International Journal of
Life Sciences
International Peer Reviewed Open Access Refereed Journal

Int. J. of Life Sciences, 2018; 6 (4): 1026-1030
ISSN:2320-7817(p) | 2320-964X(o)

Original Article Open Access

Rare plants of Bhandara District (MS), India

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Manuscript details:

Received: 27.10.2018
Revised: 19.11.2018
Accepted: 23.12.2018
Published: 31.12.2018

Editor: Dr. Arvind Chavhan

Cite this article as:
Humane Pitambar (2018) Rare plants of Bhandara District (MS), India, *Int. J. of Life Sciences*, Volume 6(4): 1026-1030.

Available online on
http://www.ijlsci.in
ISSN: 2320-964X (Online)
ISSN: 2320-7817 (Print)

ABSTRACT

In the floristic exploration of the Bhandara district, total 906 plants species of angiosperms were collected and studied from 2005 to 2011. The district is full of diverse angiosperm vegetation spread all over the areas from human habitat to the forest flora. Of these all type of angiosperm plants were studies, from herbs, shrubs, trees and climbers, some of which found rare i.e., are available in only particular area in limited number and altogether absent in others parts of the district. Such plant species of angiosperms are considered as rare plants of Bhandara district. Total 114 plants of which 97 plants from dicotyledons and 17 plants from monocotyledons, found rare in the district out of 906 plant species studied.

Keywords: *Bhandara District, Angiosperms, rare plant species, forest flora*

INTRODUCTION

Bhandara is the word derived from '*Bhannara*' of Ratanpur of district Bilaspur, Chhattisgarh. Excavation has confirmed the historical status of Bhandara. In the stone inscription of Ratanpur, Bhandara district was mentioned in the 11th century. In 1956, with the reorganization of states, Bhandara was transferred from then Madhya Pradesh to Bombay Province and in 1960 with the formation of Maharashtra; it became a district of the state. The district is popularly known as '*Lake District*' as there are 3648 large and small irrigation tanks, scattered throughout the district. Administratively the district is divided into two subdivisions and seven talukas and 878 villages.

It is situated in eastern part of Vidarbha region of Maharashtra, in between 20.39 to 21.38 degree North Latitude and 70.27 to 80.42 degree East longitudes. It has an undulating topography with an altitude range from 150 to 600 m with geographical area over 4217 Sq. Kms. which is about 1.37% of the total area of Maharashtra State. The topography of the district can be divided into two parts-the hilly tracts and the lowlands. There are a number of hill ranges found in the district. The mean minimum and maximum temperature in the district is 20.2 ^{o}C and 33.5 ^{o}C respectively, during the whole year and the average annual rainfall in the district is 1,373.03 mm. The flora of any area depends upon the various factors, like, temperature, rainfall,

humidity, soil type, topography, etc. When the conditions of the area become unfavourable to particular species, there is decline in growth and development of the species.

Also there is adverse effect of such changed environmental conditions on reproductive potential of the species. This result into decrease in the total number of individuals of the species, leads to make it rare or endangered. This paper deals with such rare plant species found during the floristic exploration of the district from 2005-2011. During this period total 906 plant species of angiosperms were studied of which, 114 plants species found rare, this is estimated as 0.13% of the total available flora of the district. Of these 114 plant species, 97 belong to dicotyledons and 17 from monocotyledons.

MATERIAL AND METHODS

For the purpose of this study extensive and intensive visits were arranged to various regions of the district in different seasons. The plants were observed in their natural habitat and the phenological data were collected and recorded in the field diary. The multiple specimens of plants in flowering and fruiting stage were collected, preserved and their herbarium sheets were prepared. The field notes were incorporated with the specimens on the herbarium sheets.

The digital photographs of some unique plants were taken with their unique characteristics that can help in identifying the plants in the natural habitat.

For this study, the plants were identified with the help of available literature in the form of national and local floras and classified them into frequent or common, infrequent or occasional and rare, based on their occurrence in the district. All the specimens of the taxa have been deposited in the herbarium of Department of Botany, Dharampeth M. P. Deo Memorial Science College, Nagpur (MS), India.

RESULT AND DISSCUSION

The present paper deals with 114 plant species of angiosperms which are about 0.13% of the flora of Bhandara district. This includes 97 species from dicotyledons and 17 species from monocotyledons. On the basis of habit of these plants, they are categorized as herbs (59), shrubs (10), trees (24) and climbers (21). This is also shown in the Figure. 1 given below:

Figure 1: Distribution of plant species according to habit

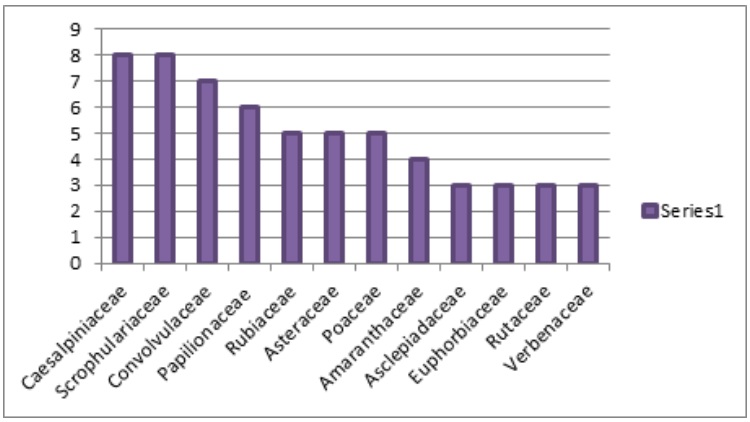

Figure 2: Families with number of plant species found rare in the district

Photo plate 1:

Of the total 114 plant species studies as rare plants of the district belongs to 101 genera of 55 families of angiosperms which includes 46 families of docotyledons and 10 families of monocotyledons. The families with maximum number of plant species found rare are given in the Figure 2 given below. The families caesalpiniaceae and scrophulariaceae with eight species each, seven species from family convolvulaceae and papilionaceae with six species each, asteraceae, and rubiaceae and poaceae with five species each, four species from amaranthaceae and three species each from asclepiadaceae, euhorbiaceae, rutaceae & verbenaceae were found rare in the district. While two species each from acanthaceae, apocynaceae, bignoniaceae, combretaceae, cyperaceae, lamiaceae, moraceae, orchidaceae, ulmaceae & zingiberaceae and one species each from alismataceae, anacardaceae, apiaceae, aracaceae, araceae, aristolochiaceae, barringtoniaceae, boraginaceae, brassicaceae, bromeliaceae, campanulaceae, capparaceae, caryophyllaceae, celastraceae, commelinaceae, cucurbitaceae, dioscoreaceae, liliaceae, lobeliaceae, lythraceae, malvaceae, mimosaceae, passifloraceae, polygalaceae, polygonaceae, primulaceae, santalaceae, sapindaceae, symphorematacеae, tiliaceae, turnaraceae, urticaceae and vitaceae.

In this paper, the plant species which are found rare in the district includes nine species as cultivated plants that may be introduced for its usefulness to the human beings and 105 species as wild flora.

Some of the important species which were recorded as rare plant species in the district are, *Celastrus paniculatus* Willd., *Paracalyx scariosus* (Roxb.) Ali, *Solena amplexicaulis* (Lam.) Gandhi, *Vallaris solanacea* (Roth) O. Ktze., *Bidaria cuspidata* (Thunb.) Huber, *Gymnema sylvestre* (Retz.) R. Br. ex Schultes, *Tylophora fasciculata* Buch.-Ham., *Ipomoea sinensis* (Desv.) Choisy, *Symphorema polyandrum* Wight, *Aristolochia indica* L., *Tephrosia senticosa* (L.) Pers., *Rotala verticillaris* L., *Wahlenbergia marginata* (Thunb.) A. DC., *Lobelia alsinoides* Lam., *Glossostigma diandrum* (L.) O. Krtz., *Striga asiatica* (L.) O. Ktze., *Elytraria acaulis* (L. f.) Lindau, *Aerva sanguinolenta* (L.) Bl. Bijdr., *Euphorbia laeta* Heyne ex Roth, *Sagittarria trifolia* L., *Mariscus paniceus* (Rottb.) Vahl var. *roxburghianus* C. B. Clarke, *Atalantia monophylla* (L.) Corr., *Lantana salvifolia* Jacq., *Homonoia retusa* Muell.-Arg., *Kydia calycina* Roxb., *Bauhinia semla* Wunderlin, *Anogeissus acuminata* (Roxb. ex DC.) Guill. & Perr., *Wendlandia heynei* (R. & S.) Sant. & Merch., *Holoptelea integrifolia* (Roxb.) Planch., *Ficus benjamina* var. *nuda* (Miq.) Barrett, etc. (Photo Plate-1)

CONCLUSION

In present study, the rare plants recorded in the district are categorized as wild and cultivated. The cultivated species may be introduced for their economical purposes which are few i.e., nine species. The remaining 105 species were found in restricted areas and or altogether absent in other part of the district. Some of the species like, *Paracalyx scariosus* (Roxb.) Ali, *Vallaris solanacea* (Roth) O. Ktze., *Bidaria cuspidata* (Thunb.) Huber, *Gymnema sylvestre* (Retz.) R. Br. ex Schultes, *Tylophora fasciculata* Buch.-Ham., *Ipomoea sinensis* (Desv.) Choisy, *Wendlandia heynei* (R. & S.) Sant. & Merch., *Anogeissus acuminata* (Roxb. ex DC.) Guill. & Perr., were found in only one place in the district as one or two individuals of the species (Photo Plate 1).

The possible reason behind the decrease in the individuals may be change in environmental factors, pollution, interference of humans with wild habitat or natural ecostystems and also the overexploitation for their economic benefits. To restore the biodiversity for sustainable development, it is important to take care of the nature and ecosystems during the course of development related to the nature.

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