



Floristic studies and utilization of ethno-medicinal plants in Mettala Hills., Rasipuram Taluk, Eastern Ghats, India

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Abstract

Nearly 80% of the world population use traditional medicine, mainly medicinal plants, to cure illnesses and ailments (UICN *et al.*, 1993). In developing countries and rural societies, the use of medicinal plants is both a valuable resource and a necessity, and furthermore it provides a real alternative for primary health care systems (Alexiades & Lozoya, 1996). Mettala Hills is an under explored and biodiversity rich region of Eastern Ghats in southern India. Which is exactly situated at Rasipuram Taluk (karkudalpatti Village) belongs to Namakkal district of Tamil Nadu. The present study showed that some plants of Mettala Hills used by Irular tribals for treating various disorders. A total of 17 species of plants were identified. All the 17 species have medicinal uses. Some of the common plants identified were *Pavonia odorata*, *Thevetia peruviana*, *Cassia tora*, *Cassia fistula*, *Spermococe hispida*, *Merremia tridentate*, *Acmella calva*, *Cocculus hirsutus s*, *Rauvolfia verticillata*, *Grewia tiliaefolia*.. Our results showed 17 species of plants are used by the Irular tribes of Mettala hills for the treatment of various diseases such as chest pain, joint pain, migration, heart diseases, skin diseases, ulcers, gallstones, injuries of nerves and kidney, cough, cardiac disorders, snake bite, respiratory diseases, purgative, pulmonary tuberculosis, menstrual disorders, swelling wounds, renal and vesicle calculi, vitiated conditions of kapha. The present investigation showed that the tribes (Irular) of Mettala hills possess rich knowledge of the medicinal plants and their utilization.

Keywords: Mettala hills, irular tribes, medicinal plants, treatments

Introduction

Nearly 80% of the world population use traditional medicine, mainly medicinal plants, to cure illnesses and ailments (UICN *et al.*, 1993). In developing countries and rural societies, the use of medicinal plants is both a valuable resource and a necessity, and furthermore it provides a real alternative for primary health care systems (Alexiades & Lozoya, 1996) [8]. Ethiopia is the home for the high diversity of traditional knowledge and practices about the uses of traditional medicine due to the existence of different ethnic groups and complex cultural diversity (Abebe *et al.*, 1993) [1].

Today, as a result of human activities the frequency, intensity, fire events, hurricanes, droughts, ice storms and insect outbreaks fluctuating. The global climate change, making forest ecosystem even prone to damage. Currently floristic survey, conservation and management of diversity, prevention of the distraction of habitats and determining the native endangered species is very important. Floristic studies are the backbone of the evaluation of photo diversity (Saranya Ravi, 2016) [14]. The area of flora is not constant as it is changes time to time. Floristic studies are essential to give the idea about the plant and the utilization of plants. The identification of plants along with their description of area it provides species, growing seasons and climate.

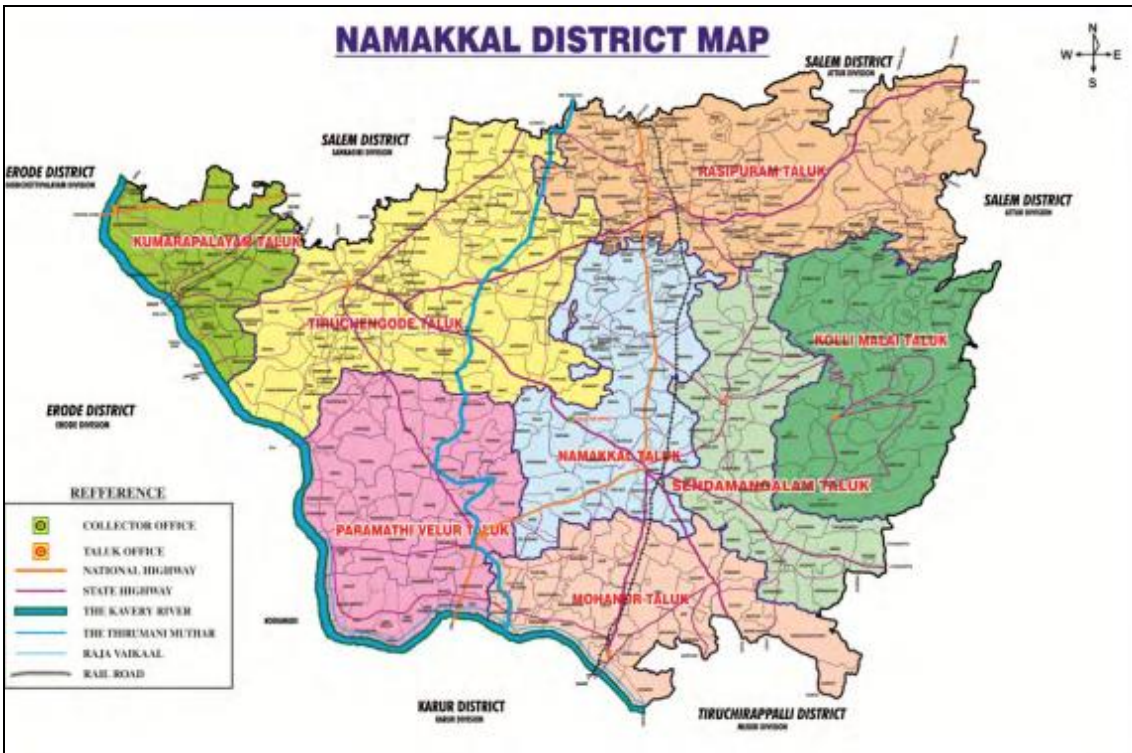
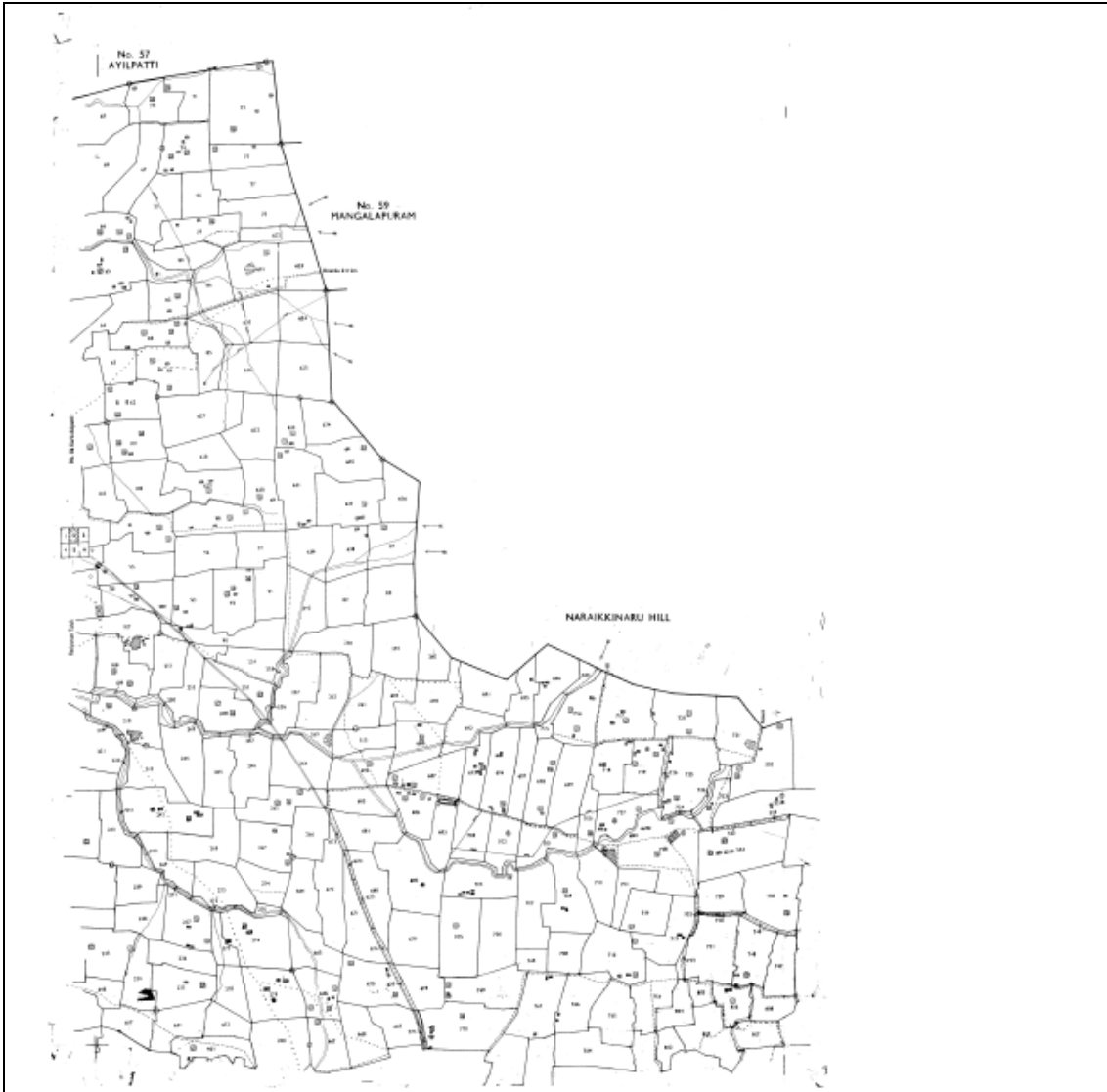
Forests constitute an integral part of the social life of tribal groups and are home to the people who are entirely or partly dependent on forest for their live hood (Arun *et al.*, 2007) [3]. Of nearly 170 million people living in an around forests in India. More than half of them are tribal depend on forests plants, especially trees for medicines, food, fuel, fodder and other non-timber forest products (NTFPs) (Bennett *et al.*,

2000) [4]. The main objective of this study was to assess the diversity of ethno medicinal plants used by Irular tribes and document the traditional medicinal practices followed in healing ailments (Rajan *et al.*, 2002 [2]; Ganesan *et al.*, 2004) [6].

Materials and Methods

Study area: Mettala Hills is an under explored and biodiversity rich region of Eastern Ghats in southern India. Which is exactly situated at Rasipuram Taluk (karkudalpatti Village) belongs to Namakkal district of Tamil Nadu, India. Located at latitude 11.229592, longitude 78.171158 and an elevation 1125m. Mettala hills height is 800m to 1200 meters. Irular tribals of Mettala hills present at the 35km upper from the town area. The main tribal is Irulars. For this Irular generations agriculture and cattle rearing have been the only source of income for their family.

Method: Ethno pharmacological field survey and the identification of ethno botanical habitat were made to Irular tribal communities of Mettala hills during the period of 5th September 2022 to 22nd February 2023. Information was gathered on medicinal plants from local tribes (Irular), herbalist and village people around the Mettala hills through personal communications, questionnaire and discussion among the elder Irular peoples of surrounding villages. In order to know the phenology of the plants an intensive and extensive field survey of Mettala hills, Rasipuram taluk, Namakkal district were made. The data were collected through repeated field visits and the careful interaction with the rural (Irular) people and traditional practitioners in their local language (Tamil).



Karkudaipatti village map

Result and Discussion

The present study showed that some plants of Mettala Hills, Namakkal district used by Irular tribals for treating various disorders. A total of 17 species of plants were identified. All the 17 species have medicinal uses. Some of the common plants identified were *Pavonia odorata*, *Thevetia peruviana*, *Cassia tora*, *Cassia fistula*, *Spermocoe hispida*, *Merremia tridentate*, *Acmella calva*, *Cocculus hrsutus s*, *Rauvolfia verticillata*, *Grewia tiliaefolia*. They are from various plant groups of vine, shrubby herbs, woody, tree, climber and shrub etc. The details of the collected plants including botanical name, family name and their medicinal uses were described below. The collected plant specimens were identified taxonomically with the help of RHT (Rapinat Herbarium Trichy) located at Trichy District, Tamil Nadu which is certified in the date of 27th February 2023.

Cassia fistula L. (Fabaceae)

The tree is deciduous forest raining from tropical forest zone. They are specially used in joint pain, migration, Chest pain and blood dysentery. Root is also useful in fever, heart diseases, retained excretions and cardiac disorders, haemorrhages, wounds, ulcers and boils and various skin diseases.

Spermocoe hispida L. (Rubiaceae)

The plant is an annual to perennial herb. The Root, stem and leaves are used for urinary infections, oliguria, venereal diseases, conjunctivitis, hemorrhoids, gallstones, stomach ailments, internal injuries of nerves and kidney, coughs, malaria, dyslipidemia and for reducing weight.

Elytraria acaulis (L.Fil.) Lindau (Acanthaceae)

Treatment to asthma, migraine, Leucorrhoea, snake bite, antipyretic, antiviral and in respiratory diseases.

Toddalia asiatica Pers. (Rutaceae)

The most frequently cited diseases were stomach problems followed by malaria, Cough, chest pain, food poisoning, sore throat to cure the Root part of the plant.

Cassia tora L. (Leguminaceae)

The leaves and seeds are treated to Leprosy, laxative and various skin disorders, Cardio tonic, vision- improving and diuretic agent.

Pavonia odorata Willd. (Malvaceae)

Root decoction is used for dysentery, stomachache, inflammation and haemorrhage of intestine. The whole plant is increase the ability to treat urinary infections.

Thevetia peruviana (Pers.) K.Schum. (Apocyanaceae)

Treatment of external wounds, infected area, ring worms, Tumours. Root paste cooked with mustard oil forms an ointment to heal skin problems.

Merremia tridentate L. (Convolvulaceae)

To treat several ailments like piles, body pain and toothache. The leave juice is used as an anti – venom after snake bites. The root is used as mouthwash.

Ipomoea pes-tigridis L. (Convolvulaceae)

The leaves are used as an antidote to dog bite, boils and

Carbuncles, sores. The root of this plant was found to possess purgative action.

Acmella calva (DC.) R.K.Jansen.(Astraceae)

Popularly this plant is known as toothache plant which reduces the pain associated with toothaches and can induce saliva secretion.

Dendrophthoe falcate (L.f.) Ettingsh. (Loranthaceae).

The plant possess wound healing, antimicrobial, kidney and gall bladder stone. Astringent, bitter, as cooling, aphrodisiac, narcotic and diuretic and is also useful in pulmonary tuberculosis, asthma, menstrual disorders, swelling wounds, ulcers, renal and vesicle calculi and vitiated conditions of kapha.

Beidelia retusa Spreng. (Euphorbiaceae)

The bark of plant is used by tribal people in treatment of rheumatism, antiviral, in snake bite and to produce sterility.

Cocculus hrsutus s (L.)Dies (Menispermaceae)

Root used to cure burning sensation, clean urinary system, anti-pyretic, tonic, lessens thirsty, good for fractures and useful in tubercular glands related problems.

Rauvolfia verticillata (Lour.) Baill (Apocyanaceae)

Dense- flowered snake Root is used to treat snake poisoning, malaria and typhus. The root are used to treat hypertension and as a sedative.

Grewia tiliaefolia Vahl (Tiliaceae)

The leaves have antibacterial action and can be used as fodder.

Dentella repens (L.) J.R. Forst & G.Forst. (Rubiaceae)

The leaves are used in case of blood ailments to purify the blood. It is also used to improve the eye slight

Turneria ulmifolia L. (Passifloraceae)

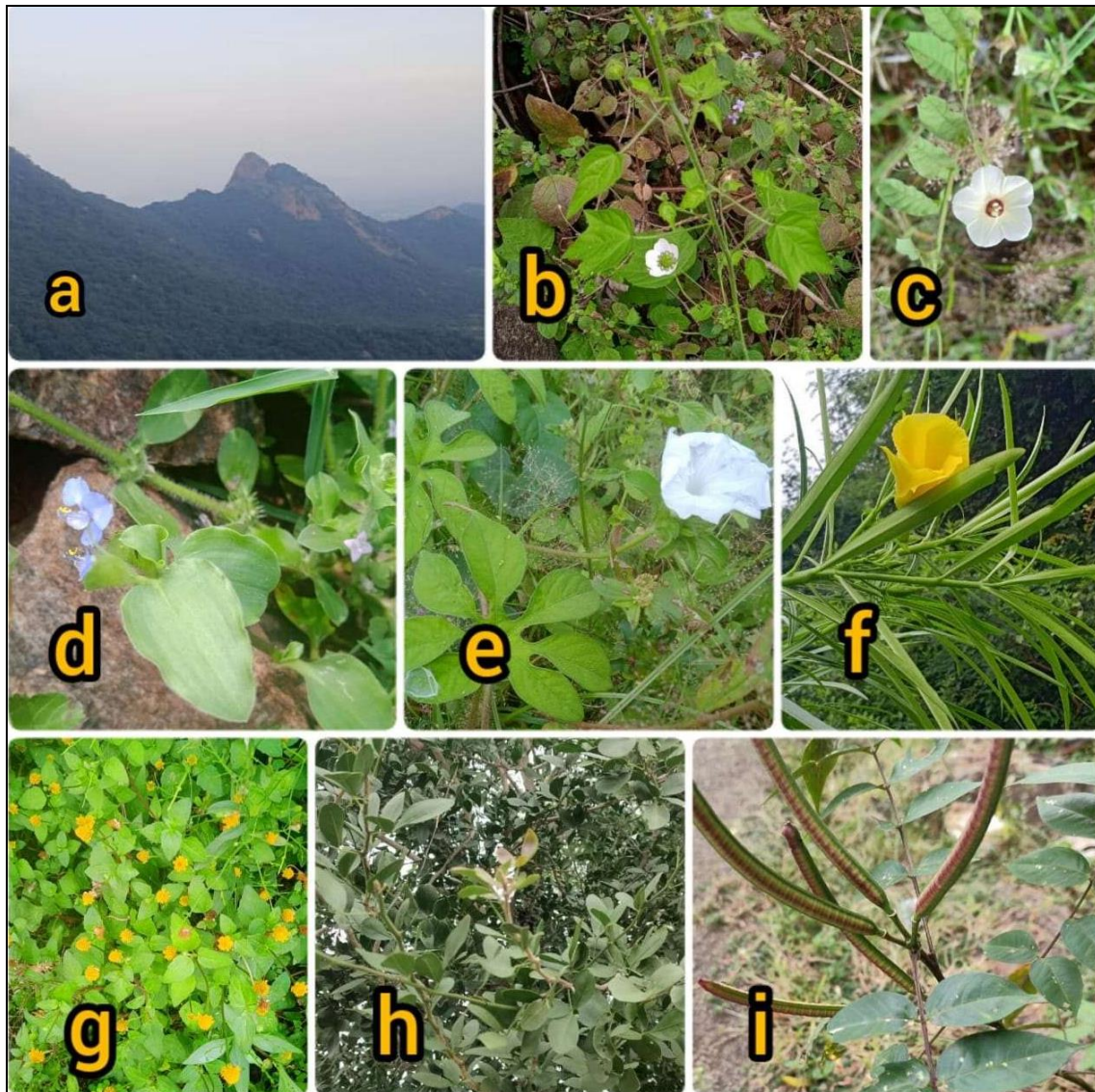
A Tea made from the leaves of this species is used to treat gastrointestinal problems (Constipation, diarrhea), colds and flu, vascular diseases (heart palpitations), menstrual cramps and dermatological issues.

Heliotropium marifolium Retz., (Boraginaceae)

The leaves used to cure the Lunge cancer, Stomach Pain, and act as a liver tonic in leaf juice.

Conclusion

Literature shows many traditional as well as ethno medicinal uses for these plants in Namakkal District. This is the first attempt therapeutic plants record on Mettala hills, Namakkal district, TamilNadu, India. Our results showed 18 species of plants are used by the Irular tribes of Mettala hills for the treatment of various diseases such as chest pain, joint pain, migration, heart diseases, skin diseases, ulcers, gallstones, injuries of nerves and kidney, cough, cardiac disorders, snake bite, respiratory diseases, purgative, pulmonary tuberculosis, menstrual disorders, swelling wounds, renal and vesicle calculi, vitiated conditions of kapha. The present investigation showed that the tribes (Irular) of Mettala hills possess rich knowledge of the medicinal plants and their utilization.



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