International Journal of Current Research and Academic Review

ISSN: 2347-3215 Volume 3 Number 4 (April-2015) pp. 32-36

www.ijcrar.com

Biodiversity of angiosperms in Poomalai hill of Thiruvannamalai District, Tamilnadu, India

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KEYWORDS

Angiosperm, Altitude, Biodiversity, Families, Megadiverse nations, Species diversity, Tropical

A B S T R A C T

Angiosperms are the most important group among the plant kingdom. It has become very essential for human kind to tap the vast potentials of diverse species of angiosperms available in the world. Researches on biodiversity facilitate to identify and know the distribution and availability of such taxonomically important species. An attempt was made to study the angiosperm diversity of Poomalai hill in Thiruvannamalai district. The plants were collected from the study area and identified. The total number of species identified was 63 belonging to 35 families. Amongst the 63 identified species, 41 were found to be economically important.

Introduction

The tropical regions of the world, generally dominate in species diversity. India being a sub-tropical nation, in different regions there is a rich flora and fauna. The range of mixture of varying ecosystems, climatic conditions and physical features supports its rich diversity. India is one among the 17 Megadiverse nations identified by Conservation International in 1998 (www.biodiversitya-z.org). Angiosperms are group of plants that dominates among the plant kingdom. The total number of angiosperms worldwide accounts to around 2.5 lakhs. About 15000 – 17000 angiosperms are present in India.

Being a megadiverse nation, India provides a vast scope to study angiosperm diversity. The study of flowering plant is easier in plains as compared to the hills. It is difficult to study the diversity of hills. Hills in tropical regions are rich in species diversity. Many researchers have explored altitudinal biodiversity patterns of plants and clarified that altitude has a role in regulating species richness patterns (Kessler, 2000; Grytnes, 2003; Oommen and Shanker, 2005). Hills are vast reservoirs of angiosperm species as they are least explored and away from human occupation. The diversity of hills differs at different elevations. This is due to

different conditions at different elevations. Altitude is an important factor in habitat diversity because it presents changes in the availability of resources, such as heat and water (Körner, 2000). Extensive study of angiosperms in various hills of India will help in identification of new species.

Many natural grass lands have been destroyed or deteriorated by overgrazing (Wang *et al.,* 2003). Areas at higher altitudes are more likely to be a refuge for large numbers of species, because human impact decreases almost monotonically with increased altitude (Nogues-Bravo *et al.,* 2008). Ohtsuka *et al.* (2008) studied vegetation properties along an altitudinal gradient (4□400–5□300 m) on the Tibetan Plateau and found that the vegetation cover decreased on lower parts of the slope, most likely because grazing intensity is greater at lower altitudes. Zhang and Mi (2007) reported monotonically increasing trends in species richness with increasing altitude between 2□100 and 3□050 m in northern China.

Materials and Methods

Study region

Angiosperm vegetation investigation was carried out in Poomalai hill. It is situated in Sirupakkam village of Thiruvannamalai district, Tamilnadu, India. The study was carried out for a period of one year from August 2010 to July 2011. The altitude of the hill is approximately 1500 - 2000 feet.

Methodology

The floral study was carried out by splitting the altitude into lower, middle and upper strata. The study was performed by a periodic visit to the hill every week. The materials taken during the study period were plant cutter, pegs, thread, hammer, scale, vasculum, newspapers, field note book, etc. The specimens of each and every angiosperm plant species were collected tagged and preserved. Preliminary identification of the collected specimens was made in the field. A few species which were difficult to identify, were identified with the help of taxonomic experts. The Herbarium sheets were prepared for all the plants collected from the hill. Flora of Presidency of Madras (Gamble, 1993) and Flora of Tamil Nadu Carnatic (Matthew, 1985) were used for identification and authentication of the plants.

Results and Discussion

The study of vegetation of Poomalai hills of Thiruvannamalai District, Tamilnadu revealed the angiosperm species diversity. About 63 species (Table) of angiosperms were identified from the hill. Among which, about 54 species belong to dicots and 9 species belong to monocots. The list of species with their respective families is tabulated below. Among the species identified from the hills, a majority of them were found to be economically and medicinally valuable.

Conclusion

The present study has showed that Poomalai hill (Thiruvannamali district) has rich angiosperm diversity. The hill harbours good species diversity at different elevations. The plants present in the hill have many economically important species.

Table.1 List of species identified from poomalai hill

S.No.	Species	Family	Tamil name
1	*Abrus precatorius* L.	Fabaceae	Gundumani
2	*Acacia nilotica* (L.) Delile.	Mimosaceae	Karuvaelam
3	*Achyranthes aspera* L.	Amaranthaceae	Naayuruvi
4	*Aegle marmelos* (L.) Corr. Serr.	Rutaceae	Vilvam
5	*Aerva lanata* (L.) A. L. Juss. ex Schultes	Amaranthaceae	Sirupoolai
6	*Agave angustifolia* Harv.	Agavaceae	
7	*Aloe vera* (L.) Burm. f.	Agavaceae	Katthazhai
8	*Anisomeles malabarica* (L.) R.Br. ex Sims.	Lamiaceae	Periyamarutti
9	*Aristida setacea* Retzius.	Poaceae	Thodappa Pul
10	*Azadirachta indica* Adr. Juss.	Meliaceae	Veppam
11	*Barleria prionitis* L.	Acanthaceae	Kaatu Kanakambaram
12	*Bauhinia racemosa* Lam.	Caesalpiniaceae	Atthi or Thathaki
13	*Boerhavia diffusa* L.	Nyctaginaceae	Mookirattai
14	*Bougainvillea spectabilis* Willdenow.	Nyctaginaceae	Paper Poo
15	*Calotropis gigantea* (L.) Ait. f.	Asclepiadaceae	Erukku
16	*Capparis zeylanica* Linn.	Capparidaceae	Aadondai
17	*Cardiospermum helicacabum* L.	Sapindaceae	Mudakkathaan
18	*Carissa spinarum* Linn.	Apocynaceae	Kalaa
19	*Cassia auriculata* Linn.	Caesalpiniaceae	Aavaarai
20	*Cassytha filiformis* Linn.	Lauraceae	Antharakodi
21	*Cissus quadrangularis* Linn.	Menispermaceae	Perandai
22	*Clitoria ternatea* L.	Fabaceae	Sangu Poo
23	*Coccinia indica* Wight & Arn.	Cucurbitaceae	Kovai
24	*Cymbopogon martini* (Roxb.) J. F. Wat.	Poaceae	Kaavattam Pul
25	*Cynodon dactylon* (L.) Pers.	Poaceae	Arugam pul
26	*Cyperus corymbosus* Rottb.	Cyperaceae	Kottikara Pul
27	*Euphorbia hirta* Linn.	Euphorbiaceae	Ammaan Paccharisi
28	*Gloriosa superba* L.	Liliaceae	Kalappai Kizhangu
29	*Hemidesmus indicus* (L.) R. Br.	Asclepiadaceae	Nannaari
30	*Ipomoea carnea* Jacq.	Convolvulaceae	Kaataamanakku
31	*Justicia gendarussa* Burm. f.	Acanthaceae	Kaaranocchi
32	*Lantana camara* L.	Verbenaceae	Unnichedi
33	*Leucas aspera* (Willdenow) Link.	Lamiaceae	Thumbai
34	*Melia azedarach* L.	Meliaceae	Malaivembu
35	*Millingtonia hortensis* Linnaeus f.	Bignoniaceae	Maramalli
36	*Mimusops elengi* L.	Sapotaceae	Magizham
37	*Mollugo cerviana* (L.) Ser.	Aizoaceae	Parpaadagam

38	*Morinda tinctoria* Roxb.	Rubiaceae	Manjanunaa
39	*Mukia maderaspatana* (Linn.) M.J. Roem.	Cucurbitaceae	Musumusukkai
40	*Murraya koenigii* (L.) Sprengel.	Rutaceae	Kariveppilai
41	*Ocimum sanctum* Linn.	Lamiaceae	Tulsi
42	*Opuntia dillenii* (Ker-Gawl.) Haw.	Cactaceae	Chappathikalli
43	*Pergularia daemia* (Forsskal) Chiov.	Asclepiadaceae	Vaelipparutthi
44	*Phoenix humilis*, Cavan.	Arecaceae	Malai Icchai
45	*Phoenix sylvestris* (L.) Roxb.	Arecaceae	Periya Icchai
46	*Phyllanthus amarus* Schumach. & Thonn.	Euphorbiaceae	Keelkaay nelli
47	*Phyllanthus niruri* L.	Euphorbiaceae	Keezha nelli
48	*Pithecellobium dulce* (Roxb.) Benth.	Mimosaceae	Kodukkapalli kaa
49	*Polyalthia cerasoides* (Roxb.) Bedd.	Annonaceae	Nedumarai
50	*Pongamia pinnata* (L.) Pierre.	Fabaceae	Pungam
51	*Prosopis juliflora* (Sw.) DC.	Mimosaceae	Kaatu Karuvaelam
52	*Ruellia tuberosa* L.	Acanthaceae	Tapas Kaay
53	*Sarcostemma intermedium* R. Br.	Asclepiadaceae	Kondappaala
54	*Sida acuta* Burm. f.	Malvaceae	Karunelli
55	*Solanum trilobatum* Linn.	Solanaceae	Thoothuvalai
56	*Stachytarpheta indica* Vahl.	Verbenaceae	Seemai Naayuruvi
57	*Strychnos nux-vomica* L.	Loganiaceae	Yetti
58	*Tephrosia purpurea* (L.) Pers.	Fabaceae	Kaatu Kozhinji
59	*Toddalia asiatica* (Linnaeus) Lamarck.	Rutaceae	Kindumullu
60	*Tridax procumbens* L.	Asteraceae	Thatha Poondu
61	*Vernonia cinerea* (L.) Less.	Asteraceae	Siru Sengalaneer
62	*Zizyphus rugosa* Lam.	Rhamnaceae	Thodari
63	*Zizyphus mauritiana* Lam.	Rhamnaceae	Elandai

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