

Journal of Medicinal Herbs and Ethnomedicine 2018, 4: 15-20
 doi: 10.25081/jmhe.2018.v4.3499
<http://updatepublishing.com/journal/index.php/jmhe/>



ISSN: 2455-0485

REGULAR ARTICLE

ETHNOBOTANICAL SURVEY OF CHITTERI HILLS OF EASTERN GHATS IN DHARMAPURI DISTRICT-TAMILNADU

G. PRABAKARAN*, D. ANANDHA KUMAR, R. PUGALVENDHAN, M. MURALI

PG and Research Department of Botany, Government Arts College, Dharmapuri 636705, Tamilnadu, India

ABSTRACT

Flora and fauna diversities are two facts components of biodiversity which covers the variety and variability of species. A survey was conducted to study the rare plants of chitteri hills, Tamil Nadu, India. 96 Plants Belonging to 48 Family, 90 Genus and 96 species were Documented Plants totally were under thorough investigation. Of these monocots are represented by 7 species belonging to 7 genera and 4 families, while dicot contributed by 87 species belonging to 82 genera and 39 families, Ferns 2 families and 2 genera, Fungi 1 family and 1 Genera. Plant species were recorded and identified during the survey. The results show that the habitat of plants belongs to herbs, shrubs and tree species. But, we have observed only minimum tree species. Of these monocots are represented by 7 species belonging to 7 genera and 4 families, while dicots contributed by 87 species belonging to 82 genera and 39 families, Ferns 2 families and 2 genera, Fungi 1 family and 1 Genera. The study depicts that Chitteri Hills have different variety of plants distributed all over the mountain.

INTRODUCTION

Around 420,000 flowering plants were identified all over the world [1]. Out of these numbers, some of them are not given a specific name. Thousands of plants are being used as medicinal ingredients [2]. India is one among the important countries which utilizes the traditional knowledge in medicinal plants since time immemorial [3]. Western Ghats in India is one of the very important world's plant biodiversity regions. The plant diversity of India is well documented [4]. Medicinal and therapeutic important plants and also traditionally used plants were also identified and well documented from most parts of India [5].

Vegetation varies considerably with altitude and therefore shown altitudinal zonation. The present investigation gives an account on plant resources available in Chitteri hills in Dharmapuri district reserve and recorded of plants were also analyzed.

MATERIALS AND METHODS

Study area

The survey was conducted in Chitteri Hills of Eastern Ghats in Dharmapuri District of Tamilnadu, India (plate 1).

Field trips ranging from 3 d to a week were made to the study area every month, throughout the year of study. A survey was conducted in the study area to gather information regarding medicinal properties, their uses and

local names

People with plant acquaintance representing different age groups from the age 17 to 90 were selected as resource persons. The age group and number of persons contacted.

Data collection

Data were mainly collected from resource persons, rarely from others. They were recorded on field notebooks. The information was verified with dictionary of folk medicine and ethno botany texts and standard journals, flora.

Plant collection

The medicinal plants used by the tribes were collected as voucher specimens following the normal herbarium techniques of plant collection. Specimens were identified by referring floras such as

1. Flora of Presidency of Madras.
2. Mathew's The flora of the Tamil Nadu, Carnatic

Photographs were taken to describe the nature of the study area, and the plants and plant groups which they dominated plants in plant diversity.

Presentation of data

Data obtained from the field such as scientific name, local name of the plant and description of the plants are provided in the observations. Observations are discussed in depth and detail in a separate chapter.

Received 22 March 2018; Accepted 20 April 2018

*Corresponding Author

G. Prabakaran

PG and Research Department of Botany, Government Arts College, Dharmapuri 636705, Tamil Nadu, India

Email: gpbitek@gmail.com

©This article is open access and licensed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted, use, distribution and reproduction in any medium, or format for any purpose, even commercially provided the work is properly cited. Attribution – You must give appropriate credit, provide a link to the license, and indicate if changes were made.

LOCATION OF CHITTERI



Plate 1: Study area

RESULTS AND DISCUSSION

96 Plants belonging to 48 families, 90 genera and 96 species were documented totally were under thorough investigation (table 1 and 2).

Of these monocots are represented by 7 species belonging to 7 genera and 4 families, while dicots contributed by 87 species belonging to 82 genera and 39 families, Ferns 2 families and 2 genera, Fungi 1 family and 1 Genera. (table 4). Families with maximum number of species include Rubiaceae with 7 species followed by Acanthaceae (6), Fabaceae (5), Asteraceae (5), Verbenaceae(4), and Lamiaceae(3), Solanaceae (3), Asclepiadaceae (3), Sapindaceae(3), Loranthaceae (3), Poaceae (3), and Dioscoriaceae, Rhamnaceae, Apiaceae, Ulmaceae, Menuspermaceae, Apocyanaceae, Convolvulaceae, Capparidaceae and Rutaceae (2 species each), Euphorbiaceae, Passifloraceae, Pteridaceae, pedaliaceae, Rhamnaceae, Malvaceae, Erythroxlaceae, Icacinaceae, Hemoniticeae, Ranunculaceae, Celastraceae, Mimosaceae, Amarilladaceae, Lythraceae, Asparagaceae, Crassulaceae, Dipterocarpaceae, Cucurbitaceae, Proteaceae, Malphiaceae, Talinaceae, Combretaceae, Burseraceae, Polygonaceae, Pedaliaceae, Smilaceae, woodsiaecae and Ganodermataceae (1 species each). (fig. 2).

The most frequently utilized plant habit percentages were Trees (25%), followed by the Shurb (22%), Herb (40%), and Climber (13%) in Survey of Chitteri hills (table 3, fig. 1).

Table 1: Ethnobotanical plant species in chitteri hills, Dharmapuri District, Tamilnadu, India

| S. No. | Family | Plant name | Habit |
|--------|------------------|-----------------------------------|--------------------|
| 1 | Euphorbiaceae | <i>Mallotus philipensis</i> | Tree |
| 2 | Rubiaceae | <i>Richardia cabra</i> | Perninal Herb |
| 3 | Lamiaceae | <i>Galeopsis tetrahit</i> | Herb |
| 4 | Solanaceae | <i>Solanum vidaceum</i> | Bhush/Shrub |
| 5 | Passifloraceae | <i>Passiflora subpeltata</i> | Vine |
| 6 | Fabaceae | <i>Cassia fistula</i> | Tree |
| 7 | Rubiaceae | <i>Coffea canephora</i> | Bush |
| 8 | Pteridaceae | <i>Adinatum pedatnm</i> | Fern |
| 9 | Asteraceae | <i>Acemella radicans</i> | Herb |
| 10 | Malvaceae | <i>Urena lobata</i> | Herb |
| 11 | Rubiaceae | <i>Ixora Brachiata</i> | Tree |
| 12 | Fabaceae | <i>Rhynchosia rufescens</i> | Shrub |
| 13 | Acanthaceae | <i>Justicia betonica</i> | Shrub |
| 14 | Erythro Xylaceae | <i>Erythroxyllum macrophyllum</i> | Small Tree |
| 15 | Solanaceae | <i>Solanum eranthimum</i> | Shrub |
| 16 | Asteraceae | <i>Centratherum punctatum</i> | Bush Perennial |
| 17 | Fabaceae | <i>Desmodium rhytidophyllum</i> | Herb |
| 18 | Fabaceae | <i>Oxalis corniculata</i> | Creepers |
| 19 | Dioscoreaceae | <i>Dioscorea oppositifolia</i> | Monocot Climber |
| 20 | Icacinaceae | <i>Cassinopsis ilicifolia</i> | Shrub |
| 21 | Hemioniticeae | <i>Hemionites arifolia</i> | Fern(heart shaped) |
| 22 | Rhamanaceae | <i>Scutia myrtina</i> | Climber |
| 23 | Asclepiadaceae | <i>Asclepias curassavica</i> | Herb |
| 24 | Acanaceae | <i>Andrograpis elongata</i> | Herb |
| 25 | Apiaceae | <i>Centella asiatica</i> | Creepers |
| 26 | Dioscoreaceae | <i>Dioscorea villosa</i> | Twinner |
| 27 | Ranunculaceae | <i>Clematis vitalba</i> | Shrub |
| 28 | Asteraceae | <i>Seneico vulgaris</i> | Herb |
| 29 | Acanthaceae | <i>Hygrophila auriculata</i> | Herb |
| 30 | Celastraceae | <i>Cassine gluca</i> | Tree |
| 31 | Asclepiadaceae | <i>Secamone emeticu</i> | Twinner |
| 32 | Ulmaceae | <i>Gironniera celtidifolia</i> | Tree |
| 33 | Mimosaceae | <i>Indoptadenia oudhensis</i> | Tree |
| 34 | Amaryllidaceae | <i>Curculigo orchioides</i> | Herb |
| 35 | Rubiaceae | <i>Canthium dicoceum</i> | Tree |
| 36 | Lythraceae | <i>Rotala densiflora</i> | Herb |
| 37 | Sapiandaceae | <i>Ganoplyllum falcatum</i> | Tree |
| 38 | Asparagaceae | <i>Asparagus racemosa</i> | Herb |
| 39 | Crassulaceae | <i>Bryopyllum daigremontianum</i> | Herb |

| | | | |
|----|-------------------------|------------------------------------|------------------|
| 40 | Sapiandaceae | <i>Filicium decipiens</i> | Tree |
| 41 | Dipterocarpaceae | <i>Hopea parviflora</i> | Tree |
| 42 | Cucurbitaceae | <i>Diplocyclos palmatus</i> | Vine |
| 43 | Menispermaceae | <i>Cucylea peltata</i> | Twinning Shrub |
| 44 | Solanaceae | <i>Solanum seaforthianum</i> | Vine |
| 45 | Verbenaceae | <i>Gmelina arborea</i> | Tree |
| 46 | Loranthaceae | <i>Phonadendrom leucarpnm</i> | Epiphyte |
| 47 | Verbenaceae | <i>Gmelina asiatica</i> | Bush Or Shrub |
| 48 | Acanthaceae | <i>Blepharis maderaspatensis</i> | Creepers |
| 49 | Verbenaceae | <i>Clerodendrum inerme</i> | Shrub |
| 50 | Lamiaceae | <i>Leucas ciliata</i> | Herb |
| 51 | Asteraceae | <i>Crassocephalum crepidroides</i> | Annual Herb |
| 52 | Ulmaceae | <i>Holoptelea integrifolia</i> | Tree |
| 53 | Loranthaceae | <i>Dendrophthoe glabrescens</i> | Parasite |
| 54 | Verbenaceae | <i>Clerodendrum clinense</i> | Shrub |
| 55 | Proteaceae | <i>Grevillae robusta</i> | Tree |
| 56 | Acanthaceae | <i>Justicia adhatoda</i> | Shrub |
| 57 | Malpighiaceae | <i>Galphimia glauca</i> | Herb |
| 58 | Apocynaceae | <i>Creptolepis buchananii</i> | Climber |
| 59 | Talinaceae | <i>Talinum fruticosum</i> | Succulent Shrub |
| 60 | Poaceae | <i>Bambusa bambos</i> | Climber |
| 61 | Combretaceae | <i>Terminalia bellirica</i> | Tree |
| 62 | Poaceae | <i>Pennisetum polystachion</i> | Grass |
| 63 | Moraceae | <i>Ficus racemosa</i> | Tree |
| 64 | Poaceae | <i>Bambusa bambos</i> | Climber |
| 65 | Burseraceae | <i>Commiphora caudate</i> | Tree |
| 66 | Capparidaceae | <i>Capparis divaricata</i> | Bushy Shrub |
| 67 | Phyllanthaceae | <i>Cleistanthus collinus</i> | Tree |
| 68 | Fabaceae | <i>Mucuna pruriens</i> | Annual Climber |
| 69 | Capparidaceae | <i>Cadaba fruticosa</i> | Shrub |
| 70 | Asteraceae | <i>Synedrella nodiflora</i> | Herb |
| 71 | Convolvulaceae | <i>Ipomoea coccinea</i> | Twisting Climber |
| 72 | Tiliaceae | <i>Triumfetta semitriloba</i> | Herb |
| 73 | Rutaceae | <i>Chloroxylon swietenia</i> | Tree |
| 74 | Sapiandaceae | <i>Schleichera oleosa</i> | Tree |
| 75 | Polygonaceae | <i>Antigonon leptopus</i> | Creepers |
| 76 | Rubiaceae | <i>Tarenna asiatica</i> | Tree |
| 77 | Pedaliaceae | <i>Petalium murex</i> | Herb |
| 78 | Asteraceae | <i>Kelinia grandiflora</i> | Herb |
| 79 | Menispermaceae | <i>Tinospora cardifolia</i> | Vine |
| 80 | Rubiaceae | <i>Pavetta indica</i> | Shrub |
| 81 | Lamiaceae | <i>Orthosiphon aristaus</i> | Herb |
| 82 | Convolvulaceae | <i>Ipomoea pes carpa</i> | Creepers |
| 83 | Rutaceae | <i>Todalia asiatica</i> | Bush |
| 84 | Asclepiadaceae | <i>Wattakaka volubilis</i> | Twinners |
| 85 | Rhamanaceae | <i>Ziziphus oenoplia</i> | Tree |
| 86 | Legumenaceae | <i>Adenantha pavonia</i> | Tree |
| 87 | Loranthaceae | <i>Cassytha filiformis</i> | Vine |
| 88 | Rubiaceae | <i>Borreria latifolia</i> | Herb |
| 89 | Smilacaceae | <i>Smilax perfoliata</i> | Climber |
| 90 | Woodsiaceae(Fern) | <i>Mattuccia struthiopteris</i> | Herb |
| 91 | Ganodermataceae (Fungi) | <i>Ganoderma applanatum</i> | Fruit Body |
| 92 | Apiaceae | <i>Centella asiatica</i> | Creepers |
| 93 | Poaceae | <i>Microstegium vimineum</i> | Creeping Grass |
| 94 | Acanthaceae | <i>Thunbergia fragrans</i> | Twinners |
| 95 | Acanthaceae | <i>Hoverdenia speciosa</i> | Tree |
| 96 | Malpighiaceae | <i>Hiptage bengalensis</i> | Lian |

Table 2: Family consolidation

| S. No. | Family | No. of species |
|--------|----------------|----------------|
| 1 | Rubiaceae | 07 Species |
| 2 | Ephorbiaceae | 01 Specie |
| 3 | Lamiaceae | 03 Species |
| 4 | Solanaceae | 03 Species |
| 5 | Passifloraceae | 01 Specie |
| 6 | Fabaceae | 05 Species |

| | | |
|----|-------------------------|------------|
| 7 | Pteridaceae | 01 Specie |
| 8 | Asteraceae | 05 Species |
| 9 | Malvaceae | 01 Specie |
| 10 | Fabaceae | 05 Species |
| 11 | Acanthaceae | 06 Species |
| 12 | Erythro Xylaceae | 01 Specie |
| 13 | Dioscoreaceae | 02 Species |
| 14 | Icacinaceae | 01 Specie |
| 15 | Hemioniticeae | 01 Specie |
| 16 | Rhamanaceae | 02 Species |
| 17 | Asclepiadaceae | 03 Species |
| 18 | Apiaceae | 02 Species |
| 19 | Dioscoreaceae | 02 Species |
| 20 | Ranunculaceae | 01 Specie |
| 21 | Celastraceae | 01 Specie |
| 22 | Ulmaceae | 02 Species |
| 23 | Mimosaceae | 01 Specie |
| 24 | Amaryllidaceae | 01 Specie |
| 25 | Lythraceae | 01 Specie |
| 26 | Sapiandaceae | 03 Species |
| 27 | Asparagaceae | 01 Specie |
| 28 | Crassulaceae | 01 Specie |
| 29 | Dipterocarpaceae | 01 Specie |
| 30 | Cucurbitaceae | 01 Specie |
| 31 | Menispermaceae | 02 Species |
| 32 | Verbenaceae | 04 Species |
| 33 | Loranthaceae | 03 Species |
| 34 | Proteaceae | 01 Specie |
| 35 | Malpighiaceae | 01 Specie |
| 36 | Apocynaceae | 02 Species |
| 37 | Talinaceae | 01 Specie |
| 38 | Poaceae | 04 Species |
| 39 | Combretaceae | 01 Specie |
| 40 | Burseraceae | 01 Specie |
| 41 | Capparidaceae | 02 Species |
| 42 | Convolvulaceae | 02 Species |
| 43 | Rutaceae | 02 Species |
| 44 | Polygonaceae | 01 Specie |
| 45 | Pedaliaceae | 01 Specie |
| 46 | Smilacaceae | 01 Specie |
| 47 | Woodsiaceae(Fern) | 01 Specie |
| 48 | Ganodermataceae (Fungi) | 01 Specie |

Table 3: The most frequently utilized plant habit percentage

| S. No. | Types of plants | Total numbers of plants |
|--------|-----------------|-------------------------|
| 1. | Trees | 24 |
| 2. | Herbs | 25 |
| 3. | Shurbs | 19 |
| 4. | Climber | 20 |
| 5. | Fruitbody | 1 |
| 6. | Grass | 1 |
| 7. | Parasite | 1 |
| 8. | Epiphyte | 1 |
| 9. | Fern | 2 |

Table 4: Classification percentage

| S. No. | Plant types | Percentage |
|--------|-------------|------------|
| 1. | Monocot | 7 |
| 2. | Dicot | 86 |
| 3. | Fern | 2 |
| 4. | Fungi | 1 |

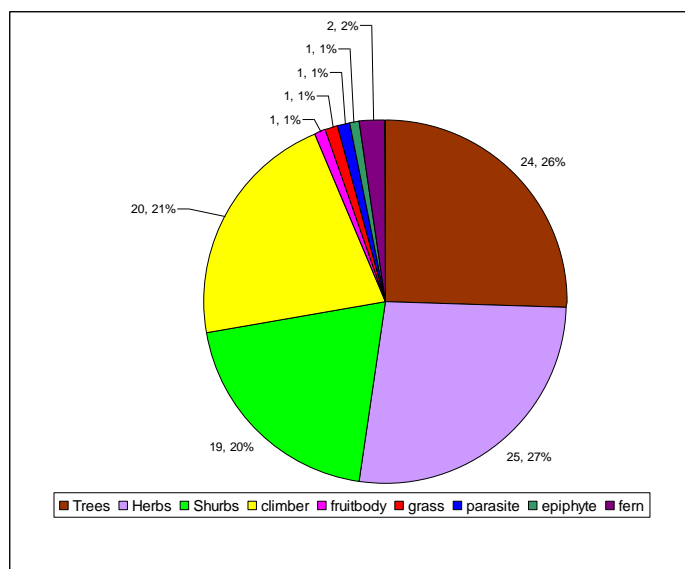


Fig. 1: The most frequently utilized plant habit percentage

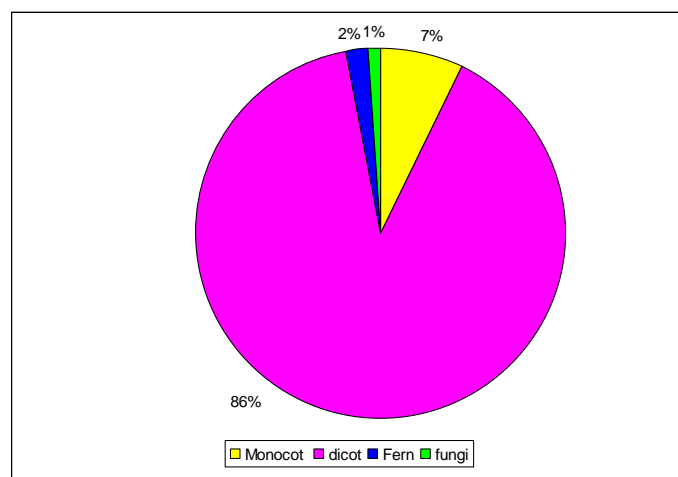


Fig. 2: Classification percentage

The recorded plants were systematically arranged under each category along with the information such as their botanical name, family, and habits. It was observed that the tribes of the study area fulfill their food requirements. Tribal people are familiar with plants of their surrounding area and knew that what to eat and how to separate harmful substances from the edible part of plants. Most of the eatables are purely from forest origin and few of them derived from cultivation.

This study will serve as a data base on Eastern Ghats plant species and will be helpful for the researchers and conservation aspects. Conservation of rare, endangered and endemic species is necessary for preservation of species diversity. Currently forests of these hills are also prone to the fragmentation of forest into patches. Fragmentation process shows effect on species, especially on unique, rare and endemic, threatening their survival and resulting in the extinction of species [6, 7]. Apart from interferences forest loss also occurs because of natural causes like soil erosion and displacement of organic matter due to high tides and much more by hazards like tsunami

[8]. Continuous field studies that updates the data base to know the status of species and conservation policies and programmers' to certain extent may help in understanding and protecting the unique ecosystem of these areas.

CONCLUSION

The study depicts that Chitteri Hills have different variety of plants distributed all over the mountain. Even medicine and food also, Therefore, documentation of traditional and well verse plant data knowledge is the only way to preserve the knowledge base conserve the plant resources endemic to this area.

REFERENCES

1. Govaerts R. How many species of seed plants are there?. *Taxon*. 2001;50:1085-90.
2. Farnsworth NR, Soejarto DD. Global importance of medicinal plants. *The conservation of medicinal plants*. 1991;26:25-51.
3. Charak D. The charak samhita explained by K. Sastri and GN Chaturvedi. 1996;22.

4. Sanjappa M. Plant diversity in India—status, conservation and challenges (P. Maheshwari Medal Award Lecture). In: Proceedings of the XXVIII Conference of Indian Botanical Society, Oct 2005 Oct 24 (pp. 24-36).
5. Alagesaboopathi C. Ethnobotanical studies on useful plants of Kanjamalai hills of Salem district of Tamil Nadu, Southern India. *Arch Appl Sci Res.* 2011;3:532-9.
6. Sindhu S, Uma G, Kumudha P. Available online at www.pelagiaresearchlibrary.com. *Asian Journal of Plant Science and Research.* 2012;2:712-7.
7. Ayyappan N, Parthasarathy N. Biodiversity inventory of trees in a large-scale permanent plot of tropical evergreen forest at Varagalaiar, Anamalais, Western Ghats, India. *Biodiversity and Conservation.* 1999;1;8:1533-54.
8. Smita R, Sangeeta R, Kumar SS, Soumya S, Deepak P. An ethnobotanical survey of medicinal plants in Semiliguda of Koraput District, Odisha, India. *Res. J. Recent. Sci.* 2013;2:20-30.