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Ethno-botanical Study of Some Important Climbers and Lianas of Adumalleshwara (Jogimatti) of Chitradurga, Karnataka

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ABSTRACT

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The present study deals with climbers creepers and twiners of Adumalleshwara (Jogimatti) of Chitradurga, Karnataka. Ethnomedicinal plants are necessary for treatment of various diseases and production of various medicines. The Climbers, Creepers and twiner are extensively used as medicine. The local people of district Chitradurga use climbers of the vascular plants for medicine, vegetable and fodder. An ethnobotanical survey of plants species in Adumalleshwara (Jogimatti) of Chitradurga, Karnataka India. This survey revealed some of the important climbers and lianas used by the tribes and local practitioners for their health care practices. Around 35climbers and lianas species in 28 genera and 18 families were identified and documented. According to our observations traditional healer's use different parts of the plants (leaves, bark, fruit etc.) to cure various diseases.

Introduction

India has one of the richest plant medical traditions in the world. Traditional medicine and ethnobotanical information's play an important role in plant science research. Herbal medicine is still practiced about 75 - 80% of the world population mainly in the developing countries for their primary health care needs (Kamboj, 2000).

The state of Karnataka boasts an unparallel diversity of medicinal plants in the country. It is estimated that, Karnataka is the home to about 4800 species of flowering plants out of which about 2000 species are medicinal (FRLHT, 2010b). This is quite remarkable, as this number accounts for about 27% of the country's flora, with just 10% of the geographical area. Karnataka with

its unique wild habitats spread across the Western Ghats and the Deccan Peninsula is also the home to several endemic species of commercial importance (Somashekar, 2011).

Some of the studies related to ethnobotany and floristic diversity have been reported from Karnataka state (Parinitha *et al.*, 2005; Rajasab and Mohamad, 2004). Ethnomedicinal plants are necessary for treatment of various diseases and production of various medicines. The Climbers, Creepers and twiner are extensively used as medicine.

Some important studies on diversity of climber's creepers and twiner in different part of India by Gentry, Ghosh and Mukherjee (2006); Bandopadhyya and Mukherjee (2010) and Jangid and Sharma (2011) suggest

that the climber creepers and twiner are forming main components of ecosystem.

The conservation of important and endangered medicinal plants, their conservation and the Ethnomedicinal uses, including climbers is very essential to establish their appropriate utilization (Ajaib *et al.*, 2012; Singh *et al.*, 2013; Dangwal and Amandep, 2012). The Rajouri however are floristically the least surveyed district in the Jammu province, with scanty and scattered information available on their flora (Singh, 1992; Kirn and Pir Panjal, 1992; Jee *et al.*, 1984; Dar *et al.*, 2009).

The aim of the current research is to highlight the key of climbers creepers and twiners Adumalleshwara (Jogimatti) of Chitradurga, Karnataka

Materials and Methods

The present study was accomplished to document of the Ethnomedicinal data on the useful climbers creepers & twiner of Adumalleshwara (Jogimatti) of Chitradurga, Karnataka India, The terrain is not uniform throughout Adumalleshwara (Jogimatti hills) & it is characterized by vast stretches of undulating plains with intermittent parallel chains of hills, mostly bare & stony.

The general elevation of the study area is between 500 and 600m above mean sea level, Adumalleshwara (Jogimatti hill) has an altitude of 1152m above mean sea level.

The present communication pertains to climbers creepers and twiner were collected from Adumalleshwara (Jogimatti) of Chitradurga, Karnataka India, and were identified with the help of local flora (Saldanha, 1984). General information about the climbers creepers and twiner was collected from the local peoples. About 15 local peoples respondents including both male and female was interviewed.

Results and Discussion

In the current study, plants belonging to medicinal uses were studied and were identified and collected during flowering, fruiting and seed developing stages described accordingly in a detailed alphabetic manner with respect to their family names. Many climbers and lianas were collected from the different parts of the study area. Around 35 climbers and lianas species in 28 genera and 18 families were identified and documented.

Present study shows that the dominant families such as *Asclepidaceae* (07), *Capparaceae* (04), *Passifloraceae* (03), *Aristolochiaceae* (02), *Menispermaceae* (02), *Sapindaceae* (02), *Cucurbitaceae* (02), *Papilionaceae* (02), *Apocynaceae* (01), *Casealpiniaceae* (01), *Combretaceae* (01) *Liliaceae* (01), *Nyctaginaceae* (01), *Oleaceae* (01), *Rhamnaceae* (01), *Rutaceae* (01), *Verbenaceae* (01), *Vitaceae* (01).

The most common lianas species are *Toddalia asiatica* L. (Rutaceae), *Caadaba indica* (Capparaceae), *Comretumalbidium* G.don. (Combretaceae) and *Ziziphus oenoplia* L (Rhamnaceae). The less taxa includes *Aristolochia indica* L., *Aristolochia tagala* (Cham.) (Aristolochiaceae), *Carissa carandas* L. (Apocynaceae), *Caesalpinia bunducella* (Casealpiniaceae), *Comretumalbidium* G.don. (Combretaceae), *Ziziphus oenoplia* L. (Rhamnaceae) and *Toddalia asiatica* L. (Rutaceae).

The documented climbers and lianas are used in the treatment of various ailments like Arthritis, Boils, Bleeding Hemorrhoids, Diarrhea, Dysentery, Gastric Ulcer, Head ache, Inflammation, Skin diseases, Stomach disorders, Asthma, cholera, cold, cough, rheumatism, ringworm, small pox, stomach disorders, toothache and swelling, Urinary diseases, Antioxidant, antibacterial, antiinflammatory, antiphretic, hepatoprotective, antidiabetic, antiulcer etc. The data collected for various uses of these species is presented in Table 1.

The current study provides the basic information about the medicinal uses of climbers and lianas and provides the information about the distribution and description of the medicinal plant species which is useful for further research and field work in Chitradurga region. It is concluded that, around 35 climbers and lianas species in 28 genera and 18 families were identified and documented. Present study shows that the dominant families such as *Asclepidaceae* (07), *Capparaceae* (04), *Passifloraceae* (03), *Aristolochiaceae* (02), *Menispermaceae* (02), *Sapindaceae* (02), *Cucurbitaceae* (02), *Papilionaceae* (02), *Apocynaceae* (01), *Casealpiniaceae* (01), *Combretaceae* (01) *Liliaceae* (01), *Nyctaginaceae* (01), *Oleaceae* (01), *Rhamnaceae* (01), *Rutaceae* (01), *Verbenaceae* (01), *Vitaceae* (01). These wild climbers and lianas species treasure are encouraged to be conserved because many of the valuable plant species are under threat to become rare, endangered and some are on the verge of extinction due to various external factors.

Table.1 Climbers used to cure many ailments and diseases

Sl. No	Botanical name	Family	Common name	Medicinal uses
1	<i>Abrus precatorius</i> L.	<i>Papilionaceae</i>	Gulaganji	The seed extract exhibited antischistosomal activity in male hamsters. It is also useful in the treatment of hepatitis and AIDS uterine stimulant abortifacient, toxic seeds tetratogenic. Detoxified seed 1-3g powder, Root powder 3-6gm.
2	<i>Aristolochia indica</i> L.	<i>Aristolochiaceae</i>	Eshwariballi	Oxytotic, abortifacient, emmenagogue, Gastric stimulant, Leucorrhoea, anticlot to snake bite, Root –dyspepsia, bowel trouble in children and intermittent fever, diarrhea and cholera.
3	<i>Capparis sepiaria</i> L.	<i>Capparidaceae</i>	Kattarigida	Antiseptic, antipyretic, used for eczema and scabies, skin diseases small wounds.
4	<i>Capparis zeylanica</i> L.	<i>Capparidaceae</i>	Aathundikayi	Economic importance: Root bark: sedative, stomachic, anticholerin, diuretic, febrifuge. Leaves: applied as poultice to piles , swellings, boils.
5	<i>Cardiospermum hellicacabum</i> L.	<i>Sapindaceae</i>	Bekkinatoddinaballi	Used in rheumatism, lumbago, skeletal fractures, nervous diseases, amenorrhoea, haemorrhoids, erysipelas. The herb is used in treating dandruff
6	<i>Jasminium</i> sp.	<i>Oleaceae</i>	Kaadumalle	Root: Emmenagogue, blood purifier. Flowers: lactifuge, alcoholic extract: hypotensive. Leaves; antibacterial used against indolent & breast tumours
7	<i>Mucuna pruriens</i> L.	<i>Papilionaceae</i>	Nasagunni	Seed: Astringent, nervine tonic, local stimulant used in impotence, spermatorrhoea, urinary troubles, Leucorrhoea, traditionally used for male virility. Also used in depressive neurosis. Hair on fruit: vermifuge mild vesicant; used for diseases of liver & gallbladder. Leaf; applied to ulcers. Pod: anthelmintic. Root and fruit: spasmolytic hypoglycemic. Root: CNS active.
8	<i>Passiflora foetida</i> L.	<i>Passifloraceae</i>	Kukkeballi	Fruit- used emetic, Leaves- used as dressing for wounds, headache and giddiness Decoction is used to treat asthma and biliousness. Emmenagogue and useful for treating husteria
9	<i>Tinospora cardifolia</i> (Willd.)	<i>Menispermaceae</i>	Amrithaballi	Powerful emetic, tonic, stomach trouble, chronic diarrhoea, dyspepsia, diabetes, bleeding piles, jaundice, anaemia, skin diseases. Part used stem, leaves, root & fruit
10	<i>Toddalia asiatica</i> L.	<i>Rutaceae</i>	Doddakaadumenasu	Whole plant; febrifuge, diuretic, Leaves antispasmodic. Root bark; antipyretic, diaphoretic antiperiodic. It is used in medicinally by

				venda herbalists
11	<i>Tylophora asthamatica</i> (Burm.)	<i>Asclipidaceae</i>	Aadumuttadaballi	Leaves : used for bronchial asthma and allergic rhinitis
12	<i>Cocculus hirsutus</i> L.	<i>Minispermaceae</i>	Daagdiballi	Root laxative, Sudorific, alterative, antirheumatic. Leaf; used extremely for ecezema, prurigo&mpetigo. A decoction of leaves is taken in eczema, leucorrhoea & gonorrhoea.
13	<i>Ariistolochia tagala</i> (Cham.)	<i>Aristolochiaceae</i>	Doddaeeshvariballi	Leaves are applied to the head & treat fever. Swollen abdomen or limbs. Plant is used to treat snake bites and malaria. Roots are considered a tonic, carminative and emmenagogue, high blood pressure, beri-beri and swollen feet.
14	<i>Cadaba indica</i> L.	<i>Capparaceae</i>	Indian cadaba, chekonadi	It is used in various chronic oilments, known to be effective for prolong periods, The leaves & roots are considered as anthelmintic & emmenagogue & are prescribed in the form of decoction for treating a uterine obstructions. The leaves are used to promote healing of sores. In siddha, the leaves & fruits are used to treating of vorminpestation, swellings
15	<i>Cryptolepis buchanani</i> (Roemer.)	<i>Asclepidaceae</i>	Maetgulihambu	Blood purifier, alterative, used for rickets in children. In combination with <i>Euphorbia microphylla</i> , the herb is used as a galactagogue. A decoction of the stem is used as a supporting drug in paralysis.
16	<i>Gymnema sylvestre</i> (Retz.)	<i>Asclepidaceae</i>	Madhunashini.	Leaf, antidiabetic, stimulates the heart & circulatory system, activities the uterus, used in parageusia&furunculosis. Plant; diuretic, antibilious. Root; emetic, expectorant, astringent, stomachic.
17	<i>Hemidesmus indicus</i> (L.)	<i>Asclepiadaceae</i>	Sogadeberu	Blood purifier, antisiphilitic, antileucorrhoeic, galactogenic, antidiarrhoeal, antirheumatic, febrifuge, alterative. Roots used against gonorrhoea, leucoderma, bleeding piles, jaundice & dysentery.
18	<i>Cissus quadrangula</i> L.	<i>Vitaceae</i>	Mangarvalli	The anabolic & steroidal principles of the aerial part showed a marked influence in the rate of fracture healing. The drug exerts influence both on the organic & mineral phase of fracture healing. Stem; alterative in survey (the plant is rich in vitamin c) & irregular menstruation.
19	<i>Wattakaka volubilis</i> (L.)	<i>Asclepiadaceae</i>	Hegalluballi	Leaves, flowers & the rind of unripe fruits are boiled & eaten as a vegetable or used in curries, The cooking removes the bitterness & nauseating property of fruit. Plant yield a very strong fibre, twining stems are used as substitute for ropes. Plant juice used as strenutatory; root & tender stalk emetic & purgative: Leaf used in applications for boils and abscesses.

20	<i>Asparagus racemosus</i> Willd.	<i>Liliaceae</i>	Shatavari	The roots are bitter, sweet, emolient, cooling, nervine, tonic, constipating, ophthalmic, anobyn, aphrodisiac. They are useful in nervous disorders, dyspepsia, tumours, scalding of urine, throat infections, tuberculosis, cough bronchitis & general debility.
21	<i>Boerhavia diffusa</i>	<i>Nictyginaceae</i>	Adakaputtinagida	The juice of roots are is applied in the treatment of a number of body disorders like asthma, scanty urine or micturation and inflammations. It is also used in curing a number of ailments like leucorrhea, rheumatisation and stomach ache. Recent studies have found that the plant has anti- microbial including anti-viral property. The entire plant along with root is eaten as vegetable in curries.
22	<i>Ceasalpina bonducella</i> (L.)	<i>Ceasalpinaceae</i>	Gajjuga	The leaves, bark and roots are used to cure fever, headache & the kernel of the seed is taken with water to treat diabetes mellitus. The seeds are used to treat rheumatism
23	<i>Pergulariadaemia</i> (Forsk.)	<i>Asclepiadaceae</i>	Ugurusuttinaballi	It is astringent, acrid, emetic, expectorant & laxative. The aqueous & ethanolic extracts obtained from aerial parts of pergulariadaemia were evaluated for hepato protective activity in rats including liver damage by carbon tetra chloride.
24	<i>Sarcostemma acidum</i> (Roxb.)	<i>Asclepiadaceae</i>	Somalatha, konahambu	This plant is used in the treatment of respiratory ailments like mild bronchospasms, allergic rhinitis, sinusitis, coryza or common cold (It is only used for siddha medicinal use). It is used to anti-asthmatic, diaphoretic. Somalatha: The divine amrutham “somarasam” is an extract of this herb.
25	<i>Ziziphus oenoplia</i> L.	<i>Rhamnaceae</i>		The plant yielding important phytopharmaceuticals. Plant pacifies pitta, kapha, worms, peptic ulcers, stomach pain & wounds. Mainly roots are used.
26	<i>Coccinia grandis</i> L.	<i>Cucurbitaceae</i>	Tondiballi	Plant pacifies pitta, kapha, constipation, burning sensation, leucorrhea, skin disease, fever, asthma, cough and jaundice.
27	<i>Carissa carandus</i> L.	<i>Apocynaceae</i>	Kbale/karonda	The Karonda fruit is a rich source of iron and contains a fair amount of Vitamin C. It is antiscorbutic and very useful for cure of anemia. It can be exploited for making jelly, jam, squash, syrup and chutney. Ripe fruits exude a white latex when severed from the branch.
28	<i>Combretum albidium</i> G.don.	<i>Combretaceae</i>		Used in African or Indian traditional medicine. The class of chemical compounds known as combretastatins were first isolated from from which they get their name. One synthetic derivative, fosbretabulin disodium (combretastatin A4 phosphate), underwent preliminary study for the treatment of anaplastic thyroid cancer but it was not

				effective enough to progress to more advanced trials.
29	<i>Cucurbita lagenaria</i>	<i>Cucurbitaceae</i>	Pungikayi	It is described as a cardi tonic and as a general tonic in Ayurveda. The ethanolic extract of the fruit has been evaluated against the disorders where free radicals play a major role in pathogenesis. It possesses cardioprotective effect against doxorubicin induced cardiotoxicity in rats. The methanol extract of the fruits has been evaluated for diuretic activity in albino rats. The constituents isolated from the fruits show antihyperlipidemic activity in albino rats. It cures pain, ulcers and fever and used for pectoral cough, asthma and other bronchial disorders-especially syrup prepared from the tender fruits.
30	<i>Passiflora edulis</i> Sims.	<i>Passifloraceae</i>	Fashion fruit	The juice but mainly the leaves of passion fruit contain the alkaloids, including Harman, which has blood pressure lowering, sedative and antispasmodic action. The passion fruit leaves are used as medicines. The flower of passion fruit has a mild sedative and can help to induce sleep. Passion flower has been used in the treatment of nervous and easily excited children, bronchial asthma, insomnia, nervous gastrointestinal disorders and menopausal problems. Passion flower is sometimes used as a mild hallucinogen. Passion fruit extracts can kill cancer cells in vitro. The phytochemicals which are responsible for this anti-cancer effect are carotenoids and polyphenols. Passion fruit extracts extract can reduce asthma symptoms. extracts can reduce Osteoarthritis the flavonoid rich extract significantly reduced pain and stiffness.
31	<i>Passiflora subpeltata</i> (Ortega.)	<i>Passifloraceae</i>		The juice but mainly the leaves of passion fruit contain the alkaloids, including Harman, which has blood pressure lowering, sedative and antispasmodic action. The passion fruit leaves are used as medicines. The flower of passion fruit has a mild sedative and can help to induce sleep. Passion flower has been used in the treatment of nervous and easily excited children, bronchial asthma, insomnia, nervous gastrointestinal disorders and menopausal problems. Passion flower is sometimes used as a mild hallucinogen. Passion fruit extracts can kill cancer cells in vitro. The phytochemicals which are responsible for this anti-cancer effect are carotenoids and polyphenols. Passion fruit extracts extract can reduce asthma symptoms. extracts can reduce Osteoarthritis the flavanoid rich extract significantly reduced pain and stiffness.

Author Contribution

B. H. Ramesh: Investigation, formal analysis, writing—original draft.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

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