

An inventory of ethno-medicinal climbers from the southern parts of West Bengal, India

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ABSTRACT

Present investigation reported 86 ethno-medicinal climbers from southern parts of West Bengal, of which 8 species are of monocots under 4 families; 77 species of dicots under 25 families and 1 species of pteridophyte (e.g. *Lygodium pinnatifidum*). Out of 86 climbers, 51 species are twiners, 4 species are liana, 17 species are tendril climbers, 7 species are scramblers, 3 species are ramblers, 3 species are root-climbers and 1 species is hook-climber. As many as 37 diseases and problems can be treated by the utilisation of medicinal properties of 86 climbers. Out of 37 diseases most common diseases are rheumatism, wound healing, asthma, gout, diabetes, jaundice, ulcers, dysentery, leprosy, leucoderma, menstruation, cough, eye problems, bone fracture, piles, venereal diseases, etc. Local names, types of climbers, parts used and mode of treatment have been discussed.

Figure : 00

References : 59

Tables : 04

KEY WORDS : Ethno-medicinal climber, Southern parts, Survey, Uses, West Bengal.

Introduction

Climbers are the weak plants generally distributed in tropical and subtropical countries in the world. Their availability is not only in angiosperms but their presence can be noted in pteridophyte (e.g. *Lygodium pinnatifidum*) to gymnosperm (e.g., *Gnetum sp.*). On the basis of their mode of climbing they are of different kinds viz. tendril climber, hook-climber, twiner, liana, ramblers and scramblers¹³. The plants are the raw material sources of active principles for the preparation of medicines. The plant extract is used by the ethnic people right from the ancient times; they are regarded as ethno-medicines. As a part of plant world climbers are also the source of potential medicines that ultimately can be utilised for the remedies of diseases or problems in our daily life. So the major part of man's traditional knowledge are yet to be tested in the modern laboratories and subsequently to put into the general stream of human welfare scientifically by utilising the potential plant extract as a remedy for different ailments or diseases afterwards.

From intensive literature survey it was revealed that most of the workers have done their works from taxonomic point of view^{29,49-53}. Besides their works, a galaxy of workers^{3-8,10,14,17,20,23,35-40,48} have made their works on

medicinal plants from southern parts of West Bengal (i.e. Purba Medinipur, Paschim Medinipur, Bankura and Purulia districts) in a holistic way.

Methodology

The southern parts of West Bengal comprise generally of four districts viz. Purba Medinipur, Paschim Medinipur, Bankura and Purulia. The physiography, climatic set up, soil formation, vary district to district. Thus there are the formation of a diversified floristic compositions due to geomorphic situation⁵⁶. Though the seasonal variations are not sound enough but their growing different kinds of habit groups of which climbers sustain a unique position. The soil of the Paschim Medinipur, Bankura and Purulia are lateritic whereas in Purba Medinipur the soil is alluvial type. The maximum temperature varies in the 4 districts from 34°C to 44.8°C during summer and comes down to 9°C during winter. The average annual rainfall is 1400 mm.

The present work was mainly based on an intensive literature as well as field surveys from the different parts Purba Medinipur, Paschim Medinipur, Bankura and Purulia districts in different seasons of the year. Field and herbarium methods were followed as recommended²⁴. Climbers were identified with the help of available

TABLE -1: List of climbing species alongwith their family, local name (s), types of climbers, parts used & medicinal uses

Name of the plant	Family	Local name (s)	Type of climbers	Parts used	Medicinal uses/ OR the treatments of-
<i>Abrus precatorius</i>	Fabaceae	Lal Kunch	Twiner	Root	Root decoction is used for Fever ⁴⁵
<i>Aganosma caryophyllata</i>	Apocynaceae	Malatilata	Twiner	Leaf	Useful in ophthalmia ¹
<i>Ampelocissus latifolia</i>	Vitaceae	Kamar lata	Tendrill climber	Root	Paste applied to wound ⁴⁴
<i>Ampelocissus tomentosa</i>	Vitaceae	-	Tendrill climber	Root	Root paste is used to cure venereal diseases ⁴⁵
<i>Antigonon leptopus</i>	Polygonaceae	Ananta lata	Twiner	Tuber	As tonic ¹
<i>Argyrea nervosa</i>	Convolvulaceae	Guguli, Bij Tarak	Twiner	Root	For the treatment of Rheumatism ¹
<i>Aristolochia indica</i>	Aristolochiaceae	Iswarmul	Twiner	Leaf	Leaf paste is applied on boils and blisters on skin ⁷
<i>Asparagus adscendens</i>	Asparagaceae	Maha satbari	Twiner	Root	Used to treat diarrhoea ⁴⁴
<i>Asparaguss racemosus</i>	Asparagaceae	Satamuli	Twiner	Root	Decoction is used internally for stomach trouble ⁴⁵
<i>Bauhinia vahlii</i>	Fabaceae	Chihurlata	Liana	Flower	Flower feed on diarrhoea ⁵²
<i>Boerhavia diffusa</i>	Nyctaginaceae	Punamava	Rambler	Whole plant	Leaf juice taken for 2 times per day for treating kidney problems ⁶ Root decoction is for the treatment of asthma and jaundice ⁵⁸ .
<i>Butea superba</i>	Fabaceae	Latpalash	Liana	Stem bark	Decoction for curing wounds ⁴⁵

	Fabaceae	Nata; Lata	Scrambler	Seed	Seed paste with mustard oil (2:1) is applied during scabies ⁷
<i>Caesalpinia bonduc</i>				Seed	Seed paste with mustard oil (2:1) is applied during scabies ⁷
<i>Cajanus scabaeoides</i>	Fabaceae	-	Twiner	Leaf	Leaf juice for curing dysentery ⁴⁵
<i>Capparis zeylanica</i>	Capparaceae	Kalokera	Scrambler	Leaf	To treat piles ⁴⁴
<i>Cardiospermum halicacabum</i>	Sapindaceae	Shibjuli; Latapatkori	Tendrill climber	Root	Roots used to treat rheumatism ⁵²
<i>Cayaponia laciniosa</i>	Cucurbitaceae	Mala	Tendrill climber	Seeds	Crushed seeds with milk given to increase the power of semen ⁴⁴
<i>Cayratia trifolia</i>	Vitaceae	Amal-lata	Tendrill climber	Stem	Stem paste is applied in healing bone fracture ⁷
<i>Celastrus paniculatus</i>	Celastraceae	Kujri; Malkgari	Twiner	Seed	Seed oil is rubbed to reduce leucoderma ⁷
<i>Centella asiatica</i>	Apiaceae	Thankuni; Tholkuri	Rambler	Leaf	Irregular menstruation ⁵⁴ .
<i>Cissampelos pareira</i>	Menispermaceae	Ekleja	Twiner	Root	Internal use for stomach pain ⁴⁵
<i>Cissus adnata</i>	Vitaceae	Panialata	Liana	Root	Root paste with termite mound's soil is bandaged to 7 days to heal bone fracture ⁴⁷
<i>Cissus quadrangularis</i>	Vitaceae	Harbhanga/ Hajjora	Tendrill climber	Stem	For treating irregular menstruation ⁵⁵
<i>Clitoria ternatea</i>	Fabaceae	Aparajita	Twiner	Root	Ulcers of cornea ²⁷
<i>Coccinea grandis</i>	Cucurbitaceae	Telakucha	Tendrill climber	Leaf	Leaf juice taken 4 to 5 teaspoon at morning & night to combat dysentery ⁶

<i>Cocculus hirsutus</i>	Menispermaceae	Daipata	Twiner	Whole plant	Useful in urethral discharges ⁴²
<i>Cucurbita maxima</i>	Cucurbitaceae	Misti-Kumra	Tendrill climber	Root	Local application for immobilisation of poison ³⁷
<i>Cuscuta reflexa</i>	Cuscutaceae	Swarnalata	Twiner	Stem	Externally stem juice is used for wound healing ⁴⁵
<i>Cryptolepis dubia</i>	Asclepiadaceae	Karilata	Twiner	Root	Roots used to treat venereal diseases ⁵²
<i>Dalbergia volubilis</i>	Fabaceae	Latmurga	Liana	Leaf	Applied to gout ⁴⁴
<i>Derris trifoliata</i>	Asclepiadaceae	Panlata	Twiner	Whole plant	Stimulant ¹⁰
<i>Dioscorea alata</i>	Dioscoreaceae	Khamalu/ Chuprialu	Twiner	Tubers	Useful in Leprosy ⁴⁴
<i>D. bulbifera</i>	Dioscoreaceae	Ban alu	Twiner	Root	Ulcers ⁴⁴
<i>D. esculenta</i>	Dioscoreaceae	Kantaalu	Twiner	Root	Dysentery ⁴⁴
<i>D. pentaphylla</i>	Dioscoreaceae	Shuoralu	Twiner	Tubers	Rheumatic swelling ⁴⁴
<i>Dergea volubilis</i>	Asclepiadaceae	Titakunja	Twiner	Whole plant	Eye problem ¹
<i>Erycibe paniculata</i>	Convolvulaceae	-	Twiner	Bark	Decoction is used internally for venereal diseases ⁴⁵
<i>Gloriosa superba</i>	Liliaceae	Ulatchandal	Tendrill climber	Tubers	For treating piles ¹⁰
<i>Gymnema sylvestre</i>	Asclepiadaceae	Gumar/ Meshshringa	Twiner	Leaf	To treat diabetes ⁴⁴
<i>Hemidesmus</i>	Asclepiadaceae	Anantamul	Twiner	Root	Root paste is used for antidote for snake bite ⁷
<i>Holostemma annularis</i>	Asclepiadaceae	Arka puspa	Twiner	Root	Roots to treating cough ⁵²

<i>Ipomoea nvoluc</i>	Convolvulaceae	Kalmisak	Rambler	Leaf	Leaf extract is used to treat opium intoxication ⁴³
<i>Ipomoea nil</i>	Convolvulaceae	Kaladana	Twiner	Seeds	Leucoderma ⁴⁴
<i>I. pes-caprae</i>	Convolvulaceae	Morning Glory	Twiner	Roots	Decoction is useful for Treating rheumatism ^{10,16}
<i>I. pes-trigridis</i>	Convolvulaceae	Languillata	Twiner	Roots	Carbuncle ⁴⁴
<i>I. purpurea</i>	Convolvulaceae	Morning glory	Twiner	Whole plant	Purgative ¹
<i>I. quamoclit</i>	Convolvulaceae	Tarulata	Twiner	Leaf	Bleeding piles ⁴⁴
<i>Ipomoea aquatica</i>	Convolvulaceae	Kalmisak	Twiner	Whole plant	Jaundice ⁴⁴
<i>Lagenaria siceraria</i>	Cucurbitaceae	Lau	Tendrill climber	Seed	Used as laxative ¹⁵
<i>Lantana camara</i>	Verbenaceae	Bhutbhairabi	Scrambler	Whole plant	Ulcers ⁴⁴
<i>Lygodium pinnatifidum</i>	Schizaeaceae	-	Twiner	Leaf	Infectious ulcers ⁴⁴
<i>Merremia nvolucrat</i>	Convolvulaceae	Prasarani	Twiner	Whole plant	For accelerating wound healing ³⁷
<i>Mikania micrantha</i>	Asteraceae	Taralata	Twiner	Leaf	Leaves used to cure wounds ^{32,51} ; Leaf extract is applied to cut wounds to stop bleeding
<i>Mimosa pudica</i>	Fabaceae	Lajjabati	Scrambler	Root	For treating piles & fistula ²⁷
<i>Momordica dioica</i>	Cucurbitaceae	Ghikalla	Tendrill climber	Leaf	Used to treat bleeding piles ⁴⁴
<i>Mucuna pruriens</i>	Fabaceae	Alkushi	Twiner	Root	Used in abortifacient purposes ²⁸
<i>Paederia foetida</i>	Rubiaceae	Gandal pata	Twiner	Leaf	Specific against toothache ³²

<i>Passiflora suberosa</i>	Passifloraceae	Begambahar	Tendrill climber	Fruit	Use as stimulant & tonic ⁴⁴
<i>Pergularia daemia</i>	Asclepiadaceae	Dudhlata	Twiner	Latex	To treat leucoderma ⁴⁴
<i>Phaseolus adenanthus</i>	Fabaceae	Banbarbati	Twiner	Whole plant	Decoction used in Bowel complaints ¹
<i>Piper betle</i>	Piperaceae	Pan	Root-climber	Petiole	Warm paste is applied locally to the cut wound, thrice in a day till cured ²⁰
<i>P. longum</i>	Piperaceae	Pipul	Root-climber	Fruit	Rheumatism ⁴⁴
<i>P. nigrum</i>	Piperaceae	Gol mirich	Root-climber	Fruit	Powder used in cold & cough ⁴⁴
<i>Operculina terpenanthum</i>	Convolvulaceae	Dudkalmi	Twiner	Whole plant	Purgative ⁴²
<i>Quirivella frutescens</i>	Apocynaceae	Shyamalata/ Siamalata	Twiner	Latex	Latex is applied in scabies ⁷
<i>Quisqualis indica</i>	Combretaceae	Madhunalata	Hook climber	Flower	Decoction of powder given to treat diabetes ⁴⁴
<i>Rivea hypocrateriformis</i>	Convolvulaceae	Banpui	Twiner	Leaf	Juice given to treat bloody urine ⁴⁴
<i>Smilax zeylanica</i>	Smilacaceae	Kumarika	Tendrill climber	Roots	Decoction is used for relief from rheumatism ⁴⁵
<i>Solanum trilobatum</i>	Solanaceae	NabhiAnkuri	Scrambler	Whole plant	Used to treat asthma ¹
<i>Solena amplexicaulis</i>	Cucurbitaceae	Rakhalsasha	Tendrill climber	Seed	Used as purgative ⁴⁴
<i>Stephania japonica</i>	Menispermaceae	Nimukha	Twiner	Root	Root is used to treat in bowel complaint ¹⁵

<i>Teramnus labialis</i>	Fabaceae	Mashani	Twiner	Whole plant	Used to treat rheumatism ⁴⁴
<i>Tinospora cordifolia</i>	Menispermaceae	Lat-gulancha	Twiner	Stem	Stem paste is prescribed for crack bone ⁷
<i>T. sinensis</i>	Menispermaceae	Padmagulan -cha	Twiner	Whole plant	Used in chronic rheumatism ⁴⁴
<i>Tiliacora racemosa</i>	Menispermaceae	NR	Twiner	Leaf	Paste removes leucoderma ¹
<i>Toddalia asiatica</i>	Rutaceae	Kadatodali	Scrambler	Leaf	Fresh leaf to treat colic ¹⁰
<i>Tragia nvolucrate</i>	Euphorbiaceae	Bichuti	Twiner	Seeds	Seed paste is used locally to stop hairfall ⁴⁷
<i>Trichosanthes anguina</i> L.	Cucurbitaceae	Chichinga	Tendrill climber	Leaf	Leaf juice is taken twice a day for 10 days in case of manupausal problems ²⁰
<i>Trichosanthes dioica</i>	Cucurbitaceae	Patol	Tendrill climber	Fruits	Juice extract from roasted fruit is used as oil to the chicken pox scar ²⁰
<i>Trichosanthes tricuspidata</i>	Cucurbitaceae	Makal	Tendrill climber	Roots	Plant extract is used in carbuncles ⁴⁴
<i>Tylophora tenuis</i>	Asclepiadaceae	Antamul	Twiner	Leaf	For treating scabies ⁹
<i>Vallis solanacea</i>	Apocynaceae	Haparnali	Twiner	Latex	Used in rheumatic pain ⁴⁴
<i>Ventilago denticulata</i>	Rhamnaceae	Banga Sarjon	Twiner	Root	Root juice used to treat ear pus formation ⁵²
<i>Vigna trilobata</i> (Fabaceae	Mugani	Twiner	Leaf	Decoction used in intermittent fever ⁴⁴
<i>Vintoxicum indicum</i>	Asclepiadaceae	Antamul	Twiner	Root bark	Used in asthma ⁴⁴
<i>Ziziphus oenoplia</i>	Rhamnaceae	Shiakul	Scrambler	Fruits	Used in stomachache ⁴⁴

TABLE-2: Taxonomic breakup of the climbers of Southern parts of West Bengal

Plant groups	Families	Genera	Species
Dicots	25	64	77
Monocots	4	4	8
Pteridophyte	1	1	1
TOTAL	30	69	86

flora^{18,20,21,45}. Finally the prepared herbarium sheets were deposited at Ramnagar College. For updating species names the website of The Plant List (<http://www.plantlist.org>) was consulted. The list of accepted plant names were arranged alphabetically (Table-1) along with their family, local name (s), type of climbers, parts used and their uses for the treatments of ailments or problems were presented in tabulated form.

Our investigation revealed that the whole plant, stem, stem bark, petiole, leaves, roots, root bark tuber, flowers, fruits, seeds or latex having medicinal values were treated separately.

For additional information regarding medicinal values were collected from local people as well as verified with pertinent literatures, published papers of plant explorers^{2,3,8,21,24,-26,29,32,33,41,46,51,55,58}, in addition to our personal experiences.

TABLE-3: Types of climbers and their numbers

Types of climbers	Total number
Twiners	51
Tendrils climbers	17
Liana	4
Hook-climbers	1
Ramblers	3
Scramblers	7
Root-climber	3
TOTAL	86

Present initiative has been taken to record the ethno-medicinal climbers from the southern parts of West Bengal and their uses to treat different kinds of diseases or problems which we are facing in our daily life.

Result and Discussion

Present investigation reported 86 ethno-medicinal climbers from southern parts of West Bengal, of which 8 species of monocots under 4 families; 77 species of dicots under 25 families and 1 species of pteridophyte (e.g. *Lygodium pinnatifidum*). Out of 86 climbers, 51 species are twiners, 4 species are liana, 17 species are tendril climbers, 7 species are scramblers, 3 species are ramblers, 3 species are root-climbers and 1 species is hook-climber. As many as 37 diseases and problems can be treated by the utilisation of medicinal properties of 86 climbers which have been recorded from the southern parts of West Bengal. The diseases and problems are rheumatism (9 species); wound healing (6 species); piles (5 species); leucoderma (4 species); eye problems, venereal diseases, tonic, stomach problems, scabies, as

TABLE-4: Types of parts and their numbers

Types of climbers	Total number
Root	24
Leaf	20
Stem	4
Stem bark	2
Seeds	7
Fruits	5
Flowers	2
Latex	3
Whole plant	13
Tubers	4
Root bark	1
Petiole	1
TOTAL	86

purgative, menstruation problems, bowel complaints, dysentery, ulcers and bone fracture 3 species each; fever, diarrhoea, kidney problems, diabetes, cough, asthma and carbuncle 2 species each; skin disease, hair fall, chicken pox, ear problem, snake-bite, de-addiction of intoxication, toothache, laxative, abortifacient purposes, jaundice, urethral problem, leprosy, semen count, as poison and gout 1 species each (Table-1).

Conclusion

Nature is a treasure house for good number of medicinal plants. With the advent of modern tools and techniques we are very much accustomed to the use of modern medicines in our daily life ignoring the uses of traditional medicines with zero side effects. In rural areas people are not very much aware of the efficacy or

potentiality of local plants. They are generally using these plants for quick relief from their daily life problems and ailments. They have no particular idea about the dose, efficacy of these plant extracted medicine. Above all rapid urbanisation, pollution, absence of pollinators, injudiciously overexploitation of some locally grown plants like *Aristolochia indica*, *Cayaponia laciniosa*, *Centella asiatica*, *Coccinea grandis*, *Gymnema sylvestre*, *Tinospora cordifolia* etc have gradually become endangered from their natural habitat. Scientific exploration, their identification and their methods of administration in conformity with their efficacy is quintessence and ultimately their conservation for future studies and sustainable development is need of the hour. If we fail to do the same, medicinally potent species might gradually be eliminated from their natural habitat.

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