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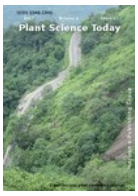

Research Article

Ethnobotanical plants of Veligonda Hills, Southern Eastern Ghats, Andhra Pradesh, India

S K M Basha[1*] and P Siva Kumar Reddy[2]

[1]NBKR Medicinal Plant Research Institute, Vidya Nagar, SPSR Nellore, Andhra Pradesh, India
[2]Research and Development Centre, Bharathiyar University, Coimbatore, Tamil Nadu, India

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Corresponding Author
S K M Basha
drskmbasha@gmail.com

Abstract

The Veligonda range which separates the Nellore district from Kadapa and Kurnool is the back bone of the Eastern Ghats, starting from Nagari promontory in Chittoor district. It runs in a northerly direction along the western boarders of the Nellore district, raising elevation of 3,626 feet at Penchalakona in Rapur thaluk. Veligonda hill ranges have high alttudinal and deep valley. These hills have rich biodiversity and many rare, endangered, endemic and threatned plants are habituated in these hills. The present paper mainly deals with the ethanobotanical plants used by local people.

Keywords
Ethnobotany; Threatened; Endangered; Endemic; Veligonda hill range

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Introduction

The World Health Organization (WHO) estimated that 80% of the population of developing countries relies on traditional medicines, mostly plant drugs, for their primary healthcare needs. Also, modern pharmacopoeia still contains at least 25% drugs derived from plants and many others which are synthetic analogues built on prototype compounds isolated from plants. Demand for medicinal plant is increasing in both developing and developed countries due to growing recognition of natural products, being non-narcotic, having no side-effects, easily available at affordable prices and sometime the only source of health care available to the poor.

It is evident that the Indian people have tremendous passion for medicinal plants and use them for wide range of health related applications from a common cold to memory improvement and treatment of poisonous snake bites to a cure for muscular dystrophy and the enhancement of body's general immunity. In the oral traditions, local communities in every ecosystem from the Trans Himalayas down to the coastal plains have discovered the medical uses of thousands of plants found locally in their ecosystem. India has one of the richest plant medical cultures in the world. It is a culture that is of tremendous contemporary relevance because it can on one hand ensure health security to millions of people and on the other hand it can provide new and safe herbal drugs to the entire world. There are estimated to be around 25000 effective plant based formulations used in folk medicine and known to rural communities all over India and around 10000 designed formulations are available in the indigenous medical texts.

Study area

Eastern Ghats are one of the nine major floristic zones of India possessing rich and diversified plant wealth due to undulated topography and availability of rich humus content. The forests of Eastern Ghats

in Andhra Pradesh are inhabited with 33 tribal 9 groups (Tribal Welfare Department, Government of Andhra Pradesh, 2011). They contain valuable information regarding therapeutic properties of commonly used crude drugs for different human and veterinary ailments which was recorded and critically analyzed with the help of literature as well as field observations. Based on these observations some potential drug yielding plants, which have limited distribution, were selected for scientific evaluation. Most of the enumerated taxa were reported as endemic and endangered (Nair and Sastry, 1998) as they have been over-exploited for different purposes.

Eastern Ghats, an overview

The Eastern Ghats cover on area about 75,000 sq. km. traversing the coromandel between 11° 30' - 22° N latitudes and 76° 50' - 86° 30' E longitudes. Its northern boundary is marked by river Mahanadi basin while the southern boundary is the Cauvery and west lives tips Bastar, Telangana, Karnataka plateaus and Tamil Nadu uplands. They pass mainly in three states *viz*. Orissa, Andhra Pradesh and Tamil Nadu.

In Andhra Pradesh, Eastern Ghats pass through Srikakulam, East Godavari, West Godavari, Khammam, Krishna, Guntur, Mahaboobnagar, Prakasam, Kurnool, Kadapa, Nellore and Chittoor districts. Eastern Ghats do not form continuous range like Western Ghats but assemblage of discontinuous ranges of hills with plateaus, escarpments, butters, tors, narrow basins and gorges with elevation ranging from few meters to more than 1600m. The Mahanadi, the Godavari, the Pennar and the Cauvery are main rivers which raise in Western Ghats have cut extensively through Eastern Ghats to escape into the Bay of Bengal, hence, they do not form a continuous range. Based on the climates, topographic, geographical features the Eastern Ghats of Andhra Pradesh can be divided into the following regions:

1. *Northern Eastern Ghats:* The stretching extreme north of the state *i.e.* Simhachalam and Rampa hills.
2. *Southern Eastern Ghats*: These Ghats stretching between the South of the river, the cannery through Papi hills, Kondapalli range, Nallamalais, Yerramalais, Palakonda, Veligonda range, Horseley hills, Seshachalam hills, Nagari hills, etc.

The altitudes in the Eastern Ghats of Andhra Pradesh range from 300 – 1500m above MSL. The altitudes more than 1000m above MSL in central parts of the north Eastern Ghats and 300 – 600m, and above in Southern Eastern Ghats, while in Nallamalais the highest peak in rising between 600 – 800 m above MSL.

Veligonda Hills

Veligonda and adjoining hill ranges spread along about 170 km North to South in Kadapa and Nellore Districts and stretching a little further into Prakasam district. Geographically these hill ranges lie between 79° E to 79° 30' E and 13° 45' N to 15° 15' N. The latitude in general ranges up to 1000m. The forests are in general dry deciduous type. Veligonda and adjoining hill ranges comprising of Palakonda, Seshachalam, Lankamala and terminal part of Nallamalais from mid region of Southern Eastern hats.

The Veligonda range which separates the Nellore district from Kadapa and Kurnool is the backbone of the Eastern Ghats, starting from Nagari promontory in Chittoor district. It runs in a northerly direction along the western boarders of the Nellore district, raising elevation of 1105m at Penchalakona in Rapur thaluk. Veligonda hill ranges have high altitudinal and deep valleys. Among the Velugondas range of hills the Durgam in Venkatagiri range and Penchalakona are the most prominent and 914m above msl.

Vegetation types in Eastern Ghats in Andhra Pradesh

The forest area of the State extends about 63,814 sq km which constitute 23.2% of the total land area (Forest Report of Andhra Pradesh, 2013). The vegetation in Eastern Ghats is determined by climate, edaphic factors and biotic factors along with altitude. The wide variations in climate and topography of the Eastern Ghats have resulted in various types of forest growth. The vegetation in Eastern Ghats is classified based on the concept of Champion and Seth (1968). The following types of vegetation are found in Eastern Ghats of Andhra Pradesh.

I. Tropical moist deciduous vegetation

These are typical deciduous forest with high annual rainfall of over 1000mm and mixed with evergreen species only along the patches of selected habitats. This type of forests found in Eastern Ghats of Andhra Pradesh like, Ananthagiri, Maredumilli, and East Godavari District. It has the following prominent sub types *viz*., a) Forests dominated with sal (*Shorea robusta* Roth., Dipterocarpaceae), b) Those completely devoid of sal or Non sal forests, and c) Rivarian forests found along with river banks, streams and in the low hilly areas.

The vegetation is characterized by dense foliage at top canopy with abundant large climbers and epiphytes with scattered bamboo growth. The deciduous period is very less *i.e.*, March-April. These can be sub classified into following categories.

a) Northern Tropical moist deciduous sal forests

This type of forest sub type found at Donubai area, Srikakulam, Vijayanagaram and Seshachalam hills

of Chittoor and Kadapa Districts. The most dominant tree species are *Shorea robusta* Roth. (Dipterocarpaceae) along with other co dominate species like *Xylia xylocarpa* (Roxb.) Taub (Fabaceae), *Haldinia cordifolia* Roxb. (Rubiaeae), *Anogeissus latifolia* (Roxb ex. DC.) Wall. ex Guillem. & Perr (Combretaceae), *Terminalia alata* Roth. (Combretaceae), *Lannea coromandelica* (Houtt.) Merr (Anacardiaceae), *Madhuca longifolia* (Koen.) Macbr. (Sapotaceae), *Albizzia procera* (Roxb.) Benth (Fabaceae), *Syzygium cumini* (L.) Skeels (Myrtaceae), *Pterocarpus marsupium* Roxb. (Fabaceae) mixed with species of middle canopy like *Cleistanthus collinus* (Roxb. Benth. ex. Hook.f), *Dillinia pentagyna* Roxb. (Dillineaceae). The lower canopy with shrubby species *Alstonia venenata* R.Br. (Apocynaceae), *Cipadessa baccifera* (Roth.) Miq. (Meliaceae), *Woodfordia fruiticosa* (L.) Kurz (Lythraceae) *Helictres isora* L. (Sterculiaceae), etc. and ground is covered with some herbs, like *Desmodium pulchellum* (L.) Benth. (Fabaceae), *Curcuma neilghierensis* Wight. (Zingebereace), *Globba merantina* L. (Zingeberaceae), *Tephrosia tinctorea* Pers. (Fabaceae), etc. along with grass species like *Arundinella setacea* Trin. (Poaceae), *Apluda muitica* L. (Poaceae), etc. A few evergreen species like, *Syzygium cumini* L. (Myrtaceae), *Memecelon umbellatum* Burm.f. (Lythraceae), *Diospyros malabarica* (Desr.) Kostel (Ebenaceae), *D. melanoxylon* Roxb. (Ebenaceae), etc.

b) Southern Tropical moist deciduous (Non-Sal) forests

These are found in the districts of Vizayanagaram (Punyagiri area), Visakhapatnam (Gudem), East Godavari (Rampa), West Godavari (Polavaram), Kurnool (Nallamalais), which contain the dominant species like *Anogeissus latifolia* (Roxb ex. DC.) Wall. ex Guillem. & Perr (Combretaceae), *Dalbergia latifolia*, Roxb. (Fabaceae) *Mangifera indica* L. (Anacardiaceae), *Pterocarpus marsupium* Roxb. (Fabaceae), *Terminalia alata* Roth. (Combretaceae), *Sterculea urens* Roxb. (Sterculiaceae) and *Xylia xylocarpa* (Roxb.) Taub (Fabaceae) represents top canopy mixed with middle canopy species like *Bridelia retusa* (L.) A. Juss, *Careya arborea* Roxb (Lycythidaceae), *Grewia tilifolia* Vahl. (Tiliaceae), *Glochidion zeylanicum* (Gaertn.) Juss. (Euphorbiaceae), *Holarrhena pubescens* (Buch-Ham) Wall. ex. Don (Apocynaceae), *Litsea glutinosa* (Lour.) C. B. Rob. (Lauraceae), *Mallotus philippensis* (Lam.) Mull. Arg. (Euphorbiaceae), *Polyalthea cerasoides* (Roxb.) Bedd. (Annonaceae) along with bamboo breaks commonly of *Dendrocalamus strictus* (Roxb.) Ness (Poaceae) and occasionally of *Bambusa arundinacia* (Retz.) Willd. (Bamboosaceae) and teak also found in some plantations. The middle and lower canopy with the species of *Cissus vitigenea* L. (Vitaceae), *Gardenia gummifera* L. f. (Rubiaceae), *Helectres isora* L. (Sterculiaceae), *Ixora arborea* Roxb. ex. Smith (Rubiaceae), *Nyctanthus arbor-tristis* L. (Oleaceae), *Woodfordia fruiticosa* (L.) Kurz (Lythraceae), etc. The low shrubby layer mixed with tall grasses such as *Apluda mutica* L. (Poaceae), *Themeda triandra* Forssk. (Poaceae), *Chlorophytum tuberosum* (Roxb.) Baker (Liliaceae), *Pimpinella tirupatiensis* N. P. Balakr. & Subram. (Apiaceae), etc. along with lianas of *Bauhinia vahlii* Wight & Arn., *Entada pursaetha* DC. (Mimosaceae), *Toddalia asiatica* Lam. (Rutaceae), etc with ground species.

c) Southern Tropical moist deciduous riparian forest

These are common along with river banks (Godavari), with semi evergreen species like *Barringtonia acutangula* (L.) Gaertn. (Baringtoniaceae), *Ficus racemosa* L. (Moraceae), *Homonia riparia* Lour. (Euphorbiaceae), *Terminalia arjuna* (Roxb. & DC.) Wight & Arn.(Combretaceae), *Mimosa pudica* L. (Mimosaceae), *Syzygium cumini* (L.) Skeels (Myrtaceae), etc. The dominant grass in this vegetation type is *Saccharum spontaneum* L. (Poaceae).

II. Tropical dry deciduous forests

This represents typical deciduous forest growing in larger areas along with the northern, middle and southern Eastern Ghats. The upper canopy in these forests are uneven with mixture of species mostly typical deciduous trees which become leafless during dry seasons. Shrubs and grasses grow as undergrowth in a limited density in frequent forest fires. Bamboo and woody climbers being exposed, moist areas along low stream banks are the suitable habitats for epiphytes. These forests are classified into following sub types:

a) Teak - bearing dry deciduous forests

These are distributed mostly in Eastern Ghats of Visakhapatnam, East Godavari, West Godavari, Khammam districts and Rayalaseema region. The teak is associated with *Anogeissus latifolia* (Roxb ex. DC.) Wall. ex Guillem. & Perr (Combretaceae), *Boswellia serrata* Roxb. ex. Colebr (Burseraceae), *Cassia pinnata*, *Chloroxylon swietenia* DC. (Rutaceae), *Garuga pinnata* Roxb., *Pterocarpus marsupium* Roxb. (Fabaceae), *Terminalia alata* Roth., *T. chebula* Retz., *T. bellirica* (Gaertn.) Roxb. (Combretaceae), etc., mixed with shrub species like *Canthium dicoccum* (Gaertn.) Merr (Rubiaceae), *Chomelia asiatica* (L.) Kunze. (Rubiaceae), *Erythroxylon monogynum* Roxb. (Erythroxylaceae), *Holarrhena pubescens* Wall. ex. G. Don (Apocynaceae), *Helecteris isora* L. (Sterculiaceae), etc., covered by climbers like *Bauhinia vahli* Wight & Arn. (Caesalpiniaceae), *Cissus pallida* (Wight & Arn.) Planchon (Vitaceae), *Mucuna pruriens* (L.) DC. (Fabaceae), *Ventilago maderaspatana* Gaertn (Rhamnaceae). The ground layer is covered gregariously with bamboo bushes, *Dendrocalamus strictus* (Roxb.) Nees (Poaceae) and other tall

grasses like *Curcuma pseudomontana* Graham. (Zingiberaceae), etc.

b) Non – Teak dry deciduous forests

These forests are found in the districts of Rayalaseema and Nellore, interestingly some parts of these forests are dominated by endemic species like *Pterocarpus santalinus* L. f. (Fabaceae), *Shorea tumbaggaia* Roxb. (Dipterocarpaceae) on the hill tops of Seshachalam (Tirumala) hills and *Syzygium alternifolium* (Wight) Walp. (Myrtaceae) is also sub dominant species in these areas. The other endemics like *Boswellia ovalifoliolata* N. P. Balakr. & Henry (Burseraceae), *Cycas beddomei* Dyer (Cycadaceae), *Pimpinella tirupetiensis* N. P. Balakr. & Subram. (Apiaceae), *Rhynchosia beddomei* Baker (Faabaceae) and *Actinodaphne madraspatana* Bedd. ex. Hook. f (Lauraceae) are not uncommon in above area. This can be termed as gaps in Seshachalam hills growing along with some common elements like *Terminalia pallida* (endemic tree) Brandis (Combretaceae) *T. alata* Roth. (Combretaceae), *Bridelia retusa* (L.) A. Juss (Euphorbiaceae), *Pinus roxburghii* Sarg. (Pinaceae) (exotic) *Acacia auriculiformis* Benth. (Mimosoideae) (introduced), mixed with dry deciduous elements like *Erythroxylum monogynum* Roxb. (Erythroxylaceae), *Ziziphus maurintiana* Lam. (Rhamnaceae), etc. The climbers are *Celastrus paniculata* Willd. (Celastraceae), The common grasses found in these forests are *Cymbopogon coloratus* (Hoof. f.) Stapf and *Heteropogon contortus*. (L.) P. Beauv. ex Roem. & Schult. (Poaceae) On the hill tops gregarious patches of *Phoenix loureirii* Kunth (Aracaceae) are also found.

III. Mixed dry deciduous forests

These forests are found in drier localities in Rayalaseema region (Anantapuram, Chittoor, Kadapas and Kurnool) of Eastern Ghats. In these forests a mixed type of Vegetation is seen. These forests are classified into following sub types:

a) Southern – mixed dry deciduous forests

These are more common in drier localities and subjected to extreme biotic interference like grazing, fires and collection centers of NWFP, found mostly in all districts of Rayalaseema region of Eastern Ghats. The floristic components comprises *Gardenia gummifera* L. f. (Rubiaceae), different species of *Terminalia, Albizia* and Acacias, *Pterocapus marsupium* Roxb. (Fabaceae), *Hardwickia binata* Roxb. (Fabaceae), *Balanites eagiptica* (L.) Del (Balantiaceae), etc. along with gregarious growth of *Phoenix loureirii* Kunth. (Arecaceae) and *Chloroxylon swietenia* DC. (Rutaceae). The hill slopes are found with *Boswellia serrata* Roxb. ex. Colebr., *Commiphora caudate* (Wight & Arn.) Engl. (Burseraceae), *Terminalia arjuna* Roxb. ex DC.) Wight & Arn.(Combretaceae) (trenches of hill slopes). The climbers like *Decalepis hamiltonii* Wight & Arn (Asclepiadaceae) *Gymnema sylvestre* (Retz.) R. Br. ex Sm. (Asclepiadaceae), etc., found in open areas of Nallamalais, Seshachalam and Yerramalais of the Eastern Ghats.

b) Northern mixed dry deciduous forests

These forests are not frequent but present in northern and southern corners like Orissa and Tamil Nadu states respectively.

IV. Dry evergreen forests

This type of forests occur in coastal plains like Vijayanagaram (Poolbagh), Visakhapatnam (Madugula), Srikakulam (Pathapatnam), Nellore (Sriharikota) and Chittoor (Mamandur) district. Sriharikota Island is located in Nellore district of southern part adjoining the Pulicat Lake. This island and its surroundings support dry evergreen vegetation. The common species found in these forests are *Albizia amara, Manilkara hexandra, Sapindus emarginatus* and *Strychnos nux-vomica*. The climbers like *Strychnos minor, Pyrenacanthus volubilis,* and *Derris scandens.*

V. Thorny – Scrub forests

These are degraded deciduous forests due to biotic interference, over exploitation, and frequent fires and are widely distributed in arid and semiarid parts of Eastern Ghats especially in forest peripheries. Hence the climax was changed to thorny scrub forests (secondary in origin). Due to frequent forest fires some fire resistant spiny species like *Lantana camara* L. (Verbanaceae), *Ziyziphus oenoplea* (L.) Mill (Rhamnaceae) established as invaders. In some places *Hyptis suaveolens* (L.) Poit (Lamiaceae) and *Cassia alata* L. (Caesalpiniaceae) are also found as invaders. These forests supports the growth of grass species for short period of rainy season and vegetation termed as dry Savannah forests (*In fact Savannah are native to African countries). Typical species are *Chloroxylon swietenea* DC. (Rutaceae), *Terminalia alata* Roth. (Combretaceae), *Atalantia monophylla* (Roxb.) DC (Rutaceae), *Capparis zeylanica* L. (Capparaceae), *Cadaba fruiticosa* (L.) Druce (Capparaceae), *Zyziphus Mauritania* Lam (Rhamnaceae)., *Z. xylopyrus* (Retz.) Willd (Rhamnaceae), *Euphorbia antiquorum* L., *E. tirucalli* L. (Euphorbiaceae), *Flacourtia indica* (Burm. f.) Merr (Flacourtiaceae), *Dodonaea viscose* (L.) Jacq. (Sapindaceae), *Cassia auriculata* (L.) Roxb. (Caesalpiniaceae), *Dichrostachys cineria* (L.) Wight & Arn (Mimosaceae), etc. with stunted growth bearing elements of *Terminalia alata* Roth (Combretaceae), *Anogeissus latifolia* (Roxb ex. DC.) Wall. ex Guillem. & Perr (Combretaceae), *Pterocarpus marsupium* Roxb. (Fabaceae), etc. The grass species like *Apluda mutica* L. (Poaceae), *Themeda triandra* Forssk (Poaceae), *Cymbopogon* sp. etc., are also common.

Table 1. Plants of Veligonda hills

S. No	Botanical name	Vernacular name	Family	Habit	Medicinal uses
1	*Abrus precatorius* L.	Gurivinda	Fabaceae	Climber	Anti inflamatery
2	*Abuliton indicum* (L.) Sweet.	Duvvenakaya/ Tutturubenda	Malvaceae	Shrub	Haematuria
3	*Acacia leucophloea* (Roxb.) Willd.	Tella tumma	Mimosaceae	Tree	Diuretic
4	*Acacia tora* (Roxb.) Craib.	Korinteega	Mimosaceae	Climber	
5	*Achyranthes aspera* L.	Uttareni	Amaranthaceae	Herb	Diuretic; Piles
6	*Actinopteris radiate* (Sw.) Link.	Mayuri shika	Actinopteridaceae	Herb	Skin diseases
7	*Adiantum caudatum* L.	Raja hamsa	Adiantaceae	Herb	Diabetes
8	*Aegle marmelos* (L.)	Maredu / Bilva	Rutaceae	Shrub	Dysentery
9	*Aerva lanata* (L.) Juss.	Pindikura	Amaranthaceae	Herb	Urinary diseases
10	*Ageratum conyzoides* L.	Goat weed	Asteraceae	Herb	Nervine tonic
11	*Alangium salvifollium* (L.f.) Wangerin	Udaga / Ankolamu	Alangiaceae	Tree	Dog Bite
12	*Albizia amara* (Roxb.) B.Boivin	Cheekireni	Mimosaceae	Tree	Inflamation
13	*Albizzia odoratissima* (L.f.) Benth	Chinduga	Mimosaceae	Tree	Leprosy
14	*Alstonia scholaris* L.	Edakulapala	Apocynaceae	Climber	Galactagogue,asthma
15	*Andrographis paniculata* (Burm.f.) Wall.	Nelavemu	Acanthaceae	Herb	Fever
16	*Anisomelea malabarica* (L.)	Moga-Bira	Lamiaceae	Shrub	Eczema; Diarrhoea
17	*Annona squamosa* L.	Sitapalem	Annonaceae	Tree	Abortifacient
18	*Annona reticulate* L.	Ramapalam	Annonaceae	Tree	Astringent
19	*Anogeissus latifolia* (Roxb.ex Dc.) Wall.ex Guillem.&Perr	Chirimanu / Elama	Combretaceae	Tree	Piles; Snake bite
20	*Argemeone mexicana* L.	Kusuma / Brahmadandi	Pepepaveraceae	Herb	Syphilis
21	*Aristolochia braceteolata* Lam.	Gadidagadapa	Aristolochiaceae	Herb	Eczema; Leprosy
22	*Aristolochia indica* L.	Easwari	Aristolochiaceae	Herb	Snake bite
23	*Asperagus racemosus* Willd.	Sathavari	Liliaceae	Herb	Diabetes; Leucorrhoea
24	*Atalantia monophylla* (L.)	Munukudu	Rutaceae	Shrub	Antiseptic; Fever
25	*Atylosia scarabaeoides* (L.) Benth.	Adavikandi	Fabaceae	Climber	
26	*Azadirachta indica* A.Juss.	Vepa	Meliaceae	Tree	Skin diseases
27	*Azima tetracantha* Lam.	Tella uppili	Salvadoraceae	Shrub	Leprosy; Eczema
28	*Bacopa monnieri* (L.) Pennel	Brahmi	Scrophulriaceae	Herb	Memory booster
29	*Basella alba* L.	Bachali	Basellaceae	Climber	Constipation
30	*Bauhinia racemosa* Lam.	Are fibres	Caesalpinaceae	Tree	Malaria Fever
31	*Blumea mollis* (D.Don) Merr.	Kukkapogaku	Asteraceae	Aromatic erect herb	Dropsy; Throat infection
32	*Boerhavia diffusa* L.	Attamamidi	Nyctaginaceae	Herb	Urinary disorders
33	*Bombax ceiba* L.	Adavi Buruga	Malvaceae	Tree	Diabetes; Diuretic
34	*Borassus flabellifer* L.	Tati	Araceae	Tree	Odema; Constipation
35	*Boswelia ovalifoliata* Bal. & Henry	Sambrrani	Burseraceae	Tree	Stomach ulcers; Dysentery
36	*Boswelia serrata* Roxb.	Sambrani	Burseraceae	Tree	Arthrites
37	*Buchnania axilaris* (Desr.) Ramamoorthy	Sara	Anacardiaceae	Tree	Boils; Cardio tonic; Wounds
38	*Butea monosperma* (Lam) Taub.	Moduga	Fabaceae	Tree	Jaundice; Astringent
39	*Caesalpinia bonduc* (L.) Roxb.	Gacha	Fabaceae	Shrub	Leucorrhoea; Hydrocele
40	*Calophyllum inophyllum* L.	Ponna	Calophyllaceae	Tree	Rheumatism; Astringent
41	*Capparis sepiaria* L.	Nalla uppili	Capparaceae	Shrub	Febrifuge
42	*Capparis zeylanica* L.	Adonda	Capparaceae	Shrub	Antihelmenthic; Sadative
43	*Carissa carundus* L.	Vaka	Apocynaceae	Small Tree	Diabetes; Stomachic

Table 1. Plants of Veligonda hills – contd.

S. No	Botanical name	Vernacular name	Family	Habit	Medicinal uses
44	*Cardiospermum halicacabum L*	Buddakakara	Sapindaceae	Climber	Rheumatism, Nervous disorders
45	*Careya arborea* Roxb.	Budda darimi	Barringtoniaceae	Tree	Eye diseases; Skin sores
46	*Carmona retusa* (Vahl) Masam.	Nomuchettu / Barranki	Boraginaceae	Shrub	Snake bite; Skin diseases
47	*Cassia absus* L.	Chanupala vittulu	Caesalpinaceae	Herb	Constipation; Cough
48	*Cassia fistula* L.	Rela	Caesalpinaceae	Tree	Diabetes
49	*Cassia italica* (Mill.) Spreng.	Nelatangedu	Caesalpinaceae	Herb	Bone fracture
50	*Cassia montana* Meyne ex.Roth.	Pyditangedu	Caesalpinaceae	shrub	Body Pains
51	*Cassia occidentalis* L.Sp.	Kasintha	Caesalpinaceae	shrub	Laxative
52	*Cassine glauca* (Rottb.) Kuntz.	Nerdhi	Celastraceae		Snake bite; dysuria
53	*Cassytha filiformis* L.	Sitamma savaralu	Lauraceae	Climber	Dysentery; Hair tonic
54	*Catunaregam spinosa* (Thunb.) Tirv.	Manga	Rubiaceae	Shrub	Diarrohoea; Astringent
55	*Cayratia pedata* (Lam.) Gagnep	Adavi gummaditeega	Vitaceae	Climber	Astringent; Boils
56	*Centella asiatica* (L.) Urban.	Saraswathi	Apiaceae	Herb	Brain Tonic
57	*Chloroxylon swietenia* DC.	Billudu	Meliaceae	Tree	Rheumatism; Astringent
58	*Cipadessa baccefera* (Roth) Miq.	Ranaberi	Meliaceae	Shrub	Diabetes; Wounds
59	*Cissampelos pareira* L	Visha boddi	Menispermaceae	Shrub	Dropsy; Diabetes
60	*Cissus quadrangularis* L.	Nalleru	Vitaceae	Herb	Leucorrhoea; Piles
61	*Cissus vetigenia* L.	Adavi gummidi	Vitaceae	Climber	Wounds
62	*Citrullus colocynthis* (L.) Scharder	Papara	Cucurbitaceae	Climber	Rheumatism; Jaundice
63	*Cocculus hirsutus* (L.) Diels	Dusari Teega	Menispermaceae	Climber	Rheumatism
64	*Coccinia grandis* J.Voigt.	Kakidonda	Cucurbitaceae	Climber	Diabetes
65	*Cochlospermum religiosum* (L.) Alston	Konda gogu	Cochlospermaceae	Tree	Dysentery; Gonorrhoea
66	*Coldenia procumbens* L.	Hamsapadu	Boraginaceae	Herb	Rheumatism
67	*Commifera caudate* (White &Arn.) Engl.	Kondamamidi	Burseraceae	Small Tree	Rheumatism
68	*Corallocarpus epigaeus* (Rottl.) C.B.Clark	Mukkudonda	Cucurbitaceae	Climber	Eczema; Dysentery
69	*Cordia dichotoma* Forst.f	Bankamanu / Nakkera	Boraginaceae	Tree	Bronchial disorders; Fever
70	*Costus speciosus* (Koenig.) Sm.	Adavi allam/ Chengalva cost	Costaceae	Herb	Dyspepsia; Snake bite
71	*Crateva religiosa* G.Forst.	Varuna	Capparaceae	Tree	Kidney stones
72	*Crotalaria retusa* L.	Sanapusphi	Fabaceae	Herb	Scabies
73	*Curculigo orchioides* Gaertn	Nelathati	Hypoxidaceae	Herb	Diarrhoea; Potency
74	*Cycas beddomi* Dyer.	Peritha	Cycadaceae	Tree	Aphrodisiac
75	*Cymopogon flexuosus* (L.) Rendle	Nimma gaddi	Poaceae	Herb	Citral oil
76	*Dalbergia latifolia* Roxb.	Jittagi / Iridi	Fabaceae	Tree	Ulcers; Leprosy
77	*Dalbergia paniculata* Roxb.	Pacchari	Fabaceae	Tree	Filarial Swelling
78	*Datura metal* L.	Nalla ummetta	Solanaceae	Herb	Epilepsy
79	*Datura stromonium* L.	Ummetta	Solanaceae	Shrub	Asthma; Narcotic
80	*Decalepis hamiltonii* Wight & Arn	Maredu kommulu	Asclepediaceae	Shrub	Haemorrhage; Appetizer
81	*Decaschistia crotonifolia* Wight & Arn	Adavigogu	Malvaceae	Shrub	Hydrocele
82	*Deccannia pubscens* (Roth) Tirveng	Konda manga	Rubiaceae	Tree	Sores
83	*Derris scandens* (Roxb.) Benth.	Nalla teega	Fabaceae	Climber	Snake bite
84	*Desmdium triflorum* (L.) Dc.	Munta mandu	Fabaceae	Herb	Galactagogue; Diarrhoea

Table 1. Plants of Veligonda hills – contd.

S. No	Botanical name	Vernacular name	Family	Habit	Medicinal uses
85	*Dillenia pentagyna* roxb.	Chinna kalinga	Dilleniaceae	Tree	Cooling agent for cattle
86	*Dioscoria pentaphylla* L.	Injedigadda	Dioscoreaceae	Climber	Dysentery; Leprosy
87	*Diospyros ebenum* J. Koenig.	Nalla uti	Ebenaceae	Tree	Astringent
88	*Diospyros melanoxylon* Roxb.	Tumki	Ebenaceae	Tree	Dyspepsia; Diuretic
89	*Dodonea viscosa* (L.) Jacq. Enum.	Bandaru	Sapindaceae	Shrub	Antipyretic; Bone fractures
90	*Eclipta prostrata* (L.) L.	Gunta galijeru	Asteraceae	Herb	Asthma; Jaundice
91	*Echinops echinatus* Roxb.	MullaBanthi	Asteraceae	Herb	Diuretic; Lice eradication
92	*Enicostema axillare*. (Lam) Raynal	Gulividi	Gentianaceae	Herb	Scabies; Gout
93	*Entada pursaetha* DC.	Gila teega / Konda chinta	Mimosaceae	Climber	Emetic
94	*Erythroxylum monogynum* Roxb.	Devadari	Erythroxylaceae	Shrub	Stomachic; Diuretic
95	*Euphorbia hirta* L.	Nanabala	Euphorbiaceae	Herb	Cough; Disentery
96	*Ficus benghalensis* L.	Marri	Moraceae	Tree	Rheumatism
97	*Ficus microcarpa* L.f.	Kondajuvvi	Moraceae	Tree	Wounds,Diabetes
98	*Gardenia gummifera*.L.f.	Bikki	Rubiaceae	Tree	Ulcersl; Constipation
99	*Gardenia resinifera* Roth.	Erribikki	Rubiaceae	Tree	Constipation; Bronchites
100	*Givotia moluccana* (L.) Sreem	Tella poliki	Euphorbiaceae	Tree	Dandruf; Psoriasis
101	*Gmelia asiatica* L.	Adavi Gummadi	Verbenaceae	Shrub	Dental Problems
102	*Gloriosa superba* L.Sp.Pi.	Nabhi / Nagetigadda	Liliaceae	Climber	Leprocy; Abortifacient
103	*Glycosmis pentaphylla* (Retz) DC.	Gonji	Rutaceae	Shrub	Diabetes; Eczema
104	*Grewia tiliifolia* Vahl.	Adavichamanthi	Tiliaceae		Dysentery; Antidote to opium poison
105	*Guazuma tomentosa* Lam. *Guazuma ulmifolia* Lam.	Rudhracksha	Tiliaceae	Tree	Corpulence
106	*Gymnema sylvestre* (Retz) R.Br.ex Sm	Podapatri	Asclepediaceae	Shrub	Diabetes
107	*Gyrocarpus asiaticus* Willd.	Taniki /Nalla poliki	Hernandiaceae	Tree	Cancer
108	*Hardwickia binata* Roxb.	Api	Fabaceae	Tree	Rheumatism
109	*Haldinia cordifolia* (Roxb) Ridsdale	Rudra ganapa	Rubiaceae	Tree	Stomachic
110	*Hedtitus peberula* (G.Don) Arn.	Chiruveru	Rubiaceae	Herb	Asthma; Bronchites
111	*Hedyotis corymbosa* (L.)	Vermela - vemu	Rubiaceae	Herb	Diarrhoea; Stomachic
112	*Hedyotis herbacea* L.	Chiriveru	Rubiaceae	Herb	Rheumatism; Febrifuge
113	*Heliotropium indicum* L.	Nagadanthi	Boraginaceae	Herb	Ulcers; Eczema
114	*Helicters isora* L.	Gooba thada	Sterculiaceae	Shrub	Diabetes; Dysentery
115	*Hemidesmus indicus* (L.) R.Br.ex *Schult.*	Sugandhapala	Apocynaceae	Herb	Cooling beverage; Cordio tonic
116	*Hemionitis arifolia* (Burm.f.) Moore	Rama bhanam	Hemionitidaceae	Herb	Antidiabetic
117	*Hugonia mystax* L.	Kakibeera	Linaceae	Shrub	Antihelmenthic
118	*Hibiscus platanifolius* (Willd.)	Kondagogu	Malvaceae	Tree	Diabetes; Rheumatism
119	*Hiptage benghalensis* (L.) Kurz	Madhavi tega	Malphigiaceae	Climber	Diarrhoea; Dysentery
120	*Holarrhena antidysenterica* (L.) R. Br.	Kola musthi / pala / kodisapala	Apocynaceae	Tree	Diarrohoea; Antidysentric
121	*Holostemma ada-kodein* Schultes	Tella jilledu / Peyyi baddu	Asclepediaceae	Climber	Gonorrhoea; Diabetes
122	*Hybanthus enneaspermus* (L.) Muell.Arg.Fragm.	Ratna purusha	Violaceae	Herb	Leucorrhoea; Diabetes
123	*Ichnocarpus frutescens* (L.) R.Br.	Palateega	Apocynaceae	Climber	Blood purifier
124	*Indigofera aspalathoides* Vahl.ex.	Sivavemu	Fabaceae	Herb	Oedema; Leprosy
125	*Ixora pavetta* Andr.	Korivi/ Papidi	Rubiaceae	Tree	Dysentery; Urinary disorders

Table 1. Plants of Veligonda hills – contd.

S. No	Botanical name	Vernacular name	Family	Habit	Medicinal uses
126	*Jasminum auriculatum* Vahl.	Adavimalli	Oleaceae	Climber	Dropsy
127	*Justicia adhatoda* L.	Addasaram	Acanthaceae	Shrub	Diabetes; Fever
128	*Lawsonia inermes* L.	Gorintaku	Lythraceae	Small Tree	Diarrhoea; Diabetes
129	*Lannea coromandelica* (Houtt.) Merr.	Gumphena	Anacardiaceae		Ulcers; dental diseases
130	*Lantana camara* L.	Phallikampa	Verbanaceae	shrub	Tooth ache; Wounds
131	*Leonotis nepetiifolia* (L) R.Br.Prodr	Ranabheri	Lamiaceae	Herb	Rheumatism
132	*Lepisanthes tetraphylla* (Wall.) Radf.	Sali kunkudu	Sapindaceae	Tree	Skin diseases
133	*Leptadenia reticulate* (Retz.)	Mukkupalateega	Asclepiadaceae	Climber	Abortifacient
134	*Limnophila indica* (L.) Druce	Sambrani	Scrophulriaceae	Herb	Antiseptic; Dysentery
135	*Limonia acidissima* Groff.	Velaga	Rutaceae	Tree	Stomachic; Astringent
136	*Listea glutinosa* (Lour.) C.B.Rob.	Pulusumamidi	Lauraceae	Tree	Dysentery; Rheumatism
137	*Lygodium flexuosum* (Linn.)	Mekasannu	Schizaeaceae	Climber	Scabies; Eczema
138	*Madhuca longifolia* (Koen.) Macbr.	Ippa	Sapotaceae	Tree	Cough; Skin diseases
139	*Mallotus philippensis* (Lam.) Mull. Arg.	Sinduri	Euphorbiaceae	Tree	Syphilis; Gonorrhoea
140	*Manikara hexandra* (Roxb.)	Pala	Sapotaceae	Tree	Headache
141	*Mimusops elengi* L.	Pogada	Sapotaceae	Tree	Diarrhoea
142	*Mimosa pudica* (L.)	Aathipathi	Sapotaceae	Herb	Constipation; Leprosy
143	*Murraya paniculata* (L.) Jack.	Naramusti	Rutaceae	Tree	Snake bite; dropsy
144	*Naravelia zeylanica* (L.) DC	Korivi kattaku	Ranunkulaceae	Climber	Headache; Toothache
145	*Neptunia oleraceae* Lour.	Neruthaluvapu	Fabaceae	Shrub	Syphilis
146	*Ochna obtusata* DC.	Errijambi	Ochnaceae	shrub	Constipation; Asthma
147	*Olax scandens* Roxb.	Mekabanda	Olacaceae	Climber	Anaemia; Fevers
148	*Opilia amentacea* Roxb.	Nallamekabanda	Opilaceae	Climber	Hair tonic; Lice eradication
149	*Pavonia xylanica* (L.) Cav.	Adavi puttudu / Chiru benda	Malvaceae	Herb	Blood motions
150	*Pentatropus capensis* (L.f.) Bullock	Yedupullateega	Asclepiadaceae	Climber	Refrigerant
151	*Pergularia daemia* (Forssk) Chiov.	Dushtapaku	Asclepiadaceae	Climber	Jaundice; Asthma
152	*Phoenix sylvestris* (L.) Roxb.	Eetha	Arecaceae	Tree	Dysentery, Ulcers
153	*Phyllanthus amarus* Schum & Thonn	Nelausiri	Euphorbiaceae	Herb	Galactogogue; Jaundice
154	*Phyllanthus emblica* L.	Nelli / Usiri	Euphorbiaceae	Tree	Febrifuge; Astringent
155	*Physalis minima* L.	Budama	Solanaceae	Herb	Fever; Asthma
156	*Pimpinella tirupathensis* L.	Adavi kottimeera	Apiaceae	Herb	Ulcersl; Abortifacient
157	*Pithacalobium dulce* (Roxb.) Benth.	Simachintha	Fabaceae	Tree	Leprosy; Diabetes
158	*Plumbago zylanica* L.	Tella chitramulam	Plumbaginaceae	Herb	Scabies; Ulcers
159	*Pongamia pinnata* (L.) Pierre	Kanuga	Fabaceae	Tree	Diabetes; Eczema
160	*Pouzolzia zeylanica* (L.) Benn.	Uchchagadda	Urticaceae	Herb	Snake bite
161	*Premna tomentosa* Willd	Narava/ Namari	Verbanaceae	Tree	Dropsy; Jaundice
162	*Pterocarpus marsupium* roxb.	yegisa	Fabaceae	Tree	Cough; Skin Problems
163	*Pterocarpus santalilnus* L.F.	Rakta chandanam	Fabaceae	Tree	Diabetes; Astringent
164	*Pterospermum xulocarpum* (Gaertn.)	Tada	Sterculiaceae	Tree	Leucorrhoea
165	*Pueraria tuburosea* Roxb.ex Willd.	Chenchu gadda / Bhoochakra	Fabaceae	Climber	Asthma; Rejuvinator
166	*Rivea hypocrateriformis* (Desr.) Choisy	Boddi teega	Convolvulaceae	Shrub	Parturition
167	*Rhynchosia minima* (L.) Dc.	Adavichikkudu	Fabaceae	Tree	Abortifacient
168	*Salvadora persica* L.	Nalla uppili/ Varagogu	Salvadoraceae	Tree	Asthma; Cough

Table 1. Plants of Veligonda hills – contd.

S. No	Botanical name	Vernacular name	Family	Habit	Medicinal uses
169	*Santalum album* L.	Chandanam , Srigandham	Santalaceae	Tree	Diuretic; Skin eruptions
170	*Scilla hyacinthina* (Roth)	Nakkeragadda	Liliaceae	Herb	Leprocy; diuretic
171	*Shorea roxburghii* G.Don Gen.Syst	Jalari	Dipteerocarpaceae	Tree	Astringent; Rheumatism
172	*Shorea tumbeuggaia* Roxb.	Tamba / Guggilam	Dipterocarpaceae	Tree	Ulcers
173	*Solanum melongena* L. var. *insanum* L.	Chiruvanga	Solanaceae	Shrub	Hypertention; Diabetes
174	*Solanum surrattense* Burm.F.	Errivanga	Solanaceae	Herb	Helminthiasis; Tooth Problems
175	*Solanum trilobatum* L.	Mulla mushti	Solanaceae	Climber	Dyspepsia
176	*Soymida febrifuga* (Roxb) A.Juss	Somi	Meliaceae	Tree	Diarrhoea; Dysentery
177	*Spondias pinnata* (L.f.) Kurz	Adavimamidi	Anacardiaceae		Astringent; Rheumatism
178	*Sphaeranthus indicus* L.	Bodasaram	Asteraceae	Herb	Aphrodisiac; Anthehelmenthic
179	*Sterculia urens* Roxb.	Thapasi	Sterculiaceae	Tree	Diabetes
180	*Strychnos calubrina* L.	Nagamusti	Loganiaceae	Climber	Rheumatism; Diabetes
181	*Strychnos potatorum* L.f.	Musthi	Loganiaceae	Tree	Kidney stones
182	*Strychnos potatorum* L.F.Suppl.	Chilla	Loganiaceae	Tree	Stomachache
183	*Suregada angustifolia* Baill.	Sapranchi	Euphorbiaceae	Shrub	Astringent
184	*Syzygium cumini* (L.) Skeels	Neredu	Myrtaceae	Tree	Diarrhoea; Cough
185	*Syzygium alternifolium* (Wight) Walp.	Mogi	Myrtaceae	Tree	Joint Paints
186	*Tamarindus indica* L.	Chinta	Fabaceae	Tree	Indigestion; Fever
187	*Tarenna asiatica* L.	Kommi	Rubiaceae	Shrub	Indigestion
188	*Terminalia arjuna* (DC.) Wight&Arn)	Arjuna / Tella maddi	Combretaceae	Tree	Blood motions
189	*Terminalia bellirica* (Gaertn.) Roxb.	Thandra / tani	Combretaceae	Tree	Dysentery
190	*Terminalia pallida* Brandis	Tella karaka	Combretaceae	Tree	Diarrhoea
191	*Terminallia chebula* Retz.	Karaka	Combretaceae	Tree	Cough; Piles
192	*Thespisia populnia* (L.) Correa	Gangaravi	Malvaceae	Tree	Boils; Ring Worms
193	*Tinospora cordifolia* (Willd.) Miers	Tippa teega	Menispermaceae	Climber	Gonorrhea; Skin diseases
194	*Tribulus terrestris* L.	Palleru	Zygophyllaceae	Herb	Aphrodisiac; Leprocy
195	*Trichosanthes cucumeria* L.	AdaviPotla	Cucurbitaceae	Climber	Diabetes
196	*Trichosanthes tricuspidata* Lour.	Papara	Cucurbitaceae	Climber	Sores; Headache
197	*Tridax procumbens* L.	Gaddi chamanthi	Asteraceae	Herb	Dysentery ; Wounds
198	*Triumfetta rhomboidea* Jacq.		Tiliaceae	Shrub	Ulcers; Leprocy
199	*Tylophora indica* (Burm.f.) Merr.	Kakkupala	Asclepediaceae	climber	Asthma; Epilepsy
200	*Vanda spathulata* L.	Nusti bhadhanika	Orchidaceae	Herb	Asthma; Consumption
201	*Vanda roxburghii* Nicolson.	Veduru bhadhanika	Orchidaceae	Herb	Bone fracture
202	*Ventilago denticulata* Willd.	Surati / Surudu	Rhamnaceae	Climber	Sprains; Malarial fever
203	*Vernonia anthelmintica* (L.)	Adavi jeelakarra	Asteraceae	Herb	Digestion
204	*Vettiveria zizanioides* (L.) Nash	Vattiveru	Poaceae	Herb	Diabetes; Cooling agent
205	*Viscum articulatum* Burm.f.	Badanika	Viscaceae	Shrub	Ulcers; Febrifuge
206	*Vitex altissima* L.f.syppl.	Nemaliadugu	Verbanaceae	Tree	Leprosy
207	*Walsura trifoliata* (A.Juss) Harms	Valudu	Meliaceae	Tree	Emmenagogue
208	*Wattakaka volubilis* (L.f.) Stapf	Kallisi	Asclepediaceae	Climber	Snake bite; Body pains
209	*Wrightia tinctoria* (Roxb.) R.Br.	Reppala	Apocynaceae	Tree	Cough; Aphrodisiac
210	*Ziziphus mauritiana* Lam.	Regu	Rhamnaceae	Tree	Scorpion sting; Diarrhoea
211	*Ziziphus xylopyrus* (Retz.) Willd.	Gotti	Rhamnaceae	Tree	Asthma; Aphrodisiac

Ethnology in Eastern Ghats of Andhra Pradesh

The tribal people of Eastern Ghats of Andhra Pradesh originated long back of prehistoric era. The stone-age culture of these tribals is evidenced by micro and mega-lithic sites at upper Godavari (Sanapati and Sahu, 1966). Being Andhra Pradesh is drained by major rivers mainly in Eastern Ghats, the tribals also settled along the river streams which pass through the Ghats. These tribes have their own styles of culture, language, heritage, customs, religious practices, food habit etc., who mainly live deep in forests, unable to contact with civilized people. They mainly depend on minor forest produce, hunting and rarely on agriculture for their lively hood. Out of 33 types of tribals of Andhra Pradesh, 27 communities are confined to these isolated hills and adjacent plains.

Yanadis

The Yanadis are more primitive aboriginal and concentrated mainly in Chittoor, Kadapa, Nellore, Ongole and Guntur districts of Andhra Pradesh. Yanadis are the melanid Black Indians a hunter gather tribe (Rangha Rao, 1901) The tribes are set to be direct descendants of Paleolithic people. Chenchus and Yanadis both are from one parental stock and are believed to be originated in Nallamalai hill tracts (Raghavaiah, 1962). Yanadis speak only Telugu language with a characteristic dialect and accent. They don't have any special functions. Ceremonies or celebrations particular to them. They are integrated with Hindu social system and practice. The Yanadi lead a carefree, life with contentment and unbridled merriment. Their diet chiefly consists of vegetable food and animals, wild fowls and other birds of food value. They even dig rat holes and use them in menu. However, the best satiating food for them is fish. Honey gathering in forests and plains is also a common practice among them. Two sub-tribes are recognized with in Yanadis, based on their occupation, Manchi yanadi, the superior type and the Challa yanadis are inferior type and carry different names including Garapa Yanadis, Chettu yanadis, Kappa yanadis, based on their habitation and the food taken. The Yanadis are short statured with dark skin colour, platyrrhine nose, long head, prominent chin, thick lips and scanty hair both on head and body. They reside in huts usually construct adjacent to a water source. Yanadis living in and around forests keep themselves busy in collecting and selling minor products.

Materials and Methods

The study was conducted among the local tribes who were practising local medicine in near the villages of Veligonda hill ranges. Frequent field trips were carried out during the different seasons in June 2012 to June 2014. The data (Local name; Habit; Plant part used; Medicinal uses) were recorded through interviews among the traditional healers and local tribes in their language (Telugu). These medicinal plants were identified taxonomically with "Flora of Presidency of Madras" (Gamble, 1935). The collected specimens were deposited in the N. B. K. R. Medicinal Plant Research Institute, Vidya Nagar, Nellore.

Results and Discussion

The yanadis are the major tribes inhabiting in Veligonda hill ranges. They choose faith healing first. Traditional and herbal medicine next and modern medicine only when the first two are failed. They have not made any changes in their life style or tried to adapt to modernity.

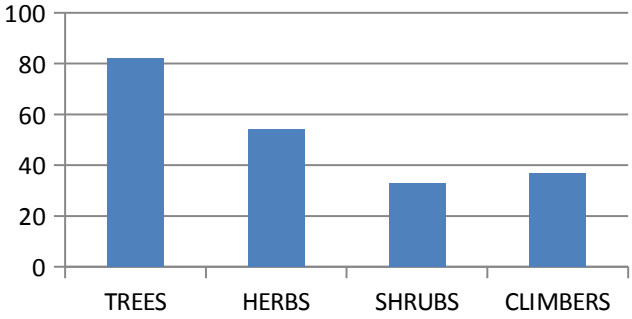

Fig. 1. Habit wise analysis of Veligonda hill range

Enumeration of 211 species belonging to 89 families used by local traditional healers was recorded in the Table **1**. with Scientific Name; Vernacular Name; Family, Habit, Medicinal use. Out of 211 species maximum 82 species are trees (38.86%); 54 (25.59%) species are herbs; 36 (17.06) species are climbers and 34 (16.11) species are shrubs (Fig **1**).

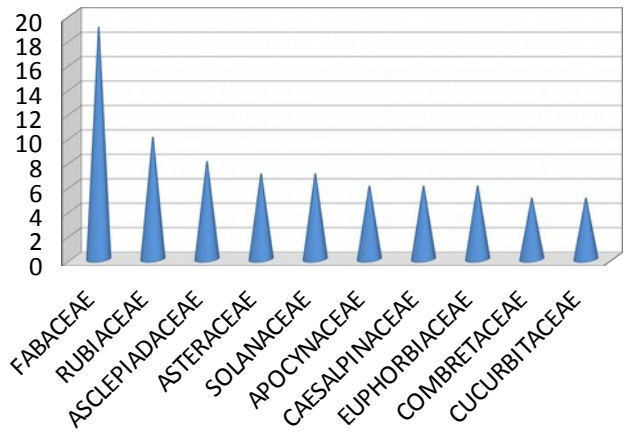

Fig. 2. Dominant families of Veligonda hill range

The rare and endangered plants like Red Sander and Sandal wood are the important

species found these hills. The riparian vegetation is very rich in floristic value, consisting of *Terminalia* Species, *Syzygium* Species, wild mangoes (*Anogeisus latifolia* (Roxb ex. DC.) Wall. ex Guillem. & Perr (Combretaceae), *Hardwikia binata* Roxb. (Caeslpiniaceae) etc. Dominant families are given in Fig **2**.

Conclusion

Indian forests are the highest resources for medicinal plants. Due to over exploitation and various anthropogenic activities many medicinal plant species were become endangered. There is an urgent need to save this germ plasm for future generations. There are several plants with unknown medicinal value should be studied. Nearly 35000 tones of medicinal plants were being exported from India and Rs.3,500 crores are annually earning. So, there is an urgent need to develop conservation practices for sustainable utilization of medicinal plants.

Competing Interest

The authors declare that they have no competing interests.

Authors' contributions

SKMB and PSR designed and coordinated the study. PSR carried out field work, Data analysis, identification and manuscript preparation is done by SKMB.

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