

PTERIDOPHYTIC FLORA OF BUNDI DISTRICT, SOUTHEASTERN RAJASTHAN

O.P. Sharma

P.G. Department of Botany, Government College, Bundi, Rajasthan 323001, India

ABSTRACT

Bundi district is situated in the south-eastern part of Rajasthan, a part of Haroti plateau. The present study describes the distribution of pteridophytic flora of Bundi district, the habitats of the concerning area and the characteristic pteridophytic species occurring have been listed. The area was surveyed in different seasons during the years 1995 to 2003. Pteridophytic species of this district need conservation in-situ, which could be achieved by identification and conservation of fern localities. Fifteen species belonging to 11 genera are reported. Most important localities included in the survey of pteridophytic flora are Rameshwar, Bhimlat, Ramjhar, Deojhar, Jawahar Sagar Dam, Guda Dam, Bardha Dam, Talwas, Dugari and Ramgarh Game Sanctuary.

KEYWORDS

Checklist, ferns, fern allies, pteridophyte, Rajasthan

Earlier fern explorer of the Rajasthan state were Adam (1900), Blatter and Hallberg (1918-21), Sutaria (1941) and Raizada (1954). Mount Abu was regarded to be the only pteridophytic locality in this state and thus the early work on pteridophytes in Rajasthan was therefore restricted to surveys and collections from this locality. According to eminent pteridologist Bir (1963) fern and fern allies of southeastern Rajasthan can be postulated as a connecting link between Himalayan and Western Ghats fern series.

The pteridophytic flora of various localities of Rajasthan has been studied by many workers. Important contributions are those of Bir *et al.* (1963), Mittal (1968), Bhardwaja *et al.* (1977, 1987), Gena *et al.* (1983) and Bohra *et al.* (1980). They surveyed a number of localities in Rajasthan state.

Many taxa of pteridophytes have been lost/eradicated from Rajasthan due to the present pace of rapid industrialisation and exploitation of natural resources in the state. Exhaustive systematic surveys of pteridophytic localities of Rajasthan from many years by Bhardwaja and Gena have revealed the occurrence of 36 species belonging to 21 genera in the state.

We surveyed different areas in different seasons during the years 1995 to 2003. The specimens collected were identified and are preserved in Herbarium, P.G. Department of Botany, Govt. College, Bundi. Fifteen taxa of pteridophytes belonging to 11 genera and seven families were recorded. The present paper includes comprehensive data on the current distribution of pteridophytes from Bundi district.

STUDY AREA

The southeastern part of Rajasthan including the district of Kota, Bundi, Jhalawar and Baran is fertile, green and well-irrigated. This region is known as Haroti plateau. Haroti plateau

(S.E. Rajasthan) is situated at the edge of Malwa plateau at 23°45'-25°53'N & 75°9'-77°26'E longitude in southeastern corner of Rajasthan.

Bundi district is a part of the Haroti plateau. It lies between 24°59'11"-25°53'11"N & 75°19'30"-76°19'30"E. It has an area of 5,582,78km². The dimension of the district from east to west is about 100km, and about 104km from north to south. It comprises of different ecological habitats such as hill tops, slopes, plains, denuded forest and reserve forest. The average rainfall of the area is 76.41cm. Hilly region, higher elevation, characteristic topography and forest cover makes important reasons for richness of fern flora of Bundi.

METHODOLOGY

All localities which are ideally favourable for growth of fern flora were observed. Every possible area which could support the growth of fern flora in the district was visited between July 1995 to October 2003 in different seasons.

Description of habitat

The most important pteridophytic localities of the area are Rameshwar, Bhimlat and Ramjhar. Other important localities of the area where pteridophytic taxa grow are Deojhar, Jawahar Sagar Dam, Guda Dam, Bardha Dam, Talwas, Dugari, Ramgarh Game Sanctuary, Hindoli tank, Bundi fort, Banganga, Nainwa, Khatkar and Kamleshwar.

Habitat-wise distribution study of pteridophytic species reveal that Bundi district pteridophytic taxa fall under six categories. The pteridophytic species of the area studied according to the habitat-wise categories are provided in Table 1. A check list of pteridophytic flora and different localities found in Bundi district is being listed in Table 2.

DISCUSSION

Fifteen species belonging to 11 genera and seven families were recorded from various localities of the district. It may be mentioned here that Mt. Abu, which is the single largest and the richest pteridophytic locality of Rajasthan, supports the growth of 26 species belonging to 17 genera.

Thus the Bundi district southeastern humid part has come up as an important locality of pteridophytes in the state. Out of the 11 genera of pteridophytes collected from Bundi district during this survey eight genera were represented by a single species each. Genera *Adiantum* and *Marsilea* were represented by two species, while *Ophioglossum* was represented by three species.

Excessive felling of tree flora for various purposes has had adverse effects on the fern habitat which is the main cause for disappearance of many moisture loving and sciophytic fern taxa of district. Population density of many fern of Bundi have decreased. Threatened species of Bundi district pteridophytes are *Pteris vittata*, *Ophioglossum costatum*, *O. nudicaule* and *Adiantum incisum*.

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Table 1. Fern habitats in Bundi district.

Species	Habitat					
	1	2	3	4	5	6
<i>Isoetes tuberculata</i>	—	—	—	—	+	—
<i>Ophioglossum petiolatum</i>	+	—	—	+	—	—
<i>Ophioglossum costatum</i>	—	—	—	+	—	—
<i>Ophioglossum nudicaule</i>	—	—	—	+	—	—
<i>Actinopteris radiata</i>	—	+	+	—	—	—
<i>Adiantum capillus-veneris</i>	—	—	+	—	—	—
<i>Adiantum incisum</i>	+	—	+	—	—	—
<i>Cheilanthes farinosa</i>	+	—	—	—	—	—
<i>Pteris vittata</i>	—	—	+	—	—	—
<i>Hypodematium crenatum</i>	—	—	+	—	—	—
<i>Christella dentata</i>	—	—	+	—	—	—
<i>Marsilea aegyptiaca</i>	—	—	—	—	+	—
<i>M. minuta</i>	—	—	—	—	+	—
<i>Azolla pinnata</i>	—	—	—	—	—	+
<i>Salvinia auriculata</i>	—	—	—	—	—	+

(+ - Present; — - Absent)

1 - Species inhabiting forest floor; 2 - Species inhabiting exposed rocks, wall of old building and extremely xerophytic condition; 3 - Lithophytes (species inhabiting rock crevices); 4 - Species inhabiting grassy areas; 5 - Marshy species; 6 - Free floating species.

Table 2. Checklist of Pteridophytes of Bundi district.

Family & Species	Localities & Collection No.
Isoetaceae	
<i>Isoetes tuberculata</i>	Hindoli tank and Bhimlat, ops 735 & 737.
Ophioglossaceae	
<i>Ophioglossum petiolatum</i>	Lakareshwar Mahadev, Guda dam, Bhimlat, Bundi fort, Dugari and Talwas, ops 740 to 745
<i>Ophioglossum costatum</i>	Ramjhar, ops 747.
<i>Ophioglossum nudicaule</i>	Rameshwar and Bhimlat, ops 748 & 749.
Pteridaceae	
<i>Actinopteris radiata</i>	Most widely distributed xerophytic fern, found almost every where in the district, ops 751.
<i>Adiantum capillus-veneris</i>	Rameshwar, Bhimlat, Ramjhar and Talwas, ops 753 to 756.
<i>Adiantum incisum</i>	Rameshwar, Ramjhar and Bhimlat, ops 751 to 759.
<i>Cheilanthes farinosa</i>	Rameshwar and Bhimlat, ops 763 to 764.
<i>Pteris vittata</i>	Rameshwar, ops 766.
Aspleniaceae	
<i>Hypodematium crenatum</i>	Rameshwar and Bhimlat, ops 768 & 769.
Thelypteridaceae	
<i>Christella dentata</i>	Rameshwar and Bhimlat, ops 771.
Marsileaceae	
<i>Marsilea aegyptiaca</i>	Hindoli tank, ops 774.
<i>M. minuta</i>	One of the most widely occurring water fern throughout Bundi district, ops 775.
Salviniaceae	
<i>Azolla pinnata</i>	A very common free floating water fern of the district, ops 777.
<i>Salvinia auriculata</i>	Dugari, ops 779.

Note: All these species were collected by the author during the years from 1995 to 2003.

