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Pteridophyte diversity of Ayyanar fall in Southern Western Ghats, Rajapalayam, Virudhunagar District, Tamilnadu.

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Research Article

Pteridophyte diversity of Ayyanar fall in Southern Western Ghats, Rajapalayam, Virudhunagar District, Tamilnadu.

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ABSTRACT

Western Ghats is a rich diversity of pteridophytes. About 320 species of ferns and fern allies with more species diversity in this region. The present study was mainly focused on the enumeration of Pteridophytes diversity from Ayyanar falls, Southern Western Ghats, South India. Results of the present study observed that a total of 24 pteridophytes species identified and dominant species of family Pteridaceae have been recorded in the Ayyanar fall in Southern Western Ghats, Rajapalayam, Virudhunagar District, Tamilnadu.

Keywords: Pteridophyte Diversity; Western Ghats; Tamilnadu; South India

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1. INTRODUCTION

As the first vascular plants, pteridophytes (aka, ferns and fern allies) are an ancient lineage, and human beings have been exploring and using taxa from this lineage for over 2000 years because of their beneficial properties. Pteridophytes are the second most diverse group of vascular plants, comprising around 12,000 species. They are reliable bioindicators, closely linked to environmental factors, readily recognizable and monitored, particularly in riparian ecosystems (Paixão et al. 2013; Della and Falkenberg 2019; Bonari et al. 2022). IUCN recognises the following categories: extinct, extinct in the wild, critically endangered, endangered, vulnerable, near threatened, least concern, data deficient and not evaluated (Fraser Jenkins (2012).

The Western Ghats of peninsular India is of great phytogeographical importance which constitutes one of the 34 global biodiversity hotspot centres, on account of exceptional levels of plant endemism because of its diversified topography and varied climatic conditions (Fraser Jenkins (2012). Species with small populations that are not at present endangered or vulnerable but are at risk are called rare (Singh et al., 2006). Many of them are facing extinction. In the past few decades, there has been an ever-increasing global inclination towards herbal medicine, followed by a belated growth in international awareness about the dwindling supply of the world's medicinal plants (Bodeker, 2002; Sharmaand and Thokchom, (2014). In this research reported that the identification of the pteridophytes diversity present in the Ayyanar fall in Southern Western Ghats, Tamilnadu.

2.MATERIALS AND METHODS

2.1 Study area and Plant Collections

This study was conducted in Ayyanar Falls in Southern Western Ghats. This region is located in the 6 km (3.7 mi) west of Rajapalayam, a city and a municipality in Virudhunagar District in the Indian State of Tamil Nadu (Fig.1). It is situated in the Western Ghats, which gets its water source mainly during the north east monsoon rain. The water from the falls is mainly used for drinking purposes by the people living in Rajapalayam. Extensive fieldwork was conducted in the Month of March 2023. During the field survey of pteridophyte species, the specimen population, habitat, morphological characteristics, and types of forest/ponds were documented. The collected pteridophytes were identified using various literature, photographs and specifications (Manickam and Irudayaraj, 1992). Voucher specimens were deposited in the Research Institute of Conservation Ecology, Tirunelveli, Tamilnadu.

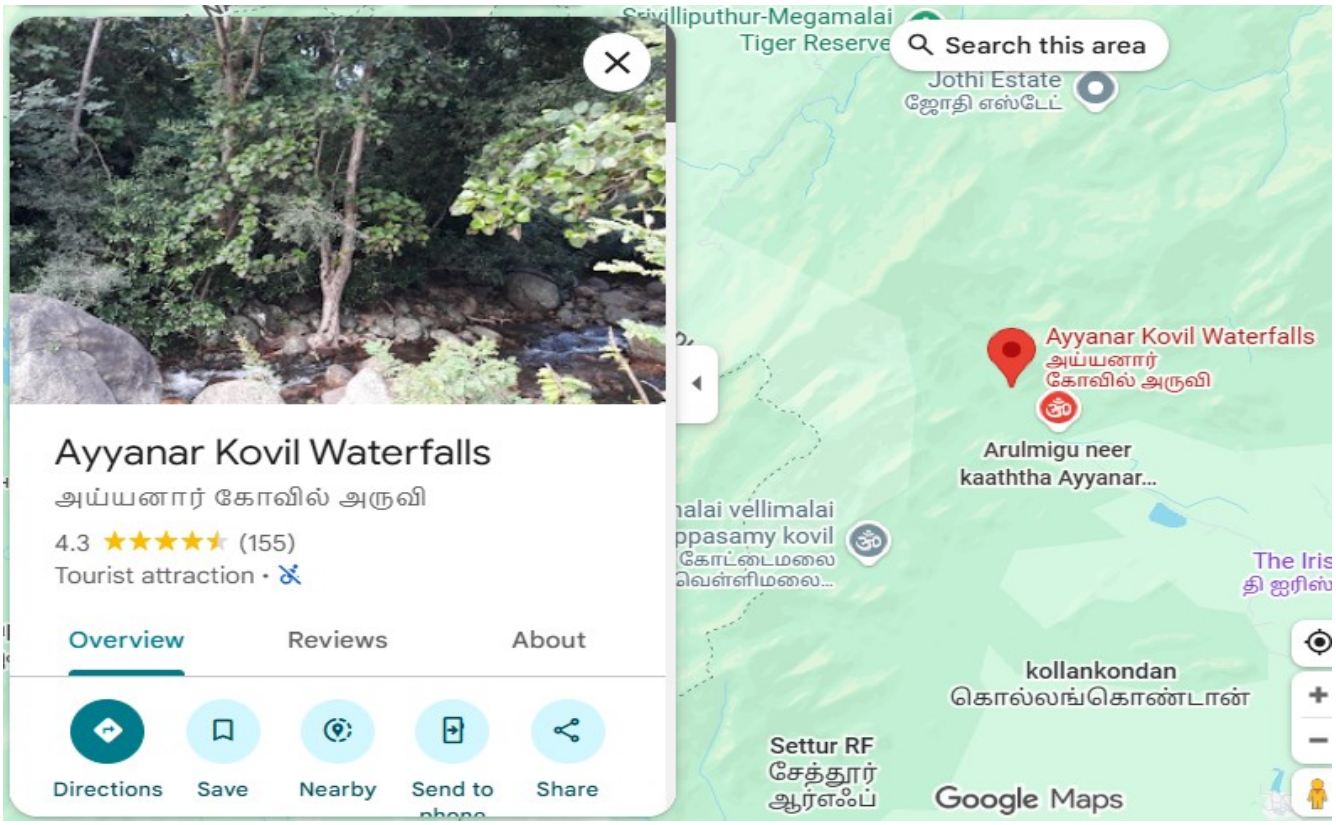

Fig.1: Ayyanar Falls in Southern Western Ghats

3 RESULTS AND DISCUSSION

The observed results, a total of 24 species were identified in the pteridophytes, which is belonging to the 12 families recorded in the Ayyanar falls, Southern Western Ghats, Srivillipudur, Virudhunagar District, (Table-1). Dominant species of recorded in the Pteridaceae family and followed by Blechnaceae and Thelypteridaceae. Previous studies, Sureshkumar et al., (2020) reported that 98 species of pteridophytes belonging to 58 genera and 32 families were recorded in Kolli Hills. According to Parashurama et al., (2016) reported that about 26 species of Pteridophytes are listed in the forests around Mudigere taluk, Chikkamagaluru District of Central Western Ghats. Most of the species are medicinal uses of pteridophytes in India (Caius, 1935; Nair, 1959; Benjamin and Manickam, 2007). The important bioremediation species of *Pteris vittata* L. collected for the first time in Ayyanar falls. These ferns have also shown an important role in bioremediation of waste water (Ma et al., 2001). In conclusion of the present study reported that detailed survey and significant pteridophyte flora found in Ayyanar falls in southern Western Ghat region. In this study, conservation practices of pteridophytes in Ayyanar falls in Southern Western Ghats.

Table-1: Pteridophytic diversity of Ayyanar Falls in Southern Western Ghats,Tamilnadu.

Sl.No	Species	Family	Current Status
1	Actiniopteris dimorpha Pic.Serm.	Pteridaceae	Rare
2	Adiantum capillus-veneris L	Pteridaceae	Rare
3	Pityrogramma argentea (Willd.) Domin	Pteridaceae	Rare
4	Pityrogramma calomelanos (L.) Link	Pteridaceae	Rare
5	Pteris vittata L	Pteridaceae	Rare
6	Pteris biaurita L.	Pteridaceae	Rare
7	Adiantum incisum Forssk.	Pteridaceae	Common
8	Cheilanthes mysurensis Wall. ex Hook	Pteridaceae	Rare
9	Pityrogramma calomelanos (L.) Link.	Pteridaceae	Rare
10	Blechnum attenuatum (Sw.) Mett.	Blechnaceae	Rare
11	Blechnum orientale L.	Blechnaceae	Rare
12	Stenochlaena palustris (Burm. fil.) Bedd	Blechnaceae	Rare
13	Dicranopteris linearis (Burm.f.) Underw.	Gleicheniaceae	Rare
14	Marsilea minuta L.	Marsileaceae	Rare
15	Lindsaea heterophylla Dryand	Lindsaeaceae	Rare
16	Tectaria polymorpha (Wallich. ex Hook.)	Tectariaceae	Rare
17	Microlepia speluncae (L.) T.Moore	Dennstaedtiaceae	Rare
18	Nephrolepis biserrata (Sw.) Schott	Nephrolepidaceae	Rare
19	Osmunda regalis L. var. obtusifolia (Kaulf.) Milde	Osmundaceae	Rare
20	Pteridium aquilinum (L.) Kuhn	Dennstaedtiaceae	Common
21	Thelypteris arbuscula (Willd.) K.Iwats.	Thelypteridaceae	Rare
22	Thelypteris dentata (Forssk.) E.P.St.John	Thelypteridaceae	Rare
23	Thelypteris interrupta (Willd.) K.Iwats.	Thelypteridaceae	Rare
24	Drynaria quercifolia (L.) J.Sm.	Polypodiaceae	Common

4. Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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4. REFERENCES

Paixão, E.C., Noronha, J. da C de., Nunes da Cunha, C. and Arruda, R. (2013). More than light: distance-dependent variation on riparian fern community in Southern Amazonia. *Brazilian Journal of Botany,* 36: 25-30.

Della, A.P. and Falkenberg, D de B., (2019). Pteridophytes as ecological indicators: an overview. *Hoehnea,* 46: e522018.

Manickam, V.S. and Irudayaraj, V. (1992). Pteridophyte Flora of the Western Ghats - South India. B. I. Publications, New Delhi.

Bonari, G., Fattorini, N., Fruchter, S.R., Angiolini, C., Baragatti, E. and Landi, M. (2022). Fine-scale fern ecological responses inform on riparian forest habitat conservation status. *Biodiversity and Conservation.* 31:2141-2161.

Bodeker, G. (2002). Medicinal plants: towards sustainability and security, Discussion paper for MEDPLANT. http://source.bellanet.org/medplant/docs/ssong/ MEDPLANT_Discussion_Paper1.Doc.

Sharmaand, S. and Thokchom, R. (2014). A review on endangered medicinal plants of India and their conservation. Journal of Crop and Weed, 10(2):205-218.

Parashurama, T.R., Deepa, J. and Prakash Kariyajjanavar, (2016). Pteridophyte diversity in Mudigere taluk, Central Western Ghats, Karnataka, south India. *Int. J. Curr. Res*., 8(10): 339-342.

Ma, L. Q., Komar, K. M., Tu, C., Zhang, W. H., Cai, Y. and Kennelley, E. D., (2001). A fern that hyper accumulates arsenic - a hardy, versatile, fast-growing plant helps to remove arsenic from contaminated soils. *Nature*, 409: 579- 579.

Benjamin, A. and Manickam, V.S. (2007). Medicinal pteridophytes from the Western Ghats. *Indian J. Trad. Knowl*., 6(4): 611-618.

Caius, J.F., (1935). The medicinal and poisonous ferns of India. *J. Bombay Nat. His. Soc*., 341-361.

Dixit, R.D. (2000). Conspectus of Pteridophytic diversity in India. *Indian Fern J*., 17: 77-91.

Fraser-Jenkins, C.R. (2012). Rare and threatened Pteridophytes of Asia 2. Endangered species of India- the higher IUCN Categories. *Bull. Natl. Mus. Nat. Sci. Ser*. B,38(4): 153-181.

Sureshkumar,J., Ayyanar,M. and Silambarasan,R. (2020). Pteridophyte species richness along elevation gradients in Kolli Hills of the Eastern Ghats, India. *Journal of Asia-Pacific Biodiversity*, 13(1):92-106.