

**ENDEMIC SPECIES OF FLOWERING PLANTS OF PENINSULAR INDIA OCCUR
IN SATPUDA MOUNTAIN RANGES OF NANDURBAR AND DHULE DISTRICTS,
MAHARASHTRA, INDIA WITH SPECIAL REFERENCE TO FAMILY
ACANTHACEAE**

Garud B.D.

P. G. Department of Botany

Jaihind Educational Trust's, Z. B. Patil College, Deopur, Dhule-424002

Mobile: 9423495657, e-mail- balasahebgarud@gmail.com

ABSTRACT

Present paper deals with list of 12 endemic species of flowering plants of Acanthaceae of Peninsular India occur in Satpuda mountain ranges of Nandurbar and Dhule districts.

Keywords: Endemic Species, Acanthaceae

INTRODUCTION

The forest of Satpuda mountain ranges mainly belongs to tropical dry deciduous type (Champion and Seth.1968). Species introduction and extinction are two major biodiversity crises of current millennium (Baharul et.al.2010) When death rate exceeds birth for prolonged duration and species may become endangered and eventually extinct. Many species are facing pressure due to anthropogenic or natural activities. Anthropogenic activities and continuous development due to human activities causes extinction of many important plant species which seriously threatened the ecosystem. Acanthaceae is large dicotyledonous cosmopolitan family distributed mostly the tropical and subtropical area of world, containing 346 genera and about 4300 species all over the world. Hutchinson (1969) considered it as the most advanced family, which consist large number of ornamental and high therapeutic application mainly due to alkaloid present in the leaves (Alka et.al.2016). All the genera of the family are shrub, undershrub and annual or perennial herbs including only one perennial climbing herb *Thunbergia laevis* Nees (Sharma,2004) The order of ten most dominant families of study area and their comparison with Dhule district, Maharashtra, Bombay presidency and Gujarat State. The family Acanthaceae occupies 5th position in study area and Gujarat State (Shah,1978 , Varghese, M. 1988, Garud,1999, Patil,2003) 3rd position in Bombay Presidency,(Cooke,1901-1908) and 4th position in Maharashtra

(Mahabale, 1987). In the present study area the family Acanthaceae consist 20 genera and 41 species out of these 12 endemic species of flowering plants of Peninsular India occur in Satpuda mountain ranges of Nandurbar and Dhule districts (Table-1)

GEOGRAPHY, TOPOGRAPHY, GEOLOGY AND CLIMATE

Geography

Nandurbar district lies in the North West part of Maharashtra State. Nandubar district was formed in the year 1998 by dividing Dhule district. It came into existence with effect from 1st July 1998. The present Nandubar and Dhule districts were referred as West Khandesh. Till 1906 this region of Maharashtra was known as Khandesh. In the year 1906, it was separated into 'East Khandesh' and 'West Khandesh' with Jalgaon and Dhule as head quarters respectively.

The area studied lies between 73° 51' to 75° 12' east longitude and 21° 14' to 22° 02' north latitude and forms part of Nandubar and Dhule districts of Maharashtra State. It comes under the North Dhule and Mewasi forest divisions of Dhule Forest Circle. North Dhule forest division comprises of Akrani, Shahada and Shirpur tahsils of Nandubar and Dhule districts. Mewasi forest division comprises of Taloda and Akkalkuwa tahsils of Nandubar district. The Satpuda mountain range of North Maharashtra covers an area of 12, 143 sq. kms.

Topography

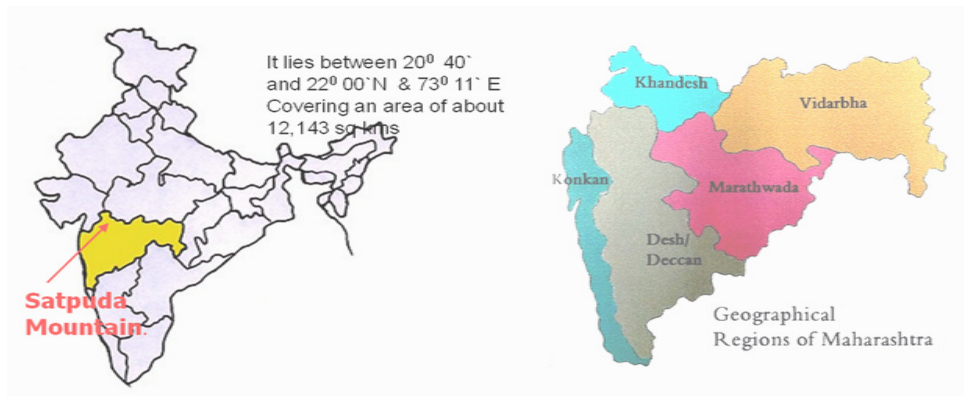
The adjoining areas of Western Khandesh (Situating in the Nandurbar and Dhule districts of Maharashtra State–Map) and the Satpuda Mountains have an interesting range of landforms. The Narmada, the longest west-flowing river passes through a rift valley marks the northern and north-western boundary of Nandurbar district, while River Tapi (Tapti), the second largest river draining westward of the Peninsula passes through the middle of Nandurbar and Dhule districts. These two river valleys in the northern part of the state are separated by a series of hills/mountains called the Satpura/Satpuda range. The study area is a part of a 900 km long mountain chain stretching from the eastern part of Gujarat to Mahadev Hills of Chaurgarh in Madhya Pradesh (Mahabale, 1987). The central part of the Satpuda, however, widens out into Mahadeo Hills in the north and the Gawilgarh Hills in the south (Legris & MeherHomji, 1977). The western side of the range, which is locally called Rajpipla hills starts from Ratanpur of Gujarat state. Satpuda Mountain is located along the southern side of the Vindhyan range and is stretching almost parallel to it.

Geology

The study of the geology of a country or a region is based on the interrelationships between different groups of rocks and the conditions responsible for their formation (Venu et al., 1996). The Indian subcontinent in general is believed to have its origin from the super continent Gondwanaland, which also included Africa, Antartica, Madagascar, Australia and South America.

Climate

Climate of Nandubar and Dhule districts is dry and generally very hot except in monsoon and winter season. Normally summer season starts from March to May, monsoon from June to October and winter from November to February every year. The Western and Eastern Ghats on the western and eastern coasts play an important role in controlling the climate of the Satpuda and help ensuring considerable amount of orographic rains on their windward sides. The movement of wind in the study area and elsewhere in Maharashtra during summer and winter is from sea to land and from land to sea respectively.



Map showing Satpuda Mountain ranges in Dhule and Nandurbar districts

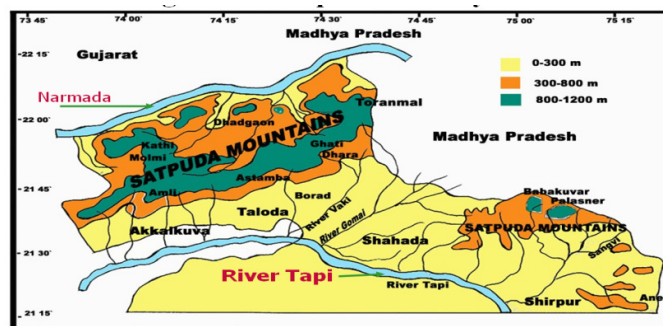


Table-1: Endemic Species in the study area

1	<i>Asystasia</i>	<i>mysurensis</i>	Acanthaceae
2	<i>Barleria</i>	<i>cuspidata</i>	Acanthaceae
3	<i>Barleria</i>	<i>gibsoni</i>	Acanthaceae
4	<i>Carvia</i>	<i>callosa</i>	Acanthaceae
5	<i>Dyschoriste</i>	<i>dalzellii</i>	Acanthaceae
6	<i>Eranthemum</i>	<i>roseum</i>	Acanthaceae
7	<i>Gymnastachyum</i>	<i>latifolium</i>	Acanthaceae
8	<i>Haplanthodes</i>	<i>neilgherryensis</i>	Acanthaceae
9	<i>Haplanthodes</i>	<i>plumosa</i>	Acanthaceae
10	<i>Haplanthodes</i>	<i>tentaculata</i>	Acanthaceae
11	<i>Haplanthodes</i>	<i>verticillata</i>	Acanthaceae
12	<i>Neuracanthus</i>	<i>sphaerostachyus</i>	Acanthaceae

Description of Taxa:

Each taxon with latest valid name is followed by vernacular name/s, habit, few morphological characters, flowering and fruiting period, distribution and world distribution status

***Asystasia mysurensis* (Roth) T.**

Herbs, stem quadrangular, grooved.

Fl. & Frts. : August-December.

Distri. : Common in open areas. Agola, Nimbari,

World Distri. : Indo-Malayan

Barleria cristata* L. var. *cristata

Herb, stems densely hairy at the nodes

Fl. & Frts. : December-May.

Distri. : Common in open places. Nigdi, Umarda,

World Distri. : Indo-Burmese-Chinese

***Barleria gibsoni* Dalz**

Gura

Herb, branches glabrous with distant nodes.

Fl. & Frts. : September-March.

Distri. : Common in waste land. Chinchkhedi, Wakaner, .

World Distri. : Indian

***Carvia callosa* (Wall.) Bremek**

Karvi

Shrubs; stems rigid.

Fl. & Frts. : September-June.

Distri. : Common on hill slopes and valleys. Toranmal, Mundalwad,

World Distri. : Indian

***Dyschoriste dalzellii* (T. And. ex Bedd.) O. Ktze**

Shrub, glandular-pubescent; stems subquadrangular

Fl. & Frts. : June-December.

Distri. : Occasional on hill slopes. Dab, Pimplibari,

World Distri. : Indo-Malayan

Eranthemum roseum (Vahl) R. Br. Dasamuli.

Herbs.

Fl. & Frts. : October-March.

Distri. : Common in open places. Balwadi, Agola,

World Distri. : Indian

Gymnostachyum latifolium (Dalz.) T. And.

A undershrub; stem erect, quadrangular.

Fl. & Frts. : November-March.

Distri. : Very few. Dhamanmal,

World Distri. : Indo-Malayan

Haplanthodes neilgherryensis (Wight) R. B. Majumdar

Herbs, prostrate, slender, annuals.

Fl. & Frts. : December-June.

Distri. : Occasional in wet areas. Wakaner,

World Distri. : Indian

Haplanthodes plumosa (T. And.) Panigr. & G. C. Das

Herbs, suberect or prostrate, wooly tomentose.

Fl. & Frts. : January-June.

Distri. : Occasional in open places. Bardi, Bamani,

World Distri. : Indian

Ecological notes: Rare in Satpuda of Khandesh region.

Haplanthodes tentaculata (L.) R. B. Majumdar

Herbs, erect; stems more or less quadrangular; cladodes slender

Fl. & Frts. : December-May.

Distri. : Occasional. Chillare, Nimbari, .

World Distri. : Indian

Haplanthodes verticillata (Roxb.) R. B. Majumdar Kateri.

Herbs, robust, glandular

Fl. & Frts. : June-December.

Distri. : Common on hill slopes of dry deciduous forest. Kakadmal, Hunda,

World Distri. : Indian

Ecological notes: Common in thickets of W. Ghats but in Satpuda it is not common.

Neuracanthus sphaerostachyus (Nees) Dalz.

Herb, stems erect, quadrangular, more or less scabrous-pubescent.

Fl. & Frts. : September-June.

Distri. : Occasional on hill slopes. Bhusa, Bardi,
World Distri. : Indian

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