

Diversity of Climber plants of girls college campus Khandwa (M.P.)

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Abstract

Climbers are important component of ecosystem. Climbing habit has evolved independently in several plant families using different climbing methods. With playing an important ecological role the climber plants also contribute as ornamental part of nature, provide habitat to animals and as a source of medicines. In the college campus diversity of wild and cultivated climbers indicate their utility, but it require awareness towards their conservation. The study revealed the presence of 26 species (both wild & planted) with climbing habit in the campus of MLC Government Girls P.G. College, Khandwa (M.P.).

Climber plants are key elements in diversity and productivity structure of any ecosystem. Climbers are conspicuous features of all ecosystem and compete actively with trees for light and space. In order to climb, they have developed a wide range of climbing strategies and specialized structures affix themselves to the supporting structures. Climbers have long flexible stems with abundance of soft tissues that allow for rapid growth and vegetative regeneration. They have extremely efficient vascular system specialized in water conduction and lacking internal structural support. Xylem vessels are wide long and have elevated hydraulic conductivities. These climbers are divided into two groups- woody vines or lianas and herbaceous (non woody) vines.

The present study is made to analyze the diversity of climbers of college campus, as climbers represent a large sector of medicinal and ornamental plants. Climbers are important part of ecosystem and contribute for management of the system. This study will be helpful to students and society to develop awareness for utility and conservation of these beautiful plants of nature.

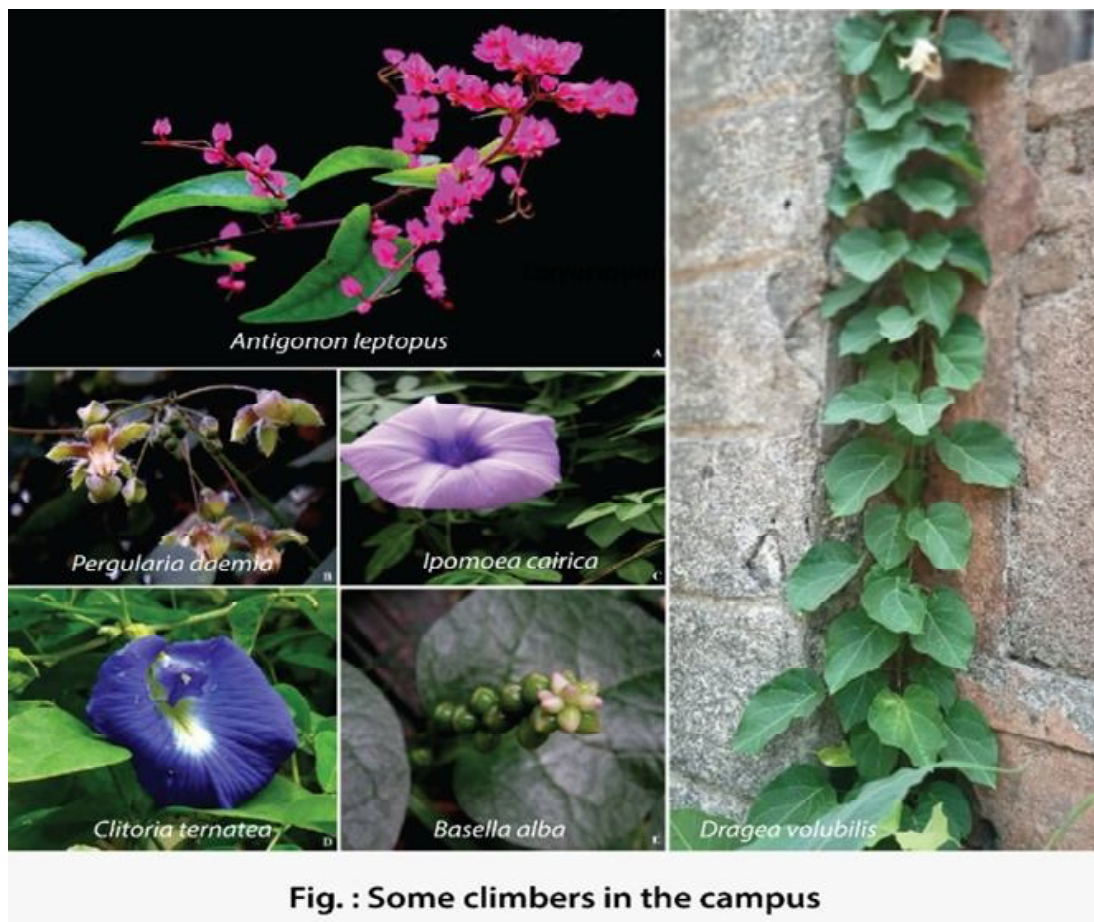
The study was conducted in college campus season wise. The survey was made in every month. The survey involved field work and collecting information for multipurpose use of climbers. The climber plants were identified with the help of relevant literature^{1,5,6}. Information was also collected from local people. The surveyed institute was established in the year 1963 and honored to be named after

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Padamshri Dada Makhanlal Chaturvedi, a renowned poet and freedom fighter. The campus is with a large area with rocky surfaces and black brown soil. District headquarter Khandwa is situated at 21.83° N 76°33' E with a whole dry climate and with 932 mm average rainfall.

Table-1. Climber plants of the campus

S. No.	Plant Species	Family	Category
1	<i>Abrus precatorius</i> L.	Leguminosae	Wild
2	<i>Allamanda blanchetii</i> A.DC.	Apocynaceae	Cultivated
3	<i>Antigonon leptopus</i> Hook and Arn.	Polygonaceae	Cultivated
4	<i>Asparagus officinalis</i> L.	Asparagaceae	Cultivated
5	<i>Basella alba</i> L.	Basellaceae	Cultivated
6	<i>Cissus quadrangularis</i> L.	Vitaceae	Cultivated
7	<i>Clitoria ternatea</i> L.	Leguminosae	Wild
8	<i>Coccinia grandis</i> (L.) voigt	Cucurbitaceae	Wild
9	<i>Cocculus hirsutus</i> (L.) W.Theob.	Menispermaceae	Wild
10	<i>Combretum indicum</i> (L.) De Filippis	Combretaceae	Cultivated
11	<i>Cryptolepis dubia</i> (Burm.f.) M.R.Almeida	Apocynaceae	Wild
12	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Wild
13	<i>Dregea volubilis</i> (L.f.) Benth. ex Hook.f.	Apocynaceae	Wild
14	<i>Epipremnum aureum</i> (Linden & Andre) G.S. Bunting	Araceae	Cultivated
15	<i>Ipomoea cairica</i> (L.) sweet	Convolvulaceae	Wild
16	<i>Ipomoea eriocarpa</i> R.Br.	Convolvulaceae	Wild
17	<i>Ipomoea hederifolia</i> L.	Convolvulaceae	Wild
18	<i>Ipomoea obscura</i> (L.) Ker Gawl.	Convolvulaceae	Wild
19	<i>Ipomoea pes-tigridis</i> L.	Convolvulaceae	Wild
20	<i>Ipomoea quamoclit</i> L.	Convolvulaceae	Wild
21	<i>Momordica charantia</i> L.	Curcubitaceae	Wild
22	<i>Pergularia daemia</i> (Forssk.) chiov.	Apocynaceae	Wild
23	<i>Passiflora foetida</i> L.	Passifloraceae	Wild
24	<i>Teramnus mollis</i> Benth	Leguminosae	Wild
25	<i>Tinospora cordifolia</i> (Thunb.) Miers	Menispermaceae	Wild
26	<i>Vitis vinifera</i> L.	Vitaceae	



Climber plants may represent more than 40% of species diversity in tropical forests. They adapt many methods for climbing, as they twine their stems around a support, which have rough stems or downward pointing bristles to avoid their grip. Some use tendrils, suckers, hooks, thorns, roots or any other method².

In the present study 26 species of climber plants belonging to 21 genera from 14 families were recorded which grow as wild or in the cultivated form. In terms of number of species, the family Convolvulaceae with six

species is the most dominant, followed by Apocynaceae and Leguminosae with four and three species respectively. Climbers represent a large sector of medicinal and ornamental plants and important components of plants diversity. In ornamental climbers nectars are source for honey production. Many plants have specific drugs, as *Asparagus* possess sarsapogenin, shatavarins (I-IV), steroidal saponins, tannins and flavonoids and have antioxidant properties. The other climbers were noted with glycosides, resins, toraxerol, triterpenes, lactones, phenolics, aliphatic

compounds, etc. as ethnomedicinally they are used as antistress, anxiolytic, antimicrobial, cardiostimulant, contraceptive, antidiabetic, hepatoprotective, brain tonic or used in cutaneous infections.

Tinospora cordifolia possesses berberine, gliconin, diterpenoid, lactones, glycosides, choline, magniflorine and tinosporin and used for diabetes, high cholesterol, allergic, rhinitis, and boost the immune system. *Cissus quadrangularis* is used in bone fracture. Leaves of *Ipomoea pes-tigridis* are applied as a poultice for boils and sores⁴.

The campus is dominated by *Antigonon*, and *Tinospora*. The species of *Ipomoea* were abundantly seen season wise. *Dregea volubilis* and *Teramnus mollis* were noted as unique species. Conservation of these plant group is essential to establish their appropriate utilization. Their conservation is possible by propagating them by tubers, stem cutting or by seeds in field in polybags or in pots in garden³. Natural vegetation of any place is

the result of long term interaction between environment and vegetation and influenced by human activities, so proper utilization and conservation is essential for development of a sense towards sustainability.

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