

STUDIES ON THE FLORA OF PALGHAT DISTRICT, KERALA

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INTRODUCTION

Palghat District lies between $10^{\circ} 20'$ to $11^{\circ} 15'$ N and $76^{\circ} 2'$ to $76^{\circ} 55'$ E. It is surrounded by Trichur District in the south, by Malapuram and Nilgiri Districts in the north, and by Coimbatore District in the east. The mountain ranges of this region are continuous with Nilgiri and Anamalai ranges of Tamil Nadu. The topography is varied with hills, valleys, rivers and streams making this district rich in vegetation.

TOPOGRAPHY

Plains are restricted to the south western portion of the district. The main ghats of this district are situated at the northern extremity and extend up to the Nilgiris. The highest peak 'Anginda' (ca 2600 m) is at the north-east corner of the Silent Valley. The Silent Valley Reserve Forest lies on a plateau to the north of Mannarghat, the outer slopes of the hill forming the table-land. Dhoni Reserve Forest, Sappal Hill Forest and 'The Chenat Nair Reserve' are situated on the southern extremity, ending at Palghat Gap. The Walayar Reserve is situated on the northern side of the eastern end of Palghat Gap, on and at the foot of Bolampatty Hills. The Walayar River which forms almost the boundary of Tamil Nadu and Kerala State, runs through the forest. The Nelliampatty Ghat in Nemmara Division also extends up to Parambikulam, bordering Anamalai Hills in Tamil Nadu. The altitude varies from 150 m to 2600 m.

SOIL AND CLIMATE

The rock formation is of gneissic origin, and the soil in the plains is sandy loam and clayey—humus, whereas on the slopes the substratum is gravelly and coarse. This district experiences varying climatic conditions due to the considerable difference in the elevation between plains and ghats. The South West monsoon which precipitates the major part of the annual rainfall, usually starts in the beginning of June and is heaviest during July and August. The average annual rainfall is about 4800 mm. The temperature ranges between 24° C to 40.5° C in the Silent Valley Region.

There are many perennial rivers and streams within the area. The western slopes of Silent Valley drain into the Kunthipuzha in a series of parallel valleys running east to west and are characterised by grassy areas. The Attapadi Block (VI) protects the waters of Siruvani—a tributary of the river Bhavani. The eastern slopes drain into Coimbatore District. The general configuration is undulating with hills and valleys, with dense vegetation and scattered grass lands.

PREVIOUS WORK

There is no floristic account of this district, except for those in the working plans prepared by the Forest Department. Cleghorn (1855-58), M. A. Lawson (1883-1884), R. H. Beddome (1871-73), and C. A. Barber (1898) have made some sporadic collections from this area. Chandrasekharan (1962) has dealt with the forest types of Kerala in general.

VEGETATION

The vegetation of Dhoni Reserve Forest, Walayar Forests, Pothundy slopes of Nemmara Division and Thenkara slopes of Man-narghat Range is of dry-deciduous type (Chandrasekharan 1962). Silent Valley the "Sirendhree Vana" of Puranas, is a near-virgin impenetrable tropical evergreen or rain forest. It occupies an area of about 8000 hectares and is nearly free from human disturbance. The main floristic compositions of the wet evergreen forests are :—*Aglaiia roxburghiana* Miq. var. *beddomei* Gamble, *Actinodaphne tadulingami* Gamble, *Artocarpus hirsutus* Lamk., *A. heterophyllus* Lamk., *Calophyllum elatum* Bedd., *Canarium strictum* Roxb., *Cullenia exarillata* Robyns, *Dipterocarpus indicus* Bedd., *Hopea wightiana* Wall., *Knema attenuata* (Wall.) Harb., *Myristica dactyloides* Gaertn., *Mesua ferrea* L., *Lansium anamalayanum* Bedd., *Melia dubia* Hiern, *Lophopetalum wightianum* Arn., *Palaequium ellipticum* (Dalz.) Baillon, etc., form the top storey.

The most common species that are found in the middle layer are *Baccourea courtalensis* Muell.-Arg., *Chrysophyllum lanceolatum* (Bl.) DC., *Drypetes macrophyllus* (Bl.) Pax. & Hoffm., *Cinnamomum iners* Reinw., *Hydnocarpus laurifolius* (Denn.) Sleum., *Scolopia crenata* Clos., *Pterospermum rubiginosum* Heyne, *Diospyros bourdillonii* Brand., *Apama siliquosa* Lamk., *Ervatamia heyneana* Hook., *Polyalthia fragrans* Bedd., *Memecylon heyneanum* Benth. etc.

Other noticeable elements of the flora are : *Sonerila versicolor* Wight, *Sarcandra grandifolia* (Miq.) Subr. & Henr., *Angiopteris evecta* (Forst.) Hoffm., *Cyathea gigantea* (Wall.) Holtt., *Lepianthes umbellata* (L.) Raf., *Anaphyllum wightii* Schott, *Pinanga dicksonii* Bl., *Ixora coccinea* L., *Lasianthus jackianus* Wight etc. The Silent Valley Reserve Forest and a few pockets of forest in Nelliampathy Reserve Forest especially near Ayyappankoil areas, are inaccessible

and impenetrable due to the thick and gregarious growth of plants. These are also infested with wild animals and leeches. Heavy rainfall, high degree of humidity, sparingly branched trees with smooth bark, leathery or glossy leaves, thick stemmed climbers or lianes and herbaceous epiphytes on the branches of trees are characteristic features of this forest.

The forests near Mukkali are typical tropical moist deciduous with *Terminalia arjuna* Wight & Arn., *T. paniculata* Roth, *Adina cordifolia* Hook. f., *Kydia calycina* Roxb., *Jambosa mundagam* Gamble, *Dalbergia latifolia* Roxb., *Gnetum ula* Brogn., *Litsea floribunda* (Bl.) Gamble, *Mastixia arborea* (Wight) Bedd. and *Vitex altissima* L. f., as dominant species.

Some of the climbers commonly found in the Silent Valley Reserve Forest, Mukkali slopes and Pothundy slopes of Nelliampathy Reserve Forests are *Dioscorea oppositifolia* L., *D. tomentosa* Heyne, *D. bulbifera* L., *Smilax zeylanica* L., *Aristolochia indica* L., *A. tugala* Charm., *Thunbergia mysorensis* T. And., *Argyrea hirsuta* Wight & Arn., *Strychnos cinnamomifolia* Thw. var. *wightii* Hill, *Toxocarpus palghatensis* Gamble, *Chilocarpus malabaricus* Bedd., *Jasminum rottlerianum* Wall. ex A. DC., *Zanonia indica* L., *Entada pusaetha* DC., *Spatholobus roxburghii* Benth. (with very large tuberous roots), *Leea sambucina* Willd., *Tetrastigma sulcatum* Gamble etc.

Below the proposed dam site across Kunthipuzha river in the Silent Valley, very large formations of *Ochlandra wightii* Fischer and *Schumannianthus virgatus* Rolfe are found. Many interesting and rare orchids numbering about 50 have also been collected from these forests. Some of them are : *Aphyllorchis prainii* Hook. f., *Chrysoglossum maculatum* Hook. f., *Cottonia peduncularis* Reich., *Desmotrichum fimbriatum* Bl., *Didymoplexis pallens* Griff., *Disperis neilgherrensis* Wight, *Liparis longipes* Lindl., *Porpax ferdoniana* (Wight)

Rolfe, *Saccolabium gracile* Lindl., *Eulophia nuda* Lindl., *Acanthephippium bicolor* Lindl., *Arundina graminifolia* Hochr., and *Habenaria multicaudata* Sedg.

Oberonia brachyphylla Blatt. & McC. and *Smithsonia straminea* Saldanha form new records of orchids to this district.

In Walayar Forest, as well as in Pothundy Forest slopes occur more or less dry deciduous type of forests with *Adina cordifolia* Hook. f., *Hymenodictyon excelsum* Wall., *Diospyros sylvatica* Roxb., *Alstonia venenata* R. Br., *Gmelina arborea* Roxb., *Anogeissus latifolia* Wall. ex Bedd., *Terminalia bellirica* Roxb., *Strychnos potatorum* L. f., *Dillenia pentagyna* Roxb. etc. as the most common components. *Tetrameles nudiflora* R. Br., (Datiscaceae), is a very large deciduous tree reaching 50-60 m with buttress base, found in Pothundy slopes as well as in Mukkali downs. Some of the most common ferns are *Adiantum incisum* Forsk., *A. philippense* L. Burm., *Cyathea gigantea* (Wall.) Holtt., *Angiopteris evecta* (Forst.) Hoffm., *Asplenium normale* Don., *Athyrium hohenackerianum* O. Ktze., *Dryopteris hirtipes* (Bl.) O. Ktze., *Leptochilus decurrens* Bl., *Microsorium punctatum* (L.) Copel., *Osmunda regulis* L., *Tectaria macrodonta* (Fée) Ching, *Vittaria flexuosa* Fée etc.

Nelumbo nucifera Gaertn., *Nymphaea nouchali* Burm. f., *N. pubescens* Willd., *Eichhornia crassipes* Solm., *Monochoria vaginalis* Presl, *Blyxa auberti* Rich., *Hydrilla verticellata* Royle, *Ottelia alismoides* Pers., *Utricularia flexuosa* Vahl, etc. have been collected from the ponds, puddles and marshy places in the plains of this district.

Several Hill Tribe settlements are found in this district. They are engaged in many of the forest works including cutting of bamboos, collection of honey etc.

Plantation crops like Tea, Coffee, Areca-

nut, Cardamom etc., are found at higher elevations.

The authors conducted nine exploration trips to these forests and 1988 field numbers comprising about 1200 species of Angiosperms and Ferns have been collected and studied. Three seasonal trips were made in Dhoni, Walayar and Malampuzha forests during the year 1963-64 and the floristic account has been published (Vajravelu, Joseph and Chandrasekharan, 1968).

Further, 4 research papers including one new species of orchid were published as a result of the present floristic studies in the district.

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