



## SOME MEDICO-POTENTIAL CLIMBERS OF KOTTAYAM DISTRICT, KERALA, INDIA

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### ABSTRACT

The present study was resulted in the documentation of 30 medico-potential climbers which are belonging to 24 genera and 14 families from the Kottayam District, Kerala, India. The medicinal efficacies of these potential climbers are revealed through the discussions with local inhabitants of the study area. They utilize these medicinal plants to treat various ailments like anti-diabetes, cough and bronchial asthma, gastro intestinal problems, skin problems, poisonous bites, cuts and wounds etc.

**Keywords:** Medico-Potential Climbers, Kottayam District, Kerala, India.

### INTRODUCTION

Since time immortal human beings are utilizing plants, apart from food and shelter they used as medicine to cure various ailments and also as ornamentals for aesthetic value. The Western Ghats region of Kerala is a great emporium and treasure house of medicinal plant wealth [1]. Out of nearly 18,500 higher plant species estimated in India, about 7,500 species are reported to be medicinal use by rural and tribal communities [2]. The recognized plants for medicinal uses mostly belonging to trees, shrubs and herbs, but there is an another group of plants categorized as “climbers”. The climbing habit is a key innovation in angiosperms evolution. 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 [3]. Climbers depend 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 twidders [4].

### MATERIALS AND METHODS

#### STUDY AREA

Kottayam district (9.5800° N, 76.5200° E), Kerala. It is covering an area of 55.40 square Kilometers.

The general soil type is alluvial soil. The vegetation is mainly tropical evergreen and moist deciduous type. The climate in this district is moderate and pleasant. An annual temperature ranges between 20 to 35 °C.

The South-West monsoon brings in heavy rains during June-August. From October to December, the area receives light rain due to the influence of Northwest Monsoon. The average annual rainfall is 3, 200 millimeters (130 in). Depending on the location and specific phyto-geographical condition of the district, there are varieties of food crops as well as cash crops are cultivated. Rice is the principal crop extensively cultivated in low lying regions like Vaikom and Upper Kuttanad [5] (Plate-1).

### DOCUMNETATION

The present exploration was conducted during December 2014 - June 2015 to document the various medico-potential climbers, which are distributed in the study area. The medicinal efficacies of these potential climbers are revealed through the discussions with local inhabitants of the study area.

During the field visits, the plant specimens were collected at different reproductive stages for the correct identification [6,7.] and also to prepare herbarium specimens [8].

The voucher specimens were deposited in the Herbaria of PG Department of Botany, Deva Matha College Kuravilangad, Kottayam for future reference.

**Table 1. List of Medicinal Plants, which are documented from the Study Area**

Sl.No	Botanical Name	Family	Part(s) used	Medicinal uses
1.	<i>Abrus precatorius</i> L. (Pl.2A)	Fabaceae	Leaves	Leaves juice are used anti-dibetic drug
2.	<i>Aristolochia indica</i> L. (Pl.2B)	Aristolocaceae	Root	Root paste applied on poisonous bites
3.	<i>Asparagus setaceous</i> (Kunth.) Jessop. (Pl.2C)	Liliaceae	Tuber	Infusion of tubers are used for gastro intestinal problems
4.	<i>Benincasa hispida</i> (Thunb.) Cogn.	Cucurbitaceae	Fruits	Fruits juice is taken daily to reduce diabetes
5.	<i>Cardiospermum canescens</i> Wall.	Sapindaceae	Leaves	Oral administration of leaf Juice is used for joints pain and swellings
6.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Leaves	Oral administration of leaf Juice is used for joints pain and swellings
7.	<i>Cayratia pedata</i> (Lam.) A. Juss.	Vitaceae	Leaves	Leaves decoction used for cough, bronchitis and asthma
8.	<i>Cissus quadrangularis</i> L. (Pl.2D)	Vitaceae	Whole plant	Dried plant parts are used to cure various type of bone fractures in both humans and animals
9.	<i>Coccinia grandis</i> Wight & Arn. (Pl.2E)	Cucurbitaceae	Leaves & fruits	Leaf paste is externally applied for pimples and raw fruits are eaten to reduced blood sugar
10.	<i>Cosmostigma racemosum</i> (Roxb.) Wight,	Asclepiadaceae	Leaves	Leaf infusion are used for ulcers
11.	<i>Cucumis melo</i> L.	Cucurbitaceae	Seeds	Seed paste is used to control diabetes
12.	<i>Cucurbita maxima</i> Duch.	Cucurbitaceae	Leaves	Leaf paste is applied on burns
13.	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Seeds	Seeds are used for liver disorders
14.	<i>Gymnema hirsutum</i> Wight & Arn.	Asclepiadaceae	Leaves	Leaves powder mixed with water and consume daily to control diabetes
15.	<i>Hemidesmis indicus</i> (L.) R. Br. Hook.	Asclepiadaceae	Root	Root extract is used for treating mouth ulcers
16.	<i>Ichnocarpus frutescens</i> Moon. (Pl.2F)	Apocynaceae	Root & stem bark	Root and stem bark extract is given orally to treat snake bites
17.	<i>Ipomeoa aquatica</i> Forssk., Fl. (Pl.3A)	Convolvulaceae	Leaves	Boiled leaves are given for piles
18.	<i>Ipomeoa batatas</i> (L.) Lam.	Convolvulaceae	Tuber	Raw tubers are used for diabetes
19.	<i>Ipomeoa cairica</i> (L.) Sweet.	Convolvulaceae	Leaves	Leaves are used for treatment of cancer
20.	<i>Ipomeoa obscura</i> (L.) Ker-Gawl.,	Convolvulaceae	Leaves	Leaf paste is applied externally to cure wounds
21.	<i>Momordica charantia</i> L.	Cucurbitaceae	Leaves & fruits	Extract of leaves and fruits are given orally for diabetes
22.	<i>Mukia maderaspatana</i> L.	Cucurbitaceae	Leaves	Leaves extract taken orally to treat stomach problems
23.	<i>Passiflora edulis</i> L.	Passifloraceae	Fruits	Consumption of fruit pulp can reduce blood sugar
24.	<i>Piper longum</i> L.	Piperaceae	Fruits	Dried fruit powder is used for cough
25.	<i>Piper nigrum</i> L. (Pl.3B)	Piperaceae	Fruits	Dried fruit powder is used for cough
26.	<i>Salacia fruticosa</i> Heyne ex Lawson (Pl.3C)	Hippocrataceae	Root	Root decoction is used as anti-diabetic drug
27.	<i>Tragia bicolor</i> Miq. (Pl.3D)	Euphorbiaceae	Leaves	Leaf decoction is used as anti-diabetic drug
28.	<i>Tylophora indica</i> Burn. f. (Pl.3E)	Asclepiadaceae	Latex	Latex applied on throat to reduce throat pain
29.	<i>Uvaria narum</i> (Dunal) Wall. (Pl.3F)	Annonaceae	Roots & leaves	The paste of Roots and leaves are applied for skin problems
30.	<i>Wattakaka volubilis</i> (L. f.) Stapf.	Asclepiadaceae	Leaves & roots	The paste of roots and leaves are applied for skin problems and poisonous bites.

## RESULTS AND DISCUSSION

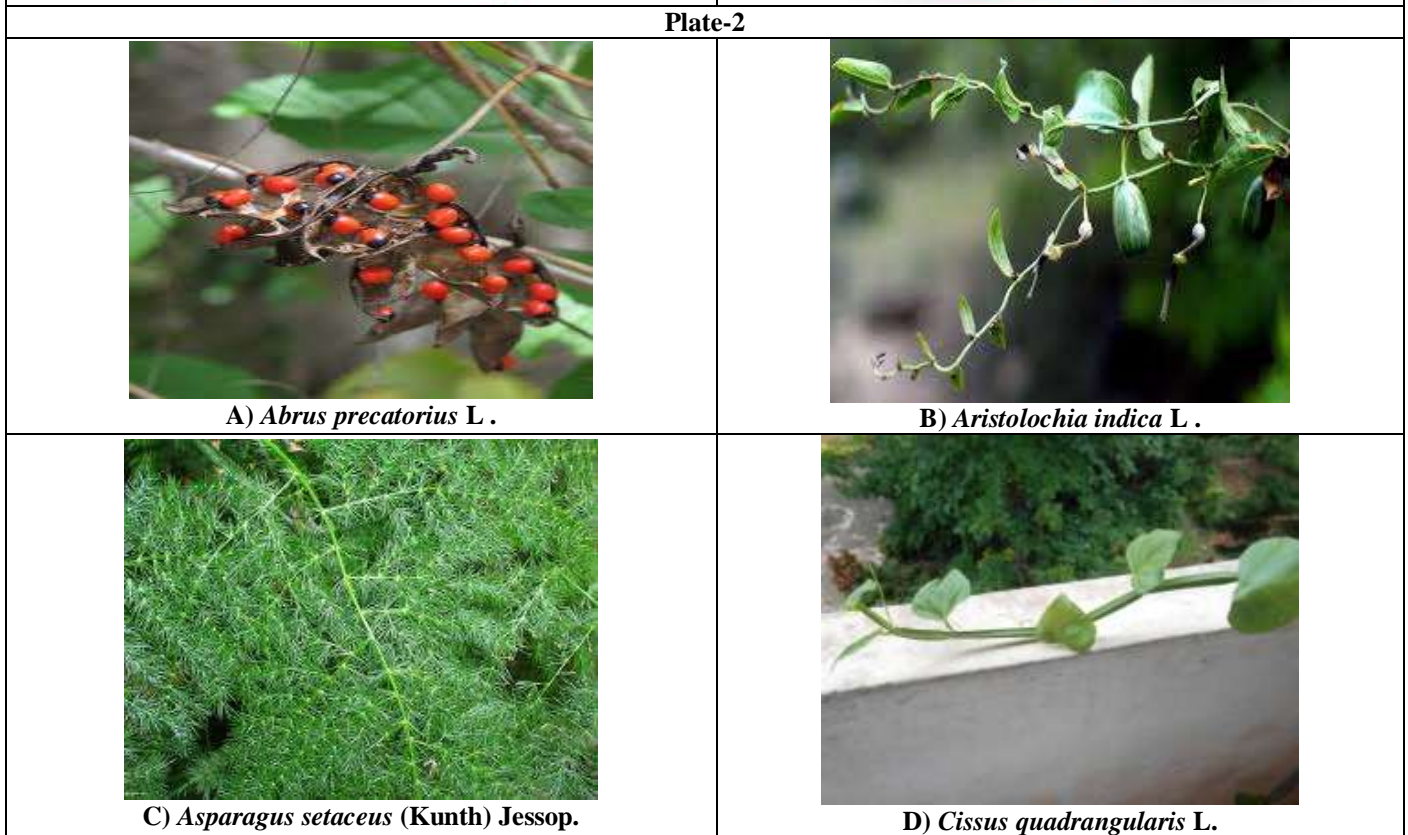
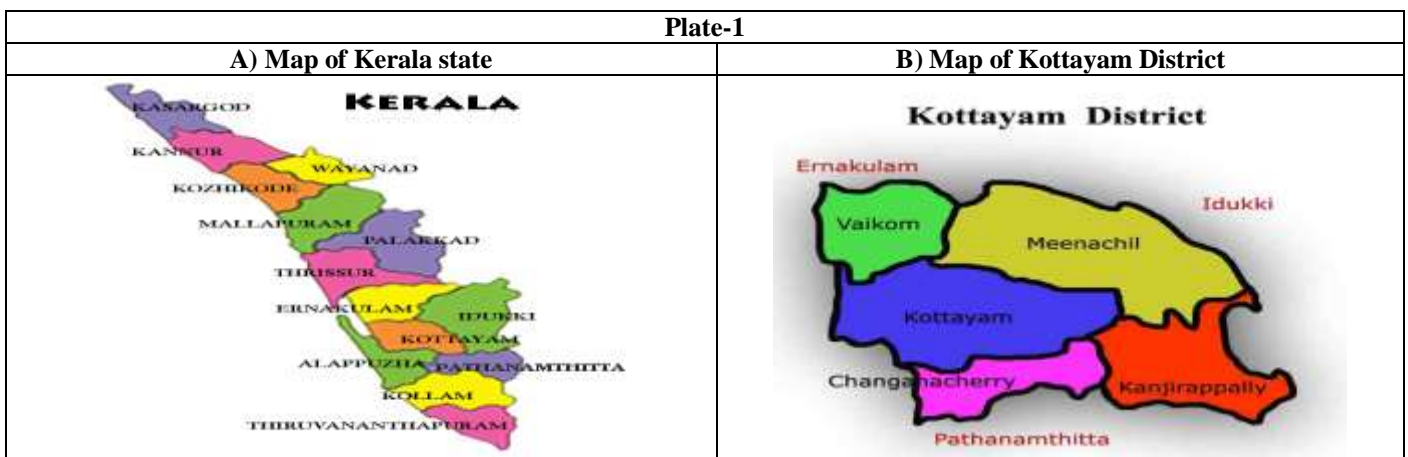
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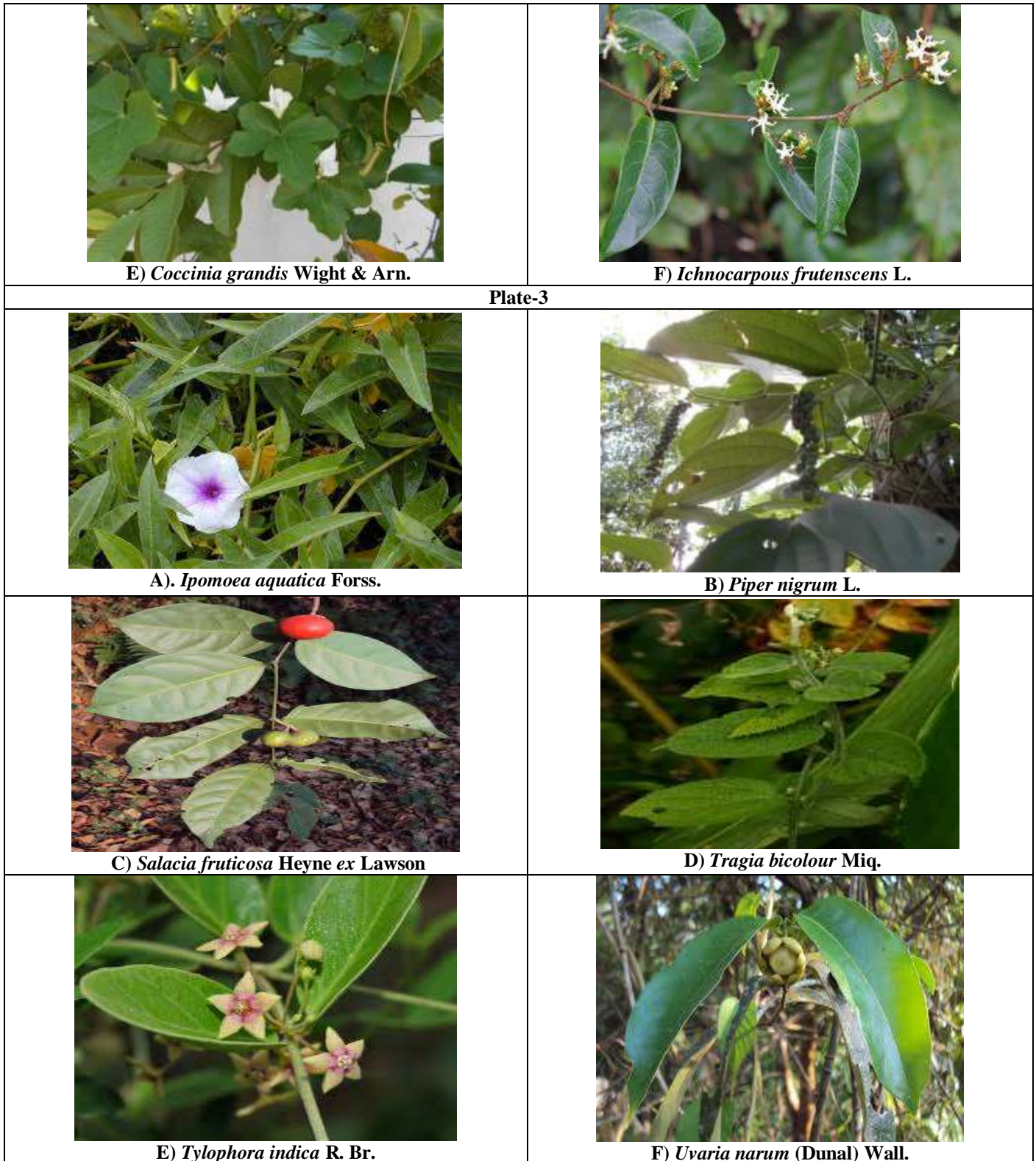
District, Kerala, India (Table-1). Among the 14 families represented, the family like Cucurbitaceae is a dominant one with 6 species followed by Asclepiadaceae and

Convolvulaceae with 5 species each. While Piperaceae, Sapindaceae and Vitaceae are having 2 species each and all other families are represented by single species each. Out of 24 genera represented, the genus like *Ipomeoa* is a dominant one with 4 species, followed by *Piper* and *Cardiospermum* with 2 species respectively and all other genera are represented by single species each. The various plant parts like Leaves (12 Nos.), Fruits (6 Nos.), Roots (6 Nos.), Seeds (2 Nos.), Tubers (2 Nos.), Latex (1 No.) and Whole plant (1 No.), are utilized by local inhabitants of the study area for the preparation of different medicinal formulations to treat various ailments like anti-diabetes, cough and bronchial asthma, gastro intestinal problems, skin problems, poisonous bites, cuts and wounds etc.,

Similar studies were conducted Sarvalingam et al., [9]. They studied on curative climbers of Maruthamali hills, Southern Western Ghats of Tamil Nadu. According

to them, a total 55 climbers which are possessing various medico-potentialities to cure different ailments like diabetes, dysentery, fever, head ache rheumatism, snake bite etc. They also highlights the ethnic people in the study area having very good knowledge on traditional medicinal practices. Similarly, survey on medico-botanical climbers in Pazhayaru river bank of Kanyakumari District, Tamilnadu by Uma and Parthipan [10]. According to their observation, a total of 25 climbing medicinal plants species which are collected through folk information from elderly villagers in the study area. Among them Apocynaceae is a dominant family, which has contributed 9 plant species followed the Cucurbitaceae and Menispermaceae 3 species each. Convolvulaceae and Liliaceae are having 2 species each and remaining families have single plant species. They also impressed the preparation of conservation strategies for medicinal plant species of the study area.





### CONCLUSION

Medicinal plants are potential renewable natural resources and are generally considered to play a beneficial role in human health care. The medicinal value of these plants lies in some chemical substances like alkaloids, flavonoids, tannins and phenolic compounds etc., that produce a definite physiological action on the human body. The present study also noticed that some of the threatened

factors in the study area are habitat destruction, agricultural expansion, anthropogenic activities, over exploitation of natural resources and over grazing can adversely affected biodiversity of an area either directly or indirectly.

Hence proper conservation and sustainable utilization of natural resources are very urgent need for tomorrow.

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