



PTERIDODIVERSITY OF DISTRICT SONEBHADRA

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ABSTRACT

The pteridophytic flora of Sonebhadra, a district in Uttar Pradesh, India, has been the subject of various studies due to its rich biodiversity. The diversity of Sonebhadra is a testament to the ecological richness of the area and underscores the importance of conservation efforts to protect the biodiversity of pteridophytes. The studies emphasize the need for ongoing research to understand the distribution, eco-morphology and conservation status of pteridophytes in district Sonebhadra. Author has collected seven species of pteridophytes from different localities of district Sonebhadra. These species are mainly collected from Hathinala, Renukoot and Markundi's areas in district Sonebhadra. The collected Pteridophytes species are *Cheilanthes farinosa* (Forsk) Kaull., *Adiantum capillus-veneris* L., *Adiantum caudatum* Linn., *Adiantum lunulatum* Burm. f., *Lygodium flexuosum* (L.) Sw., *Selaginella bryopteris* (L.) Bak. and *Pteris vittata* Linn.

KEYWORDS: Pteridophytes, Biodiversity, Energy Capital, Specimen, Taxonomic Keys, Herbarium, Morphology, Collection Sites, Sonebhadra

Pteridophytes are non-flowering primitive vascular plants. Pteridophytes are the transition groups of plants between non tracheophytes and spermatophytes. This is one of the most primitive plant groups and is known as the vascular cryptogams. Pteridophytes are the first vascular land plants.

The term 'Pteridophytes' has been derived from a Greek word Pteron, feather and thus the name was originally given to this group because of their pinnate or feather like fronds (leaves). So Pteridophytes or vascular cryptogams are group of seedless vascular plants, that have successfully invaded the land and reproduce by means of spores.

There are about 1200 species in 305 genera Pteridophytes of which 191 are found in India was noted by Dixit (1984). Pteridophytes can be seen in humid and shady places. The common type of forest that acts as a habitat for pteridophytes are tropical subtropical and moist deciduous forest. Pteridophytes can be seen from sea level to highest mountain. They are highly sensitive to micro climatic condition does even a small disturbance in the climate and environment factor can cause their extinction from the natural habitats.

Sonebhadra, known as the "Energy Capital of India," is distinguished for hosting multiple power plants and is the second-largest district by area in Uttar Pradesh. It is steeped in history and natural beauty, lying between the Vindhya and Kaimur hills, with the Son River enhancing its scenic charm. The district's rich cultural heritage is evident in its ancient monuments, forts, and caves, such as the prehistoric rock paintings found in abundance, which speak volumes of its historical significance. Moreover, it offers a plethora of attractions for tourists, from the Rihand Dam to the Salkhan Fossils Park, showcasing a blend of its scenic beauty, industrial development, and historical importance.

District Sonebhadra is also very rich for the Pteridophytic plants. Some author has also reported the medicinal ethnobotany of district Sonebhadra (Singh *et al.*, 2002), Archana Singh and N.K Dubey (2012). Although some author has reported eighteen species of Pteridophytes from district Sonebhadra (Prem Behari Khare and Manjari Bajpayee, 2005) but author has collected seven species from different localities of district Sonebhadra. (Figure 1 & 2)

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Figure 1: Map of India showing U.P.



Figure 2: Map of U.P. showing District Sonebhadra



Figure 3: Study area showing collection sites

MATERIAL AND METHODS

The materials for the study has been collected from various area of Sonebhadra district. Field trips to various habitats has been made during the different season. All specimen were collected from different localities of district Sonebhadra. They are identified with

the help of slandered taxonomies keys; the ecological parameter are also studied and the specimens are pressed on herbarium sheets. The details of the locality of collection area are given as follows-Salkhan Fossil park, Markundi Hills, Hathinala, Robertsgunj, Hindalco area and side by side road of these localities. (Figure 4, 5, 6, 7, 8 & 9)

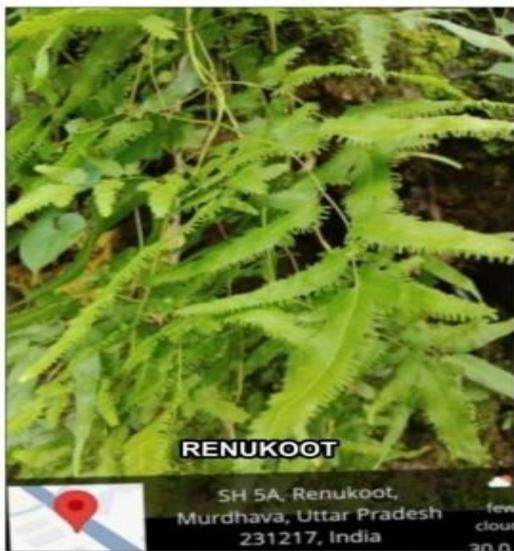


Figure 4: Plant collection sites-Renukoot



Figure 5: Chaupan

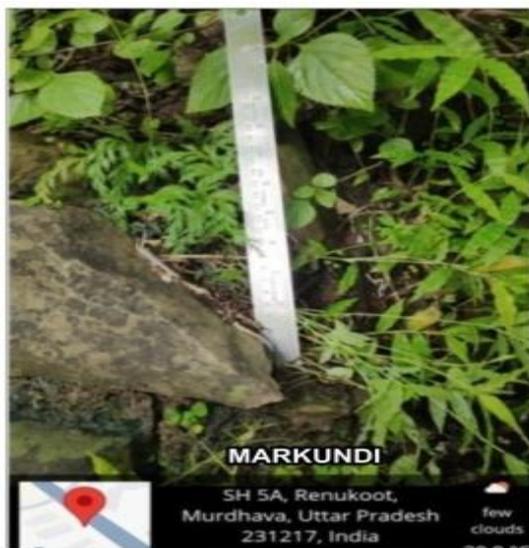


Figure 6: Markundi

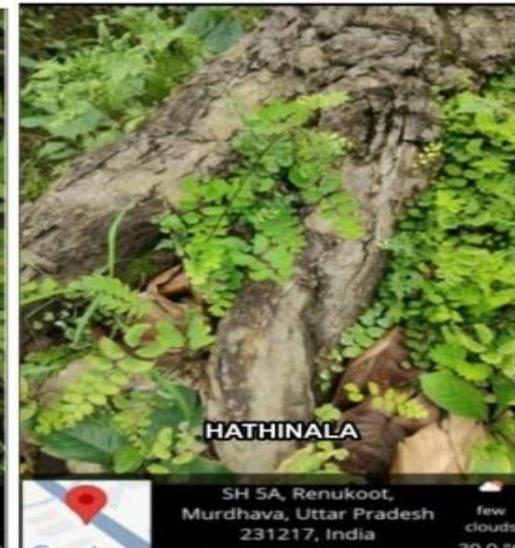


Figure 7: Hathinala Park

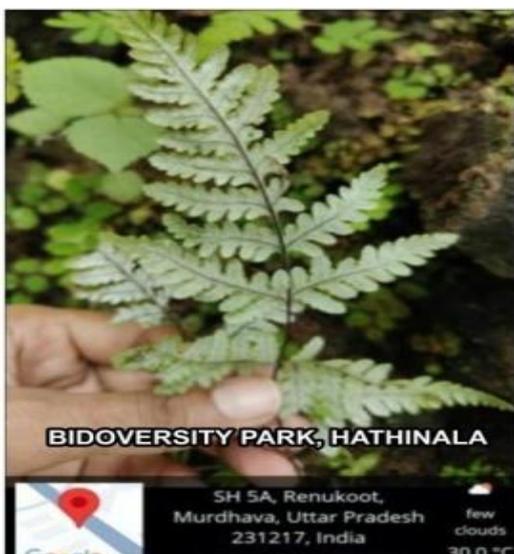


Figure 8: Biodiversity Park

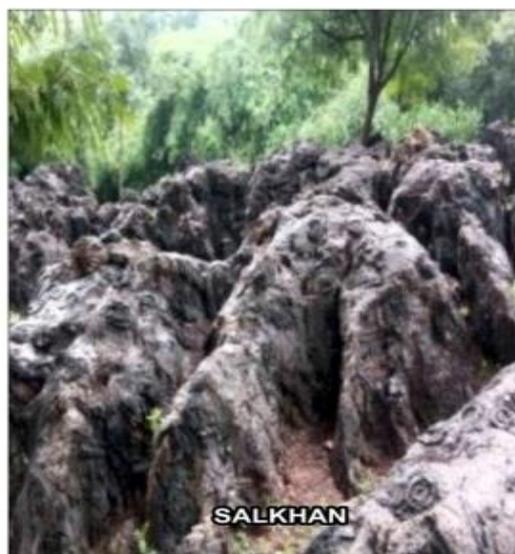


Figure 9: Salkhan Park

The found species of pteridophytes were thoroughly studied with the help of natural photography, herbarium, diagrams formations. venation patterns, scales, epidermal details and reproductive structure based on sari and spores.

RESULTS AND DISCUSSION

Varieties of Adiantum; *Adiantum lunulatum*, *Adiantum caudatum* and *Adiantum capillus-veneris* *Pteris vittata*, *Lygodium flexuosum*, *Selag Selaginella bryopteris*, *Cheilanthes ferinpsa*.

Herbarium



Figure 10 & 11: Collecting plants- *Adiantum tunutatum*Burm.f.

Figure 12: *Pteris vittata* Linn.



Figure 13&14: *Lygodium flexuosum*(L.)Sw.

Figure 15: *Selaginella bryopteris*(L.)Bak.



Figure 16: *Cheilanthes farinose* (Forsk) Kaulf

Seven species of Pteridophytes are collected during the present study. About six species are found to be abundant viz- *Adiantum lunulatum*, *Lygodium flexuosum*, *Pteris vittata*, *Adiantum caudatum*, *Adiantum capillus-veneris*, *Selaginella bryopteris* and one species *Cheilanthes farinosa* are also found in the biodiversity of Hathinala. Ecological observation based on their occurrence at different habitats shows that about five species *Adiantum lunulatum*, *Adiantum caudatum*, *Pteris vittata*, *Selaginella bryopteris* were found to be present in both the forest floor as well as on the road side. Two species *Lygodium flexuosum* and *Cheilanthes farinosa* were found to grow well in the forest floor only. (Figure 10, 11, 12, 13, 14, 15 & 16)

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