

Plant survey of Pilathara, A small town in south India

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Abstract

The floral richness of a country can be known through the richness of the plant species of a small area in the country. In this study, the floral diversity of a small town called Pilathara in South India has been carried out. The number of species found is much more than estimated, which shows that even a small area can have large species richness.

Keywords: flora, Pilathara, species richness

1. Introduction

The ecological importance of an area is determined by the species richness of the area. According to Paton *et al* (2008)^[1], 3,52,282 known Angiosperm species have been identified throughout the world. The species richness of an area is calculated by floral and faunal survey of the area. The more the floral and faunal diversity, the more is the species richness of a particular area. The total number of individuals increases with area, leading to an increased probability of encountering more species with larger areas, even in a uniform environment^[2,3,4]. When the area is large enough, the rare species will become less rare. Also, as area increases, more types of environments are likely to be encountered.^[5] Therefore to know more about the species richness, a small area has to be selected.

In this work, the species richness of a small town in the Southernmost State of India has been studied. The aim of the study is to understand the species richness of the area. The town Pilathara is located near Payyannur at Kannur district in Kerala. It lies between 12.08549 N latitude and 75.2625° E longitude. This small town covers an area about 6 square kilometers. The species richness is the number of species present in a given region^[6]. In this study the species richness of Angiosperms are considered and that too only naturally available plants are considered. The Flora of Kannur District and the Flora of two different localities Madayippara and Kalyasseri are already carried out. Kannur District contains parts of Western Ghats.

2. Materials and Methods

The survey was conducted from July to November and January to April from 2016 to 2019. The different species of dicotyledons and monocotyledons were noted down. Plant specimens of each species were collected. The specimens collected were identified with the help of Flora of Presidency of Madras (1915-1934)^[7],

Kew Herbarium Catalogue^[8]. and by querying to regional Taxonomists. The species were tabulated and classified according to Bentham and Hooker System of Classification^[9].

3. Results

The Floristic Survey revealed that 119 species belonging to 51 families are present in the study area, out of which 99 are dicots and 20 are monocots. Of the 51 families, 43 are dicot families and 8 are monocot families. The most diversified family was Asteraceae, comprising of 12 species belonging to 11 genera. Euphorbiaceae is represented by 8 species belonging to 6 genera. Acanthaceae and Rubiaceae are represented by 7 species each. Considering monocots, Poaceae is having most number of species (7) followed by Cyperaceae and Commelinaceae, (3 species each.) Another important fact is that the flora consists of herbs, shrubs, trees, climbers, creepers, epiphytes and parasites. This study reveals that even small areas are important considering biodiversity. List of plant species observed in Pilathara is given in Table 1.

4. Discussion

Ramachandran and Nair (1988)^[10]. recorded 1132 species in the Kannur district. After that Dantas *et al* (2016)^[11]. added 216 species to the Flora including Gymnosperms. The floristic studies of two localities in Kannur district were already carried out. The Flora of Kalyasseri Panchayat was carried out by Sreedharan (2004)^[12], in which 397 Angiosperm plants were mentioned. The Flora of Madayippara was conducted by Palot and Radhakrishnan (2005)^[13]. and 250 species of plants were recorded by them. In this study, it is understood that the species richness of Pilathara is high. Overall, it is understood that the species richness of a region cannot be underestimated because the area is small.

Table 1: List of Plants Available in Pilathara

Sl. No	Species	Family
1.	<i>Cyclea peltata</i> Hook.f. & Thoms.	Menispermaceae
2.	<i>Cleome burmanii</i> Wight & Arn.	Capparidaceae
3.	<i>Cleome viscosa</i> L.	
4.	<i>Talinum cuneifolium</i> (Vahl) Willd.	Portulacaceae
5.	<i>Hibiscus hissidisimus</i> Griff.	Malvaceae
6.	<i>Hibiscus rosa-sinensis</i> L.	
7.	<i>Sida acuta</i> Burm.f.	
8.	<i>Urena lobata</i> L.	
9.	<i>Melochia corchorifolia</i> L.	Sterculiaceae
10.	<i>Triumfetta rhomboidea</i> Jacq.	Tiliaceae
11.	<i>Biophytum reinwardtii</i> (Zucc.) Klotzsch.	Oxalidaceae
12.	<i>Impatiens minor</i> (DC.) Bennet	Balsaminaceae
13.	<i>Glycosmis pentaphylla</i> (Retz.) DC.	Rutaceae
14.	<i>Naregamia alata</i> Wight & Arn.	Meliaceae
15.	<i>Ziziphus oenoplia</i> (L.) Miller.	Rhamnaceae
16.	<i>Ampelocissus indica</i> Planch.	Vitaceae
17.	<i>Mangifera indica</i> L.	Anacardiaceae
18.	<i>Crotalaria pallida</i> Aiton	Papilionaceae
19.	<i>Desmodium heterocarpon</i> (L.) DC.	
20.	<i>Gliricidia sepium</i> (Jacq.) Walp.	
21.	<i>Bauhinia acuminata</i> L.	Caesalpiniaceae
22.	<i>Cassia tora</i> L.	
23.	<i>Delonix regia</i> (Boj. ex Hook.) Raf.	
24.	<i>Acacia auriculiformis</i> A. Cunn.	Mimosaceae
25.	<i>Adenantha pavonina</i> L.	
26.	<i>Mimosa pudica</i> L.	
27.	<i>Quisqualis indica</i> L.	Combretaceae
28.	<i>Osbeckia muralis</i> Naud.	Melastomataceae
29.	<i>Corchorus tridens</i> L.	Onagraceae
30.	<i>Ludwigia hyssopifolia</i> (G. Don) Exell.	
31.	<i>Turnera subulata</i> Sm.	Turneraceae
32.	<i>Passiflora foetida</i> L.	Passifloraceae
33.	<i>Trichosanthes bracteata</i> (Lam.) Voigt.	Cucurbitaceae
34.	<i>Canthium coromandelicum</i> (Burm.f.) Alston	Rubiaceae
35.	<i>Chassalia curviflora</i> (Wall.) Thwaites.	
36.	<i>Ixora coccinea</i> L.	
37.	<i>Ixora finlaysonianana</i> Wall. ex G. Don	
38.	<i>Mitracarpus verticillatus</i> (Schumach.) Vatke.	
39.	<i>Oldenlandia auriculata</i> (L.) K.Schum.	
40.	<i>Oldenlandia corymbosa</i> L.	
41.	<i>Acmella ciliata</i> (Kunth) Cass.	Asteraceae
42.	<i>Acmella uliginosa</i> (Sw.) Cass.	
43.	<i>Ageratum conyzoides</i> L.	
44.	<i>Blumea mollis</i> (D. Don) Merr.	
45.	<i>Chromolaena odorata</i> (L.) R.M. King & H. Rob.	
46.	<i>Eclipta alba</i> (L.) Hassk.	
47.	<i>Emilia sonchifolia</i> (L.) DC	
48.	<i>Grangea maderaspatana</i> Poir.	
49.	<i>Mikania micrantha</i> Kunth.	
50.	<i>Synedrella nodiflora</i> (L.) Gaertn.	
51.	<i>Tridax procumbens</i> L.	
52.	<i>Vernonia cineria</i> (L.) Less.	Oleaceae
53.	<i>Jasminum malabaricum</i> Wight.	Apocynaceae
54.	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz.	Asclepiadaceae
55.	<i>Hemidesmus indicus</i> R. Br.	Loganiaceae
56.	<i>Strichnos nux-vomica</i> L.	Boraginaceae
57.	<i>Coldenia procumbens</i> L.	
58.	<i>Heliotropium indicum</i> L.	Convolvulaceae
59.	<i>Evolvulus nummularius</i> (L.) L.	
60.	<i>Merremia vitifolia</i> (Burm. f.) Hallier f.	
61.	<i>Physalis minima</i> L.	Solanaceae
62.	<i>Solanum torvum</i> Sw.	Scrophulariaceae
63.	<i>Lindernia antipoda</i> (L.) Alston.	
64.	<i>Scoparia dulcis</i> L.	
65.	<i>Asystasia dalzelliana</i> Santapau.	Acanthaceae

66.	<i>Ecbolium ligustrinum</i> (Vahl) Vollesen	
67.	<i>Haplanthodes tentacularis</i> (L.) Nees.	
68.	<i>Justicia gendarussa</i> Burm.f.	
69.	<i>Justicia simplex</i> D.Don.	
70.	<i>Ruellia prostrata</i> Poir.	
71.	<i>Rungia pectinata</i> (L.) Nees.	
72.	<i>Clerodendrum infortunatum</i> L.	
73.	<i>Clerodendrum paniculatum</i> L.	
74.	<i>Lantana camara</i> L.	Verbenaceae
75.	<i>Stachytarpheta indica</i> (L.) Vahl.	
76.	<i>Aerva leucura</i> Moq.	
77.	<i>Hyptis suaveolens</i> (L.) Poit	Lamiaceae
78.	<i>Leucas aspera</i> (Willd.) Link	
79.	<i>Boerhavia diffusa</i> L.	
80.	<i>Bogainvillea spectabilis</i> Willd.	Nyctaginaceae
81.	<i>Achyranthes aspera</i> L.	
82.	<i>Alternanthera bettzickiana</i> (Regel) Nicholson	
83.	<i>Alternanthera ficoidea</i> (L.) P. Beauv.	
84.	<i>Alternanthera tenella</i> Colla.	Amaranthaceae
85.	<i>Cyathula prostrata</i> (Linn.) Blume.	
86.	<i>Gomphrena decumbens</i> Jacq.	
87.	<i>Rivina humilis</i> L.	Phytolaccaceae
88.	<i>Peperomia pellucida</i> (L.) Kunth	Piperaceae
89.	<i>Dendrophthoe falcata</i> (L.f.) Ett.	Loranthaceae
90.	<i>Antidesma ghaesembilla</i> Gaertn.	
91.	<i>Euphorbia heterophylla</i> L.	
92.	<i>Euphorbia hirta</i> L.	
93.	<i>Euphorbia prostrata</i> Aiton	
94.	<i>Macaranga peltata</i> (Roxb.) Mull.Arg.	
95.	<i>Mallotus philippensis</i> Muell. Arg.	
96.	<i>Phyllanthus niruri</i> L.	
97.	<i>Sebastiania chamaelea</i> (L.) Muell.Arg.	
98.	<i>Trema orientalis</i> (L.) Blume.	Cannabaceae
99.	<i>Artocarpus heterophyllus</i> Lam.	Moraceae
100.	<i>Vanda tessellata</i> (Roxb.) Wight ex Lindl.	Orchidaceae
101.	<i>Curcuma aromatica</i> Salisb.	
102.	<i>Curcuma oligantha</i> Trimen	Zingiberaceae
103.	<i>Costus speciosus</i> (J.Koenig) Sm.	Costaceae
104.	<i>Curculigo orchioides</i> Gaertn.	Amaryllidaceae
105.	<i>Commelina benghalensis</i> L.	
106.	<i>Commelina diffusa</i> Burm.f.	Commelinaceae
107.	<i>Cyanotis cristata</i> (L.) D. Don	
108.	<i>Caladium bicolor</i> (Aiton) Vent.	
109.	<i>Pothos scandens</i> L.	Araceae
110.	<i>Cyperus pygmaeus</i> Rottb.	
111.	<i>Fimbristylis aestivalis</i> (Retz.) Vahl.	Cyperaceae
112.	<i>Kyllinga monocephala</i> Rottb.	
113.	<i>Arundinella pumila</i> (Hochst. Ex A.Rich.) Steud.	
114.	<i>Cynodon dactylon</i> Pers.	
115.	<i>Digitaria ciliaris</i> (Retz.) Koeler.	
116.	<i>Eleusine indica</i> (L.) Gaertn.	
117.	<i>Hackelochloa granularis</i> (L.) Kuntze	Poaceae
118.	<i>Pennisetum hohenackeri</i> Hochst. Ex Steud	
119.	<i>Setaria viridis</i> (L.) P. Beauv.	

Reference

1. Paton A, Brummitt N, Govaerts R, Harman K, Hinchcliffe S, Allkin B, *et al.* Towards Target 1 of the Global Strategy for Plant Conservation: a working list of all known plant species—progress and prospects. *Taxon*. 2008; 57:602-611.
2. Coleman BD, Mares MA, Willig MR, Hsieh YH. Randomness, area, and species richness. *Ecology*. 1982; 63:1121-1133
3. Palmer MW, White PS. Scale dependence and the species–area relationship. *Am. Nat.* 1994; 144:717-740.
4. Rosenzweig ML. *Species Diversity in Space and Time*. Cambridge: Cambridge University Press, 1995.
5. Samuel M Scheiner, Stephen B Cox, Michael Willig, Gary G Mittelbach, Craig Osenberg, Michael Kaspari, *et al.* Species richness, species–area curves and Simpson’s paradox. *Evolutionary Ecology Research*. 2000; 2:791-802
6. https://en.wikipedia.org/wiki/Species_richness
7. Gamble JS. *Flora of the Presidency of Madras, Part1-3, 1915-1934.*
8. <https://apps.kew.org/herbcat/navigator.do>

9. Bentham G, Hooker JD. *Genera Plantarum*, 1862-1883.
10. Ramachandran VS, Nair VJ. *Flora of Cannanore District*. Botanical Survey of India, Calcutta, 1988.
11. Dantas KJ, Sasidharan N, Binu KV. Additions to the angiosperms of the flora of Kannur district, Kerala, India from Aralam wildlife sanctuary. *Annals of Plant Sciences*, 2016; 5(7):1381-1388
12. Sreedharan TP. *Biological Diversity of Kerala: A survey of Kalliasseri panchayat, Kannur district*. Kerala Research Programme on Local Level Development Centre for Development Studies, Thiruvananthapuram, 2004.
13. Muhamed Jafer Palot, Radhakrishnan C. *Faunal diversity of a Laterite Hill system at Madayipara, Kannur District, Kerala, India*. Western Ghats Field Research Station, Zoological Survey of India, Calicut-673 002, Kerala, India, 2005.