

BOTANICAL RESULTS OF THE JOINT SCIENTIFIC EXPEDITION
TO THE GREAT NICOBAR ISLANDK. THOTHATHRI, S. P. BANERJEE, P. K. MUKHERJEE¹, P. K. HAJRA² AND G. D. PAL*Botanical Survey of India, Howrah*

A B T R A C T S

The results of an extensive and intensive botanical exploration, conducted in the Great Nicobar Island during a Joint Scientific Expedition in 1966 are summarised in this paper. Notes on the topography, geology, soil and climate are given. The vegetation and flora are dealt under (1) Mangrove forest, (2) Beach forest, (3) Littoral forest, (4) Tropical Evergreen forest and (5) Riverine vegetation. An enumeration of plants, collected during the expedition is appended. Notes on plants of economic importance are given at the end.

INTRODUCTION

The Botanical Survey of India was one of the scientific teams that participated in the Joint Scientific Expedition to the Great Nicobar Island, sponsored by the Ministry of Rehabilitation, Government of India. The Great Nicobar Island attracted much attention of the different explorers from the middle of the nineteenth century due to its important geographical position and vast economic potentialities. Although marine surveys were conducted by the Austrian frigate Novara and also by the Danish corvette Galathea during the middle of the nineteenth century, much was unknown on the botanical wealth of the island. A perusal of the literature, dealing with the flora of the Andaman and Nicobar Islands reveals that there had never been in the past any systematic investigation on the flora of the Great Nicobar Island, except that of Sahni (1953). Aerial photographic survey by Survey of India in 1951 revealed the existence of exceedingly dense tropical forests. From the botanical point of view the area offers possibilities of detailed and comprehensive studies with prospects of discoveries of species new to science. The principal object of

this expedition from the botanical point of view was to make an extensive and intensive exploration and thereby assess the plant wealth of the Great Nicobar Island. Seven scientific departments namely, the Geological Survey of India; the Botanical Survey of India, the Zoological Survey of India, the Anthropological Survey of India, the All India Institute of Hygiene and Public Health, the Indian Meteorological Department and the Andaman Forest Department took part in this expedition. In the present account a detailed study of the vegetation, floristic composition, an enumeration of the plants collected and details of plants of economic importance are discussed.

TOPOGRAPHY

Great Nicobar is the farthest and southernmost island of the Nicobar group of islands, being about 1850 km away from Calcutta. It is situated between 6°45' N and 7°15' N latitudes and 93°37' E and 93°56' E longitudes. Being the largest of the Nicobar group of islands, it comprises an area of 865 square km and is roughly 55 km long and 30 km wide. The island forms a part of the chain of islands which stretches in an arcuate fashion separating the Bay of Bengal and the Indian ocean on the west and the Andaman sea on the east.

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This chain of islands constitute the physiographic continuation of the Naga Lushai and Arakan Yoma ranges in the north to the island festoons, south-west of Sumatra, known as the Mettawai islands. The chain of islands can be considered to be the peaks of a submarine mountain range standing well above sea level. The island is rugged, mountainous terrain, culminating in a peak, the Mount Thulier at a height of about 700 m. The coast line is slightly indented. Five perennial rivers with their tributaries constitute the main drainage system of the island. They are the Alexandra, the Dogmar and the Amrit Kaur flowing westwards, the Jubilee flowing northwards and the Galathea flowing southwards respectively.

GEOLOGY

The island is made up of six different rock groups as follows: 1. The older Sedimentaries. 2. The Ophiolite (Igneous) rock group. 3. The Mithakhari group. 4. The Andaman flysch. 5. The Archipelago group. 6. The Rutland shell-limestone group. The age of the rocks ranges from the Mesozoic to the Pleistocene. Besides there is a Recent to sub-Recent group, composed of gravel beds, raised and other beaches and the soil beds.

SOIL

The soil is made up of chiefly sandstone, siltstone and clay beds with minor occurrences of basaltic rocks and gravelly sandstone beds. Alluvial soil of considerable thickness is found along the main river valleys. The swamps at the mouths of the rivers are mostly of patches of silt sands and older beach material, derived through the action of burrowing animals. Chemically the soil is mild to moderately acidic and is thoroughly leached.

CLIMATE

The island enjoys a warm, tropical, humid climate. There is not much variation in the daily temperature which ranges from 25°C to 30°C. The hot weather persists from March to May while it is a bit cooler during

December to February. The relative humidity is over 80 percent. Most of the rains are brought about by the onset of south-west monsoon and the average annual rainfall is of the order of 300 cm.

VEGETATION AND FLORISTIC COMPOSITION

The vegetation of Great Nicobar Island can broadly be classified into (1) Mangrove forest. (2) Beach forest. (3) Littoral forest. (4) Tropical evergreen forest and (5) Riverine vegetation. The floristic elements that constitute the different types of vegetation are briefly discussed below.

I. *Mangrove forest*: Mangroves are found in narrow creeks which are mostly situated in different bays. The sea water during high tides penetrates as far as 3-5 km inside and plants that can thrive in brackish water, flourish well in such areas. Such forests also form the principal vegetation at the mouth of the major rivers like Galathea, Dogmar, Alexandra as well as Ganges harbour. *Rhizophora apiculata* Bl., *Bruguiera gymnorhiza* Lamk. are the major components of the mangroves, the latter occurring in large populations. *Sonneratia caseolaris* (L.) Engl. is another species, commonly found in this forest. A little interior, the muddy banks of the creek are fringed with a pure strand of *Nypa fruticans* Wurmb. Occasionally patches of *Acanthus volubilis* Wall. are found on the muddy banks under the shade of the above plants. Climbers are frequently met with in this forest such as *Derris trifoliata* Lour., *Sarcolobus globosus* Wall. and *Finlaysonia maritima* (Bl.) Baker. *Ceratostylis subulata* Bl. is a noteworthy epiphytic orchid in this forest.

II. *Beach forest*: Plants growing along beach as well as a little in the interior constitute the beach forest which is noted for shrubs and climbers as trees are of rare occurrence. *Scaevola taccada* Roxb. makes itself very prominent with its bright green foliage and is one of the dominant species in this zone. It occurs gregariously appear-



Plate I : A population of *Nypa fruticans* Wurm on the banks of Alexandra river



Plate II : Knee-roots of *Bruguiera gymnorrhiza* (Linn.) Lamk. in the mangrove forests

ing as a green hedge, fringing the sea-coast for a considerable distance. The fore-shore is marked by trailers like *Ipomoea pes-caprae* Sw., *Vigna marina* (Burm.) Merr. and twiners like *Canavalia turgida* Grah. ex Miq. Associated with *Scaevola* are other shrubs and shrubby trees like *Premna integrifolia* L., *Guettarda speciosa* L., *Desmodium umbellatum* DC., *Glochidion calocarpum* Kurz, *Colubrina asiatica* Brogn. The most common climbers are *Flagellaria indica* L., *Dischidia benghalensis* Coleb. and species of *Hoya* sp. *Messerschmidia argentea* (L.) Johnst., *Leea grandifolia* Kurz and *Vitex negundo* L. are the noteworthy shrubs in this zone. The tree layer is composed of *Barringtonia asiatica* Kurz which grows in large populations, *Pongamia pinnata* Pierre, *Calophyllum inophyllum* L., *Hibiscus tiliaceus* L. and *Hernandia ovigera* L. *Pandanus tectorius* Soland is another interesting plant in this forest which grows in populations. *Asplenium nidus* L. var. *musci-folia* Bedd. is the commonest epiphytic fern, usually found on branches of *Barringtonia* trees. *Lycopodium phlegmaria* L. and *Phymatodes scolopendria* (Burm.) Ching are the other associates of *Asplenium*. Epiphytic orchids that grow together with the above ferns are *Dendrobium crumenatum* Sw. and *Trichoglottis cirrhifera* T. & B.

III. *Littoral forest*: The littoral forest lies just behind the beach forest and stretches for some distance in the interior. There is no clear cut demarcation between these forests. During very high tides the forest floor is inundated with sea water. This forest is ideally suited for two plants namely, *Areca catechu* L. and *Calamus andamanicus* Kurz, both of them being the dominant species of this forest. *C. andamanicus* is a giant climber which forms large loops on the ground before climbing over tall trees. *Areca catechu* grows plentiful and the forest floor is studded with young seedlings during the hot season. Among the notable tree species, the following deserve

special mention namely, *Heretiera littoralis* Dryand., *Chydenanthus excelsus* Miers., *Barringtonia racemosa* Bl., *Gnetum gnemon* L., *Syzygium samarangense* Merr. & Perry, *Mangifera* sp., *Peltophorum pterocarpum* Baker, *Ficus retusa* L. var. *nitida* King, *Ficus rumphii* Bl., *Cerbera manghas* L. and *Ochrosia oppositifolia* (Lamk.) K. Schum. The shrubby vegetation is constituted by *Ardisia solanacea* Roxb., *Hedyotis paradoxa* Kurz, *Allophylus dimorphus* Radlk. and *Tabernaemontana* sp. *Ixora rosella* Kurz, a shrubby tree is the most common species, found everywhere in the littoral forest. Herbaceous vegetation is poorly developed except *Oplismenus compositus* Beauv., a grass and *Hetaeria obliqua* Bl., a ground orchid. The trees and shrubs are heavily laden with epiphytic ferns and orchids such as *Antrophyum callifolium* Bl., *Drynaria quercifolia* Sm., *Phymatodes scolopendria* Ching, *Pholidota imbricata* Lindl. and species of *Luisia* and *Dendrobium*.

IV. *Deciduous forests*: There is hardly any demarcation of this type of forest from the evergreen type. However tree species such as *Terminalia procera* Roxb., *T. bialata* Steud., *Pterocymbium tinctorium* Merr. and *Artocarpus chaplasha* Roxb. are the most common and dominant plants in this forest.

V. *Tropical evergreen forest*: The high temperature, heavy rainfall and virgin soil are the chief factors responsible for the luxuriant growth of moist, tropical, evergreen forests in Great Nicobar. The forest is characterised by dense vegetation with a variety of trees, shrubs and climbers. The soil is fertile with plenty of humus, formed by the fallen dead leaves and is always moist. A certain amount of zonations can be made in this forest namely, the top canopy, composed of tall and gigantic trees of 35-50 m in height, a middle layer of trees and climbers which normally reach a height of 15-20 m, the shrubby layer underneath and finally the ground vegetation, consisting mostly of her

baceous plants. The entire hill ranges have been clothed with such type of forest which also occurs in low lands. The most common tree species of the top layer are *Calophyllum soulattri* Burm. f., *Horsfieldia irya* (Gaertn.)

Worb., *Mangifera* sp., *Peltophorum pterocarpum* Baker, *Endospermum malaccense* Muell.-Arg., *Planchonella longepetiolata* (King & Prain) Lam., *Adenanthera pavonia* L., *Canarium euphyllum* Kurz, *Linociera mac-*



Plate III : A view of the low-evergreen forest

rophylla Wall. ex DC. var. *attenuata* Clarke and *Ficus* sp. The middle layer of trees are usually those of *Garcinia xanthochymus* Hook. f., *Lasianthera secundiflora* Miq.,

Pinanga manii Becc., *Dillenia andamanica* Parkinson, *Casearia grewiaefolia* Vent., *Tetranthera laurifolia* Jacq., *Ficus* sp., *Meme-cylon* sp. and *Antidesma* sp. Below this layer

are the shrubby trees and shrubs which can tolerate the shade and grow well under the canopy such as *Glycosmis pilosa* Narayanaswamy, *Ixora macrosiphon* Kurz, *Hunteria zeylanica* (Retz.) Gard. ex Thw., *Hedyotis paradoxa* Kurz, *Psychotria andamanica* Kurz, *Macaranga* sp. and *Mallotus* sp. *Cyathea albo-setacea* (Bedd.) Copel. is the most graceful tree fern, growing along with the above plants.



Plate IV : Huge buttressed *Tetrameles nudiflora* R. Br with giant lianas in the forest

The trees and the shrubs are infested with woody lians and climbers such as *Hematorcarpus comptus* Miers, *Gnetum scandens* Roxb., *Dinochloa andamanica* Kurz, *Artocarpus kurzii* Hook. f. and at times *Calamus andamanicus* Kurz. The herbaceous plants that constitute the ground cover of the forest are usually *Eranthemum album* Nees, *Stro-*

bilanthes timorensis Nees, *Aglaonema nicobaricum* Hk. f. which grows in populations, *Ophiorrhiza mungos* L., *Oplismenus compositus* Beauv., *Schizoloma tenerum* Holtt. and lastly *Trichomanes javanica* Bl. which grows profusely everywhere, especially in wet soil. Epiphytic ferns are represented by *Antrophyum callifolium* Bl., *Asplenium nitidum* Sw. and *Colysis macrophylla* (Bl.) Presl. A few epiphytic orchids such as species of *Dendrobium* and *Coelogyne* are not uncommon. The most interesting plant is *Ophioglossum pendulum* L. that grows epiphytic on tall palms.

VI. *Riverine vegetation*: The Andaman and Nicobar group of islands except the Great Nicobar Island lack any major river system and it is interesting to note that there exist five perennial rivers in the Great Nicobar Island. They are the Galathea River, flowing from north to south, the Alexandra and Dogmar Rivers, both flowing from east to west and the Amrit Kaur and Jubilee Rivers flowing more or less from south to north west. The vegetation on either side of the Galathea and Dogmar Rivers have been studied in detail and the following is the brief account on the same.

The vegetation at the mouth of the rivers resembles closely that of a typical mangrove creek with plants like *Rhizophora mucronata* Lamk., *Bruguiera gymnorrhiza* Lamk., and *Sonneratia caseolaris* (Linn.) Engl. all growing luxuriantly on both sides of the banks. A little in the interior, the river banks on either side are fringed with populations of *Nypa fruticans* Wurmb. This type of vegetation continues for about 3-4 km where the river water continues to be brackish. The vegetation gradually changes hereafter. On either side of the river are found valleys and hill ranges, the former being occupied by grassy meadows while the latter with dense forests. Tall trees that are commonly found in such forests, adjoining the river are *Anthocephalus chinensis* (Lam.) A. Rich. ex Walp. and species of *Syzygium* and *Ficus*.

Elaeocarpus aristatus Roxb., *Cynometra ramiflora* L., *Litsea monopetala* (Roxb.) Pers., *Fagraea racemosa* Jack. ex Wall., *Aphanaxis polystachya* (Wall.) Parker and *Symplocos nicobarica* Clarke are the smaller trees, growing in this forest. Shrubby undergrowth consists of *Pithecellobium clypearia* Benth. var. *angulatum* Koster., *Jasminum acuminatissimum* Bl. and *Uncaria pilosa* Roxb. *Mussaenda villosa* Wall. is the most common and dominant shrub, characterised by its prominent, leafy, yellow calyx lobe. In certain places *Macaranga triloba* Muell.-Arg. occurs in large populations. *Cyathea albo-setacea* (Bedd.) Copl. is another, common tree fern here. The trees are traversed by climbers such as *Merremia peltata* Merr. which grows in large populations, *Tinomisium petiolare* Miers, *Clematis smilacifolia* Wall. and *Uvaria lurida* Hook. f. & Thoms. *Calamius andamanicus* Kurz and *Dinorchloa andamanica* Kurz are the climbing cane and bamboo in the forest. The ground cover in the forest is poor in herbaceous vegetation but wherever it is an open valley, grasses, sedges and marshy plants grow well. *Phragmites karka* Trin. ex Steud. is the most common reed, growing upto 4 m. It forms large populations on either side of the river. *Echinochloa crus-galonis* Schultt., *E. crusgalli* Beauv. var. *breviseta* Neibr., *Coix lacryma-jobi* L., *Scleria terrestris* (Linn.) Fass., *Fimbristylis aestivalis* Vahl, *Jussiaea prostrata* (Roxb.) Levile, *Polygonum chinense* L. and *P. barbatum* L. are the most common sedges, grasses and marshy plants, growing in open areas on the either side of the river.

A total of 2100 plant specimens comprising 335 species of Angiosperms, Gymnosperms and Pteridophytis were collected, identified and preserved in the Central National Herbarium, Calcutta (CAL). The species are enumerated according to Bentham and Hooker's (1850) system of classification. The taxa under each family follow the alphabetical sequence. Locality, frequency,

phenology, date of collection, collector, field number and critical notes of interest if any are given for each species. Every attempt has been made to bring the nomenclature up to date.

In the enumeration, such as those plants collected during this expedition but have been reported earlier by Sahni (1953) are omitted. Whenever there is a change in the nomenclature of taxa, the names by which they are known in Hooker's Flora of British India (1872-97) or Beddome's Hand Book to the Ferns of British India, Ceylon and the Malay Peninsula with its supplement (1883, 1892) are given in brackets against appropriate taxa. The reference to Hooker and Beddome are given in an abbreviated form like FBI and FBICM respectively.

SYSTEMATIC ENUMERATION

PTERIDOPHYTES

PSILOTACEAE

***Psilotum complanatum* Sw.**

Beach side forest, Galathea Bay, common, in sporangia, 23.3.66, *Thothathri & Banerjee* 11477.

An epiphyte on dead trunks of coconut and *Barringtonia*, pendulous; stem flattened, dichotomously and laxly branched; sporangia globose, 2 each in the axil of a filiform, scaly sporophyle.

***P. nudum* (L.) Beauv.**

Beach forest, Pulobaha, rare, in sporangia, 26.3.66, *Thothathri & Banerjee* 11529.

An erect epiphyte at the base of coconut tree, branching dichotomously; sporangia axillary to enations, trilobed, yellowish.

LYCOPODIACEAE

***Lycopodium phlegmaria* Linn.**

Hill forest, Campbell Bay, common, in strobilus, 2.3.66, *Thothathri & Banerjee* 11338.

Drooping epiphyte growing on tall trees; strobilus, yellow.

***L. phlegmaria* L. var. *filiforme* Bl.**

Casuarina Bay, beach forest, rare, in stro-

bilus, 14.4.66, *Thothathri & Banerjee* 11657.

An epiphyte, drooping, spike 2-3 forked, sporophylls lax, ovate-lanceolate.

SELAGINELLACEAE

***Selaginella ciliaris* (Retz.) Spr.**

East coast forest, Campbell Bay, common, in strobilus, 4.3.66, *Thothathri & Banerjee* 11371.

Growing prostrate on shady forest floor and also on the decaying logs.

***S. decipiens* Warb.**

South east forest, Campbell Bay, 80-200 m, fairly common, in strobilus, 8.3.66, *Thothathri & Banerjee* 11409.

A spreading terrestrial plant on the forest floor, forming main ground vegetation at higher elevations; strobilii terminal.

***S. helferi* Warb.**

Rosen point, Campbell Bay, 80 m, rare, in strobilus, 5.3.66, *Thothathri & Banerjee* 11383.

A spreading plant in shady humid forest floor; strobilii terminal.

OPHIOGLOSSACEAE

***Helminthostachys zeylanica* (L.) Hook. f.**

Dogmar River bank, rare, in fertile spike, 11.4.66, *Thothathri & Banerjee* 11625.

An erect terrestrial fern with creeping fleshy rhizomes; spike 10-12 cm long, yellow, sporangia globular.

***Ophioglossum pendulum* Linn.**

Northern forest, Campbell Bay, rare, in spike, 6.3.66, *Thothathri & Banerjee* 11400.

An epiphyte on a tall tree in association with *Asplenium nidus* Linn., rhizomes creeping with many fleshy, branched roots; blade pendulous, 2 m long, ribbon like, 2-4 cm wide, generally 2-3 times forked with reticulate venations, margin slightly undulate, blade acute or notched at apex; spike arises 30 cm away from the base, stalked, 25-30 cm long, greenish to yellow in colour.

SCHIZAEACEAE

***Schizaea dichotoma* (L.) Sm.**

Casuarina Bay and way to Pulokunio, rare, in sori, 2.4.66, *Thothathri & Banerjee* 11564.

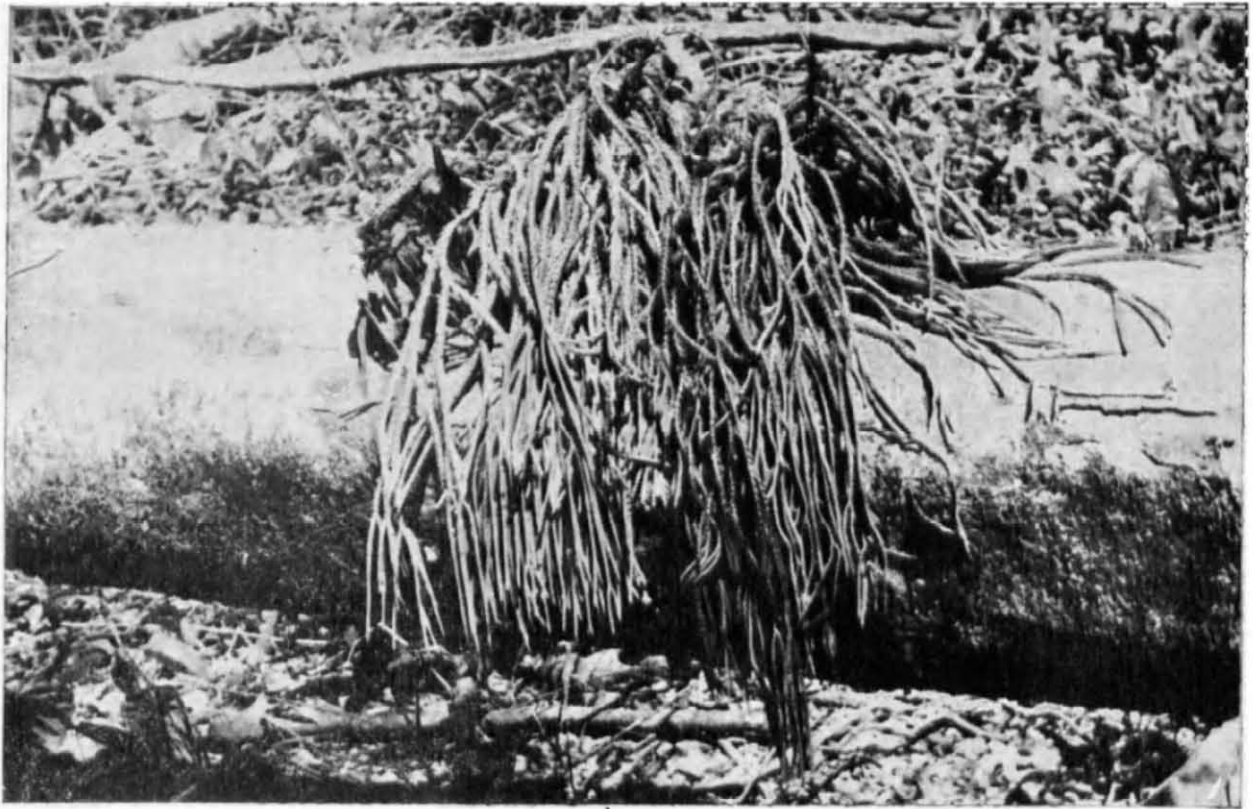


Plate V : *Lycopodium phlegmaria* Linn.—a drooping epiphytic fern-ally in the forest

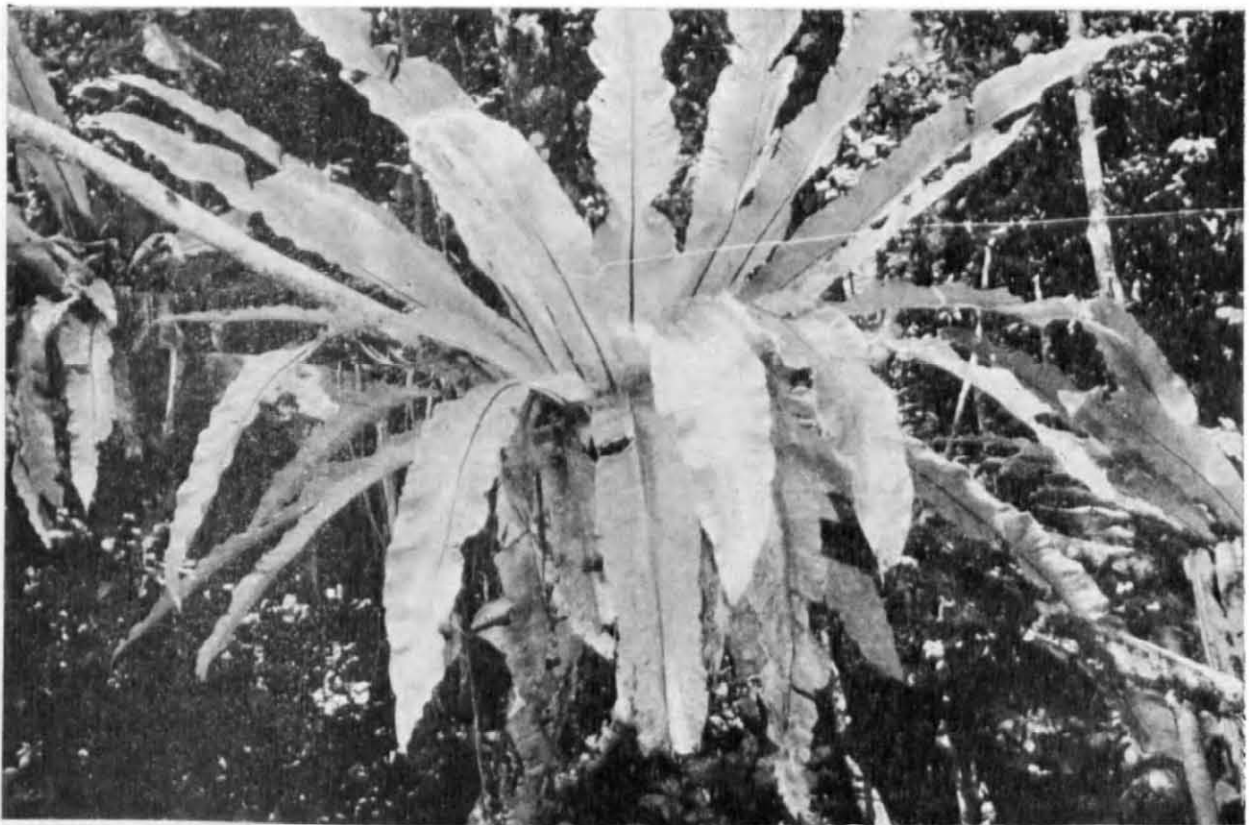


Plate VI : *Asplenium nidus* Linn. var. *muscifolia* (J. Sm.) Bedd.—the most common epiphytic fern in the forest

A herbaceous fern growing at the base of palms; branches dichotomous or trichotomous; sporangia on the ventral surface of the digitate branches.

ANTROPHYACEAE

Antrophyum callifolium Bl.

Hill forest, Campbell Bay, 66 m, very common, in sori, 2.3.66, *Thothathri & Banerjee* 11325.

An epiphyte on tall trees; sori on ventral surface arranged in linear, reticulate rows.

VITTARIACEAE

Vittaria elongata Sw.

East coast forest, Campbell Bay, common, in sori, 4.3.66, *Thothathri & Banerjee* 11366.

An epiphytic fern on small tree trunks; fronds with sori in marginal grooves; rhizome with brownish scales.

V. ensiformis Sw.

Beach side forest, Galathea Bay, common, in sori, 23.3.66, *Thothathri & Banerjee* 11478.

Epiphytic on coconut tree; sori in marginal grooves. A new record for India.

PTERIDACEAE

Acrostichum speciosum Willd.

Galathea Bay, rare, in sori, 21.3.1966, *Thothathri & Banerjee* 11659.

A shrubby fern growing on marshy areas near streamlets.

Pteris tripartita Sw. (*P. marginata* Bory, FBICM, 122. 1883.)

Way to Chengappa Bay, North of Campbell Bay, not common, in sori, 11.3.66, *Thothathri & Banerjee* 11431.

A terrestrial fern growing on dead tree trunks; sori marginal.

HYMENOPHYLLACEAE

Trichomanes bipunctatum Poir.

Northern side, Campbell Bay, in forest, rare, in sori, 6.3.66, *Thothathri & Banerjee* 11389.

An epiphytic fern growing adpressed to the barks of trees; sporangia at the tip of the pinnule.

T. humile Forst.

Galathea Bay, on way to Pygmalion point, common, in sori, 25.3.66, *Thothathri & Banerjee* 11315.

An epiphyte on tree trunk; rhizome black, trailing and rooting on barks forming a mattress; indusium cup-shaped.

T. javanicum Bl.

Hill forest, Campbell Bay, 80 m, common, in sori, 2.3.66, *Thothathri & Banerjee* 11340.

A common terrestrial fern found in the shady forest floor.

T. motleyi V. d. Bosch.

Casuarina Bay, on way to Pulokunio, not common, in sori, 4.4.66, *Thothathri & Banerjee* 11571.

An epiphyte, prostrate and adpressed to the bark of trees; indusia cup like, bilobed. A new record for India.

DENSTAEDTIACEAE

Lindsaya sp.

Way to Galathea Bay, 100 m, rare, in fructification, 8.3.66, *Thothathri & Banerjee* 11408.

A terrestrial fern growing under rocks.

Schizoloma tenerum (Dry.) Holtt. (*Lindsaya orbiculata* Lam. var. *tenera* Bedd. FBICM, 75. 1883.)

South west forest, Campbell Bay, common, in sori, 10.3.66, *Thothathri & Banerjee* 11423.

Terrestrial fern, growing in shady forest floor.

DAVALLIACEAE

Davallia solida (Forst.) Sw.

Campbell Bay, common, in sori, 27.4.66, *Thothathri & Banerjee* 11636.

An epiphyte with creeping rhizome covered with brown scales; sori marginal.

Humata heterophylla (Sm.) Desv.

Campbell Bay, common, in sori, 27.4.66, *Thothathri & Banerjee* 11637.

An epiphyte on trunks of *Barringtonia*; rhizome creeping; scales black adpressed; sori marginal. A new record for India.

H. pectinata (Sm.) Desv. (*H. parallela* Brack., FBICM, 47. 1883.)

Campbell Bay and Pulobaha, common, in



Plate VII : Seedlings of *Areca catechu* Linn. in the littoral forest



Plate VIII : *Cyathra albo-setacea* (Bedd.) Copel.—a tall and graceful tree fern in the forest

sori, 11.3.66 & 26.3.66, *Thothathri & Banerjee* 11445, 11530.

An epiphytic fern growing on the bark of coconut tree; rhizome creeping, brownish with adpressed scales; sori abaxial, in two rows on either side of the midrib of the pinnule.

Nephrolepis biserrata (Sw.) Schott. (*N. acuta* Presl, FBICM, 284. 1883.)

Northern side forest, Campbell Bay, common, in sori, 5.3.66, *Thothathri & Banerjee* 11390.

An epiphytic fern on trunks of large trees; fronds drooping, about 1.5 m long; sori on ventral surface, rounded, on either side of the pinnule. A new record for India.

N. falcata (Cav.) C. Chr.

Beach forest, Campbell Bay, common, in sori, 3.3.66, *Thothathri & Banerjee* 11343.

An epiphytic fern on the fallen logs in the beach.

CYATHEACEAE

Cyathea albo-setacea (Bedd.) Copel. (*Also-phila albo-setacea* Bedd., FBICM, 16. 1883.)

Campbell Bay, rare, 2.6.66, *Thothathri & Banerjee* 11325.

A tree fern growing in association with *Calamus* and *Dracaena*.

ASPIDIACEAE

Egenolfia appendiculata (Willd.) J. Sm. (*Polypotrya appendiculata* J. Sm., FBICM, 424. 1883.)

Rosen point, Campbell Bay, 80 m, in forest, rare, in sori, 5.3.66, *Thothathri & Banerjee* 11382.

A spreading fern on rocks near small streamlets, sori brownish.

ATHYRIACEAE

Diplazium esculentum (Retz.) Sw. (*Anisogonium esculentum* Presl, FBICM, 192. 1883.)

Dogmar River bank, common, in sori, 8.4.66, *Thothathri & Banerjee* 11599.

A terrestrial fern; sori brownish.

THELYPTERIDACEAE

Cyclosorus polycarpus (Bl.) Holttum

Dogmar River bank, fairly common, in sori, 8.4.66, *Thothathri & Banerjee* 11600.

A terrestrial fern; fronds large; sori light brown, arranged abaxially in two rows. A new record for India.

ASPLENIACEAE

Asplenium adiantoides (L.) Chr. (*A. falcatum* Lam., FBICM, 150. 1883.)

Forest north of Campbell Bay, common, in sori, 6.3.66, *Thothathri & Banerjee* 11397.

An epiphyte fern in association with *A. nidus* L.

A. macrophyllum Sw.

Casuarina Bay, way to Pulokunio, common, in sori, 4.4.66, *Thothathri & Banerjee* 11572.

An epiphytic fern; sori linear.

A. nidus Linn. var. **muscifolia** (J. Sm.) Bedd.

In forest west of Campbell Bay, very common, in sori, 3.3.66, *Thothathri & Banerjee* 11360.

A fern growing epiphytically on trees in shades; fronds upto 1 m long.

A. nitidum Sw.

Campbell Bay and Casuarina Bay, common, in sori, 4.3.66 & 3.4.66, *Thothathri & Banerjee* 11365 & 11568.

An epiphytic fern; brownish scales on the rhizome and rachis; sori linear.

A. tenerum Forst.

South west forest, Campbell Bay, sea level, common, in sori, 10.3.66, *Thothathri & Banerjee* 11427.

An epiphyte on tall trees in the forest.

POLYPODIACEAE

Colysis macrophylla (Bl.) Presl [*Selliguea campyloneuroides* Bedd., FBICM (Suppl.), 101. 1892.]

Rosen point, Campbell Bay, 80 m, rare, in sori, 5.3.66, *Thothathri & Banerjee* 11381.

An epiphytic fern; rhizome creeping; sori brown, superficial, in linear rows. A new record for India.

C. sellignea (Mett.) Ching [*Selliguea membranacea* Hook., FBICM (Suppl.), 101. 1892.]

Forest from Pulobaha to Galathea Bay, 65 m, common, in sori, 26.3.66, *Thothathri & Banerjee* 11535.

An epiphyte; rhizome creeping with small black scales; sori superficial. A new record for India.

Drynaria quercifolia (Linn.) J. Sm.

Beach forest, Campbell Bay, common, in sori, 3.3.66, sea level, *Thothathri & Banerjee* 11345.

An epiphytic fern commonly met with in beach forest.

Phymatodes scolopendria (Burm.) Ching (*Pleopeltis phymatodes* Linn., FBICM, 366. 1883.)

Campbell Bay, common, in sori, 3.3.66 & 12.3.66, *Thothathri & Banerjee* 11347 & 11447.

An epiphytic fern growing in association with orchids and other ferns; rhizome greenish, cylindrical; sori on abaxial side.

Pyrosia adnascens (Forst.) Ching (*Niphobolus adnascens* Sw., FBICM, 325. 1883.)

Galathea Bay, common, in sori, 21.3.66, *Thothathri & Banerjee* 11474.

An epiphyte, creeping; sori rounded, superficial.

GYMNOSPERMS

GNETACEAE

Gnetum gnemon L.

Campbell Bay and Galathea River, in fruit, 24.3.66, *Thothathri & Banerjee* 11355 & 11504.

A tree, 15 m tall; mature fruits yellow to pinkish in colour, obovate, sessile.

G. scandens Roxb.

Way to Pulobaha Bay, in fruit, 16.3.66, *Thothathri & Banerjee* 11525.

A woody liana; yellowish green immature and reddish mature fruits.

ANGIOSPERMS

DICOTYLEDONS

RANUNCULACEAE

Clematis smilacifolia Wall.

Dogmar River bank, rare, in flower, 9.4.66, *Thothathri & Banerjee* 11605.

A twining climber; flowers in axillary cymes with long pedicels, deep violet.

DILLENIACEAE

Dillenia andamanica Parkinson

Way to Dogmar River, Casuarina Bay, very common, in flower, 3.4.66, *Thothathri & Banerjee* 11569.

A tall tree, 20 m high; flowers yellow, fragrant.

ANNONACEAE

Artabotrys nicobarianus Das

Forest from Galathea Bay to Pulobaha, 200 m, rare, in flower, 26.3.66, *Thothathri & Banerjee* 11524.

Scandant shrub with axillary curved hooks; flowers at the tip of the hook, greenish.

Uvaria cordata G. Don

West coast, Campbell Bay, in fruit, 3.3.66, *Thothathri & Banerjee* 11349.

Large woody climber trailing over tall trees; fruit an aggregate of elliptic oblong drupes turning orange when ripe.

U. lurida Hk. f. et Thoms.

Dogmar River bank, common, in flower, 8.4.66, *Thothathri & Banerjee* 11592.

A large liana with drooping branches; flowers brownish scarlet.

MENISPERMACEAE

Diplochisia glaucescens (Bl.) Diels

Alexandra River mouth, common, in fruit, 13.4.66, *Thothathri & Banerjee* 11627.

Woody liana; fruits ash green to orange, obovate, in drooping panicles.

Hematocarpus comptus Miers

Campbell Bay and Dogmar River, rare, in flower, 2.3.66, in fruit, 10.4.66, *Thothathri & Banerjee* 11619.

A woody climber; inflorescence on older branches; flowers yellowish green; fruits green, 3-6, crowded at tip of the peduncle.

Tinospora cordifolia Miers

Pulobaha beach forest, rare, in fruit, 31.3.66, *Thothathri & Banerjee* 11570.

A twining shrub; fruits reddish yellow.

Tinomiscium petiolare (Wall.) Miers

Galathea River bank, common, in fruit, 27.3.66, *Thothathri & Banerjee* 11538.

A woody climber; fruits fleshy, 1-seeded drupes, drooping.

FLACOURTIACEAE

Casearia grewiaefolia Vent. var. **deg'abrata**

Koord. & Val. (*C. leucolepis* Turcz., FBI 2: 591. 1879.)

Forest at the mouth of Alexandra River,

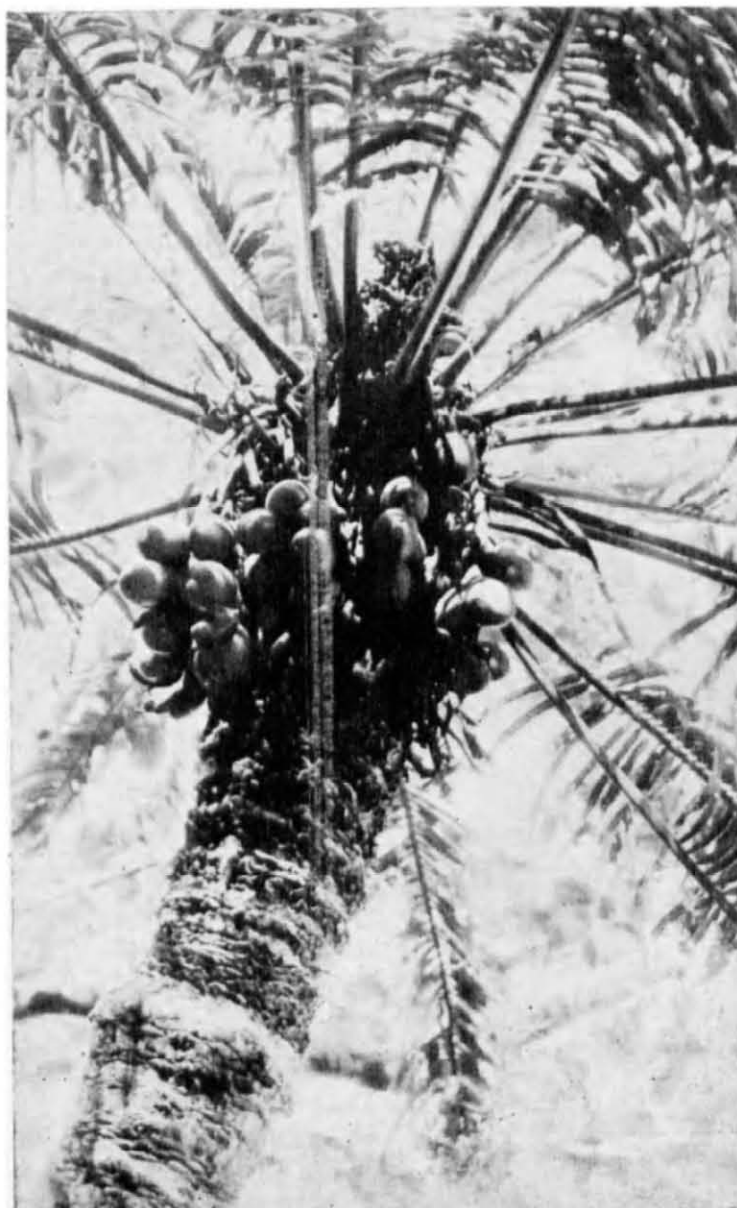


Plate IX : *Cycas rumphii* Miq. with its female cone consisting of loose megasporophylls

not common, in flower and fruit, 13.4.66, *Thothathri & Banerjee* 11626.

A big tree; flowers in terminal racemes; fruits ovoid, brownish in colour.

MALVACEAE.

Urena lobata Linn.

Pulobaha to Galathea Bay, Dogmar River, common, in flower and fruit, 26.3.66 &

9.4.66, *Thothathri & Banerjee* 11528, 11604.

A woody undershrub; flowers pinkish, fruits greenish, spinous.

STERCULIACEAE

Sterculia macrophylla Vent.

Galathea River bank, common, in fruit, 24.3.66, *Thothathri & Banerjee* 11510.

A medium sized tree; leaves large, 30 × 20 cm, villous below; fruit a follicle, scarlet in colour, pubescent, seed black.

TILIACEAE

Grewia umbellata Roxb.

Galathea River bank, common, in flower and fruit, 27.3.66, *Thothathri & Banerjee* 11546.

A scandant shrubby tree, 3-5 m high; flowers light yellow; fruits greenish brown.

ELAEOCARPACEAE

Elaeocarpus aristatus Roxb.

Dogmar River bank, rare, in flower and fruit, 9.4.66, *Thothathri & Banerjee* 11607.

A tall tree with spreading branches; flowers in axillary racemes, yellow; fruit a drupe, ovoid, green.

Elaeocarpus sp.

Galathea River, rare, in fruit, 27.3.66, *Thothathri & Banerjee* 11549.

A medium sized tree on river bank; fruit a small, ovoid drupe on a long stalk.

RUTACEAE

Atalantia simplicifolia (Roxb.) Tanaka

Galathea Bay, common, in fruit, 21.3.66, *Thothathri & Banerjee* 11470.

A medium-sized tree; fruits globular.

Glycosmis pilosa Narayanaswamy

Campbell Bay, not common, in fruit, 7.3.66, *Thothathri & Banerjee* 11401.

A shrubby tree; leaves trifoliate to penta-foliate, leaflets alternate; young fruits green, mature ones light pink with 2 seeds.

Paramigyna andamanica Tanaka

Beach forest, Campbell Bay, common, in fruit, 3.3.66, *Thothathri & Banerjee* 11344.

Shrubby tree, prickly.

MELIACEAE

Aphanamixis polystachya (Wall.) Parker

(*Amoora rohituka* Wt. & Arn., FBI 1: 559. 1875.)

Dogmar River bank, rare, in fruit, 9.4.66, *Thothathri & Banerjee* 11615.

A tree; leaves imparipinnate with 11-13 leaflets; fruits in axillary drooping peduncle, yellowish brown to pinkish red.

Dysoxylum sp.

Campbell Bay, common, in flower, 10.3.66, *Thothathri & Banerjee* 11424.

A tree, 8 m high; inflorescence pendulous, flowers greenish yellow.

ICACINACEAE

Lasianthera secundiflora Miq.

Forest north of Campbell Bay, rare, in flower and fruit, 6.3.66, *Thothathri & Banerjee* 11393.

A medium sized tree, erect; branches crowded at the top; inflorescence axillary, umbellate spike; flowers greenish; fruit oblong-ellipsoid, greenish to pinkish.

CELASTRACEAE

Euonymus javanicus Bl.

Way to Pulokunio, Casuarina Bay, common in forest, in fruit, 2.4.66, *Thothathri & Banerjee* 11558.

A tree; fruit a capsule, reddish, 1-seeded; seed black with aril.

Salacia prinoidea DC.

Beach forest, Campbell Bay, common, in fruit, 1.3.66, *Thothathri & Banerjee* 11315.

Scandant tree in association with species of *Barringtonia* and *Guettarda*; fruits occur in pairs in axils of leaves, ovoid to round, green when unripe and red when ripe.

RHAMNACEAE

Smythaea lanceata (Tul.) Summerh. (*S. pacifica* Seem. ex A. Gray, FMP 1: 468. 1922.)

Campbell Bay, common, in flower and fruit, 1.3.66, *Thothathri & Banerjee* 11306, 11320.

A twiner; flowers white; fruits oblong, compressed, 1-seeded capsule.

Zizyphus rugosa Lam.

Dogmar River bank, very common, in fruit, 6.4.66, *Thothathri & Banerjee* 11577.

A scandant shrub ; fruit axillary, greenish, puberulous.

VITACEAE

Cayratia trifolia (L.) Domin (*Vitis trifolia* L., FBI 1: 654. 1875.)

South-east coast, Campbell Bay, common, in flower, 12.3.66, *Thothathri & Banerjee* 11452.

A climber ; flowers white, in axillary cymes.

Leea grandifolia Kurz

Beach forest, Henlowa, common, in flower, 23.3.66, *Thothathri & Banerjee* 11485.

A spreading shrub, 2-2.5 m high ; flowers white to creamy yellow, in panicles.

L. indica (Burm.) Merr. (*L. sambucina* Willd., FBI 1: 666. 1875.)

Galathea River bank, in flower and fruit, 24.3.66, *Thothathri & Banerjee* 11498.

Scandant shrub ; flowers corymbose, white ; fruits globular.

SAPINDACEAE

Allophyllus dimorphus Radlk. (*A. cobbe* Bl., FBI 1: 673. 1875.)

Campbell Bay and Galathea Bay, common, in flower, 1.3.66 & 21.3.66, *Thothathri & Banerjee* 11323, 11467.

An erect shrub, 2 m high ; flowers in racemes, white.

Erioglossum rubiginosum Bl. (*E. edule* Bl., FBI 1: 672. 1875.)

Dogmar River bank, rare, in fruit, 11.4.66, *Thothathri & Banerjee* 11623.

A medium-sized tree with drooping branches ; fruits clustered on terminal panicles, one seeded drupe, ovate-elliptic, yellowish green to red to black.

ANACARDIACEAE

Dracontomecon mangiferum Bl.

Galathea River bank, common, in flower 24.3.66, *Thothathri & Banerjee* 11511.

A medium-sized tree ; flowers in terminal panicles, light yellow.

Odina sp.

South east coast, Campbell Bay, common, in flower, 12.3.66, *Thothathri & Banerjee* 11451.

A tall tree, about 20 m high ; flowers in panicles, creamy.

FABACEAE

Canavalia turgida Grah. ex Miq.

Sea beach, Campbell Bay, common, in flower and fruit, 1.3.66, *Thothathri & Banerjee* 11303.

A twiner on *Scaevola* plants ; flowers pale lilac ; fruits edible and can be used as vegetable.

Derris elegans Benth.

West coast, Campbell Bay, common, in fruit, 3.3.66, *Thothathri & Banerjee* 11348.

Woody climber with 3-5 foliate leaves ; pods indehiscent, winged on the suture.

D. heptaphylla (Linn.) Merr. (*D. sinuata* Benth. ex Thw., FBI 2: 246. 1878.)

Forest at the mouth of Alexandra River, not common, in flower, 13.4.66, *Thothathri & Banerjee* 11628.

A woody liana in mangrove creeks ; flowers in terminal panicles, light violet in colour.

Mucuna gigantea DC.

Beach forest, Pulokunio, common, in flower, 2.4.66, *Thothathri & Banerjee* 11563.

A twining shrub on *Scaevola* ; flowers in axillary cymes, greenish.

Sophora tomentosa Linn.

Way to Kondul along beach via Pulokunio, rare, in fruits, 14.4.66, *Thothathri & Banerjee* 11630.

A scandant shrub on the beach forest, in association with *Scaevola* ; pods moniliform, green.

CAESALPINIACEAE

Intsia bijuga (Coleb.) O. Kuntze (*Afzelia bijuga* A. Gray., FBI 2: 274. 1878.)

Littoral forest, Chengappa Bay, common, in flower and fruit, 13.3.66, *Thothathri & Banerjee* 11458.

A spreading tree ; flowers in terminal panicles, pinkish white ; fruit a pod, leathery, green.

Caesalpinia bonduc (L.) Roxb. (*C. bonducella* Fleming, FBI 2: 254. 1878.)

West coast, Campbell Bay, common, in fruit, 3.3.66, *Thothathri & Banerjee* 11351.

Scandant shrub, prickly; leaves bipinnate; fruits deep brown, densely covered with prickles; seeds 2-4 per fruit, round, white.
Caesalpinia crista L. (*C. nuga* Ait f., FBI 2: 255. 1878.)

Sandy beach, Campbell Bay, common, in flower and fruit, 1.3.66, *Thothathri & Banerjee* 11301.

A strong prickly climber on *Barringtonia* trees; flowers yellow; fruits green, elliptic with spinescent tip.

Cynometra ramiflora L.

Galathea River bank, rare, in fruit, 27.3.66, *Thothathri & Banerjee* 11545.

A tall tree, 10 m high; fruit a legume, 3-4 in the axils, ovoid, woody, brown.

Peltophorum pterocarpum Baker (*P. ferrugineum* Benth., FBI 2: 257. 1878.)

Campbell Bay north on way to Chengappa Bay, not common, in flower, 11.3.66, *Thothathri & Banerjee* 11430.

An elegant littoral tree, 20-m high, branches at top, spreading; flowers yellow in panicles; pod black.

MIMOSACEAE

Pithecellobium clypearia (Jack.) Benth. var. **angulatum** Koster. (*P. angulatum* Benth., FBI 2: 306. 1878.)

Forest on the bank of Galathea River, common, in fruit, 24.3.66, *Thothathri & Banerjee* 11490.

A shrubby tree, scandant, 3-4 m high; leaves bipinnate; fruits, orange red, much curved.

ROSACEAE

Rubus moluccanus Linn.

Galathea River bank, not common, in flower, 27.3.66, *Thothathri & Banerjee* 11542.

A shrub, 2-2.5 m high; branches and midrib below spinescent; flowers white in terminal panicle cymes.

RHIZOPHORACEAE

Rhizophora apiculata Bl. (*R. conjugata* FBI 2: 436. 1878, non Linn.)

Mangrove creek, Campbell Bay, common, in flower and fruit, 3.3.66, *Thothathri & Banerjee* 11352.

A mangrove tree; leaves shiny green, coriaceous, petiole and midrib pinkish in colour; flowers pedicellate, in axillary cyme, yellowish green; fruits dark green, viviparous.

COMBRETACEAE

Combretum sp.

Dogmar River, rare, in flower, 11.4.66, *Thothathri & Banerjee* 11621.

A climber; flowers small, white.

MYRTACEAE

Eugenia grata Wall. ex Wt.

Way to Chengappa Bay, 50 m, rare, in flower and fruit, 11.3.66, *Thothathri & Banerjee* 11434.

An erect tree, 10 m tall; flowers creamy white, sweet scented.

Syzygium samarangense (Bl.) Merr. & Perry

Campbell Bay, common, in flower, 3.3.66 & 12.3.66, *Thothathri & Banerjee* 11359 & 11449.

A spreading tree in littoral forest; flowers cream coloured, in terminal cymes.

BARRINGTONIACEAE

Chydenanthus excelsus (Bl.) Miers

Campbell Bay and Galathea Bay, common, in flower, 11.3.66, in fruit, 21.3.66, *Thothathri & Banerjee* 11432 & 11471.

An erect tree, 15 m high, flowers pinkish, in terminal corymbs; fruits brown, 1-seeded drupe.

MELASTOMATACEAE

Neodissochaeta celebica (Bl.) Bakh. f. (*Dissochaeta celebica* Bl., FBI 2: 544. 1878.)

Dogmar River bank, common, in flower and fruit, 8.4.66, *Thothathri & Banerjee* 11587.

A tree with drooping branches; younger parts and undersurface of leaf covered with stellate, brown tomentum; flowers in terminal cyme, white.

Memecylon edule Roxb.

Way to Chengappa Bay from Campbell Bay, 35 m, rare, in flower, 11.3.66, *Thothathri & Banerjee* 11435.

A tree, 10 m tall; flowers violet in umbels,

ONAGRACEAE

Jussiaea prostrata (Roxb.) Leville (*Ludwigia prostrata* Roxb., FBI 2: 588. 1878.)

Forest at the mouth of Galathea River, common, in flower and fruit, 24.3.66, *Thothathri & Banerjee* 11492.

A herb on marshy places; flowers small, yellow.

Ludwigia octovalvis (Jacq.) Raven subsp. **sessiliflora** (Mich.) Raven (*Jussiaea suffruticosa* Linn., FBI 2: 587. 1878.)

Dogmar River bank, common, in flower, 9.4.66, *Thothathri & Banerjee* 11602.

A herb, 1-1.5 tall; flowers yellow.

RUBIACEAE

Canthium glabrum Bl.

Galathea River bank, rare, in fruit, 27.3.66, *Thothathri & Banerjee* 11551.

A small tree, 6-7 m high; fruits greenish, ovoid.

C. dicoccum Merr. (*C. didymum* Gaertn., FBI 3: 132. 1880.)

Campbell Bay, rare; in flower and fruit, 3.3.66, *Thothathri & Banerjee* 11350.

Scandent shrub on the beach forest; flowers greenish white.

Greenea jackii Wt. & Arn.

Way to Kondul from Appiah Bay, common, in flower, 15.4.66, *Thothathri & Banerjee* 11632.

A shrub on rocky shore; flowers in terminal, cymose panicles, white.

Hedyotis paradoxa Kurz

Campbell Bay and Dogmar River bank, common, in flower, 2.3.66 & 9.4.66, *Thothathri & Banerjee* 11334, 11370 & 11609.

A shrub, 1-2 m high; flowers white, in axillary clusters.

Ixora macrostemon Kurz

Campbell Bay, rare, in flower, 2.3.66, *Thothathri & Banerjee* 11331, 11433.

A shrub to a shrubby tree; leaves oblong; flowers white with light fragrance, calyx cup reddish-brown; fruits green.

I. rosella Kurz

Rosen point, Campbell Bay, common, in flower and fruit, 5.3.66, *Thothathri & Banerjee* 11387.

A small tree, 5-6 m tall; flowers white in cymose panicles; fruit ovoid, greenish with pinkish streaks.

Mussaenda macrophylla Wall.

Kondul, common, in flower and fruit, 15.4.66, *Thothathri & Banerjee* 11634.

A small tree; flowers orange coloured, in terminal cymes; one of the calyx lobes enlarged into a white, ovate, leafy blade; fruit ovoid, green.

M. villosa Wall.

Galathea River, rare, in flower, 24.3.66, *Thothathri & Banerjee* 11491.

A scandent shrub; flowers in terminal branched cymes, orange in colour; one of the calyx lobe modified into a ovate, yellow, leafy blade.

Oldenlandia paniculata Linn.

Pulobaha, common, in flower and fruit, 26.3.66, *Thothathri & Banerjee* 11536.

A woody herb, 20-30 cm tall; flowers white.

Ophiorrhiza mungos Linn.

Galathea Bay, 60 m, rare, in flower, 23.3.66, *Thothathri & Banerjee* 11483, 11514.

A small undershrub in the forest floor; flowers white, in terminal cymes.

Pavetta sp.

Way to Chengappa Bay from Campbell Bay, 30 m, rare, in fruit, 11.3.66, *Thothathri & Banerjee* 11438.

A small tree, about 3 m tall; fruits in terminal, cymose, panicles, globose, green.

Psychotria andamanica Kurz

South east of Campbell Bay, rare, in flower, 8.3.66, *Thothathri & Banerjee* 11407.

A shrubby tree, 3-5 m tall; leaves glossy green; flowers white.

P. platyneura Kurz

Campbell Bay, 150 m, in flower and fruit, 4.3.66, *Thothathri & Banerjee* 11372 & 11412.

A shrubby undergrowth in the forest;

flowers white, in terminal cymes; fruits black.

Psychotria sarmentosa Bl.

Campbell Bay, 30 m, in flower, 10.3.66, *Thothathri & Banerjee* 11426.

Large woody climber; leaves coriaceous, glabrous; flowers greenish white.

Timonius jambosella Thw. var. *finlaysonianus* (Wall. ex Hk.f.) King & Gamble (*T. finlaysonianus* Wall. ex Hook. f., FBI 3: 127. 1880.)

Pulobaha, rare, in flower, 26.3.66, *Thothathri & Banerjee* 11527.

Tree, 8 m, tall; flowers in axillary cymes.

Uncaria pilosa Roxb.

Dogmar River bank, common, in flower, 8.4.66, *Thothathri & Banerjee* 11593.

Scandent shrub with axillary hook; inflorescence axillary globose heads; flowers brownish yellow.

ASTERACEAE

Webera kurzii Hook. f.

Kondul, common, in flower, 15.4.66, *Thothathri & Banerjee* 11633.

A shrubby tree in beach forest; flowers in terminal cymes, creamy yellow.

Wedelia scandens Clarke

Campbell Bay, common, in flower and fruit, 3.3.66, *Thothathri & Banerjee* 11353.

Glabrous undershrub; flowers yellow; fruits green.

MYRSINACEAE

Ardisia sp.

Campbell Bay, 1.3.66, in fruit, *Thothathri & Banerjee* 11309.

A shrub in the beach forest; unripe fruits pinkish and ripe ones bluish black.

Ardisia sp.

Campbell Bay, rare, in fruit, 2.3.66, *Thothathri & Banerjee* 11329.

A small tree, 8 m, high; pinkish white fruit.

Maesa sp.

Galathea Bay to Pulobaha Bay, 150 m, rare, in flower, 26.3.66, *Thothathri & Banerjee* 11520.

A scandent shrub; flowers creamy in colour, in axillary clusters.

SAPOTACEAE

Palaquium sp.

Galathea Bay to Pulobaha bay, in fruit, 26.3.66, *Thothathri & Banerjee* 11537.

A tree on the bank of Galathea river; fruit a ovoid drupe.

SYMPLOCACEAE

Symplocos nicobarica Clarke

Dogmar River bank, rare, in fruit, 9.4.66, *Thothathri & Banerjee* 11603.

A small tree, 8-10 m, tall; fruits in axillary racemes, yellowish green.

OLEACEAE

Jasminum acuminatissimum Bl.

Banks of Galathea River and Dogmar River, common, in fruit, 27.3.66 & 6.4.66, *Thothathri & Banerjee* 11550 & 11578.

A scandant shrub; fruits greenish brown, in axillary cymes.

Linociera ramiflora (Roxb.) Wall. ex G. Don (*L. macrophylla* Wall. ex DC. var. *attenuata* Clarke, FBI 3: 611. 1882.)

Forests north of Campbell Bay, rare, in fruit, 4.3.66, *Thothathri & Banerjee* 11395.

A large tree, about 30 m tall; leaves opposite decussate; inflorescence cymose panicle.

Linociera sp.

Galathea River, rare, in fruit, 27.3.66, *Thothathri & Banerjee* 11544.

A small tree on river bank; fruit ash black to pinkish black fleshy drupe.

APOCYNACEAE

Hunteria zeylanica (Retz.) Gard. ex Thw. (*H. corymbosa* Roxb., FBI 3: 637. 1880.)

In forest, Galathea Bay, in flower and fruit, 23.3.66, *Thothathri & Banerjee* 11481.

A small tree; flowers white; fruits greenish yellow, beaked.

Microchites sp.

Galathea River, common, in flower, 27.3.66, *Thothathri & Banerjee* 11539 & 11622.

A scandent shrub in mangrove forest; flowers orange in colour,

Ochrosia oppositifolia (Lamk.) K. Schum.
(*O. borbonica* FBI 3: 638. 1880, non Linn.)

Campbell Bay, common, in flower and fruit, 3.3.66, *Thothathri & Banerjee* 11357.

A tall tree in forest; stem with milky latex; leaves ovate oblong; flowers white; fruits elliptic, green.

Parsonsia helicandra Hook. f. & Arn. (*P. spiralis* Wall. ex A. DC., FBI 3: 650. 1882.)

Campbell Bay and Dogmar River, common, in flower, 6.3.66 & 24.3.66, *Thothathri & Banerjee* 11396, 11425 & 11507.

A twiner; flowers in umbellate clusters, yellowish white.

ASCLEPIADACEAE

Dischidia bengalensis Coleb.

Pulokunio, common, in flower, 2.4.66, *Thothathri & Banerjee* 11562.

An epiphyte on *Barringtonia* sp. with fleshy leaves and aerial roots; flowers creamy white, in axillary clusters.

Finlaysonia maritima (Bl.) Backer (*F. obovata* Wall., FBI 4: 7. 1883.)

Mangrove forest, Campbell Bay, common, in flower, 9.3.66, *Thothathri & Banerjee* 11418.

A twining shrub; inflorescence cymose in the axil of leaves; flowers pink in colour.

Hoya sp.

Galathea Bay, common, in flower, 23.3.66, *Thothathri & Banerjee* 11476.

Epiphytic on the branches of *Barringtonia*; flowers white, papillose.

Sarcolobus globosus Wall.

Mangrove forest, Campbell Bay, common, in flower, 9.3.66, *Thothathri & Banerjee* 11420.

A twining shrub; inflorescence axillary cymes; flowers white.

Tylophora tenuis Bl.

Dogmar River bank, rare, in flower, 8.4.66, *Thothathri & Banerjee* 11594.

A climber; flowers reddish brown in axillary branched cymes.

Strychnos quintuplinervis A. W. Hill.

Galathea River, rare, in flower, 2.5.66, *Thothathri & Banerjee* 11500.

A scandent shrub with axillary hooks; inflorescence an axillary cyme; flowers small; fruit a berry, ovoid, green.

BORAGINACEAE

Tournefortia ovata Wall. ex Don

Dogmar River bank, common, in flower and fruit, 8.4.66, *Thothathri & Banerjee* 11590.

A tall shrub; flowers arranged in terminal, branched, scorpioid cymes, greenish yellow; fruit a drupe, globose, green.

CONVOLVULACEAE

Ipomoea tuba G. Don

Campbell Bay and Casuarina Bay, common, in flower, 4.3.66, in fruit, 4.4.66, *Thothathri & Banerjee* 11375, 11574.

A twiner; flowers white, in axillary clusters; fruits brownish capsules.

Merremia peltata (Linn.) Merr.

Galathea River bank, common, in flower, 24.4.66, *Thothathri & Banerjee* 11497.

A twining shrub; leaves long petioled, ovate orbicular, peltate; inflorescence axillary with 1-2 flowers in cymes, flowers yellow, campanulate.

SCROPHULARIACEAE

Lindernia antipoda (Linn.) Alston (*Bonnaya veronicaefolia* Benth., FBI 4: 285. 1884.)

Dogmar River bank, common, in flower, 9.4.66, *Thothathri & Banerjee* 11610.

A herb growing on marshy land; inflorescence terminal racemes; flowers light violet.

L. crustacea (L.) F. von Muell.

Galathea River bank, common, in flower, 27.3.66, *Thothathri & Banerjee* 11557.

A small herb on marshy lands; flowers solitary, axillary, whitish violet.

GESNERIACEAE

Dolichandrone spathacea K. Schum. (*D. rheedii* Seem., FBI 4: 379. 1884.)

Casuarina Bay, common, in flower, 3.4.66, *Thothathri & Banerjee* 11567.

A medium-sized tree, 12 m tall; leaves imparipinnate; flowers white, large, upto 20 cm long.

ACANTHACEAE

Acanthus volubilis Wall.

Campbell Bay, not common, in flower and fruit, 10.3.66, *Thothathri & Banerjee* 11427.

A shrub growing in sandy soil by the side of a creek; flowers in terminal spikes, corolla white to light pink; fruits green, ellipsoid.

Eranthemum album Nees

Campbell Bay, common, in flower, 4.3.66, *Thothathri & Banerjee* 11324, 11377.

A woody undershrub; flowers white.

Strobilanthes timorensis Nees

Hill forest, Campbell Bay, 120 m, common, in flower, 2.3.66, *Thothathri & Banerjee* 11337.

A common undershrub in the forest floor; flowers yellow.

VERBENACEAE

Premna integrifolia Linn.

Campbell Bay, common, in flower and fruit, 1.3.66, *Thothathri & Banerjee* 11305.

A spreading tree with white flowers common in beach forest.

Vitex negundo Linn.

Campbell Bay, common, in flower and fruit, 4.3.66, *Thothathri & Banerjee* 11376.

A shrub of 3 metres growing in association with plants of *Scaevola*; leaves trifoliate; flowers in terminal panicles, violet in colour.

AMARANTHACEAE

Alternanthera sessilis Br.

Mouth of Galathea River, common, in flower, 23.3.66, *Thothathri & Banerjee* 11475.

Creeping herb on sandy beach; inflorescence axillary; flowers white.

Cyathula prostrata Bl.

Galathea River bank, common, in flower and fruit, 27.3.66, *Thothathri & Banerjee* 11556.

An undershrub in association with species of *Polygonum*; flowers in terminal spikes.

POLYGONACEAE

Polygonum barbatum L.

Galathea River bank, common, in flower and fruit, 27.3.66, *Thothathri & Banerjee* 11554.

A herb; leaves with ochreate stipule; flowers in axillary raceme, white.

P. chinense L.

Galathea River bank, common, in flower, 27.3.66, *Thothathri & Banerjee* 11555.

A herb growing in large populations; flowers white.

ARISTOLOCHACEAE

Aristolochia tagala Cham. (*A. roxburghiana* Klotz., FBI 5: 75. 1881.)

Dogmar River bank, rare, in flower and fruit, 9.4.66, *Thothathri & Banerjee* 11606.

A twining shrub climbing on bamboos, branches drooping; flowers in axillary slender racemes, creamy below and ash grey above, spathe dark violet; fruits green, ovoid, ridged.

Bragantia sp.

Campbell Bay, rare, in flower, 5.3.66, *Thothathri & Banerjee* 11379.

A runner in the forest floor; yellow flowers with reddish anther lobes.

PIPERACEAE

Piper betle Linn.

Galathea Bay, sea level, common, in flower, 21.3.66, *Thothathri & Banerjee* 11469.

A climber rooting at nodes; spike yellow.

MYRISTICACEAE

Myristica glaucescens Jack var. **andamanica** (Worb.) Sinclair

Campbell Bay and bank of Galathea River, rare, in flower, 5.3.66, in fruit, 27.3.66, *Thothathri & Banerjee* 11380, 11550.

An erect tree, 15 m high; branches whorled; flowers reddish; fruits 1-2, brownish pubescent.

Myristica sp.

Galathea Bay, rare, in fruit, 22.3.66, *Thothathri & Banerjee* 11473.

A tall tree; cut bark reddish and exudes reddish juice; fruit a drupe, orange yellow, 1-seeded; seed enclosed in fleshy, reddish aril.

LAURACEAE

Cassytha filiformis Linn.

Casuarina Bay, common, in flower and fruit, 4.4.66, *Thothathri & Banerjee* 11575.

A parasite, slender, filiform; flowers in axillary racemes, creamy; fruits globular, greenish.

Litsea kurzii King ex Hook.

Campbell Bay and Casuarina Bay, common, in flower, 4.3.66, in fruit, 2.4.66, *Thothathri & Banerjee* 11364, 11560.

A small tree; fruits greenish, in axillary clusters.

L. monopetala (Roxb.) Pers. (*L. polyantha* Juss., FBI 5: 163. 1886.)

Galathea River bank, rare, in flower, 27.3.66, *Thothathri & Banerjee* 11547.

A tree, 15 m tall; flowers in axillary clusters, creamy yellow.

Tetranthera laurifolia Jacq.

Chengappa Bay, sea level, rare, in flower, 13.3.66, *Thothathri & Banerjee* 11459.

A small tree, about 10 m tall; flowers green in axils of leaves.

HERNANDIACEAE

Hernandia ovigera Linn. (*H. peltata* Meissn., FBI 5: 188. 1886.)

Campbell Bay, common, in flower and fruit, 3.3.66, *Thothathri & Banerjee* 11356.

Medium sized tree; lamina 10-20 cm long, peltate, glabrous; flowers white; fruit a drupe, black, ribbed, found inside a greenish yellow receptacle with a circular opening at the top.

EUPHORBIACEAE

Antidesma diandrum Roth

Campbell Bay and Pulkunio, common, in flower, 5.3.66 & 6.4.66, *Thothathri & Banerjee* 11384, 11579.

A small tree, 5-7 m high with spreading branches; flowers greenish yellow, in spikes.

Claoxylon polot (Burm. f.) Merr. (*C. indicum* Hassk., FBI 5: 410. 1887.)

Campbell Bay, common, in flower, 10.3.66, *Thothathri & Banerjee* 11428.

A bushy tree, 8 m tall; inflorescence a long, pendulous raceme.

Excoecaria agallocha Linn.

Campbell Bay, rare, in flower and fruit, 12.3.66, *Thothathri & Banerjee* 11455.

A spreading tree about 8 m tall; flowers in axillary racemes; fruits greenish.

Glochidion calocarpum Kurz

Campbell Bay, rare, in fruit, 1.3.66, *Thothathri & Banerjee* 11317.

A spreading tree, 10 m high; sapwood white, bark reddish inside; fruits rosy red.

Macaranga tanarius Muell.-Arg.

Pulobaha, common, in flower, 26.3.66, *Thothathri & Banerjee* 11352.

A small tree; leaves peltate with long petiole, stipules triangular, leafy; flowers in axillary panicles, creamy in colour.

M. triloba Muell.-Arg.

Campbell Bay, Dogmar River bank, common, in flower, 11.3.66 & 8.4.66, *Thothathri & Banerjee* 11440, 11595.

A small tree; leaves large, palmately trilobed, peltate; flowers creamy in axillary panicles.

Mallotus helferi Muell.-Arg.

Forests of Campbell Bay, 70-150 m, common, in flower, 2.3.66 & 8.3.66, *Thothathri & Banerjee* 11326, 11328, 11410.

A shrub to a shrubby tree; male flowers greenish white and female flowers yellow; fruit a pinkish capsule.

Melanthesa rhamnoides (Retz.) Bl. (*Breynia rhamnoides* Muell.-Arg., FBI 5: 330. 1887.)

Forests north of Campbell Bay, rare, in flower, 6.3.66, *Thothathri & Banerjee* 11391.

A small tree, 8-9 m, high; flowers creamy in colour.

ULMACEAE

Trema amboinensis Bl.

Dogmar River bank, common, in flower and fruit, 8.4.66, *Thothathri & Banerjee* 11589.

A shrub, 3 m high; flowers greenish yellow; fruits greenish black.

MORACEAE

Ficus altissima Bl.

East coast forest, Campbell Bay, rare, in flower, 4.3.66, *Thothathri & Banerjee* 11374.

A large tree, about 25 m tall with milky

juice; branches all at the top; hypanthodia yellow to red, 2 in the axil, sessile.

Ficus benamina Linn.

Rosen point, Campbell Bay, common, in flower, 5.3.66, *Thothathri & Banerjee* 11385.

A spreading tree with branches inclined towards sea beach; hypanthodia green.

F. retusa Linn. var. **nitida** King

Campbell Bay and Galathea Bay, common, in flower, 15.3.66 & 26.3.66, *Thothathri & Banerjee* 11461, 11526.

A small spreading tree with slender aerial roots; hypanthodia sessile, pink to pinkish yellow, one on either side of the petiole.

F. hederacea Roxb. (*F. scandens* Roxb., FBI 5: 526. 1888.)

Dogmar River bank, rare, in flower, 9.4.66, *Thothathri & Banerjee* 11613.

Large lianous plant with drooping branches; hypanthodia axillary, orbicular, stalked, yellow to light pink at maturity.

F. hispida Linn. f.

Pulobaha and Galathea River bank, common, in flower, 28.3.66, *Thothathri & Banerjee* 11531, 11541.

A small tree, 6 m high; hypanthodia greenish red, stalked, ovoid with a flattened top, in pendulous clusters on lower part of the trunk.

F. rumphii Bl.

Henlowa, common, in flower, 23.3.66, *Thothathri & Banerjee* 11487.

A tall tree, 20-25 m tall; hypanthodia 2 to 3 in the axil of leaves, greenish, globular.

F. subulata Bl.

Dogmar River, forest around Shompen hut, rare, in flower, 10.4.66, *Thothathri & Banerjee* 11620.

A small shrub, upto 2 m high; branches scandent; hypanthodia 1-2 in axil of leaf, green to orange.

Ficus sp.

Forests near Galathea River, rare, in flower, 24.3.66, *Thothathri & Banerjee* 11505.

A small tree, 6-8 m high; hypanthodia

in pendent clusters near the trunk, greenish yellow, elliptic.

Ficus sp.

Campbell Bay, rare, in flower, 11.3.66, *Thothathri & Banerjee* 11442.

A scandent tree; hypanthodia at the trunks.

Ficus sp.

Campbell Bay, rare, in flower, 4.3.66, *Thothathri & Banerjee* 11363.

A tree 10 m high; hypanthodia green, globular; leaves hispid.

URTICACEAE

Procris laevigata Bl.

Beach forest, Campbell Bay, rare, in flower, 1.3.66, *Thothathri & Banerjee* 11314.

Epiphytic in association with orchids; leaves dimorphic, small and large; flowers white.

CERATOPHYLLACEAE

Ceratophyllum demersum L.

Galathea River, common, 27.3.66, *Thothathri & Banerjee* 11540.

A floating weed; leaves whorled.

MONOCOTYLEDONS

HYDROCHARITACEAE

Enhalus acoroides (L. f.) Rich. ex Steud.

Pulobaha Bay, in shallow water, abundant, 26.3.66, *Thothathri & Banerjee* 11533.

A marine angiosperm; leaves 1-1.5 m long, filiform; rhizome fleshy with a number of roots.

ORCHIDACEAE

Ceratostylis subulata Bl.

Mangrove forest, Campbell Bay, common, in fruit, 9.3.66, *Thothathri & Banerjee* 11419.

An epiphytic orchid hanging from trees; leaves absent; fruits axillary.

Cleisostoma striolatum (Reichb. f.) Garay

Campbell Bay, common, in fruit, 3.3.66, *Thothathri & Banerjee* 11346.

An epiphytic orchid growing in association with *Drynaria*.

Corymborchis veratrifolia Bl. (*Corymbis veratrifolia* Bl., FBI 6: 91. 1890.)

Casuarina Bay and Pulokunio, common, in flower and fruit 2.4.66, *Thothathri & Banerjee* 11559.

A terrestrial orchid in the forest floor; flowers white, in axillary panicle; fruits greenish in colour.

Dendrobium crumenatum Sw.

Beach side, Galathea Bay, common, in flower, 23.3.66, *Thothathri & Banerjee* 11480.

An epiphytic, pendant orchid; flowers white, sweet smelling.

Dendrobium sp.

Campbell Bay, rare, 1.3.66, in flower, *Thothathri & Banerjee* 11310.

An epiphytic orchid with creamy flowers.

Eria bractescens Lindl.

Galathea Bay, beach forest, fairly common, in fruit, 21.3.66, *Thothathri & Banerjee* 11466.

An epiphytic orchid; fruits linear oblong, green, splitting into 2 longitudinal halves.

E. bractescens Lindl. var. **kurzii** Hk. f.

Beach forest, Campbell Bay, common, in flower, 1.3.66, *Thothathri & Banerjee* 11312.

An epiphytic orchid; flowers white with pinkish brown lip.

Hetaeria obliqua Bl.

Campbell Bay and Casuarina Bay, rare, in flower, 9.3.66 & 3.4.66, *Thothathri & Banerjee* 11416, 11566.

A terrestrial orchid, 1 m high; flowers in terminal spike, petals creamy and column yellow in colour.

Luisia sp.

Galathea Bay, common, in flower, 23.3.66, *Thothathri & Banerjee* 11486.

An epiphytic orchid with creamy yellow flowers.

Pholidota imbricata Lindl.

On way to Chengappa Bay from Campbell Bay, common, in fruit, 11.3.66, *Thothathri & Banerjee* 11437.

An epiphytic orchid on tree trunks in association with ferns; fruits green, in drooping racemes.

Pomatocalpa andamanicum (Hk. f.) J. J. Sm. (*Cleisostoma andamanicum* Hook. f., FBI 6: 71. 1890.)

Beach forest, Campbell Bay, common, in flower and fruit, 1.3.66, *Thothathri & Banerjee* 11313.

An epiphytic orchid in association with *Eria bractescens* Lindl.; flowers white and fruits green.

P. wendlandorum (Reich. f.) J. J. Sm (*Cleisostoma wendlandorum* Reich. f., FBI 6: 74. 1890.)

Way to Chengappa Bay from Campbell Bay, common, in flower, 11.3.66, *Thothathri & Banerjee* 11436.

An epiphyte on trunks of small trees in forest; flowers in racemes, creamy yellow in colour with pinkish brown striations.

Trichoglottis cirrhifera T. et B. (*Cleisostoma tenuicaule* King & Pantling)

Beach forest, Campbell Bay, rare, in flower, 1.3.66, *Thothathri & Banerjee* 11307.

An epiphytic orchid in beach forest; flowers solitary, axillary; sepals and petals pinkish brown, labellum white with 2 lilac spots.

TACCACEAE

Tacca leontopetaloides (L.) O. Ktze. (*T. pinnatifida* Forst., FBI 6: 287. 1892.)

Beach forest at the mouth of Galathea River, common, in flower and fruit, 24.3.66, *Thothathri & Banerjee* 11509.

A shrub with underground tuber; tuber ± 8 cm in diameter with rootlets; leaf single with sheathing base, long stalked, lamina divided and spreading; flowers in umbellate inflorescence, light yellow; fruit obovate, 4-6 angled; seeds many.

DIOSCOREACEAE

Dioscorea glabra Roxb.

Casuarina Bay, beach forest, not common, in fruit, 6.4.66, *Thothathri & Banerjee* 11583.

A climber; fruits 3 angled.

PALMACEAE

Areca catechu Linn.

Campbell Bay and Chengappa Bay, very

common, in flower and fruit, 5.2.66, 11.3.66, *Thothathri & Banerjee* 11386, 11443.

An erect palm, 10 m high; female flowers below and male flowers above in the spadix.

***Calamus andamanicus* Kurz**

Way to Chengappa Bay from Campbell bay, common and abundant, in flower and fruit, 11.3.66, *Thothathri & Banerjee* 11444.

A climbing cane; stem rachis studded with black spines while leaf rachis armed with recurved black spines and ending in a flagellum; inflorescence axillary; fruits ovoid, conically beaked.

***Pinanga manii* Becc.**

Campbell Bay, in evergreen forest, 150 m, rare, in fruit 15.3.66, *Thothathri & Banerjee* 11463.

A palm, 15-20 m tall; fruits brownish pink to dark brown.

***Nypa fruticans* Wurm**

Mangrove creek, Campbell Bay, common and abundant, in flower and fruit 9.3.66, *Thothathri & Banerjee* 11421.

A mangrove palm growing gregariously in creeks; leaves large, pinnate; male spadix orange yellow, covered by spathe; female spadix in the centre; fruit large, an aggregate of drupes, deep brown, individual fruit turbinate angular, fibrous.

PANDANACEAE

***Pandanus lerrum* Jones**

Campbell Bay, littoral forest, abundant, in fruit, 12.3.66, *Thothathri & Banerjee* 11453.

A small tree, ± 3 m tall; leaves lanceolate, 2-3 m long, margin with upcurved spines, midrib below studded with upcurved, black tipped spines; fruit aggregate, individual ones turbinate, angled.

ARACEAE

***Aglaonema nicobaricum* Hook. f.**

Campbell Bay and Henlowa, common, in flower, 23.3.66, in fruit, 12.3.66, *Thothathri & Banerjee* 11446, 11489.

An erect herb in the forest floor; spadix greenish white with a pinkish spathe; fruits red.

***Homalomena aromatica* Schott.**

Campbell Bay, 200 m, rare, in flower, 8.3.66, *Thothathri & Banerjee* 11413.

A shrub upto 2 m high; leaves long petioled; spathe white.

CYPERACEAE

***Cyperus pilosus* Vahl**

Galathea River bank, common, in flower 24.3.66, *Thothathri & Banerjee* 11494.

A herb upto 1 m high in marshy areas; flowers in terminal panicle, brownish green.

***C. umbellatus* Benth. var. *picta* (Wall.) Clarke**

Pulokunio, common, in flower and fruit, 6.4.66, *Thothathri & Banerjee* 11581.

A herb on sandy soil.

***Fimbristylis aestivalis* (Retz.) Vahl**

Galathea River bank and Dogmar River bank, common, in flower and fruit, 24.3.66, 9.4.66, *Thothathri & Banerjee* 11493, 11612.

An erect herb; spike terminal with brownish spikelets.

***Hypolytrum nemorum* (Vahl) Spreng (*H. latifolium* Rich., FBI 6: 679. 1894.)**

Campbell Bay, 80 m, rare, in flower and fruit, 2.3.66, *Thothathri & Banerjee* 11341.

A rare herb growing in open areas in *Calamus* forest.

***Mapania cuspidata* (Miq.) Uitt. var. *angustifolia* (Uitt.) Uitt.**

Galathea Bay, rare, in flower and fruit, 23.3.66, *Thothathri & Banerjee* 11484.

A herb with a deep root system; inflorescence axillary in the lower leaves, long peduncled; nut ellipsoid.

***Scleria terrestris* (Linn.) Fass. (*S. elata* Thw., FBI 6: 690. 1894.)**

Dogmar River bank, not common, in fruit, 11.4.66, *Thothathri & Banerjee* 11624.

A herb upto 1 m high in open areas of the forest; stem triangular.

POACEAE

Centotheca lappacea* (L.) Desv. var. *lappacea

Forest from Galathea Bay to Pulobaha, 75 m, common, in flower and fruit, 26.3.66, *Thothathri & Banerjee* 11518.

Erect grass on the forest floor; panicles greenish yellow.

Cenotheca lappacea var. ***longilamina*** (Ohwi)

Bor

Pulokunio, common on sandy soil, in flower and fruit, 6.4.66, *Thothathri & Banerjee* 11582.

A herb upto 1 m tall.

Coix lachryma-jobi Linn.

Domar River bank, common, in flower and fruit, 9.4.66, *Thothathri & Banerjee* 11611.

A tall grass on marshy land, 2-3 m high; flowers in spikelet; fruits obovate, yellowish green to white in colour.



Plate X : *Pandanus lerum* Jones with its large orange coloured fruit

Echinochloa crusgalli (L.) Beauv. var. ***brevisetata*** (Doell) Neill.

Dogmar River bank, common, in flower, 9.4.66, *Thothathri & Banerjee* 11614.

A tall grass, 1.5-2.5 m high.

E. crusgalli (H.B.K.) Schult.

Galathea River bank, common, in flower, 24.3.66, *Thothathri & Banerjee* 11496.

A tall grass about 1.5 m high; flowers in terminal spikes.

Ischaemum muticum Linn.

Campbell Bay and Galathea River bank, common, in flower and fruit, 6.3.66 & 24.3.66, *Thothathri & Banerjee* 11398, 11512.

A spreading grass on sandy beach; spike terminal.

Oplismenus compositus (Linn.) Beauv.

Campbell Bay and Galathea Bay, 30-80 m, common, in flower and fruit, 4.3.66 & 26.3.66, *Thothathri & Banerjee* 11367, 11517.

Prostrate and then erect herb; panicles green.

Panicum cambogiense Balansa

Galathea River bank, common, in flower, 27.3.66, *Thothathri & Banerjee* 11553.

An erect grass upto 1.5 m high growing in populations; flowers in terminal panicle, green to greenish brown.

PLANTS OF ECONOMIC IMPORTANCE

I. Chief Timber Yielding Plants

1. **Albizia lebbeck** Benth.

A tree yielding valuable timber; wood dark-brown with lighter and darker streaks, moderately hard, taking a fine polish and excellent to work. It is useful for house-building and making fine furniture. This tree is at times called the "East Indian Walnut" of the European market.

2. **Artocarpus chaplasha** Roxb.

Wood moderately hard, yellow and turning brown; timber used for house and boat building and also for making common furniture.

3. **Bruguiera gymnorrhiza** Lamk.

Wood hard, red; straight pole may be used as electric posts; timber mainly used for making charcoal.

4. **Calamus andamanicus** Kurz

An excellent rattan-cane; thick stems are used for shoulder poles, for making frames of cane furniture and also for making baskets.

5. **C. pseudorivialis** Becc.

A very useful cane; sheathed stem split, trimmed and used for making cane furniture, baskets etc.; also used as walking rat-

tans; naked stem greenish and strong and hence useful for rafting timber.

6. **Calophyllum soulattri** Burm. f.

Wood reddish and suitable for planking and masts; used for making canoes in Nicobar.

7. **Canarium euphyllum** Kurz

Wood light coloured and soft; mainly used for splints as well as for boxes in match industry and is considered to be India's second best quality matchwood. It is also used for making light packing cases and internal fittings in furniture trade. The timber is also suitable in the manufacture of cheap grade plywood. The logs are at times used as floats for rafting timber.

8. **Garcinia xanthochymus** Hook. f.

The wood is hard and good but apparently not used.

9. **Linociera macrophylla** Wall. ex DC. var. **attenuata** Clarke

A large tree with a straight pole but there is no record of its timber being used.

10. **Mangifera** sp.

A soft wooded tree; timber can well be used for making plywood for tea boxes; may also be used for cheap furniture, floor and ceiling boards, planking door and window frames etc.

11. **Peltophorum pterocarpum** Baker

Wood strong and may be used for buildings and boats.

12. **Pterocymbium tinctorium** Merr.

Wood white, light and soft and hence greatly used as matchwood timber; logs used for floating heavy timber in rafts.

13. **Sterculia macrophylla** Vent.

Timber might be used in match-wood industry; also for construction of canoes and for planking.

14. **Terminalia bialata** Steud.

One of the most important timber yielding plant; wood is grey, beautifully mottled and moderately hard; wood takes a fine polish like that of oak; extensively used for planking in house-building and making oars

and furniture. It has been tried also for aeroplane work and railway carriage fittings.

15. **Terminalia procera** Roxb.

Wood is reddish-brown to light brown, moderately hard; used for planking in house-building and for making furniture of inferior quality.

II. Plants of Commercial Importance

1. **Areca catechu** L.

This is the 'Supari' plant of commerce and is an important revenue yielding plant. It grows extensively in the littoral forest.

2. **Barringtonia asiatica** Kurz

The fruits are used in many places to intoxicate fish for which purpose they are pulped and thrown into the river or sea.

3. **Calophyllum inophyllum** L.

A good oil yielding plant. The oil, extracted from the seeds is mainly used for illumination purposes. Incidentally it is applied to the skin in cases of rheumatic complaints.

4. **Cocos nucifera** L.

The coconut palm constitutes one of the staple food of the Nicobarese. The nut is much larger and is supposed to be superior to Ceylon and Indian coconuts. Good quality coconut oil can be extracted from the dried kernel.

5. **Gnetum scandens** Roxb.

The bark yields a fibre which is obtained by beating and splitting the bark into fine filaments. The fibre is strong and durable in sea water and has a good tensile strength in dry and wet conditions. It is valued for fishing nets and lines. Ropes made from it are strong, pliable and light. It is also suitable for paper pulp.

6. **Hibiscus tiliaceus** L.

A good fibre yielding plant, growing in good number in the beach forest as well on the sides of the rivers. The fibre may be said to have two uses; the first for cordage and the second for tow. String and cordage, made from it are used in fishing either for

lines or for making nets. It is also used for making elephant gear for dragging timbers.

7. **Phragmites karka** Trin. ex Steud.

A tall reed, growing on the banks of rivers. The plant as a whole can be used for thatching huts.

8. **Piper betle** L.

The 'pan' leaf of the Nicobarese has a fine taste. The plant grows luxuriantly and is very common in the beach forest.

9. **Pongamia pinnata** Pierre

The oil from the seed, known as 'Karanj' oil is used for burning purposes. It is also medicinal and is administered in scabies and other skin affections.

10. **Terminalia bialata** Steud., **T. catappa** Linn. and **T. procera** Roxb.

All these trees are the important source of tannin which is extracted from the barks.

11. **Nypa fruticans** Wurm

The Nypa palm is considered a species of great economic importance. The large pinnate leaves are extensively used for thatching and in the construction of huts etc. In Philippines shingles are made from the petiole. Leaflets are used for making raincoats, sunhats, coarse baskets, mats and bags. Seeds are edible similar to those of immature coconuts.

Nypa palm is an excellent source of alcohol (Gibbs, 1911). In Philippines half of the total production of alcohol is derived from this palm. It is obtained by the process of distillation of the fermented juice which flows from a cut in the inflorescence stalk. The inflorescence is near the ground which facilitates the gathering of sap. After the fruit formation, the stalk is cut across near the top just below the fruit and in each day a thin slice is removed to keep the wound fresh. 40-45 litres of sap is the estimated production from a single Nypa palm. In Philippines the fermented juice is also used as a beverage. Vinegar is also manufactured from this palm by allowing acetic fermentation to follow alcoholic fermentation. Nypa-alcohol manufac-

ture is a major industry in the Philippines. Large distilleries exist in various Nypa swamps. Artificial channels have been dredged to make the Nypa areas accessible for the collection of the sap. The Nypa palm which grows in large populations in various mangrove creeks, and sheltered bays of Great Nicobar Island may play an important role, if properly utilized in the economic uplift of the Andaman and Nicobar Islands.

III. Food Yielding Plants

1. *Areca triandra* Roxb.

The terminal buds of this plant are eaten either raw or cooked.

2. *Artocarpus chaplasha* Roxb.

The unripe fruit can be cooked and the ripe fruit is edible.

3. *Calamus andamanicus* Kurz

This interesting cane is a source of safe drinking water. An oblique cut is made in a mature cane and it is held in a vertical position when the sap trickles for some time. When the flow stops at this end, an another oblique cut is made on the other side and this is again held vertically when there is further flow of sap.

4. *Canavalia turgida* Grah. ex Miq.

The unripe fruits can be used as an excellent vegetable.

5. *Cocos nucifera* L.

The tender kernels are much relished by the Nicobarese.

6. *Garcinia xanthochymus* Hook. f.

The yellow, globose fruit which is acidic is edible.

7. *Gnetum scandens* Roxb.

The ripe fruits are edible. The yellowish-red outer part of the fruit is discarded and the seeds are eaten after roasting or cooking; the seed kernel is mashed, moulded into cakes or biscuits, dried in the sun and fried in boiling oil. The young leaves and inflorescence are eaten as vegetable.

8. *Mangifera* sp.

A tall tree, found growing in beach forest. The fruits are flat and are edible. The un-

ripe fruits can be made into pickles or used as vegetable. The ripe fruit is edible, though fibrous.

9. *Musa sapientum* L.

Both cultivated as well as wild plantains are present. The unripe fruits can be cooked and ripe ones have a very good taste.

10. *Pandanus lerram* Jones

The large, orange-yellow fruit is one of the staple food of the Nicobarese and Shompens. The individual fruits are cooked and orange-yellow pulp surrounding the fruit is flavoured and eaten.

11. *Pinanga* sp.

The tender portion of the terminal bud of this palm forms a good vegetable.

12. *Syzygium samarangense* Merr. & Perry

The small, brownish red fruits are edible.

13. *Terminalia bialata* Steud.

The seeds are edible and when fried have a better taste than ground-nut.

14. *Vigna marina* Merr.

The greenish, unripe fruits make a good vegetable.

15. *Tacca leontopetaloides* (L.) O. Ktze.

Tubers are bitter when raw but by a suitable preparation can be made edible. The tubers may weigh upto 2 pounds. The tubers are dug when the plant dies down; they are rasped into meal which is thrown into water, agitated and the water now charged with starch is filtered through a cloth coarse enough to retain the raspings while allowing the starch to pass through. After this the starch is allowed to settle when the water is poured away and fresh water is used until it is washed free from bitterness. Well purified starch is 'Tahiti arrowroot' which is a good food for invalids. In Philippines, Java and Fiji islands the tubers have been variously used as food. The coastal Nicobarese use the tubers for food at times.

ECONOMIC POTENTIALITIES

A summation of the economic potentialities of Great Nicobar Island, based on the present Expedition is worth mentioning.

Great Nicobar is exceptionally the only

island in the whole of Nicobar group that is known to possess a good timber wealth. Plants like *Terminalia bialata* Steud., *T. proccra* Roxb., *Calophyllum soulattri* Burm. f., *Artocarpus chaplasha* Roxb. and *Aphanamixis polystachya* (Wall.) Parker yield excellent timber for planking in housebuilding, boat building and similar purposes. Good furniture wood can be obtained from *Albizia lebbeck* Benth., *Artocarpus chaplasha* Roxb. etc. There are a number of softwooded trees like *Pterocymbium tinctorium* Merr., *Sterculia macrophylla* Vent., *Canarium euphyllum* Kurz and *Mangifera* sp. all of which yield excellent timber for match wood and plywood industry. According to Sri B. S. Chengappa, a retired Conservator of Forests, Andamans, it is estimated that on a sustained yield, based on a rotation of 100 years, 30000 tons of valuable matchwood and plywood timber can be extracted from this island and thus the government may expect to get a royalty of about Rs. 10,00,000 a year (Sahni, 1953). The abundant occurrence of different species of *Calamus* (Rattancanes) suggest that manufacture of Cane-furniture can be started as a cottage industry.

The areca-nut (betel nut) plants (*Areca catechu* Linn.) grow plentiful more or less self-sown and if they are properly attended to or made into good plantations, they may fetch a lot of revenue to the government. Similar is the case of coconut cultivation. The activities of the Coconut Development Department of the Andaman Administration can also be extended to this island so that good coconut plantations may be raised all along the coast. It is a fact that the Nicobar coconuts are reputed to be superior to those of Ceylon, Malaya and Indian mainland. As in the case of Katchall Island, it may prove worthwhile to introduce rubber cultivation since the climate and rainfall are identical to Malaya where rubber is one of the important revenue yielding crop. Coffee which has been successfully introduced in South Andaman as well as pepper, a good

cash crop can also be tried in Great Nicobar. The moist valleys along the major rivers may be suitable for paddy cultivation.

Good varieties of banana are being cultivated by the local inhabitants. The one with reddish outer skin is very sweet and delicious. The mango fruits, found in the island are good though fibrous but the unripe green ones are quite good. Plants like *Tacca leontopetaloides* (L.) O. Ktze., *Dioscorea* sp. have a great food value as the tubers are rich in starch. The fruits of *Pandanus* constitute one of the staple foods of the local inhabitants. A number of useful fruit yielding plants such as Pine apple (*Ananas sativus* Schult.), Custard apple (*Annona squamosa* L. and *A. reticulata* L.), Pomegranate (*Punica granatum* L.), Guava (*Psidium guajava* L.) and different species of *Citrus* can be grown in the island. Even Cashew-nut (*Anacardium occidentale* L.) can be tried on an experimental scale.

Besides these there are medicinal and ornamental plants which may also help to increase the economy of the island.

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