

STUDIES ON THE ENDEMIC FLORA OF RAJASTHAN

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Since the pioneer studies on the flora of the region, Rajasthan is reputed to be a meeting ground for the floras of the surrounding regions, with almost no flora of its own. However, a recent survey of the angiospermic flora has revealed that about 1700 species occur in this region. Out of these, 57 species are endemic. Based on distribution ranges of these endemic species, different distribution patterns have been identified. The contribution of the dominant families and genera of this region towards endemism has been discussed.

Keywords : Endemism: Rajasthan flora.

The State of Rajasthan occupies an area of 3,42,274 sq.km. in the region 23°3' to 30°12'N lat., and 69°30' to 78°7' E long. The region is bisected by the Arvalli hill ranges running north-east to south-west. These hills form an ecological continuum between the Himalayas and the high altitude regions of the peninsula. To the west of the Aravallis, there is a semi-arid zone which lies parallel to these hills. Further west there is the arid tract of the Indian Desert which is the eastern-most part of the Saharo- Thar Desert. The region lying to the east of the Aravallis is, phytogeographically, a part of the Gangetic Plain. Therefore, by virtue of its location, the flora of this region represents, to a great extent, the native flora of the surrounding regions.

The angiosperm flora of Rajasthan comprises 1652 native species and 67 alien species. It has been found that 57 species have comparatively restricted distribution ranges. Since none of these species appears to be characteristic of two or more floristic regions of the

country, they have been termed 'endemic' in the present study. These species occur in the whole or part of the State and in regions confluent with it. Based on their present distribution, several patterns have been identified :

1. Species distributed generally over the area but not extending beyond its administrative boundaries : *Anogeissus coronata*, *Hydrilla polysperma*, *Melhanium magnifolia* and *Pulicaria rajputanae*.

2. Species occurring in Pakistan (Sind, Baluchistan), Rajasthan, Gujarat and Punjab : *Abutilon pakistanicum*, *Alysicarpus heterophyllus*, *Ammania desertorum*, *Aristida hystricula*, *Bergia aestiva*, *Caralluma edulis*, *Convolvulus indicus*, *Convolvulus stocksii*, *Eriocaulon solyanum*, *Euphorbia clarkeana*, *Heliotropium calcareum*, *Hibiscus amblyocarpus*, *Pluchea arguta*, *Pulicaria boissieri*, *Pluchea wallichiana*, *Sericostoma pauciflorum*, *Tephrosia falciformis* and *Tribulus rajasthanensis*.

3. Species occurring in the Indian Desert only : *Cenchrus, minutiburensis*

Cenchrus rajasthanensis, *Convolvulus blatteri*, *Euphorbia jodhpurensis*, *Farsetia macrantha* and *Ziziphus truncata*.

4. Species occurring in Rajasthan and north-west Himalayas : *Angelica glauca* and *Pimpinella acuminata*.

5. Species occurring in Rajasthan, Gujarat and North-west Maharashtra : *Clitoria biflora*, *Desmodium ritcheii*, *Exacum pumilum*, *Indigofera dalzellii*, *Ischaemum bombaiense*, *Lepidagathis bandraensis*, *Nepeta bombaiensis*, *Senecio bombayensis*, *Senecio hewrensis* and *Vigna dalzelliana*.

6. Species occurring in south-east Rajasthan and North-west Maharashtra : *Atylosia sericea*, *Blumea eriantha*, *Isachne elegans*, *Ischaemum diplopogon*, *Lavandula gibsonii*, *Lepidagathis lutea*, *Phyllanthus scabrifolius*, *Pimpinella involucrata*, *Pseudodichanthium serrafalcoides* and *Tripogon pauperculus*.

7. Species occurring in Mt. Abu only : *Dicliptera abuensis*, *Lindernia bracteoides*, *Lindernia micrantha*, *Oldenlandia clausa* and *Strobilanthes hallbergi*.

8. *Eriocaulon polycephalum* occurs in Banswara district and Pachmarhi, alone.

9. *Indigofera angulosa* is recorded from Rajasthan and Bundelkhand only.

Based on the observations, the following generalisations are postulated.

The largest families in the flora of Rajasthan are Poaceae (8), Fabaceae (8), Asteraceae (7), Acanthaceae (4), Cyperaceae (0), Euphorbiaceae (3),

Scrophulariaceae (2), Convolvulaceae (3), Malvaceae (2), Rubiaceae (1) and Lamiaceae (2), all these families except Cyperaceae contribute endemic species (the numbers in parenthesis indicate endemic species of the family).

The genus *Cyperus* with 45 species is the largest genus in the flora of Rajasthan, yet it does not have any species endemic to this region. Only 4 endemic species are contributed by genera having more than 20 species, 25 endemic species belong to genera with 6 to 20 species, 28 endemic species are contributed by genera having less than 6 species in Rajasthan. Endemism in the flora of Rajasthan amounts to 3.5 per cent. This low percentage of endemism can be explained on the basis of absence of physical isolation from surrounding regions. Although endemic species are known from many localities in Rajasthan, at least two regions emerge as centres of endemism viz., the Indian Desert and the hill of Mt. Abu in Sirohi district. The desert region of Jodhpur and Jaisalmer districts, which lies at the eastern limit of the Saharo-Thar Desert, is a centre of endemism, as it harbours 22 of the aforementioned endemic species. On the other hand is the hill of Mt. Abu which is the place of confluence of the Himalayan and Peninsular elements, yet it is a centre of endemism where 23 endemic species occur.

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