

RESEARCH ARTICLE

Diversity and distribution of Angiospermic climbing plants of Nagpur City, Maharashtra

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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. Chavhan Arvind</p>	<p>Climbing plants i.e. climbers, twiners and lianas are important components of vegetation. To explore the diversity of climbing plants in Nagpur City regular field visits were made. Present study enumerated 110 species of climber, twiner and lianas belonging to 79 genera and 35 various angiosperm families and shows rich diversity.</p> <p>Keywords: Climbers, Lianas, Twiners, Nagpur City.</p>
<p>Cite this article as: Gakhare Pankaj D, Kamble Rahul B, Ugemuge NR and Chaturvedi Alka (2016) Diversity and distribution of Angiospermic climbing plants of Nagpur city, Maharashtra, <i>Int. J. of Life Sciences</i>, A6:59-63.</p> <p>Acknowledgement The author expresses sincere thanks to Prof. & Head, PGTD of Botany, RTM Nagpur University, Nagpur for providing necessary facilities.</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>INTRODUCTION</p> <p>Nagpur, the second greenest city in India and also called as 'Garden City of Maharashtra' and is appropriate to and worthy of being the 'Gateway to the Centre Indian Forest'. The Nagpur city is quite rich and varied in its plant composition. In addition to the natural flora of the city, there are large numbers of plants found either in cultivation or introduced for various purposes at one time or other which have now been naturalized in the area. (Chaturvedi <i>et al</i> 2013). Ugemuge (1986) documented Flora of Nagpur district with 1136 plant species. Recently, Bhuskute (1989, 1990), Thakre and Srinivasu (2012a, 2012b), Kamble <i>et al.</i>, (2013-a, 2013-b, 2013-c) Thakre and Srinivasu (2013) and Kamble and Chaturvedi (2014) and Kamble <i>et al</i> (2015) added number of plant species to the existing list of Flora of Nagpur District. Besides, tall trees, shrubs and herbaceous flora, climbers, twiner and lianas also add to the beauty of gardens and road sides of the city. A plant species which cannot withstand on itself due to weak stem and takes support of other plants or objects to continue its growth and ascending up to trap the solar energy is by and large considered as a climber. A liana is a woody climber that generally has roots in woodland or forest floor but its leaves often in full sun, blanketing canopies of trees, often many meters from the ground. All these climbing elements having various morphological forms including climbers, twiners and lianas are components of vegetation and play a crucial role to maintain the diversity of the particular area. Keeping this view the present study was planned.</p> <p>MATERIALS AND METHODS</p> <p>The present study was based on extensive survey and field observation in</p>

different localities of Nagpur city. During the field visits, the plant specimens were collected at flowering and fruiting stages to prepare herbarium specimen. The plant specimens were identified with help of regional floras i.e. Flora of Nagpur District (Ugemuge 1986); Flora of Maharashtra State (Singh and Karthikeyan, 2000; Singh *et al.*, 2001). The voucher

specimens were deposited in the herbarium of PGTD of Botany, RTMNU Nagpur for future references.

RESULTS AND DISCUSSION

Documentation and Statistical Analysis of the climber, twiner & liana diversity in Nagpur city compared with earlier work (Table No.1, 2, 3).

Table 1: Percentage of Dicot and Monocot Families, Genera and species.

	Present work 2015				Graham 1911				Ugemuge 1986			
	Dicot.		Monocot		Dicot		Monocot		Dicot		Monocot	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Families	31	88.57	4	11.42	17	89.47	2	10.52	30	88.23	4	11.76
Genera	74	93.67	5	6.32	43	93.47	3	6.52	76	95	4	5
Species	103	93.63	7	6.36	54	94.73	3	5.26	108	96.42	4	3.57

Table 2: A comparison between status of Climber, Twiner and Lianas of Nagpur city as per Graham (1911) and Ugemuge (1986) with present work

No. of species	Present work 2015				No. of species	Graham 1911				No. of species	Ugemuge 1986			
	Dicot		Monocot			Dicot		Monocot			Dicot		Monocot	
	No.	%	No.	%		No.	%	No.	%		No.	%	No.	%
110	103	93.63	7	6.36	57	54	94.73	3	5.26	112	108	96.42	4	3.57

Table 3: List of climbing plant species arranged families wise with botanical name, vernacular name, flowering, fruiting and localities.

Sr. No.	Name of Families	Name of plants	Vernacular Name	Fls. & Frs.	Location
1	Annonaceae	<i>Artabotrys hexapetalus</i> (L.f.) Bhandari.	Hirwa Chafa, Madan masta	Apr.-Oct.	Futala
2	Menispermaceae	<i>Cocculus hirsutus</i> (L.) Diels.	Vasanvel	Aug.-Feb.	University campus
		<i>Tinospora cordifolia</i> (Willd.) Miers.	Gulvel	Jan.-Aug.	Ambazari
3	Capparaceae:	<i>Capparis zeylanica</i> L.	Waghathi.	Oct.-Mar.	Seminary hill
		<i>Maerua arenaria</i> (DC.)Hook. f. &Thoms.	Kaba, Kalwari	Nov.-Apr.	Seminary hill
4	Malpighiaceae:	<i>Aspidopterys cordata</i> (Hn exWall) A. Juss.	Bokadvel	Sep.-Dec.	Telankhedi.
		<i>Hiptage benghalensis</i> (L.)Kurz.	Madhumalati,	Feb.-Apr.	Ambazari
5	Celastraceae	<i>Celastrus paniculata</i> Willd.	Dhimarbel	Nov.-Apr.	Seminary hill
6	Rhamnaceae	<i>Ventilago denticulata</i> Willd.	Lokhandi.	Nov.-Mar.	Telankhedi.
7	Vitaceae	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Dokela	July.-Oct.	Maharajbag
		<i>Cissus quadrangularis</i> L.	Kandvel.	July.-Aug.	Ambazari,Seminary H
		<i>Cissus repanda</i> Vahl.	Gendal.	July-Aug.	University campus
		<i>Cissus vitiginea</i> L.	Jangli angur.	Aug.-Dec.	University campus
		<i>Vitis vinifera</i> L.	Draksha, Angur.	Nov.-May	Telankhedi.
8	Sapindaceae	<i>Cardiospermum helicacabum</i> L.	Ghanphodi.	July-Dec.	Telankhedi.
9	Caesalpiniaceae	<i>Bauhinia vahlii</i> Wight & Arn.	veli aapta	Dec.-Mar.	University campus
		<i>Caesalpinia bonduc</i> (L.)Roxb.	Sagargota.	Sept.-Jan.	Telankhedi.
10	Fabaceae	<i>Abrus precatorius</i> L.	Gunj.	Sept.-Dec.	University campus
		<i>Butea superba</i> Roxb.	Palasvel	Feb.-Apr.	University campus
		<i>Cajanus scarabaeoides</i> (L.) du-Petit-Th	Rantur.	June.-Dec.	Maharajbag.
		<i>Cajanus platycarpus</i> (Bth.) van der Maes	Gophanvel.	Sept.-Dec.	Ambazari
		<i>Canavalia gladiata</i> (Jacq.)DC.	Bara sem	Aug.-Mar.	NEERI Premices
		<i>Clitoria ternata</i> L.	Gokarni	July-Oct.	Maharajbag
		<i>Clitoria ternateavar. pilosula</i> L.	Gokarni	July-Oct.	Maharajbag
		<i>Derris scandens</i> Benth.	Tupbel.	Aug.-Oct.	Ganesh Tekdi
<i>Lablab purpureus</i> (L.) Sweet.	Popat.	Oct.-Feb.	Pannase, Lay-out.		

Table 3: Continued...

Sr. No.	Name of Families	Name of plants	Vernacular Name	Fls. & Frs.	Location
10	Fabaceae	Lablab purpureus var. lignosus (L.), King.	Waal.	Nov.-Jan.	Futala.
		Lathyrus aphaca L.	Ran watana.	Jan.-Mar.	Maharajbag
		Mucuna pruriens (L.)DC.	Khajkui.	Sep.-Dec.	Telankhedi.
		Phaseolus radiatus	Jangli moong.	Aug.-Oct.	University campus
		Phaseolus vulgaris L.	Vilayati sem.	Dec.-Mar.	Telankhedi.
		Pisum sativum L.	Vatana.	Jan.-Mar.	Maharajbag
		Rhynchosia bracteata Benth.	Turvel	Oct.-Nov.	Seminary hill
		Rhynchosia minima (L.)DC.	Turvel	July-Dec.	Maharajbag
		Teramnus labialis (L.f.) Spreng.	Ran-udid, Tipani.	Aug.-Dec.	University campus
		Vigna unguiculata (L.)Walp.	Barbati.	June-Oct.	Ramnagar
11	Combretaceae	Calycopteris floribunda (Roxb.)Poir.	Ukshi.	Dec.-May.	Seminary hill
		Combretum ovalifolium Roxb.	Madbel, Piwarbel	Feb.-Apr.	Telankhedi.
		Quisqualis indica L.	Lalchameli.	Mar.-June.	Ramdaspath.
12	Passifloraceae	Passiflora foetida L.	Gangurli	July-Nov.	Ambazari.
		Passiflora incarnata L.	Krishnkamal.	Apr.-Sept.	Bharatnagar
13	Cucurbitaceae	Citrullus colocynthis (L.) Schrad.	Indrayan.	July-Oct.	Ambazari
		Citrullus fistulosus Stock	Dhemse.	Apr.-July	Maharajbag
		Citrullus lantus Matsumura et Nakai.	Tarbooz,	Feb.-May.	Maharajbag field
		Coccinia grandis (L.)Voigt.	Tondli.	July-Dec.	Telankhedi.
		Cucumis callosus (Rottl.)Cogn.	Pangogri kadu.	July-Jan.	Seminary hill
		Cucumis melo, var agrestis Naud.	Shendada.	July-Feb.	Maharajbag
		Cucumis sativus L.	Kakadi.	Aug.-Nov.	Maharajbag
		Cucurbita maxima Duch.	Bhopala, Kaddu.	Sept.-Jan.	Futala
		Cucurbita moschata (Duch.) Poir.	Kala bhopala	Sep.-Mar.	Maharajbag
		Cucurbita pepo L.	Kashibhopala.	Aug.-Nov.	Telankhedi.
		Diplocyclos palmatus (L.) Jeffrey	Shankar-vel	Aug.-Oct.	University campus
		Lagenaria siceraria (Molina) Standley.	Dudhi bhopala.	Aug.-Feb.	Maharajbag.
		Luffa acutangula (L.)Roxb.	Dodka.	Jun- Oct.	Pannase, lay-out.
		Luffa cylindrica (L.)Roem.	Chopda Dodka.	Aug-Dec.	Maharjbag
		Momordica charantia L.	Karle.	Aug.-Dec.	Ambazari
		Momordica dioica Roxb.	Kartoli.	June.-Oct.	Maharajbag
		Trichosanthes anguina L.	Padval.	Sept.-Dec.	Telankhedi, Futala.
Trichosanthes cucumerina L.	Jangli Padval.	Aug.-Oct.	Seminary hill		
14	Asteraceae	Mikania micrantha Kunth.	-	Year	Seminary hill.
15	Oleaceae	Jasminum officinale L. var. officinale.	Chameli, Jai.	Mar.-Oct.	Ramnagar.
		Jasminum officinale L var. grandiflorum	Chameli, jai	Jun. -Oct.	Ramnagar.
		Jasminum sambac Ait.	Batmogra.	Mar.-May.	Maharajbag
16	Apocynaceae	Allamanda cathartica L.	-	Year	Bharatnagar
		Quirivelia frutescens (L) M.R. & S.M. Almeida.	Shamlata, Kadhidudhi,.	Oct.-Feb.	Telankhedi
17	Asclepiadaceae	Leptadenia reticulata (Retz.)Wt. & Arn.	Hirandodi	Aug.-Oct.	Telankhedi
		Pergularia daemia (Forsk.)Chiov.	Utaranvel, Utarni.	Aug.-Jan.	NEERI colony.
		Telosma pallida (Roxb.)Craib.	-	July -Oct.	Maharajbag.
		Tylophora indica (Burm.f.)Merr.	Potmari.	Sept.-Dec.	Ambazari
		Wattakaka volubilis (L.f.) Stapf.	Ambri	Apr.-sept.	Seminary hill
18	Periplocaceae	Cryptolepis buchananii Roem.& Sch.	Dudhivel	Apr.-Nov.	Campus, Ambazari.
		Cryptostegia madagascariensis Bojer		June-Sept.	NEERI colony.
		Hemidesmus indicus var.indicus.(L.)	Anantmul,	Aug.-Dec.	Satpuda Bot garden.
		Hemidesmus indicus var. pubescens (Wight & Arn.)Hook.f.	-	Aug.-Dec.	Satpuda Botanical garden.

Table 3: Continued...

Sr. No.	Name of Families	Name of plants	Vernacular Name	Fls. & Frs.	Location
19	Convolvulaceae	Argyreia nervosa (Burm.f.)Boj.	Samudrashoth.	Aug.-Jan.	Laxminagar.
		Convolvulus arvensis L.	Chandvel.	Aug.-Feb.	Maharajbag.
		Ipomoea cairica (L.)Sweet.	Garwel.	Year.	Maharajbag.
		Ipomoea hederifolia L.	-	Sept.- Dec.	Ambazari, Telankhedi
		Ipomoea muricata (L.)Jacq.	-	Aug.-Nov.	Ramnagar.
		Ipomoea nil (L.) Roth.	Kaladana.	Aug.-Jan.	Telankhedi, Futala.
		Ipomoea obscura (L.)Ker-Gawl.	Pungali.	Oct.-Jan.	Ganesh tekdi, Ambazari
		Ipomoea pes-tigridis L.	Belukeja.	Aug.-Nov.	Ambazari, University Campus.
		Ipomoea quamoclit L.	Ganesh pushpa.	Aug.-Dec.	University Campus, Futala.
		Ipomoea sinensis (Desv.) Choisy.	-	Oct.-Nov.	Gorewada
		Jacquemontia paniculata (Burm.f.) Hallier	-	Sept.-Jan.	University Campus, Ramnagar.
		Operculina turpethum (L.) S. Manso.	Dudhkalmi, Nishottar.	Sept.- Jan.	Dhaba, Vayusena nagar.
		Rivea hypocrateriformis (Desr.) Choisy.	Phasvel.	Jun-sept.	Ganesh tekdi.
		Rivea ornata Choisy.	Phand	Aug-Nov.	Seminary hill.
20	Cuscutaceae	Cuscuta reflexa Roxb.	Amarwel	Nov.-Feb.	University Campus
21	Bignoniaceae	Bignonia unguis-cati L.	-	Jan.-June	Maharajbag.
22	Acanthaceae	Asystasia gangetica (L.) T. Ander.	-	Oct.-Dec.	Maharajbag.
23	Thunbergiaceae	Thunbergia fragrans Roxb.	-	July- Oct.	Ganesh tekdi, Dharampeth.
		Thunbergia grandiflora (RoxRottl.)Roxb.	-	Aug.-Nov.	Pannase lay-out.
24	Verbenaceae	Clerodendrum splendens G. Don	-	Sept.- Dec.	Bharatnagar.
		Petrea volubilis L.	-	Mar.-May.	Maharajbag, Laxminagar.
25	Nyctaginaceae	Bougainvillea glabra Choisy.	-	Year.	Bharatnagar.
		Bougainvillea spectabilis Willd.		Feb.-June.	University Campus, Futala.
26	Basellaceae	Basella rubra L.	Velbondi.	Oct.-Mar.	Futala,University campus.
27	Polygonaceae	Antigonon leptopus Hook, &Arn.	-	Aug.-May.	University Campus, Ramnagar.
28	Aristolochiaceae	Aristolochia indica L.	Badakvel	November.	University Campus
29	Piperaceae	Piper betle L.	Pan, Nagwel.	not seen.	Samarth nagar.
30	Cassythaceae	Cassytha filiformis L.	Adharvel, Amarbel.	Aug.-Dec.	Futala, University Campus.
31	Euphorbiaceae	Tragia plukenetii L.	Khajvel	Aug.-Sept.	University Campus, Telankhedi.
32	Dioscoreaceae	Dioscorea bulbifera L.	Akashvel, Kadu-karanda.	Aug.-Oct.	Seminary hill, Telankhedi.
33	Liliaceae	Asparagus racemosus Wiild.var. javanica Baker	Shatawari.	Oct.-Jan.	NEERI colony, Dharampeth.
		Gloriosa superba L.	Kal lavi.	Aug.- Oct	Seminary hill.
34	Smilacaceae	Smilax perfoliata Lour.	-	Jan.-Mar.	Maharajbag.
35	Araceae	Pothos scandens L.	Moneyplant	Not seen.	Pannase lay-out, Futala,

Present investigation enumerated Climbers, Twiner, Lianas plants of Nagpur city with potentialities of 110 species belong into 79 genera and 35 families. Graham

(1911) recorded 55 Climber, twiner & lianas from Telankhedi farm a part of Nagpur city. Ugemuge (1986) listed 34 climbing species of 80 genera and 112

families from the various localities of Nagpur city. Having small regions with varied vegetation, Nagpur city shows high degree of diversity. The floristic study of Gorewada International Biopark (Proposed) forest area of Nagpur city, Kamble *et al.* (2012) documented 46 climber species from total 449 species in 1885 ha, while present study enumerated 110 species in 220.8 km. sq. study area of Nagpur city with addition of some elements.

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