

A CONTRIBUTION TO THE VASCULAR FLORA OF VEDHARANYAM AND TALAINAYAR RESERVE FORESTS, TANJORE DISTRICT, MADRAS STATE

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ABSTRACT

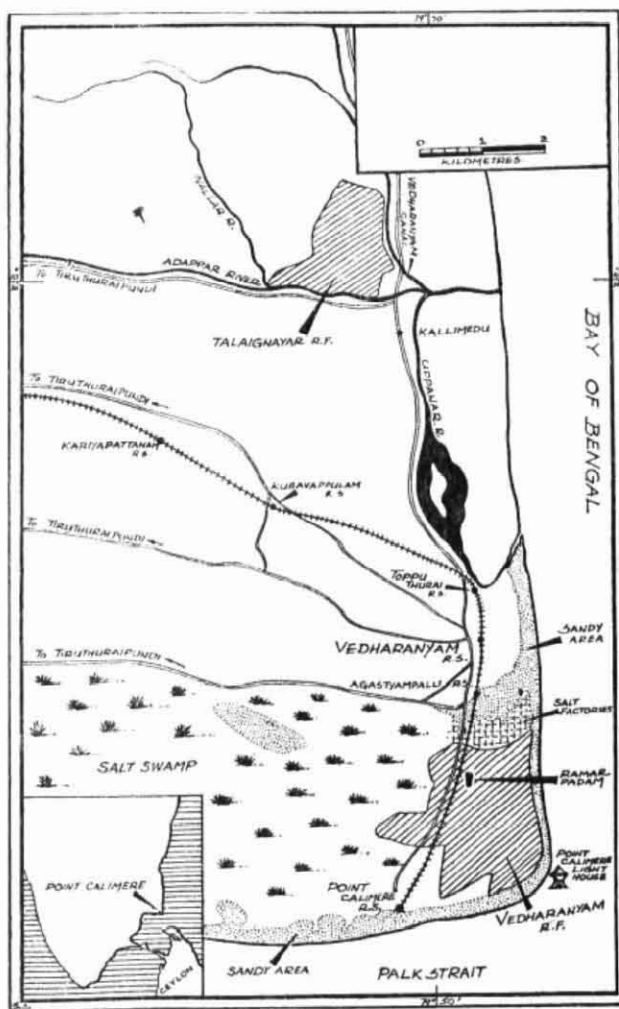
The two reserves dealt with in this paper lie between $70^{\circ} 31'-80^{\circ}$ E and $10^{\circ}-11^{\circ}$ N on the eastern coast of peninsular India in Tanjore District, Madras State. The two are separated from each other by about 18 kilometres; the Vedharanyam R. F. lying a little south of Talainayar. The Vedharanyam R. F. has a Tropical Dry Evergreen type of forest, whereas Talainayar shows characteristic salt-marsh or swamp vegetation. One new species and 3 new records have been noted.

Two botanical tours were conducted in August 1960 and January 1961 and altogether 218 taxa were collected. All the specimens have been deposited in the Southern Circle Herbarium of Botanical Survey of India, Coimbatore (MH).

INTRODUCTION

The Vedharanyam R. F., also called Kodiakadu Reserve, and Talainayar R. F., lie between $70^{\circ} 31'-80^{\circ}$ E and $10^{\circ}-11^{\circ}$ N on the eastern coast of peninsular India in Tiruthurai Pundi Taluk of Tanjore District, Madras State. The Vedharanyam R. F. occupies an area of 5663 hectares, projecting into the Bay of Bengal and Talainayar R. F. occupies an area of 1236 hectares near the estuary of the river Adappar. The two forests are separated from each other by about 18 kilometres, the Vedharanyam reserve being a little south of Talainayar.

Vedharanyam is historically an important place. The name 'Vedharanyam' means 'the forest of the Vedhas', and the place is considered very sacred by the Hindus. There is a legend attached to this place which says that Rama lived sometime in the forest here before invading Ceylon. The adjoining village, Agastyampalli, has a temple to the sage Agastya—the mythical leader of the Brahmin immigration to the south (Madras District Gazetteers—Tanjore, 1906). People from all over the country go to visit a place called Ramarpadam—the highest place in Vedharanyam forest, where two foot marks are seen on a stone which are supposed to indicate the place where Rama stood. Vedharanyam is also a game sanctuary for water birds and migrant flemings. Herds of deer are seen roaming along the beach, and some sambars are reported to be present in the wooded portion of the forest. Some wild horses are seen here which are said to be not truly feral. The other animal here which is of considerable importance is the



Map showing Vedharanyam and Talainayar Reserve Forests in Tanjore District.

wild boar. Commercially both these regions are important because of many salt factories situated near them.

Botanically this region remained unexplored. Two Botanical tours, therefore, have been conducted in these forests to cover two seasons of the year 1960-61 which are as follows: I. Exploration—August 1960; II. Exploration—January 1961.

SOIL

The subsoil in Vedharanyam is deep and the outer stratum is sandy. Occasionally alluvial deposits with bogs and quicksands are encountered. Humus content is conspicuously low, most of the forest area being covered by sand. On the other hand, the soil in Talaignayar is clayey due to the estuarial nature of the area and consequent successive deposits of alluvial silt brought down by the river Adappar. These alluvial deposits have risen the ground level, thereby exposing the soil to inundation only during the high tides. Talaignayar is covered by extensive lagoons and streams.

CLIMATE AND RAINFALL

Climatically there are two seasons in an year: the warm and the rainy. The warm season is prolonged with high temperature and humidity, the warmest months being April, May and June. During this period occasional rains known as inter-monsoon showers come. However, S. W. Monsoon which begins by the end of June or early July, accompanied by the easterly winds from the sea, reduces the atmospheric temperature. These showers are normally light. However, heavy rainfall is experienced from October to January due to N. E. Monsoon and cyclonic disturbances in the Bay of Bengal. This is also called Winter Monsoon. The annual rainfall for both the areas is about 125-140 centimetres.*

VEGETATION

Vedharanyam :

The vegetation of Vedharanyam is very interesting, for it comes under the Tropical dry evergreen forests (Champion and Seth, 1964). But the wooded portion of this forest is only 50 per cent of the total area; the rest of the area in the north is being occupied by extensive grassy lands and shallow swamps. There is a gradual change-over from such grassy and swampy vegetation to dense growth of

stunted dry evergreen type formed by trees having mostly small coriaceous leaves and short boles with spreading crowns. The wooded portion, however, has been disturbed much by the influence of felling, lopping and browsing. Several open places are present which harbour plants of Scrub vegetation. In many places partial inundation takes place during the high tides and in these areas mangrove plants grow luxuriantly.

The vegetation of Vedharanyam can, therefore, be classified under three categories: i. Sea-shore vegetation, ii. Dry evergreen vegetation, iii. Mangrove vegetation.

i. *Sea-shore vegetation*: As the Vedharanyam reserve is surrounded on two sides of the Bay of Bengal and on two other sides by salt swamp, the littoral vegetation is prominent. *Spinifex littoreus* is a conspicuous plant acting as a soil binder at several places. Along with this, *Aeluropus lagopoides*, *Aristida setacea*, *Launaea pinnatifida*, *Phyla nodiflora*, *Zoysia matrella* and others form a carpet of vegetation protecting the soil from erosion. *Asystasia gangetica*, *Encostemma hyssopifolium*, *Gisekia pharnaceoides*, *Gloriosa superba*, *Pandanus tectorius*, *Pedaliium murex* and others form the next zone. *Pandanus tectorius* needs a special mention here, for it acts both as a soil binder and a wind-break. Within some distance from this zone, amidst the partially inundated areas where during the high tides water completely covers the areas, the following plants are abundant: *Arthrocnemum indicum*, *Salicornia* sp., *Suaeda monoica*, *S. nudiflora*, etc. In the north, during the period from November to January when the area receives rainfall due to N. E. Monsoon, an aquatic scrophulariaceous plant, *Peplidium maritimum* is important occurring abundantly near the seashore, presumably preferring a soil not very saltish. *Hygrophila auriculata* again is a very common plant during this period.

The southern side, on the other hand, shows dense growth of *Prosopis juliflora*. This introduced plant has become naturalized and is showing signs of rapid propagation. This has acted very well as a soil binder. Next zone in this area comprises the thick vegetation of *Eugenia bracteata*, *Ixora arborea*, *Manilkara hexandra*, patches of *Opuntia monacantha*, *Phoenix pusilla*, *Sapindus emarginatus*, *Zizyphus oenopia* and others. The following herbaceous plants are common in this area: *Asparagus racemosus*, *Crotalaria striata*, *Indigofera aspal-*

*Data taken from the map showing the Rainfall of India, Published by the Ministry of Education and Scientific Research, Government of India, 1957.

thoides and others. During winter months, ephemeral aquatics like *Limnophila indica*, *Ludwigia perennis*, *Nesaea lanceolata* and others are abundant in pools of stagnant fresh-water. *Casuarina equisetifolia* has been successfully exploited both for fuel and as a wind-break.

ii. *Dry evergreen vegetation*: This forms the major portion of the vegetation in Vedharanyam called the Kodiakadu Reserve. As indicated earlier, the plants show stunted growth, though *Calophyllum inophyllum*, *Drypetes sepiaria*, *Lannea coromandelica*, *Manilkara hexandra*, *Mimusops elengi*, *Walsura trifoliata* and others are tall. *Manilkara hexandra* is economically important here for its fruits. At several places *Canavalia gladiata* and *Mucuna prurita* form thick patches of vegetation on many plants making impenetrable thickets. Near Ramarpadam, *Canthium dicoccum*, *Cayratia carnosa*, *Cissus vitiginea*, *Hugonia mystax*, *Memecylon umbellatum*, *Pleocospermum spinosum*, *Randia malabaricum*, *Toddalia asiatica* Lamk. var. *gracilis* and others form major taxa of the region. Near the roads and pathways, *Clerodendrum inerme*, *Ficus benghalensis*, *Vitex negundo* and others are common. In this forest the following parasitic plants have been collected: *Cassytha filiformis*, *Dendrophthoe falcata*, *Viscum capitellatum*, *V. orientale*, etc. The epiphytic orchid, *Vanda tessellata*, is fairly common.

iii. *Mangrove vegetation*: This vegetation is seen in low lying areas at various localities in Vedharanyam where partial inundation takes place during the high tides. A luxuriant growth of mangroves, however, is seen at a place called Muniappaneri, where the following plants have been collected: *Aegiceras corniculatum*, *Avicennia alba*, *Excoecaria agallocha* and *Tamarix gallica*. Some plants here which seem to prefer an alkaline type of soil are: *Cleome burmanni*, *Sarcostemma intermedium*, *Sida schimperiana*, *Sphaeranthus amaranthoides*, etc.

Tobacco is cultivated at several places. A considerable revenue for the Forest Department is brought by the sale of fallen leaves of forest plants as manure.

Talaigayar Reserve Forest:

This region shows characteristic salt-marsh vegetation where extensive growth of *Suaeda monoica* and *S. nudiflora* is noted. On either side of the river Adappar and its tributaries forming an estuary, there is an abundant growth of *Acanthus ilici-*

folius, *Aegiceras corniculatum*, *Avicennia alba* and *Rhizophora candelaria*. During the winter monsoon, aquatics like *Aponogeton natans*, *Bergia capensis*, *Najas graminea* and *Sphenoclea zeylanica* are common. *Pentatropis microphylla* is a common twiner on many plants.

In all 218 taxa spread over 72 families have been collected. They have been deposited in the Regional Herbarium, Southern Circle, Botanical Survey of India, Coimbatore (MH).

ENUMERATION

In the following enumeration the system of Bentham and Hooker with certain delimitations of Hutchinson (1926) is followed. The names of plants in a family are arranged in alphabetical order. The name of taxon is followed by the phenological data, date of collection, place of collection and collector's field number. Every attempt has been made to bring the names of plants up to date. An asterisk before a name indicates new distribution for the District.

MARSILEACEAE

Marsilea quadrifolia Linn.

In sporocarps, 23-1-1961, Kodiakadu, Vedharanyam, Ellis 11843.

MENISPERMACEAE

Tiliacora acuminata (Wt. & Arn.) Miers

In flowers, 10-8-1960, near Vedharanyam township, Sebastine 10660.

Tinospora cordifolia (DC.) Miers.

In buds and flowers, 18-1-1960, near Light House, Vedharanyam, Ellis 11776.

PAPAVERACEAE

Argemone mexicana Linn.

In flowers and fruits, 23-1-1961, Point Calimere, Vedharanyam, Ellis 11845.

CAPPARACEAE

Cadaba fruticosa (Linn.) Druce.

In flowers, 23-1-1961, Muniappaneri, Vedharanyam, Ellis 11850.

Cleome ciliata Schum. & Thonn.

In flowers and fruits, 23-1-1961, Muniappaneri, Vedharanyam, Ellis 11838.

C. viscosa Linn.

In flowers and fruits, 20-1-1961, near Vedharanyam township, Ellis 11810.

VIOLACEAE

Hybanthus enneaspermus (Linn.) F. V. Muell.

In flowers and fruits, 10-8-1960, Point Calimere, Vedharanyam, Sebastine 10651.

CARYOPHYLLACEAE

Polycarpaea corymbosa (Linn.) Lamk.

In flowers, 15-8-1960, Point Calimere, Vedharanyam, *Sebastine* 10714.

PORTULACACEAE

Portulaca oleracea Linn.

In flowers, 18-1-1961, near Light House, Vedharanyam, *Ellis* 11780; in flowers, 23-1-1961, Point Calimere, *Ellis* 11829.

P. quadrifida Linn.

In flowers, 23-1-1961, Point Calimere, *Ellis* 11828.

TAMARICACEAE

Tamarix gallica Linn.

In flowers, 9-8-1960, Muniappaneri, Vedharanyam, *Sebastine* 10659.

ELATINACEAE

Bergia capensis Linn.

In flowers and fruits, 20-1-1961, Talaignayar, near Adappar river, *Ellis* 11804.

GUTTIFERAE

Calophyllum inophyllum Linn.

In flowers and fruits, 17-8-1960, Point Calimere, *Sebastine* 10607.

MALVACEAE

Sida schimperiana Hochst.

In flowers, 23-1-1961, Muniappaneri, Vedharanyam, *Ellis* 11841.

TILIACEAE

Corchorus tridens Linn.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10723.

Grewia rhamnifolia Heyne

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10628.

Triumfetta pentandra A. Rich.

In flowers, 17-1-1961, Point Calimere, Vedharanyam, *Ellis* 11742.

LINACEAE

Hugonia mystax Linn.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10638.

ZYGOPHYLLACEAE

Tribulus terrestris Linn.

In flowers, 8-8-1960, near Light House, Vedharanyam, *Sebastine* 10637.

RUTACEAE

Toddalia asiatica Lamk. var. **gracilis** Gamble

In flowers, 13-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10703.

MELIACEAE

Walsura trifoliata (A. Juss.) Harms.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11791.

HIPPOCRATEACEAE

Hippocratea indica Willd.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10650.

RHAMNACEAE

Zizyphus oenoplia (Linn.) Mill.

In flowers, 13-8-1960, Point Calimere, *Sebastine* 10695.

VITACEAE

Cayratia carnosa Gagnep.

In flowers, 11-8-1960, Pinchenkotagam, near Thalaignayar, *Sebastine* 10678.

Cissus quadrangularis Linn.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10611.

C. vitiginea Linn.

In flowers, 13-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10700.

SAPINDACEAE

Cardiospermum halicacabum Linn.

In flowers and fruits, 18-1-1961, near Light House, Vedharanyam, *Ellis* 11777.

Sapindus emarginatus Vahl

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11797.

ANACARDIACEAE

Lanea coromandelica (Houtt.) Merr.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10616.

PAPILIONACEAE

Abrus precatorius Linn.

In flowers, 17-1-1960, Point Calimere, *Ellis* 11758.

Canavalia gladiata (Jacq.) DC.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11789.

Clitoria ternatea Linn.

In flowers, 18-1-1961, Point Calimere, *Ellis* 11768.

Crotalaria laburnifolia Linn.

In flowers, 23-1-1961, Point Calimere, *Ellis* 11848.

C. striata DC.

In flowers and fruits, 13-8-1960, Point Calimere, *Sebastine*, 10692.

C. verrucosa Linn.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11798.

Desmodium biarticulatum Benth.

In flowers, 12-8-1960, Manganipillayar thope, near Talaigaynar, *Sebastine* 10686.

D. triflorum DC.

In flowers, 23-1-1961, Muniappaneri, Vedharanyam, *Ellis* 11837.

Dolichos falcatus Klein.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11754.

Indigofera aspalathoides Vahl

In flowers, 13-8-1960, Point Calimere, Vedharanyam, *Sebastine* 10694.

Mucuna prurita Hook.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11795.

Parkinsonia aculeata Linn.

In flowers, 23-1-1961, around Muniappaneri, Vedharanyam, *Ellis* 11836.

Phaseolus trilobus Ait.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11756.

Pongamia pinnata (Linn.) Pierre

In flowers, 9-8-1960, near Ramarpadam, Vedharanyam, *Sebastine* 10645.

Stylosanthes mucronata Willd.

In flowers, 23-1-1961, Point Calimere, *Ellis* 11849.

Tephrosia purpurea (Linn.) Pers.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10602.

CAESALPINIACEAE

Cassia auriculata Linn.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11745.

C. fistula Linn.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10615.

C. obtusa Roxb.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10717.

C. occidentalis Linn.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10610.

C. tora Linn.

In flowers, 23-1-1961, Muniappaneri, Vedharanyam, *Ellis* 11842.

MIMOSACEAE

Acacia arabica Willd.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10672.

Dichrostachys cinerea (Linn.) Wt. & Arn.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10623.

Prosopis juliflora DC.

In flowers, 19-1-1961, Ramarpadam, Vedharanyam, *Ellis* 11800.

RHIZOPHORACEAE

Rhizophora candelaria DC.

In flowers, 12-8-1960, Talaigaynar, *Sebastine* 10680.

MYRTACEAE

Eugenia bracteata (Willd.) Roxb.

In flowers and fruits, Point Calimere, *Sebastine* 10696.

Syzygium cumini (Linn.) Skeels.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10606.

LECYTHIDACEAE

Barringtonia acutangula (Linn.) Gaertn.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10671.

MELASTOMACEAE

Memecylon umbellatum Burm. f.

In flowers, 9-8-1960, near Ramarpadam, Vedharanyam, *Sebastine* 10639.

LYTHRACEAE

Ammannia baccifera Linn.

In flowers, 18-1-1961, Point Calimere, *Ellis* 11763; in flowers, 23-1-1961, *Ellis* 11833.

Nesaea lanceolata Koehne

In flowers, 21-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11818.

ONAGRACEAE

Ludwigia perennis Linn.

In flowers, 2-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11817.

CUCURBITACEAE

Coccinia indica Wt. & Arn.

In flowers, 18-1-1961, Point Calimere, *Ellis* 11770.

Mukia maderaspatana (Linn.) M. Roem.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10679; in flowers, 17-1-1961, Point Calimere, *Ellis* 11744.

Momordica dioica Roxb.

In flowers, 18-1-1961, Point Calimere, *Ellis* 11764.

CACTACEAE

Opuntia monacantha Haw.

In flowers, 20-1-1961, near Vedharanyam Township, *Ellis* 11813.

MOLLUGINACEAE

Gisekia pharnaceoides Linn.

In flowers, 22-1-1961, Point Calimere, *Ellis* 11824.

Glinus oppositifolius (Linn.) A. DC.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10665.

Mollugo disticha Ser.

In flowers, 12-8-1960, Manganipillayar thope, near Talaigaynar, *Sebastine* 10684.

M. pentaphylla Linn.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10718.

RUBIACEAE

Borreria articularis (Linn. f.) F.N. Will.

In flowers, 15-8-1960, Point Calimere, Vedharanyam, *Sebastine* 10721.

Canthium dicoccum (Gaertn.) Merr.

In flowers, 9-8-1960, near Ramarpadam, Vedharanyam, *Sebastine* 10640.

Dentella repens Forst.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10666.

Ixora arborea Roxb. ex Sm.

In flowers, 13-8-1960, Point Calimere, *Sebastine* 10699.

Oldenlandia biflora Linn.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10675.

O. corymbosa Linn.

In flowers, 12-8-1960, Manganipillayar thope, near Talaigaynar, *Sebastine* 10681.

O. herbacea Roxb.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11796.

Pavetta indica Linn.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10624.

Randia dumetorum Lamk.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10630.

R. malabarica Lamk.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10644.

Tarenna asiatica (Linn.) Sant. & Merch.

In flowers, 19-1-1961, Ramarpadam, Vedharanyam, *Ellis* 11799.

COMPOSITAE

Acanthospermum hispidum DC.

In flowers, 23-1-1961, Point Calimere, *Ellis* 11847.

Ageratum conyzoides Linn.

In flowers, 17-1-1961, Point Calimere, Vedharanyam, *Ellis* 11743.

Blumea obliqua (Linn.) Druce.

In flowers, 7-8-1960, near the Beach, Point Calimere, *Sebastine* 10605.

Eclipta prostrata Linn.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10664; in flowers, 18-1-1961, Forest near Light House, Vedharanyam, *Ellis* 11773.

Epaltes divaricata Cass.

In flowers, 23-1-1961, Point Calimere, *Ellis* 11834.

Launea pinnatifida Cass.

In flowers, 7-8-1960, on the Beach, Point Calimere, *Sebastine* 10604.

Sphaeranthus amaranthoides Burm. f.

In flowers, 23-1-1961, Muniappaneri, Vedharanyam, *Ellis* 11840.

Vernonia cinerea Less.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10716.

CAMPANULACEAE

Sphenoclea zeylanica Gaertn.

In flowers, 20-1-1961, Talaigaynar, *Ellis* 11805.

MYRSINACEAE

Aegiceras corniculatum (Linn.) Blanco.

In flowers, 14-8-1960, on the banks of Adappar river, Talaigaynar, *Sebastine* 10705.

SAPOTACEAE

Manilkara hexandra (Roxb.) Dub.

In flowers, 13-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10702.

Mimusops elengi Linn.

In flowers, 13-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10702.

SALVADORACEAE

Azima tetracantha Lamk.

In flowers, 8-8-1960, near Light House, *Sebastine* 10635.

Salvadora persica Linn.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10631.

APOCYNACEAE

Catharanthus roseus (Linn.) G. Don

In flowers and fruits, 13-8-1960, Point Calimere, *Sebastine* 10690 (rose), *Sebastine* 10691 (white).

Carissa carandas Linn.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10627.

ASCLEPIADACEAE

Calotropis gigantea R. Br.

In flowers, 8-8-1960, near Light House, Vedharanyam, *Sebastine* 10636.

Ceropegia candelabrum Linn.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11788.

Leptadenia reticulata Wt. & Arn.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10641.

Pentatropis capensis (Linn. f.) Bullock.

In flowers, 14-8-1960, Talaignayar, *Sebastine* 10706.

Pergularia daemia (Forsk.) Chiov.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11749.

Sarcostemma intermedium Dcne.

In flowers, 23-1-1961, Muniappaneri, Vedharanyam, *Ellis* 11839.

Tylophora indica (Burm. f.) Merr.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10609; in flowers, 19-1-1961, Point Calimere, *Ellis* 11782.

GENTIANACEAE

Canscora sessiliflora Roem. & Schult.

In flowers, 18-1-1961, near Light House, Vedharanyam, *Ellis* 11774.

Enicostemma hyssopifolium (Willd.) Verdcorn.

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10658.

BORAGINACEAE

Heliotropium curassavicum Linn.

In flowers, 8-8-1960, near Light House, *Sebastine* 10634.

CONVOLVULACEAE

Argyrea populifolia Choisy

In flowers, 12-8-1960, Point Calimere, Vedharanyam, *Sebastine* 10701.

Evolvulus alsinoides (Linn.) Linn.

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10653.

Rivea hypocrateriformis Choisy

In flowers, 18-1-1961, Point Calimere, *Ellis* 11767.

SOLANACEAE

Physalis minima Linn.

In flowers, 22-1-1961, Point Calimere, *Ellis* 11835.

P. peruviana Linn.

In flowers, 20-1-1961, near Vedharanyam Township, *Ellis* 11811.

Solanum surattense Burm. f.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10621.

S. trilobatum Linn.

In flowers, 18-1-1961, Point Calimere, *Ellis* 11769.

SCROPHULARIACEAE

Limnophila indica (Linn.) Druce.

In flowers, 21-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11816.

Lindernia crustacea (Linn.) F. Muell.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11788.

L. hirta (Cham. & Schl.) Mukerjee

In flowers, 17-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11750.

Peplidium maritimum (Linn. f.) Wett.

In flowers and fruits, 18-1-1961, near Light House, *Ellis* 11779.

Sopubia delphinifolia (Linn.) G. Don

In flowers, 18-1-1961, Point Calimere, near the sea shore, *Ellis* 11766.

PEDALIACEAE

Pedaliium murex Linn.

In flowers, 7-8-1960, Beach, Point Calimere, *Sebastine* 10603.

MARTYNIACEAE

Martynia annua Linn.

In flowers, 18-1-1961, near Light House, *Ellis* 11778.

ACANTHACEAE

Acanthus ilicifolius Linn.

In flowers, 11-8-1960, Vellanganny, near Talaignayar, *Sebastine*, 10661.

Adhatoda vasica Nees

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10614.

Andrographis echiioides (Linn.) Nees

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10713.

Asystasia gangetica (Linn.) T. Anders.

In flowers, 22-1-1961, Point Calimere, *Ellis* 11823.

Hygrophila auriculata (Schumach.) Heine

In flowers, 18-1-1961, Point Calimere, *Ellis* 11771.

Justicia betonica Linn.

In flowers, 12-8-1960, Manganipillayar thope, *Sebastine* 10689.

J. prostrata (C. B. Cl.) Gamble

In flowers, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10676; in flowers and fruits, 15-8-1960, Point Calimere, *Sebastine* 10712.

J. tranquebariensis Linn. f.

In flowers and fruits, 15-8-1960, near Point Calimere, *Sebastine* 10711.

Ruellia prostrata Poir.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10709.

VERBENACEAE

Avicennia alba Bl.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10646.

Clerodendrum inerme (Linn.) Gaertn.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10644.

Gmelina asiatica Linn.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10625.

Phyla nodiflora (Linn.) Greene

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10601.

Premna serratifolia Linn.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10710.

Vitex negundo Linn.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10613.

LABIATAE

Anisomeles indica O. Ktze.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11748.

Geniosporum tenuiflorum (Linn.) Merr.

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10657.

Leucas diffusa Benth.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11753.

Ocimum canum Sims.

In flowers, 18-1-1961, Point Calimere, *Ellis* 11772.

O. sanctum Linn.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10719.

NYCTAGINACEAE

Boerhavia diffusa Linn.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10622.

AMARANTHACEAE

Achyranthes aspera Linn.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11747.

Aerva lanata (Linn.) Juss.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10618.

Allmania nodiflora R. Br. var. **procumbens** Hook. f.

In flowers, 11-8-1960, Manganipillayar thope, near Talaignayar, *Sebastine* 10682.

Alternanthera paronychioides St. Hill.

In flowers, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10677.

Gomphrena celosioides Mart.

In flowers, 20-1-1961, near Vedharanyam Township, *Ellis* 11812.

CHENOPODIACEAE

Arthrocnemum indicum Moq.

In flowers, 18-1-1961, Point Calimere, on the sea shore near marshy places, *Ellis* 11762.

Suaeda monoica Forsk.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10632.

S. nudiflora Moq.

In flowers, 7-8-1960, Sea shore, Point Calimere, *Sebastine* 10619.

ARISTOLOCHIACEAE

Aristolochia bracteata Retz.

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10656.

LAURACEAE

Cassytha filiformis Linn.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11794.

LORANTHACEAE

Dendrophthoe falcata (Linn. f.) Etting.

In flowers, 9-8-1960, Ramarpadam, Vedharanyam, *Sebastine* 10642.

Viscum capitellatum Sm.

In flowers, 21-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11819.

V. orientale Willd.

In flowers, 9-8-1960, Muniappaneri, Vedharanyam, *Sebastine* 10647.

EUPHORBIACEAE

Acalypha indica Linn.

In flowers, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10673.

Croton bonplandianum Baill.

In flowers, 8-8-1960, near Light House, *Sebastine* 10633.

Drypetes sepiaria (Wt. & Arn.) Pax et K. Hoffm.

In flowers, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11792.

Euphorbia antiquorum Linn.

In flowers, 19-1-1961, Ramarpadam, Vedharanyam, *Ellis* 11801; in flowers, 20-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11822.

Excoecaria agallocha Linn.

In female flowers, 19-1-1961, Point Calimere, *Ellis* 11784; in female flowers, 9-8-1960, Muniappaneri, *Sebastine* 10649; in male flowers, 9-8-1960, *Sebastine* 10648.

E. hirta Linn.

In flowers, 15-8-1960, Point Calimere, *Sebastine* 10715.

Excoecaria microphylla Heyne

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10652.

Jatropha curcas Linn.

In flowers, 13-8-1960, Point Calimere, *Sebastine* 10693.

J. gossypifolia Linn.

In flowers, 7-8-1960, Point Calimere, *Sebastine* 10608, 10617.

J. tanjorensis Ellis et Saroja

In flowers, 21-1-1961, Kallimedu, near Talaigaynar, *Ellis* 11809.

Note: This taxon is allied to *J. glandulifera* Roxb. but differs in having leaves lobed above the middle, stipules shorter with a few filiform glandular divisions, flowers polygamous and petals connate to one third their length at the base in bisexual flowers.

Kirganelia reticulata Baill.

In flowers, 19-1-1961, Point Calimere, *Ellis* 11785.

Micrococca mercurialis Benth.

In flowers, 23-1-1961, Point Calimere, *Ellis* 11832.

Phyllanthus niruri Linn.

In flowers, 18-1-1961, near Light House, *Ellis* 11781.

P. rotundifolius Klein.

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10654.

Securinega leucopyrus (Willd.) Muell.-Arg.

In flowers, 8-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10626.

Synostemon bacciforme (Linn.) Webster.

In flowers, 10-8-1960, Point Calimere, *Sebastine* 10655.

MORACEAE

Ficus benghalensis Linn.

In syconia, 12-8-1960, Manganipillayar thope, near Talaigaynar, *Sebastine* 10687.

F. hispida Linn.

In syconia, 12-8-1960, Manganipillayar thope, near Tailagnayar, *Sebastine* 10688.

Plecospermum spinosum Trec.

In flowers, 13-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10704.

URTICACEAE

***Fleurya interrupta** Gaud.

In male flowers, 23-1-1961, Point Calimere, *Ellis* 11830.

CASUARINACEAE

Casuarina equisetifolia Forst.

In male flowers, 17-1-1961, Point Calimere, Vedharanyam, *Ellis* 11752; in female flowers, 17-1-1961, *Ellis* 11755.

HYDROCHARITACEAE

Ottelia alismoides (Linn.) Pers.

In flowers, 20-1-1961, Kallimedu, Vedharanyam, *Ellis* 11808.

Vallisneria spiralis Linn.

In flowers, 11-8-1960, Pinchenkotagam, near Talaigaynar, *Sebastine* 10674.

ORCHIDACEAE

Vanda tessellata Hook.

In flowers, 13-8-1960, Kodiakadu, Vedharanyam, *Sebastine* 10698.

LILIACEAE

Asparagus racemosus Willd.

In flowers, 21-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11815.

Gloriosa superba Linn.

In flowers, 19-1-1961, near Light House, Vedharanyam, *Ellis* 11775.

COMMELINACEAE

Aneilema dimorphum Dalz.

In flowers, 17-1-1961, Point Calimere, *Ellis* 11759.

Commelina attenuata Koenig

In flowers, 17-1-1961, Point Calimere, *Ellis* 11746.

Cyanotis papilionacea Schult. f.

In flowers, 17-1-1961, Point Calimere, Vedharanyam, *Ellis* 11751.

PALMACEAE

Phoenix pusilla Gaertn.

In female flowers, 21-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11820; in male flowers, 21-1-1961, *Ellis* 11821.

PANDANACEAE

Pandanus tectorius Soland.

In female flowers, 17-1-1961, Point Calimere, near the sea shore, *Ellis* 11757.

APONOGETONACEAE

Aponogeton natans Engl.

In flowers, 20-1-1961, Kallimedu, Vedharanyam, *Ellis* 11807.

NAJADACEAE

***Najas graminea** Del.

In flowers and fruits, 19-1-1961, Agasthayampalli, *Ellis* 11802.

ERIOCAULACEAE

Eriocaulon quinquangulare Linn.

In flowers, 18-1-1961, near the beach, Point Calimere, *Ellis* 11765.

CYPERACEAE

Bulbostylis barbata Kunth

In glumes, 15-8-1960, Point Calimere, *Sebastine* 10721.

Cyperus arenarius Retz.

In glumes, 15-8-1960, Point Calimere, *Sebastine* 10707.

C. aristatus Rottb.

In glumes, 21-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11814.

C. compressus Linn.

In glumes, 23-1-1961, Point Calimere, *Ellis* 11827.

C. difformis Linn.

In glumes, 20-1-1961, Thalaignayar, *Ellis* 11803.

C. exaltatus Retz.

In flowers, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10669.

Fimbristylis ferruginea (Linn.) Vahl

In glumes, 11-8-1960, Vellanganny, near Talaignayar, *Sebastine* 10663.

F. miliacea (Burm. f.) Vahl

In glumes, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10667.

F. polytrichoides R. Br.

In glumes, 7-8-1960, Beach, Point Calimere, *Sebastine* 10620.

Kyllinga monocephala Rottb.

In glumes, 19-1-1961, Point Calimere, *Ellis* 11783.

Scirpus squarrosus Linn.

In glumes, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11787; 19-1-1961, Kodiakadu, *Ellis* 11790.

GRAMINEAE

Aeluropus lagopoides (Linn.) Trim.

In glumes, 18-1-1961, Point Calimere, on the sea shore, *Ellis* 11761.

Aristida setacea Retz.

In glumes, 12-8-1960, Point Calimere, *Sebastine* 10697.

Chloris barbata Sw.

In glumes, 15-8-1960, Point Calimere, *Sebastine* 10708.

Cynodon dactylon (Linn.) Pers.

In glumes, 23-1-1961, Point Calimere, *Ellis* 11846.

Dactyloctenium aegyptium (Linn.) P. Beauv.

In glumes, 23-1-1961, Point Calimere, *Ellis* 11826.

Eragrostis tenella (Linn.) P. Beauv. ex Roem. & Schult.

In glumes, 15-8-1960, Point Calimere, *Sebastine* 10720; 23-1-1961, *Ellis* 11835.

E. riparia (Willd.) Nees

In glumes, 7-8-1960, Point Calimere, *Sebastine* 10612.

Heteropogon contortus (Linn.) P. Beauv.

In glumes, 12-8-1960, Manganipillayar thope, near Talaignayar, *Sebastine* 10683.

Imperata cylindrica (Linn.) P. Beauv. var. **major** (Nees) C. E. Hubb. ex Hubb. & Vaughan.

In glumes, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10668.

***Myriostachya wightiana** (Nees) Hook. f.

In glumes, 11-8-1960, Vellanganny, near Talaignayar, *Sebastine* 10662.

Ophiurus exaltatus (Linn.) O. Ktze.

In glumes, 11-8-1960, Pinchenkotagam, near Talaignayar, *Sebastine* 10670.

Oplismenus burmannii (Retz.) P. Beauv.

In glumes, 23-1-1961, Point Calimere, *Ellis* 11831.

O. compositus (Linn.) P. Beauv.

In glumes, 19-1-1961, Kodiakadu, Vedharanyam, *Ellis* 11793.

Perotis indica (Linn.) O. Ktze.

In glumes, 12-8-1960, Manganipillayar thope, near Talaignayar, *Sebastine* 10685.

Saccharum spontaneum Linn.

In glumes, 20-1-1961, Kallimedu, near Talaignayar, *Ellis* 11806.

Sacciolepis indica (Linn.) A. Chase

In glumes, 23-1-1961, on compound walls of Forest Bungalow, Point Calimere, *Ellis* 11851.

Spinifex littoreus (Burm. f.) Merr.

In male flowers, 16-1-1961, Point Calimere, on the sea shore, *Ellis* 11760; in female flowers, 23-1-1961, *Ellis* 11844.

Zoysia matrella (Linn.) Merr.

In glumes, 7-8-1960, Beach, Point Calimere, *Sebastine* 10600.

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