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Research Article

MEDICINAL FLORA OF PENUSILA NARASIMHA SACRED GROVE, EASTERN GHATS, SPSR NELLORE DISTRICT, ANDHRA PRADESH, INDIA

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ABSTRACT
Sacred groves are climax forests and are the only representatives of natural or near-natural vegetation. These are dedicated to deities or ancestral spirits worshipped by local tribes along with surrounding plants and trees. These are ecosystems by themselves and perform all the ecological functions. Peninsula Narsimha Sacred grove is one of the important sacred groves of Nellore district. The present paper deals with the mediflora of the above grove used by local tribes. This paper deals with the 160 species of probable medicinal potential belonging to 138 genera and 71 families.

Key Words: *Sacred Grove, Deities, Tribes, Penusila, Mediflora*

INTRODUCTION
Plants have tremendous potential to become renewable sources of high quality raw materials for industry as well as providing a wealth of genetic diversity which can be lead to the discovery of new things (Bartle, 1997).The state of Andhra Pradesh has 800 Sacred groves eneumerated so far (Bhandary and Chandrasekhar, 2003) locally known as Pavithra-vanalu according to "WWF-AP", 1996. Nellore district occupies third place in having highest number of Sacred groves (88) after Kurnool district (106) and Chittoor district (102). The strands in the Sacred groves were more diverse, had high basal area and showed fewer signs of disturbances than the Natural forest land. This supports the view that local communities afford better protection and management to Sacred groves (Ravi Prasad Rao, 1998). Biodiversity of Sacred groves is preserved in mostly undisturbed condition probably due to certain taboos and religious beliefs (Lakshmi Narayana and Venkaiah 1998). Four Sacred groves of Nellore district namely Narasimha Konda, Stambala Kona, Siddulaiah Konda and Kona Malleswara kona were extensively explored for their flora with emphasis on plants of ethanobotanical importance and this analysis brought out 27 additions to the flora of Nellore district after Srinivasa Rao(2002). Ethno botanical wealth of sriharikota island of Nellore studied and reported 18 plant species of high medicinal importance (Savithramma and Basha 2002). This scenario motivates us to explore the medicinal Flora of Penusila Narasimha Sacred grove which is the second largest of the district after Narasimha Konda Sacred grove. Yanadis, yerukalas tribes living in this sacred grove. It is precariously protected by the tribal population of the grove.

Topography
Penchalakona Mountain is the highest point in the Eastern Ghats within Nellore district. The study site spreads between Latitude 14°.18´N, Longitude 70°.28´ at about 3000Ft. above Sea Level. The approximate area is 100 hectares. The sacred grove is having hilly terrain with imageaus, ridges, gorges and deep Valleys which support dry deciduous forests with an under growth of grasses along with dry thorny and dry ever green forests surround the fringe. The terrain is undulating, interrupted with hillocks of igneous rocks.

Etimology
Penusila Narasimha Sacred grove lies at the foot hills of Veligondalu, at a distance of 80 Km form Nellore. Lord Narasimha manifested himself here as a huge rock in "Yoga Mudra" (in an entwined

contemplative posture) and hence it acquired the name of "Penusila"(huge rock) and in course of time became famous as "Penchalakona." Legend has it that after slaying the demon Hiranya kasipa, Lord Narsimha bathed in Penchalakona and withdrew that "Avatara"(incarnation) of Narasimha, shedding his anger and ferocity. The Lord Narasimha Swamy here becomes one of the Nava Narasimhas (nine manifestations). Narasimha Jayanthi is celebrated every year in the month of May and devotees flock especially on Saturday.

MATERIALS AND METHODS

The entire area of the sacred grove is thoroughly studied by repeated visits in different seasons of the year 2009–2010 covering pre-monsoon, monsoon and post-monsoon seasons. It helps in observing the different developmental stages of medicinal plant species like vegetative, flowering and fruiting stages. The plant specimens were collected, identified with the help of Flora of Presidency of Madras Gamble 1967, Hooker 1897. During the field work, the specimens collected for the preparation of herbarium were processed in accordance with the methodology adopted by Jain and Rao (1977). The plant species are given in alphabetical sequence with other details such as botanical name, vernacular name, family, habit in Table. I

Table 1: list of mediflora of penusila narsimha sacred grove

S.No	Botanical Name	Vernacular name	Family	Habit
1	*Abuliton indicum (L.)Sweet.Hort.Brit.*	Duvvenakaya/ Tutturubenda	Malvaceae	Shrub
2	*Acacia leucophloea (Roxb.) Willd.*	Tella tumma	Mimosaceae	Tree
3	*Achyranthes aspera L.*	Uttareni	Amaranthaceae	Herb
4	*Actinopteris radiata (Koenig ex Sw.)*	Mayuri shika	Actinopteridaceae	Herb
5	*Adiantum caudatum L.*	Raja hamsa	Adiantaceae	Herb
6	*Aegle marmelos (L.)*	Maredu / Bilva	Rutaceae	Shrub
7	*Aerva lantana(L.)*	Pindikura	Amaranthaceae	Herb
8	*Ageratum conyzoides L.*	Goat weed	Asteraceae	Herb
9	*Alangium salvifollium (L.f.)*	Udaga / Ankolamu	Alangiaceae	Tree
10	*Albizia amara (Roxb.)*	Cheekireni	Mimosaceae	Tree
11	*Albizzia odoratissima (L.f.) Benth*	Chinduga	Mimosaceae	Tree
12	*Alstonia scholaris L.*	Edakulapala	Apocynaceae	Climber
13	*Andrographis paniculata (Burm.f.) Wall.*	Nelavemu	Acanthaceae	Herb
14	*Anisomelea malabarica (L.)*	Moga-Bira	Lamiaceae	Shrub
15	*Anogeissus latifolia (Roxb.ex Dc.)*	Chirimanu / Elama	Combretaceae	Tree
16	*Argemeone mexicanaL.*	Kusuma / Brahmadandi	Pepepaveraceae	Herb
17	*Aristolochia braceteolata Lam.*	Gadidagadapa	Aristolochiaceae	Herb
18	*Aristolochia indica L.*	Easwari	Aristolochiaceae	Herb

19	*Atalantia monophylla (L.)*	Munukudu	Rutaceae	Shrub
20	*Azadirachta indica A.Juss. In Mem.Mus.Natl.*	Vepa	Meliaceae	Tree
21	*Azima tetracantha Lam.*	Tella uppili	Salvadoraceae	Shrub
22	*Bacopa monnieri (L.) Pennel*	Brahmi	Scrophulriaceae	Herb
23	*Bauhinia racemosa Lam.*	Are fibres	Caesalpinaceae	Tree
24	*Boerhavia diffusa L.*	Attamamidi	Nyctaginaceae	Herb
25	*Boswelia ovalifoliata Bal.&Henry*	Sambrrani	Burseraceae	Tree
26	*Boswelia serrata Roxb.*	Sambrani	Burseraceae	Tree
27	*Capparis sepiaria L.*	Nalla uppili	Capparaceae	Shrub
28	*Cardiospermum halicacabumL.Sp.*	Buddakakara	Sapindaceae	Climber
29	*Careya arborea Roxb.*	Budda darimi	Barringtoniaceae	Tree
30	*Carmona retusa (Vahl)*	Nomuchettu / Barranki	Boraginaceae	Shrub
31	*Cassia absus L.Sp.*	Chanupala vittulu	Caesalpinaceae	Herb
32	*Cassia fistula L.Sp.*	Rela	Caesalpinaceae	Tree
33	*Cassia italica (Mill.)Spreng.*	Nelatangedu	Caesalpinaceae	Herb
34	*Cassia Montana Meyne ex.Roth.*	Pyditangedu	Caesalpinaceae	shrub
35	*Cassia occidentalis L.Sp.*	Kasintha	Caesalpinaceae	shrub
36	*Cassytha filiformis L.*	Sitamma savaralu	Lauraceae	Climber
37	*Catunaregam spinosa (Thung.)*	Manga	Rubiaceae	Shrub
38	*Cayratia pedata (Lam.)*	Adavi gummaditeega	Vitaceae	Climber
39	*Centella asiatica (L.)*	Saraswathi	Apiaceae	Herb
40	*Chionanthus zeylanica L.Sp.*	Punagani	Oleaceae	Tree
41	*Chloroxylon swietenia DC.Prodr.*	Billudu	Meliaceae	Tree
42	*Christella dentata (Forssk.)*	Downy wood fern	Thelipteridaceae	Herb
43	*Cipadessa baccefera (Roth)Miq. In Ann.Mus*	Ranaberi	Meliaceae	Shrub
44	*Cissampelos pareira L.Var.hirsuta*	Visha boddi	Menispermaceae	Shrub
45	*Cissus quadrangularis L.*	Nalleru	Vitaceae	Herb
46	*Cissus vetigenia L.Sp.Pl.*	Adavi gummidi	Vitaceae	Climber
47	*Cocculus hirsutus (L.) Diels in Engl.*	Dusari Teega	Menispermaceae	Climber
48	*Cochlospermum religiosum (L.) Alston*	Konda gogu	Cochlospermaceae	Tree

49	*Coldenia procumbens L.*	Hamsapadu	Boraginaceae	Herb
50	*Corallocarpus epigaeus (Rott.)*	Mukkudonda	Cucurbitaceae	Climber
51	*Cordia dichotoma Forst.f*	Bankamanu / Nakkera	Boraginaceae	Tree
52	*Costus speciosus (Koen.)*	Adavi allam/ Chengalva cost	Costaceae	Herb
53	*Curculigo orchioides Gaertn.,Fruct.*	Nelathati	Hypoxidaceae	Herb
54	*Cycas beddomi Dyer.*	Peritha	Cycadaceae	Tree
55	*Cymopogon flexuosus(L.) Rendle*	Nimma gaddi	Poaceae	Herb
56	*Dalbergia latifolia Roxb.*	Jittagi / Iridi	Fabaceae	Tree
57	*Dalbergia paniculata Roxb.Pl.Cor.t.*	Pacchari	Fabaceae	Tree
58	*Datura metal L.*	Nalla ummetta	Solanaceae	Herb
59	*Datura stromonium L.*	Ummetta	Solanaceae	Shrub
60	*Decalepis hamiltonii Wight &Arn*	Maredu kommulu	Asclepediaceae	Shrub
61	*Decaschistia crotonifolia Wight &Arn*	Adavigogu	Malvaceae	Shrub
62	*Deccannia pubscens (Roth)*	Konda manga	Rubiaceae	Tree
63	*Derris scandens (Roxb.)*	Nalla teega	Fabaceae	Climber
64	*Desmdium triflorum (L.) Dc.*	Munta mandu	Fabaceae	Herb
65	*Dillenia pentagyna roxb.*	Chinna kalinga	Dilleniaceae	Tree
66	*Diospyros ebenum Koen.*	Nalla uti	Ebenaceae	Tree
67	*Dodonea viscosa (L.)Jacq.Enum.*	Bandaru	Sapindaceae	Shrub
68	*Eclipta prostrata (L.)*	Gunta galijeru	Asteraceae	Herb
69	*Ehretia pubescens Benth.in Royle.*	Pakki	Boraginaceae	Tree
70	*Enicostema axillare (Lam.)*	Gulividi	Gentianaceae	Herb
71	*Entada pursaetha DC.*	Gila teega / Konda chinta	Mimosaceae	Climber
72	*Euphorbia hirta L.*	Nanabala	Euphorbiaceae	Herb
73	*Ficus benghalensis L.Sp.*	Marri	Moraceae	Tree
74	*Gardenia resinifera Roth.*	Erribikki	Rubiaceae	Tree
75	*Givotia moluccana(L.)*	Tella poliki	Euphorbiaceae	Tree
76	*Gloriosa superba L.Sp.Pi.*	Nabhi / Nagetigadda	Liliaceae	Climber
77	*Glycosmis pentaphylla (Retz) DC.*	Gonji	Rutaceae	Shrub
78	*Gymnema sylvestre (Retz)*	Podapatri	Asclepediaceae	Shrub

79	*Gyrocarpus asiaticus Willd.*	Taniki /Nalla poliki	Hernandiaceae	Tree
80	*Habenaria apetala*		Orchidaceae	Herb
81	*Haldinia cordifolia (Roxb)*	Rudra ganapa	Rubiaceae	Tree
82	*Hedtitus peberula (G.Don)Arn.*	Chiruveru	Rubiaceae	Herb
83	*Hedyotis corymbosa (L.)*	Vermela - vemu	Rubiaceae	Herb
84	*Hedyotis herbacea L.*	chiriveru	Rubiaceae	Herb
85	*Helicters isora L.*	Gooba thada	Sterculiaceae	Shrub
86	*Hemidesmus indicus(L.) var.inducus*	Sugandhapala	Periplocaceae	Herb
87	*Hemionitis arifolia (Burm.f.) Moore*	Rama bhanam	Hemionitidaceae	Herb
88	*Hiptage benghalensis (L.)Kurz*	Madhavi tega	Malphigiaceae	Climber
89	*Holarrhena antidysenterica (Roxb. exFleming)*	Kola musthi / pala / kodisapala	Apocynaceae	Tree
90	*Holostemma ada-kodein Schultes*	Tella jilledu / Peyyi baddu	Asclepediaceae	Climber
91	*Hybanthus enneaspermus (L.) Muell.Arg.Fragm.*	Ratna purusha	Violaceae	Herb
92	*Ichnocarpus frutescens (L.)R.Br.*	Palateega	Apocynaceae	Climber
93	*Impatines leschenaulti (DC.)Wall.ex.Wight & Arn*		Balsaminaceae	Herb
94	*Ixora pavetta Andr.Bot.Repos.t.*	Korivi/ Papidi	Rubiaceae	Tree
95	*Jasminum auriculatum Vahl.*	Adavimalli	Oleaceae	Climber
96	*Justicia adhatoda L.*	Addasaram	Acanthaceae	Shrub
97	*Lantana camara L.*	Phallikampa	Verbanaceae	shrub
98	*Leonotis nepetiifolia (L)R.Br.Prodr*	Ranabheri	Lamiaceae	Herb
99	*Lepisanthes tetraphylla (Wall.) Radf.*	Sali kunkudu	Sapindaceae	Tree
100	*Limnophila indica (L.)*	Sambrani	Scrophulriaceae	Herb
101	*Lygodium flexuosum (Linn.)*	Mekasannu	Schizaeaceae	Climber
102	*Madhuca longifolia (Koen.)Macbr.*	Ippa	Sapotaceae	Tree
103	*Manikara hexandra (Roxb.)*	Pala	Sapotaceae	Tree
104	*Momordica charantia L.Var.muricata Willd*	Buddakakara	Cucurbitaceae	Climber
105	*Moringa concanensis*	Adavi munaga	Moringaceae	Tree
106	*Ochna obtusata DC.*	Errijambi	Ochnaceae	shrub
107	*Olax scandens Roxb.*	Mekabanda	Olacaceae	Climber
108	*Opilia amentacea Roxb.*	Nallamekabanda	Opilaceae	Climber

109	*Pavonia xylanica (L.)Cav.*	Adavi puttudu / Chiru benda	Malvaceae	Herb
110	*Phyllanthus amarus Schum&Thonn*	Nelausiri	Euphorbiaceae	Herb
111	*Phyllanthus emblica L.*	Nelli / Usiri	Euphorbiaceae	Tree
112	*Physalis minima L.*	Budama	Solanaceae	Herb
113	*Pimpinella tirupathensis L.*	Adavi kottimeera	Apiaceae	Herb
114	*Piper sylevestre*	Toka mereyalu	Piperaceae	Climber
115	*Plumbago zylanica*	Tella chitramulam	Plumbaginaceae	Herb
116	*Pouzolzia zeylanica (L.)Benn.*	Uchchagadda	Urticaceae	Herb
117	*Premna tomentosa Willd*	Narava/ Namari	Verbanaceae	Tree
118	*Pterocarpus marsupium roxb.*	yegisa	Fabaceae	Tree
119	*Pterocarpus santalilnus L.F.*	Rakta chandanam	Fabaceae	Tree
120	*Pterospermum xulocarpum (Gaertn.)*	Tada	Sterculiaceae	Tree
121	*Pueraria tuburosea Roxb.exWilld.*	Chenchu gadda / Bhoochakra	Fabaceae	Climber
122	*Rivea gtoicraterufirnus (Desr.)*	Boddi teega	Convolvulaceae	Shrub
123	*Salvadora persica L.*	Nalla uppili/ Varagogu	Salvadoraceae	Tree
124	*Santalum albumL.*	Chandanam , Srigandham	Santalaceae	Tree
125	*Schefflera stellata (Gaertn.) Harms*	Reval, Ededdula	Araliaceae	Shrub
126	*Scilla hyacinthina (Roth)*	Nakkeragadda	Liliaceae	Herb
127	*Shorea roxburghii G.Don Gen.Syst*	Jalari	Dipteerocarpaceae	Tree
128	*Shorea tumbeuggaia Roxb.*	Tamba / Guggilam	Dipterocarpaceae	Tree
129	*Solanum Melanogena L.varinsanum L.*	Chiruvanga	Solanaceae	Shrub
130	*Solanum surrattense Burm.F.*	Errivanga	Solanaceae	Tree
131	*Solanum trilobatum L.*	Mulla mushti	Solanaceae	Climber
132	*Soymida febrifuga (Roxb)*	Somi	Meliaceae	Tree
133	*Sphaeranthus indicus L.*	Bodasaram	Asteraceae	Herb
134	*Strychnos potatorum L.f.*	Musthi	Loganiaceae	Tree
135	*Strychnos potatorum L.F.Suppl.*	Chilla	Loganiaceae	Tree
136	*Suregada angustifolia (Baill.ex Muell.Arg)*	Sapranchi	Euphorbiaceae	Shrub
137	*Syzygium cumini (L.)*	Neredu	Myrtaceae	Tree
138	*Syzygium alternifolium (Wight) Walp.*	Mogi	Myrtaceae	Tree

139	*Tarenna asiatica L.*	Kommi	Rubiaceae	Shrub
140	*Terminalia arjuna (DC.) Wight&Arn)*	Arjuna / Tella maddi	Combretaceae	Tree
141	*Terminalia bellirica (Gaertn.)*	Thandra / tani	Combretaceae	Tree
142	*Terminalia pallida Brandis*	Tella karaka	Combretaceae	Tree
143	*Terminallia chebula Retz.*	Karaka	Combretaceae	Tree
144	*Tinospora cordifolia (Willd.)Hook.f. &Thoms*	Tippa teega	Menispermaceae	Climber
145	*Tribulus terrestris L.*	Palleru	Zygophyllaceae	Herb
146	*Trichosanthes tricuspidata Lour.*	Papara	Cucurbitaceae	Climber
147	*Tridax procumbens L.*	Gaddi chamanthi	Asteraceae	Herb
148	*Tylophora indica (Burm.f.)*	Kakkupala	Asclepediaceae	climber
149	*Vanda spathulata L.*	Nusti bhadhanika	Orchidaceae	Herb
150	*Vanda roxburghii Nicolson in Salda*	Veduru bhadhanika	Orchidaceae	Herb
151	*Ventilago denticulata Willd.*	Surati / Surudu	Rhamnaceae	Climber
152	*Vernonia anthelmintica (L.)*	Adavi jeelakarra	Asteraceae	Herb
153	*Vettiveria zizanioides (L.)*	Vattiveru	Poaceae	Herb
154	*Viscum articulatum Burm.f.*	Badanika	Viscaceae	Shrub
155	*Vitex altissima L.f.syppl.*	Nemaliadugu	Verbanaceae	Tree
156	*Walsura trifolia (A.Juss)*	Valudu	Meliaceae	Tree
157	*Wattakaka volubilis (L.f.)*	Kallisi	Asclepediaceae	Climber
158	*Wrightia tinctoria (Roxb.)R.Br.*	Reppala	Apocynaceae	Tree
159	*Zizi[hus mauritiana Lam.Encycl.*	Regu	Rhamnaceae	Tree
160	*Ziziphus xylopyrus (Retz.)*	Gotti	Rhamnaceae	Tree

RESULTS AND DISCUSSION

Penusila Narasimha Sacred grove being Veligondas and offshoot of Eastern Ghats is an abode for rich Biodiversity of Deccan. Total number of medicinal plant species collected in our study from Penusila Narasimha Sacred grove is 160 species of 138 genera belonging to 71 families. Out of 71 families 65 are of angiosperms, 5 are of pteridophytes and one is the gymnosperm. The medicinal ferns of pteridophytes of sacred grove are Adiantum caudatum, Actinopteris radiate, Christella dentate, Hemionitis arifolia and Lygodium flexosum. Cycas beddomi is the only one gymnosperm. There are 49 herbs, 28 shrubs, 57 trees and 26 climbers. 38% of medicinal plants constitute trees. Cassia genus stands first with 5 species. Terminalia genus is in second place with 4 species. Solanum, Hedyotis genera are in the third place with 3 species. The genera with 2 species are Albizzia, Aristolochia, Boswelia, Cissus, Dalbergia, Datura, Phyllanthus , Pterocarpus, Shorea, Strychnos, Syzygium Vanda and Ziziphus.

Rubiaceae is the dominant family with 9 species. It is the dominant family even in Uppa Sacred grove of Eastern Ghats, Visakhapatnam, Andhra Pradesh (Prakash Rao, 2010). Fabaceae is in second place with 7

species. Caesalpinaceae, Euphorbiacee, Solanaceae families are third in place with 6 species each. Asclepediaceae, Asteraceae, Combretaceae, Meliaceae families are fourth in place with 5 species each. Families with 4 species are Apocynaceae, Boraginaceae, Mimosaceae. Cucurbitaceae, Rhamnaceae, Menispermaceae, Verbanaceae and Vitaceae, Sapindaceae and Orchidaceae are families with 3 species.2 species from Acanthaceae, Amaranthaceae, Aristalochiaeae, Dipterocarpaceae, Lamiaceae, Liliaceae, Loganiaceae, Malvaceae, Myrtaceae, Oleaceae, Poaceae, Salvadoraceae, Sapindaceae, Sterculiaceae. The remaining families are with only one species.

Decalpis hamiltonii (Wright and Arn) is endemic to south India and other six plants namely Boswelia ovalifolilata (Bal and Henry), Pterocarpus santalinus(L.), Shorea tumbuggia (Roxb.), Syzygium alternifolilgum (Wright)Walp., Terminalia pallida and Pimpinella tirupathensis are endemic to southern Eastern Ghats are reported here. Impatiens leschenaulti (DC) is an endemic taxon to Kerala and Tamilnadu only and is reported at Sidduleswarakona of Nellore district by Surya narayana and Sreenivasa Rao (2002). Now this is reported even in Penusila Narasimha Sacred grove. Cycas beddomi dyer is the only endemic gymnosperm of Seshachalam hills is reported at high altitudes of the sacred grove. List of 7 threatedned, 14 endangered and 16 vulnerable species of the grove are given in Table -II

Earlier Reports reveal that Vernonia anthelmintica (L.) Willd is widely distributed in the study site. But now it sparsely occurs in innermost forests of the grove. This may be owing to over exploitation of the seeds. Seed forms a chief constituent of "ASTHACHOORNA" - an Ayurvedic medicine prepared and widely used for proper functioning of digestive system.

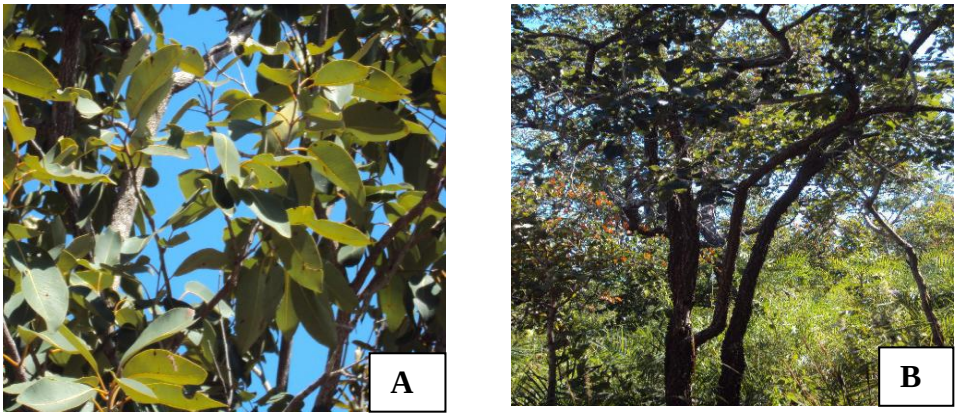

Figure 1: A. Syzygium alternifolium (Wright)Walp. **B.**Pterocarpus santalinus L.

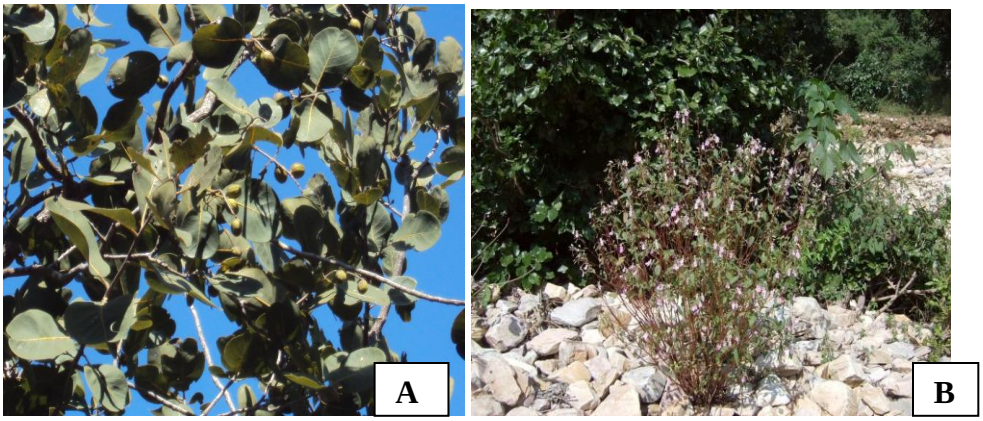

Figure 2: A. Terminalia pallid a (Brandis), **B.** Impatiens leschenaultia(DC.) Wall.ex.Wright & Arn.

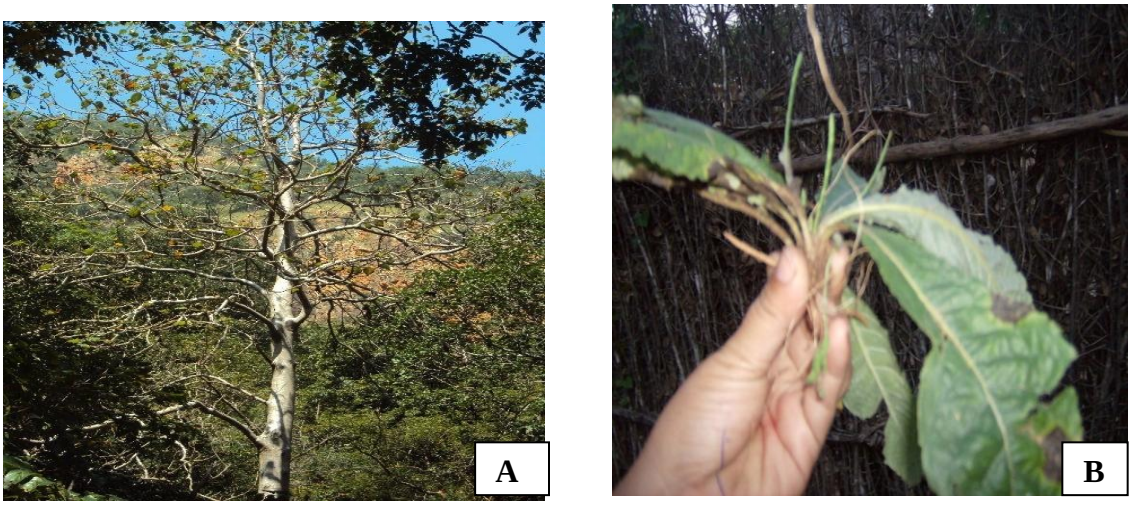

Figure 3: A. Givotia moluccani L.(Tella Poliki), **B.** Coldenia procumbens L. (Hamsapadi)

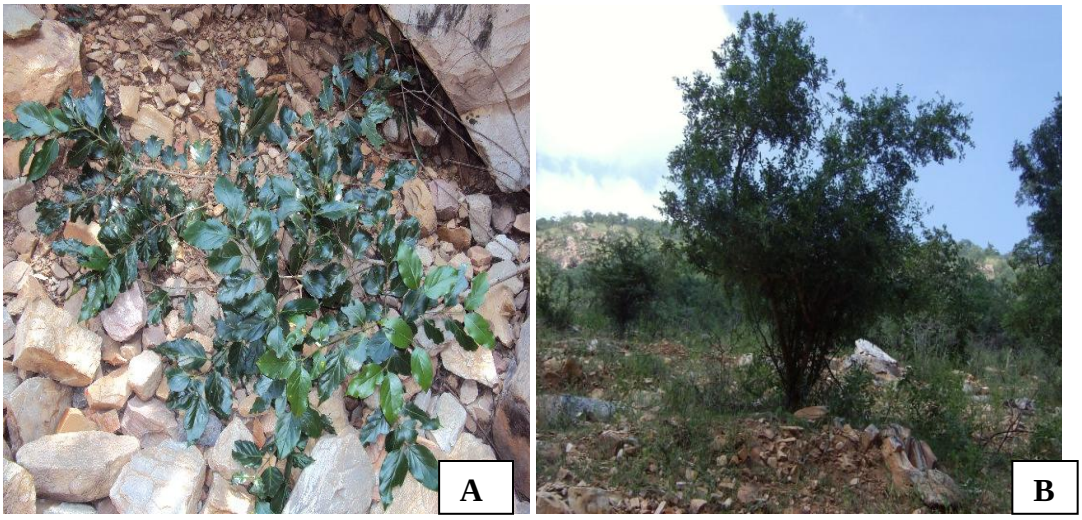

Figure 4: A. Cordia dichotoma Forst.f. (Nakkera), **B.** Premna tomentosa Willd (Narava/ Namari)

CONCLUSION

Mediflora constitute a large segment of the flora which provides raw materials for use by numerous Pharmaceutical industries. The present study will be useful for researchers in the field of Ethanobotany, Ehanomedicine, Taxonomy, and Pharmacology for further studies. The tribals and local people who reside near and around the sacred groove still depend on the mediflora to cure various ailments. Recently Forest Department released 55 Lakhs for the cultivation of medicinal plant Garden in the Sacred grove and this study may be useful in the development of that garden. The study also aims at creating mass awareness among the citizens of the non-tribal main stream society so as to release the sustainability of the biodiversity of sacred grove. Numerous anthropogenic activities like developmental projects, eco-tourism, modernization, urbanization, overexploitation, over grazing are the major threats for the sacred grove. This recognizes the need to conserve its biological resources. Sacred groves depict cultural, traditional, sociological, biological, economical values and are the chief method of in-situ conservation of biodiversity.

TABLE 2: List of Threatened, Endangered and Vulnarable medicinal plants of Penusila narasimha sacred grove

	THREATENED SPECIES		ENDANGERED SPECIES		VULNERABLE SPECIES
1	Decalpis hamilionii	1	Cristella dentata	1	Alstonia scholaris
2	Cochlospermum	2	Lygodium flexuosum	2	Centella asiatica
3	Pavonia somifera	3	Costus speciosus	3	Corallocarpus epigaeus
4	Tylophora indica	4	Vanda spathulata	4	Schefflera stellata
5	Plumbago indica	5	Gloriosa superba	5	Careya arborea
6	Purenia tuberosa	6	Hemidesmus indicus	6	Cucumeria aliangium
7	Strychnos potatorum	7	Hybanths enneaspermus	7	Entada pursaetha
		8	Hemionitis arifollila	8	Dalbergia latifolia
		9	Glycosmis pentaphylla	9	Dellenia pentagyna roxb
		10	Moringa concanensis	10.	Cardiospermum helicabum
		11	Strychnos nux-vomica	11	Habenaria apetala
		12	Vernonia anthelmintica	12	Maeruva oblongifolia
		13	Piper sylevestre	13	Holostemma ada-kodein
		14	Vanda roxburghii	14	Madhuca langifollia
				15	Pterocarpus marsupirm rox
				16	Soymida febrifuga

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