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RESEARCH ARTICLE

ANGIOSPERMIC FLORA OF DICOTYLEDONS IN CHINNAKASAMPATTY RANGE (EASTERN GHATS) DINDIGUL DISTRICT, TAMILNADU

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ABSTRACT

The present study includes the enumeration of floristic (Dicotyledons) survey carried out in Chinnakasampatty Range of Eastern Ghats in Dindigul district, was undertaken for a period of 12 months from June 2012 to May 2013. Totally 139 species belonging to 118 genera distributed among 45 families of dicots were collected. Among 139 species recorded, 67 species of 60 genera belonging to 25 families were polypetalae, 45 species of 38 genera belonging to 13 families were gamopetalae and the rest of 27 species of 20 genera belonging to 7 families are under the subclass of monochlomydeae. Each of the plant materials were tabulated in the order of family followed by Botanical name and their habits.

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INTRODUCTION

The comprehensive studies of the plants growing in a particular area are known as flora. A flora may cover any suitable area from a small patch of forest to a Taluk, City, District, State, Country or even a Continent. Floristic studies may be a simple compiled check list or an elaborate analysis of the taxa of that area. The Eastern Ghats constitute an important bio geographic region in the Indian region and is a major center of plant diversity with a high endemism. Ranging from Orissa, Andhra Pradesh to Karnataka and Tamil Nadu, the Eastern Ghats are spread over an area of about 75,000 sq.km through a chain of fragmented and disjunct hill ranges. The fragmented nature of the Eastern Ghats mountain ecosystem include a rich assemblage of floral, faunal wealth including many endangered and endemic species. An estimation stated that 3000 species of flowering plants constitute the entire flora of the Eastern Ghats out of which at least 100 species are known to be endemic to the region (Areendran *et al.*, 2010).

According to Champion & Seth (1968) the vegetation of Eastern Ghats comes under Tropical dry deciduous type. However, evergreen and semi-evergreen forests are also occurring in the high altitude of various hills (Jaya kumar *et al.*, 2002). Some the studies have been carried out near the chinnakasam patty hill range Shanmugasundari *et al.*, (2012) described the distribution of Pteridophytic flora of Alagar hills. While working on the floristic of Karanthamalai hills and Sirumalai hills of Dindigul district of Eastern Ghats, Southern part wealth of the Tamil Nadu are known for their rich biodiversity and over one-third of its angiosperms are endemic (Kaveriappa and Shetty, 2001). A check list of angiosperm climbing plant species, along with their climbing modes, enumerated from a total of one hundred and fifty grids in tropical forests of southern Eastern Ghats, peninsular India (Muthumperumal and Parthasarathy, 2009). Eventhough a few works have been documented the floristic composition of respective study areas in Eastern Ghats. Some of the areas are still remaining to

document. So, it is important to document the plants available in an area before it become totally lost. By this we can make the conservation strategies to save plants present in that area. Having the above facts in mind, here an attempt is made to study the Angiospermic flora of Chinnakasampatty range (Eastern Ghats) in Dindigul district of Tamil Nadu, India.

MATERIALS AND METHODS

Study area

Chinnakasam patty hills is of a discontinuous mountain system situated was conducted in Eastern ghats. The study Chinnakasampatty and its surrounding areas which include Vathipatty, Pattanam, Valayapatty and Pudhukottai of Dindigul district. Geographically, the study area is lies between 10°20' N latitude and 78° 22' E longitude. The altitude of the study area is about 209m above mean sea level. Temperature is scarcely fluctuates in the year, with the mean monthly minimum and maximum temperatures of 25 and 39°C respectively, and annual rainfall reaches 380 - 700mm.

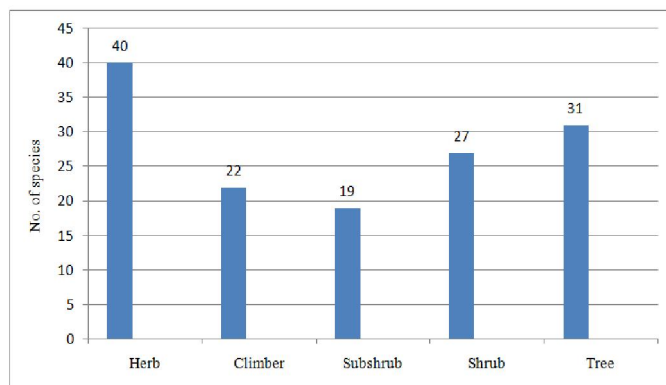


Fig.1. Number of Herb, Sub-shrub, Shrub, Climber and Tree recorded in study area

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METHODOLOGY

A Complete and meticulous study on plants present in study area was undertaken for a period of 12 months from June, 2012 to May, 2013. The known and familiar plants were recorded on the spot in the collection site itself. The unknown and doubtful plants were collected and brought to the laboratory for identification. All the plants were botanically identified by using the regional floras includes Flora of Presidency of Madras, I to III Vols. (Gamble and Fischer, 1957), Flora of Tamil Nadu Carnatic, (Matthew, 1981 – 83) and An Excursion Flora of Central Tamil Nadu, India (Matthew, 1991). Regarding the habit of the plants recorded during this study, prostrate herb, erect herb and herb were included in the category of 'Herb'. Small shrub and shrub were included in the category of 'Shrub'. Sub-shrub were included in the category of 'Sub-shrub'. Vine, twiner, straggler and climber were mentioned as 'Climber' and small tree and trees as 'Tree'. The collected plant specimens were processed, dried and herbarium specimen were prepared. The herbarium specimens were deposited in the Department of Botany, The American College (Autonomous), Madurai in Tamil Nadu for future reference.

RESULTS AND DISCUSSION

Totally dicotyledons, 139 species belonging to 118 genera distributed among 45 families were collected. In Polypetalae, 67 species belonging to 60 genera distributed among 25 families were recorded, 45 species belonging to 38 genera distributed among 13 families in Gamopetalae and the remaining 27 species belonging to 20 genera and 7 families were documented in Monochlamydeae (Table 1).

Each of the plant materials were documented and it's followed by family, Botanical name and their habits (Table 2). Among the 45 families listed 16 families were represented by a single genus and single species, 10 families by 2 species, 5 families by 3 species, 5 families in 4 species, 3 families were found in 6 species, 2 families were found in 7 species, 2 families were found in 8 species, 1 family were found in 9 species and single family were found in 11 species (Table 3).

Regarding the habit of the plants recorded during this study, prostrate herb, erect herb and herb were included in the category of 'Herb'. Vine, straggler and climber were mentioned as 'Climber' and small tree and trees as 'Tree'. The herbs (40 species) were found more numbers and followed by shrub (27 species), sub - shrub (19 species) followed by climber (22 species) and tree were found in 31 species (Fig 1). The Eastern Ghats have suffered considerable degradation from pressures of deforestation and natural resource exploitation. Some parts of the region are also afflicted by repeated droughts and cyclonic destruction. . Exploitation of these forests has resulted in rapid loss of tropical forests and it is recognized as one of the serious environmental and economic problems all over the world (Hare *et al.*, 1997). In conclusion further studies must be carried out to explore the entire floral wealth of Chinnakasampatty and conservation strategies must be created on the plants available with less frequency. Otherwise there may be a possibility of the extinction of that particular plant species.

Table 1. Number of Families, Genera and Species recorded in study area

| Class | Subclass | No. of species | No. of genus | No. of families |
|--------|----------------|----------------|--------------|-----------------|
| Dicots | Polypetalae | 67 | 60 | 25 |
| | Gamopetalae | 45 | 38 | 13 |
| | Monochlomydeae | 27 | 20 | 7 |
| Total | | 139 | 118 | 45 |

Table 2. List of plants available in Chinnakasampatty

| S.No. | Family | Botanical Name | Habit |
|-------|------------------|--|----------|
| 1 | Acanthaceae | <i>Adhatoda zeylanica</i> Medikus | Shrub |
| 2 | Acanthaceae | <i>Andrographis alata</i> (Vahl) Nees | Subshrub |
| 3 | Acanthaceae | <i>Andrographis paniculata</i> (Burm.f.) Wallich ex Nees | Subshrub |
| 4 | Acanthaceae | <i>Barleria nitida</i> Nees | Subshrub |
| 5 | Acanthaceae | <i>Blepharis maderaspatensis</i> (L.)Roth | Herb |
| 6 | Acanthaceae | <i>Dipteracanthus prostratus</i> (Poiret) Nees | Herb |
| 7 | Aizoaceae | <i>Mollugo nudicaulis</i> Lam. | Herb |
| 8 | Aizoaceae | <i>Trianthema portulacastrum</i> L. | Herb |
| 9 | Alangiaceae | <i>Alangium salviifolium</i> (L.f.) Wangerin | Tree |
| 10 | Amaranthaceae | <i>Achyranthus aspera</i> L. | Subshrub |
| 11 | Amaranthaceae | <i>Aerva lanata</i> (L.) Juss. | Herb |
| 12 | Amaranthaceae | <i>Allmania nodiflora</i> (L.) | Herb |
| 13 | Amaranthaceae | <i>Alternanthera sessilis</i> (L.) R. Br. ex DC. | Herb |
| 14 | Amaranthaceae | <i>Amaranthus spinosus</i> L. | Herb |
| 15 | Amaranthaceae | <i>Amaranthus viridis</i> L. | Herb |
| 16 | Amaranthaceae | <i>Celosia argentea</i> L. | Herb |
| 17 | Amaranthaceae | <i>Gomphrena celosioides</i> C. Maritus | Herb |
| 18 | Amaranthaceae | <i>Nothosaerva brachiata</i> (L.) Wight | Herb |
| 19 | Anacardiaceae | <i>Anacardium occidentale</i> L. | Tree |
| 20 | Anacardiaceae | <i>Mangifera indica</i> L. | Tree |
| 21 | Anacardiaceae | <i>Rhus mysorensis</i> Don | Shrub |
| 22 | Annonaceae | <i>Annona squamosa</i> L. | Tree |
| 23 | Apocynaceae | <i>Carissa spinarum</i> L. | Shrub |
| 24 | Apocynaceae | <i>Wrightia tinctoria</i> (Roxb.) R. Br. | Tree |
| 25 | Aristolochiaceae | <i>Aristolochia indica</i> L. | Climber |
| 26 | Asclepiadaceae | <i>Calotropis gigantea</i> (L.) | Subshrub |
| 27 | Asclepiadaceae | <i>Caralluma adscendens</i> (Roxb.) Haw. | Herb |
| 28 | Asclepiadaceae | <i>Hemidesmus indicus</i> (L.) | Climber |
| 29 | Asclepiadaceae | <i>Pergularia daemia</i> (Forsskal) Chiov. | Climber |
| 30 | Asclepiadaceae | <i>Sarcostemma brunonianum</i> Eight & Arn. | Climber |
| 31 | Asclepiadaceae | <i>Secamone emetica</i> (Retz.) R. Br. ex Schultes | Climber |
| 32 | Asclepiadaceae | <i>Wattakaka volubilis</i> (L.f.) Stapf | Climber |
| 33 | Asteraceae | <i>Kleinia grandiflora</i> (DC.) N. Rani | Subshrub |
| 34 | Asteraceae | <i>Parthenium hysterophorus</i> L. | Herb |
| 35 | Asteraceae | <i>Tridax procumbens</i> L. | Herb |

Continue.....

| | | | |
|-----|-----------------|--|----------|
| 36 | Asteraceae | <i>Vicoa indica</i> (L.) | Herb |
| 37 | Burseraceae | <i>Commiphora caudata</i> (Wight & Arn.) | Tree |
| 38 | Cactaceae | <i>Cereus pterogonus</i> Lemaire | Shrub |
| 39 | Cactaceae | <i>Opuntia monacantha</i> (Willd) Haw. | Subshrub |
| 40 | Caesalpinaceae | <i>Bauhinia racemosa</i> Lam. | Tree |
| 41 | Caesalpinaceae | <i>Caesalpinia bonduc</i> (L.) | Climber |
| 42 | Caesalpinaceae | <i>Cassia auriculata</i> L. | Shrub |
| 43 | Caesalpinaceae | <i>Cassia occidentalis</i> L. | Subshrub |
| 44 | Caesalpinaceae | <i>Cassia roxburghii</i> DC. | Tree |
| 45 | Caesalpinaceae | <i>Pterolobium hexapetalum</i> (Roth) Santapau Wagh | Climber |
| 46 | Caesalpinaceae | <i>Tamarindus indica</i> L. | Tree |
| 47 | Capparidaceae | <i>Cleome gynandra</i> L. | Herb |
| 48 | Caricaceae | <i>Carica papaya</i> L. | Tree |
| 49 | Convolvulaceae | <i>Evolvulus alsinoides</i> (L.) | Herb |
| 50 | Convolvulaceae | <i>Merremia tridentata</i> (L.) Hallier | Herb |
| 51 | Cucurbitaceae | <i>Coccinia grandis</i> (L.) Voigt | Climber |
| 52 | Cucurbitaceae | <i>Cucumis trigonus</i> Roxb. | Climber |
| 53 | Cucurbitaceae | <i>Mukia maderaspatana</i> (L.) M.Roemer | Climber |
| 54 | Ebenaceae | <i>Maba buxifolia</i> (Rottb.) A. L. Juss. | Shrub |
| 55 | Euphorbiaceae | <i>Acalypha indica</i> L. | Herb |
| 56 | Euphorbiaceae | <i>Cleistanthus collinus</i> (Roxb.) Benth. ex Hook.f. | Shrub |
| 57 | Euphorbiaceae | <i>Euphorbia antiquorum</i> L. | Shrub |
| 58 | Euphorbiaceae | <i>Euphorbia heterophylla</i> L. | Herb |
| 59 | Euphorbiaceae | <i>Euphorbia tirucalli</i> L. | Shrub |
| 60 | Euphorbiaceae | <i>Phyllanthus amarus</i> Schum. & Thonn. | Herb |
| 61 | Euphorbiaceae | <i>Phyllanthus emblica</i> L. | Tree |
| 62 | Euphorbiaceae | <i>Phyllanthus maderaspatensis</i> L. | Herb |
| 63 | Fabaceae | <i>Abrus precatorius</i> L.ssp. <i>precatorius</i> | Climber |
| 64 | Fabaceae | <i>Arachis hypogaea</i> L. | Herb |
| 65 | Fabaceae | <i>Cajanus cajan</i> (L.) Millsp. | Shrub |
| 66 | Fabaceae | <i>Dalbergia horrida</i> (Dennst.) Mabb. | Climber |
| 67 | Fabaceae | <i>Eleiotis monophylla</i> (Burm.f.) | Herb |
| 68 | Fabaceae | <i>Erythrina suberosa</i> Roxb. | Tree |
| 69 | Fabaceae | <i>Indigofera aspalathoides</i> Vahl ex DC | Subshrub |
| 70 | Fabaceae | <i>Macrotyloma uniflorum</i> (Lam.) Verdc. | Climber |
| 71 | Fabaceae | <i>Tephrosia purpurea</i> (L.) Pers. | Subshrub |
| 72 | Fabaceae | <i>Vigna trilobata</i> (L.) Verdc. | Herb |
| 73 | Fabaceae | <i>Zornia diphylla</i> (L.) Pers. | Herb |
| 74 | Hernandiaceae | <i>Gyrocarpus americanus</i> Jacq. | Tree |
| 75 | Lamiaceae | <i>Hyptis suaveolens</i> (L.) Poit | Subshrub |
| 76 | Lamiaceae | <i>Leonotis nepetifolia</i> (L.) R. Br. | Herb |
| 77 | Lamiaceae | <i>Leucas aspera</i> (Willd) Link | Herb |
| 78 | Lamiaceae | <i>Leucas biflora</i> (Vahl) R. Br. | Herb |
| 79 | Lamiaceae | <i>Leucas martinicensis</i> (Jacq.) R. Br. | Subshrub |
| 80 | Lamiaceae | <i>Ocimum basilicum</i> L. | Subshrub |
| 81 | Lamiaceae | <i>Ocimum canum</i> Sims | Herb |
| 82 | Lamiaceae | <i>Ocimum tenuiflorum</i> L. | Subshrub |
| 83 | Loganiaceae | <i>Strychnos nux-vomica</i> L. | Tree |
| 84 | Loranthaceae | <i>Denrophanthoe falcata</i> (L.f.) Ettingsh. | Subshrub |
| 85 | Loranthaceae | <i>Taxillus cuneatus</i> (Roth) Danser | Subshrub |
| 86 | Lythraceae | <i>Ammannia baccifera</i> L. | Herb |
| 87 | Lythraceae | <i>Lawsonia inermis</i> L. | Shrub |
| 88 | Malpighiaceae | <i>Hiptage benghalensis</i> (L.) Kurz | Climber |
| 89 | Malvaceae | <i>Abutilon indicum</i> (L.) Sweet ssp <i>indicum</i> | Shrub |
| 90 | Malvaceae | <i>Hibiscus micranthus</i> L.f. | Subshrub |
| 91 | Malvaceae | <i>Hibiscus rosa-sinensis</i> L. | Shrub |
| 92 | Malvaceae | <i>Pavonia zeylanica</i> (L.) Cav | Subshrub |
| 93 | Malvaceae | <i>Sida acuta</i> Burm.f. | Subshrub |
| 94 | Malvaceae | <i>Thespesia populnea</i> (L.) Sol. ex Corr. Serr. | Tree |
| 95 | Melastomataceae | <i>Memecylon umbellatum</i> Burm.f. | Shrub |
| 96 | Meliaceae | <i>Azadirachta indica</i> Adr. Juss. | Tree |
| 97 | Mimosaceae | <i>Acacia leucophloea</i> (Roxb.) Willd. | Tree |
| 98 | Mimosaceae | <i>Mimosa instia</i> L. | Climber |
| 99 | Mimosaceae | <i>Mimosa pudica</i> L. | Herb |
| 100 | Mimosaceae | <i>Pithecolobium dulce</i> (Roxb.) Benth | Tree |
| 101 | Moraceae | <i>Artocarpus heterophyllus</i> Lam. | Tree |
| 102 | Moraceae | <i>Ficus benghalensis</i> L. | Tree |
| 103 | Moraceae | <i>Ficus religiosa</i> L. | Tree |
| 104 | Myrtaceae | <i>Psidium guajava</i> L. | Tree |
| 105 | Myrtaceae | <i>Syzygium cumini</i> (L.) Skeels | Tree |
| 106 | Nyctaginaceae | <i>Boerhavia diffusa</i> L. | Herb |
| 107 | Nyctaginaceae | <i>Boerhavia erecta</i> L. | Herb |
| 108 | Nyctaginaceae | <i>Pisonia aculeata</i> L. | Shrub |
| 109 | Oleaceae | <i>Jasminum azoricum</i> L. | Shrub |
| 110 | Polygalaceae | <i>Polygala aervensis</i> Willd | Herb |
| 111 | Portulacaceae | <i>Portulaca grandiflora</i> Hook | Herb |
| 112 | Portulacaceae | <i>Portulaca oleracea</i> L. | Herb |
| 113 | Rhamnaceae | <i>Scutia myrtina</i> (Burm.f.) Kurz | Climber |
| 114 | Rhamnaceae | <i>Ventilago maderaspatana</i> Gaertner | Climber |
| 115 | Rhamnaceae | <i>Ziziphus mauritiana</i> Lam. | Tree |
| 116 | Rhamnaceae | <i>Ziziphus oenoplia</i> (L.) Miller | Shrub |
| 117 | Rubiaceae | <i>Canthium dicoccum</i> (Gaertner) Teijsm. & Binnend | Tree |
| 118 | Rubiaceae | <i>Oldenlandia biflora</i> L. | Herb |
| 119 | Rubiaceae | <i>Spermacoce hispida</i> L. | Herb |

| | | | |
|-----|---------------|---|----------|
| 120 | Rutaceae | <i>Chloroxylon swietenia</i> DC. | Tree |
| 121 | Rutaceae | <i>Limonia acidissima</i> L. | Tree |
| 122 | Rutaceae | <i>Murraya koenigii</i> (L.) Sprengel | Tree |
| 123 | Rutaceae | <i>Toddalia asiatica</i> (L.) Lam. | Climber |
| 124 | Salvadoraceae | <i>Azima tetraacantha</i> Lam. | Tree |
| 125 | Sapindaceae | <i>Cardiospermum halicacabum</i> L. | Climber |
| 126 | Sapindaceae | <i>Dodonaea angustifolia</i> L.f. | Shrub |
| 127 | Solanaceae | <i>Datura metel</i> L. | Subshrub |
| 128 | Solanaceae | <i>Physalis minima</i> L. | Subshrub |
| 129 | Solanaceae | <i>Solanum nigrum</i> L. | Shrub |
| 130 | Solanaceae | <i>Solanum trilobatum</i> L. | Shrub |
| 131 | Verbenaceae | <i>Gmelina arborea</i> Roxb. | Tree |
| 132 | Verbenaceae | <i>Lantana camara</i> L. | Shrub |
| 133 | Verbenaceae | <i>Phyla nodiflora</i> (L.) E. Greene | Herb |
| 134 | Verbenaceae | <i>Stachytarpheta jamaicensis</i> (L.) Vahl | Subshrub |
| 135 | Verbenaceae | <i>Tectona grandis</i> L.f. | Tree |
| 136 | Verbenaceae | <i>Vitex negundo</i> L. | Shrub |
| 137 | Violaceae | <i>Hybanthus enneaspermus</i> (L.) F. Muell. | Herb |
| 138 | Vitaceae | <i>Cayratia pedata</i> (Lour.) A. L. Juss. ex Gagnepain | Climber |
| 139 | Vitaceae | <i>Cissus quadrangularis</i> L. | Shrub |

Table 3. Number of genera and species were recorded in following family

| S. No | Family | No. of genera | No. of species |
|-------|------------------|---------------|----------------|
| 1 | Acanthaceae | 5 | 6 |
| 2 | Aizoaceae | 2 | 2 |
| 3 | Alangiaceae | 1 | 1 |
| 4 | Amaranthaceae | 8 | 9 |
| 5 | Anacardiaceae | 3 | 3 |
| 6 | Annonaceae | 1 | 1 |
| 7 | Apocynaceae | 2 | 2 |
| 8 | Aristolochiaceae | 1 | 1 |
| 9 | Asclepiadaceae | 7 | 7 |
| 10 | Asteraceae | 4 | 4 |
| 11 | Burseraceae | 1 | 1 |
| 12 | Cactaceae | 2 | 2 |
| 13 | Caesalpiniaceae | 5 | 7 |
| 14 | Capparidaceae | 1 | 1 |
| 15 | Caricaceae | 1 | 1 |
| 16 | Convolvulaceae | 2 | 2 |
| 17 | Cucurbitaceae | 3 | 3 |
| 18 | Ebenaceae | 1 | 1 |
| 19 | Euphorbiaceae | 4 | 8 |
| 20 | Fabaceae | 11 | 11 |
| 21 | Hernandiaceae | 1 | 1 |
| 22 | Lamiaceae | 4 | 8 |
| 23 | Loganiaceae | 1 | 1 |
| 24 | Loranthaceae | 2 | 2 |
| 25 | Lythraceae | 2 | 2 |
| 26 | Malpighiaceae | 1 | 1 |
| 27 | Malvaceae | 5 | 6 |
| 28 | Melastomataceae | 1 | 1 |
| 29 | Meliaceae | 1 | 1 |
| 30 | Mimosaceae | 3 | 4 |
| 31 | Moraceae | 2 | 3 |
| 32 | Myrtaceae | 2 | 2 |
| 33 | Nyctaginaceae | 2 | 3 |
| 34 | Oleaceae | 1 | 1 |
| 35 | Polygalaceae | 1 | 1 |
| 36 | Portulacaceae | 1 | 2 |
| 37 | Rhamnaceae | 3 | 4 |
| 38 | Rubiaceae | 3 | 3 |
| 39 | Rutaceae | 4 | 4 |
| 40 | Salvadoraceae | 1 | 1 |
| 41 | Sapindaceae | 2 | 2 |
| 42 | Solanaceae | 3 | 4 |
| 43 | Verbenaceae | 6 | 6 |
| 44 | Violaceae | 1 | 1 |
| 45 | Vitaceae | 2 | 2 |

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