

Climbers of Rampur and Kotgarh Forest Division of Shimla District, Himachal Pradesh

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Abstract: Himachal Pradesh is lying between 30.22' to 33.12' North latitudes and 75.47' to 79.04' East longitudes. The area of the state is 55,673 km² with almost mountainous elevations ranging from 350-6500 m above the mean sea level. Shimla is surrounded by Mandi and Kullu in the north, Kinnaur in the east, Uttarakhand in the southeast, Solan to the southwest and Sirmour in the south. It is the third most populous district of Himachal Pradesh, after Kangra and Mandi. In the present study 24 climber species belonging to 12 families and 19 genera have been reported. Cucurbitaceae and Ranunculaceae with 4 species, Apocynaceae with 3 species, Convolvulaceae with 2 species, Dioscoreaceae and Menispermaceae with 2 species and other families with one species.

Keywords: Climbers, Rampur and Kotgarh forest, Shimla, Himachal Pradesh.

INTRODUCTION

Geographically, the Himachal Pradesh is divided into three distinct regions, Shivalik or outer Himalaya, Mid-hills and the greater Himalaya. The mid-hill region of Himalaya comprises of regions of elevation between 1500-3500 m above mean sea level, and includes Shimla district along with some other districts of Himachal Pradesh. Shimla district is located at the longitude 77.00' and 78.19' East and latitude 30.45' and 31.44' North, with its headquarters in Shimla. A wide variety of wild plants and other genetic resources are found in the area due to great altitudinal variations. The present study is done on the climber plants of the area with their family, common name, uses, and altitude. Climbers are advanced type of weak stemmed plants which ascends up through other plants or objects. There are about 130 plant families include climbers [5].

Vine plant species may represent more than 40% of species diversity in tropical forests [10]. The climbing plants generally divided into two broad groups:

- Bines are climbers which twine their stems around a support. Most of the vines have rough stems or downward-pointing bristles to aid their grip (*Ipomoea*).
- Vines which use specialised methods like twining petioles (*Clematis* species), tendrils (*Vitis* spp), adhesive pads of tendrils at the end (*Parthinosissus*), using thorns (*Rosa* spp) or other hooked structures, clinging roots (*Hedera*). The vine may be woody called lianas or herbaceous.

MATERIALS AND METHODS

Area of study

Rampur and Kotgarh forest divisions of Rampur forest circle are situated in Shimla District of Himachal Pradesh. This tract lies in mid hill Himalayan region between latitude 31. 8'40" to 31.42'50" North and longitude 72 .18'50" to 77. 58' East. The total geographical area occupied by this tract is 1, 27,408 ha. It covers the area of Kotgarh, Kumarsain, Ranges of Kotgarh Forest Division and Balhi, Nankhri, Rampur and Sarahan ranges of Rampur Forest Divisions. The tract is hilly with altitude varying from 730 meters at Pandoa to 5690 meters at Gushu Pushu ridge. The slopes vary from moderate to steep and very steep to precipitous which drain into the river Sutlej.

Table-1: List of Climbers in Rampur and Kotgarh Forest divisions of District Shimla, H.P.

Sr.No.	Name of Plant	Family	Common name	Uses	Elevation
1.	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Vitaceae	Wild Grape, Jungle Grape Vine	To cure dyspepsia, indigestion, tuberculosis, blood purifier and diuretic, dental problems, cough and skin disease	Ascending up to 1600 m
2.	<i>Cissampelos pareira</i> L.	Menispermaceae	Velvet Leaf, False Pareira Brava, Abuta, Pereira Root, Barbasco	Appetizer, expectorant, anti-inflammatory, blood purifier, antidote, cough, dyspepsia, dropsy and diarrhoea	Ascending up to 1500 m.
3.	<i>Clematis buchananiana</i> DC.	Ranunculaceae	Fragrant Chinese Clematis	To treat swellings caused by inflammation and externally to cuts and wounds	1200-2800 m
4.	<i>Clematis connata</i> DC.	Ranunculaceae	Himalayan Clematis	To relieve sinusitis	1800-3200 m
5.	<i>Clematis grata</i> Wall.	Ranunculaceae	Charming Clematis	Skin infections	1000-2400 m.
6.	<i>Clematis montana</i> Buch.-Ham. Ex Dc	Ranunculaceae	Anemone Clematis	Diabetes and urinary troubles	1000-3600 m.
7.	<i>Cryptolepis dubia</i> (Bur m.F.) M.R. Almeida	Apocynaceae	Wax Leaved Climber, Indian Sarsaparilla	Treatment of chills and oedema and skin to treat wounds	300-1500 m
8.	<i>Dioscorea bulbifera</i> L.	Dioscoreaceae	Aerial Yam, Air Potato, Wild Yam	To expel threadworm, treat wounds, sores, boils and inflammations	Ascending up to 2300 m
9.	<i>Dioscorea deltoidea</i> Wall. ex Griseb.	Dioscoreaceae	Nepal Yam, Elephant's Foot	Treatment of digestive disorder, irritability, abdominal pain, wounds burns and anaemia.	1800-3100 m
10.	<i>Diplocyclos palmatus</i> (L.) C. Jeffrey.	Cucurbitaceae	Lollipop Climber, Marble Vine	Aphrodisiac, tonic, anti inflammation, stomach problem, malaria and fever	Ascending up to 1000 m
11.	<i>Hedera nepalensis</i> K. Koch.	Araliaceae	Creeping Ivy, Nepal Ivy, Himalayan Ivy	Cathartic, diaphoretic and skin diseases	1200-3000 m
12.	<i>Herpetospermum pedunculatus</i> (Ser.) C.B. Clarke	Cucurbitaceae	Himalayan Bitter Gourd	Anti-inflammatory, cholagogue, febrifuge, inflammation in stomach and the intestines.	2200-2700m
13.	<i>Ipomoea nil</i> (L.) Roth	Convolvulaceae	Blue Morning Glory, Japanese Morning Glory	Anthelmintic, antifungal, antispasmodic, antitumor, diuretic and laxative	Ascending up to 1600 m.
14.	<i>Ipomoea purpurea</i> (L.) Roth.	Convolvulaceae	Common Morning Glory, Purple Morning Glory	Treatment of oedema, oliguria, ascariasis and constipation	900-2800 m
15.	<i>Jasminum dispersum</i> Wall.	Oleaceae	-	-	1400-2800 m.
16.	<i>Parthenocissus semicordata</i> (Wall.) Planch.	Vitaceae	Himalayan Woodbine, Virginia Creeper.	To help set dislocated bones	500-3400 m.
17.	<i>Rhynchosia himalensis</i>	Leguminosae	Himalayan	-	1200-3300

	Baker.		Snout bean		m.
18.	<i>Rosa moschata</i> Herrm.	Rosaceae	Himalayan Musk Rose	Dried flower powder is given in diarrhoea and extract along with sugar/squash is used as a coolant	600-300 m.
19.	<i>Smilax aspera</i> L.	Smilacaceae	Common Smilax, Rough Bindweed,	Demulcent, depurative, diaphoretic, diuretic, stimulant, tonic and scabies	100-2100 m
20.	<i>Solena amplexicaulis</i> (L am.) Gandhi	Cucurbitaceae	-	Root and seeds are considered stimulant and purgative	600-2500 m.
21.	<i>Stephania elegans</i> Hoo k. F. & Thomson	Menispermaceae	Elegant Tape Vine	-	Ascending up to 1800 m
22.	<i>Trachelospermum lucidum</i> (D.Don) K. Schum.	Apocynaceae	Shining Star Jasmine	-	600-2200 m
23.	<i>Trichosanthes tricuspidata</i> Lour	Cucurbitaceae	Indrayan	Asthma, earache and ozoena	600-1800 m.
24.	<i>Vallis solanacea</i> (Roth) Kuntze	Apocynaceae	Bread Flower.	To treat ringworm, skin infections	Ascending up to 1500 m.

The climatic temperate changes due to variation in altitude, tropical climate is found in sub-mountainous areas at the base of Sutlej valley to alpine in the upper reaches[6].

Methodology

A large number of plant collections were made randomly from the following different geographical localities of the Rampur forest division with four ranges (Rampur, Sarahan, Bahli and Nankhari) and Kotgarh forest division with two ranges (Kotgarh and Kumarsain) of Shimla District, Himachal Pradesh. The collections were made from February, 2012 to December, 2017. The standard procedures were adopted for the collection, identification, preservation and classification of the plants. The diagnostic features of the plants were noted and their photographs were taken in the field. Herbarium mounts of these plants were also prepared for record and identification. The morphological details of species were noted and their photomicrographs were taken. The specimens were identified with the help of illustrations and descriptions available in authentic journals, monographs, manuals and books. Nomenclature has been updated from the 1.1 version, 2013 of The Plant List. The information was also obtained from different floristic account of Himachal Pradesh Viz. Flora Simlensis by Collett [3], Flora of Lahaul & Spiti by Aswal and Mehrotra [1], Flora of Kullu by Dhaliwal and Sharma[4], Flora of great Himalayan national Park by Singh and Rawat [12], Flora of Sirmour by Kaur and Sharma [7], Flora of Chamba by Singh and Sharma [11]. In addition information were taken from Flowers of Himalaya by Polunin & Stainton [9], Flowers of Himalaya Suppl. by

Stainton[13], Flora of Himachal Pradesh' in 3 volumes by Chowdhery and Wadhawa [2] and 'Flora of Bushahr Himalaya' by Nair [9].

RESULTS AND DISCUSSIONS

In the present study 24 climber species belonging to 12 families and 19 genera have been reported. A list climber plants with their family, common name, uses and elevation is given in the Table1.

In the present study 24 climbers were reported from the Rampur and Kotgarh Forest Divisions of Shimla District, H.P. The higher number of climbers belong to the family Cucurbitaceae with 4 species (*Herpetospermum pedunculatus*, *Diplocyclos palmatus*, *Solena amplexicaulis*, *Trichosanthes tricuspidata*), Ranunculaceae with 4 species (*Clematis montana*, *Clematis bucharaniana*, *Clematis connate*, *Clematis grata*), Apocynaceae with 3 species (*Cryptolepis dubia*, *Trachelospermum lucidum*, *Vallis solanacea*), Convolvulaceae with 2 species (*Ipomoea nil*, *Ipomoea purpurea*), Dioscoreaceae with 2 species (*Dioscorea bulbifera*, *Dioscorea deltoidea*), Menispermaceae with 2 species (*Cissampelos pareira*, *Stephania elegans*), Vitaceae with 2 species (*Ampelocissus latifolia*, *Parthenocissus semicordata*) and followed by rest the families comprising of only one species.

CONCLUSION

Climbers are plants which climb up trees and other tall objects. Suitable modification for mechanical support like hooks, tendrils and roots in modified forms are found in plants. These plants are the components of

ecosystem and have multiple uses in human as well as animals. They are very beneficial in different ways like edible, fodder, medicinal, religious etc. in daily life. Due to population explosion, habitat destruction, constructions, pollution, overexploitation, alien species, the number of indigenous species decreased which are very important for our environment. So their conservation is very important to maintain the equilibrium in ecosystem of area and for future generation.

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