

Phytogeographical elements and analytical aspects of flora of Patnadevi forest, Chalisgaon Taluka, (MS), India

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Manuscript details:	ABSTRACT
<p>Available online on http://www.ijlsci.in</p> <p>ISSN: 2320-964X (Online) ISSN: 2320-7817 (Print)</p> <p>Editor: Dr. Arvind Chavhan</p> <p>Cite this article as: Nikam Sadhana S (2015) Phytogeographical elements and analytical aspects of flora of Patnadevi forest, Chalisgaon Taluka, (MS), India, <i>International J. of Life Sciences</i>, A3:147-149.</p> <p>Acknowledgements The author is thankful to Dr. S.S. Yadav, Z.B. Patil College, Dhule for providing facilities and encouragement.</p> <p>Copyright: © Author, This is an open access article under the terms of the Creative Commons Attribution-Non-Commercial - No Derives License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.</p>	<p>Phytogeographical elements are fundamental for understanding flora of any area. Geographical elements are the real base for subdividing flora into different floral elements. It is clear that floristic work is incomplete without an account of floral elements of an area. There are various types of floral elements occur in Patnadevi forest. These floral elements are such as Indian, Indo-Malayan, Tropical African - Indian, Indo-Malayan Chinese, Tropical Asian, Cosmopolitan, Indo-Malayan-Australian, Pantropics, Paleotropics, Exotic, Mediterranean, Perso - Arabian and Sudano-Deccanian in decreasing order and their percentage is also different. Introduction of Exotic elements and their occurrence is more and it is an alarming signal to the natural flora. Analysis of a flora of Patnadevi forest in such a way indicates the status of a forest and such type of analysis is also essential for origin and development of a flora.</p> <p>Keywords: Floral elements, Patnadevi forest, Mediterranean, exotic, alarming signal.</p>
	<p>INTRODUCTION</p> <p>Forests are the main components on the earth hence they act as a life supporting system. But since the last few decades the biodiversity of these forests is disappearing at an alarming rate. Many important plants are threatened and becoming rare and even some are on the verge of extinction. To stop exploitation, an appropriate strategy for conservation and sustainable utilization of plant resources is urgent. To launch any policies and programmes for conservation purposes, a detailed assessment of floristic diversity at three steps: generic, species and ecosystem is essential.</p> <p>The study area of Patnadevi forest is located in the Satmala ranges of the Sahyadris, a part of the northern Western Ghats. The Western Ghats is one of the well-known world's biodiversity hotspots. The present study site is within the Western Ghats of India, hence the present work is an attempt to know the status of vegetation in Patnadevi forest.</p>

MATERIALS AND METHODS

Field work: The study area was demarcated with the help of map. Patnadevi forest area is 6355.39 hectare about 64 sq. km and it is divided in to 18 compartments. Quadrats of 10x10m. were laid down randomly in each of the compartment of forest area, so that the quadrat represents almost all species in the area. Altogether 64 quadrats were laid for the trees and shrubs in the entire area studied. Thus the sampling was done for a total area 64 sq. km. in the forests. All species covered by the quadrats were recorded. Commonly followed methods for floristics are sampling technique has been adopted. We have followed the random sampling technique.

Laboratory work: Extensive periodic floristic survey was carried out for entire study area. Various life forms were collected. Specimens were

sorted out into respective species and then genera and families. All the families are arranged according to Bentham and Hooker’s system of classification. Collected plant species identified by using related literature “Flora of Presidency of Bombay”, vol I, II, and III. (Cooke, 1958), Flora of Maharashtra state Dicotyledons Vol 1 (Singh and Karthikeyan, 2000), Flora of Maharashtra state Dicotyledons Vol. 2 (Singh *et al.*, 2001), Flora of Maharashtra state Monocotyledons (Sharma *et al.*, 1996), Flora of Marathwada (Naik, 1998) and other available literature.

RESULTS

A critical study of the distribution of various species in Patnadevi forest shows that in all 637 plant species are recorded out of which 260 species are reported first time. Total 13 floral elements are observed in study area.

Table 1 : Number and Percentage of Floral elements of Patnadevi Forest.

Sr. No.	Floral Elements	Number	Percentage
1	Indian	188	29.51
2	Indo-Malayan	161	25.27
3	Tropical African - Indian	75	11.77
4	Indo - Malayan - Chinese	41	6.43
5	Tropical Asian	38	5.96
6	Pantropics	28	4.39
7	Cosmopolitan	24	3.76
8	Indo-Malayan-Australian	23	3.61
9	Exotics	21	3.29
10	Paleotropics	14	2.19
11	Mediterranean	9	1.41
12	Perso-arabian	8	1.25
13	Sudano-deccanian	7	1.09

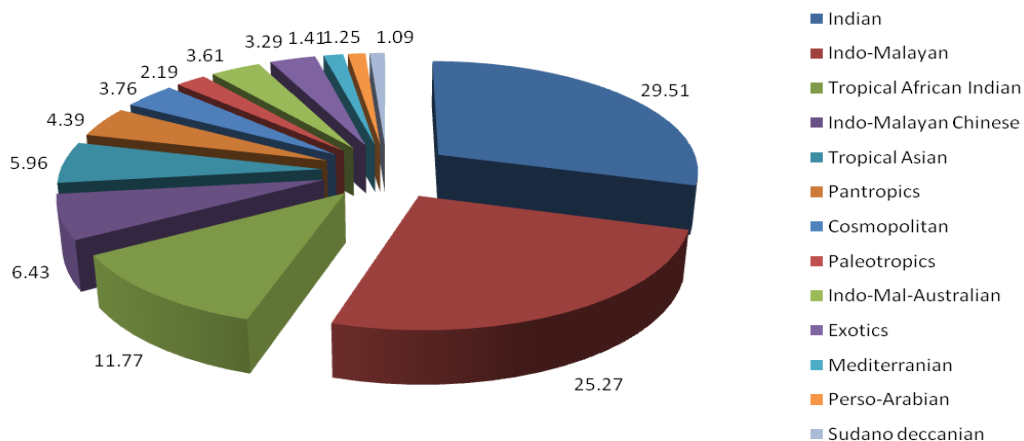


Fig. 1: Floral Elements

Various exotic plant species have naturalized in the area along with natural flora. The chief centers of origin are Mexico, South America and South Africa. The common exotic plants are *Adansoniadigitata* L., *Alternanthera pungens* Kunth, *Alysicarpus bupleurifolius* (L.) DC., *Ancistrocladus heyneanus* Wall, *Argemone mexicana* L, *Cassia tora* L, *Cassia occidentalis* L, *Cardiospermum helicabum* L., *Casuarina equisetifolia* L. *Ceropegia hirsuta* Wight & Arn., *Chrysanthemum americanum* L., *Clerodendrum multiflorum* (Burm.f.) O. Ktze., *Euphorbia heterophylla* L., *Jatropha curcus* L., *Jatropha gossypifolia* L., *Lantana camara* L., *Parthenium hysterophorus* L., *Parkinsonia aculeata* L., *Tridax procumbens* L., *Vaccaria pyramidata* Medik., *Zornia gibbosa* span. etc.

Wulff (1943) considered that, the geographical elements are fundamental for understanding flora of study area. Meher -Homji and Misra (1973) explained that origin and development of a flora is based on analysis of given flora of study area. It is clear that no floristic work is complete without an account of floral elements of an area. From the table 1, it will be seen that, the Indian constitutes the largest number (29.51%) followed by Indo-Malayan elements. (25.27%), Tropical African Indian constitute(11.77%) , Indo - Malayan - Chinese (6.43%), Tropical Asian (5.96%),Pantropics (4.39%),Cosmopolitan (3.76%), Indo -Malayan - Australian (3.61%),Exotics (3.29%), Paleotropics (2.19%), Mediterranean (1.41%), Perso-arabian (1.25%), and Sudano-deccanian (1.09%) Introduction of exotic elements and their occurrence is more (3.29%) is alarming signal to the natural flora.

CONCLUSION

The most common floral element is the Indian (29.51%) followed by Indo - Malayan (25.27%). Study area is also represented by other floral elements like Tropical - African - Indian, Indo-Malayan-Chinese, Tropical Asian, Pantropics, Cosmopolitan, Indo-Malayan- Australian, Exotics, Paleotropics, Mediterranean, Perso- Arabian and Sudano-Deccanian in decreasing order.

Indian floral elements are most dominant 29.51% but introduction of other floral elements in proportion with Indian floral elements and also exotic elements & their occurrence in study area has threatened the natural flora. For restoration of plant diversity in future, reorientation of local

indigenous community is necessary. Hence to maintain natural flora of Patnadevi forest preventive control measures should taken into consideration.

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