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Medicinal Plants in Tropical Evergreen Forest of Pachakumachi Hill, Cumbum Valley, Western Ghats, India

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ABSTRACT

Western Ghats is a treasure of medicinal plants. In this survey, two previously unreported endemic medicinal plants were identified from the study area.

Keyword: Medicinal plants, Western Ghats, endemic plants.

Introduction

There has been struggle between man and sickness since time immemorial. Man has acquired methods of treating sickness as rendered by his bio- cultural environment. In every society, whether technologically primitive or not, there exists some sort of curative methods for health. It is difficult to separate the magico- religious practices associated with the administration of such prescriptions. The World Health Organization (WHO) has listed 20,000 medicinal plants globally; India's contribution is 15- 20 %. According to the WHO estimation, about 80% of the population in the developing countries depends directly on plants for its medicines (Gupta, 1995, Singh, 2000). In India, about 2000 drugs used are of plant origin. In the last few decades over- exploitation of forest resources has led to species loss. As a result, 20- 25% of existing plant species in India has become endangered. Medicinal plants are now under great pressure due to their excessive collection or exploitation. The degree of threat to natural populations of medicinal plants has increased because more than 90% of medicinal plant raw material for herbal industries in India and also for export is drawn from natural habitat.

Plants are useful for man in many ways. They are the source of food, fodder, fruits, manure and medicine. Modern man depends on the advanced medical systems such as allopathy and homeopathy for healthcare. But

ayurveda played major role in India and now it is in the path of revival and global acceptance.

MATERIALS AND METHODS

Our study site is situated in the Pachakumachi hill (9° 35' to 9° 45' N latitude and 77º 15' to 77º 27'E longitude) of Western Ghats, South India. The Pachakumachi hill is surrounded by Palani Hills in the North, Sethur and Sivagiri hills in the South, Cardamom hills and Kerala state in the West, the Varushanadu hills in the Northeast and Thekkadi hills in the Southwest. Vaigai and Surliyaru are the main rivers originating from Pachakumachi hill. Study area is showed in fig 1. Climatological data of the study site are collected from Pachakumachi estate Climatological station. Pachakumachi hill receives 2726 mm rainfall annually. June is recorded as the hottest month with maximum temperature of 31°C and January is the coldest month with the minimum temperature of 17° C. Humidity is high (95%) during the months of June, July and August; and low humidity is noted only in the month of March (85%). In the 10,000 Acres of total area of Pachakumachi hill, 2,000 acres are under the cultivation of cash crops such as cardamom, coffee and tea. These plantations are intermingled with the patches of Evergreen forests. The altitude of the hill ranges from 600 m to 2,000 m. The vegetation ranges from scrub jungles in the foothill to evergreen and sholas at hill tops. Our study site is situated at an altitude of 1,700 m. Our study site is defined as the tropical evergreen forest. Our study period was from May 2006 to March 2007. The phytosociological studies were carried out in 1 ha permanent plot which was divided into one hundred 10x 10 m^2 subplots. Then, 5x 5 m^2 and 1x 1m^2 sub plots were laid within each 10x 10 m^2 for medicinal shrubs and herbs respectively. The diversity indices were calculated using the software BIODIVERSITY PRO BETA VERSION (Mc Aleece, 1997).

RESULTS AND DISCUSSION

All in all, 16 medicinal plants were identified in our study area. Shannon and Simpson indices of the medicinal plants are 2.03 and 0.02 respectively. Among 16, 2 species are endemic.

CONCLUSION

To improve the status of the medicinal plants in Pachakumachi Hill, the local people must become aware of the

problem.

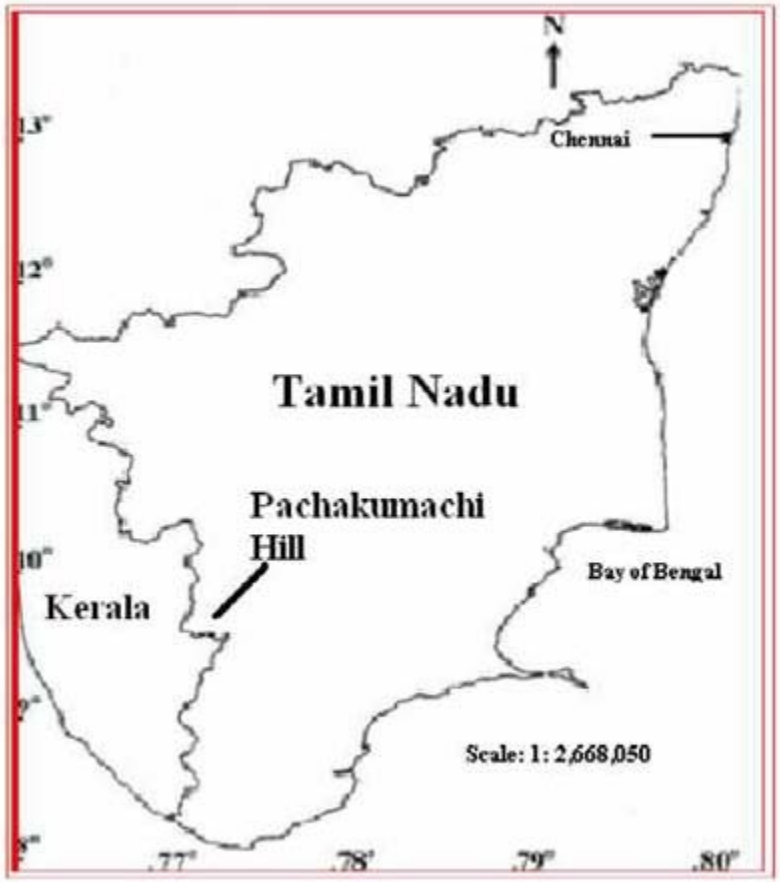

Figure 1. Map showing the study area.

Figure 2: Evergreen Forest of Study Area (Pachakumachi Hill).

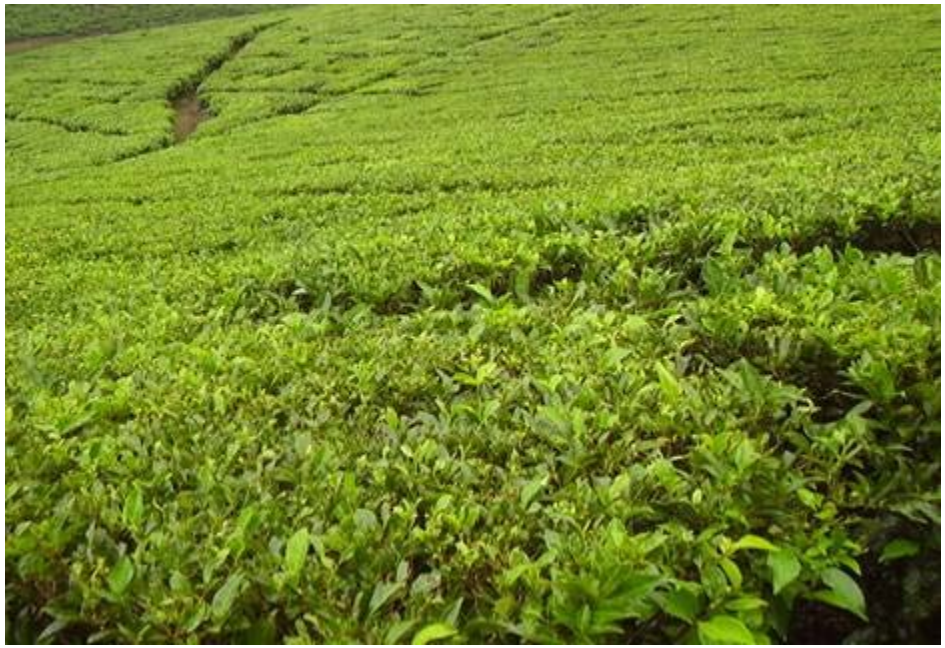

Figure 3: Tea plantation in study area.

Table1. Medicinal plants in Pachakumachi Hill and their uses.

S.No.	Plant species	Family	Plants Parts	Medicinal Uses
1.	*Elaeocarpus serratus* Linn.	Elaeocarpaceae	Leaves	Used in rheumation, antidote to poison
			Fruits	Used in dysentery and diarrhea
2.	*Cinnamomum zeylanicum* Blume	Lauraceae	Bark	Aromatic, astringent, stimulant, carminative, useful for checking nausea and vomiting
3.	*Cinnamomum malabathrum* (Burm.f.) Berchrh & Presl.	Lauraceae	Seeds, bark and dried buds	Astringent, stimulant and carminative.
4.	*Mesua ferrea* Linn	Clusiaceae	Flower buds, leaves, flowers,	Form poultice- head in severe colds.
			fruits, seed.	In decoction or infusion or tincture is a
			Root and bark	bitter tonic- useful in gastritis and bronchitis.
5.	*Gordonia obtusa* Wall.	Ternstrmiaceae	Leaves	Stimulant, similar to tea
6.	*Commelina benghalensis* Linn.	Commelinaceae	Whole Plant	Bitter, emollient, demulcent, refrigerant, laxative, and beneficial in leprosy.
7.	*Cynodon dactylon* (Linn.) Pers.	Poaceae	Decoction of Root	Diuretic, in dropsy in secondary syphilis
			Infusion of root	For stopping bleeding from piles.
			Crushed roots	Mixed with curds used in gleet.
			Juice of Plant	Astringent, used as application to fresh cuts and wounds, diuretic, used in dropsy and anasarca, in hysteria, epilepsy, insanity, astringent in chrdiar and dysentery useful in catar opthalmia.
8.	*Lantana camara* Linn.	Verbenaceae		Decoction given in tetanus, rheumatism and malaria, tonic much used in atoxy of abdominal viscera.
9.	*Loranthus longiflorus* Desr.	Loranthaceae	Bark	Astringent, narcotic used for wounds and menstrual troubles and also as a

				remedy for consumption, asthma and mania, substitute for betel nut.
10.	*Lycopodium clavatum*	Lycopodiaceae		Diuretic antiseptic in form of a decoction used in rheumatism and disease of lungs and kidneys.
11.	*Ficus retusa* Linn.	Moraceae	Juice of the bark	In liver disease
			Powdered leaves and bark	In rheumatic headache
			Root- bark and leaves	Boiled in oil application for wounds and bruises.
12.	*Lobelia nicotianaefolia* Heyne.	Campanulaceae	Infusion of leaves	Antispasmodic
			Leaves and seeds	Acrid, poisonous
			Root	In Scorpion sting Antiseptic to asthma
13.	*Michelia nilagirica* Zenk.	Magnoliaceae	Bark	Febge. Essential oil and bitter substance
14.	*Polygonum chinense* Linn	Polygonaceae	Whole Plant	Tonic, Vulnerary, anti scorbutic
15.	*Strychnos colubrine* Linn.	Loganiaceae	Fruit	Bruised and applied to the head in mania
			Root	Rubbed down with pepper given to check diarrhea. Boiled with oil used as liniment for pains in the joints.
			Fresh leaves	Rubbed into a paste with cashenut kernel applied to suppurting tumors.
16.	*Piper nigrum* Linn.	Piperaceae	Fruit	Used as aromatic,stimulant, in cholera, in weakness following fevers, vertigo, coma, as stomachic in dyspepsia and flatulence; as antiperiodic in malarial fever; and alterative in paraplegia and arthritic diseases; externally used as rubefacient and as local

	application for relaxed sore throat, piles and skin diseases.

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