

Some notes on the Tropical Dry Evergreen Forest Of South India

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Introduction

The Tropical Evergreen forest of the east coast of India has been variously studied since it was recognized as a forest type in Champion's classification of Indian forests (Champion 1936). Initial studies gave species lists for various remnants (Shankaranarayan & Dabholkar 1959), (Sebastine & Ellis 1967) as well as attempts to describe the physiognomic character of the vegetation (Marlange & Meher-Homji 1965), (Legris and Blasco 1972), (Blasco and Legris 1973). Reference to the disturbed nature of the vegetation was often noted, as well as the absence of any of the primary forest. Subsequently an attempt to redefine the forest type was made (Meher-Homji 1973), (Meher-Homji 1986), based on a species association with *Albizia amara*. This work continued and hypotheses were put forward as to the origin of the forest type (Meher-Homji 1974) and also to the cline inland towards the dry deciduous type (Meher-Homji 1977).

In the next decade energy was devoted to studying the remnant forest in Point Calimere; here interesting ecological characteristics of seed dispersal and animal interactions were noted (Balasubramanian and Bole 1993a), (Balasubramanian and Bole 1993b). Lately quantitative ecological analyses of sacred groves around the Pondicherry region have been undertaken and comparisons with other tropical dry forests in the world made in terms of species number and basal area (Visalakshi 1995), (Parthasarathy & Kartikeyan 1996).

However within all of these works a clear picture of the ecological dynamics of the TDEF has not emerged and it is the intention of this paper to contribute to this.

Outline of Forest Environment

The TDEF has been described by various authors as a thin belt of forest existing on the south-eastern seaboard of peninsular India. It is generally held that the forest extends from Vishakhapatnam in the north to Ramanathapuram in the south, and in a belt between 60 km wide (Champion 1936) or 30 km wide (Gamble 1967)

The climate of the region is tropical dissymmetric (Meher-Homji 1973). In contrast to the rest of peninsular India, where the rains are concentrated in the summer months (June to first half of October), the rainy season is spread over the months June to December - January. The rains are light from June to September, becoming heavy from October to December, resulting mainly from depressions formed in the Bay of Bengal. Consequently the peak of the rainy season is not found in the middle of the year, as elsewhere, but towards the later parts, somewhere between October-November.

The average annual rainfall of the area is around 1250 mm, but variation is found as one travels north-south. After the rainy period the dew formation in the months of January and February can be heavy, and may be a significant factor in the formation of this forest type. However no clear reason has been put forth although it is assumed that some climatic feature is responsible (Meher-Homji 1974).

The soils of the region are red ferralitic or alluvial clays of varying kinds. The vast majority of the remnant vegetation occurs on the red soils, as this is the least productive land for agriculture. It is assumed that in pre-human times the forest would have occurred on all soil types, with consequent variation in species composition.

Within the geographic region granite hillocks are found up to a height of 160 m. The bedrock has been described as Charnockite. The vegetation is often heavily disturbed, but as the hillocks have no agricultural value they are covered in forest, degraded to a varying degree.

The Remnant Areas

The remnants are to be found in three major forms: - sacred groves, reserve forests on the plains, and reserve forests around and on hillocks. Of these three forms the forest found outside of the sacred groves is very obviously impacted by human factors, such as browsing, lopping, grazing, long since removal of any sizeable trees, and constant removal of firewood. The reserve forests are of sizes 1000-2000 acres and consequently have potential as future forests that can sustain wildlife (Balasubramanian and Bole 1993a & 1993b). The forest found within the sacred groves can be relatively undisturbed, however the sizes of the groves are very small ranging from less than an acre to little more than ten.

Mammals of the forests

The forest in the plains supports a number of small mammals including the Mongoose (*Herpestes edwardsi*), Pale hedgehog (*Paraechinus coromandra*), Indian fox (*Vulpes bengalensis*) and the Jackal (*Canis aureus*). The hillocks around Chinglepet and Madurantagam support a variety of larger mammals: Porcupine (*Hystrix indica*), Civet cat (*Viverricula indica*), Pangolin (*Manis crassicaudata*), Honey badger (*Mellivora capensis*). Further inland the hillocks around Gingee that rise to 650m additionally support the Indian giant squirrel (*Ratufa indica*), Ruddy Mongoose (*Herpestes smithi*), Sloth bear (*Melursus ursinus*) and the Wild boar (*Sus scrofa*). In Point Calimere both the Black buck (*Antelope cervicapra*) and the Chital (*Axis axis*) are found. Of the monkeys, the Bonnet Macaque (*Macaca radiata*) is found all over, where as the Common langur (*Presbytis entellus*) is restricted to the hills. See appendix 1 for full list of mammals.

Other animals of the forest type

The reptiles of the forest have never been listed, although the monitor lizard (*Varanus bengalensis*) is found in nearly all areas, and various other lizards are present, as well as around 18 species of snake. See appendix 2 for list of reptiles.

The bird population has been recorded for Point Calimere; it has also been studied in Marakanam forest and the total number of species is thought to be around 80, including seasonal migrants. This excludes water birds. See appendix 3 for list of birds.

Some notes on the ecology of the TDEF

Within the tropics the concept of primary succession is erroneous if considered within the classical concept of ecology as taught within the European and American schools. In those schools the clean sheet created by the advance of the ice sheet in the glacial periods is not applicable to the tropical environment. The concept of pioneer vegetation, leading through various stages to a climax is misleading. The vegetation of the tropics is more a case of a fluid vegetation continuum that responds to the changing climate, slowly, over long periods of time.

Therefore the concept of primary pioneer vegetation is not valid. The opportunities for this type of vegetation are limited to the presence of relatively small scale natural disasters such as forest fire, prolonged drought, or in the case of coastal vegetation, damage by cyclonic winds. Rather than calling it pioneer vegetation it should be considered as opportunistic, or at least it should be recognized that it is secondary succession taking place.

Having said this, it is also true that the vegetation of this area has long been subject to anthropogenic influences and, over this period of at least two millennia, the make-up of this forest type will have changed to reflect this consistent input. The shifting agriculture, which will have expanded and contracted with the minor variations in climate, would have periodically left many areas of fallow land to be recolonized by the forest.

It might be impossible to discern a pure ecological system for the TDEF, however a number of observations can be made to give a feel for the forest type. It is fair to assume that for this

area, allowing for variation due to edaphic factors, there exists a climax type of the vegetation. Meaning, that given a large enough area, and stable climatic conditions, there is a vegetation complex that this forest type will head towards over succeeding generations. The strongest impression that is left for us is found within the temple groves. Although they are never pristine, and always of a small size, it is within them that we are able to detect at least an outline of the climax of this vegetation type, which we can call the TDEF.

This climax vegetation has broad common characteristics, which can be noted, allowing that in every case there are exceptions to the rule. It is an example of convergent evolution, where different plant species have solved the environmental conundrum for this particular area with similar adaptations.

The species are evergreen, responding to rainfall with new flushes of leaves.

The leaves are coriaceous, simple; approximately 6 cm by 3 cm, often waxy on the upper surface, and the venation is concealed to a greater or lesser extent.

The flowers are small, 1 cm in diameter, white, with perfume.

The seeds are contained within small fruits, around 1 cm in diameter, edible by birds.

The habit of the trees is generally to have around two meters of clean bole and then to branch; the general height is between 4 and 8 meters.

Some trees exhibit buttressing.

The flowering season is between February and August.

The fruiting season is April to September.

The plants are slow growing and the wood is generally dense and hard.

Thorns are absent – although to this there are four or five notable exceptions.

If these characteristics are accepted, then within a piece of remnant vegetation, one can discern which are the species of the original forest and which are opportunistic species that are responding to the disturbances that, in the main, have been implemented by man. Within the opportunistic species there are also grades and common characteristics that can be discerned, most notably the presence or absence of thorns, and the life form; the shrubs and stragglers are often found in the more disturbed areas.

The Study

The study that this paper is based upon was conducted from March 1993 - April 2000 and involved surveys of 37 sites. Some areas have been thoroughly surveyed by systematic methods, e.g. Marakanam, but for the vast majority species lists showing presence or absence were collated for the areas on multiple visits. Specimens from each geographical area were collected in flowering and fruiting stage and the specimens are stored in the herbarium in Auroville. The identifications were verified by visiting botanists.

The surveys were conducted by a group of people ranging in size from 3-7, walking through the areas and identifying species; unknown species were collected for subsequent identification. All angiosperms were noted.

Analysis of survey data

The results of the surveys were arranged in a database and the survey locations were sorted into site types, either as groves (13 sites), plains forests (7 sites), or hillocks (17 sites). Percentage occurrence was calculated for each species with respect to each site type. This value, along with other field observations, was used to ascribe a ranking for each species with respect to each site type

The ranking was as follows:

- 1 – commonly associated with the site type
- 2 – occasionally associated with the site type
- 3 – rarely associated with the site type
- 0 – not associated with the site type

If the species had a ranking of 1 or 2 for each of the 3 site types they were ascribed to the core species of the TDEF. These species can be considered to be the generalists.

If a species was outside of this criterion it was then assigned to one or more of the site types as common species if it had a rating of 1, or as an occasional species if it had a rating of 2. These species can be considered as specialists that are adapted to, or require, some specific environmental constraint or condition.

Field observations were then used to ascribe species to a further 4 site types: Coastal, Riverine, Tank bunds, and Wayside.

The full list is given in table 1 of plants ascribed a place in any of the site types.

Table 1:
Woody and auxiliary species of the Tropical Dry Evergreen Forest

Ty = Type (bul-bulb, cl-climber, e-epiphyte, l-liana, p-palm, suc-succulent,sh-shrub, ss-subshrub,st-straggler,tw-twiner,tr-tree,tub-tuberous,v-vine).

M = Core species G = Groves P = Plains forest H = Hillocks

C = Coastal Groves Gi = Ginge area R = Riverine E = Eri/Tank bund

W = Wayside

T = Present C = Common O = Occasional

| Family | Botanical Name | TY | M | G | P | H | C | Gi | R | E | W |
|------------------|-----------------------------|----|---|---|---|---|---|----|---|---|---|
| FABACEAE | Abrus precatorius | tw | T | C | C | C | | | | | |
| MIMOSACEAE | Acacia caesia | st | T | O | O | O | | | | | |
| MIMOSACEAE | Acacia chundra | tr | | | O | | | | | | |
| MIMOSACEAE | Acacia horrida | tr | | | O | O | | | | | |
| MIMOSACEAE | Acacia leucophloea | tr | | | C | | | | | | |
| MIMOSACEAE | Acacia nilotica ssp. indica | tr | | | | | | | | T | |
| MIMOSACEAE | Acacia torta | st | | O | | | | | | | |
| PASSIFLORACEAE | Adenia wightiana | v | T | O | C | O | | | | | |
| RUTACEAE | Aegle marmelos | tr | | | | | | | | | T |
| MELIACEAE | Aglaia elaeagnoidea | tr | | O | | | T | | | | |
| ALANGIACEAE | Alangium salviifolium | tr | | O | O | | | | | T | T |
| MIMOSACEAE | Albizia amara ssp. amara | tr | T | O | C | C | | | | | |
| MIMOSACEAE | Albizia lebbeck | tr | T | O | O | O | | | | | T |
| MIMOSACEAE | Albizia odoratissima | tr | | | O | | | | | | |
| SAPINDACEAE | Allophylus cobbe | st | T | O | O | C | | | | | |
| ANACARDIACEAE | Anacardium occidentale | tr | | | | | | | | | T |
| ANNONACEAE | Annona squamosa | sh | | | | | | | | | T |
| COMBRETACEAE | Anogeissus latifolia | tr | | | O | | | | | | |
| STILAGINACEAE | Antidesma ghesaembilla | sh | | | O | | | | | | |
| CONVOLVULACEAE | Argyrea cymosa | st | | | | | | | | | T |
| CONVOLVULACEAE | Argyrea osyrensis | st | | | | | | T | | | |
| ARISTOLOCHIACEAE | Aristolochia bracteata | tw | | | | | T | | | | |
| ARISTOLOCHIACEAE | Aristolochia indica | tw | T | O | O | O | | | | | |
| ASPARAGACEAE | Asparagus racemosus | tw | T | C | C | C | | | | | |
| RUTACEAE | Atalantia monophylla | tr | T | C | C | C | | | | | |
| RUTACEAE | Atalantia racemosa | tr | | | | | | T | | | |
| MELIACEAE | Azadirachta indica | tr | T | C | C | C | | | | | T |
| SALVADORACEAE | Azima tetracantha | sh | | O | O | | | | | | |
| ACANTHACEAE | Barleria longiflora | ss | | | | C | | | | | |
| ACANTHACEAE | Barleria nitida | ss | | | | | | T | | | |
| ACANTHACEAE | Barleria noctiflora | sh | | O | | | | | | | |
| ACANTHACEAE | Barleria prionitis | ss | | | | O | | | | | |
| LECYTHIDACEAE | Barringtonia acutangula | tr | | | | | | | T | T | |
| BASELLACEAE | Basella alba | tw | | | O | | | | | | |
| CAESALPINIACEAE | Bauhinia racemosa | tr | | | C | C | | | | | |
| CAESALPINIACEAE | Bauhinia tomentosa | sh | | | | | | T | | | |
| RUBIACEAE | Benkara malabarica | sh | T | O | C | C | | | | | |
| BOMBACACEAE | Bombax ceiba | tr | | | | | | | | | T |
| ARECACEAE | Borassus flabellifer | p | T | C | O | O | | | | T | T |
| EUPHORBIACEAE | Breynia retusa | sh | | | O | | | | | | |
| EUPHORBIACEAE | Breynia vitis-idaea | sh | | | O | | | | | | |
| EUPHORBIACEAE | Bridelia retusa | tr | | | | | | | | | T |
| ANACARDIACEAE | Buchanania axillaris | tr | | | C | | | | | | |
| FABACEAE | Butea monosperma | tr | | | O | O | | | | T | T |
| CAPPARACEAE | Cadaba fruticosa | sh | T | O | C | C | | | | | |
| CAPPARACEAE | Cadaba trifoliata | sh | | O | | | | | | | |
| CAESALPINIACEAE | Caesalpinia bonduc | st | | O | | | | | | | T |

| Family | Botanical Name | TY | M | G | P | H | C | Gi | R | E | W |
|------------------|------------------------------------|-----|---|---|---|---|---|----|---|---|---|
| ARECACEAE | Calamus rotang | p | | | | | T | | | | |
| CLUSIACEAE | Calophyllum inophyllum | tr | | | | | T | | | | |
| ASCLEPIADACEAE | Calotropis gigantea | sh | | | | | | | | | T |
| COMBRETACEAE | Calycopteris floribunda | st | | | O | | | | | | |
| FABACEAE | Canavalia cathartica | tw | T | O | O | O | | | | | |
| OPILIACEAE | Cansjera rheedii | st | | O | C | | | | | | |
| RUBIACEAE | Canthium parviflorum | sh | T | O | C | C | | | | | |
| CAPPARACEAE | Capparis brevispina | sh | T | C | C | C | | | | | |
| CAPPARACEAE | Capparis divaricata | sh | | | O | | | | | | |
| CAPPARACEAE | Capparis rotundifolia | st | | | | | T | | | | |
| CAPPARACEAE | Capparis sepiaria | st | | O | O | | | | | | |
| CAPPARACEAE | Capparis zeylanica | st | T | O | O | O | | | | | |
| ASCLEPIADACEAE | Caralluma adscendens | suc | | | O | O | | | | | |
| ASCLEPIADACEAE | Caralluma attenuata | suc | T | O | O | O | | | | | |
| ASCLEPIADACEAE | Caralluma lasiantha | suc | | | O | | | | | | |
| ASCLEPIADACEAE | Caralluma umbellata | suc | | | | | | T | | | |
| SAPINDACEAE | Cardiospermum halicacabum var. lur | v | | | | | | | | | T |
| SAPINDACEAE | Cardiospermum halicacabum var. mic | v | | | | | | | | | T |
| LECYTHIDACEAE | Careya arborea | tr | | | | | | | | | T |
| APOCYNACEAE | Carissa salicina | sh | | | O | | | | | | |
| APOCYNACEAE | Carissa spinarum | sh | T | C | C | C | | | | | |
| BORAGINACEAE | Carmona retusa | sh | T | C | C | O | | | | | |
| FLACOURTIACEAE | Casearia elliptica | sh | | O | O | | | | | | T |
| CAESALPINIACEAE | Cassia fistula | tr | T | O | O | O | | | | T | |
| CAESALPINIACEAE | Cassia montana | sh | | | | O | | | | | |
| CELASTRACEAE | Cassine glauca | tr | | O | O | | | | | | T |
| LAURACEAE | Cassytha filiformis | tw | T | O | C | C | | | | | |
| CASUARINACEAE | Casuarina equisetifolia | tr | | | | | | | | | T |
| APOCYNACEAE | Catharanthus roseus | ss | | | | | O | | | | |
| VITACEAE | Cayratia carnosa | st | | | | | | T | | | |
| VITACEAE | Cayratia pedata | v | T | O | O | O | | | | | |
| ULMACEAE | Celtis philippensis | tr | | | | | | T | | | |
| CACTACEAE | Cereus pterogonus | sh | | | | | | | | | T |
| OLEACEAE | Chionanthus mala-elengi | tr | T | C | C | O | | | | | |
| ANTHERICACEAE | Chlorophytum tuberosum | tub | | | | C | | | | | |
| FLINDERSIACEAE | Chloroxylon swietenia | tr | | | C | | | | | | |
| MENISPERMACEAE | Cissampelos pareira | tw | | | | | | | | | T |
| VITACEAE | Cissus pallida | v | | | | | C | | | | |
| VITACEAE | Cissus quadrangularis | st | T | C | C | C | | | | | |
| VITACEAE | Cissus repens | v | | O | | | | | | | |
| VITACEAE | Cissus vitiginea | v | T | C | O | C | | | | | |
| RUTACEAE | Clausena dentata | sh | | O | O | | | | | | |
| EUPHORBIACEAE | Cleistanthus collinus | sh | | | O | O | | | | | |
| VERBENACEAE | Clerodendrum inerme | sh | | | | | T | | | | |
| VERBENACEAE | Clerodendrum phlomides | sh | | | | | | | | | O |
| FABACEAE | Clitoria ternatea | tw | | | | | | | | | T |
| CUCURBITACEAE | Coccinia grandis | v | | C | O | | | | | | |
| MENISPERMACEAE | Cocculus hirsutus | tw | T | C | C | C | | | | | |
| COCHLOSPERMACEAE | Cochlospermum religiosum | tr | | | | | | T | | | |
| COMBRETACEAE | Combretum ovalifolium | l | T | C | C | O | | | | | |
| BURSERACEAE | Commiphora berryi | tr | | | | | | | | | T |
| BURSERACEAE | Commiphora caudata | tr | | | | | | T | | | |
| BORAGINACEAE | Cordia monoica | tr | | | | C | | | | | |
| BORAGINACEAE | Cordia myxa | tr | | O | O | | | | | | T |
| CAPPARACEAE | Crateva magna | tr | T | C | O | O | | | | | |
| AMARYLLIDACEAE | Crinum latifolium | tub | | | | | | T | | | |
| PERIPLOCACEAE | Cryptostegia grandiflora | st | | | O | | | | | | |
| CUCURBITACEAE | Ctenolepis garcinii | v | | O | | O | | | | | |
| CUCURBITACEAE | Cucumis melo | v | | | O | | | | | | |

| Family | Botanical Name | TY | M | G | P | H | C | Gi | R | E | W |
|-----------------|------------------------------------|-----|---|---|---|---|---|----|---|---|---|
| HYPOXIDACEAE | Curculigo orchioides | tub | T | O | O | C | | | | | |
| ORCHIDACEAE | Cymbidium aloifolium | e | | | | | | T | | | |
| FABACEAE | Dalbergia lanceolaria | tr | T | O | C | O | | | | | |
| FABACEAE | Dalbergia latifolia | tr | | | | | | T | | | |
| RUBIACEAE | Deccania pubescens var. pubescens | tr | | | | | | T | | | |
| CAESALPINIACEAE | Delonix elata | tr | | | | | | | | | T |
| LORANTHACEAE | Dendrophthoe falcata | sh | | C | C | | T | | | | |
| FABACEAE | Derris ovalifolia | l | | O | | | T | | | | |
| FABACEAE | Derris scandens | l | | C | C | | T | | | | |
| MIMOSACEAE | Dichrostachys cinerea | tr | | | C | O | | | | | |
| EUPHORBIACEAE | Dimorphocalyx glabellus | sh | | O | O | | | | | | |
| DIOSCOREACEAE | Dioscorea oppositifolia | tw | T | O | C | C | | | | | |
| DIOSCOREACEAE | Dioscorea pentaphylla | tw | | | | O | | | | | |
| DIOSCOREACEAE | Dioscorea tomentosa | tw | | | | O | | | | | |
| EBENACEAE | Diospyros affinis | tr | | | | | | T | | | |
| EBENACEAE | Diospyros chloroxylon | tr | | O | O | | | | | | |
| EBENACEAE | Diospyros ebum | tr | T | C | C | C | | | | | |
| EBENACEAE | Diospyros ferrea | tr | T | C | C | C | | | | | |
| EBENACEAE | Diospyros melanoxylon | tr | | | C | | | | | | |
| EBENACEAE | Diospyros montana | tr | | O | | | | | | | |
| CUCURBITACEAE | Diplocyclos palmatus | v | | O | O | | | | | | |
| SAPINDACEAE | Dodonaea viscosa var. angustifolia | sh | | | O | O | | | | | |
| BIGNONIACEAE | Dolichandrone falcata | tr | | | O | | | | | | |
| EUPHORBIACEAE | Drypetes porteri | tr | | | | | | T | | | |
| EUPHORBIACEAE | Drypetes sepiaria | tr | T | C | C | C | | | | | |
| ACANTHACEAE | Ecbolium ligustrinum | ss | T | O | O | O | | | | | |
| BORAGINACEAE | Ehretia pubescens | tr | | | C | C | | | | | |
| FABACEAE | Erythrina suberosa | tr | | | | | | T | | | |
| ERYTHROXYLACEAE | Erythroxylum monogynum | sh | | | O | | | | | | |
| MYRTACEAE | Eugenia bracteata | sh | | O | | | T | | | | |
| ORCHIDACEAE | Eulophia epidendraea | bul | | C | O | | | | | | |
| EUPHORBIACEAE | Euphorbia antiquorum | sh | | | C | C | | | | | |
| EUPHORBIACEAE | Euphorbia nivulia | tr | | | O | | | | | | |
| EUPHORBIACEAE | Euphorbia tirucalli | sh | | | | | | | | | T |
| EUPHORBIACEAE | Euphorbia tortilis | sh | | | | | | T | | | |
| MORACEAE | Ficus albipila | tr | | | | | | T | | | |
| MORACEAE | Ficus amplissima | tr | | O | | | | | | | T |
| MORACEAE | Ficus arnottiana | tr | | | | O | | | | | |
| MORACEAE | Ficus benghalensis | tr | | C | O | | | | | | T |
| MORACEAE | Ficus hispida | sh | | | | | | | | | T |
| MORACEAE | Ficus microcarpa | tr | | | | | | T | | | |
| MORACEAE | Ficus mollis | tr | | | | C | | | | | |
| MORACEAE | Ficus religiosa | tr | | | | | | | | T | T |
| MORACEAE | Ficus tinctoria | tr | | | | | | | | | T |
| MORACEAE | Ficus tsjakela | tr | | | | | O | | | | |
| STERCULIACEAE | Firmiana colorata | tr | | | | O | | | | | |
| FLACOURTIACEAE | Flacourtia indica | sh | T | O | C | O | | | | | |
| FABACEAE | Galactia tenuiflora | tw | | | | | | | | | T |
| CLUSIACEAE | Garcinia spicata | tr | | C | C | | T | | | | |
| RUBIACEAE | Gardenia gummifera | sh | | | O | | | | | | |
| RUBIACEAE | Gardenia latifolia | sh | | | | O | | | | | |
| RUBIACEAE | Gardenia resinifera | sh | | | | | | T | | | |
| BURSERACEAE | Garuga pinnata | tr | | | | | | T | | | |
| EUPHORBIACEAE | Givotia rottleriformis | tr | | | | O | | | | | |
| COLCHICACEAE | Gloriosa superba | cl | T | C | C | C | | | | | |
| RUTACEAE | Glycosmis mauritiana | sh | T | C | C | O | | | | | |
| VERBENACEAE | Gmelina asiatica | sh | T | C | O | O | | | | | |
| TILIACEAE | Grewia carpinifolia | l | T | C | C | C | | | | | |
| TILIACEAE | Grewia flavescens | st | | | | C | | | | | |

| Family | Botanical Name | TY | M | G | P | H | C | Gi | R | E | W |
|-----------------|----------------------------------|-----|---|---|---|---|---|----|---|---|---|
| TILIACEAE | Grewia hirsuta | sh | | | O | O | | | | | |
| TILIACEAE | Grewia orbiculata | st | | | | O | | | | | |
| TILIACEAE | Grewia tiliifolia | tr | | | | | | T | | | |
| ASCLEPIADACEAE | Gymnema sylvestre | l | T | O | O | C | | | | | |
| HERNANDIACEAE | Gyrocarpus americanus | tr | | | | O | C | | | | |
| ORCHIDACEAE | Habenaria roxburghii | bul | | | O | | | | | | |
| CAESALPINIACEAE | Hardwickia binata | tr | | | | | | | | | T |
| STERCULIACEAE | Helicteres isora | sh | | | | | O | | | | |
| PERIPLOCACEAE | Hemidesmus indicus | tw | T | C | C | C | | | | | |
| BIGNONIACEAE | Heterophragma adenophyllum | tr | | | | | | | | | O |
| MALVACEAE | Hibiscus purpureus | sh | | | | | | T | | | |
| MALVACEAE | Hibiscus tiliaceus | tr | | | | | | T | | | |
| STERCULIACEAE | Hildegardia populifolia | tr | | | | | | | T | | |
| LINACEAE | Hugonia mystax | st | T | O | C | C | | | | | |
| RUBIACEAE | Hymenodictyon orixense | tr | | | | | | | T | | |
| APOCYNACEAE | Ichnocarpus frutescens | tw | T | C | C | C | | | | | |
| COLCHICACEAE | Iphigenia indica | tub | | | | | C | | T | | |
| CONVOLVULACEAE | Ipomoea fistulosa | st | | | | | | | | | T |
| CONVOLVULACEAE | Ipomoea sepiaria | tw | T | O | C | O | | | | | |
| CONVOLVULACEAE | Ipomoea staphylina | l | | | | | O | | | | |
| RUBIACEAE | Ixora pavetta | sh | T | C | C | O | | | | | |
| OLEACEAE | Jasminum angustifolium | tw | T | C | C | C | | | | | |
| OLEACEAE | Jasminum auriculatum | tw | | O | C | | | | | | |
| OLEACEAE | Jasminum azoricum var. azoricum | st | | | | | | | T | | |
| OLEACEAE | Jasminum cuspidatum | sh | | | O | | | | | | |
| EUPHORBIACEAE | Jatropha glandulifera | sh | | | | | | | | | T |
| EUPHORBIACEAE | Jatropha gossypifolia | sh | | | | | | | | | T |
| EUPHORBIACEAE | Jatropha tanjorensis | sh | | | | | | | | | T |
| ACANTHACEAE | Justicia adhatoda | sh | | | | | | | | | T |
| CUCURBITACEAE | Kedrostis foetidissima | v | | O | O | | | | | | |
| ASTERACEAE | Kleinia grandiflora | ss | | | | | | | T | | |
| ANACARDIACEAE | Lannea coromandelica | tr | T | O | O | C | | | | | T |
| VERBENACEAE | Lantana camara var. aculeata | sh | | | | | | | | | T |
| VERBENACEAE | Lantana camara var. splendens | sh | | | | | | | | | T |
| SAPINDACEAE | Lepisanthes tetraphylla | tr | T | C | C | C | | | | | |
| ASCLEPIADACEAE | Leptadenia reticulata | tw | | | | | | | | | T |
| RUTACEAE | Limonia acidissima | tr | | | | | | | | | T |
| CELASTRACEAE | Loeseneriella obtusifolia | st | | | | | | | T | | |
| SAPOTACEAE | Madhuca indica | tr | | O | | | | | | T | T |
| CAPPARACEAE | Maerua oblongifolia | st | | C | | | | | | | |
| EUPHORBIACEAE | Mallotus philippensis | sh | | O | | | | | | | T |
| EUPHORBIACEAE | Mallotus repandus | st | | | | | | | T | | T |
| EUPHORBIACEAE | Mallotus rhamnifolius | sh | | O | | | | | | | T |
| EUPHORBIACEAE | Mallotus stenanthus | sh | | | | | | | T | | |
| SAPOTACEAE | Manilkara hexandra | tr | T | C | C | O | | | | | |
| CELASTRACEAE | Maytenus emarginata | sh | T | O | C | C | | | | | |
| MEMECYLACEAE | Memecylon umbellatum | sh | T | C | C | C | | | | | |
| CONVOLVULACEAE | Merremia hederacea | tw | | | O | | | | | | |
| ANNONACEAE | Miliusa eriocarpa | sh | | O | | | | | | | |
| MIMOSACEAE | Mimosa intsia | st | | | C | O | | | | | |
| SAPOTACEAE | Mimusops elengi | tr | | | | | | | | | T |
| RUBIACEAE | Mitragyna parvifolia | tr | | | | | | | T | T | |
| CUCURBITACEAE | Momordica charantia | v | | O | | O | | | | | |
| RUBIACEAE | Morinda pubescens var. pubescens | tr | | C | | | | | | | T |
| FABACEAE | Mucuna gigantea | l | | | | | | | T | | |
| FABACEAE | Mucuna pruriens | tw | | O | | | | | | | |
| CUCURBITACEAE | Mukia maderaspatana | v | | C | | O | | | | | |
| RUTACEAE | Murraya paniculata | sh | | O | | | | | | | |
| RUBIACEAE | Mussaenda tomentosa | sh | | | | | | | T | | |

| Family | Botanical Name | TY | M | G | P | H | C | Gi | R | E | W |
|-----------------|--------------------------------|-----|---|---|---|---|---|----|---|---|---|
| OCHNACEA | Ochna lanceolata | sh | | | | | | T | | | |
| OCHNACEAE | Ochna obtusata | sh | | O | O | | | | | | T |
| OLACACEAE | Olax scandens | st | | | O | O | | | | | |
| OPILIAEAE | Opilia amentacea | st | | C | O | | | | | | |
| CACTACEAE | Opuntia dillenii | sh | T | O | O | O | | | | | |
| CACTACEAE | Opuntia monacantha | sh | | | | | | | | | T |
| FABACEAE | Ormocarpum sennoides | sh | | | O | C | | | | | |
| MENISPERMACEAE | Pachygone ovata | tw | | | | | | | | T | |
| RUTACEAE | Pamburus missionis | tr | | O | | | | | | T | |
| PANDANACEAE | Pandanus fascicularis | sh | | | | | | | | | T |
| PASSIFLORACEAE | Passiflora foetida | v | T | O | O | O | | | | | |
| RUBIACEAE | Pavetta indica | sh | | O | | | | | | | |
| ASCLEPIADACEAE | Pentatropis capensis | tw | | | | | | | | | T |
| ASCLEPIADACEAE | Pergularia daemia | tw | | | | | | | | | T |
| ARECACEAE | Phoenix pusilla | p | T | O | C | O | | | | | T |
| ARECACEAE | Phoenix sylvestris | p | | | | | | | | T | T |
| EUPHORBIACEAE | Phyllanthus emblica | tr | | | | | | | | | T |
| EUPHORBIACEAE | Phyllanthus pinnatus | sh | | | | | | T | | | |
| EUPHORBIACEAE | Phyllanthus polyphyllus | tr | | | O | | | | | | |
| EUPHORBIACEAE | Phyllanthus reticulatus | sh | T | O | O | O | | | | | T |
| NYCTAGINACEAE | Pisonia aculeata | st | | | | | | T | | | |
| MIMOSACEAE | Pithecellobium dulce | tr | | | | | | | | | T |
| MORACEAE | Plecosperrum spinosum | st | | O | O | | | | | | |
| RUTACEAE | Pleiospermium alatum | tr | | O | | | | | | | |
| CELASTRACEAE | Pleurostyliia opposita | sh | | | O | | T | | | | |
| ANNONACEAE | Polyalthia cerasoides | sh | | | O | | | | | | |
| ANNONACEAE | Polyalthia coffeoides | sh | | | | | | T | | | |
| ANNONACEAE | Polyalthia korinti | sh | | | O | | | | | | |
| ANNONACEAE | Polyalthia longif. var.pendula | tr | | | | | | | | | T |
| ANNONACEAE | Polyalthia longifolia | tr | | | | | | | | | T |
| ANNONACEAE | Polyalthia suberosa | sh | | O | | | | | | | |
| FABACEAE | Pongamia pinnata | tr | | | | | | | T | T | T |
| URTICACEAE | Pouzolzia auriculata | sh | | | | | | T | | | |
| VERBENACEAE | Premna alstoni | sh | T | O | O | C | | | | | |
| VERBENACEAE | Premna corymbosa | sh | | | | O | | | | | |
| VERBENACEAE | Premna serratifolia | sh | | | | | T | | | | |
| VERBENACEAE | Premna tomentosa | sh | | | | O | | | | | |
| MIMOSACEAE | Prosopis juliflora | tr | | | | | | | | | T |
| RUBIACEAE | Psilanthus wightianus | sh | | | O | C | | | | | |
| RUBIACEAE | Psydrax dicoccos | tr | T | O | C | O | | | | | |
| FABACEAE | Pterocarpus marsupium | tr | | | O | | | | | | |
| CAESALPINIACEAE | Pterolobium hexapetalum | st | | | C | C | | | | | |
| STERCULIACEAE | Pterospermum canescens | tr | T | C | C | O | | | | | |
| STERCULIACEAE | Pterospermum xylocarpum | tr | | O | | C | | | | | |
| ICACINACEAE | Pyrenacantha volubilis | l | | O | O | | T | | | | |
| RUBIACEAE | Randia dumetorum | sh | T | C | C | C | | | | | |
| APOCYNACEAE | Rauvolfia tetraphylla | sh | | | | | | | | | T |
| CELASTRACEAE | Reissantia indica | st | T | O | O | C | | | | | |
| FABACEAE | Rhynchosia courtallensis | st | | | | O | | | | | |
| CONVOLVULACEAE | Rivea hypocrateriformis | l | T | C | C | C | | | | | |
| CELASTRACEAE | Salacia chinensis | sh | | | C | | T | | | | |
| SALVADORACEAE | Salvadora persica | tr | | | | | T | | | | |
| DRACAENACEAE | Sansevieria roxburghiana | bul | T | C | O | O | | | | | |
| SANTALACEAE | Santalum album | tr | | O | | | | | | | T |
| SAPINDACEAE | Sapindus emarginata | tr | T | O | C | C | | | | | |
| EUPHORBIACEAE | Sapium insigne | tr | | O | | | | | | | |
| ASCLEPIADACEAE | Sarcostemma intermedium | st | T | O | C | C | | | | | |
| HYACINHACEAE | Scilla hyacinthina | tub | | | O | C | | | | | |
| RHAMNACEAE | Scutia myrtina | st | T | O | O | C | | | | | |

| Family | Botanical Name | TY | M | G | P | H | C | Gi | R | E | W |
|-----------------|-----------------------------|-----|---|---|---|---|---|----|---|---|---|
| ASCLEPIADACEAE | Secamone emetica | tw | | | O | O | | | | | |
| EUPHORBIACEAE | Securinega leucopyrus | sh | T | O | C | O | | | | | |
| ANACARDIACEAE | Semecarpus anacardium | tr | | O | O | | | | | | |
| CAESALPINIACEAE | Senna auriculata | sh | | | C | C | | | | | |
| CAESALPINIACEAE | Senna occidentalis | ss | | | | | | | | | T |
| CAESALPINIACEAE | Senna siamea | tr | | | | | | | | | T |
| SOLANACEAE | Solanum trilobatum | v | T | C | O | O | | | | | |
| CUCURBITACEAE | Solena amplexicaulis | v | T | O | O | O | | | | | |
| ANACARDIACEAE | Spondias pinnata | tr | | | O | | | | | | |
| ACANTHACEAE | Stenosiphonium parviflorum | sh | | | | | | T | | | |
| ACANTHACEAE | Stenosiphonium russellianum | sh | | | C | C | | | | | |
| STERCULIACEAE | Sterculia foetida | tr | | | | | | T | | | |
| STERCULIACEAE | Sterculia urens | tr | | | | O | | | | | |
| BIGNONIACEAE | Stereospermum personatum | tr | | | | O | | | | | |
| MORACEAE | Streblus asper | tr | | O | O | | | | T | T | |
| LOGANIACEAE | Strychnos minor | l | T | C | C | O | | | | | |
| LOGANIACEAE | Strychnos nux-vomica | tr | | O | O | | | | T | T | T |
| LOGANIACEAE | Strychnos potatorum | tr | | O | | | | | | | |
| EUPHORBIACEAE | Suregada angustifolia | sh | | O | O | | | | | | |
| SYMPHOREMACEAE | Symphorema involucreatum | st | T | O | O | O | | | | | |
| MYRTACEAE | Syzygium caryophyllum | tr | | | | | T | | | | |
| MYRTACEAE | Syzygium cumini | tr | T | C | C | O | | | T | T | T |
| CAESALPINIACEAE | Tamarindus indica | tr | | | | | | | | T | T |
| RUBIACEAE | Tarenna asiatica | sh | T | C | C | C | | | | | |
| LORANTHACEAE | Taxillus bracteatus | sh | | | | | | T | | | |
| LORANTHACEAE | Taxillus heyneanus | sh | | | | | | T | | | |
| FABACEAE | Teramnus labialis | tw | | | | | | | | | T |
| COMBRETACEAE | Terminalia arjuna | tr | | | | | | | T | | |
| COMBRETACEAE | Terminalia bellirica | tr | | | | | | | | | T |
| COMBRETACEAE | Terminalia chebula | tr | | | O | | | | | | |
| COMBRETACEAE | Terminalia paniculata | tr | | | O | | | | | | |
| ARACEAE | Theriophonum fischeri | tub | T | O | O | O | | | | | |
| ARACEAE | Theriophonum minutum | tub | | | O | | | | | | |
| MALVACEAE | Thespesia populnea | tr | | | | | | | | | T |
| APOCYNACEAE | Thevetia peruviana | sh | | | | | | | | | T |
| MENISPERMACEAE | Tiliacora acuminata | tw | | | | | | | | T | |
| MENISPERMACEAE | Tinospora cordifolia | tw | | | | | | | | | T |
| RUTACEAE | Toddalia asiatica | st | T | O | O | O | | | | | |
| EUPHORBIACEAE | Tragia involucrata | tw | | | | | | | | | T |
| EUPHORBIACEAE | Tragia plukenetii | tw | | | | | | | | | T |
| RUBIACEAE | Tricalysia sphaerocarpa | sh | | O | O | | | | | | |
| CUCURBITACEAE | Trichosanthes cucumerina | v | | | | | | T | | | |
| ASCLEPIADACEAE | Tylophora indica | tw | T | O | C | C | | | | | |
| HYACINTHACEAE | Urginea indica | tub | | | O | | | | | | |
| APOCYNACEAE | Vallisneria spiralis | st | | O | | | | | | | |
| ORCHIDACEAE | Vanda spathulata | e | | | O | | | | | | |
| ORCHIDACEAE | Vanda tessellata | e | | | O | | | | | | |
| RHAMNACEAE | Ventilago maderaspatana | l | T | C | C | O | | | | | |
| LORANTHACEAE | Viscum orientale | sh | | O | | | | | | | |
| VERBENACEAE | Vitex altissima | tr | | | C | C | | | | | |
| VERBENACEAE | Vitex leucoxydon | tr | | | | | | | T | | |
| VERBENACEAE | Vitex negundo | sh | | | | | | | | | T |
| MELIACEAE | Walsura trifoliolata | tr | | C | O | | | | | | |
| ASCLEPIADACEAE | Wattakaka volubilis | l | | O | | | | | | | T |
| APOCYNACEAE | Wrightia tinctoria | tr | | | | C | | | | | |
| OLACACEAE | Ximenia americana | sh | | | | | | T | | | |
| RHAMNACEAE | Ziziphus mauritiana | tr | | | | | | | | | T |
| RHAMNACEAE | Ziziphus oenoplia | st | T | O | C | C | | | | | |
| RHAMNACEAE | Ziziphus xylopyra | tr | | | C | O | | | | | |

Note on identification

The species were identified with the floras of Matthew and Gamble, with verification through the Flora of Ceylon. Two genera presented particular problems and as such should be noted here so that care is taken when considering the information presented.

The genus of *Cordia* was difficult and so following Nowicke and Miller 1991 in the flora of Ceylon the species identification of the *C. myxa* group was left ambiguous to include the species *C. myxa*, *C. domestica*, *C. dichotoma*, and *C. obliqua*. *C. monoica* was positively identified, although none of the floras remarked upon the obvious diagnostic feature of the smooth greenish bark.

The genus of *Premna* also presented difficulties. *Premna alstoni* was identified from the flora of Ceylon, and then confirmed during a personal visit to the herbarium at Kew Gardens, London. *Premna tomentosa* was identified positively from all floras, but the identification of *P. corymbosa* could only follow Matthew, as in Gamble it is referred to as glabrous, which is the opposite of the collections made, in which the specimens were densely hirsute.

Results

During the survey 915 species of angiosperms were recorded, both native and exotic. The number of herbaceous plants, including grasses and sedges, was 447. For the analysis these and the majority of the sub shrubs were excluded (93 species), as were the species of *Menispermaceae* and *Vitaceae* where the plants were not of a woody nature (9 species). Also excluded were the exotic species that were obviously originally planted or introduced (23 species).

The remaining 343 species were included in the analysis.

Summary of Vegetation Components

In order to aid discussion of the TDEF and its distribution, it has been separated into distinct site types within the range as follows:

Sacred groves that have never been clear felled.

Plains forests, which have at times been treated as woodlots and so, represent secondary regrowth forests.

Hillocks, which occur on charnockite outcroppings within the range to the north of Marakanam, and towards Madras.

Coastal forest on stabilized sand dunes close to the sea.

Also included are categories for riverine vegetation, which is based on conjecture, and wayside and tank bund vegetation. The latter two include many common trees of the area, which are not necessarily indigenous to the region.

All forest types are made up of the core species plus the additional species specific to each type. They have been arranged to reflect the forest type as it is today and as a consequence the lists are not to be confused with the concept of the climax vegetation. When the lists for each forest type are considered they will contain the climax species but also opportunistic species that are now an inextractable element of the forest site type.

Core Species of TDEF

The core species of the TDEF occur throughout the range and can be found in any of the 4 site types (coastal, groves, plains forest, hillocks). They are commonly encountered and as such they can be considered to be the species, which form the backbone of the common ecology of the area. They are the generalist species.

Other species may be common within one or two of the specific site types but they are absent from the others and therefore they must have, in relation to the core species a peculiar need or adaptation; thus they are excluded from the group.

Trees

Albizia amara ssp. *amara*, *Albizia lebbek*, *Atalantia monophylla*, *Azadirachta indica*, *Cassia fistula*, *Chionanthus mala-elengi*, *Crateva magna*, *Dalbergia lanceolaria*, *Diospyros ebenum*, *Diospyros ferrea*, *Drypetes sepiaria*, *Lannea coromandelica*, *Lepisanthes tetraphylla*, *Manilkara hexandra*, *Psydrax dicoccos*, *Pterospermum canescens*, *Sapindus emarginata*, *Syzygium cumini*.

Shrubs

Benkara malabarica, *Cadaba fruticosa*, *Canthium parviflorum*, *Capparis brevispina*, *Carissa spinarum*, *Carmona retusa*, *Ecbolium ligustrinum*, *Flacourtia indica*, *Glycosmis mauritiana*, *Gmelina asiatica*, *Ixora pavetta*, *Memecylon umbellatum*, *Opuntia dillenii*, *Phyllanthus reticulatus*, *Premna alstoni*, *Randia dumetorum*, *Securinega leucopyrus*, *Tarenna asiatica*.

Palms

Borassus flabellifer, *Phoenix pusilla*.

Climbers and Stragglers

Acacia caesia, *Adenia wightiana*, *Allophylus cobbe*, *Asparagus racemosus*, *Capparis zeylanica*, *Cassytha filiformis*, *Cayratia pedata*, *Cissus vitiginea*, *Cissus quadrangularis*, *Cocculus hirsutus*, *Combretum ovalifolium*, *Dioscorea oppositifolia*, *Grewia carpinifolia*, *Gymnema sylvestre*, *Hugonia mystax*, *Jasminum angustifolium*, *Passiflora foetida*, *Reissantia indica*, *Rivea hypocrateriformis*, *Sarcostemma intermedium*, *Scutia myrtina*, *Solanum trilobatum*, *Solena amplexicaulis*, *Strychnos minor*, *Symphorema involucreatum*, *Toddalia asiatica*, *Tylophora indica*, *Ventilago maderaspatana*, *Ziziphus oenoplia*.

Twiners

Abrus precatorius, *Aristolochia indica*, *Canavalia cathartica*, *Ichnocarpus frutescens*, *Ipomoea sepiaria*.

Bulbous/tuberous/orchids

Caralluma attenuata, *Curculigo orchioides*, *Gloriosa superba*, *Sansevieria roxburghiana*, *Theriophonum fischeri*.

Additional species of the Groves

The groves are found in varying locations around Pondicherry, Cuddalore and Pudukottai. Invariably they are located on the red ferruginous soils, but occasionally they occur on the alluvial clays. Variation in species between the soil types has been noted in field observations, but nothing has been made of this in this write up as further studies are being carried out at the moment into this variation. However, *Cassine glauca* is often limited to the alluvial areas, as are *Diospyros montana*, *Pamburus missionis*, *Pleiospermium alatum*, and *Streblus asper*. *Santalum album* is found in the hedgerows on the black cotton soils. Much has been said of the protection afforded to the vegetation by the presence of the deity. All that needs to be added to this, is a confirmation that these are the only areas left that contain anything resembling the climax vegetation of the area, and as such, they are extremely valuable in terms of biodiversity conservation.

Common

Trees

Ficus benghalensis, *Garcinia spicata*, *Morinda pubescens* var. *pubescens*, *Walsura trifoliata*.

Shrubs

Dendrophthoe falcata.

Climbers and stragglers

Coccinia grandis, *Derris scandens*, *Maerua oblongifolia*, *Mukia maderaspatana*, *Opilia amentacea*.

Bulbous/tuberous/orchids

Eulophia epidendreaea.

Occasional

Trees

Aglaia elaeagnoidea, *Alangium salviifolium*, *Cassine glauca*, *Cordia myxa*, *Diospyros chloroxylon*, *Diospyros montana*, *Ficus amplissima*, *Madhuca indica*, *Pamburus missionis*, *Pleiospermium alatum*, *Pterospermum xylocarpum*, *Santalum album*, *Sapium insigne*, *Semecarpus anacardium*, *Streblus asper*, *Strychnos nux-vomica*, *Strychnos potatorum*.

Shrubs

Azima tetraantha, *Barleria noctiflora*, *Cadaba fruticosa*, *Cadaba trifoliata*, *Casearia elliptica*, *Clausena dentata*, *Dimorphocalyx glabellus*, *Eugenia bracteata*, *Mallotus philippensis*, *Mallotus rhamnifolius*, *Miliusa eriocarpa*, *Murraya paniculata*, *Ochna obtusata*, *Pavetta indica*, *Phyllanthus reticulatus*, *Polyalthia suberosa*, *Suregada angustifolia*, *Tricalysia sphaerocarpa*, *Viscum orientale*.

Climbers and Stragglers

Acacia torta, *Caesalpinia bonduc*, *Cansjera rheedii*, *Capparis sepiaria*, *Capparis zeylanica*, *Cissus repens*, *Cocculus hirsutus*, *Ctenolepis garcinii*, *Derris ovalifolia*, *Diplocyclos palmatus*, *Hugonia mystax*, *Jasminum auriculatum*, *Kedrostis foetidissima*, *Momordica charantia*, *Mucuna pruriens*, *Plecospermum spinosum*, *Pyrenacantha volubilis*, *Vallaris solanacea*, *Wattakaka volubilis*.

Bulbous/tuberous/orchids

Curculigo orchioides, *Theriophonum fischeri*.

Additional species of the Plains Forest

The plains forest referred to here is synonymous with the reserve forests that occur on the inland plains, which have always had a degree of human interference and a history of management and extraction. As a consequence they can not be studied as a climax forest type, but rather they represent various stages of the ecological cycle that would be present in the natural forest away from the influences of humanity. They are secondary regrowth forests. The species number in these forest types is often higher as they contain a wider variety of habitats and cover larger areas.

Common

Trees

Acacia leucophloea, Bauhinia racemosa, Buchanania axillaris, Chloroxylon swietenia, Dalbergia lanceolaria, Dichrostachys cinerea, Diospyros melanoxylon, Ehretia pubescens, Garcinia spicata, Vitex altissima, Ziziphus xylopyra.

Shrubs

Cadaba fruticosa, Dendrophtoe falcata, Euphorbia antiquorum, Salacia chinensis, Senna auriculata, Stenosiphonium russellianum.

Climbers and stragglers

Cansjera rheedii, Derris scandens, Hugonia mystax, Jasminum auriculatum, Mimosa intsia, Pterolobium hexapetalum.

Occasional

Trees

Acacia chundra, Acacia horrida, Alangium salviifolium, Albizia odoratissima, Anogeissus latifolia, Butea monosperma, Cassine glauca, Cordia myxa, Diospyros chloroxylon, Dolichandrone falcata, Euphorbia nivulia, Ficus benghalensis, Gyrocarpus americanus, Phyllanthus polyphyllus, Pterocarpus marsupium, Semecarpus anacardium, Spondias pinnata, Streblus asper, Strychnos nux-vomica, Terminalia chebula, Terminalia paniculata, Walsura trifoliolata.

Shrubs

Antidesma ghesaembilla, Azima tetracantha, Breynia retusa, Breynia vitis-idaea, Capparis divaricata, Carissa salicina, Casearia elliptica, Clausena dentata, Cleistanthus collinus, Dimorphocalyx glabellus, Dodonaea viscosa var. angustifolia, Erythroxylum monogynum, Gardenia gummifera, Grewia hirsuta, Jasminum cuspidatum, Ochna obtusata, Ormocarpum sennoides, Phyllanthus reticulatus, Pleurostyliia opposita, Polyalthia cerasoides, Polyalthia korinti, Psilanthus wightianus, Suregada angustifolia, Tricalysia sphaerocarpa.

Climbers and stragglers

Basella alba, Calycopteris floribunda, Capparis sepiaria, Coccinia grandis, Cucumis melo, Cryptostegia grandiflora, Derris scandens, Diplocyclos palmatus, Kedrostis foetidissima, Merremia hederacea, Olax scandens, Opilia amentacea, Plecospermum spinosum, Pyrenacantha volubilis, Secamone emetica, Strychnos colubrina, Toddalia asiatica.

Bulbous/tuberous/orchids

Caralluma adscendens, Caralluma lasiantha, Curculigo orchioides, Eulophia epidendrea, Habenaria roxburghii, Scilla hyacinthina, Theriophonum fischeri, Theriophonum minutum, Urginea indica, Vanda spathulata, Vanda tessellata.

Additional species of the Hillocks

The hillocks present a diverse habitat as soil conditions and moisture availability vary greatly within the habitat; thus the variation in species composition is high. The difference between the summit of the hillocks and the apron around their base is great. In fact the forest at the bottom of the hillocks is much akin to the plains forest type. It is most noticeable that when one moves from the flat land to the slopes of the hillock certain characteristic species appear, most noticeably *Barleria longiflora*.

Common

Trees

Bauhinia racemosa, *Cordia monoica*, *Diospyros chloroxylon*, *Ehretia pubescens*, *Ficus mollis*, *Gyrocarpus americanus*, *Pterospermum xylocarpum*, *Vitex altissima*, *Wrightia tinctoria*.

Shrubs

Barleria longiflora, *Cadaba fruticosa*, *Euphorbia antiquorum*, *Ormocarpum senoides*, *Psilanthus wightianus*, *Senna auriculata*, *Stenosiphonium russellianum*.

Climbers and stragglers

Cissus pallida, *Grewia flavescens*, *Hugonia mystax*, *Pterolobium hexapetalum*.

Bulbous/tuberous/orchids

Chlorophytum tuberosum, *Curculigo orchioides*, *Iphigenia indica*, *Scilla hyacinthina*.

Occasional

The occasional species of the hillocks are interesting in that they are found more commonly as one moves inland to the hillocks around the Gingee area. They are species of a different forest type that have somehow managed to survive and propagate far outside the boundaries of the normal range.

Trees

Butea monosperma, *Dichrostachys cinerea*, *Ficus arnottiana*, *Firmiana colorata*, *Givotia rottleriformis*, *Sterculia urens*, *Stereospermum personatum*, *Ziziphus xylopyra*.

Shrubs

Barleria prionitis, *Cassia montana*, *Cleistanthus collinus*, *Dodonaea viscosa* var. *angustifolia*, *Gardenia latifolia*, *Grewia hirsuta*, *Helicteres isora*, *Phyllanthus reticulatus*, *Premna corymbosa*, *Premna tomentosa*.

Climbers and stragglers

Ctenolepis garcinii, *Dioscorea pentaphylla*, *Dioscorea tomentosa*, *Grewia orbiculata*, *Ipomoea staphylyna*, *Mimosa intsia*, *Momordica charantia*, *Mukia maderaspatana*, *Olax scandens*, *Rhynchosia courtallensis*, *Secamone emetica*.

Bulbous/tuberous/orchids

Caralluma adscendens, *Theriophonum fischeri*.

Additional species of the Coastal Groves

Of the additional species associated with this forest site type some species are associated with the freer draining sand, such as *Eugenia bracteata*, and *Capparis rotundifolia*. Others are associated with the under lying clay that can be termed halomorphic, such as *Salvadora persica*, *Premna serratifolia*, and *Clerodendrum inerme*, whereas a species such as *Syzygium caryophyllum* is associated with an abundant supply of close ground water. Due to this variation and the desire to avoid too many site types, the concept of common and occasional was abandoned in this site type.

Trees

Aglaia elaeagnoidea, *Calophyllum inophyllum*, *Ficus tsjakela*, *Garcinia spicata*, *Hibiscus tiliaceus*, *Salvadora persica*, *Syzygium caryophyllum*.

Shrubs

Catharanthus roseus, Clerodendrum inerme, Dendroptoe falcata, Eugenia bracteata, Pleurostyliia opposita, Premna serratifolia, Salacia chinensis.

Climbers and stragglers

Aristolochia bracteata, Calamus rotang, Capparis rotundifolia, Derris ovalifolia, Derris scandens, Pyrenacantha volubilis.

Gingee Species

Most of the TDEF species occur all the way inland to Gingee and the surrounding hillocks. However there is a group of species that are found on the Gingee hills that have not been recorded on the smaller hillocks closer to the coast. They are listed here as possible other species that in the past may have occurred on the coastal hillocks, but due to human pressure have become locally extinct there.

Trees

Atalantia racemosa, Celtis philippensis, Cochlospermum religiosum, Commiphora caudata, Dalbergia latifolia, Deccania pubescens var. pubescens, Diospyros affinis, Drypetes porteri, Erythrina suberosa, Ficus albipila, Ficus microcarpa, Garuga pinnata, Grewia tiliifolia, Hildegardia populifolia, Hymenodictyon orixense, Sterculia foetida.

Shrubs

Barleria nitida, Bauhinia tomentosa, Euphorbia tortilis, Gardenia resinifera, Hibiscus purpureus, Kleinia grandiflora, Mallotus stenanthus, Mussaenda tomentosa, Ochna lanceolata, Phyllanthus pinnatus, Polyalthia coffeoides, Pouzolzia auriculata, Stenosiphonium parviflorum, Taxillus bracteatus, Taxillus heyneanus, Ximenia americana.

Climbers and stragglers

Argyreia osyrensis, Cayratia carnosa, Jasminum azoricum var. azoricum, Loeseneriella obtusifolia, Mallotus repandus, Pisonia aculeata, Trichosanthes cucumerina.

Bulbous/tuberous/orchids

Caralluma umbellata, Crinum latifolium, Cymbidium aloifolium.

Riverine

Within the region no real areas of riparian vegetation remain, however with the occurrence of species in areas of perennial moisture, and with field observations from other areas, it is felt that these species would constitute this ecological type within the TDEF

Trees

Barringtonia acutangula, Mitragyna parvifolia, Pongamia pinnata, Streblus asper, Strychnos nux-vomica, Syzygium cumini, Terminalia arjuna, Vitex leucoxydon.

Climber

Mucuna gigantea.

Tank bunds

These species are commonly associated with the tanks and *eyries* in the TDEF area.

Trees

Acacia nilotica ssp. indica, Alangium salviifolium, Barringtonia acutangula, Butea monosperma, Cassia fistula, Ficus religiosa, Madhuca indica, Mitragyna parvifolia, Pamburus missionis, Ficus benghalensis, Streblus asper, Strychnos nux-vomica, Syzygium cumini, Tamarindus indica.

Palms

Borassus flabellifer, Phoenix pusilla.

Stragglers and climbers

Ipomoea fistulosa, Pachygone ovata, Tiliacora acuminata.

Wayside

The roadsides and field sides of the area contain many species that may either be part of remnant forest, or species that have been identified as useful or they will be opportunistic species that move along areas of disturbance. This list is not exhaustive, only the most important or unusual have been included. This category also includes naturalized exotics.

Trees

Aegle marmelos, *Alangium salviifolium*, *Albizia lebeck*, *Anacardium occidentale*, *Azadirachta indica*, *Bombax ceiba*, *Bridelia retusa*, *Butea monosperma*, *Careya arborea*, *Cassine glauca*, *Casuarina equisetifolia*, *Commiphora berryi*, *Cordia myxa*, *Delonix elata*, *Ficus amplissima*, *Ficus benghalensis*, *Ficus religiosa*, *Ficus tinctoria*, *Hardwickia binata*, *Heterophragma adenophyllum*, *Lannea coromandelica*, *Limonia acidissima*, *Madhuca indica*, *Mimusops elengi*, *Morinda pubescens* var. *pubescens*, *Phyllanthus emblica*, *Pithecellobium dulce*, *Polyalthia longifolia* var. *pendula*, *Polyalthia longifolia*, *Pongamia pinnata*, *Prosopis juliflora*, *Santalum album*, *Senna siamea*, *Strychnos nux-vomica*, *Syzygium cumini*, *Tamarindus indica*, *Terminalia bellirica*, *Thespesia populnea*, *Ziziphus mauritiana*.

Shrubs

Annona squamosa, *Calotropis gigantea*, *Casearia elliptica*, *Cereus pterogonus*, *Euphorbia tirucalli*, *Ficus hispida*, *Jatropha glandulifera*, *Jatropha gossypifolia*, *Jatropha tanjorensis*, *Justicia adhatoda*, *Lantana camara* var. *aculeata*, *Lantana camara* var. *splendens*, *Mallotus philippensis*, *Mallotus rhamniifolius*, *Ochna obtusata*, *Opuntia monacantha*, *Pandanus fascicularis*, *Phyllanthus reticulatus*, *Rauvolfia tetraphylla*, *Senna occidentalis*, *Thevetia peruviana*, *Vitex negundo*.

Palms

Borassus flabellifer, *Phoenix pusilla*, *Phoenix sylvestris*.

Climbers and stragglers

Argyrea cymosa, *Caesalpinia bonduc*, *Cardiospermum halicacabum* var. *luridum*, *Cardiospermum halicacabum* var. *microcarpum*, *Cissampelos pareira*, *Clitoria ternatea*, *Galactia tenuiflora*, *Leptadenia reticulata*, *Mallotus repandus*, *Mukia maderaspatana*, *Pentatropis capensis*, *Pergularia daemia*, *Teramnus labialis*, *Tinospora cordifolia*, *Tragia involucrata*, *Tragia plukenetii*, *Wattakaka volubilis*.

Discussion

The results presented are not supposed to be those attained by a rigorous scientific method that can be utilized for comparison between other forest types within India and other tropical areas. They are intended as an addition to the knowledge about the TDEF as a forest type that is enigmatic due to its scarcity. These notes are more than anything offered as an aid for conservation, helping to identify which species are needed to be replanted in the degenerated areas of forest, and also in new areas for afforestation.

Limitations of the Methodology

Information is very limited for the climax forest on the differing soil types. Due to the fact that very few groves and no reserve forests are found on the better soils, (the alluvial clays utilized for rice growing), we can have little idea of the species composition of these areas. The little information we can glean comes from the wayside trees and shrubs found in the area and also the occasional groves left, but they are of such small number that corroborative evidence is totally lacking.

Within the area it is uncertain which species have been introduced, either in sacred groves traditionally for minor forest products, or by the forest department in previous eras for enrichment planting. Information still needs to be gathered on these issues. Some species under question include *Anogeissus latifolia*, *Buchania axillaris*, *Gardenia gummifera*, *Maduca indica*, *Terminalia bellerica*, and *Terminalia paniculata*.

Extinction of high value timber trees. Some species may have been present, but wiped out due to over exploitation and their low tolerance to interference, for example *Dalbergia latifolia*, *Pterocarpus marsupium*, and *Terminalia paniculata*.

The current and future value of these forests to humanity

At present when we consider this forest type in all its forms there are over 1000 plant species occurring within it. Of these 500 are herbaceous and grasses, the others are woody to a greater or lesser extent. Over half of these species have a medicinal use, and others have cultural or religious uses. Consequently conserving the forest in all its diversity will maintain this resource base for those that can or need to utilize it.

The forest, with its dense and evergreen characteristic, is an excellent conservator of soil, and when intact acts as an effective sponge for the monsoon rains that are characteristic of the area. In watershed management the forest is very effective, particularly due to its evergreen nature, maintaining a constant ground cover that breaks up the rain's impact. Also the nature of the leaves allows a persistent mulch layer to develop in the pristine forest.

The economic value of the forest is little investigated, and although the potential for timber extraction is limited, the development of sustainable harvesting of MFP's is a possibility for the members of society at a low subsistence level.

Other Auroville Resources on TDEF

Auroville Botanical Garden:

http://www.auroville.org/environment/botanical_garden/introduction.htm

Shakti Herbarium at Auroville:

http://www.auroville.org/environment/env_shakti.htm

Article in "Auroville Today" on TDEF (April 2002):

http://www.auroville.org/journals&media/avtoday/april_2002/tdef%20project.htm

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Appendix 1: The mammals of the TDEF

| Family | Scientific name | Author | Common name |
|----------------|--------------------------------------|------------------|--------------------------------|
| Bovidae | <i>Antilope cervicapra</i> | Linnaeus | Black buck |
| Canidae | <i>Canis aureus</i> | Linnaeus | Jackal |
| Canidae | <i>Vulpes bengalensis</i> | Shaw | Indian fox |
| Ceropithecidae | <i>Macaca radiata</i> | Geoffroy | Bonnet macaque |
| Ceropithecidae | <i>Presbytis entellus</i> | Dufresne | Common langur |
| Cervidae | <i>Axis axis</i> | Erxleben | Chital |
| Cervidae | <i>Muntiacus muntjak</i> | Zimmermann | Barking deer |
| Chiroptera | <i>Cynopterus sphinx</i> | Vahl | Short nosed fruit bat |
| Chiroptera | <i>Kerivoula picta</i> | Pallas | Painted bat |
| Chiroptera | <i>Megaderma lyra</i> | Geoffroy | Indian false vampire bat |
| Chiroptera | <i>Pipistrellus coromandra</i> | Gray | Indian pipistrelle |
| Chiroptera | <i>Pteropus giganteus</i> | Brunnich | Indian flying fox |
| Erinaceidae | <i>Paraechinus micropus</i> | Blyth | Pale hedgehog |
| Felidae | <i>Felis chaus</i> | Guldenstaedt | Jungle cat |
| Herpestidae | <i>Herpestes edwardsi</i> | Geoffroy | Common mongoose |
| Herpestidae | <i>Herpestes smithi</i> | Gray | Ruddy mongoose |
| Leporidae | <i>Lepus nigricollis nigricollis</i> | F.Cuvier | Blacknaped hare |
| Lorisidae | <i>Loris tardigradus</i> | Linnaeus | Slender loris |
| Muridae | <i>Bandicota benghlensis</i> | Gray & Hardwicke | Indian mole rat |
| Muridae | <i>Bandicota indica</i> | Bechstein | Bandicoot |
| Muridae | <i>Golunda ellioti</i> | Gray | Indian bush rat |
| Muridae | <i>Mus booduga</i> | Gray | Indian field mouse |
| Muridae | <i>Mus musculus</i> | Linnaeus | House mouse |
| Muridae | <i>Rattus rattus</i> | Linnaeus | Common house rat |
| Muridae | <i>Vandeleuria oleracea</i> | Bennett | Long tailed tree mouse |
| Mustelidae | <i>Mellivora capensis</i> | Schreber | Ratel |
| Pholidota | <i>Manis crassicaudata</i> | Gray | Pangolin |
| Rodentia | <i>Hystrix indica</i> | Kerr | Indian porcupine |
| Scuiridae | <i>Funambulus palmarum</i> | Linnaeus | Three striped palm squirrel |
| Scuiridae | <i>Ratufa indica</i> | Erxelben | Indian giant squirrel |
| Scuiridae | <i>Tatera indica</i> | Hardwicke | Indian gerbil |
| Soricidae | <i>Suncus murinus</i> | Linnaeus | Grey musk shrew |
| Suidae | <i>Sus scrofa</i> | Linnaeus | Wild boar |
| Ursidae | <i>Melursus ursinus</i> | Shaw | Sloth bear |
| Viverridae | <i>Paradoxurus hermaphroditus</i> | Pallas | Comman palm civet or Toddy cat |
| Viverridae | <i>Viverra zibetha</i> | Linnaeus | Large india civet |

Appendix 2: The reptiles of the TDEF

| Family | Scientific name | Author | Common name |
|---------------|-------------------------------|--------------|---------------------------|
| BOIDAE | <i>Eryx conicus</i> | Schneider | Common sand boa |
| BOIDAE | <i>Eryx johni</i> | Russell | Red sand boa |
| COLUBRIDAE | <i>Ahaetulla nasutus</i> | Lacepede | Vine snake |
| COLUBRIDAE | <i>Amphiesma stolata</i> | Linn | Striped keelback |
| COLUBRIDAE | <i>Atretium schistosum</i> | Daudin | Olive keelback watersnake |
| COLUBRIDAE | <i>Boiga trigonata</i> | Schneider | Common cat snake |
| COLUBRIDAE | <i>Dendrelaphis tristis</i> | Daudin | Bronzeback tree snake |
| COLUBRIDAE | <i>Elaphe helena</i> | Daudin | Trinklet snake |
| COLUBRIDAE | <i>Lycodon aulicus</i> | Linnaeus | Common wolf snake |
| COLUBRIDAE | <i>Lycodon striatus</i> | Shaw | Shaw's wolf snake |
| COLUBRIDAE | <i>Oligodon arnensis</i> | Shaw | Banded kukri |
| COLUBRIDAE | <i>Oligodon taeniolaotus</i> | Jerdon | Russell's kukri snake |
| COLUBRIDAE | <i>Ptyas mucosus</i> | Linn. | Rat snake |
| COLUBRIDAE | <i>Xenochropis piscator</i> | Schneider | Chequered keelback |
| ELAIDAE | <i>Bungarus caeruleus</i> | Schneider | Common krait |
| ELAPIDAE | <i>Naja naja</i> | Linn. | Indian cobra |
| TYPHLOPHIDAE | <i>Typhlina bramina</i> | Daudin | Blind snake |
| VIPERIDAE | <i>Echis carinatus</i> | Schneider | Saw scaled viper |
| VIPERIDAE | <i>Vipera russelli</i> | Shaw | Russell's viper |
| AGAMIDAE | <i>Calotes calotes</i> | Linn. | Southern green calotes |
| AGAMIDAE | <i>Calotes rouxi</i> | Dum. & Bibr. | Forest calotes |
| AGAMIDAE | <i>Calotes vericolor</i> | Daudin | Common garden lizard |
| CHAMAELONIDAE | <i>Chamaeleon zeylanicus</i> | Laurenti | Indian chameleon |
| GEKKONIDAE | <i>Hemidactylus frenatus</i> | Schlegel | Southern house gecko |
| GEKKONIDAE | <i>Hemidactylus maculatus</i> | Dum. & Bibr. | Rock gecko |
| SCINCIDAE | <i>Mabuya carinata</i> | Schneider | Common skink |
| SCINCIDAE | <i>Riopa punctata</i> | Gmelin | Snake skink |
| TESTUDINIDAE | <i>Geochelone elegans</i> | Schoepff | Starred tortoise |
| VARANIDAE | <i>Varanus bengalensis</i> | Scheider | Common indian monitor |

Appendix 3: The Birds of the TDEF

(Note – The number refers to Salim Ali’s reference number)

| Ref | Family | Scientific name | Author | Common name |
|-----|---------------|-----------------------------------|--------------|--------------------------------|
| 74 | ACCIPITRIDAE | <i>Pernis ptilorhyncus</i> | Temminck | Honey Buzzard |
| 77 | ACCIPITRIDAE | <i>Accipiter badius</i> | Gmelin | Shikra |
| 80 | ACCIPITRIDAE | <i>Virgatus besra</i> | Temminck | Besra Sparrow-Hawk |
| 108 | ACCIPITRIDAE | <i>Spilornis cheela</i> | Latham | Crested Serpent Eagle |
| 119 | FALCONIDAE | <i>Falco tinnunculus</i> | Linnaeus | Kestrel |
| 122 | PHASIANIDAE | <i>Francolinus pondicerianus</i> | Gmelin | Grey Partridge |
| 135 | PHASIANIDAE | <i>Pavo cristatus</i> | Linnaeus | Common Peafowl |
| 138 | PHASIANIDAE | <i>Turnix suscitator</i> | Gmelin | Bustard Quail |
| 163 | CHARADRIIDAE | <i>Vanellus malabaricus</i> | Boddaert | Yellow-Wattled Lapwing |
| 222 | COLUMBIDAE | <i>Treron bicincta</i> | Jerdon | Orangebreasted Green Pigeon |
| 233 | COLUMBIDAE | <i>Streptopelia chinensis</i> | Scopoli | Spotted Dove |
| 237 | PSITTACIDAE | <i>Psittacula krameri</i> | Scopoli | Roseringed Parakeet |
| 243 | CUCULIDAE | <i>Clamator coromandus</i> | Linnaeus | Redwinged Crested Cuckoo |
| 244 | CUCULIDAE | <i>Clamator jacobinus</i> | Boddaert | Pied Crested Cuckoo |
| 245 | CUCULIDAE | <i>Cuculus varius</i> | Vahl | Common Hawk-Cuckoo |
| 249 | CUCULIDAE | <i>Cacomantis passerinus</i> | Vahl | Plaintive Cuckoo |
| 251 | CUCULIDAE | <i>Eudynamys scolopacea</i> | Linnaeus | Koel |
| 255 | CUCULIDAE | <i>Centropus sinensis</i> | Stephans | Coucal |
| 257 | STRIGIDAE | <i>Tyto alba</i> | Scopoli | Barn Owl |
| 260 | STRIGIDAE | <i>Otus bakkamoena</i> | Pennant | Collared Scops Owl |
| 261 | STRIGIDAE | <i>Bubo bubo</i> | Linnaeus | Indian Great Horned Owl |
| 267 | STRIGIDAE | <i>Athene brama</i> | Temminck | Spotted Owlet |
| 274 | CAPRIMULGIDAE | <i>Caprimulgus asiaticus</i> | Latham | Nightjar |
| 278 | APODIDAE | <i>Apus affinis</i> | J.E. Gray | House Swift |
| 279 | APODIDAE | <i>Cypsiurus parvus</i> | Lichtenstein | Palm Swift |
| 284 | ALCEDINIDAE | <i>Alcedo atthis</i> | Linnaeus | Common Kingfisher |
| 289 | ALCEDINIDAE | <i>Halcyon smyrnensis</i> | Linnaeus | Whitebreasted Kingfisher |
| 294 | MEROPIDAE | <i>Merops phillippinus</i> | Linnaeus | Bluetailed Bee-eater |
| 295 | MEROPIDAE | <i>Merops orientalis</i> | Latham | Green Bee-eater |
| 298 | CORACIIDAE | <i>Coracias benghalensis</i> | Linnaeus | Indian Roller |
| 300 | UPUPIDAE | <i>Upupa epops</i> | Linnaeus | Hoopoe |
| 314 | CAPITONIDAE | <i>Megalaima haemacephala</i> | Muller | Crimsonbreasted Barbet |
| 320 | PICIDAE | <i>Dinopium benghalensis</i> | Linnaeus | Lesser Goldenbacked Woodpecker |
| 329 | PITTIDAE | <i>Pitta brachyura</i> | Linnaeus | Indian Pitta |
| 332 | ALAUDIDAE | <i>Mirafra assamica</i> | Horsfield | Bush Lark |
| 342 | HIRUNDINIDAE | <i>Hirundo rustica</i> | Linnaeus | Swallow |
| 346 | HIRUNDINIDAE | <i>Hirundo daurica</i> | Linnaeus | Redrumped Swallow |
| 351 | LANIIDAE | <i>Lanius cristatus</i> | Linnaeus | Brown Shrike |
| 352 | ORIOOLIDAE | <i>Oriolus oriolus</i> | Linnaeus | Golden Oriole |
| 356 | DICRURIDAE | <i>Dicrurus adsimilis</i> | Bechstein | Black Drongo |
| 357 | DICRURIDAE | <i>Dicrurus leucophaeus</i> | Vieillot | Ashy Drongo |
| 363 | ARTAMIDAE | <i>Artamus fuscus</i> | Vieillot | Ashy Swallow-Shrike |
| 366 | STURNIDAE | <i>Sturnus pagodarum</i> | Gmelin | Brahminy Mynah |
| 367 | STURNIDAE | <i>Sturnus roseus</i> | Linnaeus | Rosy Pastor |
| 370 | STURNIDAE | <i>Acridotheres tristis</i> | Linnaeus | Common Mynah |
| 377 | CORVIDAE | <i>Dendrocitta vagabunda</i> | Latham | Tree Pie |
| 380 | CORVIDAE | <i>Corvus splendens</i> | Vieillot | House Crow |
| 381 | CORVIDAE | <i>Corvus macrorhynchus</i> | Wagler | Jungle Crow |
| 385 | CAMPEPHAGIDAE | <i>Tephrodornis pondicerianus</i> | Gmelin | Common Wood Shrike |
| 387 | CAMPEPHAGIDAE | <i>Coracina melanoptera</i> | Ruppell | Blackheaded Cuckoo-Shrike |
| 391 | CAMPEPHAGIDAE | <i>Pericrocotus cinnamomous</i> | Linnaeus | Small Minivet |
| 393 | IRENIDAE | <i>Aegithina tiphia</i> | Linnaeus | Common Iora |
| 404 | PYCNONOTIDAE | <i>Pycnonotus cafer</i> | Linnaeus | Redvented Bulbul |
| 407 | PYCNONOTIDAE | <i>Pycnonotus luteolus</i> | Lesson | Whitebrowed Bulbul |
| 416 | MUSCICAPIDAE | <i>Turdoides caudatus</i> | Dumont | Common Babbler |
| 419 | MUSCICAPIDAE | <i>Turdoides malcolmi</i> | Sykes | Large Grey Babbler |
| 422 | MUSCICAPIDAE | <i>Turdoides affinis</i> | Jerdon | Whiteheaded Babbler |

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| 434 MUSCICAPIDAE | <i>Muscicapa latirostris</i> | Raffles | Brown Flycatcher |
| 435 MUSCICAPIDAE | <i>Muscicapa muttui</i> | Layard | Brownbreasted Flycatcher |
| 443 MUSCICAPIDAE | <i>Muscicapa rubeculoides</i> | Vigors | Bluethroated Flycatcher |
| 450 MUSCICAPIDAE | <i>Terpsiphone paradisi</i> | Linnaeus | Paradise Flycatcher |
| 459 MUSCICAPIDAE | <i>Orthotomus sutorius</i> | Pennant | Tailorbird |
| 474 MUSCICAPIDAE | <i>Erithacus brunneus</i> | Hodgson | Blue Chat |
| 475 MUSCICAPIDAE | <i>Copsycus saularis</i> | Linnaeus | Magpie Robin |
| 485 MUSCICAPIDAE | <i>Saxicoloides fulicata</i> | Linnaeus | Indian Robin |
| 490 MUSCICAPIDAE | <i>Zootera citrina citrina</i> | Latham | Orangeheaded Ground Thrush |
| 491 MUSCICAPIDAE | <i>Zootera citrina cyanotus</i> | Jardine & Selby | Whitethroated Ground Thrush |
| 502 MOTACILLIDAE | <i>Motacilla indica</i> | Gmelin | Forest Wagtail |
| 507 MOTACILLIDAE | <i>Motacilla maderaspatensis</i> | Gmelin | Large Pied Wagtail |
| 509 DICAETIDAE | <i>Dicaeum erythrorhynchos</i> | Latham | Tickell's Flowerpecker |
| 513 NECTARINIIDAE | <i>Nectarinia zeylonica</i> | Linnaeus | Purplerumped Sunbird |
| 515 NECTARINIIDAE | <i>Nectarinia lotenia</i> | Linnaeus | Loten's Sunbird |
| 516 NECTARINIIDAE | <i>Nectarinia asiatica</i> | Latham | Purple Sunbird |
| 520 ZOSTEROPIDAE | <i>Zosterops palpebrosa</i> | Temminck | White-eye |
| 523 PLOCEIDAE | <i>Ploceus philippinus</i> | Linnaeus | Baya Weaverbird |
| 530 PLOCEIDAE | <i>Lonchura striata</i> | Linnaeus | Whitebacked Munia |
| 533 PLOCEIDAE | <i>Lonchura malacca</i> | Linnaeus | Blackheaded Munia |
| 534 FRINGILLINAE | <i>Carpodacus erythrinus</i> | Pallas | Rosefinch |

Appendix 4 Botanical names with Authors, by Family

| FAMILY | BOTANICAL NAMES |
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| ACANTHACEAE | Barleria longiflora L.f. |
| ACANTHACEAE | Barleria nitida Nees |
| ACANTHACEAE | Barleria noctiflora L.f. |
| ACANTHACEAE | Barleria prionitis L. |
| ACANTHACEAE | Ecbolium ligustrinum (Vahl) Vollesen |
| ACANTHACEAE | Justicia adhatoda L. |
| ACANTHACEAE | Stenosiphonium parviflorum T.Anderson |
| ACANTHACEAE | Stenosiphonium russellianum Nees |
| ALANGIACEAE | Alangium salviifolium (L.f.) Wangerin |
| AMARYLLIDACEAE | Crinum latifolium L. |
| ANACARDIACEAE | Anacardium occidentale L. |
| ANACARDIACEAE | Buchanania axillaris (Desr.) T.P.Ramamoorthy |
| ANACARDIACEAE | Lanea coromandelica (Houtt.) Merr. |
| ANACARDIACEAE | Semecarpus anacardium L.f. |
| ANACARDIACEAE | Spondias pinnata (L.f.) Kurz |
| ANNONACEAE | Annona squamosa L. |
| ANNONACEAE | Miliusa eriocarpa Dunn |
| ANNONACEAE | Polyalthia cerasoides (Roxb.) Beddome |
| ANNONACEAE | Polyalthia coffeoides (Hook.f. et Thomson) Benth. et Hook.f. ex Beddome |
| ANNONACEAE | Polyalthia korinti (Dunal) Thwaites |
| ANNONACEAE | Polyalthia longifolia (Sonn.) Thwaites |
| ANNONACEAE | Polyalthia longifolia (Sonn.) Thwaites var. pendula |
| ANNONACEAE | Polyalthia suberosa (Roxb.) Thwaites |
| ANTHERICACEAE | Chlorophytum tuberosum (Roxb.) Baker |
| APOCYNACEAE | Carissa salicina Lam. |
| APOCYNACEAE | Carissa spinarum L. |
| APOCYNACEAE | Catharanthus roseus (L.) G.Don |
| APOCYNACEAE | Ichnocarpus frutescens (L.) R.Br. |
| APOCYNACEAE | Rauvolfia tetraphylla L. |
| APOCYNACEAE | Thevetia peruviana (Pers.) Merr. |
| APOCYNACEAE | Vallisneria spiralis (L.) Kuntze |
| APOCYNACEAE | Wrightia tinctoria (Roxb.) R.Br. |
| ARACEAE | Theriophonum fischeri Sivadasan |
| ARACEAE | Theriophonum minutum (Willd.) Baillon |
| ARECACEAE | Borassus flabellifer L. |
| ARECACEAE | Calamus rotang L. |
| ARECACEAE | Phoenix pusilla Gaertner |
| ARECACEAE | Phoenix sylvestris (L.) Roxb. |
| ARISTOLOCHIACEAE | Aristolochia bracteata Retz. |
| ARISTOLOCHIACEAE | Aristolochia indica L. |
| ASCLEPIADACEAE | Calotropis gigantea (L.) R.Br. |
| ASCLEPIADACEAE | Caralluma adscendens (Roxb.) Haw. |
| ASCLEPIADACEAE | Caralluma attenuata Wight |
| ASCLEPIADACEAE | Caralluma lasiantha (Wight) N.E.Br. |
| ASCLEPIADACEAE | Caralluma umbellata Haw. |
| ASCLEPIADACEAE | Gymnema sylvestre (Retz.) R.Br. ex Roemer et Schultes |
| ASCLEPIADACEAE | Leptadenia reticulata (Retz.) Wight et Arn. |
| ASCLEPIADACEAE | Pentstemon capensis (L.f.) Bullock |
| ASCLEPIADACEAE | Pergularia daemia (Forsskal) Chiov. |
| ASCLEPIADACEAE | Sarcostemma intermedium Decne. |
| ASCLEPIADACEAE | Secamone emetica (Roxb.) R.Br. ex Schultes |
| ASCLEPIADACEAE | Tylophora indica (Burm.f.) Merr. |
| ASCLEPIADACEAE | Wattakaka volubilis (L.f.) Stapf |
| ASPARAGACEAE | Asparagus racemosus Willd. |
| ASTERACEAE | Kleinia grandiflora (DC.) N.Rani |
| BASELLACEAE | Basella alba L. |
| BIGNONIACEAE | Dolichandrone falcata (DC.) Seemann |
| BIGNONIACEAE | Heterophragma adenophyllum (Wallich ex G.Don) Seemann ex Benth. et Hook.f. |
| BIGNONIACEAE | Stereospermum personatum (Hassk.) Chatterjee |

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| BOMBACACEAE | <i>Bombax ceiba</i> L. |
| BORAGINACEAE | <i>Carmona retusa</i> (Vahl) Masam. |
| BORAGINACEAE | <i>Cordia monoica</i> Roxb. |
| BORAGINACEAE | <i>Cordia myxa</i> L. |
| BORAGINACEAE | <i>Ehretia pubescens</i> Benth. |
| BURSERACEAE | <i>Commiphora berryi</i> (Arn.) Engl. |
| BURSERACEAE | <i>Commiphora caudata</i> (Wight et Arn.) Engl. |
| BURSERACEAE | <i>Garuga pinnata</i> Roxb. |
| CACTACEAE | <i>Cereus pterogonus</i> Lemaire |
| CACTACEAE | <i>Opuntia dillenii</i> (Ker Gawler) Haw. |
| CACTACEAE | <i>Opuntia monacantha</i> (Willd.) Haw. |
| CAESALPINIACEAE | <i>Bauhinia racemosa</i> Lam. |
| CAESALPINIACEAE | <i>Bauhinia tomentosa</i> L. |
| CAESALPINIACEAE | <i>Caesalpinia bonduc</i> (L.) Roxb. |
| CAESALPINIACEAE | <i>Cassia fistula</i> L. |
| CAESALPINIACEAE | <i>Cassia montana</i> Heyne ex Roth |
| CAESALPINIACEAE | <i>Delonix elata</i> (L.) Gamble |
| CAESALPINIACEAE | <i>Hardwickia binata</i> Roxb. |
| CAESALPINIACEAE | <i>Pterolobium hexapetalum</i> (Roth) Santapau et Wagh |
| CAESALPINIACEAE | <i>Senna auriculata</i> (L.) Robx. |
| CAESALPINIACEAE | <i>Senna occidentalis</i> Roxb. |
| CAESALPINIACEAE | <i>Senna siamea</i> (Lam.) Irwin et Barneby |
| CAESALPINIACEAE | <i>Tamarindus indica</i> L. |
| CAPPARACEAE | <i>Cadaba fruticosa</i> (L.) Druce |
| CAPPARACEAE | <i>Cadaba trifoliata</i> (Roxb.) Wight et Arn. |
| CAPPARACEAE | <i>Capparis brevispina</i> DC. |
| CAPPARACEAE | <i>Capparis divaricata</i> Lam. |
| CAPPARACEAE | <i>Capparis rotundifolia</i> Rottl. |
| CAPPARACEAE | <i>Capparis sepiaria</i> L. |
| CAPPARACEAE | <i>Capparis zeylanica</i> L. |
| CAPPARACEAE | <i>Crateva magna</i> (Lour.) DC. |
| CAPPARACEAE | <i>Maerua oblongifolia</i> (Forsskal) A.Rich. |
| CASUARINACEAE | <i>Casuarina equisetifolia</i> Forster et Forster f. |
| CELASTRACEAE | <i>Cassine glauca</i> (Rottb.) Kuntze |
| CELASTRACEAE | <i>Loeseneriella obtusifolia</i> (Roxb.) A.C.Smith |
| CELASTRACEAE | <i>Maytenus emarginata</i> (Willd.) Ding Hou |
| CELASTRACEAE | <i>Pleurostyliopsis opposita</i> (Wallich) Alston |
| CELASTRACEAE | <i>Reissantia indica</i> (Willd.) N.Hallé |
| CELASTRACEAE | <i>Salacia chinensis</i> L. |
| CLUSIACEAE | <i>Calophyllum inophyllum</i> L. |
| CLUSIACEAE | <i>Garcinia spicata</i> (Wight et Arn.) Hook.f. |
| COCHLOSPERMACEAE | <i>Cochlospermum religiosum</i> (L.) Alston |
| COLCHICACEAE | <i>Iphigenia indica</i> (L.) A.Gray e |
| COLICACEAE | <i>Gloriosa superba</i> L. |
| COMBRETACEAE | <i>Anogeissus latifolia</i> (Roxb. ex DC.) Wallich ex Guill. et Pers. |
| COMBRETACEAE | <i>Calycopteris floribunda</i> (Roxb.) Poir. |
| COMBRETACEAE | <i>Combretum ovalifolium</i> Roxb. |
| COMBRETACEAE | <i>Terminalia arjuna</i> (DC.) Wight et Arn. |
| COMBRETACEAE | <i>Terminalia bellirica</i> (Gaertner) Roxb. |
| COMBRETACEAE | <i>Terminalia chebula</i> Retz. |
| COMBRETACEAE | <i>Terminalia paniculata</i> Roth |
| CONVOLVULACEAE | <i>Argyrea cymosa</i> Sweet |
| CONVOLVULACEAE | <i>Argyrea osyrensis</i> (Roth) Choisy |
| CONVOLVULACEAE | <i>Ipomoea fistulosa</i> C.Martius ex Choisy |
| CONVOLVULACEAE | <i>Ipomoea sepiaria</i> J.Koenig ex Roxb. |
| CONVOLVULACEAE | <i>Ipomoea staphylina</i> Roemer et Schultes |
| CONVOLVULACEAE | <i>Merremia hederacea</i> (Burm.f.) Hallier f. |
| CONVOLVULACEAE | <i>Rivea hypocrateriformis</i> (Desr.) Choisy |
| CUCURBITACEAE | <i>Coccinia grandis</i> (L.) J.Voigt |
| CUCURBITACEAE | <i>Ctenolepis garcinii</i> (Burm.f.) C.B.Clarke |
| CUCURBITACEAE | <i>Cucumis melo</i> L. |
| CUCURBITACEAE | <i>Diplocyclos palmatus</i> (L.) C.Jeffrey |
| CUCURBITACEAE | <i>Kedrostis foetidissima</i> (Jacq.) Cogn. |

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| CUCURBITACEAE | Momordica charantia L. |
| CUCURBITACEAE | Mukia maderaspatana (L.) M.Roemer |
| CUCURBITACEAE | Solena amplexicaulis (Lam.) Gandhi |
| CUCURBITACEAE | Trichosanthes cucumerina L. |
| DIOSCOREACEAE | Dioscorea oppositifolia L. |
| DIOSCOREACEAE | Dioscorea pentaphylla L. |
| DIOSCOREACEAE | Dioscorea tomentosa J.Koenig ex Sprengel |
| DRACAENACEAE | Sansevieria roxburghiana Schultes et Schultes f. |
| EBENACEAE | Diospyros affinis Thwaites |
| EBENACEAE | Diospyros chloroxylon Roxb. |
| EBENACEAE | Diospyros ebenum J.Koenig ex Retz. |
| EBENACEAE | Diospyros ferrea (Willd.) Bakh. |
| EBENACEAE | Diospyros melanoxylon Roxb. |
| EBENACEAE | Diospyros montana Roxb. |
| ERYTHROXYLACEAE | Erythroxylum monogynum Roxb. |
| EUPHORBIACEAE | Breynia retusa (Dennst.) Alston |
| EUPHORBIACEAE | Breynia vitis-idaea (Burm.f.) |
| EUPHORBIACEAE | Bridelia retusa (L.) Sprengel |
| EUPHORBIACEAE | Cleistanthus collinus (Roxb.) Benth. ex Hook.f. |
| EUPHORBIACEAE | Dimorphocalyx glabellus Thwaites |
| EUPHORBIACEAE | Drypetes porteri (Gamble) Pax et Hoffm. |
| EUPHORBIACEAE | Drypetes sepiaria (Wight et Arn.) Pax et Hoffm. |
| EUPHORBIACEAE | Euphorbia antiquorum L. |
| EUPHORBIACEAE | Euphorbia nivulia Buch.-Ham. |
| EUPHORBIACEAE | Euphorbia tirucalli L. |
| EUPHORBIACEAE | Euphorbia tortilis Rottler ex Ainslie |
| EUPHORBIACEAE | Givotia rottleriformis Griffith |
| EUPHORBIACEAE | Jatropha glandulifera Roxb. |
| EUPHORBIACEAE | Jatropha gossypifolia L. |
| EUPHORBIACEAE | Jatropha tanjorensis Ellis et Saroja |
| EUPHORBIACEAE | Mallotus philippensis (Lam.) Muell.Arg. |
| EUPHORBIACEAE | Mallotus repandus Muell.Arg. |
| EUPHORBIACEAE | Mallotus rhamnifolius Muell.Arg. |
| EUPHORBIACEAE | Mallotus stenanthus Muell.Arg. |
| EUPHORBIACEAE | Phyllanthus emblica L. |
| EUPHORBIACEAE | Phyllanthus pinnatus (Wight) Webster |
| EUPHORBIACEAE | Phyllanthus polyphyllus Willd. |
| EUPHORBIACEAE | Phyllanthus reticulatus Poirer |
| EUPHORBIACEAE | Sapium insigne (Royle) Trimen |
| EUPHORBIACEAE | Securinega leucopyrus (Willd.) Muell.Arg. |
| EUPHORBIACEAE | Suregada angustifolia (Muell.Arg.) Airy Shaw |
| EUPHORBIACEAE | Tragia involucrata L. |
| EUPHORBIACEAE | Tragia plukenetii R.-Sm. |
| FABACEAE | Abrus precatorius L. |
| FABACEAE | Butea monosperma (Lam.) Taubert |
| FABACEAE | Canavalia cathartica Thouars |
| FABACEAE | Clitoria ternatea L. |
| FABACEAE | Dalbergia lanceolaria L.f. |
| FABACEAE | Dalbergia latifolia Roxb. |
| FABACEAE | Derris ovalifolia (Wight et Arn.) Benth. |
| FABACEAE | Derris scandens (Roxb.) Benth. |
| FABACEAE | Erythrina suberosa Roxb. |
| FABACEAE | Galactia tenuiflora (Willd.) Wight et Arn. |
| FABACEAE | Mucuna gigantea DC. |
| FABACEAE | Mucuna pruriens (L.) DC. |
| FABACEAE | Ormocarpum sennoides (Willd.) DC. |
| FABACEAE | Pongamia pinnata (L.) Pierre |
| FABACEAE | Pterocarpus marsupium Roxb. |
| FABACEAE | Rhynchosia courtallensis Maesen |
| FABACEAE | Teramnus labialis (L.f.) Sprengel |
| FLACOURTIACEAE | Casearia elliptica Willd. |
| FLACOURTIACEAE | Flacourtia indica (Burm.f.) Merr. |
| FLINDERSIACEAE | Chloroxylon swietenia DC. |

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| HERNANDIACEAE | Gyrocarpus americanus Jacq. |
| HYACINTHACEAE | Scilla hyacinthina (Roth) J.F.Macbr. |
| HYACINTHACEAE | Urginea indica (Roxb.) Kunth |
| HYPOXIDACEAE | Curculigo orchioides Gaertner |
| ICACINACEAE | Pyrenacantha volubilis Wight |
| LAURACEAE | Cassytha filiformis L. |
| LECYTHIDACEAE | Barringtonia acutangula (L.) Gaertner |
| LECYTHIDACEAE | Careya arborea Roxb. |
| LINACEAE | Hugonia mystax L. |
| LOGANIACEAE | Strychnos minor Dennst. |
| LOGANIACEAE | Strychnos nux-vomica L. |
| LOGANIACEAE | Strychnos potatorum L.f. |
| LORANTHACEAE | Dendrophthoe falcata (L.f.) Ettingsh. |
| LORANTHACEAE | Taxillus bracteatus (Wallich) Thiegem |
| LORANTHACEAE | Taxillus heyneanus (Schultes) |
| LORANTHACEAE | Viscum orientale Willd. |
| MALVACEAE | Hibiscus purpureus Forsskal |
| MALVACEAE | Hibiscus tiliaceus L. |
| MALVACEAE | Thespesia populnea (L.) Sol. ex Corr.Serr. |
| MELIACEAE | Aglaia elaeagnoidea (Adr.Juss.) Benth. |
| MELIACEAE | Azadirachta indica Adr.Juss. |
| MELIACEAE | Walsura trifoliolata (Adr.Juss.) Harms |
| MEMECYLACEAE | Memecylon umbellatum Burm.f. |
| MENISPERMACEAE | Cissampelos pareira L. |
| MENISPERMACEAE | Cocculus hirsutus (L.) Diels |
| MENISPERMACEAE | Pachygone ovata (Poiret) Hook.f. et Thomson |
| MENISPERMACEAE | Tiliacora acuminata (Lam.) Miers |
| MENISPERMACEAE | Tinospora cordifolia (Willd.) Hook.f. et Thomson |
| MIMOSACEAE | Acacia chundra (Rottler) Willd. |
| MIMOSACEAE | Acacia farnesiana (L.) Willd. |
| MIMOSACEAE | Acacia horrida (L.) Willd. |
| MIMOSACEAE | Acacia leucophloea (Roxb.) Willd. |
| MIMOSACEAE | Acacia nilotica (L.) Willd. ex Del. subsp. indica (Benth.) Brenan |
| MIMOSACEAE | Acacia torta (Roxb.) Craib |
| MIMOSACEAE | Albizia amara (Roxb.) Boivin |
| MIMOSACEAE | Albizia lebbeck (L.) Benth. |
| MIMOSACEAE | Albizia odoratissima (L.f.) Benth. |
| MIMOSACEAE | Dichrostachys cinerea (L.) Wight et Arn. |
| MIMOSACEAE | Mimosa intsia L. |
| MIMOSACEAE | Pithecellobium dulce (Roxb.) Benth. |
| MIMOSACEAE | Prosopis juliflora (Sw.) DC. |
| MORACEAE | Ficus albipila (Miq.) King |
| MORACEAE | Ficus amplissima Smith |
| MORACEAE | Ficus arnottiana (Miq.) Miq. |
| MORACEAE | Ficus benghalensis L. |
| MORACEAE | Ficus hispida L.f. |
| MORACEAE | Ficus microcarpa L.f. |
| MORACEAE | Ficus mollis Vahl |
| MORACEAE | Ficus religiosa L. |
| MORACEAE | Ficus tinctoria Forster f. |
| MORACEAE | Ficus tsjakela Rheede ex Burm.f. |
| MORACEAE | Plecosperrum spinosum Trécul |
| MORACEAE | Streblus asper Lour. |
| MYRTACEAE | Eugenia bracteata (Willd.) Roxb. ex DC. |
| MYRTACEAE | Syzygium caryophyllatum (L.) Alston |
| MYRTACEAE | Syzygium cumini (L.) Skeels |
| NYCTAGINACEAE | Pisonia aculeata L. |
| OCHNACEA | Ochna lanceolata Sprengel |
| OCHNACEAE | Ochna obtusata DC. |
| OLACACEAE | Olax scandens Roxb. |
| OLACACEAE | Ximenia americana L. |
| OLEACEAE | Chionanthus mala-elengi (Dennst.) P.S.Green |
| OLEACEAE | Jasminum angustifolium Vahl |

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| OLEACEAE | <i>Jasminum auriculatum</i> Vahl |
| OLEACEAE | <i>Jasminum azoricum</i> L. var. <i>azoricum</i> |
| OLEACEAE | <i>Jasminum cuspidatum</i> Rottler |
| OPILIACEAE | <i>Cansjera rheedii</i> J.Gmelin |
| OPILIACEAE | <i>Opilia amentacea</i> Roxb. |
| ORCHIDACEAE | <i>Cymbidium aloifolium</i> (L.) Sw. |
| ORCHIDACEAE | <i>Eulophia epidendraea</i> (J.Koenig) Schltr. |
| ORCHIDACEAE | <i>Habenaria roxburghii</i> (Pers.) R.Br. |
| ORCHIDACEAE | <i>Vanda spathulata</i> Sprengel |
| ORCHIDACEAE | <i>Vanda tessellata</i> (Roxb.) Hook. ex Don |
| PANDANACEAE | <i>Pandanus fascicularis</i> Lam. |
| PASSIFLORACEAE | <i>Adenia wightiana</i> (Wallich ex Wight et Arn.) Engl. |
| PASSIFLORACEAE | <i>Passiflora foetida</i> L. |
| PERIPLOCACEAE | <i>Cryptostegia grandiflora</i> R.Br. |
| PERIPLOCACEAE | <i>Hemidesmus indicus</i> (L.) R.Br. |
| RHAMNACEAE | <i>Scutia myrtina</i> (Burm.f.) Kurz |
| RHAMNACEAE | <i>Ventilago maderaspatana</i> Gaertner |
| RHAMNACEAE | <i>Ziziphus mauritiana</i> Lam. |
| RHAMNACEAE | <i>Ziziphus oenoplia</i> (L.) Miller |
| RHAMNACEAE | <i>Ziziphus xylopyra</i> (Retz.) Willd. |
| RUBIACEAE | <i>Benkara malabarica</i> (Lam.) Tirv. |
| RUBIACEAE | <i>Canthium parviflorum</i> Lam. |
| RUBIACEAE | <i>Deccania pubescens</i> (Roth) Tirv. var. <i>pubescens</i> |
| RUBIACEAE | <i>Gardenia gummifera</i> L.f. |
| RUBIACEAE | <i>Gardenia latifolia</i> Ait. |
| RUBIACEAE | <i>Gardenia resinifera</i> Roth |
| RUBIACEAE | <i>Hymenodictyon orixense</i> (Roxb.) Mabb. |
| RUBIACEAE | <i>Ixora pavetta</i> Andrews |
| RUBIACEAE | <i>Mitragyna parvifolia</i> (Roxb.) Korth. |
| RUBIACEAE | <i>Morinda pubescens</i> J.E.Smith var. <i>pubescens</i> |
| RUBIACEAE | <i>Mussaenda tomentosa</i> Wight ex Wallich |
| RUBIACEAE | <i>Pavetta indica</i> L. |
| RUBIACEAE | <i>Psilanthus wightianus</i> (Wight et Arn.) J.Leroy |
| RUBIACEAE | <i>Psydrax dicoccos</i> Gaertner |
| RUBIACEAE | <i>Randia dumetorum</i> (Retz.) Poiret |
| RUBIACEAE | <i>Tarenna asiatica</i> (L.) Kuntze ex Schumann |
| RUBIACEAE | <i>Tricalysia sphaerocarpa</i> Gamble |
| RUTACEAE | <i>Aegle marmelos</i> (L.) Corr.Serr. |
| RUTACEAE | <i>Atalantia monophylla</i> (L.) Corr.Serr. |
| RUTACEAE | <i>Atalantia racemosa</i> Wight et Arn. |
| RUTACEAE | <i>Clausena dentata</i> (Willd.) Roemer |
| RUTACEAE | <i>Glycosmis mauritiana</i> (Lam.) Yuich Tanaka |
| RUTACEAE | <i>Limonia acidissima</i> L. |
| RUTACEAE | <i>Murraya paniculata</i> (L.) Jacq |
| RUTACEAE | <i>Pamburus missionis</i> (Wight) Swingle |
| RUTACEAE | <i>Pleiospermium alatum</i> (Wight et Arn.) Swingle |
| RUTACEAE | <i>Toddalia asiatica</i> (L.) Lam. |
| SALVADORACEAE | <i>Azima tetracantha</i> Lam. |
| SALVADORACEAE | <i>Salvadora persica</i> L. |
| SANTALACEAE | <i>Santalum album</i> L. |
| SAPINDACEAE | <i>Allophylus cobbe</i> (L.) Raeusch. |
| SAPINDACEAE | <i>Cardiospermum halicacabum</i> L. v. <i>luridum</i> (Blume) Adelb. |
| SAPINDACEAE | <i>Cardiospermum halicacabum</i> L. v. <i>microcarpum</i> (Kunth) Blume |
| SAPINDACEAE | <i>Dodonaea viscosa</i> Jacq. var. <i>angustifolia</i> (L.f.) Benth. |
| SAPINDACEAE | <i>Lepisanthes tetraphylla</i> (Vahl) Radlk. |
| SAPINDACEAE | <i>Sapindus emarginata</i> Vahl |
| SAPOTACEAE | <i>Madhuca indica</i> J.Gmelin |
| SAPOTACEAE | <i>Manilkara hexandra</i> (Roxb.) Dubard |
| SAPOTACEAE | <i>Mimusops elengi</i> L. |
| SOLANACEAE | <i>Solanum trilobatum</i> L. |
| STERCULIACEAE | <i>Firmiana colorata</i> (Roxb.) R.Br. |
| STERCULIACEAE | <i>Helicteres isora</i> L. |
| STERCULIACEAE | <i>Hildegardia populifolia</i> (Roxb.) Schott et Endl. |

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| STERCULIACEAE | <i>Pterospermum canescens</i> Roxb. |
| STERCULIACEAE | <i>Pterospermum xylocarpum</i> (Gaertner) Santapau et Wagh |
| STERCULIACEAE | <i>Sterculia foetida</i> L. |
| STERCULIACEAE | <i>Sterculia urens</i> Roxb. |
| STILAGINACEAE | <i>Antidesma ghesaembilla</i> Gaertner |
| SYMPHOREMACEAE | <i>Symphorema involucratum</i> Roxb. |
| TILIACEAE | <i>Grewia carpinifolia</i> A.L.Juss. |
| TILIACEAE | <i>Grewia flavescens</i> A.L.Juss. |
| TILIACEAE | <i>Grewia hirsuta</i> Vahl |
| TILIACEAE | <i>Grewia orbiculata</i> Rottler |
| TILIACEAE | <i>Grewia tiliifolia</i> Vahl |
| ULMACEAE | <i>Celtis philippensis</i> Blanco |
| URTICACEAE | <i>Pouzolzia auriculata</i> Wight |
| VERBENACEAE | <i>Clerodendrum inerme</i> (L.) Gaertner |
| VERBENACEAE | <i>Clerodendrum phlomides</i> L.f. |
| VERBENACEAE | <i>Gmelina asiatica</i> L. |
| VERBENACEAE | <i>Lantana camara</i> L. var. <i>aculeata</i> (L.) Moldenke |
| VERBENACEAE | <i>Lantana camara</i> L. var. <i>splendens</i> L. |
| VERBENACEAE | <i>Premna alstoni</i> Moldenke |
| VERBENACEAE | <i>Premna corymbosa</i> (Burm.f.) Rottler et Willd. |
| VERBENACEAE | <i>Premna serratifolia</i> L. |
| VERBENACEAE | <i>Premna tomentosa</i> Willd. |
| VERBENACEAE | <i>Vitex altissima</i> L.f. |
| VERBENACEAE | <i>Vitex leucoxydon</i> L.f. |
| VERBENACEAE | <i>Vitex negundo</i> L. |
| VITACEAE | <i>Cayratia carnosa</i> (Wallich ex Wight et Arn.) Gagnepain |
| VITACEAE | <i>Cayratia pedata</i> (Lour.) A.L.Juss. ex Gagnepain |
| VITACEAE | <i>Cissus pallida</i> (Wight et Arn.) Planchon |
| VITACEAE | <i>Cissus quadrangularis</i> L. |
| VITACEAE | <i>Cissus repens</i> Lam. |
| VITACEAE | <i>Cissus vitiginea</i> L. |