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Journal of Threatened Taxa

Building evidence for conservation globally

www.threatenedtaxa.org

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

COMMUNICATION

A CHECKLIST OF ANGIOSPERM FLORA OF LOW ELEVATION LATERITIC HILLS OF NORTHERN KERALA, INDIA

K.A. Sreejith, V.B. Sreekumar, P. Prashob, S. Nita, M.P. Prejith & M.S. Sanil

26 June 2020 | Vol. 12 | No. 9 | Pages: 16077–16098

DOI: 10.11609/jott.4912.12.9.16077-16098



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A checklist of angiosperm flora of low elevation lateritic hills of northern Kerala, India

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Abstract: An inventory to prepare the checklist of angiosperm species in the lateritic hillocks of northern Kerala was conducted in five sampling sites during April 2013–March 2015. In total, we recorded 364 genera with 535 species, of which 334 are native and 201 are non-native. Native species were represented in 102 families, namely, Poaceae (28), Fabaceae (25), Acanthaceae (22), Rubiaceae (17), Euphorbiaceae (14), Commelinaceae (11), Phyllanthaceae (7), etc., whereas, non-native species were represented in 99 families. Among the native species herbs are the predominant habit with 147 species (44%). Out of the 72 endemic species, three taxa namely, *Syzygium travancoricum*, *Santalum album* and *Hopea ponga* are red listed species documented from the study area. Twenty-seven invasive species were also recorded and major threats to the laterite ecosystems are by *Lantana camara*, *Mikania micrantha*, *Pennisetum polystachyon*, *Ipomoea* spp., and *Senna* spp. Most part of the laterite has been converted to plantations, building sites and mining sites. The indiscriminate mining for laterite, soil and demolishing the hillocks have severely threatened the very existence of the flora.

Keywords: Endemism, floristic inventory, lateritic plateau, microhabitats.

Editor: Sanjaykumar R. Rahangdale, PDEA's A. W. Arts, Science & Commerce College, Pune, India.

Date of publication: 26 June 2020 (online & print)

Citation: Sreejith, K.A., V.B. Sreekumar, P. Prashob, S. Nita, M.P. Prejith & M.S. Sanil (2020). A checklist of angiosperm flora of low elevation lateritic hills of northern Kerala, India. *Journal of Threatened Taxa* 12(9): 16077–16098. <https://doi.org/10.11609/jott.4912.12.9.16077-16098>

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Funding: KFRI Plan Grants (652/12) supported by KSCSTE, Thiruvananthapuram.

Competing interests: The authors declare no competing interests.

Author details: DR. K.A. SREEJITH, is a Senior Scientist at KFRI involved in field oriented studies of tropical forests in Western Ghats especially on long term monitoring permanent plots. DR. V.B. SREEKUMAR, Senior Scientist in Forest Botany Department working in the field of floristics, plant systematics, phylogenetics, genetic diversity assessments and long term changes in phenology and seed dispersal of angiosperms. DR. P. PRASHOB, S. NITA, M.P. PREJITH and M.S. SANIL were working as project staff in the lateritic hillocks of northern Kerala on different aspects dealing with diversity, distribution and ecology of flora and fauna.

Author contribution: KAS—contributed to field survey, identification and paper writing; VBS—contributed to field survey, identification and paper writing; PP—contributed to field survey and identification; NS—contributed to paper writing; MPP—contributed to field survey; MSS—contributed for preparation of herbarium and paper writing.

Acknowledgements: We express our sincere thanks to the Director, Kerala Forest Research Institute for support, encouragement and facilities provided. We are also thankful to the Kerala State Council for Science, Technology & Environment and the Government of Kerala for providing financial support under plan grants (Project No KFRI RP 652/12).



INTRODUCTION

Francis Hamilton-Buchanan from Angadipuram in Kerala, India in the 1800s, while on a journey through the regions of Mysore, Canara, and Malabar (Buchanan 1807; Narayanaswamy 1992) came across a type of weathered substance. This substance used in building material, consisted of indurated clay, full of cavities and pores. It had large quantities of iron in the form of red and yellow ochre. Soft when fresh, this could be cut with any iron instrument; but if exposed, it hardened and resisted air and water. This came to be known as laterite. This unique geological formation is reported to occur from Karnataka, Kerala, Maharashtra, Madhya Pradesh in central India, the Eastern Ghats regions of Odisha, from parts of Assam, and more (Raychaudhuri 1981).

Floristic studies in lateritic plateaus have reported occurrence of many endemic species and habitat-specific flora (Bachulkar 1983; Yadav & Sardesai 2002; Watve 2013; Rahangdale & Rahangdale 2014) throughout the Western Ghats, India.

Some of the new species discovered from laterite ecosystems in India include *Rotala malabarica* Pradeep, Joseph & Sivar. (Pradeep et al. 1990), *Nymphoides krishnakasara* Joseph & Sivar. (Joseph & Sivarajan 1990), *Justicia ekakusuma* Pradeep & Sivar. (Pradeep & Sivarajan 1991), *Lepidagathis keralensis* Madhu. & Singh (Madhusoodanan & Singh 1992), *Eriocaulon sivarajanii* R. Ansari & N.P. Balakr. (Ansari & Balakrishnan 2009), and *Eriocaulon madayiparnese* Swapna, Rajesh, Manju & Prakashkumar (Swapna et al. 2012). There are so many new discoveries from the plateau ecosystems from the Western Ghats and especially from lateritic ones. Therefore, the basaltic as well as lateritic plateaus are inhabited by a great diversity of flora. The plateaus are very species rich, for example the Durgawadi Plateau in Maharashtra of three square kilometer area has more than 600 angiospermic taxa of which 150 are endemic and also 105 faunal members (Rahangdale & Rahangdale 2018), which indicates the extent of species richness on the isolated hillocks or plateaus in the Western Ghats.

Some other taxa also described from laterite habitats, especially from the Western Ghats and adjoining areas are: *Ceropegia attenuata* Hook. var. *mukambikae* (Diwakar & Singh 2011) from Mookambika Hills, Karnataka, *Ceropegia anantii* (Yadav et al. 2004), *Dipcadi concanense* (Dalzell) Baker (Prabhugaonkar et al. 2009), both from low elevation laterites of the Konkan region in Maharashtra, and *Ceropegia mahabalei* Hemadri & Ansari var. *hemalatae* (Rahangdale & Rahangdale

2012) from basaltic plateaus of high elevation from the Western Ghats, Maharashtra.

Recent reports of new angiosperm species like *Lindernia madayiparense* Ratheesh, Sunil & Nandakumar, *Eriocaulon madayiparense* Swapna, Rajesh, Manju & Prakashkumar, *Eriocaulon kannureense* Sunil, Ratheesh & Nandakumar, and *Rotala khaleeliana* Sunil, Ratheesh & Nandakumar from the lateritic hills in northern Kerala highlights the importance of these ecosystems in terms of floral diversity and species richness. Though many endemic and new species have been reported from the lateritic hills of northern Kerala, floral inventory of these ecosystem are limited (Jayarajan 2004; Balakrishnan et al. 2010). Hence, this study was undertaken to document floristic composition and to highlight the significance of these ecosystem in the laterite hills of low elevations of northern Kerala.

MATERIALS AND METHODS

Study Site

The lateritic regions are a unique feature of northern Kerala and are found from Malappuram District in the south and extend upwards to southern Karnataka towards the north. For the present study, intensive surveys were conducted in three lateritic hillocks of Cherupara, IT park, and Kookanam of the Kavvayi Basin (12.087–12.262 °N & 75.179–75.236 °E), spread across Kannur and Kasargod districts. Additionally, lateritic hills of Ariyittapara and Madayipara were also selected. Madayipara (12.031 °N & 75.258 °E) is a popular and typical lateritic plateau in Kannur District and lies on the north bank of Kuppam River, located in Madayi Village. Ariyittapara (12.248°N & 75.280°E) is a lesser known hillock in Cheemeni, Kasargod (Figure 1). The altitude gradient of the selected sites ranges from 23m to about 140m. The vegetation in these midland hillocks support scrub jungles, cashew plantations, grasslands, and aquatic & semiaquatic plants.

Data Collection

Field surveys were conducted in the five selected sampling sites from April 2013 to March 2015. Survey frequency was thrice a month during the months of June to September for extensive representation of monsoon ephemeral plants that are characteristic of lateritic hillocks and monthly for the remaining months of the year. The collected plant specimens were processed using standard herbarium techniques, identified with the aid of regional floras (Hooker 1872–1897; Gamble



Figure 1. Study Sites: Kavvayi River Basin (boundary marked in red), Madayipara, and Ariyittapara.

1915–1935; Ramachandran & Nair 1988; Sasidharan 2004, 2007) and deposited at the Kerala Forest Research Institute Herbarium (KFRI). A checklist was prepared based on the APG IV system of classification and the families and species are arranged alphabetically. Information such as habit, endemism, Red List category if any of each taxon is also provided.

RESULTS

During the present study a total of 535 species belonging to 364 genera of 102 families were recorded from the study area (Table 1). Eight predominant families (i.e., with number of species ≥ 15 in each family), namely Poaceae (57 species), Fabaceae (56 species), Acanthaceae (23 species), Rubiaceae (23 species), Malvaceae (22), Euphorbiaceae (21 species), Asteraceae (16) and Convolvulaceae (16 species) were listed. Families with the greatest number of genera included Fabaceae (39 genera), Poaceae (35 genera), Euphorbiaceae (12 genera), Acanthaceae (17 genera),

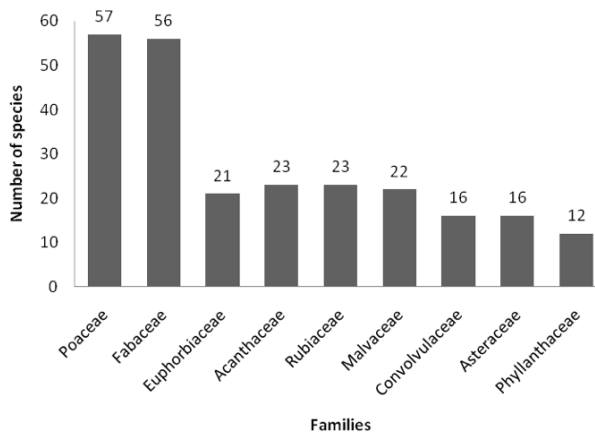


Figure 2. Plant families with higher native species richness in the study area.

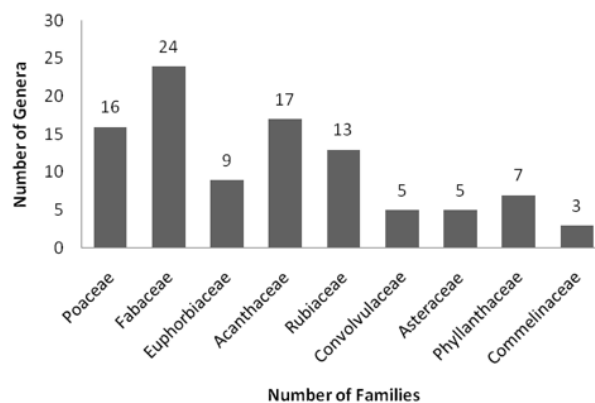


Figure 3. Plant families with highest number of genera native in the study area.

Rubiaceae (16 genera) and Asteraceae (15 genera).

Of the flora documented 2.25% were magnoliids, 21.75% were monocots and the remaining 76% were eudicots comprising rosids (39.8%) and asterids (36.2%). Among the native species of lateritic hills of northern Kerala, herbaceous species were the predominant habit (147 species: 44% of the total) followed by trees (87 species, 26% of the total), climbers (55 species, 16%), and shrubs (45 species, 14%) (Figure 4). Out of the 535 species, 334 are native and 201 are non-native species. Native species were represented in 102 families, namely Poaceae (28), Fabaceae (25), Acanthaceae (22), Rubiaceae (17), Euphorbiaceae (14), etc. (Figure 2). Families with the greatest number of genera in the native species are Fabaceae (27), Poaceae (16), Acanthaceae (17), Rubiaceae (13), Euphorbiaceae (9), etc. (Figure 3). Whereas, non-native species were represented in 99 family and dominated by Poaceae (32), Fabaceae (27), Malvaceae (17), Convolvulaceae (11), etc. Twenty-

Table 1. Angiosperm plant species from lateritic hills of northern Kerala, India.

	Taxon	Life form	Phyto-geographic distribution	Voucher number
	Family: Piperaceae			
1	<i>Peperomia pellucida</i> (L.) Kunth	Herb ^{Ex}	Native of Tropical America; now Pantropica	KFRI 28939
2	<i>Piper longum</i> L.	Shrub	Indo-Malaysia	#
3	<i>Piper nigrum</i> L.	Climber	Peninsular India and Sri Lanka, cultivated elsewhere	#
	Family: Aristolochiaceae			
4	<i>Aristolochia indica</i> L.	Climber	Indo-Malaysia	KFRI 28967
5	<i>Thottea siliquosa</i> (Lam.) Ding Hou	Shrub	Peninsular India and Sri Lanka	#
	Family: Myristicaceae			
6	<i>Knema attenuata</i> Warb.	Tree ^W	Western Ghats	KFRI 28993
	Family: Annonaceae			
7	<i>Polyalthia korinti</i> (Dunal) Thwaites	Shrub	Southern India and Sri Lanka	KFRI 22366
8	<i>Uvaria narum</i> Wall.	Climber	Southern India and Sri Lanka	KFRI 22361
	Family: Lauraceae			
9	<i>Alseodaphne semecarpifolia</i> Nees	Tree	Peninsular India and Sri Lanka	KFRI 28920
10	<i>Cinnamomum malabratum</i> (Burm. f.) J.Presl	Tree ^W	Western Ghats	KFRI 28625
11	<i>Cinnamomum verum</i> Presl	Tree	Southwestern India and Sri Lanka	#
12	<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Tree	Indo-Malaya and China	#
	Family: Araceae			
13	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Herb	India, Sri Lanka, and Pacific Islands	KFRI 22345
14	<i>Ariopsis peltata</i> Nimmo	Herb	India and western Malaysia	KFRI 22330
15	<i>Cryptocoryne spiralis</i> (Retz.) Fisch. ex Wydler	Herb	India extending to Bangladesh	KFRI 22312
16	<i>Pothos scandens</i> L.	Climber	India to Malaysia and Madagascar	KFRI 28966
17	<i>Typhonium flagelliforme</i> (Lodd.) Blume	Herb	Indo-Malaysia	KFRI 22386
18	<i>Typhonium roxburghii</i> Schott	Herb	Southern Asia from India through New Guinea	KFRI 22378
	Family: Hydrocharitaceae			
19	<i>Blyxa octandra</i> (Roxb.) Planch. ex Thwaites	Herb	Indo-Malesia to Australia	#
20	<i>Ottelia alismoides</i> (L.) Pers.	Herb	Indo-Malesia to Pacific Islands and East Asia	KFRI 28919
	Family: Burmanniaceae			
21	<i>Burmannia coelestis</i> D.Don	Herb	Indo-Malesia	#
	Family: Dioscoreaceae			
22	<i>Dioscorea alata</i> L.	Climber ¹	India	KFRI 28974
23	<i>Dioscorea bulbifera</i> L.	Climber	Paleotropics	KFRI 28947
24	<i>Dioscorea hispida</i> Dennst.	Climber	Southern and southeastern Asia	KFRI 22380
25	<i>Dioscorea oppositifolia</i> L.	Climber	Indo-Malesia and China	#
26	<i>Dioscorea pentaphylla</i> L.	Climber	Indo-Malesia and China	KFRI 28975
27	<i>Dioscorea wallichii</i> Hook. f.	Climber	India, Myanmar and Thailand	#
	Family: Pandanaceae			
28	<i>Pandanus amaryllifolius</i> Roxb.	Shrub ^{Ex}	Native of Indonesia	KFRI 28629
	Family: Colchicaceae			
29	<i>Gloriosa superba</i> L.	Climber	Paleotropics	KFRI 28682
30	<i>Iphigenia indica</i> (L.) A. Gray ex Kunth	Herb	Indo-Malesia to Australia	#
	Family: Smilacaceae			
31	<i>Smilax zeylanica</i> L.	Climber	Indo-Malesia	KFRI 22324
	Family: Orchidaceae			
32	<i>Acampe praemorsa</i> (Roxb.) Blatt. & McCann	Herb	India, Sri Lanka and Seychelles	#
33	<i>Bulbophyllum sterile</i> (Lam.) Suresh	Herb	Peninsular India, Nepal, Bangladesh, and Myanmar	KFRI 28647
34	<i>Dendrobium ovatum</i> (L.) Kranz.	Herb ^W	Western Ghats	#
35	<i>Rhynchostylis retusa</i> (L.) Blume	Herb	Indo-Malesia	#
36	<i>Zeuxine longilabris</i> (Lindl.) Trimen	Herb	Indo-Malesia	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
	Family: Hypoxidaceae			
37	<i>Curculigo orchioides</i> Gaertn.	Herb	Indo-Malesia	#
	Family: Asparagaceae			
38	<i>Dracaena terniflora</i> Roxb.	Shrub	India and southeastern Asia	KFRI 28945
39	<i>Furcraea foetida</i> (L.) Haw.	Shrub ^{Ex}	Native to central America; introduced in other parts of Tropics	KFRI 22391
	Family: Arecaceae			
40	<i>Areca catechu</i> L.	Tree	Cultivated from India to the Solomon Islands and less commonly in Africa and Tropical America	#
41	<i>Caryota urens</i> L.	Tree	Indo-Malesia	#
42	<i>Cocos nucifera</i> L.	Tree	Cultivated throughout the tropics	#
	Family: Commelinaceae			
43	<i>Commelina benghalensis</i> L.	Herb	Africa, India, China, Japan, and Malaysia	KFRI 28968
44	<i>Commelina diffusa</i> Burm. f.	Herb	Pantropical	KFRI 22370
45	<i>Commelina erecta</i> L.	Herb	India, Africa, and Australia	#
46	<i>Commelina wightii</i> Raiz.	Herb ^W	Western Ghats	#
47	<i>Cyanotis axillaris</i> (L.) D. Don ex Sweet	Herb	Indo-Malaya	KFRI 28940
48	<i>Cyanotis burmanniana</i> Wight	Herb ^{WVU}	Western Ghats	#
49	<i>Cyanotis cristata</i> (L.) D. Don	Herb	Paleotropics	KFRI 28959
50	<i>Cyanotis fasciculata</i> (B. Heyne ex Roth) Schult. & Schult. f.	Herb	Peninsular India and Sri Lanka	KFRI 28969
51	<i>Cyanotis papilionacea</i> (Burm. f.) Schult. & Schult. f.	Herb ^{PI}	Peninsular India	#
52	<i>Murdannia crocea</i> (Griff.) Faden	Herb ^{PIVU}	Peninsular India	KFRI 28970
53	<i>Murdannia lanuginosa</i> (Wall. ex Clarke) Brueckn.	Herb ^{PIVU}	Peninsular India	KFRI 22371
54	<i>Murdannia nudiflora</i> (L.) Brenan	Herb	Indo-Malaya and Africa	KFRI 28929
55	<i>Murdannia semiteres</i> (Dalz.) Sant.	Herb ^{PI}	Peninsular India	KFRI 28939
	Family: Pontederiaceae			
56	<i>Monochoria vaginalis</i> (Burm. f.) C. Presl	Herb	India to China, Malaysia, and Japan	#
	Family: Marantaceae			
57	<i>Stachyphrynium spicatum</i> (Roxb.) Schum.	Herb ^W	Southern Western Ghats	KFRI 28643
	Family: Costaceae			
58	<i>Cheilocostus speciosus</i> (J. Koenig) C.D. Specht	Herb	Indo-Malaya	#
	Family: Zingiberaceae			
59	<i>Curcuma oligantha</i> Trimen	Herb	Southern India, Sri Lanka, and Myanmar	KFRI 22316
60	<i>Curcuma zanthorrhiza</i> Roxb.	Herb	Cultivated and naturalised in Indo-Malaya	KFRI 22311
61	<i>Globba sessiliflora</i> Sims	Herb	India to Thailand	#
62	<i>Zingiber zerumbet</i> (L.) Roscoe ex Sm.	Herb	India, Sri Lanka, and Malaysia	KFRI 22306
	Family: Eriocaulaceae			
63	<i>Eriocaulon cuspidatum</i> Dalz.	Herb ^{WEN}	Western Ghats	#
64	<i>Eriocaulon heterolepis</i> Steud.	Herb ^W	Western Ghats	KFRI 28949
65	<i>Eriocaulon lanceolatum</i> Miq. ex Koernicke	Herb ^{SI}	Southern India	#
66	<i>Eriocaulon madayiparense</i> Swapna, Rajesh, Manju & Prakashkumar	Herb ^W	Southern Western Ghats (Kerala)	#
67	<i>Eriocaulon parviflorum</i> (Fyson) R. Ansari & N.P. Balakr.	Herb ^{PI}	Peninsular India	KFRI 28950
68	<i>Eriocaulon xeranthemum</i> Mart.	Herb	Tropical Africa and India	KFRI 28948
	Family: Cyperaceae			
69	<i>Cyperus castaneus</i> Willd.	Herb	Indo-Malaya to Northern Australia	KFRI 28946
70	<i>Cyperus compressus</i> L.	Herb	Pantropical	KFRI 28973
71	<i>Cyperus distans</i> L. f.	Herb	Pantropical	KFRI 22381
72	<i>Kyllinga brevifolia</i> Rottb.	Herb	Pantropical	#
73	<i>Kyllinga nemoralis</i> (J. R & G. Forst.) Dandy ex Hutch. & Dalz.	Herb	Pantropical	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
	Family: Poaceae			
74	<i>Alloteropsis cimicina</i> (L.) Stapf	Herb	Paleotropics	KFRI 28695
75	<i>Apluda mutica</i> L.	Herb	Tropical Asia and Australia	KFRI 28637
76	<i>Apocopsis mangalorensis</i> (Hochst. ex Steud.) Henrard	Herb	Peninsular India	KFRI 28639
77	<i>Arundinella cannanorica</i> V.J.Nair, Sreek. & N.C.Nair	Herb ^w	Western Ghats	#
78	<i>Arundinella leptochloa</i> (Steud.) Hook. f.	Herb	Peninsular India and Sri Lanka	#
79	<i>Arundinella metzii</i> Hochst. ex Miq.	Herb ^w	Western Ghats	#
80	<i>Axonopus compressus</i> (Sw.) P.Beauv.	Herb	Tropics and subtropics	#
81	<i>Bhidea fischeri</i> Sreek. & B.V.Shetty	Herb ^{si}	Southern India	
82	<i>Brachiaria ramosa</i> (L.) Stapf	Herb	Africa and Tropical Asia	#
83	<i>Brachiaria reptans</i> (L.) C.A.Gardner & C.E.Hubb.	Herb	Tropical Asia; now introduced throughout the tropics	#
84	<i>Brachiaria subquadripata</i> (Trin.) Hitchc.	Herb	Indo-Malaya	KFRI 28990
85	<i>Centotheca lappacea</i> (L.) Desv.	Herb	Asia and Africa	KFRI 28649
86	<i>Chloris barbata</i> Sw.	Herb ^{ex}	Native of tropical Africa	#
87	<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Herb	Tropical Asia and Australia	#
88	<i>Chrysopogon hackelii</i> (Hook.f.) C.E.C. Fisch.	Herb ^{pi}	Peninsular India	KFRI 28638
89	<i>Cymbopogon flexuosus</i> (Nees ex Steud.) Wats.	Herb	India and southeastern Asia	#
90	<i>Cynodon dactylon</i> (L.) Pers.	Herb	Tropical and warm temperate regions of the world	#
91	<i>Cyrtococcum trigonum</i> (Retz.) A. Camus	Herb	Southeastern Asia, Sri Lanka, and peninsular India	KFRI 28661
92	<i>Dactyloctenium aegypticum</i> (L.) Willd.	Herb ^{ex}	Native of South America	#
93	<i>Digitaria bicornis</i> (Lam.) Roem. & Schult.	Herb	Pantropical	#
94	<i>Digitaria ciliaris</i> (Retz.) Koeler	Herb	Paleotropics	#
95	<i>Dimeria bialata</i> C.E.C. Fisch.	Herb ^{si}	Southern India	KFRI 28637
96	<i>Dimeria hohenseckeri</i> Hochst. ex Miq.	Herb ^{pi}	Peninsular India	#
97	<i>Echinochloa colona</i> (L.) Link	Herb	Tropical Asia and Africa	KFRI 28938
98	<i>Eleusine indica</i> (L.) Gaertn.	Herb	Pantropical	#
99	<i>Eragrostis patula</i> (Kunth) Steud.	Herb	Tropical Africa and southern India	KFRI 28636
100	<i>Eragrostis unioides</i> (Retz.) Nees ex Steud.	Herb	Southeastern Asia, India, and Africa	#
101	<i>Eragrostis viscosa</i> (Retz.) Trin.	Herb	Pantropical	#
102	<i>Eragrostis amabilis</i> (L.) Wight & Arn.	Herb	Paleotropics; introduced in America	#
103	<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schult.	Herb	Cosmopolitan	#
104	<i>Isachne globosa</i> (Thunb.) Ktze.	Herb	Tropical Asia	KFRI 28631
105	<i>Ischaemum burmanicum</i> Bor.	Herb ^{vu}	Myanmar and India	#
106	<i>Ischaemum commutatum</i> Hack.	Herb	Peninsular India and Sri Lanka	KFRI 28658
107	<i>Ischaemum indicum</i> (Houtt.) Merr.	Herb	America, Australia, southeastern Asia, and India	#
108	<i>Ischaemum molle</i> Hook.f.	Herb	India and Pakistan	#
109	<i>Ischaemum muticum</i> L.	Herb	Australia, China, southeastern Asia to Polynesia, Sri Lanka, and India	KFRI 28635
110	<i>Ischaemum pappinisseriensis</i> Ravi N. Mohanan & R. Rajesh	Herb ^{si}	South India	#
111	<i>Ischaemum timorensis</i> Kunth	Herb ^{ex}	America, Java, Malaysia, Myanmar, Pakistan, Sri Lanka, Sumatra, Thailand, and Taiwan	#
112	<i>Ischaemum tumidum</i> Stapf ex Bor	Herb ^{pi}	Peninsular India	#
113	<i>Microchloa indica</i> (L.f.) P. Beauv.	Herb	Pantropical	#
114	<i>Oplismenus burmanni</i> (Retz.) P.Beauv.	Herb	Pantropical	KFRI 28698
115	<i>Oplismenus compositus</i> (L.) P. Beauv.	Herb	Pantropical	#
116	<i>Oryza rufipogon</i> Griff.	Herb	India, Sri Lanka, and tropical Australia	#
117	<i>Oryza sativa</i> L.	Herb	Widely cultivated	#
118	<i>Panicum brevifolium</i> L.	Herb	Paleotropics	#
119	<i>Panicum notatum</i> Retz.	Herb	Southern and southeastern Asia	#
120	<i>Panicum repens</i> L.	Herb	Tropics and subtropics of both hemispheres	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
121	<i>Paspalum scrobiculatum</i> L.	Herb	India and Pakistan	#
122	<i>Pennisetum polystachyon</i> Schult.	Herb ^{Ex}	Paleotropics	KFRI 28937
123	<i>Perotis indica</i> (L.) Ktze.	Herb	Indo-Malaya	#
124	<i>Pseudanthistiria umbellata</i> (Hack.) Hook. f.	Herb	Peninsular India and Sri Lanka	#
125	<i>Rottboellia cochinchinensis</i> (Lour.) Clayton	Herb	Paleotropics	#
126	<i>Sacciolepis interrupta</i> (Willd.) Stapf	Herb	Tropics of southeastern Asia, and Africa	KFRI 28622
127	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Herb	Paleotropics	#
128	<i>Spodiopogon rhizophorus</i> (Steud.) Pilg.	Herb	Southwestern India	#
129	<i>Sporobolus diandrus</i> (Retz.) P.Beauv.	Herb	Indo-Malaya to Australia	#
130	<i>Themeda triandra</i> Forssk.	Herb	Paleotropics	#
	Family: Menispermaceae			
131	<i>Anamirta cocculus</i> (L.) Wight & Arn.	Climber	Indo-Malaya	#
132	<i>Cyclea peltata</i> (Lam.) Hook. f. & Thoms.	Climber	India and Sri Lanka	KFRI 28627
133	<i>Diploclisia glaucascens</i> (Blume) Diels	Climber	Indo-Malaya and China	#
134	<i>Tinospora sinensis</i> (Lour.) Merr.	Climber	Sri Lanka, India, Bangladesh, and Myanmar	#
	Family: Ranunculaceae			
135	<i>Naravelia zeylanica</i> (L.) DC.	Climber	Southeastern Asia	KFRI 28621
	Family: Crassulaceae			
136	<i>Bryophyllum pinnatum</i> (Lam.) Oken	Herb ^{Ex}	Originally from tropical Africa; now pantropical	KFRI 28934
	Family: Vitaceae			
137	<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Climber	Southern Asia	KFRI 28663
138	<i>Cayratia trifolia</i> (L.) Domin	Climber	Indo-Malaya, China, and Australia	KFRI 28653
139	<i>Cissus latifolia</i> Lam.	Climber	Peninsular India and Sri Lanka	KFRI 23321
140	<i>Cissus javana</i> DC.	Climber	Indo-Malaya	#
141	<i>Leea indica</i> (Burm. f.) Merr.	Shrub	Indo-Malaya, China, and Australia	KFRI 28685
142	<i>Leea macrophylla</i> Roxb. ex Hornem.	Shrub	Southern and southeastern Asia	#
	Family: Fabaceae			
	Sub Family: Caesalpinioideae			
143	<i>Cassia fistula</i> L.	Tree	Indo-Malaya	#
144	<i>Chamaecrista mimosoides</i> (L.) Greene	Herb	Paleotropics	KFRI 28925
145	<i>Chamaecrista nictitans</i> subsp. <i>patellaria</i> (Collad.) Irwin & Barneby	Herb	Pantropical	#
146	<i>Delonix regia</i> (Hook.) Raf.	Tree ^{Ex}	Native of Madagascar; now cultivated throughout the tropics	#
147	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	Tree ^{Ex}	Native of Sri Lanka, Andamans, Malaya peninsula and northern Australia	#
148	<i>Senna alata</i> (L.) Roxb.	Shrub ^{Ex}	Pantropical	#
149	<i>Senna hirsuta</i> (L.) Irwin & Barneby	Shrub ^{Ex}	Native of tropical America	#
150	<i>Senna occidentalis</i> (L.) Link	Shrub ^{Ex}	Native of South America; naturalised in Asia	#
151	<i>Senna siamea</i> (Lam.) Irwin & Barneby	Tree ^{Ex}	Native of southeastern Asia; now widely cultivated	#
152	<i>Senna tora</i> (L.) Roxb.	Herb ^{Ex}	Native of South America	KFRI 28921
153	<i>Tamarindus indica</i> L.	Tree ^{Ex}	Native of tropical Africa; introduced and widely grown in India and other parts of tropics	KFRI 28679
	Sub Family: Mimosoideae			
154	<i>Acacia caesia</i> (L.) Willd.	Climber	Indo-Malaysia	#
155	<i>Acacia pennata</i> (L.) Willd.	Climber	Paleotropics	#
156	<i>Acacia auriculiformis</i> Benth.	Tree ^{Ex}	Native of Tropical Australia	KFRI 28910
157	<i>Adenanthera pavonina</i> L.	Tree ^{Ex}	Sri Lanka, Himalaya, Myanmar, Thailand, Malaysia, and China	KFRI 28675
158	<i>Albizia odoratissima</i> (L.f.) Benth.	Tree	Indo-Malaya	#
159	<i>Albizia saman</i> (Jacq.) Merr.	Tree ^{Ex}	Native of central and South America; widely planted in the tropics as avenue tree	#
160	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Tree	India and Sri Lanka	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
161	<i>Mimosa pudica</i> L.	Herb ^{Ex}	Native of South America; now pantropical	#
162	<i>Xylia xylocarpa</i> (Roxb.) Taub.	Tree	Indo-Malaya	KFRI 28925
	Sub Family: Papilionoideae			
163	<i>Abrus precatorius</i> L.	Climber	Pantropical	KFRI 22389
164	<i>Aeschynomene americana</i> L.	Herb ^{Ex}	Central America; now introduced and naturalised in some parts of Peninsular India	#
165	<i>Aeschynomene aspera</i> L.	Shrub	Indo-Malaya	#
166	<i>Alysicarpus bupleurifolius</i> (L.) DC.	Herb	Indo-Malaya to Polynesia	KFRI 28927
167	<i>Butea monosperma</i> (Lam.) Taub.	Tree	Tropical Asia	KFRI 28915
168	<i>Cajanus scarabaeoides</i> (L.) Thouars	Herb	Tropical Asia; introduced in Africa	#
169	<i>Calopogonium mucunoides</i> Desv.	Climber ^{Ex}	Introduced from tropical Asia; now wild in southern India	KFRI 28903
170	<i>Canavalia gladiata</i> (Jacq.) DC.	Climber ^{Ex}	Pantropical	#
171	<i>Centrosema molle</i> Benth.	Climber ^{Ex}	Native of America; introduced in India	KFRI 28909
172	<i>Clitoria ternatea</i> var. <i>pleniflora</i> Fantz	Climber ^{Ex}	Pantropical	KFRI 28907
173	<i>Clitoria ternatea</i> L.	Climber ^{Ex}	Widely cultivated in the tropics, probably native of South America	#
174	<i>Crotalaria pallida</i> Aiton	Shrub	Pantropical	KFRI 22393
175	<i>Crotalaria quinquefolia</i> L.	Herb	Tropical Asia; introduced in Jamaica and West Indies	KFRI 28676
176	<i>Dalbergia horrida</i> (Dennst.) Mabb.	Climber ^W	Western Ghats	KFRI 28962
177	<i>Derris scandens</i> (Roxb.) Benth.	Climber	Indo-Malaya	KFRI 22395
178	<i>Derris trifoliata</i> Lour.	Climber	Paleotropics	#
179	<i>Desmodium gangeticum</i> (L.) DC.	Herb	Paleotropics	KFRI 28913
180	<i>Desmodium heterocarpon</i> (L.) DC.	Shrub	Indo-Malaya, China, and Japan	#
181	<i>Desmodium heterophyllum</i> (Willd.) DC.	Herb	Indo-Malaya and China	KFRI 28914
182	<i>Desmodium scorpiurus</i> (Sw.) Desv.	Herb ^{Ex}	Native of America; introduced and naturalised in the pacific regions of Asia	KFRI 28908
183	<i>Desmodium triflorum</i> (L.) DC.	Herb	Indo-Malaya and Australia	KFRI 28902
184	<i>Erythrina variegata</i> L.	Tree	Indo-Malaya, China, and Africa	KFRI 28677
185	<i>Geissaspis cristata</i> Wight & Arn.	Herb	Southwestern India to Indo-China, Sri Lanka, and China	#
186	<i>Gliricidia sepium</i> (Jacq.) Walp.	Tree ^{Ex}	Native of South America; Introduced and now widely grown in India	#
187	<i>Indigofera trifoliata</i> L.	Herb	Indo-Malaya, China and Australia	KFRI 28916
188	<i>Mucuna pruriens</i> (L.) DC.	Climber	India, Myanmar, and Sri Lanka	KFRI 28917
189	<i>Pongamia pinnata</i> (L.) Pierre	Tree	Indo-Malaya	KFRI 28911
190	<i>Pseudarthria viscida</i> (L.) Wight & Arn.	Shrub	Peninsular India and Sri Lanka	KFRI 28623
191	<i>Smithia conferta</i> Smith	Herb	Indo-Malaya to Australia	#
192	<i>Spatholobus parviflorus</i> (DC.) Kuntze	Climber	Indo-Malaya	KFRI 28678
193	<i>Stylosanthes fruticosa</i> (Retz.) Alston	Shrub	Sri Lanka, India, Africa, and Madagascar	#
194	<i>Tadehagi triquetrum</i> (L.) H. Ohashi	Shrub	Indo-Malaya to Pacific Islands, and China	#
195	<i>Tephrosia purpurea</i> (L.) Pers.	Herb	Indo-Malaya	KFRI 28680
196	<i>Vigna trilobata</i> (L.) Verdc.	Climber	Indo-Malaya	KFRI 28912
197	<i>Zornia gibbosa</i> Span.	Herb	Indo-Malaya to Australia and China	#
	Family: Polygalaceae			
198	<i>Polygala elongata</i> Klein ex Willd.	Herb	India and Sri Lanka	#
199	<i>Salomonina ciliata</i> (L.) DC.	Herb	Indo-Malaya and Australia	#
200	<i>Xanthophyllum arnotianum</i> Wight	Tree ^W	Western Ghats	KFRI 22359
	Family: Rhamnaceae			
201	<i>Ziziphus oenopia</i> (L.) Mill.	Climber	Tropical Asia and Australia. Throughout the hotter parts of India	#
202	<i>Ziziphus rugosa</i> Lam.	Shrub	India, Sri Lanka, Bangladesh, and Myanmar	#
203	<i>Ziziphus jujuba</i> Mill.	Tree ^{Ex}	Paleotropics	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
	Family: Ulmaceae			
204	<i>Holoptelea integrifolia</i> Planch.	Tree	Indo-Malaya	KFRI 28667
	Family: Cannabaceae			
205	<i>Celtis philippensis</i> Blanco	Tree	Indo-Malaya to Australia and Tropical Africa	KFRI 22322
206	<i>Trema orientalis</i> (L.) Blume	Tree	Tropical Africa, Asia, and Australia	KFRI 28666
	Family: Moraceae			
207	<i>Antiaris toxicaria</i> Lesch.	Tree	Paleotropics	KFRI 28645
208	<i>Ficus arnottiana</i> (Miq.) Miq.	Tree	India and Sri Lanka	KFRI 28691
209	<i>Ficus benghalensis</i> L.	Tree	Indian subcontinent; widely grown as avenue tree	#
210	<i>Ficus callosa</i> Willd.	Tree	Indo-Malaya	#
211	<i>Ficus exasperata</i> Vahl	Tree	Eastern Africa, Arabia, India, and Sri Lanka	#
212	<i>Ficus heterophylla</i> L.f.	Tree	Indo-Malaya and China	KFRI 28692
213	<i>Ficus hispida</i> L.f.	Tree	Indo-Malaya to Australia	KFRI 28992
214	<i>Ficus racemosa</i> L.	Tree	Indo-Malaya to Australia	#
215	<i>Ficus religiosa</i> L.	Tree ^{Ex}	Eastern Himalaya; naturalised in India	#
216	<i>Ficus tinctoria</i> G. Forst. ssp. <i>gibbosa</i> (Blume) Corner	Tree	Indo-Malaya	#
	Family: Urticaceae			
217	<i>Elatostema cuneatum</i> Wight	Herb	Indo-Malaya	KFRI 28634
218	<i>Laportea interrupta</i> (L.) Chew	Herb	Paleotropics	#
219	<i>Pilea microphylla</i> (L.) Liebm.	Herb ^{Ex}	South America; now introduced into other tropical regions	#
220	<i>Pouzolzia zeylanica</i> (L.) Bennett	Herb	Tropical Asia	#
	Family: Cucurbitaceae			
221	<i>Diplocyclos palmatus</i> (L.) C. Jeffrey	Climber	Indo-Malaya, China, and Africa	#
222	<i>Momordica dioica</i> Roxb. ex Willd.	Climber	Indo-Malaya and China	KFRI 28928
223	<i>Mukia maderaspatana</i> (L.) Roem.	Climber	Paleotropics	#
224	<i>Solena amplexicaulis</i> (Lam.) Gandhi	Climber	Indo-Malaya to Australia	#
225	<i>Trichosanthes nervifolia</i> L.	Climber	Southwestern India and Sri Lanka	KFRI 22373
226	<i>Trichosanthes tricuspidata</i> Lour.	Climber	Indo-Malaya to Australia and eastern Asia	KFRI 28933
	Family: Celastraceae			
227	<i>Loeseneriella arnottiana</i> (Wight) A.C.Sm.	Climber	Southern India and Sri Lanka	#
228	<i>Lophopetalum wightianum</i> Arn.	Tree	Indo-Malaya	KFRI 28958
229	<i>Salacia chinensis</i> L.	Climber	Indo-Malaya	KFRI 28923
230	<i>Salacia fruticosa</i> Wall.	Climber ^w	Western Ghats	#
	Family: Connaraceae			
231	<i>Connarus monocarpus</i> L.	Climber	Peninsular India and Sri Lanka	KFRI 28931
232	<i>Connarus wightii</i> Hook.f.	Shrub ^w	Western Ghats	KFRI 28943
233	<i>Rourea minor</i> (Gaertn.) Alston	Climber	India, Sri Lanka, Bangladesh, and Malaysia	KFRI 22372
	Family: Oxalidaceae			
234	<i>Biophytum reinwardtii</i> (Zucc.) Klotzsch.	Herb	Indo-Malaya and China	#
235	<i>Oxalis corniculata</i> L.	Herb	Cosmopolitan	KFRI 28648
	Family: Rhizophoraceae			
236	<i>Carallia brachiata</i> (Lour.) Merr.	Tree	Indo-Malaya and Australia	KFRI 28935
237	<i>Rhizophora mucronata</i> Lam	Tree	Paleotropics	#
	Family: Ochnaceae			
238	<i>Gomphia serrata</i> (Gaertn.) Kanis	Shrub	Indo-Malaya	KFRI 28646
	Family: Achariaceae			
239	<i>Hydnocarpus pentandrus</i> (Buch.-Ham.) Oken	Tree ^w	Western Ghats	KFRI 28922
	Family: Violaceae			
240	<i>Hybanthus ennaespermus</i> (L.) F.Muell.	Herb	Sri Lanka, India, China, Madagascar, Africa, and tropical Australia	KFRI 28980

	Taxon	Life form	Phyto-geographic distribution	Voucher number
	Family: Passifloraceae			
241	<i>Passiflora foetida</i> L.	Climber ^{Ex}	Native of tropical America; now naturalised in India, China, and Africa	KFRI 28659
242	<i>Turnera subulata</i> Smith	Shrub ^{Ex}	Native of Tropical America	KFRI 28670
	Family: Salicaceae			
243	<i>Flacourtia indica</i> (Burm. f.) Merr.	Shrub	Paleotropics	#
	Family: Euphorbiaceae			
244	<i>Acalypha indica</i> L.	Herb	Indo-Malaya and tropical Africa	#
245	<i>Acalypha paniculata</i> Miq.	Herb	Indo-Malaya and tropical Africa	KFRI 28951
246	<i>Agrostistachys borneensis</i> Becc.	Tree	Indo-Malaya	#
247	<i>Croton caudatus</i> Geisel.	Climber	Indo-Malaya	KFRI 28905
248	<i>Croton persimilis</i> Muell.-Arg.	Tree	India to China	#
249	<i>Euphorbia deccanensis</i> V.S.Raju	Herb ^{SI}	Southern India	KFRI 28953
250	<i>Euphorbia heterophylla</i> L.	Herb ^{Ex}	Native of central America; now a pantropical weed	KFRI 22385
251	<i>Euphorbia hirta</i> L.	Herb ^{Ex}	Native of tropical America; now pantropical	#
252	<i>Euphorbia nivulia</i> Buch.-Ham.	Herb	India and Myanmar	KFRI 28904
253	<i>Euphorbia thymifolia</i> L.	Herb	Tropical Asia	#
254	<i>Falconeria insignis</i> Royle	Tree	Indo-Malaya	#
255	<i>Jatropha curcas</i> L.	Shrub ^{Ex}	Native of tropical America; now widespread in paleotropics	KFRI 28960
256	<i>Jatropha gossypifolia</i> L.	Shrub ^{Ex}	Native of South America, planted elsewhere in the tropics	#
257	<i>Macaranga peltata</i> (Roxb.) Muell.-Arg.	Tree	India, Sri Lanka, and Andamans	#
258	<i>Mallotus philippensis</i> (Lam.) Muell.Arg.	Tree	Indo-Malaya and Australia	#
259	<i>Mallotus repandus</i> (Willd.) Muell.Arg.	Shrub	India, China, and Malaysia	KFRI 22387
260	<i>Micrococca mercurialis</i> (L.) Benth.	Herb	Tropical Africa, Arabia, India, Sri Lanka, and Myanmar	#
261	<i>Microstachys chamaelea</i> (L.) Muell. Arg.	Herb	Indo-Malaya to Australia	KFRI 28906
262	<i>Microstachys chamaelea</i> (L.) Muell.Arg.	Herb	Indo-Malaya to Australia	#
263	<i>Ricinus communis</i> L.	Shrub ^{Ex}	Native of tropical Africa; now cultivated throughout tropics	#
264	<i>Tragia involucrata</i> L.	Herb	India and Sri Lanka	KFRI 28674
	Family: Linaceae			
265	<i>Hugonia mystax</i> Cav.	Climber	India and Sri Lanka	#
	Family: Phyllanthaceae			
266	<i>Antidesma acidum</i> Retz.	Shrub	Indo-Malaya and southern China	KFRI 28979
267	<i>Antidesma bunius</i> (L.) Spreng.	Tree	Indo-Malaya to Australia and southern China	KFRI 22383
268	<i>Aporosa cardiosperma</i> (Gaertn.) Merr.	Tree	Peninsular India and Sri Lanka	KFRI 28672
269	<i>Breynia vitis-idaea</i> (Burm.f.) C.E.C.Fisch.	Shrub	Indo-Malaya	KFRI 28961
270	<i>Bridelia retusa</i> (L.) A.Juss.	Tree	Indo-Malaya	#
271	<i>Bridelia stipularis</i> (L.) Blume	Shrub ^{PI}	Peninsular India	KFRI 28952
272	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	Shrub	Tropical Africa, Asia, and Australia	#
273	<i>Glochidion zeylanicum</i> (Gaertn.) A. Juss.	Tree	Indo-Malaya	#
274	<i>Phyllanthus amarus</i> Schum. & Thonn.	Herb	Tropics	#
275	<i>Phyllanthus emblica</i> L.	Tree	Throughout the tropics	#
276	<i>Phyllanthus reticulatus</i> Poir.	Shrub	Paleotropics	#
277	<i>Phyllanthus urinaria</i> L.	Herb ^{Ex}	Native of tropical eastern Asia; now a circumtropical weed	KFRI 28673
	Family: Combretaceae			
278	<i>Combretum latifolium</i> Blume	Climber	Indo-Malaya	#
279	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Tree	Indo-Malaya	#
280	<i>Terminalia catappa</i> L.	Tree	Indo-Malaya to northern Australia and Polynesia, commonly planted in the tropics	#
281	<i>Terminalia paniculata</i> Roth	Tree ^{PI}	Peninsular India	KFRI 28931

	Taxon	Life form	Phyto-geographic distribution	Voucher number
	Family: Lythraceae			
282	<i>Rotala malabarica</i> Pradeep, Joseph & Sivar.	Herb ^{SI}	Southern India	#
283	<i>Rotala malampuzhensis</i> R.V. Nair	Herb ^W	Western Ghats	#
	Family: Onagraceae			
284	<i>Ludwigia hyssopifolia</i> (G. Don) Exell	Herb	Pantropical	#
285	<i>Ludwigia octovalvis</i> subsp. sessiliflora (Michx.) P.H. Raven	Herb	Pantropical	#
	Family: Myrtaceae			
286	<i>Syzygium caryophyllum</i> (L.) Alston	Tree	Western Ghats and Sri Lanka	KFRI 28991
287	<i>Syzygium cumini</i> (L.) Skeels	Tree ^W	Western Ghats	KFRI 28995
288	<i>Syzygium grande</i> (Wight) Walp.	Tree	Indo-Malaya	#
289	<i>Syzygium travancoricum</i> Gamble	Tree ^{W,EN}	Southern Western Ghats	KFRI 28994
290	<i>Syzygium zeylanicum</i> (L.) DC.	Tree	Indo-Malaya	#
	Family: Melastomataceae			
291	<i>Melastoma malabathricum</i> L.	Shrub ^{Ex}	Southeastern Asia	#
292	<i>Memecylon randerianum</i> S.M. Almeida & M.R. Almeida	Shrub ^W	Western Ghats	#
293	<i>Memecylon umbellatum</i> Burm.f.	Shrub	Peninsular India and Sri Lanka	#
294	<i>Osbeckia muralis</i> Naud.	Herb ^W	Western Ghats	KFRI 28998
	Family: Burseraceae			
295	<i>Garuga pinnata</i> Roxb.	Tree	Indo-Malaya	KFRI 22360
	Family: Anacardiaceae			
296	<i>Anacardium occidentale</i> L.	Tree ^{Ex}	Native of South America; now widely cultivated in Asia and Africa	#
297	<i>Holigarna arnottiana</i> Hook. f.	Tree ^W	Western Ghats	#
298	<i>Lannea coromandelica</i> (Houtt.) Merr.	Tree	Indo-Malaya and China	KFRI 22317
299	<i>Mangifera indica</i> L.	Tree	Indo-Malaya	#
	Family: Sapindaceae			
300	<i>Allophylus cobbe</i> (L.) Raeusch.	Shrub	Southern India, Sri Lanka, and southeastern Asia	KFRI 28632
301	<i>Cardiospermum halicacabum</i> L.	Climber	Pantropical	#
302	<i>Sapindus trifoliatus</i> L.	Tree	Southern Asia	#
303	<i>Schleichera oleosa</i> (Lour.) Merr.	Tree	Indo-Malaya	#
	Family: Rutaceae			
304	<i>Aegle marmelos</i> (L.) Correa	Tree	India and Sri Lanka; widely cultivated in southeastern Asia, Malaysia, tropical Africa and the United States	KFRI 28934
305	<i>Citrus medica</i> L.	Shrub ^{Ex}	Probably indigenous in India; not exactly known	#
306	<i>Glycosmis mauritiana</i> (Lam.) Tanaka	Shrub	Indo-Malaya	#
307	<i>Glycosmis pentaphylla</i> (Retz.) DC.	Shrub	Indo-Malaya	KFRI 28620
308	<i>Melicope lunu-ankenda</i> (Gaertn.) Hartley	Tree	Indo-Malaya	#
309	<i>Naringi crenulata</i> (Roxb.) Nicolson	Tree	Indo-Malaya	#
310	<i>Zanthoxylum rhetsa</i> DC.	Tree	Indo-Malaya	KFRI 22342
	Family: Meliaceae			
311	<i>Aglaia elaeagnoidea</i> (A.Juss.) Benth.	Tree	Indo-Malaya to Pacific Islands	#
312	<i>Azadirachta indica</i> A.Juss.	Tree	Indo-Malaya	KFRI 28628
313	<i>Naregamia alata</i> Wight & Arn.	Herb ^{PI}	Peninsular India	#
	Family: Malvaceae			
314	<i>Abutilon indicum</i> (L.) Sweet	Shrub	Tropics and subtropics	#
315	<i>Bombax ceiba</i> L.	Tree	Tropical Asia and New Guinea	#
316	<i>Corchorus aestuans</i> L.	Herb	Pantropical	KFRI 28671
317	<i>Corchorus capsularis</i> L.	Herb ^{Ex}	Cultivated in most tropical countries	#
318	<i>Grewia nervosa</i> (Lour.) Panigrahi	Shrub	Tropical Asia	#
319	<i>Grewia tillifolia</i> Vahl	Tree	Tropical Africa, India to Indo-China	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
320	<i>Helicteres isora</i> L.	Shrub	Indo-Malaya, China and Australia	#
321	<i>Hibiscus hispidissimus</i> Griff.	Shrub	Palaeotropics	KFRI 28639
322	<i>Hibiscus surattensis</i> L.	Shrub	Pantropical	#
323	<i>Melochia corchorifolia</i> L.	Herb	Pantropical	KFRI 28618
324	<i>Pterospermum diversifolium</i> Blume	Tree	Indo-Malaya	#
325	<i>Pterospermum rubiginosum</i> Heyne ex Wall.	Tree ^w	Western Ghats	#
326	<i>Pterygota alata</i> (Roxb.) R. Br.	Tree	Southern Asia and Myanmar	KFRI 28619
327	<i>Sida acuta</i> Burm. f.	Shrub	Pantropical	KFRI 28626
328	<i>Sida cordata</i> (Burm. f.) Bors. Waalk.	Herb	Pantropical	#
329	<i>Sida cordifolia</i> L.	Shrub	Pantropical	KFRI 28690
330	<i>Sida rhombifolia</i> L.	Shrub	Pantropical	#
331	<i>Sterculia guttata</i> Roxb. ex G. Don	Tree	Indo-Malaya	#
332	<i>Triumfetta rhomboidea</i> Jacq.	Shrub	Pantropical	KFRI 28650
333	<i>Urena lobata</i> L.	Shrub	Pantropical	KFRI 28996
334	<i>Urena sinuata</i> L.	Shrub	Pantropical	#
335	<i>Waltheria indica</i> L.	Shrub	Pantropical	#
	Family: Dipterocarpaceae			
336	<i>Hopea ponga</i> (Dennst.) Mabb.	Tree ^{w,vu}	Western Ghats	KFRI 28976
337	<i>Vateria indica</i> L.	Tree ^w	Western Ghats	KFRI 28932
	Family: Capparaceae			
338	<i>Capparis baducca</i> L.	Shrub ^{wvu}	Western Ghats	KFRI 28957
339	<i>Capparis sepiaria</i> L.	Shrub	Pantropical	#
340	<i>Capparis zeylanica</i> L.	Shrub	Indo-Malaya and China	#
	Family: Cleomaceae			
341	<i>Cleome rutidosperma</i> DC.	Herb	Pantropical	KFRI 22362
342	<i>Cleome viscosa</i> L.	Herb	Pantropical	#
	Family: Opiliaceae			
343	<i>Cansjera rheedel</i> J.F. Gmel.	Climber	India through Malaya to Hong Kong and northern Australia	#
	Family: Santalaceae			
344	<i>Santalum album</i> L.	Tree ^{vu}	Peninsular India and Malaysia	#
	Family: Loranthaceae			
345	<i>Dendrophthoe falcata</i> (L.f.) Etting.	Shrub	Peninsular India	#
346	<i>Helicanthes elastica</i> (Desr.) Danser	Shrub ^w	Western Ghats	#
347	<i>Macrosolen parasiticus</i> (L.) Danser	Shrub	Southwestern India and Sri Lanka	KFRI 28637
348	<i>Scurrula parasitica</i> L.	Shrub	Southern and southeastern Asia	#
	Family: Plumbaginaceae			
349	<i>Plumbago zeylanica</i> L.	Shrub	Pantropical	KFRI 28660
	Family: Droseraceae			
350	<i>Drosera indica</i> L.	Herb	Paleotropics	KFRI 28977
	Family: Ancistrocladaceae			
351	<i>Ancistrocladus heyneanus</i> Wall. ex J.Graham	Climber	Southern India and Sri Lanka	KFRI 22302
	Family: Caryophyllaceae			
352	<i>Polycarpaea corymbosa</i> (L.) Lam.	Herb	Pantropical	#
	Family: Amaranthaceae			
353	<i>Achyranthes aspera</i> L.	Herb	Pantropical	KFRI 22301
354	<i>Achyranthes bidentata</i> Blume	Herb	Indo-Malaya to Australia and eastern Asia	KFRI 22392
355	<i>Aerva lanata</i> (L.) Juss.	Herb	Widespread in the tropics and subtropics	KFRI 22375
356	<i>Alternanthera bettzickiana</i> (Regel) G. Nicholson	Herb ^{ex}	Native of tropical America; getting naturalised in Asia	KFRI 22353
357	<i>Alternanthera brasiliana</i> (L.) Kuntze	Herb ^{ex}	Native of tropical America	KFRI 22399
358	<i>Alternanthera sessilis</i> (L.) R. Br. ex. DC.	Herb	Pantropical	KFRI 22376

	Taxon	Life form	Phyto-geographic distribution	Voucher number
359	<i>Amaranthus spinosus</i> L.	Herb ^{Ex}	Originally from America; now found in warmer regions of the world	KFRI 22397
360	<i>Amaranthus viridis</i> L.	Herb	Pantropical	KFRI 22343
361	<i>Celosia argentea</i> L.	Herb	Cosmopolitan	KFRI 22331
362	<i>Cyathula prostrata</i> (L.) Blume	Herb	Pantropical	KFRI 28964
363	<i>Gomphrena celosioides</i> Mart.	Herb ^{Ex}	Originally from South America; now widespread in the tropics	KFRI 22352
	Family: Aizoaceae			
364	<i>Trianthema portulacastrum</i> L.	Herb	Tropics of the world	KFRI 22363
	Family: Nyctaginaceae			
365	<i>Boerhavia diffusa</i> L.	Herb	Pantropical	#
	Family: Molluginaceae			
366	<i>Glinus oppositifolius</i> (L.) A. DC.	Herb	Pantropical	#
367	<i>Molluga pentaphylla</i> L.	Herb	Pantropical	#
368	<i>Molluga stricta</i> L.	Herb	Pantropical	#
	Family: Portulacaceae			
369	<i>Portulaca oleracea</i> L.	Herb	Pantropical	KFRI 28699
	Family: Cactaceae			
370	<i>Cereus pterogonus</i> Lem.	Shrub ^{Ex}	Pantropical	KFRI 28936
	Family: Cornaceae			
371	<i>Alangium salviifolium</i> subsp. <i>hexapetalum</i> (Lam.) Wang.	Climber	Indo-Malaya	KFRI22314
	Family: Balsaminaceae			
372	<i>Impatiens balsamina</i> L.	Herb	Indo-Malaya; introduced into many countries	KFRI 22318
373	<i>Impatiens chinensis</i> L.	Herb	India and China	KFRI 22303
374	<i>Impatiens flaccida</i> Arn.	Herb	Southern India and Sri Lanka	KFRI 22315
375	<i>Impatiens minor</i> (DC.) Bennet	Herb ^{PI}	Peninsular India	KFRI 22320
	Family: Lecythidaceae			
376	<i>Careya arborea</i> Roxb.	Tree	Tropical Asia	KFRI 28636
	Family: Sapotaceae			
377	<i>Madhuca neriifolia</i> (Moon) H. J. Lam	Tree	India and Sri Lanka	KFRI 22339
378	<i>Mimusops elengi</i> L.	Tree	Indo-Malaya	#
	Family: Ebenaceae			
379	<i>Diospyros buxifolia</i> (Blume) Hiern	Tree	Indo-Malaya	KFRI 29000
380	<i>Diospyros candolleana</i> Wight	Tree ^{PI}	Peninsular India	KFRI 28978
	Family: Rubiaceae			
381	<i>Benkara malabarica</i> (Lam.) Tirveng.	Shrub	Peninsular India and Sri Lanka	KFRI 28700
382	<i>Canthium coromandelicum</i> (Burm.f.) Alston	Shrub	Indo-Malaya	KFRI 28657
383	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Shrub	Tropical Asia and Africa	#
384	<i>Chassalia curviflora</i> var. <i>ophioxylodes</i> (Wall.) Deb & Krishna	Shrub	Indo-Malaya	#
385	<i>Hedyotis cyanantha</i> Kurz	Shrub	Peninsular India and Sri Lanka	#
386	<i>Ixora brachiata</i> Roxb.	Shrub ^W	Western Ghats	#
387	<i>Ixora coccinea</i> L.	Shrub	Peninsular India and Sri Lanka	KFRI 22357
388	<i>Mitracarpus hirtus</i> (L.) DC.	Herb ^{Ex}	Tropical Africa and America; now common in southern India	#
389	<i>Morinda citrifolia</i> L.	Tree	Indo-Malaya to Australia	#
390	<i>Mussaenda frondosa</i> L.	Shrub ^{PI}	Peninsular India	#
391	<i>Neanotis hohenackeri</i> Daniel & Vajr.	Herb ^I	India	#
392	<i>Neanotis rheedei</i> (Wall. & Arn.) W.H. Lewis	Herb ^{W,En}	Western Ghats	KFRI 28936
393	<i>Neanotis tubulosa</i> (G. Don) Mabb.	Herb	Peninsular India and Sri Lanka	#
394	<i>Oldenlandia corymbosa</i> L.	Herb	Pantropical	
395	<i>Oldenlandia herbacea</i> (L.) Roxb.	Herb	Tropical Africa and Asia	#

	Taxon	Life form	Phyto-geographic distribution	Voucher number
396	<i>Ophiorrhiza mongus</i> L.	Herb	India, Myanmar, and Sri Lanka	#
397	<i>Pavetta indica</i> L.	Shrub	India and Sri Lanka	#
398	<i>Psychotria flavida</i> Talbot	Shrub ^w	Southern Western Ghats	#
399	<i>Psychrax umbellata</i> (Wight) Bridson	Tree	Indo-Malaysia and China	#
400	<i>Spermacoce alata</i> Aubl.	Herb ^{ex}	Native of Tropical America; now established in Tropical Africa and Asia	#
401	<i>Spermacoce articularis</i> L. f.	Herb	Tropical Asia and Africa	KFRI 22346
402	<i>Spermacoce ocymoides</i> Burm.f.	Herb	Indo-Malaysia and Tropical Africa	#
403	<i>Spermacoce pusilla</i> Wall.	Herb	India and Myanmar	#
Family: Gentianaceae				
404	<i>Canscora diffusa</i> (Vahl) R.Br. ex Roem. & Schult.	Herb	Tropical Africa, Asia, and Australia	KFRI 28923
405	<i>Hoppea fastigiata</i> (Griseb.) Clarke	Herb	Peninsular India, Sri Lanka, and Myanmar	#
Family: Loganiaceae				
406	<i>Mitrasacme indica</i> Wight	Herb	Indo-Malaya to Australia and eastern Asia	KFRI 28641
407	<i>Strychnos nux-vomica</i> L.	Tree	Indo-Malaya	KFRI 28638
408	<i>Strychnos vanprukii</i> Craib	Climber ^w	Western Ghats	KFRI 28999
Family: Apocynaceae				
409	<i>Aganosma cymosa</i> (Roxb.) G.Don	Climber	Peninsular India and Sri Lanka	KFRI 22349
410	<i>Allamanda cathartica</i> L.	Climber ^{ex}	Native of Tropical America; now naturalised in the tropics of the world	KFRI 22332
411	<i>Alstonia scholaris</i> (L.) R. Br.	Tree	Southern and southeastern Asia to Australia	#
412	<i>Catharanthus pusillus</i> (Murr.) G. Don	Herb	India and Sri Lanka	#
413	<i>Cryptolepis dubia</i> (Burm.f.) M.R.Almeida	Climber	Peninsular India and Sri Lanka	#
414	<i>Holarrhena pubescens</i> Wall. ex G. Don	Tree	Indo-Malaya	KFRI 28956
415	<i>Ichnocarpus frutescens</i> (L.) W.T.Aiton	Climber	Indo-Malaya and Australia	KFRI 28935
416	<i>Kamettia caryophyllata</i> (Roxb.) Nicolson & Suresh	Climber ^w	Western Ghats	KFRI 22326
417	<i>Plumeria rubra</i> L.	Tree ^{ex}	Native of tropical America; widely naturalised elsewhere in the tropics	#
418	<i>Rauvolfia serpentina</i> (L.) Benth. ex Kurz	Herb	Southern and southeastern Asia	KFRI 28965
419	<i>Tabernaemontana alternifolia</i> L.	Tree ^w	Western Ghats	KFRI22384
420	<i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schult.	Shrub ^{ex}	Native of southern Himalaya	#
421	<i>Wrightia tinctoria</i> R. Br.	Tree	India, Myanmar, and Timor	KFRI 28955
Family: Boraginaceae				
422	<i>Cordia dichotoma</i> G. Forst.	Tree	Pakistan, India, Sri Lanka, and northern Africa	KFRI 22356
423	<i>Heliotropium indicum</i> L.	Herb	Pantropical	#
424	<i>Heliotropium keralense</i> Sivar. & Manilal	Herb ^w	Western Ghats	KFRI 22354
425	<i>Heliotropium marifolium</i> J.Koenig ex Retz.	Herb	Peninsular India and Sri Lanka	KFRI 22305
Family: Convolvulaceae				
426	<i>Argyreia nervosa</i> (Burm.f.) Bojer	Climber	Indo-Malaya, China, and Mauritius	KFRI 28954
427	<i>Cuscuta reflexa</i> Roxb.	Climber	Indo-Malaysia and China	KFRI 22374
428	<i>Erycibe paniculata</i> Roxb.	Climber	India, Himalaya, and Andaman Islands	KFRI 22369
429	<i>Evolvulus alsinoides</i> (L.) L.	Herb	Pantropical	KFRI 28938
430	<i>Evolvulus nummularius</i> (L.) L.	Herb ^{ex}	Native of tropical America; naturalised in Africa and Indo-Malaya	KFRI 28971
431	<i>Hewittia malabarica</i> (L.) Suresh	Climber	Asia, Africa, and South America	KFRI 28941
432	<i>Ipomoea cairica</i> (L.) Sweet	Climber ^{ex}	Paleotropics	#
433	<i>Ipomoea hederifolia</i> L.	Climber ^{ex}	Native of tropical America; now naturalised in tropical Asia	#
434	<i>Ipomoea mauritiana</i> Jacq.	Climber	Pantropical	KFRI 28930
435	<i>Ipomoea nil</i> (L.) Roth	Climber ^{ex}	Native of South America; now naturalised in tropics	#
436	<i>Ipomoea pes-tigridis</i> L.	Climber	Pantropical	#
437	<i>Ipomoea pileata</i> Roxb.	Climber	Tropical Africa and Indo-Malaya	KFRI 28942

	Taxon	Life form	Phyto-geographic distribution	Voucher number
438	<i>Merremia tridentata</i> (L.) Hall.f.	Herb	Paleotropics	#
439	<i>Merremia umbellata</i> (L.) Hall.f.	Climber	Pantropical	#
440	<i>Merremia vitifolia</i> (Burm. f.) Hall.f.	Climber	Indo-China and China	KFRI 28944
441	<i>Neuropeltis malabarica</i> Ooststr.	Climber ^w	Western Ghats	KFRI 28972
Family: Solanaceae				
442	<i>Capsicum annum</i> L.	Shrub ^{Ex}	Native to West Indies; widely cultivated all over the world	#
443	<i>Datura stramonium</i> L.	Shrub ^{Ex}	Widely distributed in most parts of the temperate regions of the world	#
444	<i>Physalis angulata</i> L.	Herb ^{Ex}	Tropical Asia, Africa, and Australia	KFRI 28981
445	<i>Solanum americanum</i> Mill.	Herb ^{Ex}	Cosmopolitan	#
446	<i>Solanum torvum</i> Sw.	Shrub	Throughout the tropics	KFRI 28655
Family: Oleaceae				
447	<i>Chionanthus mala-elengi</i> (Dennst.) P.S.Green	Tree ^{Pl}	Peninsular India	#
448	<i>Jasminum azoricum</i> L.	Climber ^{Ex}	Native to the Azores Islands	#
449	<i>Jasminum malabaricum</i> Wight	Climber ^w	Western Ghats	#
450	<i>Olea dioica</i> Roxb.	Tree ^l	India	KFRI 28662
Family: Gesneriaceae				
451	<i>Rhynchoglossum notonianum</i> (Wall.) Burt	Herb	Southwestern India and Sri Lanka	#
Family: Plantaginaceae				
452	<i>Dopatrium junceum</i> (Roxb.) Buch.-Ham. ex Benth.	Herb	Eastern tropics	#
453	<i>Limnophila repens</i> (Benth.) Benth.	Herb	Tropical Asia	KFRI 22337
454	<i>Mecardonia procumbens</i> (Mill.) Small	Herb ^{Ex}	Native of tropical America; naturalised in India	KFRI 22328
455	<i>Microcarpaea minima</i> (Koenig ex Retz.) Merr.	Herb	Paleotropics	#
456	<i>Scoparia dulcis</i> L.	Herb ^{Ex}	Native of tropical America; now pantropical	#
Family: Linderniaceae				
457	<i>Lindernia ciliata</i> (Colsm.) Pennell	Herb	Indo-Malaya	#
458	<i>Lindernia crustacea</i> (L.) F.Muell.	Herb	Africa, America, and tropical & subtropical Asia	#
459	<i>Lindernia hyssopioides</i> (L.) Haines	Herb	Southeastern Asia, Malaysia and China	#
460	<i>Lindernia viscosa</i> (Hornem.) Merr.	Herb	Indo-Malaya and China	#
Family: Martyniaceae				
461	<i>Martynia annua</i> L.	Shrub ^{Ex}	Tropical and subtropical America; naturalised in Indian subcontinent	#
Family: Pedaliaceae				
462	<i>Petalium murex</i> L.	Herb	Tropical Africa, Sri Lanka, India, and Pakistan	KFRI 28698
463	<i>Sesamum indicum</i> L.	Herb	Tropical Africa and Asia	KFRI 28630
464	<i>Sesamum radiatum</i> Schum. & Thonn.	Herb ^{Ex}	Native of tropical western Africa; now widely spread	#
Family: Acanthaceae				
465	<i>Acanthus ilicifolius</i> L.	Shrub	Indo-Malaya and Australia	KFRI 22229
466	<i>Andrographis paniculata</i> (Burm. f.) Wall.	Herb	Peninsular India and Sri Lanka	KFRI 22301
467	<i>Asystasia dalzelliana</i> Sant.	Herb	Tropical Asia and Africa	KFRI 22341
468	<i>Asystasia gangetica</i> (L.) Anders.	Herb	Peninsular India, Sri Lanka, Arabia, and Africa	KFRI 22329
469	<i>Barleria cristata</i> L.	Shrub ^{Ex}	Indo-Malaya and southern China	KFRI 22351
470	<i>Barleria prionitis</i> L.	Shrub	Tropical Africa and Asia	KFRI 22355
471	<i>Dicliptera paniculata</i> (Forssk.) I. Darbysh.	Herb	India, Myanmar, and tropical Africa	KFRI 22350
472	<i>Dipteracanthus prostratus</i> (Poir.) Nees	Herb ^l	India	KFRI 22338
473	<i>Eranthemum capense</i> L. var. <i>capense</i> Hook. f.	Herb	Peninsular India and Sri Lanka	KFRI 22336
474	<i>Gymnostachyum febrifugum</i> Benth.	Herb ^w	Southern Western Ghats	#
475	<i>Haplanthodes neilgherryensis</i> (Wight) Majumdar	Herb ^w	Western Ghats	KFRI 22394
476	<i>Justicia adhatoda</i> L.	Shrub	Indo-Malaya	KFRI 22390
477	<i>Justicia ekakusuma</i> Pradeep & Sivar.	Herb ^{Sl}	Southern India	KFRI 22382
478	<i>Justicia japonica</i> Thunb.	Herb	Indo-Malaya and eastern Africa	KFRI 22313

	Taxon	Life form	Phyto-geographic distribution	Voucher number
479	<i>Lepidagathis incurva</i> Buch.-Ham. ex D. Don	Herb	India, Myanmar, and China	KFRI 22353
480	<i>Lepidagathis keralensis</i> Madhu. & Singh	Herb ^{SI}	Southern India	KFRI 22340
481	<i>Phaulopsis imbricata</i> (Forssk.) Sweet	Herb	Indo-Malaysia, China, and Africa	KFRI 22400
482	<i>Pseuderanthemum malabaricum</i> Gamble	Herb	Peninsular India and Sri Lanka	KFRI 22396
483	<i>Rhinacanthus nasutus</i> (L.) Kurz	Herb	India, Sri Lanka, Java, and Madagascar	KFRI 22358
484	<i>Rungia pectinata</i> (L.) Nees	Herb	India, Sri Lanka, and Myanmar	KFRI 22329
485	<i>Staurogyne glutinosa</i> Kuntze	Herb	India and Bangladesh	KFRI 22341
486	<i>Strobilanthes heyneanus</i> Nees	Shrub	India and Sri Lanka	KFRI 22334
487	<i>Strobilanthes perfoliata</i> Anders.	Shrub ^W	Western Ghats	KFRI 22367
	Family: Bignoniaceae			
488	<i>Millingtonia hortensis</i> L.f.	Tree	Southeastern Asia and Malaysia	KFRI 22358
489	<i>Pajanelia longifolia</i> (Willd.) K.Schum.	Tree	India and Myanmar	KFRI 22304
490	<i>Stereospermum tetragonum</i> DC.	Tree	Indo-China and Malaysia	KFRI 28937
	Family: Lentibulariaceae			
491	<i>Utricularia cecillii</i> P.Taylor	Herb ^W	Western Ghats	KFRI 28918
492	<i>Utricularia graminifolia</i> Vahl	Herb	India and Sri Lanka	#
493	<i>Utricularia lazulina</i> P.Taylor	Herb ^W	Western Ghats	KFRI 28683
494	<i>Utricularia malabarica</i> Janarth. & A.N Henry	Herb ^{SI}	South India	#
495	<i>Utricularia reticulata</i> Smith	Herb	India and Sri Lanka	#
496	<i>Utricularia striatula</i> Smith	Herb	Paleotropics	KFRI 28640
497	<i>Utricularia uliginosa</i> Vahl	Herb	Indo-Malaya, China, and Australia	#
	Family: Verbenaceae			
498	<i>Lantana camara</i> L.	Shrub ^{Ex}	Native of tropical America, widely naturalised in the tropics and subtropics	#
499	<i>Phyla nodiflora</i> (L.) Greene	Herb	Tropics and subtropics	KFRI 28664
500	<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Shrub	Pantropical	KFRI 28665
	Family: Lamiaceae			
501	<i>Anisochilus carnosus</i> (L. f.) Wall.	Herb	Southern India, Sri Lanka and Myanmar	#
502	<i>Anisomeles indica</i> (L.) Kuntze	Herb	Indo-Malaya and China	KFRI 28644
503	<i>Hyptis suaveolens</i> (L.) Poit.	Shrub ^{Ex}	Originally from America now pantropical	
504	<i>Leucas aspera</i> (Willd.) Link	Herb	Indo-Malaya	#
505	<i>Leucas biflora</i> (Vahl) Sm.	Herb	Peninsular India and Sri Lanka	KFRI 28681
506	<i>Ocimum americanum</i> L.	Herb ^{Ex}	Paleotropics	#
507	<i>Platostoma hispidum</i> (L.) A.J.Paton	Herb	Indo-Malaya	#
508	<i>Pogostemon deccanensis</i> (Panigrahi) Press	Herb ^{SI}	Southern India	KFRI 28642
509	<i>Pogostemon purpurascens</i> Dalz.	Herb ^{SWI}	Southwestern India	#
510	<i>Pogostemon quadrifolius</i> (Benth.) F.Muell.	Herb ^I	India	#
511	<i>Symphorema involucreatum</i> Roxb.	Climber	Indo-Malaya	KFRI 22323
	Family: Orobanchaceae			
512	<i>Centranthera indica</i> (L.) Gamble	Herb	Indo-Malaya, China, and Australia	#
513	<i>Rhamphicarpa fistulosa</i> (Hochst.) Benth.	Herb ^I	India	#
514	<i>Sopubia trifida</i> Buch.-Ham. ex D. Don	Herb	Indo-Malaya and China	#
515	<i>Striga angustifolia</i> (D. Don) Saldanha	Herb	Indo-Malaya	KFRI 28933
516	<i>Striga asiatica</i> (L.) Ktze.	Herb ^{Ex}	Southeastern Asia and Africa	#
517	<i>Striga gesnerioides</i> (Willd.) Vatke	Herb	From tropical and southern Africa through Arabia to India and Sri Lanka	#
	Family: Menyanthaceae			
518	<i>Nymphoides krishnakasara</i> Joseph & Sivar.	Herb ^W	Southern Western Ghats	KFRI 28997
	Family: Asteraceae			
519	<i>Acanthospermum hispidum</i> DC.	Herb ^{Ex}	Pantropical	KFRI 22309
520	<i>Ageratum conyzoides</i> (L.) L.	Herb ^{Ex}	Pantropical	KFRI 22325

	Taxon	Life form	Phyto-geographic distribution	Voucher number
521	<i>Bidens pilosa</i> L.	Herb ^{Ex}	Pantropical	KFRI 22310
522	<i>Blumea membranacea</i> DC.	Herb	Indo-Malaya	KFRI 22365
523	<i>Blumea oxyodonta</i> DC.	Herb	Indo-Malaya and southern China	KFRI 22308
524	<i>Cosmos caudatus</i> Kunth	Herb ^{Ex}	West Indies and central America; introduced in India	KFRI 22307
525	<i>Eclipta prostrata</i> (L.) L.	Herb	Pantropical	#
526	<i>Elephantopus scaber</i> L.	Herb	Pantropical	#
527	<i>Emilia sonchifolia</i> (L.) DC. ex DC.	Herb	Tropical and subtropical Africa and Asia	KFRI 22347
528	<i>Grangea maderaspatana</i> (L.) Poir.	Herb	Indo-Malaya and Africa	KFRI 22335
529	<i>Mikania micrantha</i> Kunth	Climber ^{Ex}	Pantropical	#
530	<i>Phyllocephalum phyllolaenum</i> (DC.) Narayana	Herb ^I	India	KFRI 22344
531	<i>Sphagneticola trilobata</i> (L.) Pruski	Herb ^{Ex}	Native of tropical America	KFRI 22368
532	<i>Synedrella nodiflora</i> (L.) Gaertn.	Herb ^{Ex}	Native of West Indies; naturalised in India, China, Malaysia, and Polynesia	KFRI 22319
533	<i>Tridax procumbens</i> (L.) L.	Herb ^{Ex}	Native of tropical America; now widespread throughout tropics and subtropics	#
534	<i>Vernonia cinerea</i> (L.) Less.	Herb	Pantropics	#
	Family: Apiaceae			
535	<i>Centella asiatica</i> (L.) Urb.	Herb	Tropical Asia and Africa	#

#—not accessed due to restriction in collection | EN—Endangered | Ex—exotic | I—endemic to India | PI—endemic to peninsular India | SI—endemic to southern India | SWI—endemic to southwestern India | VU—Vulnerable | W—endemic to Western Ghats.

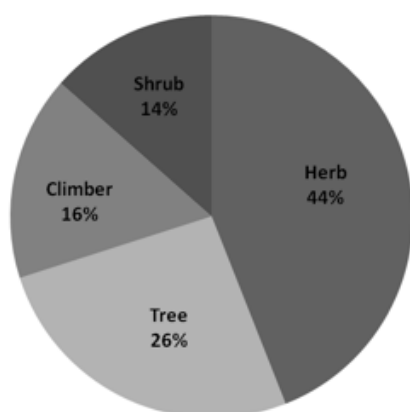


Figure 4. Percentage distribution of native plant habits of the documented species.

seven invasive species were recorded and major threats to the laterite ecosystems are by *Lantana camara* L., *Mikania micrantha* Kunth, *Pennisetum polystachyon* Schult., *Ipomoea* spp., and *Senna* spp.

Of the 334 native species reported, *Asparagus fyonii* Macbr., *Eriocaulon cuspidatum* Dalz., *Neanotis rheedei* (Wall. ex Wight & Arn.) Lewis are listed as Endangered; *Capparis baducca* L., *Cyanotis burmanniana* Wight, *Ischaemum burmanicum* Bor., and *Murdannia lanuginosa* (Wall. ex Clarke) Bruckn. as Vulnerable (Sasidharan 2007); whereas *Syzygium travancoricum* Gamble is listed as Critically Endangered (CAMP Workshops on Medicinal

Plants, India 1998), *Hopea ponga* (Dennst.) Mabb. as Endangered (Ashton 1998) and *Santalum album* L. are listed as Vulnerable (Arunkumar et al. 2019). Important plant species images are also provided (Image 1–4).

DISCUSSION

The alteration in wet and dry spells creates unique microhabitats that support the varied biota in it. The microhabitats and larger area could be the reasons for accommodating more angiosperms (Rahangdale & Rahangdale 2014). Most of the lateritic flora is adapted to the various microhabitats and each microhabitat is unique in its edaphic properties, water availability, and species composition. This makes such floristic studies ecologically significant. Floral inventories as provided here contribute to understanding and highlighting the ecological significance of the landscape. The current inventory adds to the floristic knowledge of lateritic hills in these areas. The floristic composition may differ from site to site, but in general these (Table 1) were the frequent families recorded during the study in the lateritic hills in northern Kerala.

Also, of the seven new species recorded from lateritic hills of northern Kerala over the years, only two species were observed during the current study. These are *Justicia ekakusuma* Pradeep & Sivar. and *Rotala malabarica* Pradeep et al. Most of the lateritic

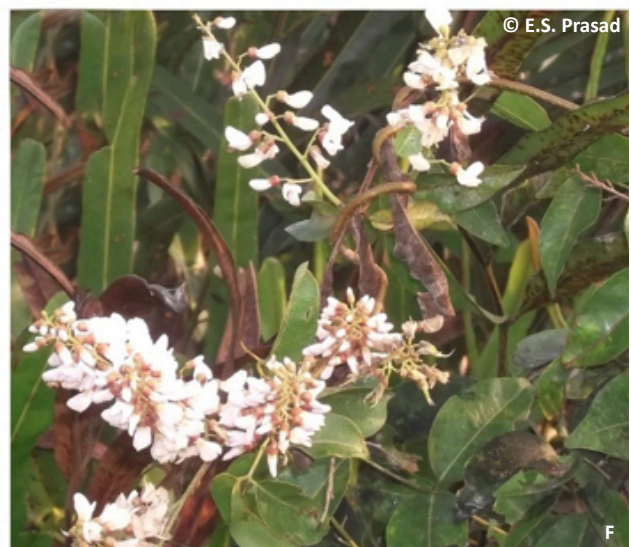
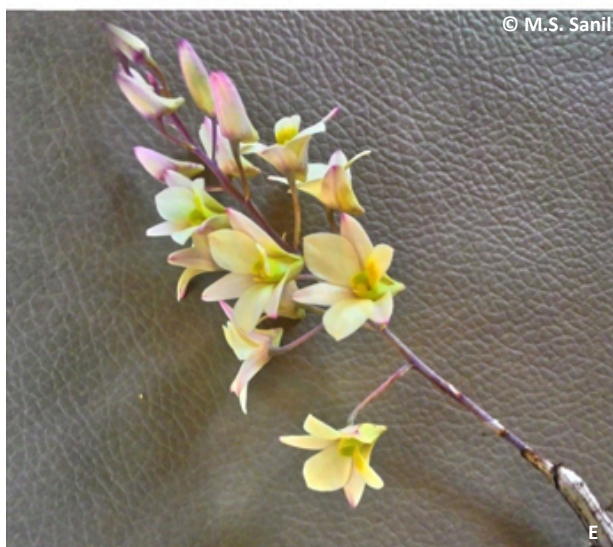


Image 1. A—*Acanthus ilicifolius* | B—*Capparis baducca* | C—*Catunaregam spinosa* | D—*Dalbergia horrida* | E—*Dendrobium ovatum* | F—*Derris trifoliata*.

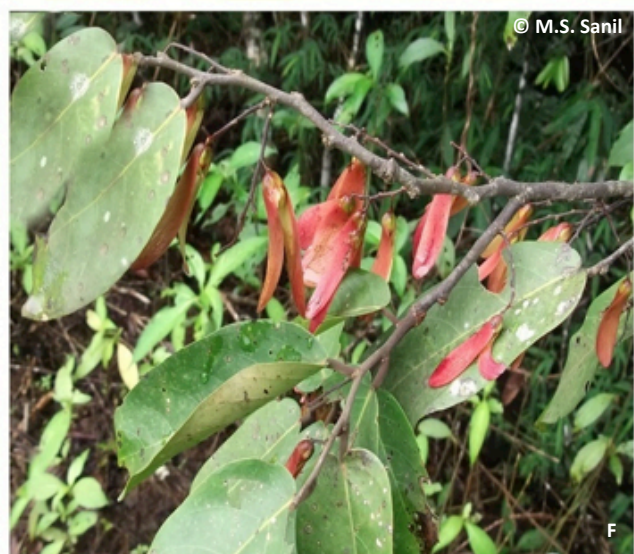


Image 2. A—*Eriocaulon madayiparense* | B—*Erythrina variegata* | C—*Globba sessiliflora* | D—*Grewia tiliifolia* | E—*Gymnostachyum febrifugum* | F—*Hopea ponga*



Image 3. A—*Ixora brachiata* | B—*Melastoma malabathricum* | C—*Neanotis hohenackeri* | D—*Psychotria flavida* | E—*Rhizophora mucronata* | F—*Rhynchosyilis retusa*



Image 4. A—*Rotheca serrata* | B—*Sesamum radiatum* | C—*Strobilanthes perfoliata* | D—*Syzygium zeylanicum* | E—*Terminalia paniculata* | F—*Utricularia cecilia*

exposed areas have been converted into industrial and residential areas. Infrastructure developments lead to mining and extraction of more lateritic hills and the soil from the mining are used to fill wetland and paddy field which again utilized for building and infrastructure development. This series of events in turn seriously affected the natural environment of the lateritic biotopes in northern Kerala (Sreejith et al. 2016). The indiscriminate mining for laterite & soil and demolishing the hillocks have severely threatened the very existence of the biota, culture, and the water availability in most areas (Balakrishnan et al. 2010). Currently, these systems in the lateritic hills are undergoing severe degradation, destruction, alteration through various activities such as mining, shifting to monoculture plantation, rapid infrastructure development, and from alien invasive species. Since only a small portion of this landscape remains undisturbed, an urgent intervention from concerned authorities to formulate and implement strict guidelines & policies to conserve the species-rich lateritic biotope, to evolve & implement site-specific restoration, and conservation programmes are to be initiated & implemented to protect the floristically rich lateritic hillocks of northern Kerala.

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ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

June 2020 | Vol. 12 | No. 9 | Pages: 15967–16194

Date of Publication: 26 June 2020 (Online & Print)

DOI: 10.11609/jott.2020.12.9.15967-16194

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