

Floristic study of Kaprada's hilly forest in South Gujarat

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SUMMARY

Floristic studies help us to assess the plant wealth and its potentiality of any given area. Floristic studies also help us to understand the basic aspects of biology such as speciation, isolation, endemism and evolution. Flora of any area is not fixed up. It changes from time to time. Various ecological factors, mostly biotic, change the floristic components. The total number of species may be changed; dominant species may be replaced with other species; the floristic composition, *i.e.*, family: genus: species ratio may be changed. Kaparada hilly forest is selected for the floristic studies. Whole area is rich in plant diversity. Our aim was to survey the area on basis of plant diversity. The area was previously explored only by Reddy (1987). After 1987 there is no information as to what is the present status and flora of the area. A total of 839 angiosperms belonging to 508 genera and 123 families have been collected from the region.

Key Words : Floristic study, Flora of Kaparada, Ethnobotanical study

How to cite this article : Rao, Vishal H., Gohil, T.G. and Thakor, Alpesh B. (2013). Floristic study of Kaprada's hilly forest in south Gujarat. *Internat. J. Plant Sci.*, 7 (2) : 100-102.

Article chronicle : Received : 04.05.2012; Revised : 09.09.2012; Accepted : 08.11.2012

Valsad district in South Gujarat is situated in heavy rainfall zone so it is having good biodiversity. This district is having five taluka- Valsad, Pardi, Dharampur, Kaprada and Umbergaon. Kaprada taluka which is separated from Dharampur taluka in 1997 is not so far studied. The taluka of Kaprada is separated from Dharampur on 15th October, 1997.

Kaparada taluka is situated on 20.43' – 20.13' North latitude and 73.42' – 73.01' East longitude. Its North boundary is shared with Dharampur taluka, North-West boundary with Pardi taluka while East and South East boundary with Maharashtra State and South-West boundary with Silvassa and Dadra and Nagar Haveli. Its geographical area is 936.62 Sq. km. and forest area is about 476.58 Sq. kms. according to State government of Gujarat which is 50 per cent of the geographical area. It shows how the area is rich by plant diversity. Kaprada taluka is having Par, Kolak and Damanganga rivers to keep it green whole the

year.

Kaparada is divided into two zones – the Talat and the Dungar. Towards the east this taluka has a region where the land bears much dissected and poorer appearance. Deeply furrowed streams and river zigzagging through the low hills are a common sight. The hills and slopes are covered with forest, once dense but a good deal depleted now due to indiscriminate felling. The region is shaped like a plateau has quite a few high hills with lofty peaks. This “Dungar” region is the home to Koknas and the Warlis – two schedule tribes inhabiting majority of the taluka. The taluka belongs to the Sahyadri hills stretching southwards making the land scape to be dominated by a chain of flat topped hills. Due to basaltic formation the soils are red loam and black soil, which are heterogamous in colour. On piedmont slopes the soils, red in colour, have shallow sollum depth. Soil fertility in general is not a constraint.

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MATERIALS AND METHODS

The study area has been thoroughly surveyed in all seasons to procure maximum collections and their variants. The fieldwork consisted of collection of plant specimens for herbarium, observation on the habit, habitat, phenology and distribution. The herbarium specimens were processed with

mercuric chloride-alcohol saturated solution. All the herbarium specimens were deposited in the herbarium house of B. K. M. Science College, Valsad. Plants were identified mainly with the help of standard floras. The plants were collected season wise and during the collection photographs were taken. Ethnobotanical uses were collected by interviewing elder tribal, local medicine man and also by personal observations. Data on climatic factors, tribal populations, land use pattern etc., have been obtained from district gazetteers, working plans of taluka panchayat, Gram panchayat and other secondary sources.

RESULTS AND DISCUSSION

A total of 839 angiosperms belonging to 508 genera and 123 families have been collected from the region. The genera to species ratio was 1: 1.65.

The ratio between monocots and dicots species was 1: 2.76; between monocots and dicots families was 1: 4.59 and between monocots and dicots genera was 1: 3.26. Out of the total 123 families, 57 families were represented by one genera each. *i.e.*, monogeneric families in the area. Monocotyledons were represented by 223 species out of which Poaceae and Cyperaceae were dominant, representing 101 and 42 species, respectively.

It is interesting to note here that the proportion of genera to species in the entire country is 1:7 (Bedi, 1968). The ratio of genera to species in the selected area was 1: 1.65. This confirms or rather supports the general rule that within the same floral region the smaller the area, the smaller is the genera to species ratio.

A list of dominant families of the study area has been prepared. The table shows the position of different families in the study area and their respective positions in order of dominance. The number of Leguminosae species includes those given for family Fabaceae, Caesalpiniaceae and Mimosaceae. Among monocots Poaceae occupy highest position (101 species), followed by Cyperaceae species (42).

The table below gives the account of ten dominant families in the study area. The largest family being Leguminosae with 123 species (Fabaceae + Caesalpiniaceae and Mimosaceae).

New record plants from research area :

During the research work 4 plants were found as new record from research area. They are as given below:

- *Stephania japonica* (Thunb.) Miers. Menispermaceae
- *Aeschynomene americana* L. Fabaceae
- *Syzygium rubicundum* Wight. and Arn. Myrtaceae
- *Scurrula parasitica* L. Loranthaceae.

Table 1 : Flora of Kaprada's hilly forest

Group	Dicots		Monocots		Total
	Number	Per cent	Number	Per cent	
Families	101	82.12	22	17.88	123
Genera	389	76.57	119	23.43	508
Species	616	73.42	223	26.58	839

Table 2: Ratio between monocots and dicots

Group	Family	Genus	Species
Polypetalae	58	175	310
Gamopetalae	29	158	216
Apetalae	14	56	90
Dicot total	101	389	616
Monocot total	22	119	223
Total	123	508	839

Table 3 : Plant group

Group	Polypetalae	Gamopetalae	Apetalae	Monocot
Herb	115	134	34	202
Undershrub	30	13	08	03
Shrub	31	16	27	06
Tree	79	31	20	04
Climber	37	03	00	02
Twiner	18	19	01	06

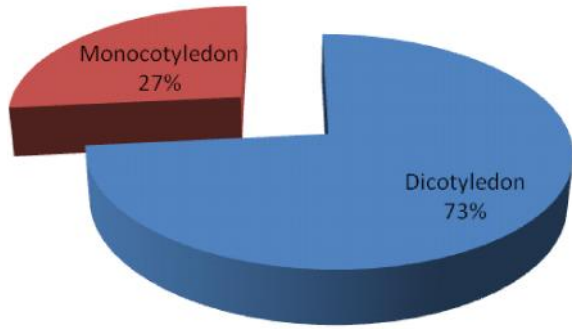


Fig. 1: Plants group

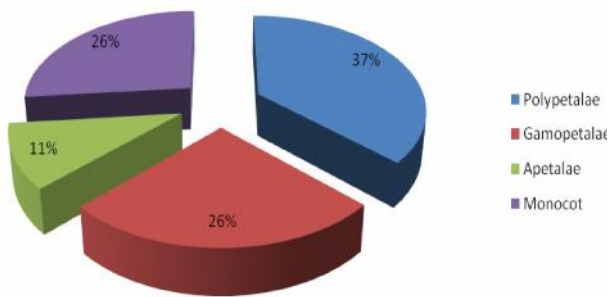


Fig. 2: Plants group

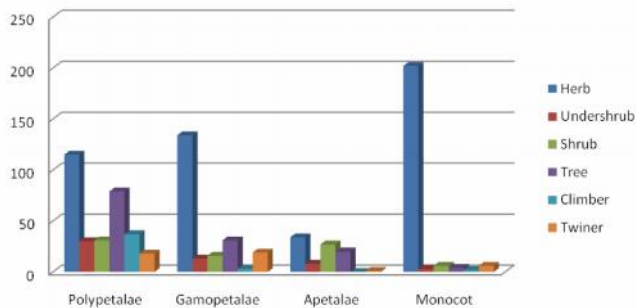


Fig. 3: Habit of plants

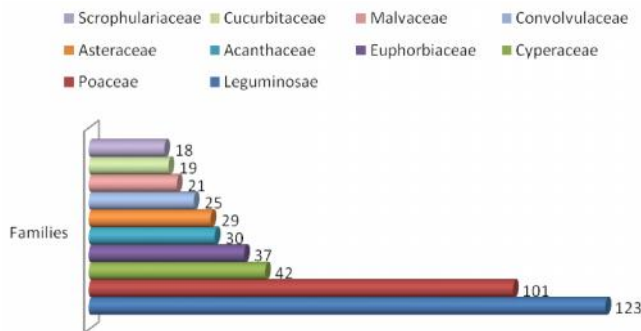


Fig. 4: Dominant families

Sr. No.	Family	No. of species
1.	Leguminosae	123
2.	Poaceae	101
3.	Cyperaceae	42
4.	Euphorbiaceae	37
5.	Acanthaceae	30
6.	Asteraceae	29
7.	Convolvulaceae	25
8.	Malvaceae	21
9.	Cucurbitaceae	19
10.	Scrophulariaceae	18

REFERENCES

Bentham, G. and Hooker, J.D. (1862-1883). *Genera Plantarum*. 1 (3). LONDON.

Cooke, T. H. (1908). *The flora of presidency of Bombay*. 1(3) (Reprinted. Ed. In 1958). CALCUTTA, INDIA.

Hooker, J. D. (1872-1897). *The flora of British India*. London. Vols I-VII.

Parabia, M. H. (1974). A contribution to the cyperaceae of Gujarat state (Floristics, trichomes, glume anatomy and palynology). M.Sc.Thesis, Sardar Patel University, Vallabh Vidyanagar, GUJARAT (INDIA).

Patel, R.M.(1971). *The flora of Bulsar and its environs*. M.Sc. Thesis, Sardar Patel University, Vallabh Vidyanagar, GUJARAT (INDIA).

Reddy, A. S. (1987). *Flora of Dharampur forests*. M.Sc. Thesis, Sardar Patel University, Vallabh Vidyanagar, GUJARAT (INDIA).

Reddy, A.S. (1989). An ethnobotanical survey of some wild plants from Dharampur forests in Gujarat state. In: Proceedings of All India Symposium on the Biology and Utility of Wild Plants. Dept. of Biosciences, South Gujarat University, Surat (GUJARAT) INDIA pp. 218-235.

Shah, G. L. (1978). *The flora of Gujarat State*. Vols I and II. Registrar, Sardar Patel University, Vallabh Vidyanagar, GUJARAT (INDIA).

Sharma, B.D. *et al.* (1996). Flora of Maharashtra State, Monocotyledons. Flora of India. Series 2. BSI, CALCUTTA (INDIA).

Singh, N. P. *et al.* (2000.). Flora of Maharashtra State. Dicotyledons. Vols. I and II. Flora of India. Series 2. BSI. CALCUTTA, (INDIA).

