

**ETHNOMEDICINAL USES OF PTERIDOPHYTES OF TIKRI FOREST, GONDA,  
UTTAR PRADESH****SHOBHIT KUMAR SRIVASTAVA, RAVI PRATAP GAUTAM,  
SHASHANK KUMAR SINGH AND S. DOMINIC RAJKUMAR\****Centre for Plant species Biology, Department of Botany, St. Andrew's College,  
Gorakhpur, Uttar Pradesh, India***ABSTRACT**

The Pteridophytes are considered to be one of the primitive groups in vascular plants which are scattered all over the world. More than 1200 species of fern & fern allies have been reported from India. Being a group of lower plants, they were always uncared for and their valuable aspect has been ignored. Very less attention has been given towards the utility of Pteridophytes though they possess economic importance and medicinal value. The ferns are also recorded as valuable drug yielding plants. This paper deals with the ethnomedicinal usage of ferns in the treatment of different types of diseases. In this paper the botanical name, family & ethnomedicinal uses are provided.

**KEYWORDS:** Ethnomedicinal, Pteridophytes, Tikri forest, Gonda and Uttar Pradesh**S. DOMINIC RAJKUMAR**Centre for Plant species Biology, Department of Botany,  
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## INTRODUCTION

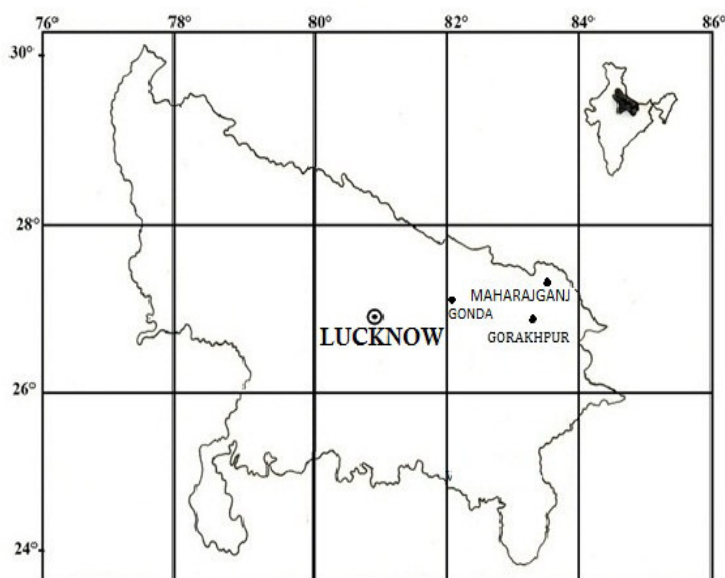
Caius<sup>1</sup> is the man who described the medicinal utility of ferns of India for the first time. Later on, many have contributed to the curative identity of Pteridophytes. The Pteridophytes flora of the Indian region are very rich due to remarkable altitudinal variation ranging from sea to the highest mountain ranges. Pteridophytes are primitive vascular plants. There are about 12000 species of ferns worldwide and about 1200 species of ferns have been recorded so far from India<sup>2, 3</sup>. Pteridophytes have also medicinal properties and it has been used for a long time<sup>4, 5</sup>. Different parts like rhizome, stem, fronds, pinnae and spores have been known to be used for treatment of various diseases. Many numbers of publications are seen in different fields like taxonomy, ecology and cytology of Pteridophytes but only a hand full of reports are available regarding the medicinal properties and uses<sup>6, 7</sup>. The present study explores the ethnomedicinal uses of Pteridophytes in different medicinal fields like Ayurveda, Unani & Homeopathic.

## MATERIALS AND METHODS

The present data is outcome of field work carried out in Tikri Forest, Gonda District, Uttar Pradesh. All the specimens were collected in duplicate and they are deposited in Centre for Plant Species Biology, Department of Botany, St. Andrew's College (PG), Gorakhpur, Uttar Pradesh, India.

### STUDY AREA

The Study area Tikri forest, Gonda, Uttar Pradesh (Fig. 1), which is at the foot hills of the Himalayas is bounded by Nepal on the North, Uttarakhand on the North-East, Himachal Pradesh on the North- West, Haryana on the West, Rajasthan in the South-West, Madhya Pradesh on the South & South-West & Bihar on the East. They are situated between 23°52' N & 31°28'N Latitudes and 77°30'E and 84°39'E Longitude. Being at the foot hills it is very rich in diversity and it has been poorly reported. Hence the present study brings out the different species of Pteridophytes used by the locals for various purposes.



**Figure 1**  
**Study area of this study**

## **ENUMERATION OF THE ETHNOMEDICINAL PLANTS**

Pteridophytes with medicinal properties have been collected from Tikri Forest Gonda, Uttar Pradesh. Their Botanical Names family, mode of use and parts used are given below.

## **RESULTS AND DISCUSSION**

### **1- *Adiantum caudatum***

L. Adiantaceae (Fig. 2) Leaf paste is applied to burns, cuts and wounds. It is used as an expectorant and skin diseases, Diabetes, cough and fever.

### **2- *Adiantum capillus-veneris***

L. Adiantaceae (Fig. 3) The decoction of leaves is taken for acute bronchitis and fever. The fronds are used against cough and cold and also chewed in the treatment of mouth blisters. Fronds extract mixed with honey is used as an eye ointment. It is used as stimulant, fibrifige, expectorant, purgative, demulcent and hair tonic. It has anticancerous, hypoglycaemic, aphrodisiac, antibacterial, antifungal and antiviral properties.

### **3- *Adiantum lunulatum***

Burm. Adiantaceae (Fig. 4) The plant is useful in Dysentery, leprosy and fever. The past of fronds and rhizomes is applied for centipede-bite. It is used in blood related diseases, in epileptic fits and in rabies, rhizomes prescribed for strangery and in fever due to elephantiasis.

### **4. *Diplazium esculentum***

(Retz.) Sw. Athyriaceae (Fig. 5) Young fronds used as salad or cooked as vegetables. The rhizome used as indicator in the granaries from insects and pest.

### **5. *Equisetum ramosissimum***

Desf. Equisetaceae (Fig. 6) Whole fronds in powdered form mixed with mustard oil & used as treatment for bone fracture and muscular pain.

### **6. *Lygodium flexuosum***

L. Sw. Lycopodiaceae (Fig. 7) Used in skin diseases like scabies, sprains, ulcer & cut wounds. One teaspoonful of leaf powder is mixed in milk and given orally for children to improve memory. Spores cure high fever.

### **7. *Marsilea minuta***

L. Marsileaceae (Fig. 8) Plants used in cough and cold. Some tribal people eat as food used as pain reliever.

### **8. *Ophioglossum reticulat***

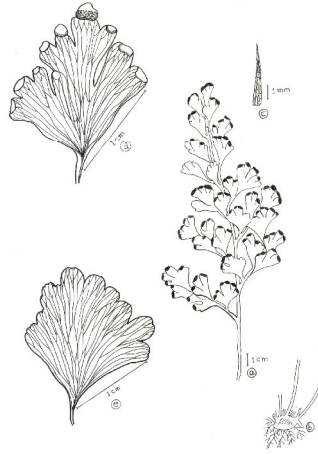
L. Ophioglossaceae (Fig. 9) Paste of plant is used to burn as cooling agent. Leaf extract is used in the preparation for tonic for vulnerary and remedy for wounds.

### **9. *Helminthostachys zeylanica***

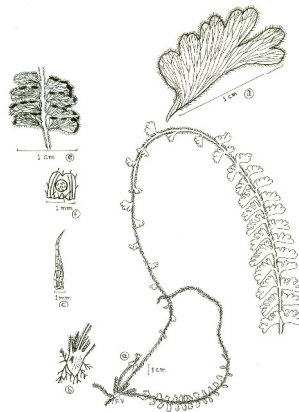
(L.) Hook Helminthostachyaceae (Fig. 10) The plant is considered as in toxicant anodyne and used in sciatica fronds used as aphrodisiac.

### **10. *Ceratopteris thalictroides***

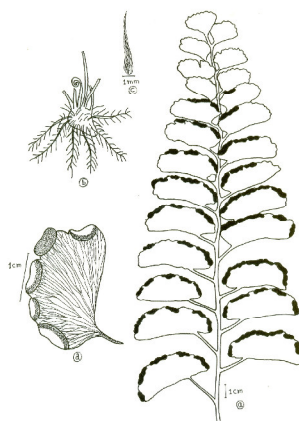
(L.) Brongn Parkeriaceae (Fig. 11) Leaf powder along with turmeric is applied to unhealed wounds.



**Figure 2**  
***Adiantum capillus- veneris***



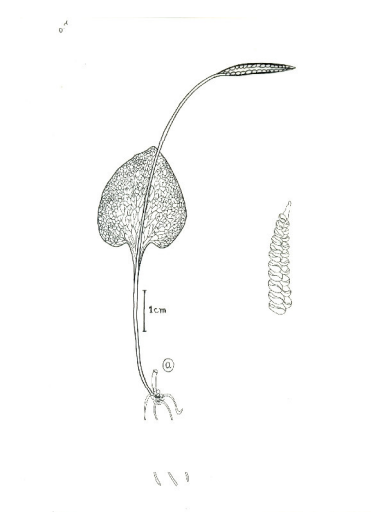
**Figure 3**  
***Adiantum caudatum***



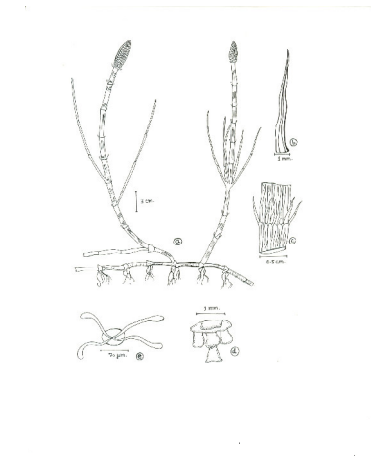
**Figure 4**  
***Adiantum lunulatum***



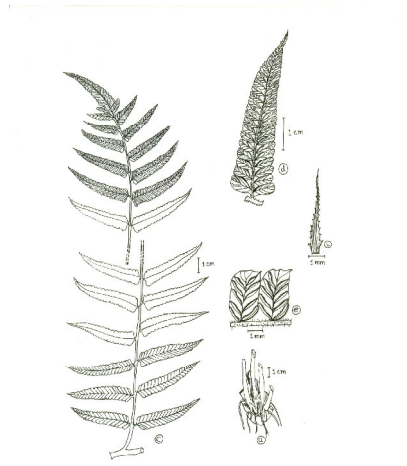
**Figure 5**  
***Lygodium flexuosum***



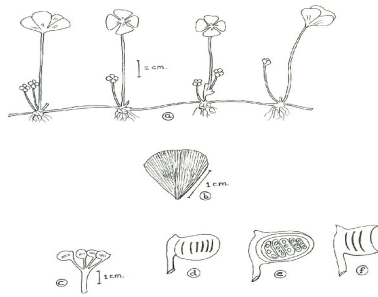
**Figure 6**  
***Ophioglossum reticulatum***



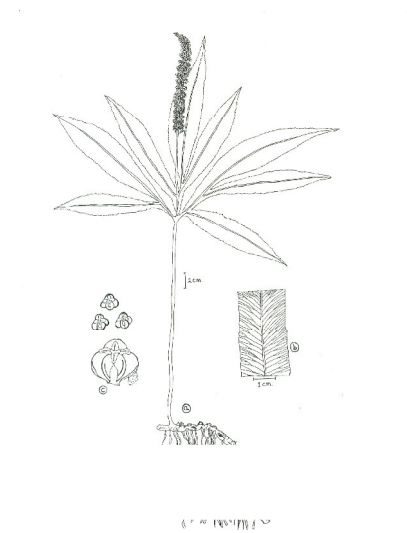
**Figure 7**  
***Equisetum ramosissimum***



**Figure 8**  
***Diplazium esculentum***



**Figure 9**  
***Marsilea minuta***



**Figure 10**  
***Helminthostachys zeylanica***



**Figure 11**  
***Ceratopteris thalictroides***

The present study emphasizes that, the herbal medicine has great potentiality to prevent many types of diseases for which there is no proper medication. The indigenous rural community depends on traditional healthcare system. About 70% of human inhabitants in India are using herbal medicine to cure diseases. In spite of such a huge number of individuals depending on traditional system of medicine, the medicinal wealth of most regions in India is not yet explored desirably. Hence the present study has been done from Tikri forest Gonda Uttar Pradesh to gather information on the usage of medicinal plants individually or in combination to cure diseases. The present study also highlights the status of

the plants (abundant, occasional, rare and threatened) in the study area. Undeniably, this will help in developing a proper strategy for conservation of important plant species and their diversity.

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## REFERENCES

1. Caius JF, The medicinal and poisonous ferns of India, J Bombay Nat Hist. Soc, 38: 341-361, (1935).
2. Manickam VS and Irudayaraj V, Pteridophyte flora of the Western Ghats, South India, B.I. publications New Delhi, (1992).
3. Manickam, VS, Medicinal ferns of India, Amruth, 56-59, (1999).
4. Kumar and Kaushik P, Antibacterial effect of *Adiantum capillus- veneris* Linn. Indain Fern J, 16: 72-74, (1999).
5. Shirsat,RP, Ethnomedicinal uses of some common Bryophytes & Pteridophytes used by Tribal of Melghat region (MS) India, Ethnobotanical leaflets, 12: 690-692, (2008).
6. Dixit RD, Fern- a much neglected group of medicinal plants, I. J. Res Indian Med, 9(4): 59-68, (1974).
7. Nayar B K, Medicinal Ferns of India, Bull. Nat. Bot. Garden, 29: 1-36, (1957).