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Ethnomedicinal uses of Pteridophytes in Marunthuvazhmalai Hills of Kanyakumari Wildlife Sanctuary, Southern Western Ghats

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ABSTRACT

The study focuses on the ethno-medicinal significance of Pteridophytes which are widely used by the local people of Marunthuvazhmalai hills, southern Western Ghats. A total of 25 species of pteridophytes were collected from the study area, of these, 20 taxa of pteridophytes are ethnomedicinally important, which are being used in Ayurvedic, Unani, Siddha, Homeopathic and other preparations.

KEYWORDS

Ethnomedicinal uses, Marunthuvazhmalai, Pteridophytes, Western Ghats



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INTRODUCTION

Pteridophytes which constitute ferns and fern allies have been known to man for more than 2000 years as medicine. Theophrastus (327-287B.C.) and Dioscorides (100A.D.) have referred to medicinal attributes of certain ferns¹. This has been well documented that medicinal uses of pteridophytes have been mentioned in Sushrata and Charaka. Since antiquity, most of the ferns and fern allies have given many health benefits to ancient civilizations who had used them for food, tea and drugs. Modern approaches have combined multidisciplinary technologies and have specific chemical compounds extracted and identified for producing very particulate medicines from plant parts. Plants, which yield substantial amount of secondary metabolites, are suitable for dragging out drugs for many ailments. Phytochemical explorations of pteridophytes for the production of healthcare products by discovering novel compounds and their usage in medicines have widened the scope of ferns and fern allies by shaping these plants as a great benefit for pharmaceutical companies and related industries. Even 'fern weeds', which invade our freshwater bodies and reduce the freshwater wealth of a lake, e.g. *Azolla*, *Salvinia*, *Marsilea*,

Ceratopteris, etc. can be utilized to produce lifesaving drugs because they are reservoirs of very many organic compounds that are useful as medicines². Some of the fern genera have a few unique secondary metabolites, which have not been discovered in higher plants. The present study provides the list of medicinal pteridophytes found in Marunthuvazhmalai hills of Western Ghats with their recent nomenclature, family and their brief uses.

MATERIALS AND METHODS

Marunthuvazhmalai is a hillock located about 11km from Nagercoil and about 8 km from Kanyakumari. The term Marunthuvazhmalai means "Mountain of Medicinal Plants". Marunthuvazhmalai, the southernmost tip of Western Ghats lying between North Latitude of 8⁰, 9' and East latitude of 77⁰, 33'. The elevation of the Hill measure about 800 ft above sea level. The area as a whole is very dry and has a hot tropical climate. The area receives less rain during monsoon and the mean annual rain fall is 60mm, while the maximum temperature is 30⁰ C.

A survey of pteridophytes in the study area was conducted during the period of April 2012 to March 2013. While collecting the specimen the habitats of (terrestrial, epiphytic, lithophytes and hydrophytes



forms) of pteridophytes were recorded. Morpho-taxonomical features of the specimen were studied and relevant field notes were made from its habitat. Identification was made by referring to available literature and Pteridophytic floras³⁻⁷. Ethnobotanical uses of pteridophytes were documented with the help of traditional healers by using a Semi-structured Questionnaire.

RESULTS AND DISCUSSION

A total of 20 taxa of ethnomedicinally important pteridophytes were collected from the study area (Table 1). They comprise terrestrial, epiphytic, lithophytic and hydrophytic forms. These ferns are

commonly used for various ailments like typhoid, rheumatism, epilepsy, leprosy and kidney problem. They cure many symptoms like asthma, cold, fever, cough, body pain, swellings, liver problems, knee pain, joint pain, and sprains. Pteridophytes also known to have antibacterial, antifungal, antiseptic, anthelmintic and detergent properties⁸⁻¹². Decoction of *O. gramineum* as a lotion for boils. *O. reticulatum* is used as a cooling agent, used for bruises and hemorrhages. The study reveals that the area has a rich pteridophyte flora than any other coastal environments. Further chemical studies will reveal the phytochemical principles with curative effects.

Table 1 Medicinal uses of pteridophytes in the study area

Sl. No.	Botanical Name	Part used	Ethnobotanical significance
1	<i>Actinopteris radiata</i> (Sw.) Link.	Whole plant	Anthelmintic and fever
2	<i>Adiantum latifolium</i> Lam.	Whole plant	Boiled decoction is applied to get relief from body pain
3	<i>Azolla pinnata</i> R. Br.	Whole plant	The extract of the water velvet has possessed anti-fungal properties.
4	<i>Ceropteris thalictroides</i> (L.) Brongn.	Whole plant	Antifungal agent, plant paste mixed with turmeric and is applied for wounds and skin infections
5	<i>Cheilanthes mysurensis</i> Wall. Ex. Beddome		Hot decoction is used for throat pain
6	<i>Christella dentata</i> (Forssk) Brownsey and Jermy	Leaves	Crushed leaves are used to relieve body pain
7	<i>Christella parasitica</i> (L.)H. Lev.		The juice obtained is taken orally to treat swellings
8	<i>Cyclosorus interruptus</i> (Willd.) H.		Leaves are soaked in water for 2 hrs, and the filtrate is drunk for gonorrhoea.
9	<i>Drynaria quercifolia</i> (L.) J. Sm.	Rhizome	The rhizome made into a paste and boiled with pepper, cumin seeds, onion and garlic along with water. It is taken orally to get relieve from body pain, knee pain and joint pain.
10	<i>Hemionitis arifolia</i> (Burm. F.) T. Moore	Whole plant	Plant is ground into a paste and applied over cut wounds
11	<i>Isoetes coromandelina</i> L.f.		The plant gives out a fluid. It is used for liver problems.
12	<i>Lygodium flexuosum</i> (L.) Sw.	Leaves	The plant is used an expectorant. Leaf paste cures cuts, wounds, rheumatism and sprains.
	<i>Lygodium microphyllum</i> (Cav.) R. Br.		Leaf is ground into a paste with turmeric and applied



13			over the affected part. Whole plant extract is taken orally along with the seeds of <i>Piper nigrum</i> to relief from cough.
14	<i>Marsilea minuta</i> L.	Leaves	Used as an expectorant, aphrodisiac, cough relieving properties and to treat fever.
15	<i>Ophioglossum gramineum</i> Willd.	Whole plant	Plant yields a mucilaginous and astringent decoction. It is used in angina. Warm rhizome decoction as a lotion for boils. Antibacterial, anticancerous, antiseptic and detergent properties.
16	<i>Ophioglossum reticulatum</i> L.	Whole plant	Used as a cooling agent. Used to treat inflammations, wounds, bruises and haemorrhages.
17	<i>Ophioglossum vulgatum</i> L. f.		Possesses antiseptic, styptic and vulnerary properties.
18	<i>Phlebodium aureum</i> (L.) J. Sm.	Rhizome	It is used for the treatment of fever and cough.
19	<i>Pteris vitata</i> L.	Whole plant	Topical application of leaf paste is used to cure wounds. The whole plant is mixed with the seeds of <i>Piper nigrum</i> and taken orally to get relief from cold, cough and fever.
20	<i>Salvinia molesta</i> Mitch.	Whole plant	Plant extract is used an antifungal agent.



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