | Yamaani churadi | Powder of leaf along with the leaves of *Tridax procumbens* and *Nyctanthes zeylanica* is heated with castor, coconut and gingly oil and applied externally to cure rheumatism | Sesquiterpene lactones, isoreptin, stigmasterol and etc.
| Eupatorium odoratum L. (T45)            | Asteraceae | Ana vanthan cheli | Leaf paste along with cow’s milk and oil of *Pongamia pinnata* is taken externally to care wounds | A-pinene, cadinone, camphor, limonene, cadinol, citronellal, p-cymene and geraniol
| Evolvulus alsinoides L. (T122)          | Convolvulaceae | Vinsna kranti | Powder of whole plant along with the leaves of *Wrightia tinctoria*, *Alonos scholaris* and *Euphorbia hirta* is used to cure venereal diseases | Yellow neutral fat, alkaloid, organic acid and saline substances
| Ficus retusa L. (T165)                  | Moraceae | Kottal | Fresh fruit is mixed with honey and is taken twice a day to improve the body stamina. The fruit is mixed with cow’s milk, and taken twice a day to cure sterility in men | Lupoyl acetate, glutinol, olemic acid, pentacysic triterpenoids, taurinol and friedelin
| Helleborus inosus (L.) W & A. (T 136)   | Sterculiaceae | Valampuri or Edampuri | Decoction of unripe fruit mixed with the leaves of *Cucumis hirtus*, *Aloe vera* and *Sanseiviera roxburghiana* is heated with castor oil and coconut oil and applied for hair growth | Malaysian, cucurbitin B and cnicusin C triterpenoids and etc.
| Heterocera indica R. Br. (T186)         | Asclepiadaceae | Namari | Powder of root along with the fruit of *Cuscuta oxydoptylam*, *Dasycarpus edulis*, *Terminalia chebula*, *Terminalia ivierica* and *Phyllanthus emblica* and honey is taken to increase the semen production | Coumarin, hordenine, emodine, hemidione rutin and etc.
| Herniaria arifolia (Burm.) Moore (T180) | Hemirotiaceae | Vatta sumali | Paste of leaf is mixed with the leaves of *Asimina zeylanica*, *Datura metel* and root bark of *Pongamia pinnata* and applied externally to cure rashes infection | Not available
| Ipomoea oblonga K. Gawli. (T152)        | Convolvulaceae | Pillai thali | Powder of stem, leaf, flower and root is taken along with the stem bark of *Ficus retusa*, root bark of *Alangium salvifolium* and leaves of *Aloe vera* to induce conception | Indole compounds, isoprostanes, alkaloid spousamine C and etc.
| Kleina grandiflora (DC) N. Ram (T149)   | Asclepiadaceae | Elai kalli | Powder of leaf and root bark is mixed with the leaves of *Centrosema pubescens* and leaf juice of *Piper nigrum* to get relief from gastric complaints | Kaempferitrin, Kaempferol-β-sitosterol and etc.
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<tr>
<td>Lantana camara L. (T12)</td>
<td>Verbenaceae</td>
<td>Umichelli</td>
<td>Decoction and inhalation of leaf and root bark along with the leaves of <em>Podalia pyxidata</em>, <em>Adhatoda zeylanica</em> and <em>Eucalyptus globulus</em> is taken to get relief from cold and fever. Triterpenes, lactamic acid, lactamilemic acid lactamide A and etc.</td>
<td></td>
</tr>
<tr>
<td>Mussaenda indica W. var. perrotettiana Cl. (T108)</td>
<td>Myrsinaceae</td>
<td>Padar-kothamali</td>
<td>Leaf juice is applied externally to stimulate hair growth. Juice of leaf, root bark and unspaced fruit is applied on the body before bath to increase disease resistance. Siestosterone, quercetin-3—rhamnoside and dimnetic phenol-merol</td>
<td></td>
</tr>
<tr>
<td>Mallotus philippinensis (Lam.) Hutch. (T199)</td>
<td>Euphorbiaceae</td>
<td>Kutthu senkalai</td>
<td>Decoction of stem bark and leaf is taken with the stem bark of <em>Markusa hirsutigloia</em>, root bark of <em>Philanthus emblica</em> and fruit of <em>Phoenix dactylifera</em> to cure hydrocele and stomachache. Flavonones, chalcones—mallinus AB, tannins, cardenolides, rotiferin, sorotinlein, tannin acid, gum, volatile oil and etc.</td>
<td></td>
</tr>
<tr>
<td>Momordica charantia L. (T112)</td>
<td>Cucurbitaceae</td>
<td>Kamini chaungi</td>
<td>Leaf paste is applied externally on affected places of nail. Juice of root bark is taken with the stem bark of <em>Sycosum camini</em>, leaf of <em>Solanum trifoliatum</em>, rhizome of <em>Canavalia orchis</em> and honey to increase the fertility in men. Not available</td>
<td></td>
</tr>
<tr>
<td>Morema hastate Hall. (T103)</td>
<td>Verbenaceae</td>
<td>Paanan-kodi</td>
<td>Powder of leaf, stem and root is taken with the powder of stem bark of <em>Avicia nilotica</em>, leaves of <em>Alpinia schottii</em>, <em>Cénarina medica</em> and <em>Euphorbia testa</em>. The powder is used as tooth powder to cure tooth diseases. Flavonoids, diosmetin, luteolin, glucose, luteolin glucoside and etc.</td>
<td></td>
</tr>
<tr>
<td>Mussaenda hirsutissima L.</td>
<td>Rubiaceae</td>
<td>Kurai kaanchi</td>
<td>Powder of leaf is heated with castor oil and applied externally to cure heel cracks. Powder of stem bark is taken internally with the fruit of <em>Ficus retusa</em> and young leaves to improve body stamina and also increase the fertility. Not available</td>
<td></td>
</tr>
<tr>
<td>Ocimum basilicum L. (T125)</td>
<td>Lamiaceae</td>
<td>Kodu inthu</td>
<td>Decoction from leaves, stem, inflorescence and root along with leaves of <em>Evolvulus alsinoides</em>, <em>Solanum ascospernum</em> and <em>Solanum trifoliatum</em> is taken internally to get relief from cold, cough and fever. Volatile oil consisting of safrole, eucine, cineole, linalool, thymol and etc.</td>
<td></td>
</tr>
<tr>
<td>Ocimum canum Sims. (T134)</td>
<td>Lamiaceae</td>
<td>Naadi inthu</td>
<td>Decoction of leaf is taken with the leaves of <em>Ocimum basilicum</em> and <em>Eucalyptus globulus</em> to get relief from cold, cough and fever. Essential oil, volatile oil, engenols and etc.</td>
<td></td>
</tr>
<tr>
<td>Osbeckia zeylanica Wild. (T131)</td>
<td>Melastomataceae</td>
<td>Kattu paralam</td>
<td>Paste of whole plant is taken orally to improve body stamina and also increase the disease resistance. Not available</td>
<td></td>
</tr>
<tr>
<td>Osbekia songolensis (T86)</td>
<td>Rutaceae</td>
<td>Palam drag</td>
<td>Leaf paste is taken with the leaves of <em>Aloe vera</em>. <em>Cocculus hirsutus</em> and <em>Phyllanthus amarus</em> to reduce the body heat. Alkaloids—simplexine and phyllanthine</td>
<td></td>
</tr>
<tr>
<td>Phyllanthus virgatus G. Forst. (T133)</td>
<td>Euphorbiaceae</td>
<td>Kutthu keetanelli</td>
<td>Paste of leaf is taken along with the leaves of <em>Becium communis</em>, <em>Centella asiatica</em> and <em>Calamus rotang</em> to cure jaundice and stomachoche. Not available</td>
<td></td>
</tr>
<tr>
<td>Pothos scandens L. (T116)</td>
<td>Araceae</td>
<td>Pariyan kodi</td>
<td>Paste of leaf along with the fruit of <em>Capuanus annum</em> and rhizome of <em>Allium sativum</em> mixed with coconut oil is applied externally to cure wounds created during delivery. Not available</td>
<td></td>
</tr>
<tr>
<td>Pseudostellaria viscosa W &amp; A. (T128)</td>
<td>Fabaceae</td>
<td>Perum–kurum payiru</td>
<td>Paste of leaf is taken with the stem bark of <em>Ficus glareosa</em>, <em>Ficus microcarpa</em>, and stem bark of <em>Aegycyn camini</em> combined with castor oil to get relief from cold and cough. Not available</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 (Continued)

<table>
<thead>
<tr>
<th>Botanical name (voucher specimen number)</th>
<th>Family</th>
<th>Local name</th>
<th>Parts used, mode of preparation, ethnomedicinal uses and some other plants used as ingredients</th>
<th>Major chemical constituents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richardia scabra L. (T133)</td>
<td>Rubiaceae</td>
<td>Pachai-amman</td>
<td>Paste of leaf along with the leaves of Wrightia micromera, Toddalia asiatica and Cissus antarctica combined with the coconut oil is applied externally to cure skin diseases</td>
<td>Emetin and starch</td>
</tr>
<tr>
<td>Ruellia prostrata Poir. (T127)</td>
<td>Acanthaceae</td>
<td>Kodi urinchi</td>
<td>Leaf juice along with the stem bark and leaf of Scrophularia sarmentosa and leaf of Andrographis paniculata is applied to prevent the falling of hairs</td>
<td>Ethers, esters, lactone, tyrosine, valine, glycine, sitosterol and stigmasterol</td>
</tr>
<tr>
<td>Sceletium tortuosum (Donn.) Mori (T144)</td>
<td>Santalaceae</td>
<td>Muli karayan</td>
<td>Paste of stem bark and leaf is applied externally to cure skin diseases</td>
<td>Decane, lauric, palmitic, steare, arachidic, behenic, oleic, erucic and limolic acids</td>
</tr>
<tr>
<td>Solanum vagum Heyne. (T156)</td>
<td>Solanaceae</td>
<td>Piz - chumani</td>
<td>Leaf and root juice is mixed with water and taken with leaves of Neemolaya zeylanica and Aloe vera to treat dry skin</td>
<td>Not available</td>
</tr>
<tr>
<td>Tabernaemontana heyneana Wall. (T120)</td>
<td>Apocynaceae</td>
<td>Kundalam paalai</td>
<td>Powder of leaf and stem bark along with the stem bark of Ficus benghalensis and Madhuca longifolia, is heated with coconut oil and applied externally to cure skin diseases. Latex is taken along with the latex of Carica papaya and Xylaria scholade to induce abortion</td>
<td>Alkaloid – tabernoxidine, coronaridine, voacangine and iboganine</td>
</tr>
<tr>
<td>Themeda triandra Forsk. (T80)</td>
<td>Poaceae</td>
<td>Peru manip-pul</td>
<td>Powder of whole plant along with ginigelly oil along with the leaves of Toddalia asiatica and Pongamia pinnata is applied externally to cure wounds</td>
<td>Hydrocyanic acid</td>
</tr>
<tr>
<td>Trichopus zeylanicus Guert. (T81)</td>
<td>Trichopodaceae</td>
<td>Anskia puchila</td>
<td>Unopened fruit is immersed in honey for 10 days and then taken internally to get relief from asthma. Powder of leaves along with stem bark of Mentha indica is taken orally to treat venereal diseases</td>
<td>Not available</td>
</tr>
<tr>
<td>Tridax procumbens L. (T10)</td>
<td>Asteraeae</td>
<td>Kitalapposodu</td>
<td>Paste of leaf along with the leaves of Cucurbita foetida, Sicyos indicus and castor oil is applied externally to get relief from swellings</td>
<td>Lipids, β - amyrin, lupeol, lupein, sitosterol, luteolin, Palmitic, steareic acids and etc.</td>
</tr>
<tr>
<td>Urtica lobata L. subsp. lobata (L.) Briss. Wald. (T201)</td>
<td>Malvaceae</td>
<td>Koduri thuthi</td>
<td>Destruction of root and leaves of Arbutus unedo, Alangium sylvestre and Cucurbita foetida is taken orally to cure snakebite</td>
<td>β -sitosterol, triterpenoids, sterol, pyrethrine I, II, fatty acids, β-amyrin, and etc.</td>
</tr>
<tr>
<td>Vernonia cinerea Less. (T174)</td>
<td>Asteraeae</td>
<td>Mookkathis poondu</td>
<td>Powder from the whole plant along with the leaves of Conyza bonariensis and Parthenium gronston is heated with castor, ginigelly and coconut oil and applied externally on breast to cure tumor in breast</td>
<td>Tannins and phytins. Seeds—areese</td>
</tr>
<tr>
<td>Zelneria maysorensis (W &amp; A) Am. (T193)</td>
<td>Cucurbitaceae</td>
<td>Vatta pugaski kodii</td>
<td>Leaves along with leaves of Eclipta protonutum and Ricinus communis are taken in equal amount, powdered and is taken with honey to kill stomach worm</td>
<td>Not available</td>
</tr>
<tr>
<td>Zornia diphyllos Pers. (T121)</td>
<td>Fabaceae</td>
<td>Melem-mari</td>
<td>Paste of whole plant along with stem bark of Madhuca longifolia, roots of Isogonia malabarica and leaves of Hibiscus esculentus is taken internally to cure wounds in stomach (icter)</td>
<td>Magnesium, calcium and iron</td>
</tr>
</tbody>
</table>

* The chemical constituents for the plants were extracted from the literatures of Nadkarni (1976), Yoha Narasimhan (2000), Rastogi and Mehrotra (1990–1994), Bakshi et al. (1999) and Chatterjee and Pakrashi (1997).

of income. But unfortunately due to their over-exploitation there is a great danger of their extinction. Hence, efforts must be taken to protect these species in this area by involving the local communities in preservation and conservation aspects. In addition, we surveyed pharmacopoeias and some major medicinal plants textbooks for the major chemical constituents of the ethnomedicinal plants studied in this paper. For some of the plants the chemical constituents
are not available. Of the 54 plants studied, major chemical constituents are reported for 42 plants (Table 1). Natarajan et al. (1999) studied ethnomedical plants from the Coimbatore district, Tamil Nadu, India. They also compared the traditional knowledge with modern biological science.

From this account it is clear that the Kani tribe, like other ancient tribes (Rajasingh, 1971), possess the ability to discern the character of various plants and their beneficial properties. It is interesting to note that such a way of life, particularly with respect to healthcare practices has hardly undergone any change even in the present days. Similar ethnomedical studies have been reported in some other parts of India (Aminuddin and Girach, 1991; Borthakur, 1993; Negi et al., 1993; Jamir, 1997; Katewa and Arora, 1997; Reddy et al., 1997; Jain, 2004; Singh, 2004) and some other parts of the World (Jovel et al., 1996; Bonet et al., 1999; Grierson and Afolyan, 1999; Guarrera, 1999; Shinwari and Khan, 2000).

6. Conclusion

This study revealed that medicinal plants still play a vital role in the primary healthcare of the people. The information gathered from the tribes is useful for further researchers in the field of ethno botany, taxonomy and pharmacology. This study offers a model for studying the relationship between plants and people, within the context of traditional medical system. The purpose of standardizing traditional remedies is obviously to ensure therapeutic efficacy. The value of using ethnomedical information is to initiate drug discovery efforts. This study also generated a broad spectrum of information concerning medicinal plants used by tribals. Due to lack of interest among the younger generation of tribals as well as their tendency to migrate to cities for lucrative jobs, we face the possibility of losing this wealth of knowledge in the near future. The Kani tribal healers are rapidly dying of old age, and with them their traditions.

An abundance of ethnomedical information on plant uses can be found in the scientific literature but has not yet been compiled into a usable form. The present study has indicated that the current healers will probably be the final generation of traditional healers in the Tirunelveli hills. It thus becomes necessary to acquire and preserve this traditional system of medicine by proper documentation and identification of specimens. The results of over-exploitation of medicinal plants is felt first by those involved with traditional healing, either as collectors, traders, traditional practitioners and herbalists. Traditional medicines also have the potential to form the basis of pharmaceutical drugs for the treatment of a range of diseases. Thus, the loss of these potentially valuable genetic resources ultimately affects the whole society.

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References


Manickam, V.S., Jothi, G.J., Murugan, C. and Sundarasan, V., 2003. Check-list of the Flora of Tirunelveli hills, Southern Western Ghats, India, Centre for Biodiversity and Biotechnology, St. Xavier’s College, Palayamkottai, India, pp. 1–6.


