



Study of useful climbers of Fatehpur, Uttar Pradesh, India

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Abstract

The survey of angiospermic climbers from Fatehpur recorded total 42 species under 29 genera belonging to 15 families. Maximum number of 16 species were recorded for dicotyledonous family Cucurbitaceae followed by Fabaceae and Convolvulaceae each with 06 species. Climbers were both wild and ornamental. Climbers constitute a large and important sector of ornamental horticulture. They also play a vital role in medicine and agriculture while some were used as edibles. . Some climbers' combinly serve various purposes. Local people had a unique knowledge to cure various human ailments using these climbers.

Key words: Climbers, uses, Fatehpur, Uttar Pradesh

Introduction

Climbing plants are one of the most interesting group but a much neglected group of plants. But, these neglected climbers contribute largely to the charms of our landscapes by the manner in which they climb over trees, hedgerows or rocks. They also play a part in historical importance of our ancient buildings which owe their attraction to the green veil which covers up their architectural or structural defects making them assume perfect beauty in our eyes. Early morphologists like Dutta (1689) included these climbers under weak stemmed plants. Climbers are the plants that germinate on floor and grow for part of their life by winding ground, anchoring or adhering to other plants (Jongkind and Hawthorne, 2005) to attain great stature (Swaine, 2005). They rely on other plants for mechanical support. Due to their weak stem, they attach themselves to any neighboring object by means of some special organs of attachment. They show great diversity in their climbing mechanism depending on which they are classified as root climbers, hook climbers, tendril climbers, leaf or stem climbers or twinners. They compete with trees for both above and below ground resources considerably decreasing the growth rates retarding regeneration of tree seedlings and saplings.

Climbing or vining habit is a wonderful example of economy of nature. It allows a plant to attain maximum exposure to sunlight, water and nutrients with minimum expense in vegetation support. They occur in all woody ecosystem of world although high climbers play important ecological role in forest ecosystem dynamics and functioning. They contribute sustainability to canopy closure after tree fall and help to stabilize the microclimate underneath. Lianas in particular add considerably to forest plant diversity and provide valuable habitat and connections among tree canopies that enable arboreal animals to traverse the tree tops. Climbers also form an essential part of diet of many animals in times of scarcity of flowers and fruits. Climbers constitute a large and important sector of ornamental horticulture. Some play a vital role in medicine and agriculture. Many climbers combinly serve both the purposes. Besides, if left uncontrolled some climbers can block drain pipes, gutters on buildings while some can do serious damage to structure or tree them are clinging to. In spite of numerous roles climbers play in ecosystem, as medicines, in horticulture and agriculture, little attention has been paid to them, they are scanty treated in literature. Only a few studies are carried out on climbers.

Danial (1994) studied the ethno botany of Weedy vines of Florida while diversity and distribution of climbers in semi deciduous rain forest, Ghana and Perak, Malasiya were worked out by Patrick et.al.(2008) and Ghollasimood et.al. (2012) respectively. In India, Pandey et.al. (2005) studied many climbers in their study of medicinal flora of Gujarat while 81 climbers were recorded by Jangid and Sharma (2011) in Taluka

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Moasa, District Sabarkantha of Gujarat. Climbers of Urban area of Ahmadabad and Gandhinagar and Saraswati River Region of Patan district of North Gujrat were documented by Patel et.al. (2013) and Seliya and Patel (2009) respectively. Ghosh and Mukherjee (2006) recorded 149 herbaceous climbers and 79 lianas from N.Andaman covering 55 families while Mahajan (2006) reported 31 taxa used by tribal people of Nimar region (M.P.) to cure various human ailments. Diversity of climbing flora of Thiruanathapuram district, Monghyr district of Bihar and Koch Bihar district of West Bengal was surveyed by Usha (2010), Singh (1990) and Bandopadhyaya and Mukherjee (2010) respectively. According to M. Ajaib et.al. (2012), the local people of District Kotli, Azad Jammu & Kashmir use 36 climbers/twinners of vascular plants for medicines, vegetables and fodder. Bor and Raizada (1954) published a book 'Some Beautiful Indian Climbers And Shrubs' with a series of papers appeared in the Journal of Bombay Natural History Society. In Uttar Pradesh, the work was conducted by Siddiqui et. al. (1994), Khanna et.al. (2002), Maliya (2004), Jagdish Narayan et.al. (2008), Dwivedi et.al. (2009), Singh et.al. (2009), Jyotsna Sharma et.al. (2010) and Singh et.al (2010).

No comprehensive work is available for climbers in the study area. Therefore, the objective of the present study was to document the angiospermic climbers of Fatehpur, U.P and their uses by the local people of the area.

Area under study

Study area lies 122 km. south east from capital Lucknow of U.P. To its north is River Ganges- District Unnao and Rae-Bareilly; River Yamuna in south with district Hamirpur and Banda; Kanpur in west and Kaushambi and Allahabad in east. It covers total area of 4152 sq km. between 26.16 North latitude and 81.20 East longitudes at an elevation of 114.66 mt. above sea level. Climate is sub tropical. Seasonal variations is well marked with three seasons in the year – summer (March to June), rainy (July to September) and winter (October to February). It resembles the climate of Bundelkhand in south region and Awadh in north. The area has a rural culture of old traditions.

Methodology

The periodical trips were undertaken to the different parts of the study area to get information about climbers which are for medicinal value or for horticultural purpose. Climbers were identified with the help of available flora (Duthie 1960, Hooker 1973). The identified climbers were further studied for their medicinal and other values as per suggestions of Chopra et.al. (1956), Jain (1991), Nadkarni (1908),

Dastur (1952), Kirtikar and Basu (1975). Information about the medicinal value of climbers was also obtained through interview and discussion with the local people.

Results and Discussion

The present survey reveals that angiospermic climbers of the area are represented by 42 species under 29 genera belonging to 15 families (13 dicot and 02 monocot families). Some climbers are wild while others are cultivated. Among all families, Cucurbitaceae was found to be the most abundant having 16 species followed by family Fabaceae and Convolvulaceae both having 06 species and Oleaceae with 03 species. Cucurbitaceae is the most dominating family species as well as genera wise. All other families are represented by single species only. Climbers found in field survey are listed in Table-1 alongwith their botanical name, vernacular /local name, family and their ethnobotanical uses in alphabetical order. The study reveals that the different plant parts like fruits, roots, leaves, rhizomes are used by the local people of Fatehpur for different ailments. Local people have unique knowledge to cure different human diseases and disorders by using these climbers. These are administered in the form of medicinal recipes such as extract, powder, juice, paste, oil etc. Sometimes, various domestic substances like ghee, milk, jaggery, oil, and termaric powder etc. are also employed for preparing medicinal recipes. Fruits of many climbers are used as vegetables. Several species of climbers have more than one kind of uses. Besides, local people also use some climbers for decorative, ornamental and horticultural purposes. Some people fill vertical space in their home using climbers. Alternatively, some use them to divide a room, curtain a window, cover an expense of wall or frame a door. It is evident from the above study that despite dense urbanization, angiospermic climbers still play a vital role to maintain life and livelihood of local people. However, some people specially young and new generations prefer alternative modern treatment and also becoming ignorant about the indigenous knowledge of plants.

Over exploitation of some climber species particularly collection of roots and underground parts from the climbers e.g. *Asparagus racemosus*, *Tinospora cordifolia* etc. causes damage to these plants. Therefore, there is a need to create awareness among the local people for the importance as well as conservation of these climbers in their original habitat.

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Table 1: List of climbers of Fatehpur, U.P.

S. No.	Botanical Name	Local name	Family	Ethnobotanical uses
1	<i>Antigonon leptopus</i> Hook & Arn.	Coral creeper	Polygonaceae	Cultivated in gardens and bungalows. Decoction of aerial parts used for prevention of cough and flu related pains. Analgesic, anti-inflammatory and anti- diabetic.
2	<i>Asparagus racemosus</i> Willd.	Satavar	Liliaceae	Tuberous roots given to induce lactation in females. Bleeding from nose, blood in urine, anthelmintic, in cutaneous diseases, diarrhoea and dysentery,rheumatism
3	<i>Benincasa hispida</i> (Thunb.)Cogn.	Petha	Cucurbitaceae	Fruits are used both as a vegetable as well as in the preparation of sweets. Fruit is a laxative and useful in the haemorrhages from internal organs.
4	<i>Bignonia campsis</i> <i>radicans</i> (L.)Seem.	-	Bignoniaceae	Ornamental plant of gerdens and houses.
5	<i>Bougainvillia glabra</i> Choisy	-	Nyctaginaceae	Grown in gardens,parks and houses as an ornamental climber for its showy coloured bracts.
6	<i>Clitoria ternatea</i> L.	Aprajita	Fabaceae	Root powder is given orally in snake bite. Powdered leaves are used in urinary troubles. Roots are used in headache, cough,fever, stomachache.
7	<i>Citrullus vulgaris</i> Scgrad.	Tarbooz	Cucurbitaceae	Largely cultivated for sake of fruits. Fruits have cooling and refreshing effect in summer. Seeds are also eaten and used in summer cooling drink-thandai.
8	<i>Citrullus vulgaris</i> Schrاد. Var. <i>fistulosus</i>	Tinda	Cucurbitaceae	Fruits are used as vegetable. It makes blood pressure normal and helps in urination clearly.
9	<i>Coccinia grandis</i> (L.)Voigt	Kunduru	Cucurbitaceae	Leaf juice used in diabetes.Paste of leaves used in high fever. Roots useful in vomiting.

10	<i>Convolvulus microphyllus</i> Sieb.	Safed shankh pushpi	Convolvulaceae	Whole plant Used as brain tonic, cardiac tonic, in high blood pressure, skin disease, and insomnia.
11	<i>Cucumis melo</i> Linn.	Kharbuza	Cucurbitaceae	Cultivated for its edible fruits. Seeds are edible used in sweets and cooling drink-thandai and are diuretic also.
12	<i>Cucumis melo</i> Linn. var. <i>utilissimus</i> Duthie & Fuller	Kakari	Cucurbitaceae	Cultivated for fruits and eaten raw. Seeds useful in burning sensation and fever.
13	<i>Cucumis melo</i> Linn. var. <i>momordica</i> Duthie & Fuller	Phunt	Cucurbitaceae	Ripe fruits are eaten. Seeds are cooling.
14	<i>Cucumis sativus</i> L.	Khira	Cucurbitaceae	Cultivated for refreshing edible fruits. Useful in fever, headache.
15	<i>Cucurbita maxima</i> Duch.	Sita phal/meetha kaddu	Cucurbitaceae	Cultivated for fruits eaten as vegetable. Dried fruits are used for making utensils of saints and musical instruments. Seeds are diuretic and anthelmintic (tapeworms). Fruit pulp used as poultice, applied to burns, boils.
16	<i>Cucurbita pepo</i> Duch.	Vilayati kaddu	Cucurbitaceae	Eaten as vegetable. Dried fruits useful for making utensils and musical instrument.
17	<i>Cuscuta reflexa</i> Roxb.	Amarbel	Convolvulaceae	Plant paste warmed with mustard oil and wheat flour is applied on joint pain. Used in jaundice, liver complaints.
18	<i>Dolichos lablab</i> L. / <i>Lablab purpureus</i> (L.) Sweet	Sem	Fabaceae	Cultivated for its green pod used as vegetable in the area. Leaf juice is rubbed in skin discoloration, ringworm.
19	<i>Ipomea aquatica</i> Forsk. Syn. <i>I. reptans</i> (L.) Poir	Nari ka sag	Convolvulaceae	Plant paste is applied over body to cure itching. Plant juice used in cases of opium poisoning. Whole plant is used indigestive problems. Used as vegetable.
20	<i>Ipomea batatas</i> (L.) Lamk.	Shakar-kand	Convolvulaceae	Tuberous roots eaten as a vegetable rich in carbohydrate. Consumed as fresh boiled or baked. Helps in repairing body tissues, lowering blood pressure and normalizing blood sugar level. Beneficial for vision and eye health. Protect from infection. It is a laxative.
21	<i>Ipomea palmata</i> Forsk.	Railway creeper	Convolvulaceae	Planted in gardens for ornamental purposes.
22	<i>Ipomea nil</i> Linn.	Nil kalmi	Convolvulaceae	Purgative, tonic.
23	<i>Jasminum auriculatum</i> Vahl.	Juhi	Oleaceae	Cultivated in gardens for ornamental purposes.
24	<i>Jasminum multiflorum</i> (Burm.f) Andr.	Chameli	Oleaceae	Grown in gardens, lawns and parks for its beautiful flowers. Essential oil used externally to relax the body and soothe the dry skin.
25	<i>Jasminum officinale</i> L.	Bela	Oleaceae	Grown in gardens, houses for its fragrant flowers which are largely used in making garlands that sacred to lord Vishnu.
26	<i>Lagenaria sineraria</i> Standley	Lauki	Cucurbitaceae	Cultivated for its fruits used as vegetable. Useful in jaundice and for stomach flatulence, cooling properties and weight loss.

27	<i>Lathyrus odoratus</i> Linn.	Garden pea	Fabaceae	Cultivated in gardens for sweet smell. Ornamental.
28	<i>Lathyrus sativus</i> Linn.	Khesari	Fabaceae	Cultivated and adulterated with <i>Cajanus</i> sps. (arhar dal).
29	<i>Luffa acutangula</i> (L.) Roxb.	Tori	Cucurbitaceae	Cultivated for its fruits used as vegetable. Useful in jaundice, stomach.
30	<i>Luffa cylindrical</i> (L.) Roem	Ghiya tori	Cucurbitaceae	Cultivated as a crop for its fruits eaten as vegetable.
31	<i>Momordica charantia</i> L.	Karela	Cucurbitaceae	Cultivated for its fruits eaten as vegetable. Seeds given for round worms. Juice useful in diabetes.
32	<i>Oxalis corniculata</i> Linn.	Khatti buti/Teenpatia	Oxalidaceae	Leaf decoction is used in fever, dysentery, diarrhoea, stomachache and swelling.
33	<i>Passiflora foetida</i> L.	Krishna kamal	Passifloraceae	Herb used for treating insomnia and beneficial effect on nervous system. Leaves used to treat neurasthenia, inflammation, itching, and as antispasmodic particularly neuralgic type. Plant paste applied on boils, swelling, headache, wounds.
34	<i>Phaseolus lunatus</i>	Lobia	Fabaceae	Young pods are sliced and cooked as vegetable. Dried seeds also eaten as pulse.
35	<i>Pisum sativum</i> L.	Matar	Fabaceae	Cultivated as pulse crop. Green Pods used as vegetable and dried as pulse.
36	<i>Pothos scandens</i> L.	Money plant	Araceae	Cultivated for Ornamental purposes.
37	<i>Quisqualis indica</i> L.	Malti	Combretaceae	Grown for ornamental purposes. Decoction of root, seed or fruit can be used as anthelmintic to expel parasitic worms or alleviate diarrhea. Juice of leaves relieve flatulence. Flower and leaf juice with mishri useful in leucorrhoea.
38	<i>Tinospora cordifolia</i> (Willd) Hook f. & Thomson	Giloy	Menispermaceae	Stem decoction along with sugar is given to cure typhoid. Also used for cold, fever, heart problems.
39	<i>Trichosanthes dioica</i> Roxb.	Parwal	Cucurbitaceae	Cultivated for its fruits eaten as vegetable. Useful for stomach complaints.
40	<i>Trichosanthes anguina</i> Linn.	Chichinda	Cucurbitaceae	Cultivated for its fruits eaten as vegetable.
41	<i>Tropaeolum majus</i> Linn.	Nastertium	Tropaeolaceae	Ornamental plant. Also used in respiratory and urinary infections.
42	<i>Vitis vinifera</i> L.	Angoor	Vitaceae	Cultivated for fruits. Eaten fresh and processed to make wine. Unripe grapes are used to treat sore throats and raisins are used to treat constipation and thirst. Leaves are used to stop bleeding, pain and inflammation of haemorrhoids.