ETHNOMEDICINAL STUDIES ON FERNS AND FERN ALLIES OF HADOTI PLATEAU, SOUTHEASTERN RAJASTHAN

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Abstract

Medicinal uses of eleven species of fems and fem allies growing in Hadoti Plateau, southeastern Rajasthan are given. The area is geographically located from 75^{0}15' to 77^{0}20'E and 23^{0}47' to 25^{0}55'N. It is traversed by Mukundara Hill ranges, a branch of Vindhyan range and is drained by river Chambal and its right bank tributaries like Parban, Parvati and Kali Sindh. Apart from hills and mountains, this part of southeastern Rajasthan is covered with dense forests, vast agricultural fields and open grasslands. The tribals residing in this region include Sahariya, Bhil, Kanjar, Sansis, Gadia Lohar, Mogya etc. and they frequently utilize wild plants including ferns and fern allies for treatment of various diseases. The data provides material for safe, cheap and effective remedies for some prevalent ailments in humans.

Key words

Tribals, ferns, fern allies, Hadoti, disease, medicine

Introduction

Fern and fern allies also known as botanical snakes or plant reptiles, have always been in the center stage of attraction to botanists, horticulturists and nature lovers since ancient times. This fascinating group of pteridophytes is distributed in the Himalaya, Western Ghats, Vindhya, hilly areas of Bihar, Orissa and Madhya Pradesh as well as in the Aravalli, particularly in Mount Abu in Rajasthan. According to an eminent pteridologist Bir (1963), ferns and fern allies of southeastern Rajasthan and Hadoti Plateau can be postulated as a connecting link between Himalayan and Western Ghats fern species.

Pteridophytic flora of Rajasthan, except for few publications about the ferns of Mt. Abu, had not drawn the attention of pteridologists during first half of the 20th century. It was only in the 1960s and 1970s that ferns and fern allies as a group attracted serious attention of botanists.

A number of papers have been published on the pteridophytic flora of Rajasthan and Hadoti Plateau (Bir & Verma ,1963; Mittal 1968; Sharma & Bohra, 1977; Bharadwaja *et al.*, 1979, 1987; Sharma *et al.*, 1988; Sharma & Shringi 1985; Sharma, 1990). They made important contributions about ecology, distribution and taxonomy of these plants in Rajasthan and particularly in Hadoti Plateau, but did not provide ethnobotanical information. The present communication deals with the ethnomedicinal uses of 11 species of ferns and fern allies of Hadoti Plateau.

Study area

The study area includes Hadoti Plateau which is situated at the edge of Malwa Plateau, at 23^{0}45' to 25^{0}53'N and 75^{0}9' to 77^{0}26'E in the southeastern corner of Rajasthan State. The total area is 24,156.6km^2 and from administrative point of view, it covers Kota division of Rajasthan and includes Kota, Bundi, Jhalawar and Baran districts respectively.

The average altitude of the region is 300m. It is an extension of the northern Malwa Plateau with numerous natural diversities. Peculiarities of surface physiography and soil composition makes this region a specific physical unit. It is bounded in the northwest by the great boundary fault of the Aravallis and extends eastwards across the Rajasthan border till one comes across the sharply defined scraps overlooking Bundelkand. The region has a general slope from southwest to northeast. The climate of the area is dry or subhumid. The year may be divided into three seasons namely: winter from November to mid March, summer from mid March to mid June, and rainy season from mid June to October. The average annual rainfall of the area is 852mm. The southwest monsoon advances into the area in the latter half of June and as much as 93% of the annual rainfall is received in June to September. The average ambient temperature ranges between 47^{0}C during summer to 3-5^{0}C in winter (Sharma, 1997).

The vast portion of the area is a plain with deep soils akin to that of Malwa Plateau. The soil is predominantly black cotton soil. It is rather light and shallow to moderately deep, which are locally

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praised for their moisture retention, thus helping good growth of Barani crops.

Methodology

Several permanent and nomadic tribes, e.g., Sahariyas, Bhils, Gadia Lohars (Blacksmith on carts), Raibaris, Kalbalias (Snake charmers), Kanjara, Banjaras and Sansis are commonly observed in the area. Sahariyas are specifically found in Shahbad and Kishanganj areas of Baran District. While Bhils are uniformly spread over in remote areas and jungles of the Hadoti Plateau, nomadic tribals commonly travel in the area during different seasons. To collect ethnomedicinal information on fern and fern allies of the area from these tribals, their villages were visited in different seasons from 1999 onwards.

Observations

These tribals have specific culture, rituals and living habits. Nomads are different from Sahariyas and Bhils as they are constantly moving their household; hence their association with plants is not restricted to a region. Since they are more exposed to the ravages of nature, they practice herbal medication, which is easily available everywhere.

It was observed that most tribals followed medical advice of Ojhas and Mukhias or Patels of their own community. These Ojhas are their local doctors who practice medicine at a specific point in tribal settlements, known as Than (a sacred seat).

These Ojhas were approached through their Mukhias (Chieftains), who were very helpful in reaching remote and otherwise unaccessible areas. Data was gathered through enquiries, personal observations in their colonies, and by holding discussions with the elderly. Interview with a party was more reliable as unanimous affirmations or denials could be easily assessed.

The details of ethnobotanical aspects of the area studied are provided in Table 1.

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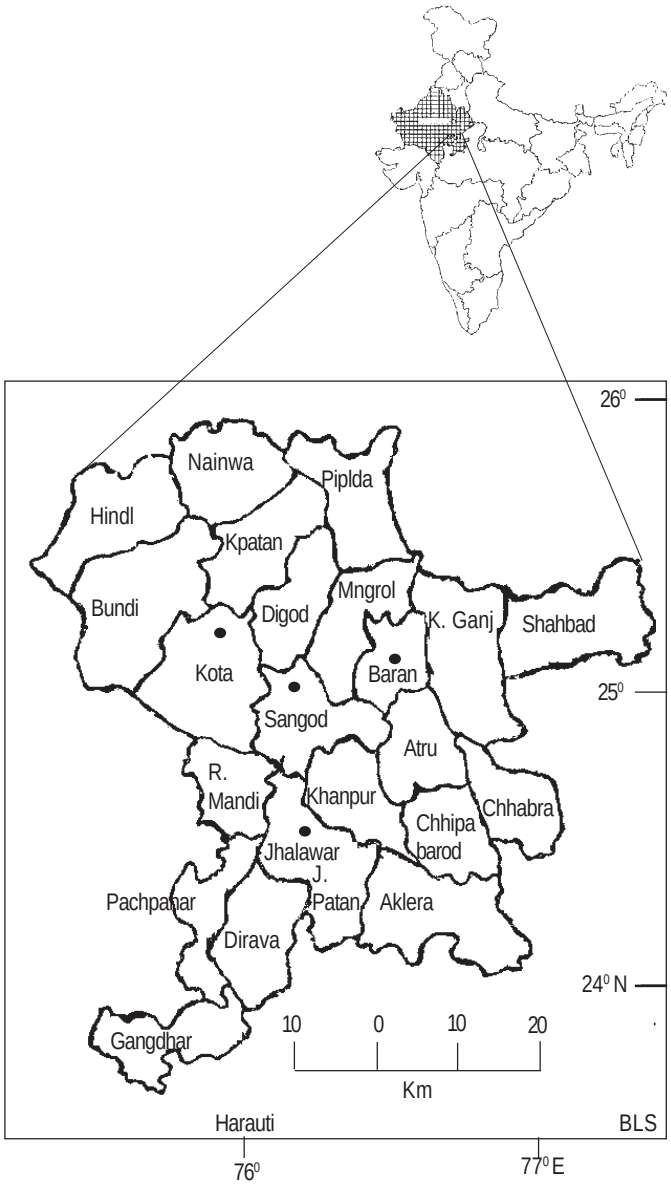

Figure 1. Location of Hadauti region

Table 1. Checklist of ferns and fern allies being used as medicine by the tribals.

Scientific name	Common name	Collection details	Extraction and processing	Drug therapy	Locality
Adiantum capillus-veneris	Hans Raj (Maiden-hair Fern)	Rhizomes and leaves . collected in monsoon.	Fresh leaves, rhizomes or dried material is stored in shade. The collected parts are crushed and the paste is taken with cold water.	To be taken twice a day (10g paste + 150ml water) for 3 days. It is said to be effective for coughs and as a diuretic also.	Bijliya Bhadak (Jhalawar, Gaipar Nath Madadev (Kota)
Adiantum incisum	Hans Raj (Walking Fern)	Leaves collected in monsoon.	Fresh or dried leaves are powered or crushed into paste. 50g paste or 25g powder is mixed in 200ml coconut oil.	The oil in appropriate amount (5ml) is applied on hair. Efficient to check hair fall. Twice a day for 2 months.	Darah (Kota)
Actinopteris radiata	Morpankhi	Leaves collected in monsoon.	Leaves are dried in shade and ground to make fine powder.	5g of powder + 10g of honey mixed together and given thrice a day for 15 days. It is useful in treatment of typhoid.	Common in the area on walls of old buildings
			Fresh leaves crushed into paste.	5g paste is taken with a glass of water once in the morning for 7 days effective anthelmentic.	
Ampelopteris prolifera	Sonpakhi	Leaves and rhizomes collected in monsoon and winter.	The collected parts are thoroughly washed and ground to make a paste.	5g paste taken with lukewarm milk for 30 days. Effective tonic.	Sita Bari (Baran)
Ceratopteris thallictreides	Pakhrana	Leaves collected in monsoon and post monsoon seasons.	Fresh juice of leaves whenever required.	Juice applied on fresh wounds immediately effective to stop bleeding.	Lotia dhir (Jhalawar), Mainal (Near Bundi)
Equisetum ramoesissium	-	Cones or strobili in post monsoon period.	Younger cones collected, dried in shade and ground to fine powder.	2.5g powder with cold water prescribed twice a day for 7 days, said to be effective in kidney troubles.	Rain Basera (Jhalawar), Sita Bari (Baran)
Marsilea minuta	Chaupatti	Fresh leaves and petioles throughout the year.	Fresh, healthy and younger leaves are crushed to extract the juice.	Two drops of juice in the nostrils twice a day, effective against migraine.	Throughout the area near water reservoirs
Ophioglossum petiolatum	Shaambli	Rhizome/tuber collected in monsoon.	Fresh rhizomes/ tubers are crushed to form a thick paste.	Paste is applied only once a week on head during bathing, effective to check hair fall.	Gindore (Jhalawar), Atru (Baran)
Ophioglossum reticulatum	Ban palak	Fresh leaves and tuber in monsoon and post monsoon seasons.	Fresh leaves and tubers are crushed to form a paste.	Paste is applied on boils, twice a day for 5 days, said to be effective.	Bijliya Bhadak (Jhalawar)
Ophioglossum costatum	Shaambli	Tubers collected in monsoon.	Dried tubers are powdered.	2.5g powder mixed with 5-10ml mustard oil applied twice a day, in the case of skin disease.	Gindore (Jhalawar)
Pteris vittata	Jasumba	Rhizomes and young cercinate leaves throughout the year.	Fresh, thoroughly washed rhizomes and leaves taken in equal quantity, ground to a fine paste.	Paste applied twice on glandular swellings for 15 days, highly effective.	Jawahar Sagar Dam (Kota)