

Floristic Diversity of Puliyanamkunnu, Chalavara Grama Panchayath, Palakkad District, Kerala State

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Abstract— Botanical exploration in Puliyanamkunnu, Chalavara Grama Panchayath of Palakkad district yielded a total of 80 wild taxa of angiosperms. These taxa belong to 65 genera covering 38 families including 36 herbs, 12 climbers, 14 Shrubs and 18 trees. Among them 12 species are endemics and 10 species are rare and red listed. Out of these 80 taxa, 69 species are recorded to be used in different systems of medicines like Ayurveda, Siddha, Unani, Tibetan, Homeopathy, Folk and Western or Modern system. The data will provide information on herbs, Shrubs, climbers and trees that exist in the Puliyanamkunnu, Chalavara Grama Panchayath and about the natural condition under which these plants grow. Such studies will provide reliable information on the presents and distribution of plants in general. This data coupled with studies on threat assessment and trade can also guide focused. Conservation actions like species recovery for each species its local uses are provided. Voucher specimens are deposited in the Sree Krishna college herbarium, with the correct botanical identity and medicinal uses recorded in brief.

Keywords— Diversity, Chalavara, Palakkad.

I. INTRODUCTION

A botanical exploration was carried out in the Puliyanamkunnu, Chalavara Grama Panchayath, Ottapalam taluk, Palakkad district, Kerala state to collect and study the rare and endemic plants of the region. The Puliyanamkunnu is a hill area located in Puliyanamkunnu water shed near Anangan mala ecotourism project, Palakkad district of Kerala. During the survey, a local guide (Member of Panchayath level Peoples Biodiversity Register Committee) and a medicine man belonging to Mannan community, accompanied us for helping in locating the medicinal plants. Since ages the Mannan and Peruvannan community has

been using these plants to treat a number of ailments and diseases. However, due to lack of proper documentation, the knowledge is getting lost. The present paper is an effort to focus attention on the documentation and preservation of the traditional knowledge on some of the endemic, rare, red listed and medicinal plants. This is especially important because the last couple of decades have brought the plant-based medicines back into focus of research as well as development of value added products (Alagesaboopathi & Balu 1999).

Mannan is the minor scheduled community living in the Palakkad district and their lives and economy are intimately interlinked with the nature. They depend mostly upon the forest flora and fauna for their livelihood. This community collects and utilizes many plants for food, fibre, fuel and medicines and their very survival depends on the non-wood forest produce of the region. The present paper deals with the information gathered from an old Mannan vaidyar and the local healer of the community about the medicinal plants used in the health care of the tribe is given. Eighty such plants are included this paper.

II. STUDY AREA

Puliyanamkunnu is a moist deciduous forest element with a low altitude plains area covering three wards of Chalavara Grama Panchayath, Ottapalam taluk, Palakkad district (Champion & Seth, 1968). The Puliyanamkunnu watershed starting from Pulinchimala and ending in Angadithodu. Two major roads passing through this area, 23 ponds, 2 kanals, 7 sacred groves are there. The present study conducted in the Puliyanamkunnu watershed area has resulted in the collection of 80 taxa of angiosperms coming under 65 genera and 38 families. Out of these, 22 rare, endemic, red listed and taxonomically important species are enumerated here with updated nomenclature, local name,

family, brief description, distribution and habitat, phenological data, specimen examined and notes for better understanding of these taxa. The voucher specimens are deposited at the Sree Krishna College, Guruvayur.

III. MATERIALS AND METHODS

The study area was visited during different seasons and two specimens were collected in each species and these were systematically numbered and tagged. Important field observation like, habit, phenology of the plant, colour, texture and smell of leaves, abundance, local names and local uses available were also noted. Each species in fresh condition was critically studied with the help of floras like, *Flora of Presidency of Madras* (Gamble, 1915-1936); *Flowering Plants of Kerala* (Sasidharan, 2004). The plants were identified with the help of floras and finally by comparing with the reference collections available in the Herbarium of Kerala Forest Research Institute, Peechi. The species were often poisoned, processed and labeled, by

standard herbarium methods given by Santapau (1955) and Jain & Rao (1977).

IV. RESULTS AND DISCUSSION

The present study conducted in the Puliyanamkunnu watershed area has resulted in the collection of 80 taxa of angiosperms. These taxa belong to 65 genera covering 38 families including 36 herbs, 12 climbers, 14 Shrubs and 18 trees. Among them 12 species are endemics and 10 species are rare and red listed. Out of these 80 taxa, 69 species are recorded to be used in different systems of medicines like Ayurveda, Siddha, Unani, Tibetan, Homeopathy, Folk and Western or Modern system. (Ravikumar *et al.*, 2000; Udayan & Indira Balachndran, 2009).

In the present paper a total of 80 species were collected and they are arranged alphabetically. Information provided includes botanical name, family, habit, systems of medicine and status. (Table 1)

Table.1: List of species collected

A: Ayurveda, F: Folk, H: Homeopathy, M: Western or Modern, S: Siddha, T: Tibetan and U: Unani.

Sl. No.	Botanical name	Family	Habit	Systems of medicine	Status
1	<i>Anamirta cocculus</i> (L.) Wight & Arn.	Menispermaceae	Climber	F,H,M,S,U	Medicinal
2	<i>Abelmoschus moschatus</i> Medik.	Malvaceae	Herb	A,F,S,U	Cultivated
3	<i>Abrus precatorius</i> L.	Fabaceae	Climber	A,F,H,S,T	Medicinal
4	<i>Acalypha indica</i> L.	Euphorbiaceae	Herb	A,F,H,S,U	Medicinal
5	<i>Acanthospermum hispidum</i> DC.	Asteraceae	Herb	-	-
6	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Tree	A,F,H,T,U	Red listed
7	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae	Tree	A,F,H,T,U	Medicinal
8	<i>Artocarpus hirsutus</i> Lam.	Moraceae	Tree	A,F	Endemic
9	<i>Alysicarpus vaginalis</i> (L.) DC.	Fabaceae	Herb	F	Red listed
10	<i>Bambusa bambos</i> (L.) Voss	Poaceae	Tree	A,F,S,U	Medicinal
11	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Shrub	F	Cultivated
12	<i>Breynia retusa</i> (Dennst.) Alston	Euphorbiaceae	Shrub	A,F,S	Medicinal
13	<i>Breynia vitis-idaea</i> (Burm. f.) C.E.C. Fisch.	Euphorbiaceae	Shrub	F,S,U	Medicinal
14	<i>Canscora pauciflora</i> Dalz	Gentianaceae	Herb	-	Red listed
15	<i>Canthium rheedei</i> DC.	Rubiaceae	shrub	F	Red listed
16	<i>Catharanthus pusillus</i> (Murr.) G. Don	Apocynaceae	Herb	F,S	Red listed
17	<i>Curcuma neilgherrensis</i> Wight	Zingiberaceae	Herb	-	Red listed
18	<i>Cynanchum tunicatum</i> (Retz.) Alston in Trimen	Asclepiadaceae	Climber	-	Red listed
19	<i>Cycas circinalis</i> L	Cycadaceae	Tree	A,F,S,U	Red listed
20	<i>Dipteracanthus prostratus</i> (Poir.) Nees	Acanthaceae	Herb	F	Red listed
21	<i>Drosera burmannii</i> Vahl	Droseraceae	Herb	F	Red listed
22	<i>Elephantopus scaber</i> L.	Asteraceae	Herb	A,F,S,U	Medicinal
23	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Herb	A,S	Medicinal
24	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	Herb	A,F,S,U	Medicinal

25	Eragrostis viscosa (Retz.) Trin.	Poaceae	Herb	-	-
26	Ficus tsjahela Burm. f.	Moraceae	Tree	F	-
27	Gomphrena celosioides Mart.	Amaranthaceae	Herb	F	-
28	Gomphrena globosa L.	Amaranthaceae	Herb	S,F	Cultivated
29	Hemidesmus indicus (L.) R.Br.	Periplocaceae	Climber	A,F,S,T,U	Red listed
30	Heteropogon contortus (L.) P. Beauv. ex Roem. & Schult.	Poaceae	Herb	F	-
31	Hibiscus hispidissimus Griff.	Malvaceae	Herb	A	-
32	Holigarna arnottiana Hook. f.	Anacardiaceae	Tree	F,S	Red listed
33	Holostemma ada-kodien Schult.	Asclepiadaceae	Climber	A,F,U	
34	Hoppea fastigiata (Griseb.) Clarke	Gentianaceae	Herb	-	Red listed
35	Hybanthus enneaspermus (L.) F. Muell.	Violaceae	Herb	A,F,S	Medicinal
36	Hyptis suaveolens (L.) Poit.,	Lamiaceae	Herb	F	-
37	Impatiens chinensis L.	Balsaminaceae	Herb	F	-
38	Indigofera colutea (Burm. f.) Merr.	Fabaceae	Herb	-	-
39	Indigofera linnaei Ali.	Fabaceae	Herb	A,F,S	Medicinal
40	Ipomoea hederifolia L.	Convolvulaceae	Climber	F	Cultivated
41	Ipomoea obscura (L.) Ker-Gawl.	Convolvulaceae	Climber	A,F,S	Medicinal
42	Ixora coccinea L.	Rubiaceae	Shrub	A,F,S,U	Medicinal
43	Jasminum sambac (L.) Ait.	Oleaceae	Climber	A,F,S,T,U	Medicinal
44	Leucas aspera (Willd.) Link	Lamiaceae	Herb	A,F,H,S,U	Medicinal
45	Lindernia ciliata (Colsm.) Pennell	Scrophulariaceae	Herb	F	-
46	Macaranga peltata (Roxb.) Muell.-Arg.	Euphorbiaceae	Tree	F,S	-
47	Memecylon umbellatum Burm.f.	Melastomaceae	Tree	F	Endemic
48	Moringa pterygosperma Gaertn.	Moringaceae	Tree	A,S,T,U	Cultivated
49	Murraya koenigii (L.) Spreng.	Rutaceae	Tree	A,F,S,U	Cultivated
50	Mussaenda frondosa L.	Rubiaceae	Tree	A,F,S,U	Red listed
51	Murdannia spirata (L.) Brueck.	Commelinaceae	Herb	-	-
52	Naregamia alata Wight & Arn.	Meliaceae	Herb	A,F	Red listed
53	Ocimum americanum L.	Lamiaceae	Herb	A,F,H	Medicinal
54	Olea dioica Roxb.	Oleaceae	Tree	F,S	Endemic
55	Osbeckia muralis Naud.	Melastomaceae	Herb	-	Endemic
56	Piper longum L.	Piperaceae	Climber	A,F,S,T,U	Red listed
57	Pseudarthria viscida (L.) Wight & Arn.	Fabaceae	Herb	A,S,U	Red listed
58	Rhynchoglossum notonianum (Wall.) Burtt	Gesneriaceae	Herb	-	Red listed
59	Ricinus communis L.	Euphorbiaceae	Shrub	A,F,S,T,U	Medicinal
60	Saraca asoca (Roxb.) de Wilde	Caesalpiniaceae	Tree	A,F,H,S,U	Red listed
61	Sida cordata (Burm. f.) Borss.	Malvaceae	Herb	A,F,S,U	Medicinal
62	Sida fryxellii Sivar. & Pradeep	Malvaceae	Herb	A	Endemic
63	Sida mysorensis Wight & Arn.	Malvaceae	Herb	A	Medicinal

64	Smithia blanda Wallex Wight & Arn.	Fabaceae	Herb	-	Red listed
65	Solanum violaceum Ortega	Solanaceae	Shrub	A,F	Medicinal
66	Spermacoce mauritiana Osea Gideon ex Verdc.	Rubiaceae	Herb	-	Red listed
67	Syzygium caryophyllatum (L.) Alston	Myrtaceae	Tree	A,F,	
68	Tabernaemontana alternifolia L.	Apocynaceae	Shrub	A,F	Red listed
69	Tamarindus indica L.	Caesalpiniaceae	Tree	A,F,S,T,U	Endemic
70	Tecoma stans (L.) HBK	Bignoniaceae	Shrub	F,S	Cultivated
71	Tectona grandis L.f.	Verbenaceae	Tree	A,F,S,T,U	Cultivated
72	Terminalia bellirica (Gaertn.) Roxb.	Combretaceae	Tree	A,F,S,U	Medicinal
73	Terminalia cuneata Roth	Combretaceae	Tree	A,F,H,S,T,U	Red listed
74	Thevetia peruviana (Pers.) Merr.	Apocynaceae	Shrub	F,T	Cultivated
75	Tragia involucrata L.	Euphorbiaceae	Climber	A,F,S,U	Red listed
76	Trichosanthes cucumerina L.	Cucurbitaceae	Climber	A,F,S,U	Medicinal
77	Vigna radiata (L.) Wilczek var. sublobata (Roxb.) Verdc.	Fabaceae	Climber	A	Medicinal
78	Vitex negundo L.	Verbenaceae	Shrub	A,F,S,T,U	Medicinal
79	Woodfordia fruticosa (L.) Kurz	Lythraceae	Shrub	A,F,S,T,U	Medicinal
80	Ziziphus rugosa Lam.	Rhamnaceae	Shrub	F,S,U	Medicinal

5 medicinal plants were assessed in Conservation Assessment Management Plan Workshop (CAMP) as Red Listed Medicinal Plants were collected from the present study site. *Drosera burmanni* Vahl (Droseraceae); *Holostemma kodian* Schult. (Asclepiadaceae); *Pseudarthria viscida* (L.) Wight & Arn. (Fabaceae); *Trichosanthes cucumerina* L. (Cucurbitaceae) and *Vigna radiata* (L.) Wilczek var. *sublobata* (Roxb.) Verdc. (Fabaceae). 6 medicinal plants were assessed in Conservation Assessment Management Plan Workshop (CAMP) as Red Listed Medicinal Plants were collected from the present study site. *Aegle marmelos* (L.) Correa (Rutaceae); *Artocarpus hirsutus* Lam. (Moraceae); *Cycas circinalis* L. (Cycadaceae); *Piper longum* L. (Piperaceae); *Saraca asoca* (Roxb.) de Wilde (Caesalpiniaceae) and *Terminalia cuneata* Roth (Combretaceae). 2 species are endemic to Western Ghats *Canscora pauciflora* Dalz. (Gentianaceae) and *Osbeckia muralis* Naud. (Melastomaceae). 4 species are endemic to Peninsular India *Alysicarpus vaginalis* (L.) DC. (Fabaceae); *Curcuma neilgherrensis* Wight (Zingiberaceae) and *Naregamia alata* Wight & Arn. (Meliaceae). 2 species are endemic to India *Dipteracanthus prostratus* (Poir.) Nees (Acanthaceae) *Smithia blanda* Wall. ex Wight & Arn. (Fabaceae). 4 species are endemic to Western Ghats *Artocarpus hirsutus*

Lam. (Moraceae); *Holigarna arnottiana* Hook.f. (Anacardiaceae); *Mussaenda frondosa* L. (Rubiaceae) and *Tabernaemontana alternifolia* L. (Apocynaceae). 1 species are endemic to Peninsular India *Canthium rheedei* DC. (Rubiaceae). 9 Species Endemic to India and Sri Lanka *Catharanthus pusillus* (Murray) G. Don (Apocynaceae), *Cynanchum tunicatum* (Retz.) Alston (Asclepiadaceae), *Hemidesmus indicus* (L.) R.Br. (Periplocaceae), *Hoppea fastigiata* (Griseb) Clarke (Gentianaceae), *Polygala rosmarinifolia* Wight & Arn. (Polygalaceae), *Pseudarthria viscida* (L.) Wight & Arn. (Fabaceae), *Rhynchoglossum notonianum* (Wall.) Burt. (Gesneriaceae), *Spermacoce mauritiana* Oseagideon ex Verdc. (Rubiaceae) and *Tragia involucrata* L. (Euphorbiaceae).

V. CONCLUSION

Out of 80 plants 69 plants are medicinal. Here endemic plants *Artocarpus hirsutus*, *Memecylon malabaricum*, *Osbeckia muralis*, and *Olea dioica* are present. When compare to habit of species more number of herbs and shrubs are present, but less numbers of trees. This shows the disturbance inside the natural habitat. In this circumstance suitable management measures and awareness programmes about the importance of sacred groves are necessary for sustainable utilization of the valuable

bioresources. Chalavara Grama Panchayath proposed suitable plans to protect this area.

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REFERENCES

- [1] Alagesaboopathi, C. & Balu, S. 1999. Ethnobotany of Indian *Andrographis* Wallich ex Nees. *J. Econ. Tax. Bot.*, 23(1) 29-32.
- [2] Champion, H.G. and S.K. Seth. 1968. *A Revised Survey of the Forest Types of India*. Forest Research Institute, Manager of Publications, Delhi.
- [3] Gamble, J.S. and C.E.C. Fischer, 1915-1936. *The Flora of the Presidency of Madras*. parts 1-11 (parts 1-7 by Gamble and 8-11 by Fischer), Vols. 1-3. Adlard & Sons Ltd., London.
- [4] Jain, S.K. and R.R. Rao, 1977. *A Handbook of Field and Herbarium Methods*. Today & Tomorrow, New Delhi.
- [5] Ravikumar, K. and D.K. Ved. (Assisted by R. Vijaya Sankar & P.S. Udayan) 2000. *Illustrated Field Guide of 100 Red-Listed Medicinal Plants of Conservation Concern in Southern India*. FRLHT, Bangalore.
- [6] Santapau, H. 1955. *Botanical Collector's manual - A Handbook*. New Delhi.
- [7] Sasidharan, N 2004. Biodiversity documentation for Kerala Part 6 *Flowering Plants*. Kerala. Forest Research Institute, Peechi, Kerala.
- [8] Udayan, P.S. and Indira Balachandran, 2009. *Medicinal Plants of Arya Vaidya Sala Herb Garden*. Kottakkal Arya Vaidya Sala, Kottakkal.