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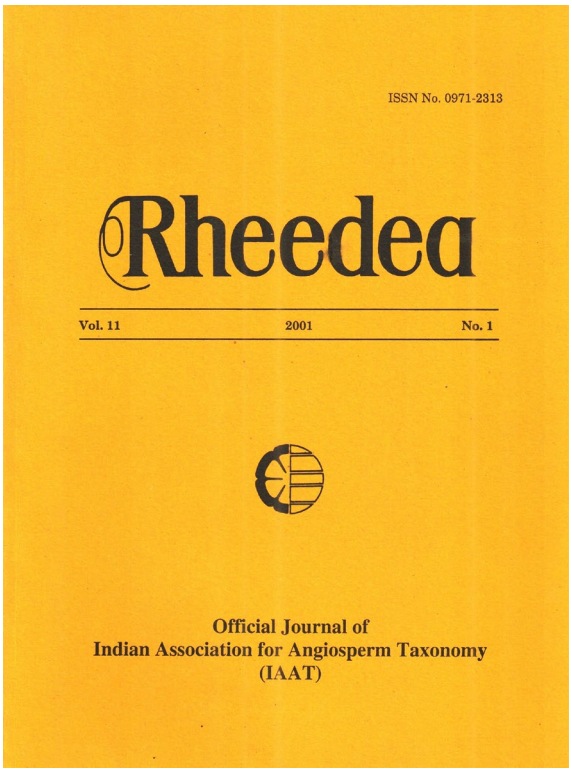

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Rare and Endangered Plants of South-East Rajasthan

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Abstract

A list of plant species which have been considered as rare, vulnerable and endangered is given on the basis of frequent floristic surveys carried out in the state of Rajasthan, during the last 25 years. The probable reasons for the decrease of their populations are destruction of natural habitats consequent upon increasing urbanization, massive destruction of forests, and pollution of rivers in one way or the other. Suggestions for their efficient regular monitoring have also been suggested.

INTRODUCTION

It has been universally recognised that with the increase of human population there has been a constant degeneration of natural resources. Several species of plants, as well as animals are already extinct or are on the verge of extinction. If a plant species is under constant anthropogenic pressure on account of its economic value, the reason for its becoming rare is understandable but the category of rare and threatened plants include many species which are apparently of no economic use to man. With population explosion and increasing urbanization many areas with natural vegetation have been cleared for building purposes. The importance of loss of species was hardly realised. In India, where the population has been increasing very fast, the problem is all the more serious. In the year 1969 at the eleventh technical meeting of the IUCN the problem was discussed at length. Later on, the Botanical Survey of India brought out a small booklet, "Threatened Plants of India - A State of the Art Report" in the year 1980. Further data on the subject was collected by the BSI under a PL-480 project on study, survey and conservation of endangered species of the flora. Initially about 1000 species were considered as endangered. Finally, the Red Data Book of Indian plants also saw the light of the day (Nayar & Sastry, 1987).

The State of Rajasthan with an area of about 348861 sq.km., *i.e.*, about 11% of the total area of India, forms the eastern extremity of the arid and semi-arid belt of the world. The Aravallis which are the oldest system of mountains in the world divide the state diagonally into two regions, a sandy desert on the north-west of Aravallis and a comparatively fertile region on the south-east of Aravallis. The two regions are different in their climate, topography and

rainfall and consequently floristically. Though a number of contributions have been made to the natural flora of this state in general, the work on its south-eastern region is rather meagre (Ramdeo, 1965, 1969; Vyas, 1965; Vyas & Ramdeo, 1964, 1965; Aery & Tiagi, 1982, 1985; Aery & Tyagi, 1988, Tiagi *et al.*, 1999).

The authors have been working on the geobotany and floristics of this region for the last 25 years or so. One of us (Y.D. Tiagi) has a tryst with the flora of this state since 1951 (Tiagi, 1951) and seen its progressive decimation. During regular forays it has been observed that species which were once "very common" have become most uncommon; which were not common have become rare and the rare, ones have almost disappeared or are at the verge of disappearance. There is need to enlist such plants and to make efforts for their conservation. This gave the impetus to the present authors to be more meticulous in observing the vegetation in nature. On the basis of our long experience with the flora and vegetation of Rajasthan, the following list of plants has been prepared and this includes category of endangered, vulnerable, rare or indeterminate species (Nayar & Sastri, 1987) which need to be conserved to avoid their total disappearance from the state. In modern terminology an extinct plant is one which after repeated surveys could not be located in the wild during the last fifty years.

It also appears quite logical to note that since most of the plants are of high medicinal value and it is their indiscriminate over exploitation by unscrupulous people that has led to such a dreadful situation. If timely action for their conservation is not taken, it will result in the disappearance of some of these highly valuable species of this region in the not very distant future. The rare, vulnerable and endangered plant species of this region are given in the following table, which reflects the regional status of the species.

Rare, vulnerable and endangered species of Rajasthan

Name of the Plant Species	Family	Endangered	Vulnerable	Rare
1	2	3	4	5
Cleome chelidonii L.f.	Cleomaceae			*
C. simplicifolia (Camb.) Hook. f. & Thoms.	-do-			*
Maerna arenaria (DC.) Hook. f. & Thoms.	Capparaceae		*	*
Hybanthus enneaspermus (L.) Muell.	Violaceae		*	
Casearia elliptica Willd.	Samydaceae			*
Tamarix indica Willd.	Tamaricaceae			*
Kydia calycina Roxb.	Malvaceae			*

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1	2	3	4	5
Urena lobata L.	Malvaceae		*	
Melhania futteyporensis Munro ex Mast.	Sterculiaceae		*	
Melochia corchorifolia L.	-do-			*
Sterculia alata Roxb.	-do-			
S. urens Roxb.	-do-	*		
Waltheria indica L.	-do-			*
Grewia tenax (Forsk.) Fiori	Tiliaceae		*	
Fagonia indica Burm. f.	Zygophyllaceae			*
Monsonia senegalensis Guill. & Parry	Geraniaceae			*
Biophytum sensitivum (L.) DC.	Oxalidaceae			*
Commiphora wightii (Arn.) Bhandari	Burseraceae	*		
Garuga pinnata Roxb.	-do-	*		
Soymida febrifuga (Roxb.) A. Juss.	Meliaceae	*		
Celastrus paniculatus Willd.	Celastraceae		*	
Ampelocissus arnottiana (W. & A.) Planch.	Vitaceae		*	
Moringa concanensis Nimmo ex Dalz.	Moringaceae		*	
Abrus fruticulosus Wall. ex W. & A.	Papilionaceae			*
Alysicarpus glumaceus (Vahl) DC.	-do-			*
Atylosia platycarpa Benth.	-do-	*		
Butea superba Roxb.	-do-			*
Dalbergia lanceolata L.f.	-do-	*		
Desmodium procumbens (Mill.) Hitch.	-do-			*
Dolichos lobatus L.	-do-			*
Galactia tenuiflora (Willd.) W. & A.	-do-			*
Goniogyna hirta (Willd.) Ali	-do-			*
Indigofera angulosa Edgew.	-do-			*
Psoralea corylifolia L.	-do-		*	
Pterocarpus marsupium Roxb.	-do-		*	
Rhynchosia bracteata Benth.	-do-			*
Smithia bigemina Dalz.	-do-			*

1	2	3	4	5
Smithia conferta J.E. Smith	Papilionaceae			*
Tephrosia strigosa (Dalz.) Sant. & Mahesh.	-do-			*
Teramnus labialis (L.f.) Spreng.	-do-			*
Cassia italica (Mill.) Lamk. ex Anders.	Caesalpiniaceae			*
C. sophera L.	-do-			*
Acacia pennata (L.) Willd.	Mimosaceae			*
Vahlia digyna (Retz.) O. Ktze.	Vahliaceae			*
Anogeissus acuminata (Roxb. ex DC.) Guill. & Perr.	Combretaceae	*		
A. sericea Brandis	-do-	*		
Bryonopsis laciniosa (L.) Naud.	Cucurbitaceae		*	
Mukia maderaspatana (L.) M. Roem.	-do-		*	
Trichosanthes bracteata (Lamk.) Voigt	-do-		*	
Passiflora foetida L.	Passifloraceae			*
Trianthema portulacastrum L.	Aizoaceae			*
Paedaria foetida L.	Rubiaceae	*		
Elephantopus scaber L.	Asteraceae			*
Erigeron asteroides Roxb.	-do-			*
Gnaphalium peregrinum Fernald	-do-			*
Gynura cusimbua (D. Don) S. Moore	-do-			*
Laggera falcata (Don) O. Ktze.	-do-			*
Pluchea tomentosa DC.	-do-			*
Pulicaria bossieri Hook.	-do-			*
Tricholepis glaberrima DC.	-do-			*
Schrebera swietenioides Roxb.	Oleaceae	*		
Cephalostigma erectum (Roxb.) Vatke	Campanulaceae			*
Wrightia arborea (Dennst.) Mabb.	Apocynaceae		*	
Carissa spinarum L.	-do-	*		
Vallaris solanacea (Roth.) Kuntze	-do-		*	
Ceropegia bulbosa Roxb.	Asclepiadaceae	*		
C. hirsuta W. & A.	-do-	*		

1	2	3	4	5
Colebrookea oppositifolia Smith	Lamiaceae	*		
Leonotis nepetifolia (L.) R. Br.	-do-			*
Leucas flaccida R. Br.	-do-		*	
Plectranthus mollis (Ait.) Spreng.	-do-		*	
Pogostemon benghalense (Burm. f.) O. Ktze.	-do-			*
Commicarpus verticillatus (Poir.) Standl.	Nyctaginaceae	*		
Amaranthus graecizans L.	Amaranthaceae			*
Aerva monsoniae Mart.	-do-			*
Alternanthera pronychioides St.-Hill.	-do-			*
Polygonum serrulatum Lag.	Polygonaceae			*
Aristolochia bracteolata Lamk.	Aristolochiaceae		*	
A. indica L.	-do-			*
Viscum articulatum Burm. f.	Viscaceae	*		
Euphorbia prolifera Buch.-Ham.	Euphorbiaceae			*
Micranthus chamaelea Muell.	-do-			*
Securinega lencopyrus (Willd.) Muell.	-do-			*
Musa rosea Jacq.	Musaceae	*		
Crinum defixum Ker. Gawl	Amaryllidaceae	*		
Chlorophytum borivilianum Sant. & Fern.	Liliaceae	*		
Gloriosa superba L.	-do-	*		
Iphigenia indica (L.) A. Gray	-do-	*		
Scilla hyacinthina (Roth) Macbr.	-do-	*		
Commelina forskalaei Vahl	Commelinaceae			*
Cyanotis cristata (L.) D. Don	-do-			*
Cyperus sanguinolentus Vahl	Cyperaceae			*
Eleocharis capitata R. Br.	-do-			*
Arisaema tortuosum (Wall.) Schott	Araceae	*		
Remusatia vivipara (Roxb.) Schott	-do-	*		
Sauromatum pedatum (Willd.) Schott	-do-	*		
Eulophia ochreata Lindl.	Orchidaceae	*		

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1	2	3	4	5
Ceropegia vincaefolia Hook.	Asclepiadaceae	*		
Gymnema sylvestre (Retz.) R.Br. *ex* Schult.	-do-	*		
Hemidesmus indicus (L.) R. Br.	Periploaceae	*		
Mitreola petiolata (J.F. Gmel.) Torr. & Gray	Spigeliaceae	*		
Canscora decurrens Dalz.	Gentianaceae	*		
C. decussata (Roxb.) Schult. & Schult. f.	-do-	*		
Centaurium centaurioides (Roxb.) Rolla Rao *et* Hemadri	-do-	*		
Heliotropium marifolium Retz.	Boraginaceae			*
H. rariflorum Stocks	-do-			*
Coldenia procumbens L.	-do-			*
Convolvulus rottlerianus Choisy	Convolvulaceae		*	
Evolvulus alsinoides var. *decumbens* (R. Br.) Oststr.	-do-		*	
E. alsinoides var. *hirsutus* (Lamk.) Oststr.	-do-		*	
E. nummularius (L.) L.	-do-		*	
Solanum elaegnifolium Cav.	Solanaceae			
S. sisymbrifolium Lamk.	-do-	*		
Lindernia procumbens (Krock.) Philox	Scrophulariaceae			*
Striga densiflora (Benth.) Benth.	-do-			*
S. gesnerioides (Willd.) Vatke	-do-	*		
Blepharis asperrima Nees	Acanthaceae			*
Andrographis paniculata (Burm. f.) Wall. *ex* Nees	-do-			*
Hemiadelphis polysperma (Heyne *ex* Roth) Nees	-do-			*
Nilgirianthus heyneanus (Nees) Bremek.	-do-			*
Gmelina arborea Roxb.	Verbenaceae			*
Lantana wightiana Wall. *ex* Gamble	-do-			*
Anisochilus carnosus (L.f.) Wall. *ex* Benth.	Lamiaceae			*
Anisomeles indica (L.) Kuntze	-do-			*

1	2	3	4	5
Vanda tessellata (Roxb.) Hook. ex G. Don	-do-	*		
Curcuma amada Roxb.	Zingiberaceae	*		
Curculigo orchioides Gaertn.	Hypoxidaceae	*		

Discussion

In south-east Rajasthan certain observations have been made which provide examples on the regional status of various species. In the early seventies even within the restricted boundaries of the College of Science *Trianthema portulacastrum* L. occurred in abundance. Now it has practically disappeared from this campus although the edapho-climatic and biotic factors apparently remain unchanged. The case of another species namely, *Leptadenia reticulata* is even more interesting since this species with its broad leaves is so distinct from the almost leafless *Leptadenia pyrotechnica*. About 20 years ago *L. reticulata* was very common along roadsides, in fallow fields, on rocky areas and so on. Now it takes months to locate even a single individual. Likewise, *Biophytum sensitivum* which was so common on the ground in shady places is now practically nowhere to be seen. On the whole, it is observed that the density and frequency of many dicot herbs have been showing a conspicuous and observable decline. Even species like *Cassia tora* and *Cassia obtusifolia* which used to grow gregariously on roadsides during the rainy season and after are rarely to be seen. For these latter two species the obvious reason appear to be that they have been overwhelmed by *Parthenium hysterophorus*. Likewise, it is seen that two varieties of *Evolvulus alsinoides*, one with bluish corolla and other with pinkish corolla, have become rare, probably due to over-exploitation by ayurvedic pharmacies. Likewise, *Musa rosea* has also become rare today and is surviving only on extremely precipitous slopes. *Striga gesnerioides*, which occurred with a much greater frequency as a total root parasite on *Lepidagathis trinervis* and *Euphorbia nivulia* are now not seen anywhere in this area though the host is quite frequently seen. Then, it can be said with certainty that certain species namely *Mitreola petiolata, Solanum eleagnifolium, Solanum sisymbrifolium* and *Crinum defixum* which were not frequently seen in the seventies have now disappeared from this area. Besides this, the naked Aravalli hills around the township of Udaipur which were very densely covered with forests of *Anogeissus pendula* even up to as late as 1948, today present an extremely naked and awe-provoking sight.

It is suggested that there should be a monitoring committee under the Botany Departments of Universities to monitor the status of various plant species year after year in the area around it. This task should be started with the initial preparation of a list of rare plants of the district followed by constant monitoring and effort should be made for their conservation. Some species which are very rare should be cultivated in the protected habitats and even in botanical gardens.

Literature cited

Aery, N.C. & Y.D. Tiagi. 1982. Additions to the flora of Udaipur district (South-East Rajasthan). *Bull. Bot. Surv. India* 24: 153-157.

Aery, N.C. & Y.D. Tiagi. 1985. Additions to the angiospermic flora of Rajasthan. *Nat. Acad. Sci. Lett.* 8: 1-2.

Aery, N.C. & S. Tyagi. 1988. Further additions to the flora of Udaipur district (South-East Rajasthan). *Ind. J. Plant Sci.* 5: 1-9.

Nayar, M.P. & A.R.K. Sastri. 1987. *Red Data Book on Indian Plants*. Botanical Survey of India, Calcutta. Vol. I.

Ramdeo, K.D. 1965. Additions to the flora of Rajasthan. *Ind. For.* 80: 207-215.

Ramdeo, K.D. 1969. *Contribution to the Flora of Udaipur (South-East) Rajasthan*. Krishna Publ., Udaipur.

Tiagi, Y.D., N.C. Aery, B.P. Singh & C.M. Mathur. 1999. Floristic diversity of the natural vegetation of Rajasthan. *In:* M. Sivadasan & Philip Mathew (Eds.), *Biodiversity Taxonomy and Conservation of Flowering Plants*. Mentor Books, Calicut, pp.1-25.

Tiagi, Y.D. 1951. On a botanical trip to Mount Abu. *Agave* 1: 1-7.

Vyas, L.N. 1965. Vegetation of Parshuram hills and its neighbourhood. *J. Ind. Bot. Soc.* 4: 149-159.

Vyas, L.N. & K.D. Ramdeo. 1964. Vegetation of Kumbhalgarh. *Proc. Nat. Acad. Sci.* 34: 353-360.

Vyas, L.N. & K.D. Ramdeo. 1965. Contributions to flora of Rajasthan from Udaipur. *Ind. For.* 91: 672-675.