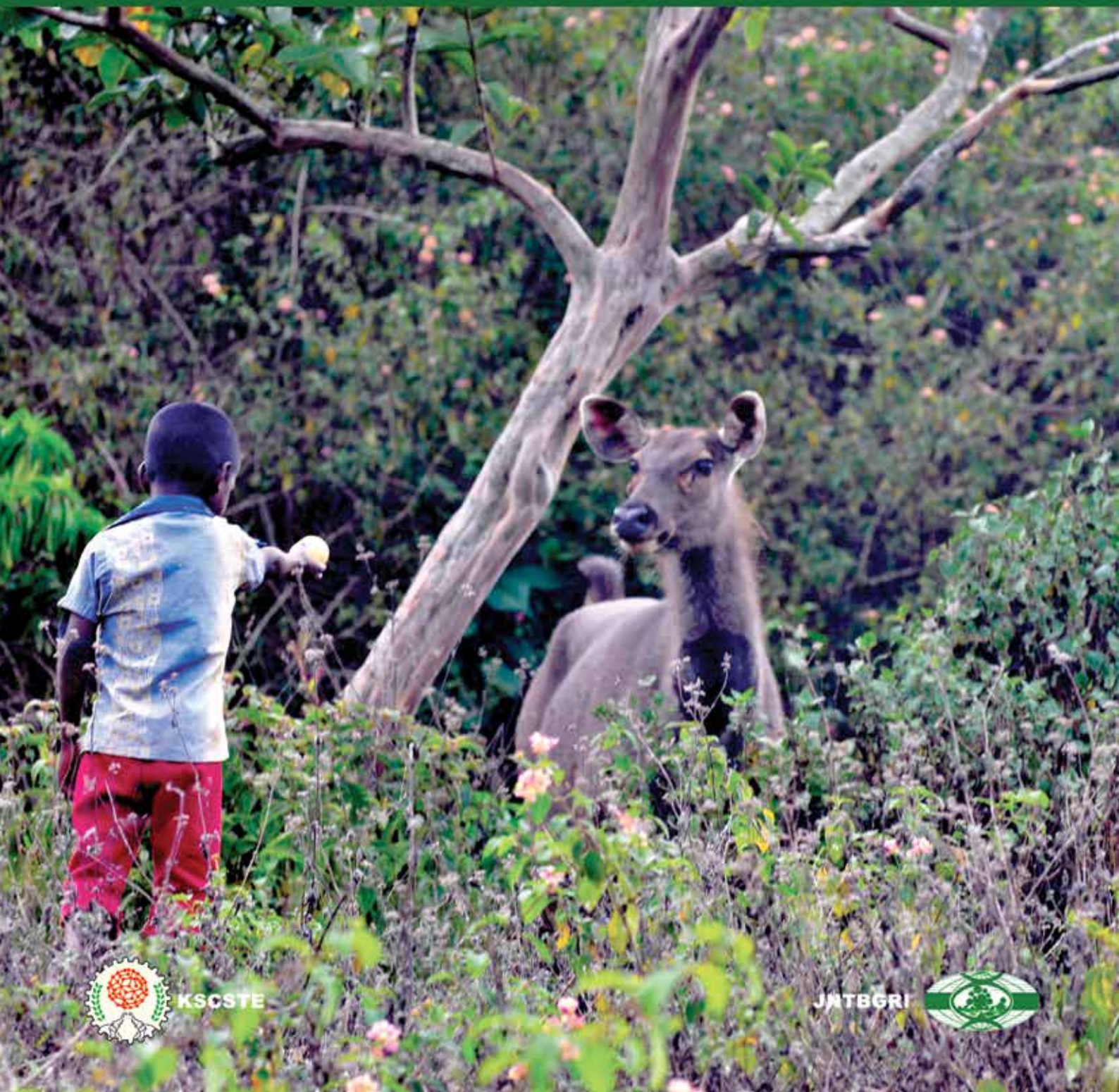


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Threatened plant species of Ajmer district with special reference to Todgarh - Raoli wildlife sanctuary of Rajasthan

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Abstract

A number of records are available about the Ajmer district (Central Aravali) vegetation. However the present checklist reflects few species which are less investigated from the view point of biodiversity conservation central Aravali region (Ajmer-area) is located in the middle of Rajasthan. The region is bordered by Nagaur, Pali in west, Udaipur, Bhilwara and Chittorgarh in the south, Tonk, Bundi in the east and Jaipur in the north direction. The characteristic feature of the topography of the central Aravali is mountains and valleys, interrupted by each other. At the same time, the western slopes of the hills are becoming a transition zone (ecotone) between the hills and the great Indian desert, Thar. This narrow belt of the central Aravali with unique geographical macroclimatic and microclimatic conditions as well as pedological variations favours a variety of flora and fauna, unique to the region. The most important species explored are *Anogeissus sericea* var. *nummularia* King ex Duthie, *Ziziphus truncata* Blatt. & Hallb., *Tephrosia falciformis* Ramaswamy, *Tecomella undulata* (Sm.) Seem and *Citrullus colocynthis* (L.) Schard.

Keywords: Topography, Ecotone, Biodiversity, Threatened species, *In-situ* conservation

1. Introduction

Ajmer district is located in the central portion of Rajasthan and has sometimes been referred to as 'Heart of Rajputana'. It is extended from 25°38' and 26°58' north latitudes and 73°54' and 75°22' east longitudes. Geographically, the city is located in a valley in between three mountain ridges of Aravali hills. The highest peak is Taragarh, which is 870 meters above the sea level. Ajmer Aravali hills are the source of many important rivers of Rajasthan; such as Luni, originating from Nag Pahar and flows into Marwar, whereas Rupanadi river arises from Madar Pahar and drains into Sambhar Lake which is a part of inland drainage. The hilly rough topography and monsoonal climate favours rich plant diversity in the hills, despite an increasing biological pressure and scanty rainfalls, due to climate

change and other meteorological fluctuations. The current work includes certain species of threatened plants, all belonging to the Angiosperm stock. Few plants are extremely endangered and few others are vulnerable to become extinct in the near future if not protected.

1.2. Area of Study

1.2.1. Historical and Geographical aspects

During British period, the district of Ajmer was a union territory under the Central Government as part 'C' State till 31st October 1956. Subsequently, it was merged with the State of Rajasthan based on recommendations of the States Reorganization Commission by adjusting its boundary chiefly by transferring certain villages falling under the former princely state of Kishangarh (Fig.1).

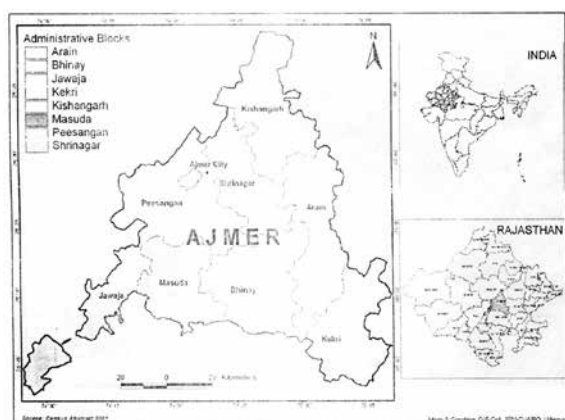


Fig.1. Ajmer District map showing in Rajasthan (India)

1.2.2. Topography and Drainage:

The distinguishing feature of the district is presence of the "Middle Aravali", which divides the plains of Marwar from the high table land of Mewar. The plateau on which the town of Ajmer stands, marks the highest point on the plains of India. The terrain slopes away from the plateau in all directions. The range of hills between Ajmer, Nashirabad and Rajgarh are the watershed divide separating the flow of water in Northern India into the Arabian sea and/or the Bay of Bengal. The rain, which falls on the eastern and southern slopes i.e. on Nashirabad side, finds its way through rivers Khari, Banas, Chambal, Yamuna and finally into Ganges, which leads to the Bay of Bengal; and that which falls on the western slopes is discharged by the river Luni into the Gulf of Kutch.

The character of surface drainage shows close relationship with the slopes, of the land. Ajmer does not have any river of significant importance owing to its position at the centre of the watershed. There are no perennial rivers in the district except for small

seasonal rivers like Roopanadi, Sagarmati, Saraswati, Dai and Khari. (Fig. 2)

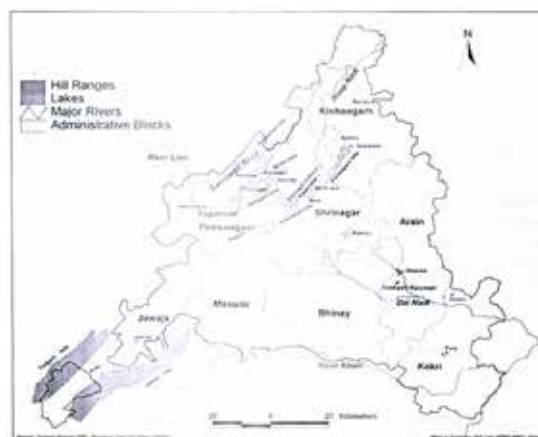


Fig. 2. Important Hill ranges and Rivers in Ajmer

2. Materials and Methods

Studies were carried out on 12 species during the rainy seasons from 2015-2018 and periodic surveys and botanical explorations were made regularly. Usually three visits during a year were done. Although most species are identified and recognized as threatened category, few of them were sporadically growing particularly in a small, narrow stretch. The specimens were collected, dried and kept as specimens and herbarium sheets for reference. Few other species which are highly endangered were not collected because there are only few individuals of the species. However photographs were taken for further studies and references. Herbarium sheets & specimens are maintained at the Taxonomy lab, Department of Botany (SPC Government College, Ajmer) by the Author for further studies. These species are included in IUCN Red List Categories 2012 and CAZRI, Jodhpur.

Table 1. Checklist of the species

S.N.	Botanical Name	Family	Common name and locality	Conservation status IUCN Category
1	<i>Anogeissius sericea</i> var. <i>nummularia</i> King ex Duthie	Combretaceae	'Indradhav' Raoli-Todgrah	Critically Endangered
2	<i>Anogeissius sericea</i> var. <i>sericea</i> Brandis	Combretaceae	'Dhavara' Goram Pahar	Endangered
3	<i>Ceropegia bulbosa</i> Roxb. var. <i>bulbosa</i>	Asclepiadaceae	'Dhalio-khedulo' Kachbali village	Critically Endangered

Threatened plant species of Ajmer district

4	<i>Cenchrus prieurii</i> var. <i>scabra</i> Bhandari	Poaceae	'Lambo-bharut' Dhorela village in bhim (Rajsamad)	Endemic and Rare
5	<i>Ceropegia bulbosa</i> Roxb. var. <i>lushii</i> (Grah.) Hook.f.	Asclepiadaceae	'Talvario-Khediyo' Dhorela Village (Rajsamand)	Critically Endangered
6	<i>Citrullus colocynthis</i> (L.) Schard.	Cucurbitaceae	'Indrayan' Pushkar	Rare
7	<i>Melhania futteyporensis</i> var. <i>major</i> (Blatt. & Hallb.) Santapau	Sterculiaceae	'Melhania' Raoli - Todgrah wild life sanctuary	Endangered
8	<i>Monsonia senegelensis</i> (Cav.) Boiss.	Geraniaceae	Kukri Nag Pahar	Rare and Endemic
9	<i>Moringa concanensis</i> Nimmo ex Dalz. & Gibs.	Moringaceae	'Mitho sargudo' Raoli- todgarh	Rare
10	<i>Tecomella undulata</i> (Sm.) Seem	Bignoniaceae	'Rohira' (State flower of rajasthan) Barakhan village	Endangered
11	<i>Tephrosia falciformis</i> Ramaswamy	Fabaceae	'Rati Biyani' Pushkar	Rare and Endemic but sporadic in the conserved area
12	<i>Ziziphus truncata</i> Blatt. & Hallb.	Rhamnaceae	'Boti' MDS university	Critically Endangered

PHOTO PLATES



Anogeissius sericea var.
nummularia



Anogeissius sericea var.
sericea



Monsonia senegelensis

PHOTO PLATES



Citrullus colocynthis



Melhania futteyporensis



Tephrosia falciformis



Ceropegia bulbosa var.
lushii



Ceropegia bulbosa var.
bulbosa



Moringa concanensis



Ziziphus truncata



Tecomella undulata



Cenchrus prieurii

Ajmer is located at the central part of Rajasthan. The Central Aravali is spread in Ajmer as well as in the Rajsamand district of the state. The region is geographically characterised by the hills, vallies and sand dunes. On the other hand; the western slopes especially Pushkar and Pisangan region is dominated by sand dunes. The area is an ecotone, which herbours a treasure of highly endangered angiospermic plant diversity. The studied & encountered plants are presented schematically with their botanical names, vernacular names, family and threatened status.

There are 12 plant species from 10 different families with threatened status such as - *Anogeissus sericea* var. *nummularia* King ex Duthie, *Anogeissus sericea* var. *sericea*, *Ziziphus truncata* Blatt. & Hallb., *Monsonia senegalensis* (Cav.) Boiss., *Tephrosia falciformis* Ramaswamy, *Tecomella undulata* (Sm.) Seem, *Ceropegia bulbosa* Roxb. var. *lushii* (Grah.) Hook.f., *Ceropegia bulbosa* Roxb. var. *bulbosa*, *Cenchrus prieurii* var. *scabra* Bhandari, *Moringa Concanensis* Nimmo ex Dalz. & Gibs., *Citrullus colocynthis* (L.) Schard., *Citrullus colocynthis* (L.) Schard. and *Melhania futteyporensis* var. *major* (Blatt. & Hallb.) Santapau are recorded and studied for conservation point of view.

4. Conclusion

The explored plants belong to families of flowering plants such as Combretaceae, Rhamnaceae, Geraniaceae, Fabaceae, Bignoniaceae, Asclepiadaceae, Poaceae, Moringaceae, Cucurbitaceae, Sterculiaceae, etc. All species are extremely threatened and included in Critically Endangered, Endangered and Rare species category. There is an urgent need for conservation of these threatened species by adapting suitable *in-situ* and *ex-situ* conservation to prevent the untimely extinction.

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