

# FLORA OF GREAT NICOBAR ISLAND



**BOTANICAL SURVEY OF INDIA**  
Ministry of Environment and Forests

# FLORA OF GREAT NICOBAR ISLAND

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BOTANICAL SURVEY OF INDIA

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Ministry of Environment and Forests

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## FOREWORD

I am very happy to learn that the Botanical Survey of India, Andaman & Nicobar Circle is bringing out a book on the Flora of Great Nicobar Island during the Golden Jubilee Year of India's Independence.

After C.E. Parkinson published the Forest Flora of Andaman Islands in the year 1923, there has been no exhaustive floristic work published either on the Andaman Group of Islands or the Nicobar Group till date. The Botanical Survey of India, Andaman and Nicobar Circle, Port Blair established in 1972 has undertaken extensive and intensive studies on the plant diversity of the isles. While the writing of Flora of Andaman & Nicobar Islands is in progress and is envisaged to be brought out in three volumes, a special effort has been made by the Botanical Survey of India to come up with a Flora of Great Nicobar Island separately in view of the phytogeographical importance attached to this remote and southernmost island of the archipelago where most of the plant species are indigenous to the Islands.

The present publication, dealing with the native flora of insular and fragile nature and the introduced exotic species in the island ecosystem well known for its pristine glory but subjected to some human intervention, it is believed, will prove to be of immense use to the nature lovers, tourists, environmentalists, foresters and the botanists. The book may be indispensable in future for evolving viable conservation strategies in order to strike a balance between development and conservation and between developed ecosystem and natural ecosystem. The book should also create awareness amongst people against any damage to the rare and precious species that the Islands possess.

The editors and the author have done their best in bringing out the book at a time when habitat deterioration has been occurring worldwide.



**Raj Niwas,**  
12-08-1998.

**(I.P. Gupta)**  
Lieutenant Governor  
Andaman & Nicobar Islands



## PREFACE

The Great Nicobar Island presents varied natural panorama and is clothed with virgin lush evergreen dense tropical forests extending from sea coast to the top of hills. The forest wealth is by far the richest natural embodiment of the island and the great strength of this natural wealth lies in their utter immensity, density and vitality but even a small imbalance in this tropical ecosystem could be detrimental to the interests of the people who inhabit this island.

A report of the multidisciplinary study team constituted under the Ministry of Agriculture and Irrigation which visited this island in 1975, expressed serious concern over the deforestation which would affect the stability of the ecosystem and suggested that these areas should be made available only for scientific and conservational studies. Subsequently, the MAB National Committee of Govt. of India launched a project through the Botanical Survey of India entitled 'Status of survey of the floral constituents in the land ecosystem of Great Nicobar in the present context of changing habitats' and as a result of this endeavour, a project document was submitted in the year 1989 by Balakrishnan *et al.*, on the Great Nicobar Biosphere Reserve. There after, as a logical measure, the present elaborate floristic work is brought out to meet the needs of all those who are concerned with the nature conservation.

The guidance and useful suggestions extended by Dr. N.P. Singh, Director, BSI, Calcutta have immensely helped in bringing out the book. The encouragement given by the Ministry of Environment & Forests, the help and assistance extended by all the scientists and staff of BSI particularly those of Andaman & Nicobar Circle and the facilities and field assistance provided by the Forest Department and other departments of A & N Administration in various ways are gratefully acknowledged.

**P.K. Hajra**  
**P.S.N. Rao**

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## INTRODUCTION

The Great Nicobar island is the southernmost island of the Andaman & Nicobar archipelago, situated between 6°45'N and 7°15' N lat. and 93°38' and 93°55'E long. The island presents varied natural panorama and is covered with virgin lush evergreen dense tropical forests extending from sea coast to the hill tops. The forest wealth is by far the richest natural endowment of the island. The great strength of this natural wealth lies in their utter immensity, density and vitality. The tropical humid climate with heavy rainfall facilitates dense floristic growth and everything on these islands grows with utmost insane vigour. The forests of Great Nicobar are not far away from the equator, hence the tropical ecosystem in this island is so enormous, complex, delicate and fragile. The island occupies a phytogeographically strategic position between mainland India, Myanmar, Thailand on one hand and Sumatra and Malay Peninsula on the other. The island supports a unique combination of floral and faunal assemblage, high degree of endemism and fragile ecosystem with the result the Ministry of Environment and Forests, Govt. of India, has declared this diversity rich island as Biosphere Reserve (see Map-2) on 6th January, 1989. The main objectives of the Biosphere reserves are:

1. They are the protected areas of representative terrestrial and coastal environments recognised world wide for their value in conservation.
2. They are representative examples of natural or minimally disturbed ecosystems.
3. The extent and size of such areas is large enough to function as a unit of conservation.
4. Adequate long term legislative, regulatory and institutional protection is available.
5. Peoples are a part of the biosphere reserves.
6. No changes of land holding are brought about in a biosphere reserve, especially in core zone.
7. Biosphere reserve functions as an open system.

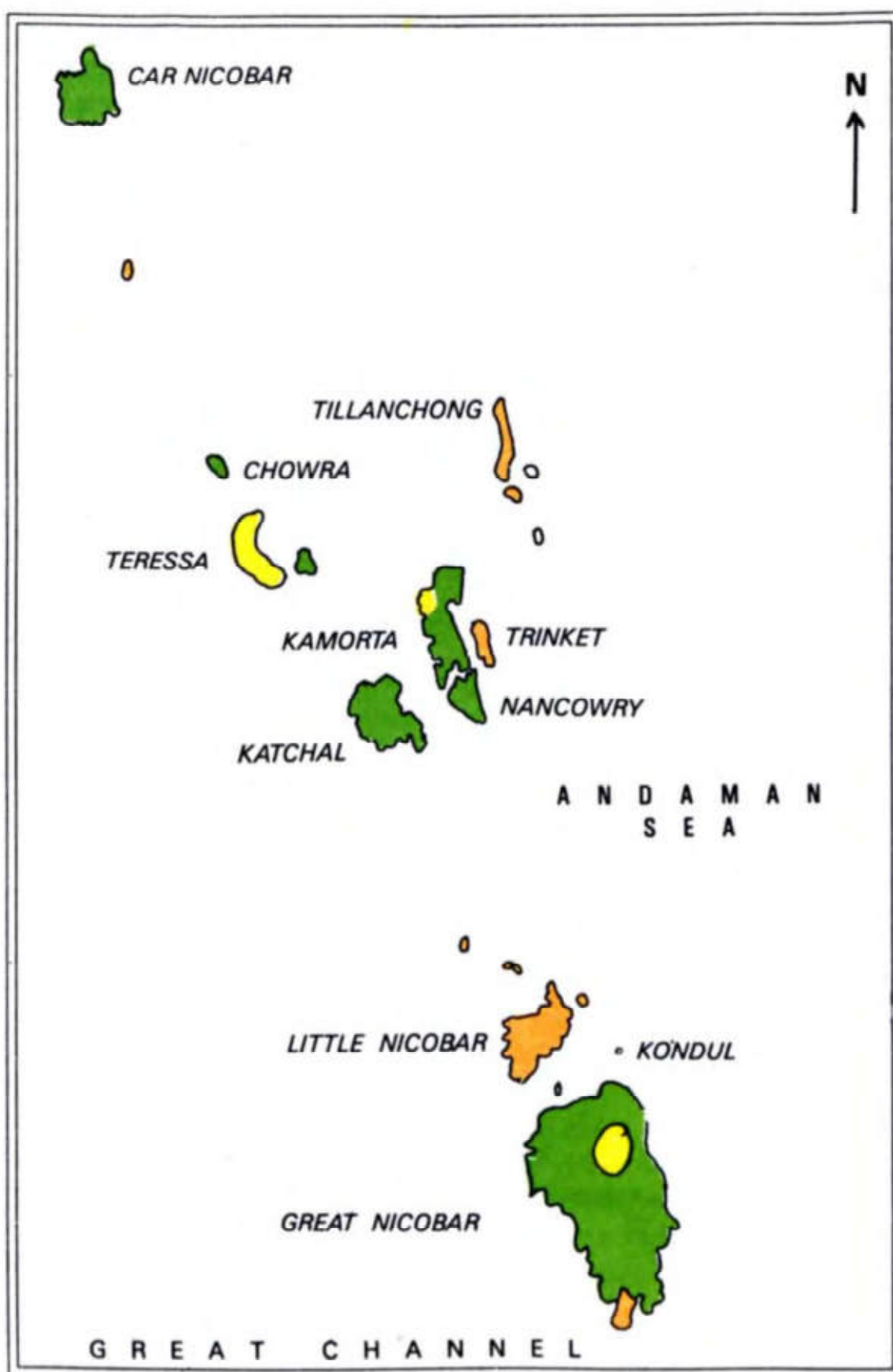
Keeping all these objectives in view, the floral inventorisation of this unique phytogeographically important island is an urgent need, because it is the only remnant virgin tropical rain forest in Andaman & Nicobar Islands, southernmost in India and east of Malay Peninsula. The Botanical Survey of India has decided to prepare the flora of this island and launched the project in this circle as '*Floristic Diversity of Great Nicobar Island*'. The main objectives of this work are :

1. To explore the rich and underexplored area of this island, extensively and intensively.
2. To publish a comprehensive floristic account on the plant wealth of this island.
3. To collect and reintroduce the rare, endemic, endangered and economically useful plant species for conservation of the germplasm.
4. To compare and evaluate the floristic elements of the islands (i.e. Phytogeography).
5. To compare and evaluate the utilisation aspect of the flora i.e. food, medicinal plants, timber etc.
6. To document the ethnobotanical data from the existing literature and from field work.

## GEOGRAPHY

The Great Nicobar Island, the southernmost island of Andaman & Nicobar archipelago and in fact the southernmost land piece of India (situated between 6° 45' and 7° 15' N latitude and 93° 37' E and 93° 56' E longitude) lies about 482 km south of Port Blair and about 145 km north of Sumatra and covers an area of 1045 square km. The island is about 55 km long between Murray point in the north to Indira point in the south. It has a width of about 30 km in the north but the island narrows down to only about 3 km in southern tip (See Map 1, 2).

The island is highly rugged with very narrow flat land along the sea coasts and hill ranges running in north south direction. The reef consists

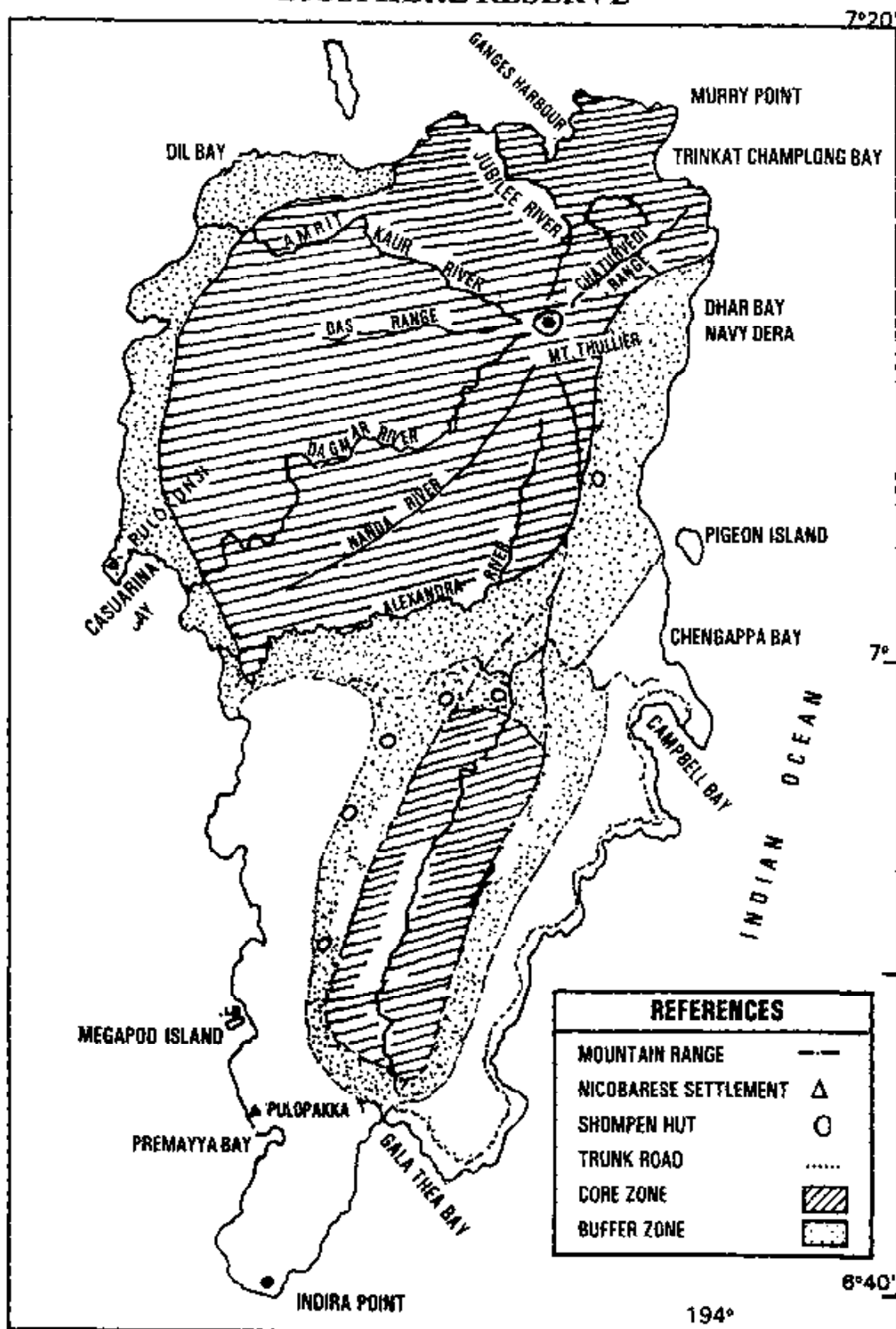


MAP OF NICOBAR

## GREAT NICOBAR

10 km

## BIOSPHERE RESERVE



Map 2

of numerous spurs and ridges enclosing narrow valleys which culminate in a peak known as the Mt. Thullier (670 m above m.s.l.). From this peak, 5 main ranges of hills radiate i.e. Das range, Chaturvedi range, Nanda range, Shani range and Mani range. These hill ranges rise abruptly to substantial height from the seashore/resulting in a spectacular panoramic view of the island.

The coastline is highly indented and several creeks penetrate into the island from inland bays. Some of the bay mouths are studded with several damaged and partially submerged rocky pinnacles which become visible at low tide. The principal bays around the island are Galathea, Casuarina, Ganges harbour, Valdora and Trinkat Champlong. The coastline is generally coralline with magnificent coral reefs at certain places, extending far away from the shoreline, providing ideal situations for underwater photography. There are practically no deep lagoons.

### **DRAINAGE SYSTEM**

Five perennial rivers Alexandra, Dogmar, Amrita Kaur, Jubilee and Galathea with their several tributaries constitute the main drainage system of the island. Apart from these, there are about 25 small fresh water streams originating from hilly ranges and flowing into the sea. Such fresh water resources of the island enjoy unrivalled position among the whole of Andaman & Nicobar Islands.

### **GEOLOGY**

Great Nicobar island is continental in nature and cannot be studied in isolation from Andamn & Nicobar group of Islands which forms a continuation of Arakkan Yoma range of Myanmar in the north to Sumatra of Indonesia in the south. These groups of islands are projections of a long narrow submarine range with only the peaks of which are visible above sea. Geologically quite young in age, probably formed sometimes in upper Mesozoic (*ca* 100 milion years ago), the mountain range has a narrow deep oceanic furrow on the western boundary which abuts on the main Indian plate on the west.

These are three important geological formations for the entire southern group of Nicobar Islands. Firstly, erruptive serpentine and gabbre formations; secondly marine deposits of younger tertiary age composed

of sandstones, slates, clay marls and plastic clay; and thirdly, coral-reef formations of recent origin. The rock formations are of younger tertiary age and are geologically similar to the south west coast of Sumatra (Rink, 1847; Hochstetter, 1869). With the exception of some sand stone hills on the northern coast and the sand stone mountain ranges on the eastern side of Galathea Bay in the south, nothing is known so far about the interior geology of this island. The principal nature of the rock can be said as soft micaceous and sandstone and are younger in origin than the Andamans.

## SOIL

The soils of the island are immature, loose in texture, poor in drainage and low in moisture retaining capacity. They are made chiefly of soft micaceous sandstones, silt stones and clay beds with minor occurrence of basaltic rocks and gravelly sandstone beds. Sandy alluvial soils resulting from the deposition of fine material from the higher slopes in the saline swamps and creeks, support the mangrove forests that fringe the islands sheltered coasts and inland creeks. The coralline alluvium on the beaches along the coasts supports rich tree vegetation. In flat lands along stream banks, the soil is fresh water alluvium. The rich grey, brown and red soils derived from the calcareous sandstones support the luxuriant tropical forest vegetation. Heavy clays to clay loams are found mostly in valley areas. Soil depth varies with slopes, shallow soils characterising higher elevations and deep soil in the valleys and river sides. The profile shows no visible stratification into horizons.

The high rainfall causes an almost continuous percolation of water through the streams and beaches into the sea and the soils have very low moisture retaining capacity. Humus or organic matter is comparatively poor even in hill forests, they being washed away by the heavy rainfall assisted by the steep slopes and loose texture of soils. The soils are highly permeable and thus strongly leached. There is no humus enrichment of the rain forests because of rapid decomposition of organic matter. Thus the soils of the rain forests of Great Nicobar Island are generally poor in nutrient content which is a characteristic feature of the tropical 'Ombrophilous' forests. This is due to the fact that in tropical rain forests favourable climatic conditions facilitate quick mineralisation and dead biotic materials and the released nutrients are immediately absorbed by the roots of dense vegetation. Therefore, the amount of nutrients in



the soils at any instance of time is considerably reduced. The entire nutrient capital necessary for the continuous growth of this lush type of tropical vegetation is tied up in the living plant itself.

## CLIMATE

The temperature ranges from 22°-32°C with the mean relative humidity of about 82%. The annual rainfall in the northern part of island is 3800 mm while in south it is about 3000 mm. April is the hottest month of the year. Monsoon months are April to December. The months of January to March show fairly dry weather. The island is subject to gales and cyclonic winds blowing west to east and east to west changing with the monsoons and sudden depression in the sea around.

## VEGETATION

The following account of the vegetation of Great Nicobar Island is based mainly on several field trips conducted so far by A & N circle and earlier vegetational accounts published by Sahni (1953), Thothathri et al., (1973) and Balakrishnan et al., (1989).

The vegetation of Great Nicobar can broadly be classified into following major groups :

- A. LITTORAL :**
  - 1. Sandy beach formation
    - a. Herbaceous beach vegetation
    - b. Shrubby beach vegetation
    - c. Woodland beach vegetation
    - d. *Casuarina* forests
    - e. *Pandanus* vegetation
    - f. Mixed littoral forests
  - 2. Mangrove vegetation
    - a. Mangrove shrubs
    - b. Mangrove forests
    - c. *Nypa* palm swamp
- B. INLAND :**
  - 1. Low land swamp
    - a. *Pandanus* swamp
    - b. *Areca* swamp

2. Evergreen hill forests
  - a. Mixed evergreen forests
  - b. Pure evergreen forests
3. Man made vegetation
  - a. Coconut plantations
  - b. Secondary formations

## A. LITTORAL :

### 1. Sandy Beach Formations :

This formation starts from the proximity of seashore to about 30-50 m interior of the island. These areas are not usually inundated by sea water, however, sometimes during storms high waves splash over them. This formation can be classified into the following groups :

(a) *Herbaceous beach vegetation* : This includes both submerged and non-submerged plants. Among the plants growing submerged in sea water along shallow beaches are various types of algae, and sea grasses like *Enhalus acoroides* and *Halodule uninervis* etc. on open exposed sandy beaches we get the dominant creepers like *Ipomoea pescaprae* and *Vigna marina*. This is intermingled with grasses like *Ischaemum muticum* and *Thuarea involuta* and the sedges like *Cyperus pedunculatus*. The parasitic angiosperm *Cassytha filiformis* is also found in this area.

(b) *Shrubby beach vegetation* : Immediately behind herbaceous vegetation, one can find taller shrubby formations. *Scaevola sericea*, which often forms gregarious dense hedge-like formations facing sea, is the most dominant species in this area. Associated with it are *Dendrolobium umbellatum*, *Sophora tomentosa*, *Argusia argentea*, *Atalantia monophylla* and *Cordia subcordata*. The spiny straggler with yellow flowers, *Caesalpinia bonduc* is also common at certain places. These shrubby formations are often densely entangled with climbers such as *Flagellaria indica* and *Vigna marina*.

(c) *Woody beach vegetation* : The most dominant tree species along the beaches is *Barringtonia asiatica*. This is associated with other trees such as *Pongamia pinnata*, *Calophyllum inophyllum*, *Glochidion calocarpum*, *Hernandia nymphaeifolia*, *Guettarda speciosa* and *Heritiera*

*littoralis*. The ground floor in this woody vegetation is sparse and consists of *Crinum asiaticum*, *Tacca leontopetaloides* and *Dracaena angustifolia*. The common epiphytes found in these forests are *Asplenium nidus*, *Phymatosorus scolopendria*, *Dendrobium crumenatum* and *Trichoglottis cirrhifera* are also commonly found.

(d) *Casuarina forests* : Along some beaches in this island especially on the west coast near the mouths of Alexandra and Dogma rivers, pure stands of *Casuarina equisetifolia* are found growing naturally. Sometimes they are associated with *Pandanus odoratissimus*.

(e) *Pandanus vegetation* : At several places along the open beaches, one can find pure stands of *Pandanus odoratissimus*, extending to wide areas.

(f) *Mixed littoral forests*: This zone lies just behind the beach forest and stretches for some distance interior. The demarcation between woodland beach forests and littoral forests are not clear at several places. This forest is characterised by the abundance of palms in the shrub and lower tree layers and many trees being laden with climbers and rattans. Epiphytes are particularly the ferns. The dominant canopy trees are *Terminalia bialata*, *T. procera*, *Mangifera camptosperma*, *Syzygium samarangense*, *Barringtonia racemosa*, *Heritiera littoralis* and occasionally associated with some sparsely distributed Coconut palms. The shrubby *Tabernaemontana* vegetation is composed of *Atalantia monophylla*, *Ardisia solanacea*, *Tabernaemontana crispa* and *Hedyotis paradoxa* etc. The herbaceous vegetation is very poorly developed. Climbers like *Calamus andamanicus*, *Dinorchloa scandens*, *Thunbergia laurifolia*, *Schefflera elliptica*, *Mucuna gigantea*, *Uvaria cordata* and *Poikilospermum suaveolens* are usually seen in these forests. Epiphytic orchids like *Aerides emericii* and *Cleisostoma uraiensis* are common.

## 2. Mangrove vegetation :

Mangroves, the characteristic vegetation of the coastal tidal zone, play valuable and critical role in the coastal systems and maintain high level of carrying capacity since they are closely correlated with conditions of soil, topography, climate, tidal patterns, salinity of water, soil drainage and aeration. They can be zoned into different communities, each occupying its own ecological niche and dominated by a few species for

adaptations with their environment, they are characterised by frequent presence of pneumatophores, stilt roots and viviparous fruits.

(a) *Mangrove scrub* : The scrubby vegetation of pioneering mangroves like *Acanthus volubilis*, *Acrostichum aureum* and *A. speciosum* are also found on the seaward side on muddy shores. Further seawards occur small trees of *Sonneratia caseolaris* and *Excoecaria agallocha*.

(b) *Mangrove forests* : Mangrove forests usually have dense canopy. Its undergrowth is very sparse and climbers and epiphytes are rare, though they are common in interior areas. The common tree species are : *Rhizophora apiculata*, *R. mucronata*, *R. stylosa*, *Carallia brachiata* and *Sonneratia caseolaris* etc. The common climbers and epiphytes are *Hoya parasitica*, *Dischidia bengalensis*, *Derris trifoliata* and also a few Orchids and Ferns.

(c) *Nypa palm swamp* : It covers riverine swampy areas and estuaries and are subject to daily brackish water flooding. They also line tidal creeks where fresh and salt water meet and mix. Very frequently it forms pure stands with a closed canopy without any undergrowth. The most common species is *Nypa fruticans*, sometimes associated with *Dolichandrone spathacea* at the creek mouth.

## B. INLAND :

1. **Low land swamp** : This type of vegetation is found in the low land areas near the major banks of rivers of the islands and the low land forest of the littoral zones. It depends generally on depth and quality of water, drainage and flooding conditions.

(a) *Pandanus swamp* : Far away from the seashore in the low land areas, near the water courses, where the soil is moist and swampy due to heavy downpour, *Pandanus lerram* var. *andamanensium* generally occurs in large populations.

(b) *Areca swamp* : Due to heavy rain, the lowland forest floors get inundated with water often remaining stagnant for long time. This is commonly seen in littoral zone of certain areas where the wild *Areca catechu* grows abundantly. This is often associated with *Syzygium*

*samarangense*, *Ficus rumphii*, *Terminalia bialata*, *Pandanus odoratissimus* and *Mangifera camptosperma*.

2. **Evergreen hill forests :** The tropical humid rain forests of Great Nicobar Island are basically broad-leaved, multistoried and evergreen with some deciduous elements, comprising of tall canopy and supporting diverse life forms of palms, climbers, epiphytes and ferns. These luxuriant rain forests are very rich both floristically and structurally. The forest structure is irregular and diverse throughout all layers. The canopy is very variable in height, coverage and crown sizes. This can broadly be classified into two groups :

(a) *Mixed evergreen forests :* At low altitudes littoral and mixed evergreen forests are often intermixed with each other depending on topography. However pure deciduous formation is practically absent. The major deciduous and semi-deciduous trees occupying this low level, undulating, less moist ground are *Artocarpus gomeziana*, *Terminalia catappa*, *T. bialata*, *T. citrina*, *Neolamarckia cadamba*, *Dehaasia candolleana* and *Lagerstroemia ovalifolia* etc. associated with several evergreen elements which gradually merge into evergreen hill forests. A characteristic gymnosperm *Gnetum gnemon* occurs scattered in this region. The ground layer occasionally becomes wet, due to lack of penetration of light through the closed canopy. Several species of *Aglaonema simplex*, *Piper* spp. and *Hetaeria obliqua* occupy the ground layers, whereas epiphytes like *Asplenium nidus*, *Nephrolepis* spp., *Pholidota pallida*, *Luisia zeylanica* and *Pteroceras barkeleyii* etc. are seen on the evergreen trees. Rare palms like *Rhopaloblaste angusta* and *Pinanga manii* are found in this transitional zone.

At low altitudes, along small perennial rivers, the characteristic fern *Cyathea albo-setacea* and the giant leaved fern, *Angiopteris evecta* grow luxuriantly. Shrubs like *Grewia calophylla*, *G. acuminata*, *Mussaenda* spp., *Ziziphus rugosa*, *Leea indica*, *L. grandifolia*, *Macarranga peltata*, *M. nicobarica*, *Clerodendrum innerme*, *C. viscosum* and *C. paniculatum*. Trees like *Antidesma* spp., *Ficus* spp., *Chisocheton grandiflorus*, *C. nicobarianus*, *Elaeocarpus macrocerus* and *E. aristatus* and herbs like *Tournefortia ovata*, *T. tetrandra*, *Stauroanthera grandiflora*, *Rhynchoetechum parviflorum*, *Goodyera procera*, *Homalomena cordata*, *H. nutans* and *Coelorachis glandulosa* are found along the streams. A liana with pendulous branches *Indorouchera griffithiana* and epiphytes like

*Aeschynanthus volubilis*, *Hoya parasitica* and *Pothos macrocephalus* are frequently confronted. Several epiphytic orchids and ferns are found in this humid environment.

(b) *Pure evergreen forests* : Moderate temperature and excessive rainfall are the main factors responsible for the luxuriant growth of the rich tropical evergreen humid forests. This type of formation occurs on low and high hills and valleys in the interior of the island. The top soil here is fertile with abundant humus, which mainly influences the structure and distribution of the species composition. The tall evergreen trees are *Calophyllum soulattri*, *Sterculia macrophylla*, *Planchonella firma*, *Palaquium semarum*, *Aphanamixis polystachya*, *Horsfieldia irya*, *Actephila excelsa*, *Fagraea racemosa*, *F. auriculata*, *Aglaia* sp., *Knema andamanica* ssp. *andamanica*, *Chydenanthus excelsus*, *Litsea glutinosa*, *Elaeocarpus aristatus*, *Dysoxylum densiflorum*, *Nephelium uncinatum*, *Pometia pinnata*, *Kibara coriacea*, *Nothophoebe panduriformis* and *Ficus* spp.. Often these are associated with climbers like *Freycinetia insignis*, *Dinorchloa scandens*, *Merremia peltata*, *Bauhinia stipularis*, *Dioscorea* spp. *Fibraurea tinctoria*, *Tinomisium petiolare* and *Aristolochia tagala* etc. Clumps of Bamboos are rarely seen in thickets along the rivers of water courses. Different shrubs like *Oxyceros longiflora*, *Saurauia bracteosa*, *Cyrtandroemia nicobarica*, *Melastoma affine*, and lianas like *Rourea minor* are also seen. Besides several pteridophytes and orchids are also observed. Tree Ferns (*Cyathea albo-setacea*) are also frequently dispersed along the hilly slopes of the forests.

### 3. Man made vegetation :

Nicobarese, the coastal tribals occupying mostly the west coast of the island, are mainly dependent on coconut and hence they have cleared the coastal vegetation and replaced it with Coconut plantations in and around their villages.

Shompens, the aboriginal, nomadic tribe living in the interior dense forests, also raise some cultivated plants like *Musa*, *Pandanus*, *Cocos*, *Capsicum*, *Citrus*, *Nicotiana* and *Colocasia* etc. However, they do not destroy any large tracts in the forests and are not responsible for large scale deforestation.

**Botanical History :**

The flora of this island is unique as well as diverse in species content. According to Jacobs (1978), the flora is closely related to the Sumatran flora.

During the year 1845-47, the Austrian Frigate 'Novora' headed by Dr. Von Hochstetters, a geologist, studied the geology and geography of the Nicobar Islands and Mr. Jelinek, a member of the team, collected a few plants from the Nicobar Islands. Between, 1847-1849, Commodore Steen Bille made the famous expedition of the Danish Corvette 'Galathea' and touched the Great Nicobar Islands and collected some plants which were enumerated together with an account of the vegetation and was published in Danish language in 1849. Subsequently N. Wallich translated it into English in 1850. In 1863 Rev. Parish, botanised the islands and his collections were deposited in *CAL* and *K* herbarium. S. Kurz described several new plants from the Nicobar Islands and gave a detailed sketch of the vegetation following his systematic exploration between 1866 to 1876.

Sir David Prain (1891) conducted a series of botanical explorations to these islands and described the vegetation of Nicobar (especially Car Nicobar) Islands.

Boden Klos (1903), an explorer visited these islands and wrote a book on Andaman & Nicobars where he mentioned the names of many plants used by the local tribes for various purposes.

During 1952 Sahni visited the Great Nicobar Island along with the forest officials to assess the timber wealth of the island. He collected more than 150 specimens and published an account in 1953. His observations on mangroves as a whole on Andaman & Nicobar Islands along with discussions on its economical potentialities appeared in 1958.

Thothathri and his associates made a joint scientific expedition in 1966 to explore and assess the plant wealth of the Great Nicobar Island. The result of this expedition was published in 1973 which includes enumeration of 335 species and accounts on the vegetation, flora, phytogeography and economical potentialities from the botanical point of view.

Balakrishnan (1976-1979) undertook three visits to this island and his survey work resulted in several novelties including new species, new distributional records, endemic and rare species etc. A list of rare and endangered, endemic plants of the whole Andaman & Nicobar Islands has been published by him during 1977-88. He also made extensive studies on the wild populations of *Areca* and *Cocos* in these islands.

Subsequently Balakrishnan & Vasudeva Rao (1983) have published the dwindling plant species of Andaman & Nicobar Islands. The Ministry of Environment & Forests, New Delhi published Project Document-II on the Great Nicobar Biosphere Reserve in 1989 under the MAB Programme which was prepared by Balakrishnan *et. al.*

Besides these, several other interesting papers have been published on the plant resources of this island under different headings viz., Taxonomical notes, new species, new distributional records, endemic and rare species; Phytogeography; Economic & Ethnobotanical aspects; Ecology and Family revision work etc.

After launching the project in the Botanical Survey of India, Andaman & Nicobar Circle in January 1994 four exploration trips have been made so far. The area was frequently visited to record in detail seasonal variations and to collect plants in different developmental stages. The specimens were identified with the help of available literature, proper dissection of the materials and finally by comparing with the authentic herbarium sheets.

The present comprehensive floristic account of the Great Nicobar Island is the outcome of three years (1994 to 1996) intensive and extensive floristic studies on the area and on the basis of existing herbarium collections at *PBL* and published research papers.

The arrangement of the families followed in the present work is based primarily on Bentham & Hooker's (1862-1883) system of classification in general, as is followed in most of the floras published in India. However, a number of cases, the circumscription of the families has been restricted after Hutchinson (1959) and Airy Shaw (1973). The genera under family and the species under the genus have been arranged in alphabetical order for the sake of convenience. Classification of Pteridophytes has been according to Pichi-Sermolli (1977, 82) and Ching (1978).



Indented keys have been provided for the genera and species. These keys are artificial and are largely based on exomorphic characters.

The nomenclature of plants has been made as far as possible up to date as per ICBN 1994.

For each species latest botanical names have been given with full citation. Selective bibliography is appended at the end of the flora.

### STATUS OF THE PLANT EXPLORATIONS :

About 80% of the total geographical area is explored extensively and intensively and the remaining 20% of the area (Mt. Thulliar part) is inaccessible and unexplored (see Map 3.).

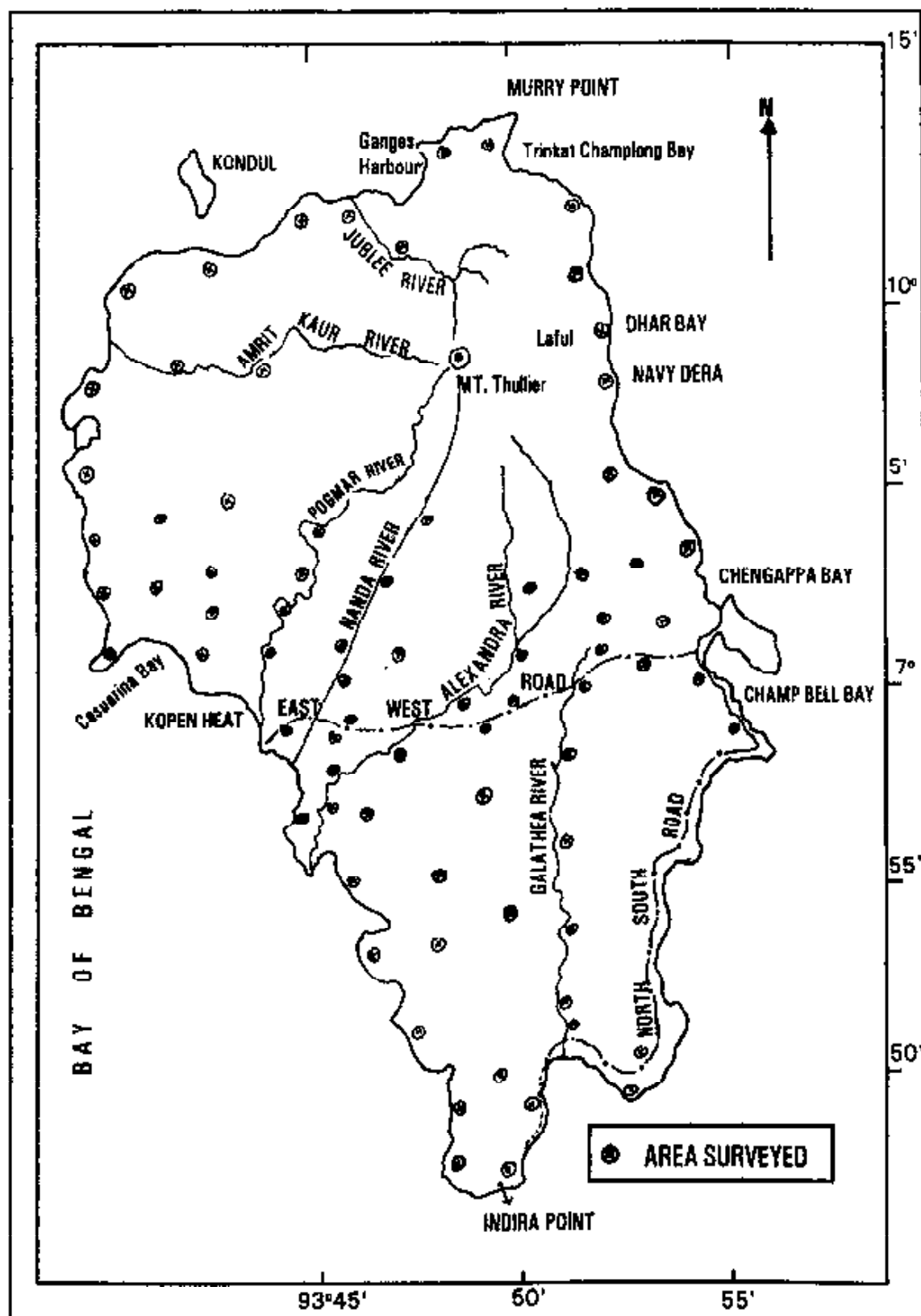
### ANALYSIS OF THE FLORA :

The analysis of the flora of the Great Nicobar Island has been drawn up on the basis of material studied and identified so far (upto January 1996) both from herbarium (*PBL*) materials as well as our collections from the fields.

The following floristic accounts include the angiosperms, pteridophytes and gymnosperms comprising 648 species, 422 genera and 142 families (see Table 1).

**Table 1**  
**Floristic Analysis of the Flora**

Groups	Families	Genera	Species	Endemic species	Extended distr.
Pteridophytes	32	47	77	2	22
Gymnosperms	2	2	3		1
Dicots	89	287	438	65	154
Monocots	19	86	130	22	34
Total	142	422	648	89	211



Map 3

The ten largest families in the area in order of their highest representation of the species are Euphorbiaceae, Rubiaceae, Orchidaceae and Cyperaceae (see Table 2).

**Table 2**  
**Largest Families of the Flora of Great Nicobar**

Families	Genera	Species
Euphorbiaceae	19	39
Rubiaceae	23	37
Orchidaceae	27	31
Cyperaceae	7	28
Poaceae	20	26
Annonaceae	8	16
Fabaceae	10	14
Moraceae	3	13
Menispermaceae } and Meliaceae }	11 & 6	12
Asteraceae & } Verbenaceae }	9 & 7	11

A comparison between ten largest families of Great Nicobar Island and with those given in Hooker (1904) '*Flora of British India*' is given in Table-3. The position of Euphorbiaceae is first in present flora which is fifth in Flora of British India. The position of Orchidaceae is first in Flora of British India while it is third in present flora. The position of other families too vary in both cases. In the present flora Fabaceae, Caesalpiniaceae and Mimosaceae are treated separately while Hooker included them under Leguminosae.

**Table 3**  
**The Comparison between Ten Largest Families of Great**  
**Nicobar Island with Flora of British India**

Flora of Great Nicobar	Hooker's Flora British India
Euphorbiaceae	Orchidaceae
Rubiaceae	Leguminosae
Orchidaceae	Poaceae
Cyperaceae	Rubiaceae
Poaceae	Euphorbiaceae
Annonaceae	Acanthaceae
Fabaceae	Asteraceae
Moraceae	Cyperaceae
Menispermaceae	Lamiaceae
Asteraceae	Urticaceae

## PYTOGEOGRAPHY

An analysis of the distribution of the floristic elements occurring in the area was made to understand the phytogeographical affinity on one hand and to find out the endemic content of the flora on the other.

The presence of over 648 species within a land area of 1045 sq km is a significant feature of Great Nicobar Island becoming a cynosure not only for plant taxonomists but also for conservationists. The rare and distinct flora which evolved through millions of years due to insular nature of the territory, physical isolation between the islands and also from the neighbouring continental land masses is unique to India. Though related to mainland Indian flora, the flora of Great Nicobar shows much closer affinity with Malaysian Archipelago (i.e. Sunda biogeographical zone) representing 422 genera belonging to 142 families. Out of these about 13.11% of the species are endemic to the Island (see Table 4). Among the non endemic species about 32.25% are not found in mainland India but extend their distribution to south east Asia including Malay Peninsula, Java, Sumatra, Thailand & Myanmar (see Table 5). As the flora of the Great Nicobar island is essentially Malaysian it is also called as subcontinental island flora (Balakrishnan, 1989).

The flora of Great Nicobar is distinctly different from Andaman islands which is evident from the fact that the genera *Otenthra* and *Astronia* of Melastomataceae, *Cyrtandromea* of Scrophulariaceae, *Cyrtandra* of Gesneriaceae, *Stemonurus* (Icacinaceae), *Rhopaloblaste* from Arecaceae and *Spathoglottis* of Orchidaceae and many more species so common in Great Nicobar Island are totally absent in the Andaman Islands.

The striking dissimilarities between the Great Nicobar flora and Andaman flora are owing to reason that Great Nicobar has more species common with Malaysian in the east and Indonesia in the south while Andaman Islands have more species common to N.E. India, Myanmar & Thailand.

The climatic conditions of the Western Ghats of Peninsular India & Sri Lanka are similar to that of Great Nicobar island as all these areas lies in the tropical zone and experience heavy rainfall from south west and north east monsoon. Although both the zones are not contiguous but separated from each other by the Bay of Bengal, they show striking resemblance in their floristic composition. Several rare plants especially orchids common to Peninsular India and Great Nicobar are *Corymborkis veratrifolia*, *Dendrobium* sp., *D. crumenatum* and *Eria bractescens*. Other species which have common distribution are *Burmannia championii*, *Floscopa scandens*, *Myxopyrum smilacifolium* and several other species.

Thus the Great Nicobar islands are characterised by a rare and distinct flora, although exhibiting phytogeographical affinity with the neighbouring biogeographic zones of Malaysian and Indonesian species and Peninsular biogeographical zones of mainland India by virtue of which the island constitute a transitional zone phytogeographically. The floristic analysis also indicates that while 13.11% species are endemic to the island, about 54.62% are also occurring in mainland India. The remaining 32.25% extend to the south east Asian countries like Malaysia, Sumatra & Java but not recorded in mainland India.

The island is also rich in Pteridophytic flora with about 77 species (2 endemic and 22 occurring in the adjacent neighbouring countries but not in Indian mainland) represented of which, 'Tree Fern' *Cyathea* is most interesting with significant population in this island.

**Table 4**  
**List of Endemic Plants**

Plant species	Endemic to		
	Gt. Nicobar Island	Nicobar Island	A & N Islands
<b>PTERIDOPHYTES :</b>			
<b>CYATHEACEAE :</b>			
<i>Cyathea albosetacea</i>		+	
<i>Cyathea nicobarica</i>		+	
<b>DICOTYLEDONS :</b>			
<b>RANUNCULACEAE</b>			
<i>Clematis smilacifolia</i>			+
<i>var. andamanica</i>			
<b>DILLENIACEAE :</b>			
<i>Dillenia andamanica</i>			+
<b>ANNONACEAE :</b>			
<i>Artobotrys nicobarianus</i>	+		
<i>Friesodielsia forniculata</i>	+		
<i>Orophea katschallica</i>			+
<i>Polyalthia parkinsonii</i>			+
<i>Pseuduvaria prainii</i>			+
<i>Uvaria nicobarica</i>	+		
<b>MENISPERMACEAE :</b>			
<i>Cyclea pendulina</i>		+	
<b>STERCULIACEAE :</b>			
<i>Sterculia cordata</i>		-	+
<b>CLUSIACEAE :</b>			
<i>Grewia calophylla</i>			+

Plant species	Endemic to		
	Gt. Nicobar Island	Nicobar Island	A & N Islands
<b>RUTACEAE :</b>			
<i>Glycosmis pilosa</i>			+
<i>G. mauritiana</i> var. <i>andamanensis</i>			+
<i>Paramignya andamanica</i>			+
<b>MELIACEAE :</b>			
<i>Chisocheton nicobarianus</i>	+		
<i>Dysoxylum alliaceum</i>			+
<b>ICACINACEAE :</b>			
<i>Codiocarpus andamanica</i>			+
<i>Gomphandra comosa</i>		+	
<b>CELASTRACEAE :</b>			
<i>Nicobariodendron sleumeri</i>	+		
<b>VITACEAE :</b>			
<i>Tetrastigma andamanicum</i>			+
<b>LEEACEAE :</b>			
<i>Leea grandifolia</i>		+	
<b>ANACARDIACEAE :</b>			
<i>Mangifera nicobarica</i>		+	
<i>Semecarpus kurzii</i>			+
<b>CONNARACEAE :</b>			
<i>Connarus nicobaricus</i>	+		
<b>COMBRETACEAE :</b>			
<i>Terminalia procera</i>			+
<b>MELASTOMATACEAE :</b>			
<i>Otanthura nicobarensis</i>	+		

Plant species	Endemic to		
	Gt. Nicobar Island	Nicobar Island	A & N Islands
<b>MEMECYLACEAE :</b>			
<i>Memecylon andamanicum</i>			+
<b>RUBIACEAE :</b>			
<i>Coptophyllum nicobaricum</i>	+		
<i>Hedyotis paradoxa</i>			+
<i>Ixora brunnescens</i>			+
<i>I. cuneifolia</i> var. <i>macrocarpa</i>		+	
<i>I. grandifolia</i> var. <i>kurziana</i>		+	
<i>I. grandifolia</i> var. <i>rosella</i>		+	
<i>I. tenuifolia</i>		+	
<i>Ophiorrhiza infundibularis</i>	+		
<i>O. nicobarica</i>	+		
<i>Psychotria andamanica</i>			+
<i>P. platyneura</i>		+	
<i>Tarenna weberaefolia</i>			+
<b>MYRSINACEAE :</b>			
<i>Embelia microcalyx</i>		+	
<i>Maesa andamanica</i>			+
<b>OLEACEAE :</b>			
<i>Jasminum multiflorum</i> var. <i>nicobaricum</i>	+		
<b>APOCYNACEAE :</b>			
<i>Alstonia kurzii</i>			+
<i>Chilocarpus denudatus</i> var. <i>nicobaricus</i>	+		
<i>Tabernaemontana crispa</i>			+
<b>ASCLEPIADACEAE :</b>			
<i>Genianthus horei</i>	+		
<b>SCROPHULARIACEAE :</b>			
<i>Cyrtandroemia nicobarica</i>	+		



Plant species	Endemic to		
	Gt. Nicobar Island	Nicobar Island	A & N Islands
<b>GESNERIACEAE :</b>			
<i>Cyrtandra burtii</i>	+		
<i>C. occidentalis</i>	+		
<b>ACANTHACEAE :</b>			
<i>Strobilanthes glandulosus</i>			+
<b>MYRSINACEAE :</b>			
<i>Knema andamanica</i> ssp. <i>andamanica</i>			+
<b>LAURACEAE :</b>			
<i>Litsea kurzii</i>		+	
<i>Nothophoebe nicobaricus</i>	+		
<b>EUPHORBIACEAE :</b>			
<i>Claoxylon rostratum</i>			+
<i>Cleistanthus balakrishnani</i>	+		
<i>Drypetes bhattacharyae</i>			+
<i>Glochidion calocarpum</i>			+
<i>Macaranga nicobarica</i>		+	
<i>Mallotus oblongifolius</i> var. <i>rubriflorus</i>			+
<i>Sphyrnthera lutescens</i>			+
<i>Trigonostemon villosus</i> var. <i>nicobaricus</i>	+		
<b>URTICACEAE :</b>			
<i>Pellionia procradifolia</i>		+	
<i>Elatostema novorae</i>		+	
<b>MONOCOTYLEDONS :</b>			
<b>ORCHIDACEAE :</b>			
<i>Aerides emericii</i>	+		
<i>Anoectochilus nicobaricus</i>	+		
<i>Eria bractescens</i> var. <i>kurzii</i>			+

Plant species	Endemic to		
	Gt. Nicobar Island	Nicobar Island	A & N Island
<i>Dendrobium shompenii</i>	+		
<i>Pomatocalpa andamanicum</i>			+
<i>Phalaenopsis speciosa</i> var. <i>speciosa</i>			+
<i>Trichoglottis quadricornuta</i>		+	
<i>Vanilla andamanica</i>			+
<b>ZINGIBERACEAE :</b>			
<i>Hornstedtia fenzlii</i>	+		
<b>MARANTACEAE :</b>			
<i>Phrynium paniculatum</i>	+		
<b>DIOSCOREACEAE :</b>			
<i>Dioscorea vexans</i>			+
<b>AGAVACEAE :</b>			
<i>Dracaena brachyphylla</i>	-		+
<b>ARECACEAE :</b>			
<i>Calamus andamanicus</i>			+
<i>C. dilaceratus</i>		+	
<i>C. pseudo-rivalis</i>			+
<i>C. unifarius</i>		+	
<i>C. nicobaricus</i>	+		
<i>Pinanga manii</i>			+
<i>Rhopaloblaste augustata</i>	+		
<b>PANDANACEAE :</b>			
<i>Pandanus leram</i> var. <i>andamanensium</i>			+
<b>ARACEAE :</b>			
<i>Aglaonema nicobaricum</i>	+		
<i>Homalomena griffithii</i> var. <i>ovata</i>	+		

**Table 5**  
**List of plant species common to A & N Islands and S.E. Asian countries but not found in India proper**

Name of Species	Family	Distribution
<b>PTERIDOPHYTES :</b>		
<i>Lycopodium nummularifolium</i>	LYCOPODIACEAE	Gt. Nicobar Is.; Malay Peninsula to Pacific Island.
<i>Microsorium insigne</i>	POLYPODIACEAE	Gt. Nicobar Is.; Java & Malaysia.
<i>Syngnema alsimaefolia</i>	HEMIONITIDACEAE	Gt. Nicobar Island; Malaysia.
<i>Vittaria ensiformis</i>	VITTARIACEAE	A & N Is.; Thailand, Polynesia to Madagascar.
<i>Reediella humilis</i>	HYMENOPHYLLACEAE	A & N Is.; Indonesia, Malaysia, Philippines, Taiwan, Polynesia etc.
<i>Vandenboschia maxima</i>	HYMENOPHYLLACEAE	Gt. Nicobar; Japan to Pacific Islands.
<i>Crepidomanes bilabiatum</i>	HYMENOPHYLLOPSIDACEAE	Nicobar Is.; Thailand, Java, Western Malaysia.
<i>Lindsaea malayensis</i>	LINDSAEACEAE	Nicobar Is.; Malay Peninsula.
<i>L. parasitica</i>	LINDSAEACEAE	Nicobar Is.; Malay Peninsula, Thailand.
<i>L. tetragona</i>	LINDSAEACEAE	Nicobar Is.; Celebes, Solomon Islands, Fiji & Tahiti.
<i>Cyclosorus heterocarpus</i>	THELYPTERIDACEAE	A & N Is.; Java, Malay Peninsula, Philippines, New Guinea, China.

Name of Species	Family	Distribution
<i>Pronephrium cuspidatum</i>	THELYPTERIDACEAE	Gt. Nicobar; Malaysia, Solomon Islands, Taiwan, Rajuku Islands.
<i>Asplenium batuense</i>	ASPLENIACEAE	Great Nicobar; Western Malaysia.
<i>A. sublasperptifolium</i>	ASPLENIACEAE	Great Nicobar; Malaysia to S. China.
<i>A. tenerum</i>	ASPLENIACEAE	Great Nicobar; Malay Peninsula.
<i>Luerssenia kehdingiana</i>	ASPIDIACEAE	Great Nicobar; Sumatra.
<i>Bolbitis sinuata</i>	BOLBITIDIACEAE	Great Nicobar; Thailand, Malaysia, New Guinea.
<i>Lomagramma sumatrana</i>	BOLBITIDIACEAE	Great Nicobar; Malay Peninsula & Sumatra.
<i>Humata heterophylla</i>	DAVALLACEAE	Great Nicobar; Malaysia to Polynesia.
<i>H. pectinata</i>	DAVALLACEAE	Great Nicobar; Sumatra to Solomon Islands.
<i>Blechnum finlaysonianum</i>	BLECHNACEAE	A & N Islands; Malay Peninsula.
<b>GYMNOSPERM :</b>		
<i>Cycas rumphii</i>	CYCADACEAE	Andaman & Nicobar Islands; Myanmar.

Name of Species	Family	Distribution
<b>ANGIOSPERMS :</b>		
<b>DICOTYLEDONS :</b>		
<i>Naravelia laurifolia</i>	RANUNCULACEAE	Great Nicobar; Malay Peninsula.
<i>Anaxagorea javanica</i>	ANNONACEAE	Great Nicobar; Java, Borneo, Singapore.
<i>Goniothalamus malayanus</i>	ANNONACEAE	Great Nicobar; Malay Peninsula, Sumatra, Borneo & Sarawak.
<i>Polyalthia cauliflora</i> var. <i>desmantha</i>	ANNONACEAE	Great Nicobar; Thailand, Indonesia.
<i>P. lateriflora</i>	ANNONACEAE	A & N Islands; Myanmar.
<i>Pseuduvaria rugosa</i>	ANNONACEAE	Nicobar Is.; Malay Peninsula.
<i>Uvaria rufa</i>	ANNONACEAE	A & N Islands; Cambodia, Laos, Vietnam, Thailand, Malaysia, Philippines to New Guinea.
<i>Fibraurea tinctoria</i>	MENISPERMACEAE	A & N Islands; Myanmar, Thailand, Java, Malaysia, Sumatra.
<i>Pycnarrhena lucida</i>	MENISPERMACEAE	A & N Islands; Thailand, Cambodia, Malay Peninsula, Sumatra & Java.
<i>Tinomiscium petiolare</i>	MENISPERMACEAE	Great Nicobar Island; Malay Peninsula, Sumatra, Java.

Name of Species	Family	Distribution
<i>Casuaria grewiaefolia</i> var. <i>geionoides</i>	FLACOURTIACEAE	A & N Islands; Indonesia, Malaysia.
<i>Pangium edule</i>	FLACOURTIACEAE	Great Nicobar; Malaysia.
<i>Ryparosa javanica</i>	FLACOURTIACEAE	A & N Islands; Malay Peninsula, New Guinea.
<i>Xanthophyllum vitellinum</i>	XANTHOPHYLLACEAE	A & N Islands; Malaysia, Indonesia, Philippines.
<i>Calophyllum macrocarpum</i>	CLUSIACEAE	A & N Islands; South Thailand, Malay to Borneo.
<i>C. soulattri</i>	CLUSIACEAE	A & N Islands; South East Asia, Philippines, Vietnam to Australia.
<i>Garcinia nervosa</i>	CLUSIACEAE	A & N Islands; Malay Peninsula; Singapore.
<i>Saurauia bracteosa</i>	ACTINIDIACEAE	Great Nicobar; Java.
<i>Sterculia macrophylla</i>	STERCULIACEAE	Nicobar Is.; Myanmar, Malay Peninsula.
<i>S. parviflora</i>	STERCULIACEAE	A & N Islands; Myanmar, Bangladesh, Malaysia.
<i>S. rubiginosa</i>	STERCULIACEAE	A & N Islands; Myanmar & Malay Peninsula.
<i>Grewia acuminata</i>	TILIACEAE	Great Nicobar; Myanmar, Malay Peninsula.
<i>Triumfetta repens</i>	TILIACEAE	Great Nicobar; Thailand, Malaysia, Cambodia, Madagascar.
<i>Indorouchera griffithiana</i>	LINACEAE	Nicobar Islands; Malay Peninsula, Java.

Name of Species	Family	Distribution
<i>Glycosmis mauritiana</i> var. <i>insularis</i>	RUTACEAE	A & N Islands; Sri Lanka & Malay Peninsula.
<i>Canarium euphyllum</i>	BURSERACEAE	A & N Islands; S.E. Asia.
<i>Dacryodes rugosa</i>	BURSERACEAE	Nicobar Islands; Malay Peninsula, Java & Borneo.
<i>Aglaia edulis</i>	MELIACEAE	A & N Islands; Bangladesh, Java, Borneo & Fiji.
<i>A. sylvestris</i>	MELIACEAE	A & N Islands; Sumatra & Malaysia.
<i>Chisocheton grandiflorus</i>	MELIACEAE	A & N Islands; Myanmar & Malaysia.
<i>C. longistipitatus</i>	MELIACEAE	A & N Islands; Malay Peninsula.
<i>Dysoxylum arborescens</i>	MELIACEAE	A & N Islands; Borneo & Malay Peninsula.
<i>D. densiflorum</i>	MELIACEAE	Nicobar Islands; Java.
<i>Dichapetalum platyphyllum</i>	DICHAPETALACEAE	Nicobar Islands; Malay Peninsula, insular Philippines.
<i>D. timoriense</i>	DICHAPETALACEAE	Nicobar Is.; Malay Peninsula.
<i>Anacolosia frutescens</i>	OLACACEAE	A & N Islands; Myanmar, Malay Peninsula.
<i>Olax imbricata</i>	OLACACEAE	A & N Islands; Myanmar, Malay Peninsula.
<i>Iodes cirrhosa</i>	ICACINACEAE	Great Nicobar; Java, Philippines.

Name of Species	Family	Distribution
<i>Stemonurus secundiflorus</i>	ICACINACEAE	Great Nicobar; Java, Malay Peninsula.
<i>Smythea lanceata</i>	RHAMNACEAE	Nicobar Islands; Java, Philippines, New Guinea.
<i>Ziziphus horsfieldia</i>	RHAMNACEAE	Nicobar Islands; Java.
<i>Leca angulata</i>	LEEACEAE	Nicobar Islands; Java.
<i>Allophylus dimorphus</i>	SAPINDACEAE	Nicobar Islands; Malay Peninsula, Philippines.
<i>Nephelium uncinatum</i>	SAPINDACEAE	Nicobar Islands; Borneo.
<i>Pometia pinnata</i> f. <i>glabra</i>	SAPINDACEAE	Nicobar Islands; Java, Philippines.
<i>Meliosma lanceolata</i>	SABIACEAE	Nicobar Islands; Sumatra, Borneo.
<i>Buchanania splendens</i>	ANACARDIACEAE	A & N Islands; Malay Peninsula, Indonesia.
<i>Mangifera camptosperma</i>	ANACARDIACEAE	A & N Islands; Malay Peninsula, China.
<i>Semecarpus prainii</i>	ANACARDIACEAE	A & N Islands; Malay Peninsula.
<i>Connarus planchonianus</i>	CONNARACEAE	Nicobar Islands; Malay Peninsula, Myanmar, Java.
<i>C. semidecandrus</i>	CONNARACEAE	A & N Islands; Myanmar.
<i>Derris elegans</i> var. <i>elegans</i>	FABACEAE	A & N Islands; Myanmar, Malaysia, Indonesia, Philippines.



Name of Species	Family	Distribution
<i>Dioclea hexandra</i>	FABACEAE	A & N Islands; Myanmar, Thailand, Malay Peninsula, Philippines.
<i>Bauhinia stipularis</i>	CAESALPINIACEAE	Great Nicobar; Sumatra.
<i>Intsia bijuga</i>	CAESALPINIACEAE	A & N Islands; Indonesia, Malaysia, Philippines.
<i>Archidendron clypearia</i>	MIMOSACEAE	Nicobar Islands; Malaysia & Thailand.
<i>A. ellipticum</i>	MIMOSACEAE	Nicobar Islands; Java, Malay Peninsula.
<i>Gynotroches axillaris</i>	RHIZOPHORACEAE	Nicobar Islands; Myanmar, Java, Malay Peninsula, Philippines.
<i>Rhizophora stylosa</i>	RHIZOPHORACEAE	Nicobar Islands; Malay Peninsula.
<i>Terminalia bialata</i>	COMBRETACEAE	A & N Islands; Myanmar, Malay Peninsula.
<i>Syzygium flosculiferum</i>	MYRTACEAE	Nicobar Islands; Malay Peninsula.
<i>S. samarangense</i>	MYRTACEAE	A & N Islands; Java, Malay Peninsula.
<i>Barringtonia pendula</i>	BARRINGTONIACEAE	Nicobar Islands; Malay Peninsula.
<i>B. reticulata</i>	BARRINGTONIACEAE	Nicobar Islands; Java & Malay Peninsula.
<i>Chydenanthus excelsus</i>	BARRINGTONIACEAE	A & N Islands; Myanmar.

Name of Species	Family	Distribution
<i>Astronia macrophylla</i>	MELASTOMATACEAE	Great Nicobar; Malay Peninsula, Java, Moluccas, Celebes.
<i>Melastoma affine</i>	MELASTOMATACEAE	Great Nicobar; Java, Malay Peninsula, Australia.
<i>Neodissochaeta celebica</i>	MELASTOMATACEAE	Great Nicobar; Borneo, Malay Peninsula, Celebes.
<i>Ochthocharis bornensis</i>	MELASTOMATACEAE	Great Nicobar; Borneo.
<i>Pternandra coerulescens</i>	MELASTOMATACEAE	Great Nicobar; Malay Peninsula to Philippines.
<i>Memecylon caeruleum</i>	MEMECYLACEAE	A & N Islands; Malay Peninsula.
<i>M. garcinoides</i>	MEMECYLACEAE	Nicobar Islands; Thailand, Indonesia, Malaysia.
<i>Lagerstroemia ovalifolia</i>	LYTHRACEAE	Nicobar Islands; Java, Malay Peninsula.
<i>Crypteronia paniculata</i>	CRYPTERONIACEAE	A & N Islands; Myanmar, Java.
<i>Adenia penangiana</i> var. <i>penangiana</i>	PASSIFLORACEAE	Nicobar Islands; Malay Peninsula.
<i>Arthrophyllum diversifolium</i>	ARALIACEAE	A & N Islands; Java, Malaysia.
<i>Schefflera longifolia</i>	ARALIACEAE	Great Nicobar; Myanmar, Java.
<i>Mastixia trichotoma</i> var. <i>maingayi</i>	CORNACEAE	Great Nicobar; Java, Singapore.
<i>Alangium javanicum</i>	ALANGIACEAE	Nicobar Islands; Malay Peninsula, Java.

Name of Species	Family	Distribution
<i>Canthium glabrum</i>	RUBIACEAE	A & N Islands; Myanmar, Java, Malay Peninsula.
<i>Gardenia tubifera</i>	RUBIACEAE	Nicobar Islands; Sumatra, Java, Borneo.
<i>Greenea jackii</i>	RUBIACEAE	Great Nicobar; Myanmar, Malay Peninsula.
<i>Mussaenda villosa</i>	RUBIACEAE	Nicobar Islands; Java, Malay Peninsula.
<i>Petunga racemosa</i>	RUBIACEAE	Nicobar Islands; Malay Peninsula.
<i>Timonius jambosella</i>	RUBIACEAE	A & N Islands; Malaysia, Singapore.
<i>Uncaria lanosa</i> var. <i>ferrea</i> f. <i>ferrea</i>	RUBIACEAE	Nicobar Islands; Malay Peninsula, Borneo, Sumatra, Lesser Sunda Islands.
<i>Blumea janghuhniana</i>	ASTERACEAE	Nicobar Islands; Malay Peninsula; Indonesia, Philippines, New Guinea.
<i>Vernonia parula</i>	ASTERACEAE	Nicobar Islands; S.E. Asia, Philippines.
<i>Ardisia oxyphylla</i>	MYRSINACEAE	A & N Islands; Myanmar, Malay Peninsula.
<i>A. oxyphylla</i> var. <i>attenuata</i>	MYRSINACEAE	A & N Islands; Myanmar.
<i>Palaquium semarum</i>	SAPOTACEAE	Nicobar Islands; Malay Peninsula, Sumatra.
<i>P. sukoei</i>	SAPOTACEAE	Nicobar Islands; Myanmar, Malay Peninsula.
<i>Planchonella firma</i>	SAPOTACEAE	Nicobar Islands; Malay Peninsula.

Name of Species	Family	Distribution
<i>Diospyros cauliflora</i>	EBENACEAE	Great Nicobar; Malay Peninsula, S.E. Asian countries.
<i>Symplocos fasciculata</i>	SYMPLOCACEAE	Nicobar Islands; Java, Borneo, Malay Peninsula.
<i>S. odoratissima</i>	SYMPLOCACEAE	Nicobar Islands; Malay Peninsula.
<i>Alstonia macrophylla</i>	APOCYNACEAE	A & N Islands; Malaysia, Indonesia, Philippines.
<i>Kopsia arborea</i>	APOCYNACEAE	A & N Islands; Sumatra, Java.
<i>Rauvolfia sumatrana</i>	APOCYNACEAE	A & N Islands; Malay Peninsula, Sumatra.
<i>Fagraea auriculata</i>	LOGANIACEAE	Nicobar Islands; Myanmar, Indonesia, Malaysia, Singapore, China.
<i>F. racemosa</i>	LOGANIACEAE	A & N Islands; Myanmar, Indonesia, Borneo, Malay Peninsula.
<i>Tournefortia ovata</i>	BORAGINACEAE	A & N Islands; Myanmar, China.
<i>T. tetrandra</i>	BORAGINACEAE	Nicobar Islands; Malay Peninsula.
<i>Erycibe griffithii</i>	CONVOLVULACEAE	A & N Islands; Malay Peninsula, Java.
<i>Merremia peltata</i>	CONVOLVULACEAE	A & N Islands; Java, Malay Peninsula, Philippines, Australia.
<i>Operculina riedeliana</i>	CONVOLVULACEAE	A & N Islands; Malay Peninsula.

Name of Species	Family	Distribution
<i>Aeschynanthus volubilis</i>	GESNERIACEAE	Nicobar Islands; Sumatra.
<i>Rhynchoetechum parviflorum</i>	GESNERIACEAE	Nicobar Islands; Java, Malay Peninsula.
<i>Stauranthera grandiflora</i>	GESNERIACEAE	Nicobar Islands; Malay Peninsula.
<i>Radermachera pinnata</i> ssp. <i>acuminata</i>	BIGNONIACEAE	Nicobar Islands; Malay Peninsula, Java.
<i>Acanthus volubilis</i>	ACANTHACEAE	A & N Islands; Malay Peninsula.
<i>Mananthes sumatrana</i>	ACANTHACEAE	Nicobar Islands; Java, Sumatra.
<i>Peristrophe acuminata</i>	ACANTHACEAE	Nicobar Is.; Myanmar, Malay Peninsula, Indonesia.
<i>Thunbergia laurifolia</i>	ACANTHACEAE	A & N Islands; Myanmar, Java, Malay Peninsula.
<i>Pseuderanthemum album</i>	ACANTHACEAE	Nicobar Islands; Myanmar, Malay Peninsula.
<i>Teijsmanniodendron peralata</i>	VERBENACEAE	Nicobar Islands; Myanmar, Malay Peninsula.
<i>Pisonia umbellifera</i>	NYCTAGINACEAE	A & N Islands; Malay Peninsula.
<i>Aristolochia jackii</i>	ARISTOLOCHIACEAE	Nicobar Islands; Malaysia.
<i>Thottea tomentosa</i>	ARISTOLOCHIACEAE	A & N Islands; Java, Malay Peninsula.
<i>Piper pedicelloseum</i>	PIPERACEAE	A & N Islands; Java, Malay Peninsula.
<i>Horsfieldia irya</i>	MYRISTICACEAE	A & N Islands; Myanmar, Java, Sumatra, Sri Lanka.

Name of Species	Family	Distribution
<i>Myristica elliptica</i>	MYRISTICACEAE	Nicobar Islands; Sumatra, Malay Peninsula.
<i>Kibara coriacea</i>	MONIMIACEAE	Nicobar Islands; Java, Sumatra, Celebes.
<i>Actinodaphne procera</i>	LAURACEAE	Nicobar Islands; Java.
<i>Dehaasia candolleana</i>	LAURACEAE	Nicobar Islands; Myanmar.
<i>Litsea pustulata</i>	LAURACEAE	Great Nicobar; Malay Peninsula.
<i>Nothophoebe panduriformis</i> var. <i>paucinervis</i>	LAURACEAE	Nicobar Islands; Malaysia.
<i>Hernandia nymphaeifolia</i>	HERNANDIACEAE	A & N Islands; Malay Archipelago, N. Australia, Madagascar, E. Africa.
<i>Helicia serrata</i>	PROTEACEAE	Nicobar Islands; Java.
<i>Phaleria macrocarpa</i>	THYMELAEACEAE	Nicobar Islands; Malaysia, Java.
<i>Balanophora abbreviata</i>	BALANOPHORACEAE	Great Nicobar; Java.
<i>Alchornea rugosa</i>	EUPHORBIACEAE	A & N Islands; Myanmar, South China, Malaysia to New Guinea, N. Australia.
<i>Antidesma tetrandrum</i>	EUPHORBIACEAE	Nicobar Islands; Sumatra, Java.
<i>A. tomentosum</i>	EUPHORBIACEAE	Nicobar Islands; Malay Peninsula, Java, Sumatra, Borneo.

Name of Species	Family	Distribution
<i>Baccaurea sumatrana</i>	EUPHORBIACEAE	Nicobar Islands; Malaya Peninsula, Sumatra Borneo.
<i>Blumeodendron kurzii</i>	EUPHORBIACEAE	A & N Islands; Myanmar, Thailand, Malay Peninsula, New Guinea.
<i>B. takbrai</i>	EUPHORBIACEAE	Great Nicobar; Malay Peninsula, Java, Sumatra, New Guinea.
<i>Breynia racemosa</i>	EUPHORBIACEAE	Nicobar Islands; Thailand, Malay Peninsula, Sumatra, Java, Borneo.
<i>Croton argyratus</i>	EUPHORBIACEAE	A & N Islands; S.E. Asia, Malaysia to Moluccas, N. Australia.
<i>Drypetes microphylla</i>	EUPHORBIACEAE	Nicobar Islands; Malaya, Sumatra & Borneo.
<i>D. sumatrana</i>	EUPHORBIACEAE	Nicobar Islands; Myanmar, Thailand, Sumatra.
<i>Glochidion sumatranum</i>	EUPHORBIACEAE	Nicobar Islands; Myanmar, Thailand, Malay Peninsula.
<i>Macaranga triloba</i>	EUPHORBIACEAE	Nicobar Islands; Thailand, Malay Peninsula.
<i>Mallotus oblongifolius</i>	EUPHORBIACEAE	A & N Islands; Malaysia to New Guinea, N. Australia.

Name of Species	Family	Distribution
<i>M. peltatus</i>	EUPHORBIACEAE	A & N Islands; Myanmar, Thailand, Sumatra, Java, Malaysia.
<i>M. penangensis</i>	EUPHORBIACEAE	Nicobar Islands; Malay Peninsula, Borneo, Philippines.
<i>Phyllanthus amarus</i>	EUPHORBIACEAE	A & N Islands; Myanmar.
<i>P. gomphocarpus</i>	EUPHORBIACEAE	Nicobar Islands; Malay Peninsula, Sumatra.
<i>Cypholopus moluccanus</i>	URTICACEAE	Nicobar Islands; Malay Peninsula, Java.
<i>Pipturus argenteus</i>	URTICACEAE	A & N Islands; Java, Malay Peninsula, Philippines, Australia and Polynesia.
<i>Ficus hispida</i>	MORACEAE	A & N Islands; Myanmar, Malay Peninsula.
<i>F. pendens</i>	MORACEAE	Nicobar Islands; Malay Peninsula.
<i>Gironniera subaequalis</i>	ULMACEAE	A & N Islands; Myanmar, Java, Malay Peninsula, Thailand.
<b>MONOCOTYLEDONS :</b>		
<i>Burmanna championii</i>	BURMANNIACEAE	Nicobar Islands; Sri Lanka, Indonesia, Malay Peninsula to New Guinea, Japan, China.



Name of Species	Family	Distribution
<i>Appendicula reflexa</i>	ORCHIDACEAE	Great Nicobar Islands; Thailand, Sumatra to New Guinea.
<i>Bulbophyllum macranthum</i>	ORCHIDACEAE	Great Nicobar; Thailand, Sumatra, New Guinea.
<i>Ceratostylis subulata</i>	ORCHIDACEAE	Nicobar Islands; Myanmar, Java, Malay Peninsula, Sumatra.
<i>Cleisostoma uraiense</i>	ORCHIDACEAE	Great Nicobar; Philippines, Taiwan, Formosa.
<i>Dendrobium pensile</i>	ORCHIDACEAE	Nicobar Islands; Malay Peninsula, Thailand.
<i>D. crumenatum</i>	ORCHIDACEAE	A & N Islands; Sri Lanka, Myanmar, China, Thailand, Java, Malay Peninsula.
<i>Flickingeria fimbriata</i>	ORCHIDACEAE	A & N Islands; Thailand, Malaysia, Borneo, Java, Celebes, Philippines.
<i>Hetaeria obliqua</i>	ORCHIDACEAE	Nicobar Islands; Malaysia, Indonesia.
<i>H. oblongifolia</i>	ORCHIDACEAE	Nicobar Islands; Myanmar, Thailand, Malay Peninsula, Java, Philippines.
<i>Nervilia punctata</i>	ORCHIDACEAE	Nicobar Islands; Thailand, Malay Peninsula, Borneo, Sumatra.
<i>Phalaenopsis speciosa</i> var. <i>tetraspis</i>	ORCHIDACEAE	A & N Islands; Java.

Name of Species	Family	Distribution
<i>Platocoglossis javanica</i>	ORCHIDACEAE	Great Nicobar; Myanmar, Thailand, Java, Malay Peninsula.
<i>Podochilus microphyllus</i>	ORCHIDACEAE	Great Nicobar; Myanmar, Thailand, Malay Peninsula.
<i>Pteroceras barkeleyi</i>	ORCHIDACEAE	A & N Islands; Malay Peninsula.
<i>Spathoglottis plicata</i>	ORCHIDACEAE	Nicobar Islands; Thailand, Malay Peninsula, Java, Sumatra, Philippines.
<i>Thrixspermum hystrix</i>	ORCHIDACEAE	A & N Islands; Myanmar, Thailand, Borneo, Java, Malaysia.
<i>Trichoglottis cirrhifera</i>	ORCHIDACEAE	Great Nicobar; Thailand, Laos, Java, Malay Peninsula.
<i>Vrydagzynea albida</i>	ORCHIDACEAE	Great Nicobar; Myanmar, Thailand, Malaysia, Indonesia, Philippines.
<i>Actoplanes caniniformis</i>	MARANTACEAE	A & N Islands; Myanmar, Malay Peninsula, Java.
<i>Korthalsia laciniata</i>	ARECACEAE	A & N Islands; Malay Peninsula.
<i>Freycinetia insignis</i>	PANDANACEAE	A & N Islands; Java.
<i>Aglaonema simplex</i>	ARACEAE	Nicobar Islands; Myanmar, Java.

Name of Species	Family	Distribution
<i>Homalomena nutans</i>	ARACEAE	Nicobar Islands; Myanmar.
<i>Pothos macrocephalus</i>	ARACEAE	Nicobar Islands; Java, Sumatra.
<i>Carex cryptostachys</i>	CYPERACEAE	A & N Islands; Malay Peninsula.
<i>Cyperus javanicus</i>	CYPERACEAE	A & N Islands; Java, Malaysia, Japan, Australia.
<i>Mapania cuspidata</i> var. <i>petiolata</i>	CYPERACEAE	Nicobar Islands; Thailand, Java, Malay Peninsula.
<i>M. cuspidata</i> var. <i>angustifolia</i>	CYPERACEAE	Great Nicobar; Malay Peninsula, Celebes, Philippines, New Guinea.
<i>Scirpodendron ghaeri</i>	CYPERACEAE	Nicobar Islands; Sri Lanka, Java, Malaysia, Thailand, Celebes, New Guinea.
<i>Scleria scrobiculata</i>	CYPERACEAE	A & N Islands; Malaysia, Thailand.
<i>Coelorachis glandulosa</i>	POACEAE	Nicobar Islands; Malay Peninsula, Indonesia, Java.
<i>Dinochloa scandens</i>	POACEAE	A & N Islands; Myanmar.
<i>Thuarea involuta</i>	POACEAE	Nicobar Islands; Malay Peninsula, Java, Thailand & Sumatra.

## RARE AND THREATENED PLANTS

A comprehensive list of rare and threatened plants of Great Nicobar with remarks on their status is given below. These plants have been categorised under two groups :

### *Rare and endangered endemic taxa of Great Nicobar Island :*

It includes 48 taxa, out of which 14 have never been collected after type collections (TC) and remaining have either rare distribution or recollected from type localities (TL) see Table 6 :

**Table 6**  
**Rare and Endangered Endemic Taxa**

S.N.	Plant Species	Remarks
1.	<i>Cyathea nicobarica</i>	TC
2.	<i>Clematis smilacifolia</i> var. <i>andamanica</i>	TC
3.	<i>Artabotrys nicobarianus</i>	TC
4.	<i>Pseuduvaria prainii</i>	TL
5.	<i>Uvaria nicobarica</i>	TC
6.	<i>Cyclea pendulina</i>	Rare
7.	<i>Chisocheton nicobarianus</i>	Rare
8.	<i>Nicobariodendron sleumeri</i>	TC
9.	<i>Tetrastigma andamanica</i>	Rare
10.	<i>Leea grandifolia</i>	Rare
11.	<i>Mangifera nicobarica</i>	TC
12.	<i>Connarus nicobaricus</i>	TC
13.	<i>Terminalia procera</i>	Rare
14.	<i>Otanthura nicobarensis</i>	Rare
15.	<i>Coptophyllum nicobaricum</i>	TC
16.	<i>Ixora cuneifolia</i> var. <i>macrocarpa</i>	TC
17.	<i>I. tenuifolia</i>	TC
18.	<i>Ophiorrhiza nicobarica</i>	TL
19.	<i>Psychotria platyneura</i>	Rare

S.N.	Plant Species	Remarks
20.	<i>P. tylophora</i>	Rare
21.	<i>Tarenna weberaefolia</i>	Rare
22.	<i>Embelia microcalyx</i>	Rare
23.	<i>Chilocarpus denudatus</i> var. <i>nicobaricus</i>	TC
24.	<i>Genianthus horei</i>	Rare
25.	<i>Cyrtandroemia nicobarica</i>	Rare
26.	<i>Cyrtandra burtii</i>	TC
27.	<i>C. occidentalis</i>	TL
28.	<i>Strobilanthes glandulosus</i>	Rare
29.	<i>Nothophoebe nicobaricus</i>	TC
30.	<i>Drypetes bhattacharyae</i>	Rare
31.	<i>Macaranga nicobarica</i>	Rare
32.	<i>Mallotus oblongifolius</i> var. <i>rubriflorus</i>	Rare
33.	<i>Trigonostemon villosus</i> var. <i>nicobaricus</i>	TC
34.	<i>Elatostema novarae</i>	TC
35.	<i>Pellionia procrdifolia</i>	Rare
36.	<i>Anoectochilus nicobaricus</i>	TL
37.	<i>Aerides emericii</i>	Rare
38.	<i>Dendrobium shompenii</i>	Rare
39.	<i>Phalaenopsis speciosa</i>	Rare
40.	<i>Pomatocalpa andamanicum</i>	Rare
41.	<i>Trichoglottis quadricornuta</i>	Rare
42.	<i>Vanilla andamanica</i>	Rare
43.	<i>Phrynium paniculatum</i>	TL
44.	<i>Calamus dilaceratus</i>	TC
45.	<i>C. nicobaricus</i>	TC
46.	<i>C. unifarius</i>	Rare
47.	<i>Rhopaloblaste angustata</i>	TC
48.	<i>Aglaonema nicobaricum</i>	TC

*Rare and endangered non endemic taxa :*

This group includes 85 taxa, most of them are rare or endangered only as far as Indian territory is concerned (see Table 7) :

**Table 7**  
**Rare and Endangered Non Endemic Taxa**

**PTERIDOPHYTES :**


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<i>Lycopodium nummularifolium</i>	LYCOPODIACEAE
<i>Microsorium insigne</i>	POLYPODIACEAE
<i>Syngamma alsimaefolia</i>	HEMIONITIDACEAE
<i>Vandenboschia maxima</i>	HYMENOPHYLLACEAE
<i>Pronephrium cuspidatum</i>	THELYPTERIDACEAE
<i>Asplenium batuense</i>	ASPLENIACEAE
<i>A. sublasperitifolium</i>	ASPLENIACEAE
<i>Luerssenia kehdingiana</i>	ASPIDIACEAE
<i>Bolbitis sinuata</i>	BOLBITIDIACEAE
<i>Lomagramma sumatrana</i>	BOLBITIDIACEAE

**GYMNOSPERMS :**

<i>Cycas rumphii</i>	CYCADACEAE
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**ANGIOSPERMS :**

<i>Naravelia laurifolia</i>	RANUNCULACEAE
<i>Anaxagorea javanica</i>	ANNONACEAE
<i>Goniothalamus malayanus</i>	ANNONACEAE
<i>Polyalthia lateriflora</i>	ANNONACEAE
<i>Pseuduvaria rugosa</i>	ANNONACEAE
<i>Tinomiscium petiolare</i>	MENISPERMACEAE
<i>Casearia grewiaefolia</i> var. <i>gelonoides</i>	FLACOURTIACEAE
<i>Pangium edule</i>	FLACOURTIACEAE
<i>Saurauia bracteosa</i>	ACTINIDIACEAE
<i>Sterculia macrophylla</i>	STERCULIACEAE
<i>Grewia aciminata</i>	TILIACEAE

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<i>Triumfetta repens</i>	TILIACEAE
<i>Indrouchera griffithiana</i>	LINACEAE
<i>Elaeocarpus macrocerus</i>	ELAEOCARPACEAE
<i>Dacryodes rugosa</i>	BURSERACEAE
<i>Dysoxylum densiflorum</i>	MELIACEAE
<i>Dichapetalum platyphyllum</i>	DICHAPETALACEAE
<i>D. timoriense</i>	DICHAPETALACEAE
<i>Iodes cirrhosa</i>	ICACINACEAE
<i>Stemonurus secundiflorus</i>	ICACINACEAE
<i>Nephelium uncinatum</i>	SAPINDACEAE
<i>Connarus planchonianus</i>	CONNARACEAE
<i>Bauhinia stipularis</i>	CAESALPINIACEAE
<i>Archidendron ellipticum</i>	MIMOSACEAE
<i>Gynotroches axillaris</i>	RHIZOPHORACEAE
<i>Syzygium flosculiferum</i>	MYRTACEAE
<i>Barringtonia pendula</i>	BARRINGTONIACEAE
<i>Astronia macrophylla</i>	MELASTOMATAACEAE
<i>Neodissochaeta celebica</i>	MELASTOMATAACEAE
<i>Pternandia coerulescens</i>	MELASTOMATAACEAE
<i>Memecylon caeruleum</i>	MEMECYLACEAE
<i>M. garcinioides</i>	MEMECYLACEAE
<i>Schefflera longifolia</i>	ARALIACEAE
<i>Mastixia trichotoma</i> var. <i>maingayi</i>	CORNACEAE
<i>Alangium javanicum</i>	ALANGIACEAE
<i>Greenia jackii</i>	RUBIACEAE
<i>Vernonia patula</i>	RUBIACEAE
<i>Planchonella firma</i>	SAPOTACEAE
<i>Palaquium sukoei</i>	SAPOTACEAE
<i>Diospyros cauliflora</i>	EBENACEAE
<i>Symplocos fasciculata</i>	SYMPLOCACEAE
<i>S. odoratissima</i>	SYMPLOCACEAE
<i>Tournefortia tetrandra</i>	BORAGINACEAE
<i>Aeschynanthus volubilis</i>	GESNERIACEAE
<i>Rhynchoetechum parviflorum</i>	GESNERIACEAE
<i>Stauroanthus grandiflora</i>	GESNERIACEAE

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<i>Teijsmanniodendron pteropodium</i>	VERBENACEAE
<i>Piper pedicellosum</i>	PIPERACEAE
<i>Kibara coriacea</i>	MONIMIACEAE
<i>Nothophoebe panduriformis</i> var. <i>paucinervia</i>	LAURACEAE
<i>Helicia serrata</i>	THYMELAEACEAE
<i>Antidesma tomentosum</i>	EUPHORBIACEAE
<i>Blumeodendron kurzii</i>	EUPHORBIACEAE
<i>Phyllanthus gomphocarpus</i>	EUPHORBIACEAE
<i>Cyphotophus moluccanus</i>	URTICACEAE
<i>Ficus pendens</i>	MORACEAE

### MONOCOTYLEDONS :

<i>Burmannia championii</i>	BURMANNIACEAE
<i>Appendicula reflexa</i>	ORCHIDACEAE
<i>Ceratostylis subulata</i>	ORCHIDACEAE
<i>Dendrobium pensile</i>	ORCHIDACEAE
<i>Nervilia punctata</i>	ORCHIDACEAE
<i>Plicoglottis javanica</i>	ORCHIDACEAE
<i>Podochilus microphyllus</i>	ORCHIDACEAE
<i>Trichoglottis cirrhifera</i>	ORCHIDACEAE
<i>Korthalsia laciniosa</i>	ARECACEAE
<i>Homalomena griffithii</i> var. <i>ovata</i>	ARACEAE
<i>Carex cryptostachys</i>	CYPERACEAE
<i>C. rafflesiana</i>	CYPERACEAE
<i>Scirpodendron ghaeri</i>	CYPERACEAE
<i>Mapania cuspidata</i> var. <i>angustifolia</i>	CYPERACEAE

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### CONSERVATION MEASURES

The Great Nicobar represents the only comparatively undisturbed patch of tropical evergreen forests in Andaman & Nicobar Islands. Its rich flora and fauna, high endemism and unique genetic richness can play a vital role as a reservoir of genetic material.



The Ministry of Environment and Forests, Govt. of India has already declared part of this island as Biosphere Reserve on 6th January, 1989, based on the 'Project Document, submitted by Balakrishnan et al., (1989).

### CONSERVATION MEASURES PROPOSED :

The following conservation measures have been proposed :

1. The EEZ around the island is very rich in marine flora and fauna and many of the species are of very high commercial value. There is a greater need to use them on sustainable basis. A multipronged strategy is needed, however, to achieve this objective.
2. The rapid growth in settler population should be checked immediately otherwise this will add to the depletion of the resources and the destruction of the forests.
3. Rare and endemic species which are threatened owing to various human activities should be cultivated in the experimental garden for their *ex-situ* conservation.
4. The conservation of wild germ plasm resources such as canes, rattans, bamboos, orchids, medicinal Plants, timber yielding tree species should be well taken care of.
5. Efforts are also afoot to grow several plant species of phytogeographical significance and aesthetically important orchid species which are threatened in natural habitats owing to habitat deterioration.
6. Efforts should be made for conservation of wild germ plasm used by Shompens.
7. Hunting and poaching of wild animals and birds by the non-tribals should be completely banned.
8. The proposed refuelling base dry dock in this island and having a Free Port should be reconsidered. Because this will exert an enormous pressure on the resources of the island. The worst affect will be on the lush green forests which harbour the endemic flora and fauna.

Necessary action must be initiated to ensure that this island is left undisturbed and adequate environmental safe guards are provided.

### UTILISATION ASPECTS OF THE FLORA

Plants are used by both the tribals and non-tribals as a source of food, shelter, clothing, medicine, timber, resin and oil and for an array of other miscellaneous purposes in the Great Nicobar island. A detailed account of various plant resources and their utilisation is given below :

*Mangroves and their importance* : Mangrove is a term denoting any salt tolerant intertidal tree species. They play an important role in shore protection and natural land reclamation and the mangrove habitats harbour many kinds of fish, birds, and other wild life dependent on them for survival. For an island like Great Nicobar, mangroves play a valuable role in the coastal ecosystem.

1. They protect the shore line from major erosional damage due to tropical storms.
2. Mangrove forests may exert a break water effect in absorbing most of the energy of storm driven wave action.
3. They exert an important stabilizing effect on areas where they are able to grow.
4. Mangrove zones are useful for breeding, feeding and act as a nursery ground for substantial population of spectacular wading and fishing birds and sport and also commercial fishes.

Apart from these, the mangrove trees are of direct economic importance in many tropical countries as timber, charcoal, tan bark, source materials in the textile industry and indirectly for fisheries and other marine resources.

Mangrove forests of Great Nicobar consist of following species : *Rhizophora apiculata*, *R. stylosa*, *Bruguiera gymnorrhiza*, *Carallia brachiata*, *Sonneratia caseolaris*, *Excoecaria agallocha* and *Nypa fruticans*.

*Timber yielding plants* : A number of forest species yield valuable and useful timber, which forms the major source of revenue to the Administration. The major forest products that occur in the area are timber and firewood. The important timber yielding plant species are : *Calophyllum inophyllum* (Poon), *Heritiera littoralis* (Sundri), *Sterculia cordata*, *Sterculia rubiginosa*, *Aphanamixis polystachya*, *Aglaia sylvestris*, *Dysoxylum binectariferum*, *Harpullia cupanioides*, *Pometia pinnata* (Thitkandu), *Lannea coromandelica* (Nabbe), *Mangifera camptosperma* (Jungli Am), *Adenanthera pavonia* (Ywegyi), *Carallia brachiata*, *Terminalia bialata* (Safed Jungli Badam), *T. procera* (Safed bambway), *Lagerstroemia ovalifolia* (Pyinma), *Neolamarckia cadamba* (Kadamba), *Alstonia kurzii* (Chatian), *Premna pyramidata*, *Knema andamanica* ssp. *andamanica*, *Litsea glutinosa* and *Artocarpus gomezianus*.

The forests are bestowed with a number of Cane and Bamboo species which grow luxuriantly. They offer good raw materials for cane industry. The important canes are : *Calamus andamanicus* (Mota Beth), *C. pseudorivalis* (Malay beth), *C. dilaceratus*, *C. unifarius* and *Korthalsia laciniata* (Lal Beth). Noteworthy bamboo species are *Bambusa* sp. and *Dinochloa scandens*.

*Plants of minor economic importance* : The seeds of *Calophyllum inophyllum* and *Pongamia pinnata* (Karanj) are the source of oil that are used for lighting etc. Tannin could be extracted from the bark of *Terminalia bialata*, *T. catappa*, *Rhizophora mucronata* and *Bruguiera gymnorrhiza*. The large pinnately compound leaves of *Nypa fruticans* and *Cocos nucifera* and the grass *Phragmites karka* offer excellent thatching and roofing materials. Fruits of *Barringtonia asiatica* are powdered and used as fish poison. Pan leaf is obtained from *Piper betel* that grow wild and abundantly in the forests. Gums and resins are derived from *Canarium euphyllum*. Apart from this the important fibre yielding plants are *Hibiscus tiliaceus*, *Thespesia populnea*, *Boehmeria nivea* and *Gnetum scandens*.

*Plants of commercial importance* : The forests are characterised with a number of potential and commercially important species that grow wild in the forests. Some of them are : *Nypa fruticans* (Source of alcohol), *Vanilla andamanica* (Source of Vanilla), *Knema andamanica* ssp. *andamanica* (Source of wild nutmeg), *Dioscorea* ssp. (Pharmaceutical industry), *Areca catechu* (Areca nut), *Nephelium uncinatum* (Wild litchi), *Mangifera camptosperma* (Wild Mango), and *Musa* sp. (Wild Banana) etc.

*Plants as food* : The large orange coloured fruits of *Pandanus leram* var. *andamanensium* constitute the staple food of the Shompen tribe. They grow in large numbers in the coastal beach forests. The fruits are boiled and the orange coloured pulp surrounding the individual fruit is separated and made into 'Pandanus Cheese' which is eaten with honey. Tubers of *Dioscorea* spp. and *Tacca leontopetaloides* constitute a part of the staple food of the tribals. There are many other wild plants which are consumed by the local people. These are : Pods of *Canavalia maritima*, *C. cathartica*; Tubers of *Colocasia esculenta* (as vegetable); Leaves of *Flagellaria indica* & *Ipomoea aquatica* (as vegetable); fruits of *Terminalia bialata* and *Syzygium samarangense* (as raw).

*Plants of medicinal importance* : The island is known to harbour a wealth of medicinal plants too which are used for amelioration of people's sufferings. Some of them are : *Pericampylus glaucus*, *Sandoricum koetjape*, *Pongamia pinnata*, *Psychotria andamanica*, *P. platyneura*, *Ardisia solanacea*, *A. oxyphylla*, *Rauvolfia sumatrana*, *Strychnos quintuplinervis*, *Thottea tomentosa*, *Aristolochia tagala*, *Corymborkis veratrifolia*, *Nervilia punctata*, *Zingiber zerumbet*, *Costus speciosus*, *Dioscorea glabra*, *Acanthus ilicifolius*, *Achyranthes bidentata*, *Actoplanes canniformis*, *Adenia panangiana*, *Ageratum conyzoides*, *Alstonia kurzii*, *A. macrophylla*, *Amischotolype mollissima*, *Aphanamixis polystachya*, *Barringtonia racemosa*, *Boerhavia diffusa*, *Caesalpinia bonduc*, *Callicarpa longifolia*, *Calophyllum innophyllum*, *Casearia grewiaefolia* var. *gelonoides*, *Cassytha filiformis*, *Cissus repens*, *Claoxylon indicum*, *Clerodendrum inerme*, *C. paniculatum*, *C. viscosum*, *Crataeva religiosa*, *Croton argyratus*, *Cycas rumphii*, *Cyclea peltata*, *Cynometra ramiflora*, *Dendrolobium umbellatum*, *Dischidia benghalensis*, *Dracaena angustifolia*, *Eclipta prostrata*, *Euphorbia hirta*, *Glochidion calocarpum*, *Guettarda speciosa*, *Hernandia nymphaeifolia*, *Hibiscus tiliaceus*, *Hornstedtia fenzlii*, *Hyptis rhomboidea*, *Ipomoea pescaprea* ssp. *brasiliensis*, *Ixora brunnescens*, *Lannea coromandelica*, *Lepisanthes rubiginosa*, *Leea indica*, *Macaranga indica*, *Melastoma malabathricum*, *Merremia peltata*, *Ophiorrhiza mungos*, *O. nicobarica*, *Phylla nodiflora*, *Phyllanthus reticulatus*, *Pisonia umbellifera*, *Scaevola sericea*, *Semecarpus kurzii*, *Spilanthes paniculata*, *Sterculia rubiginosa*, *Syzygium samarangense*, *Tabernaemontana crispa*, *Tacca leontopetaloides*, *Terminalia catappa*, *Tylophora indica*, *Urena lobata*, *Vitex negundo*, *Wattakaka volubilis* and *Weddellia biflora*.

*Species of ornamental value for introduction in gardens* : There are a number of wild species with ornamental value which can be grown in the gardens. Some of them are : *Uvaria rufa*, *Indorouchera griffithiana*, *Euonymus javanicus*, *Bauhinia stipularis*, *Astronia macrophylla*, *Melastoma affine*, *M. malabathricum*, *Memecylon caeruleum*, *Lagerstroemia ovalifolia*, *Alangium javanicum*, *Gardenia tubifera*, *Ixora* sp., *Uncaria lanosa* var. *ferrea*, *Jasminum* sp. *Alstonia kurzii*, *Tabernaemontana crispa*, *Fagraea auriculata*, *F. racemosa*, *Cyrtandromoea nicobarica*, *Aeschynanthes volubilis*, *Radermachera pinnata*, *Thunbergia laurifolia*, *Clerodendrum paniculatum*, *C. viscosum*, *C. innerme*, *Helicia serrata*, *Cycas rumphii*. Several species of Orchids, *Crinum asiaticum*, *Dracaena angustifolia* and *Flagellaria indica*.

**TRIBES** : The primitive people living in the Great Nicobar include Shompens and Nicobarese (native tribals). They are considered two distinct ethnic groups, although they have originated from the common Mongoloid stock of S.E. Asia. The details of both the tribes are given below:

#### 1. Nicobarese :

There are 11 Nicobari villages in the island. All of them are situated along the west coast of the island. The village huts have been built in the midst of Coconut trees. Leaving the Coconut plantation zone, they sometimes clear some littoral forests for planting the *Pandanus* trees. The common forest land is used as hunting ground by them. The Areca nuts grow in the forest land adjacent to their village. The vast sea coast is their hunting ground which provides fish, crabs, shells etc. hence are utilising both the land and sea resources. They set out for hunting of Pigs, Fowls, Birds, Lizards etc. frequently. They domesticate animals like Pigs, Fowls, Dogs and Cats etc.

#### 2. Shompens :

Shompens are the aboriginal inhabitants of Great Nicobar Island, who probably migrated into this area, several hundred years ago from the nearby Malaysian regions. The Shompens are one of the Mongoloid aborigines whose number may not exceed a hundred at present. They are semi-nomadic, food gatherers and hunters with stone age civilization. They live in small groups in dense interior forests of the island. They are entirely dependent on forest resources and sea products for all their sustenance.

## ETHNOBOTANY

A detailed ethnobotanical information about the Shompens of Great Nicobar Island was given by Chakrabarty & Vasudeva Rao (1988). Some important ethnobotanical informations are : (see Table 8).

**Table 8**  
**Plants used by the Shompens**

Species	Part Used
<b>EDIBLE PLANTS :</b>	
<i>Ardisia solanacea</i>	Raw fruit
<i>Blechnum orientale</i>	Tender fronds boiled and eaten
<i>Calamus andamanicus</i>	Juice of stem forms drinking water
<i>Calamus</i> spp.	Raw fruit
<i>Ceratopteris thalictroides</i>	Tender fronds boiled and eaten
<i>Citrus</i> sp.	Raw fruit
<i>Cocos nucifera</i>	Fruit
<i>Colocasia esculenta</i>	Rhizome boiled and eaten
<i>Dioscorea glabra</i>	Tuber boiled and eaten
<i>Diospyros cauliflora</i>	Raw fruit
<i>Flagellaria indica</i>	Stem & leaf boiled and eaten
<i>Ficus</i> spp.	Fruit boiled and eaten
<i>Helminthostachys zeylanica</i>	Tender fronds boiled & eaten
<i>Mangifera camptosperma</i>	Raw fruit
<i>Morinda citrifolia</i>	Leaf as vegetable
<i>Musa sapientum</i>	Fruit eaten raw or after boiling
<i>Pandanus leram</i> var. <i>andamanensium</i>	Fruit forms the staple food; eaten after boiling and processing
<i>Pangium edule</i>	Seed roasted and eaten
<i>Pinanga manii</i>	Raw fruit
<i>Pisonia umbellifera</i>	Tender shoot as vegetable
<i>Rubus moluccanus</i> var. <i>angulosus</i>	Raw fruit
<i>Selaginella</i> sp.	Root as vegetable

Species	Part Used
<i>Tacca leontopetaloides</i>	Rhizome boiled and eaten
<i>Terminalia catappa</i>	Raw fruit
<i>Thespesia populnea</i>	Leaf as vegetable
<b>CONDIMENT :</b>	
<i>Capsicum frutescens</i>	Fruit
<b>NARCOTIC :</b>	
<i>Nicotiana tabacum</i>	Leaf
<b>STIMULANTS :</b>	
<i>Areca catechu</i>	Nut
<i>Piper betel</i>	Leaf
<b>BEE REPELLENT :</b>	
<i>Hornstedtia fenzlii</i>	Rhizome extract as bee repellent
<b>FISH POISON :</b>	
<i>Barringtonia asiatica</i>	Fruit powder used as fish poison
<i>Pangium edule</i>	Bark powder as fish poison
<b>CONSTRUCTION OF HUT :</b>	
<i>Actephila excelsa</i>	Branches used for posts, beams, thatching rods or sticks etc.
<i>Antidesma tetrandrum</i>	do
<i>Calophyllum inophyllum</i>	do
<i>Casearia grewiaefolia</i>	do
<i>Diospyros cauliflora</i>	do
<i>Dryptes sumatrana</i>	do
<i>Dysoxylum binectariferum</i>	do
<i>Mallotus resinousus</i>	do
<i>Radermachera pinnata</i> ssp. <i>acuminata</i>	do

Species	Part Used
<i>Saurauia bracteosa</i>	Branches used for posts, beans, thatching rods or sticks
<i>Semecarpus kurzii</i>	do
<i>Areca catechu</i>	Split stem used for making floor of hut
<i>Pinanga manii</i>	do
<i>Dinorchloa scandens</i>	do
<i>Areca catechu</i>	Leaf used for thatching of roof
<i>Calamus</i> spp.	do
<i>Nypa fruticans</i>	do
<i>Pandanus leram</i> var. <i>andamanensium</i>	Leaf used for thatching roof
<i>P. odoratissimus</i>	do

**ROPE :**

<i>Actoplanes canniformis</i>	Twig
<i>Calamus</i> spp.	Twig
<i>Connarus semidecandrus</i>	Twig
<i>C. paniculatus</i>	Twig

**CLOTH :**

<i>Sterculia macrophylla</i>	Bark
<i>Ficus</i> spp.	Bark

**UTENSILS :**

<i>Aglaia edulis</i>	Bark used for making large vessel for cooking <i>Pandanus</i> fruit
<i>A. sylvestris</i>	do
<i>Calophyllum inophyllum</i>	do
<i>Neolamarckia cadamba</i>	do
<i>Terminalia</i> sp.	do
<i>Tremma tomentosa</i>	do



Species	Part Used
<i>Areca catechu</i>	Spathe used for such purposes
<i>Cocos nucifera</i>	Shell used as mug
<b>PLATE/COVER :</b>	
<i>Macaranga indica</i>	Leaf
<i>M. nicobarica</i>	Leaf
<i>M. peltata</i>	Leaf
<b>BRUSH :</b>	
<i>Nypa fruticans</i>	Dried fruit with fibre used for cleaning the hands
<i>Pandanus leram</i> var. <i>andamanensium</i>	do
<b>DUG OUT CANOE :</b>	
<i>Barringtonia asiatica</i>	Trunk
<i>Calophyllum inophyllum</i>	Trunk
<i>C. soulattri</i>	Trunk
<i>Sterculia macrophylla</i>	Trunk
<i>Garcinia nervosa</i>	Branches used for making paddle of canoe
<i>Leea</i> sp.	Branches used for making balance of canoe
<b>FISHING HARPOON :</b>	
<i>Atalantia monophylla</i>	Branch
<i>Dinorchloa scandens</i>	Stem
<b>MAT/BASKET :</b>	
<i>Calamus</i> spp.	Strip of the cane used for making crude mat and basket
<i>Leea</i> sp.	Leaves often used as bedsheet
<i>Pandanus odoratissimus</i>	Leaves used to make crude mat

Species	Part Used
<b>ORNAMENTS :</b>	
<i>Coix lachryma jobi</i>	Seeds used to make necklace
<i>Dinochloa scandens</i>	Slender piece of branch used as ear ornament
<b>MEDICINAL PLANTS :</b>	
<i>Actoplanes canniformis</i>	Decoction of stem and root taken orally in fever
<i>Alstonia kurzii</i>	Bark, root or leaf boiled in water and vapour inhaled for curing fever
<i>A. macrophylla</i>	do
<i>Ardisia solanacea</i>	Root boiled in water and used for washing uterus after childbirth; decoction of root also taken orally to remove blood clot and cure internal haemorrhage
<i>Croton argyratus</i>	Seeds pounded and eaten in small quantity as laxative and in stomach disorders
<i>Dischidia benghalensis</i>	Leaf pounded & applied externally for reducing pain on mumps & sores. Twigs pounded & applied externally for healing of fractured bone
<i>Glochidion calocarpum</i>	Seeds or bark pounded & applied externally in skin diseases; decoction of leaf taken orally for curing fever
<i>Leea sp.</i>	Leaf eaten in fever
<i>Myristica sp.</i>	Seed or bark pounded & applied externally for skin diseases
<i>Ophiorrhiza nicobarica</i>	Fresh leaves pasted in water and applied on wounds
<i>Semecarpus kurzii</i>	Fruit used to cure injuries

## DOUBTFUL AND EXCLUDED SPECIES

It is observed that Kurz (1875, 1876), Thothathri et al. (1973) and several other workers have reported several plants from Great Nicobar Island. Out of which about 58 species have not been reported in the later collections. These plants have not been included in the present flora. The collections, are either not represented or poorly represented in *PBL* & *CAL* with some depauperated specimens. The list of such species is given below :

## PTERIDOPHYTES :

<i>Colysis macrophylla</i> (Bl.) Presl.	POLYPODIACEAE
<i>C. selligera</i> (Mett.) Ching	POLYPODIACEAE
<i>Antrophyum reticulatum</i> (Forst.) Kaulf.	ANTROPHYACEAE
<i>Microgonium molleyii</i> Bosch.	HYMENOPHYLLO- PSIDACEAE
<i>Cyclosorus polycarpus</i> (Bl.) Holtt.	THELYPTERIDACEAE
<i>Asplenium macrophyllum</i> Sw.	ASPLENIACEAE
<i>A. aethiopicum</i> (Burm.f.) Becher.	ASPLENIACEAE
<i>Nephrolepis falcata</i> (Cav.) C. Chr.	NEPHROLEPIDACEAE
<i>Humata repens</i> (L.f.) Diels	DAVALLIACEAE

## GYMNOSPERM :

<i>Podocarpus wallichianus</i> Presl.	PODOCARPACEAE
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## ANGIOSPERMS :

<i>Garcinia xanthochymus</i> Hk.f. & T.And.	CLUSIACEAE
<i>Urena sinuata</i> L.	MALVACEAE
<i>Pterocymbium tinctorium</i> (Blanco) Merr.	STERCULIACEAE
<i>Sterculia villosa</i> Roxb.	STERCULIACEAE
<i>Grewia umbellata</i> Roxb.	TILIACEAE
<i>Glycosmis pilosa</i> Naryan ex Tanaka	RUTACEAE
<i>Amoora wallichii</i> King	MELIACEAE

<i>Apodytes andamanica</i> Kurz	OLACACEAE
<i>Allophyllus triphyllus</i> Bl.	SAPINDACEAE
<i>Semecarpus heterophyllus</i> Boll. var. <i>pubescens</i> Kurz	ANACARDIACEAE
<i>Desmodium heterocarpum</i> (L.) DC.	FABACEAE
<i>Derris elliptica</i> (Wall.) Benth.	FABACEAE
<i>Bauhinia ferruginea</i> Wall.	CAESALPINIACEAE
<i>Albizia retusa</i> Benth.	MIMOSACEAE
<i>Lumnitzera racemosa</i> Willd.	COMBRETACEAE
<i>Syzygium claviflora</i> (Roxb.) Wall. ex Cowan & Cowan	MYRTACEAE
<i>Memecylon ovatum</i> Sw.	MEMECYLACEAE
<i>Adenia cordifolia</i> (Bl.) Engl.	PASSIFLORACEAE
<i>Hedyotis diffusa</i> Willd.	RUBIACEAE
<i>H. paniculata</i> (L.) Lamk.	RUBIACEAE
<i>H. racemosa</i> Lamk.	RUBIACEAE
<i>Knoxia corymbosa</i> Willd.	RUBIACEAE
<i>Mussanda wallichii</i> G.Don	RUBIACEAE
<i>Blumea myriocephala</i> DC.	ASTERACEAE
<i>Planchonella obovata</i> (R.Br.) Pierre	SAPOTACEAE
<i>Sideroxylon attenuatum</i> DC.	SAPOTACEAE
<i>Jasminum acuminatissimum</i> Bl.	OLEACEAE
<i>Chionanthus palembanicus</i> Miq.	OLEACEAE
<i>Strychnos minor</i> Dennst	LOGANIACEAE
<i>Merremia vitifolia</i> (Burm.f.) Hall.f.	CONVOLVULACEAE
<i>Eranthemum succifolium</i> Kurz	ACANTHACEAE
<i>Mananthes vasculosa</i> (Nees.) Bremek.	ACANTHACEAE
<i>Strobilanthes timorensis</i> Nees.	ACANTHACEAE
<i>Piper clypeatum</i> Wall. ex Hk.f.	PIPERACEAE
<i>Cinamomum</i> sp.	LAURACEAE

<i>Dehaasia triandra</i> Merr.	LAURACEAE
<i>Litsea kurzii</i> King ex Hk.f.	LAURACEAE
<i>L. monopetala</i> (Roxb.) Pers.	LAURACEAE
<i>Hernandia sonora</i> L.	HERNANDIACEAE
<i>Spathistemon javense</i> Bl.	EUPHORBIACEAE
<i>Ficus macropoda</i> Kurz	MORACEAE
<i>Gonostylus macrophyllus</i> (Miq.) Airy Shaw	GONOSTYLACEAE
<i>Cymbidium pubescens</i> Lindl.	ORCHIDACEAE
<i>Calamus nicobaricus</i> Becc.	ARECACEAE
<i>Korthalsia echinometra</i> Becc.	ARECACEAE
<i>Scindapsus pteropodus</i> Schott.	ARACEAE
<i>Homalomena griffithii</i> (Schott.) Hk.f. var. <i>ovata</i> (Schott.) Engl.	ARACEAE
<i>Carex rafflesiana</i> Boott.	CYPERACEAE

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**HUPERZIACEAE**

2 genera and nearly 400 species, cosmopolitan; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Cones distinct; sporophylls much smaller than the sterile leaves (i.e. trophophylls) .....2. *Phlegmariurus*
- b. Cones not distinct; sporophylls hardly smaller than the sterile leaves .....1. *Huperzia*

**1. HUPERZIA Benth.**

Plants terrestrial, epiphytic or lithophytic; stems creeping or erect, simple to isodichotomously branched. Leaves ovate-oblong to subulate, entire or serrate. Sporophylls aggregated in dense terminal or lateral strobili; spores trilete.

About 400 species, cosmopolitan; 1 species in Gt. Nicobar Island.

***Huperzia carinata* (Desv.) Trev.** Atti. Soc. Ital. Sci. Nat. 17: 247, 1875.

Epiphytic herbs *ca* 50 cm high; stems pendulous. Leaves narrowly lanceolate, subulate at apex, narrowing towards base, sessile, *ca* 1.3 x 0.12 cm; veins distinct. Sporophylls oblong, subdeltoid, *ca* 5 x 1.5 mm, placed only on apical portion or downwards to middle portion, not forming distinct cones.

Rare on mossy tree trunks in dense evergreen forests. Galathea, Kopenheat to Koshin Don, Indira point.

**2. PHLEGMARIURUS (Hurter) Holub.**

Epiphytic; stems tufted, pendulous. Leaves and sporophylls heteromorphous. Strobili terminal.

About 20 species, cosmopolitan; 1 species and 1 variety in Gt. Nicobar Island.

***Phlegmariurus phlegmaria* (L.) Sen & Sen**, Fern Gaz. 11(6): 421, 1978.

Epiphytic herbs, ca 80 cm high; stems pendulous, dichotomously branching at irregular intervals. Leaves patent, oblong-lanceolate to ovate subdeltoid, acuminate at apex, rounded to truncate at base or cordate, subsessile or shortly stalked, ca 15 x 7 mm. Cones distinct, ca 15 x 0.2 cm, yellowish. Sporophylls ovate, subdeltoid, adpressed, ca 1 mm long.

Rare on mossy tree trunks.

Campbell Bay, 30 km on north-south road, 25 km on east-west road.

**Phlegmariurus phlegmaria** (L.) Sen & Sen var. **filiforme** (Bl.) Ellis in J. Andaman Sci. Assoc. 3(2): 61. 1987.

Epiphytic herbs, ca 75 cm long; stems slender, pendulous. Leaves thin, filiform. Strobili terminal, branched.

Rare on mossy tree trunks.

6 km on east-west road, Casuarina Bay.

## LYCOPODIACEAE

About 9 genera and 200 species, cosmopolitan; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Epiphytic herbs; cones erect .....1. *Lycopodium*
- b. Terrestrial herbs; cones pendulous .....2. *Palhinhaea*

### 1. LYCOPODIUM L.

Herbs, main stem wide trailing, branches hetero-dichotomous, ascending. Leaves spirally arranged. Cones terminal; spores reticulate.

About 40 species, cosmopolitan; 1 in Gt. Nicobar Island.

**Lycopodium nummulariaefolium** Blume, Enum., Pl. Javae 2: 263. 1828.

Herbs ca 60 cm high; stems pendulous. Leaves ovate to suborbicular, round to acute at apex, round and sessile at base, ca 1 x 0.6 cm; veins visible on both surfaces, thick, fleshy. Cones at apex of vegetative

branches, *ca* 15 x 0.15 cm. Sporophylls smaller, adpressed, ovate with acute apex, *ca* 1 mm long.

Rare on mossy tree trunks in evergreen forests.

25 km on east-west road, Galathea river side.

India (Nicobar Islands); Malay eastwards to Pacific Islands.

## 2. **PALHINHAEA** (L.) Franco et Vasc.

Terrestrial herbs. Leaves crowded, linear, pale to brownish green in colour. Strobili solitary, sessile at the end of branchlets. Sporophylls whitish green, ciliate at margins.

Monotypic genus, tropical Asia; 1 species in Gt. Nicobar Island.

***Palhinhaea cernua*** (L.) Franco. & Vasc. in Vasc. & Franco, Bd. Soc. Broter. ser. 2. 41. 1967.

Herbs; rhizomes subterranean, producing arborescent lateral stems. Leaves linear, arcuate, ascending at apex, subulate, margins strongly revolute, subcoriaceous. Strobili solitary. Sporophylls ascending whitish-green, broadly ovate, cuspidate.

Rare on slopes, dry or marshy places.

Campbell Bay, 34, 39 km on east-west road

## **SELAGINELLACEAE**

1 genus and about 700 species, cosmopolitan; 5 species in Gt. Nicobar Island.

## **SELAGINELLA** P. Beauv.

Terrestrial or epiphytic; stems creeping or erect; rhizophores confined at base to apical part. Leaves isomorphic or heteromorphic, arranged in 2 parallel planes, lower larger called 'lateral leaves' and upper smaller called 'median leaves'. Strobili terminal. Sporophylls uniform or dimorphic,

heterosporous; megasporangia placed in axils of sporophylls in basal region, microsporangia in upper regions; megaspores 4, per megasporangium, 3 large, 1 small; microsporangium with many microspores; spores terete.

About 700 species, tropical & temperate regions; 5 species in Gt. Nicobar Island.

- 1 a. Plants branching from the base .....2  
b. Plants branching away from the base .....3
- 2 a. Leaves ciliate .....2. *S. ciliaris*  
b. Leaves glabrous .....4. *S. delicatula*
- 3 a. Stems trailing *ca* 3 m long; sporophylls ovate-acuminate, entire; spores spinulose .....5. *S. helferi*  
b. Stems scandent, *ca* 60 cm long; sporophylls otherwise .....4
- 4 a. Lateral leaves spreading, ovate-acute; median leaves ovate-acute, finely dentate; sporophylls denticulate .....1. *S. biformis*  
b. Lateral leaves compact, deltoid-oblong median leaves lanceolate-aristate, entire; sporophylls entire .....3. *S. decipiens*

**1. *Selaginella biformis* A. Br. ex Kuhn Forsch. Gaz. 4. 17. 1889.**

Terrestrial herbs, *ca* 60 cm high; rhizophores arising from base. Leaves uniform at base, dimorphic on branchlets; lateral leaves ovate, acute, entire, spreading; median leaves ovate, acute, finely dentate, compact. Sporophylls lanceolate, acute, finely dentate, uniform. Mega and microsporangia in same strobilus; megaspores spherical; microspores trilet, round.

Rare in marshy places.

Leela nalah, 30 km on north-south road; 35 km on east-west road, Campbell Bay to Chengappa Bay.

**2. *Selaginella ciliaris* (Retz.) Spreng in Bull. Acad. Sci. Brux. 10: 231. 1843.**

Terrestrial herbs, *ca* 8 cm high; rhizophores from joints of the branches. Leaves dimorphic; lateral oblong, acute, denticulate; median

ovate-acuminate, distantly dentate. Sporophylls of the strobili dimorphic, ciliate; lateral ovate-lanceolate, entire, sterile; median ovate-acuminate, fertile. Mega & microsporangia in same strobili; megaspores trilet, round; microspores trilet, round, red.

Rare along marshy inland forests.

East coast forests, Campbell Bay.

3. *Selaginella decipens* Warb in Monsunia 1: 127. 1900.

Terrestrial, ca 40 cm high; rhizophores absent. Leaves dimorphic; lateral leaves alternate, oblique, deltoid-oblong, entire, median in 2 rows, lanceolate-aristate, entire. Strobilus ca 0.7 cm long. Sporophylls acuminate, entire. Sporangia yellowish-green; spores minute, oval to 3-angular, greenish.

Common in moist and shady places.

South-east forests, Campbell Bay.

4. *Selaginella delicatula* (Desv.) Alston in J. Bot. 70: 282. 1932.

Terrestrial herbs, ca 60 cm high; rhizophores near the base, lower portion. Leaves at base of stem, all alike, ovate, acute, auricled at base; median leafy branches ca 5 mm broad; lateral leaves oblong, apiculate, unequal sided, entire, narrowed at base. Strobili terminal on leafy branchlets, ca 30 mm long, 4 angled. Sporophylls all of one type, ovate-acuminate, equal sided, keeled, margins entire.

Rare in marshy places.

Leela Nalah, 30 km on north-south road, Campbell Bay.

5. *Selaginella helferi* Warb in Monsunia 1: 107. 1900.

Terrestrial herbs, ca 3 m high. Leaves dimorphic throughout; lateral leaves oblique, oblong, acute, spreading; median leaves oblong-lanceolate, unequal sided, acuminate. Sporophylls uniform. Strobilus ca 2 cm long; both mega and microsporangia in same strobilus; megaspores trilet, round; exine spinulose; microspores trilet, subglobose, exine reticulate.



Common in moist and shady places.

30 km on north-south road, Rosen point, Campbell Bay.

## PSILOTACEAE

1 genus and 3 species in the world flora; 2 species in Gt. Nicobar Island.

## PSILOTUM Sw.

Epiphytic perennial plants; roots absent and represented by rhizoids. Aerial shoots 2 chotomously branched. Leaves reduced to minute scales. Sporangia solitary in the axils of leaves, sessile, triquetrous, obovoid, 3-celled.

3 species, tropics & subtropics; 2 in Gt. Nicobar Island.

- 1 a. Herbs, *ca* 30 cm high; branches 3-angular in cross section, bearing scaly projections on the ridges .....2. *P. nudum*
- b. Herbs, *ca* 1 m high; branches complanate, bearing scaly projections on their edges .....1. *P. complanatum*

### 1. *Psilotum complanatum* Sw., Syn. Fil. 188. 415. 1806.

Epiphytic herbs; stems and branches flattened, *ca* 3 mm broad, with distinct midribs. Leaves minute, scale-like. Sporangia in triads, on short stalks, in the axils of minute, bifid sporophylls towards the apices of aerial shoots.

Rare on tree trunks in shady places.

Galathea Bay, Campbell Bay, 26 km on east-west road.

### 2. *Psilotum nudum* (L.) P. Beauv., Prod. Fam. Aetheog. 112. 1805.

Herbs, rootless; aerial shoots slender, dichotomously branched; branches triquetrous. Leaves minute, scale-like. Sporangia borne adaxial to the projections, *ca* 2 mm in diam., green at first, yellow when mature; spores lemon-yellow.

Rare on mossy tree trunks, in dense forests.

Pulobaha beach forests.

### HELMINTHOSTACHACEAE

1 genus & 1 species, tropics & subtropics; 1 in Gt. Nicobar Island.

#### HELMINTHOSTACHYS Kaulf

Terrestrial herbs; rhizomes creeping. Sterile segment of frond palmately divided. Fertile segments arising from base of sterile frond or adnate for a short distance to one of its divisions. Sporangia globose on sporangiophores.

1 species, tropics & subtropics; 1 in Gt. Nicobar Island.

***Helminthostachys zeylanica* (L.) Hook., Gen. Fil. t. 47. 1840.**

Erect herbs, *ca* 60 cm high; rhizomes fleshy, glabrous. Stipe *ca* 45 cm long, base covered with scales. Sterile segments palmatifid, lobes 5-11; veins free, simple, dichotomous. Fertile segments in terminal spikes, stalks *ca* 18 cm long. Spikes *ca* 15 cm long. Sporangia numerous; spores globose, dark, exine verrucoid.

Rare in moist shady humus covered forest floor.

Dogmar river, Galathea river, Indira point.

### OPHIOGLOSSACEAE

4 genera in the world; 1 genus in Gt. Nicobar Island.

#### OPHIODERMA (Blume) Endl.

An epiphytic herb. Fronds *ca* 2 m long, pendulous, ribbon-shaped, veins anastomosing. Fertile segments stalked, single, rarely forked.

Species 2 in tropics; 1 in Gt. Nicobar Island.

***Ophioderma pendula* (L.) Presl., Suppl. Tent. Pterid. 56. 1845.**

Epiphytic herbs; rhizome fleshy, bearing a few fronds. Phyllomophore short, not distinct from sterile, *ca* 20 cm long; sterile segments long and strap-shaped, *ca* 100 x 4 cm, including the stipes, round to acute at apex, entire. Sporophylls arising from middle part of sterile fronds, simple, with stalks *ca* 7 cm long. Spikes *ca* 30 cm long. Sporangia *ca* 3 mm in diam.; exospores with fine reticulum, seemingly smooth.

Rare on tree trunks, inland forests.

4 km on east-west road, Galathea to Indira point, northern forests Campbell Bay.

### ANGIOPTERIDACEAE

A monotypic family comprising of single genus, and 115 species, cosmopolitan; 1 genus & 1 species in Gt. Nicobar Island.

### ANGIOPTERIS Hoffm.

Terrestrial herbs. Rhizome short, with massive fleshy stock. Fronds tripinnate. Stipe fleshy, swollen at base; veins free. Sori dorsal, boat-shaped, exindusiate, on veins in 2 close marginal rows; sporangia dehiscing by longitudinal slit; spores tetrahedral, trilete.

About 115 species, cosmopolitan; 1 in Gt. Nicobar Island.

**Angiopteris evecta** (Forst.) Hoffm. Comm. Soc. Reg. Sci. Gotting 12: 29. 1793.

Terrestrial herbs. Rhizome greenish-brown. Stipe jointed on rhizome, fleshy, pale green, *ca* 90 cm long. Fronds bipinnate; pinnae with 12-24 pairs of pinnules, jointed with swollen base; pinnules sessile, lanceolate, *ca* 30 x 4 cm, toothed, attached to pinnae; veins dichotomously 1 or 2 forked. Sori submarginal, consisting of 8-12 sporangia in each group; spores round, with verrucose protuberance on exine.

Common in moist places of inland forests.

Indira point, Laful, 36 km on east-west road.

**GLEICHENIACEAE**

About 2 genera and 20 species, pantropical; 1 genus & 1 species in Gt. Nicobar Island.

**DICRANOPTERIS Bernh.**

Terrestrial herbs. Rhizome long creeping, hairy. Fronds pinnate, pseudodichotomous at the top of stipe; pinnae repeatedly pseudodichotomous, branched; young parts covered with branched hairs; veins free, 1-3 times forked. Sori near the costae of the segments; sporangia 10-15 or more in each sorus.

About 10 species, pantropical; 1 species in Gt. Nicobar Island.

**Dicranopteris linearis** (Burm.f.) Underw. in Bull. Torrey bot. Club. 34: 250. 1907. var. **linearis**.

Terrestrial herbs. Rhizome slender. Stipe apex covered with reddish brown hairs. Pinnae brown to purplish, pseudodichotomously branched; veins 1-3 times forked. Sori near the costae of segments on the acroscopic branch of veins, each with 10-15 sporangia.

Common along road sides, inland forests.

Campbell Bay to Magar Nallah, 4 km on east-west road.

**POLYPODIACEAE**

About 63 genera and over 1000 species, tropics; 4 genera and 5 species in Gt. Nicobar Island.

- 1 a. Fronds covered with stellate hairs on one or both surfaces .....4. *Pyrrosia*  
 b. Fronds without stellate hairs .....2
- 2 a. Fronds dimorphic .....1. *Leptochilus*  
 b. Fronds monomorphic .....3
- 3 a. Margins of pinnae lobes cartilaginous; sori sunken in a cavity .....  
 .....3. *Phymatosorus*  
 b. Margins not thickened; sori small, multiseriate .....2. *Microsorium*

1. **LEPTOCHILUS** Kaulf.

Epiphytic herbs. Rhizome creeping, covered with dark scales. Stipes remote, inconspicuously articulate. Fronds dimorphic; sterile ovate to lanceolate, entire, sessile or with short stipe; fertile narrowly linear, long stipitate. Sporangia covering the whole lower surface.

About 12 species, tropics; 1 in Gt. Nicobar Island.

**Leptochilus axillaris** (Cav.) Kaulf., Enum. Fil. 147. 1824.

Epiphytic herbs. Rhizome scales linear, dark brown. Stipes *ca* 10 cm long, winged. Fronds dimorphic, slender, stipitate; veins obscure; fertile fronds *ca* 30 x 0.5 cm. Sori exindusiate; sporangia oval, dark brown, paraphyses linear; spores elliptic, hyaline, light brown, exine smooth.

Rare on mossy tree trunks in dense forests.

25 km on east-west road, Laful.

2. **MICROSORIUM** Link

Terrestrials or epiphytic. Rhizome clothed with dark brown scales. Fronds simple to pinnate, articulate to rhizome; venation reticulate, with branched included veinlets, free. Sori globose, superficial or in irregular rows, paraphyses absent; sporangia slender, stalked; spores bilateral.

About 40 species, tropics; 2 in Gt. Nicobar Island.

- |   |    |                      |                        |
|---|----|----------------------|------------------------|
| 1 | a. | Lamina pinnate ..... | 1. <i>M. insigne</i>   |
|   | b. | Lamina simple .....  | 2. <i>M. punctatum</i> |

1. **Microsorium insigne** (Blume) Ching, in Bull. Fan. Mem. Mem. Inst. Biol. 4: 311. 1933.

Epiphytic herbs. Rhizome creeping, clothed with dark brown scales. Fronds pinnately lobed, lobes 4-5 pairs, *ca* 1 m long. Sori round, scattered.

Rare on mossy tree trunks.

Near Galathea river, 25 km on east-west road.

India (Nicobar Islands); West Malaysia, Java, Philippines.

2. **Microsorium punctatum** (L.) Copel. Orient. Gen. Polyp. in Univ. Calif. Publ. Bot. 16. 110. 1929.

Epiphytic herbs. Rhizome covered with dark brown scales. Frond simple, sessile; lamina linear-lanceolate, ca 60 x 4.5 cm; midrib prominently grooved on both surfaces; veins obscure. Sori globose, irregularly scattered on the upper half of lamina, slightly immersed on the surface; sporangia oval, short stalked, dark brown; spores oval, light brown, hyaline, exine finely verrucoid.

Common on mossy tree trunks, inland forests.

Kopenheat to Koshin Don, 6 km on east-west road.

### 3. **PHYMATOSORUS** Pic.-Ser.

Epiphytes. Rhizome covered with scales. Stipes stout, smooth, articulate at base. Fronds lanceolate, trifid or more often deeply pinnatifid, margins thickened, without notches; venation reticulate. Sori round, large, sunken in one or 2 rows, on either side of costa.

About 12 species, tropical Asia; 1 in Gt. Nicobar Island.

**Phymatosorus scolopendria** (Burm.f.) Pic.-Ser., Webbia 28: 460. 1973.

Epiphytic climbing herbs. Rhizome covered with dark brown scales. Stipes stramineous not winged, articulate at base. Fronds deeply pinnatifid, with 2-5 pairs of lateral lobes and one terminal lobe; venation somewhat hidden costa & costules raised on both sides. Sori round, large, in 1 or 2 rows on either side of costa, sunken, upper surface pastulate.

Common on moist tree trunk.

41 km on east-west road; 20 km on road to Indira point, Campbell Bay.

#### 4. **PYRROSIA** Mirb.

Epiphytes with creeping paleate rhizome. Fronds simple, entire, articulate to rhizome; lamina coriaceous, densely matted with persistent stellate hairs, uniform or slightly dimorphic; veins obscure, irregularly anastomosing with free included veinlets. Sori numerous, usually on included veinlets, with stellate paraphyses; spores bilateral.

About 100 species, tropics; 1 in Gt. Nicobar Island.

***Pyrrosia adnascens*** (Sw.) Ching, Bull. Chin. Bot. Soc. 1: 45. 1935.

Epiphytes. Rhizome wiry, creeping, covered with peltate scales. Stipe ca 5 cm long, glabrous. Lamina linear, ca 25 x 1.25 cm, narrowly decurrent on stipe, acute at apex; midrib prominently raised; veins obscure. Sori scattered in upper half of lamina, globose, dark brown; sporangia stalked; spores round, 2-lobed, exine tuberculate.

Common on exposed tree trunks, inland forests.

6 km on east-west road, Campbell Bay to Chengappa Bay.

#### **DRYNARIACEAE**

1 genus and 20 species in the world; 1 species in Gt. Nicobar Island.

#### **DRYNARIA** (Bory) J.Sm.

Epiphytic herbs. Rhizome long creeping, thick, fleshy. Fronds dimorphic; sterile ones small, sessile and close to rhizome; fertile ones large, stalked, pinnatisect; veins anastomosing. Sori round.

About 20 species in the world; 1 in Gt. Nicobar Island.

***Drynaria quercifolia*** (L.) J.Sm. in Hook. J. Bot. 3: 398. 1841.

Epiphytes. Rhizome creeping, fleshy, densely covered with dark brown scales. Fronds dimorphic; sterile fronds overlapping the base of fertile fronds. Sori small, globose, scattered throughout the surface of lamina; sporangia round, stalked; spores oval, hyaline, light brown, exine with minute blunt projections.

Common on tree trunks.

Campbell Bay, Galathea Bay.

### SCHIZAEACEAE

About 4 genera and many species, tropics & subtropics; 1 genus and 2 species in Gt. Nicobar Island.

### SCHIZAEA Sm.

Terrestrial herbs. Rhizome shortly creeping, covered with septate hairs. Leaves polystichous, simple or forked, grass-like. Sporangia in special lobes, terminal on the costae, in 2 distinct rows, partly protected by indusium-like recurved margins.

About 30 species, tropical & temperate regions; 2 species in Gt. Nicobar Island.

- 1 a. Fronds repeatedly dichotomous .....1. *S. dichotoma*
- b. Fronds simple .....2. *S. digitata*

1. **Schizaea dichotoma** (L.) Smith, Mem. Acad. Turin. 5: 422. t. 9. 1773.

Terrestrial herbs. Rhizome creeping, deep in the earth, densely covered with brown hairs. Stipes *ca* 30 cm long, narrowly winged for the basal portion. Fronds 7-20 cm long and wide, branched dichotomously 2-6 times. Sporangia bearing lobes at apex of the distal branches, 5-10 pairs, forming distinct sorophores of 2-5 mm long.

Rare in open grasslands, inland forests.

Galathea river mouth, 33 km on east-west road, Laful, Casuarina Bay and way to Pulokunio.

2. **Schizaea digitata** (L.) Sw., Syn. Fil. 150. 380. t. 4. f. 1. 1806.

Terrestrial herbs. Rhizomes short, creeping, covered with hairs. Fronds 4-10 on one stock, erect, unbranched, grass-like when sterile, *ca* 35 cm



long, winged except on the base; costae prominent on lower and slightly grooved on upper surfaces, glandular hairs abundant below. Sporangia bearing lobes 7-20 at apex of fronds, equal, ca 5 x 0.12 cm.

Rare in inland forests.

12 km on east-west road.

### LYGODIACEAE

1 genus and 40 species, cosmopolitan; 1 species in Gt. Nicobar Island.

### LYGODIUM Sw.

Scandent climbing ferns. Rhizome without scales. Fertile pinnae copiously divided; veins forked, usually free. Sporangia subtended by an indusium-like outgrowth, marginal, in biseriate spikes; spores tetrahedral, minute, numerous.

About 40 species, tropical & subtropical; 1 species in Gt. Nicobar Island.

***Lygodium circinatum* (Burm.f.) Sw., Syn. Fil. 153. 1806.**

Climbing herbs. Rhizome shortly creeping, densely covered with blackish hairs. Fronds large, climbing to several meters; stipe brownish, hairy on lower part, narrowly winged on upper part; rachis glabrous; sterile leaflets 2-7 lobed, palmately divided with cuneate base, ca 20 x 2 cm, sometimes fertile on the upper part; fertile leaflets ca 20 x 0.9 cm, similar to sterile ones. Sporangia bearing lobes protruding, numerous on margins of tertiary leaflets; indusia glabrous.

Common in shady places, inland forests.

35 and 42 km on east-west road.

### PTERIDACEAE

About 20 genera and 650 species, tropics; 1 genus and 1 species in Gt. Nicobar Island.

**PTERIS L.**

Terrestrials. Rhizome short, creeping, clothed with hairs and few scales. Fronds simple to bipinnate, rarely tripinnate; rachis deeply grooved; veins free or rarely anastomosing on included veinlets. Sori continuous along both the margins of segments; false indusia formed by the reflexed margins of segments covering the coenosori, true indusia absent; spore tetrahedral.

About 300 species, tropics; 1 in Gt. Nicobar Island.

***Pteris vittata* L., Sp. Pl. 2: 1074. 1753.**

Shrubs. Rhizome suberect, densely covered with brown scales and hairs. Fronds imparipinnate, *ca* 75 x 15 cm, densely covered with whitish hairs; pinnae elongate linear, deltoid-cordate at base, serrulate, few pairs of basal pinnae reduced to auricle-like appendages; terminal pinnae elongate linear; costae grooved; veins free. Sori marginal, continuous; spores round, bright brown.

Common in shaded places, inland forests.

Kopenheat, Campbell Bay.

**DOUBTFUL TAXA**

***Pteris tripartita* Sw., Schard. J. Bot. 1800 (2): 67. 1801.**

Terrestrial herbs. Rhizome short. Stipes *ca* 75 cm long, brown; lamina tripartite; veins copiously anastomosing. Sori continuous along the margins from base to midway; indusia entire, rather thick, pale green.

Rare on slopes, inland forests.

Way to Chengappa Bay, North of Campbell Bay.

*Note* : The plant was recorded from Great Nicobar by Thothathri *et al.*, in 1973 and the identity is doubtful.

**ACROSTICHACEAE**

Monotypic family of about 3 species; 2 species in Gt. Nicobar Island.

**ACROSTICHUM L.**

Shrubby ferns. Rhizome erect, large, scaly. Stipe not jointed to rhizome, thick. Frond large, simply pinnate with distinct terminal pinnae; pinnae stalked narrowly oblong to elliptic, fleshy; lower pinnae sterile, upper pinnae fertile with scattered sporangia on whole of under surface; veins close, forming smaller areoles without free included veinlets.

About 3 species, pantropics, along the coasts; 2 in Gt. Nicobar Island.

- 1 a. Sterile pinnae rounded or truncate and shortly mucronate at apex ..... 1. *A. aureum*
- b. Sterile pinnae acuminate at apex ..... 2. *A. speciosus*

**1. *Acrostichum aureum* L., Sp. Pl. 1069. 1753.**

Shrubby ferns. Rhizome thick, erect, scaly. Stipe *ca* 1 m long, thick, stramineous to pale castaneous. Frond imparipinnate, *ca* 4 m long, including stipe, narrowly oblong to elliptic; lateral sterile pinnae ascending, with stalks *ca* 2.5 cm long, narrowly oblong, rounded or truncate, shortly mucronate at apex, cuneate to round at base, *ca* 50 x 8 cm; costa grooved above, distinctly raised below; veins hardly visible on upper surface. Fertile fronds similar to sterile ones. Sporangia scattered on whole under surface of pinnae; paraphyses capitate, with small multilobed apical cell.

Common on mangrove swamps and tidal forests.

Campbell Bay, Indira point, Galathea Bay.

**2. *Acrostichum speciosum* Willd., Sp. Pl. 5: 117. 1810.**

Habit is very similar to *A. aureum*, differing only in rhizome scales larger; plants smaller, *ca* 1.5 m high; sterile pinnae acuminate at apex, cuneate at base.

Rare in mangrove forests.

Campbell Bay, Galathea Bay.

## HEMIONITIDACEAE

About 35 genera and many species, tropics & subtropics; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Fronds simple, entire; lower surface not covered with waxy powder ..... 2. *Syngramma*
- b. Fronds pinnate or more amply divided; lower surface usually covered with waxy powder ..... 1. *Pityrogramma*

### 1. *PITYROGRAMMA* Link.

Terrestrial herbs. Rhizome short, scaly. Stipes dark, polished. Lamina pinnately compound, lower surface usually covered with waxy powder; veins all free. Sori along veins, without indusia, with no paraphyses; spores tetrahedral.

About 40 species, mostly tropical America, a few in Africa; 1 in Gt. Nicobar Island.

***Pityrogramma calomelanos* (L.) Link, Handb. Erken. Gew. 3: 20. 1833.**

Herbs. Rhizome short, erect, clothed with narrow brown scales. Stipes ca 55 cm long, dark purplish, polished, scaly towards the base. Lamina ca 60 cm long, bipinnate or tripinnate at base, lower surface covered with white waxy powder, segments oblique, elliptic, toothed. Sporangia seated along the veins on lower surfaces; spores tetrahedral.

Common along the road sides.

35 km on east-west road, Campbell Bay, 25 km towards Indira point.

### 2. *SYNGRAMMA* J. Sm.

Terrestrial herbs. Rhizome short, creeping, covered with purplish bristles, bearing crowded fronds. Stipe often castaneous, grooved on

adaxial surface. Lamina simple; fronds or lobes entire or toothed at margin; veins anastomosing near margin. Sori elongate, usually along whole length of veins, naked; paraphyses often red; spores tetrahedral.

About 20 species, distributed Malaysia to Fiji; 1 species in Gt. Nicobar Island.

**Syngramma alsimaefolia** (Presl.) J.Sm. in Lond. J. Bot. 4: 168. 1845.

Terrestrial herbs. Rhizome covered with bristles. Stipe *ca* 30 cm long, dark brown, polished, bristle like at base, glabrous upwards, grooved on abaxial surface. Fronds simple, oblong, caudately acuminate at apex, round to cuneate at base, entire, *ca* 25 x 9 cm, midrib grooved on upper surface, distinctly raised beneath, purple. Sori elongate along almost whole length of veins; paraphyses with bright red enlarged apical cell.

Rare along streams and marshy places.

18 and 36 km on east-west road.

India (Great Nicobar Island); Malaysia.

### ANTROPHYACEAE

A monotypic family with about 40 species, tropics & subtropics; 1 species in Gt. Nicobar Island.

### ANTROPHYUM Kaulf.

Epiphytic herbs. Rhizome covered with scales. Fronds broadly lanceolate, rarely forked at apex; costa wanting or rarely partial; veins forming large elongate areoles without included veinlets. Sori elongate linear, dorsal along the veins, sometimes reticulate, superficial or slightly immersed; spores tetrahedral.

About 40 species, tropics & subtropics; 1 species in Gt. Nicobar Island.

**Antrophyum callifolium** Blume, Enum. Pl. Jav. 111. 1828.

Epiphytic herbs. Rhizomes scaly. Stipe short, scaly, indistinctly merging with the basal portion of frond. Fronds oblong lanceolate to broadly oblanceolate, acuminate at apex, narrowing downwards, *ca* 30 x 8 cm; costa distinct only in lowest portion of fronds; veins distinct, evenly anastomosing without included veinlets. Sori linear, anastomosing along veins on whole of under surface; paraphyses filamentous, long, numerous; spores tetrahedral.

Common on mossy tree trunk, usually in dense forests.

37 km on east-west road, Nevy Dera, 6 km on east-west road, Campbell Bay.

### VITTARIACEAE

Monotypic family with about 50 species, tropics and subtropics; 2 species in Gt. Nicobar Island.

#### VITTARIA J.E. Smith.

Epiphytes or lithophytes. Rhizome densely covered with scales. Fronds tufted on rhizome, without distinct stipe. Sori in a single row at each side of costa, dorsal or in marginal flaps; paraphyses usually abundant; spores globose or tetrahedral.

About 50 species, tropics; 2 in Gt. Nicobar island.

- 1 a. Fronds *ca* 50 x 2.3 cm; sori immersed in 2 lipped marginal grooves; midrib more or less distinct above .....1. *V. elongata*
- b. Fronds *ca* 40 x 0.6 cm; sori submarginal immersed in grooves; midrib hardly visible on both surfaces .....2. *V. ensiformis*

#### 1. *Vittaria elongata* Sw., Syn. Fil. 109. 302. 1806.

Epiphytes. Rhizomes covered with scales. Fronds linear, entire, glabrous, *ca* 50 x 1.5 cm, shortly stipitate; costa distinct above on lower portion; veins more or less visible, anastomosing to form a row of elongate oblique areoles at each side of midrib. Sori continuous along the submarginal fertile veins extending to the margin, immersed; spores globose, tetrahedral.

Rare on mossy tree trunks.

4-8 km on east-west road, 30-31 km on north-south road, Campbell Bay.

2. *Vittaria ensiformis* Sw., Ges. Nat. Fr. Berl. Neu. Schr. 2: 134. t. 7. f. 1. 1799.

Epiphytes. Rhizome short creeping, densely covered with scales. Stipe usually indistinct, narrowly winged throughout. Fronds linear, *ca* 40 x 0.6 cm, leathery; costa indistinct below. Sori immersed in deep grooves at margin, usually elongate along both margins of fronds.

Common on tree trunks.

6 km on east-west road, Galathea Bay.

India (Nicobar Islands); Malaysia & Madagascar.

### TAENITIDACEAE

About 1 genus and 15 species, in old world tropics; 1 species in Gt. Nicobar Island.

### TAENITIS Willd. ex Schkuhr.

Terrestrial herbs. Rhizome covered with black bristles. Stipe darker, grooved above. Frond simply pinnate with terminal pinnae similar to lateral; pinnae simple, entire; veins reticulate. Sori on a narrow longitudinal band about half way between midrib and edge, all naked; paraphyses abundant, multicellular.

About 15 species, tropics; 1 in Gt. Nicobar Island.

*Taenitis blechnoides* (Willd.) Sw., Syn. Fil. 24: 220. 1806.

Terrestrial herbs. Rhizome covered with bristles in apical portion. Stipe *ca* 60 long. Lamina simply pinnate or simple one, *ca* 40 x 30 cm; lateral, pinnae 1-8 pairs, alternate, linear, caudately acuminate at apex, cuneate at base, *ca* 25 x 3 cm in fertile pinnae, and sterile pinnae *ca* 25 x

5 cm; costa distinctly raised on lower surface, sunken on upper surfaces, veins copiously reticulate. Sori midway between costa and margin of pinna.

Rare on hill forests.

Campbell Bay, Lafu.

### **PARKERIACEAE**

1 genus and 5 species, tropics and subtropics; 1 species in Gt. Nicobar Island.

### **CERATOPTERIS Ad.**

Aquatic herbs. Rhizome short with small fuscous scales. Fronds pinnately decompose, dimorphic; fertile larger, much dissected, with long and narrow acicular pinnules; proliferous in the axils; veins anastomosing, without included veinlet. Sori exindusiate, acrostichoid, often protected by reflexed margin of lamina; sporangia sessile, placed along veins; spore tetrahedral.

About 5 species, in tropics & subtropics; 1 in Gt. Nicobar Island.

*Ceratopteris thalictroides* (L.) Ad. Brongn. Bull. Sci. Soc. Philom. Paris. 1821: 186. 1822.

Aquatic herbs. Rhizome with dense fleshy roots. Stipe fleshy, ca 10 cm long, ribbed. Sterile lamina unipinnate, ca 15 cm long, with deeply pinnatifid pinnae; segments variously lobed, with narrow angular tip; veins depressed; fertile lamina with much branched pinnae; pinnae linear, acicular, dichotomously branched.

Rare in marshy places.

Campbell Bay.

### **HYMENOPHYLLACEAE**

About 30 genera and many species, cosmopolitan; 2 genera and 2 species in Gt. Nicobar Island.



- 1 a. Rhizome slender; fronds remote ..... 1. *Reediella*  
 b. Rhizome stout; fronds clustered ..... 2. *Vandenboschia*

### 1. **REEDIELLA** Pich.-Ser.

Epiphytic or lithophytic. Rhizome creeping, filiform. Fronds pinnately compound, with winged rachis; ultimate segments entire at margin; 1 or 2 rows of marginal cells elongate and thick walled; involucre tubular, winged, with expandate entire mouth; receptacles extruded.

About 5 species, in Malaysia and Polynesia; 1 in Gt. Nicobar Island.

***Reediella humilis*** (Forst. f.) Pich.- Ser., Webbia 24: 719. 1970.

Small herbs on rocky walls. Rhizome slender, densely covered with dark brownish hairs. Stipes hairy at base, winged upper part, ca 1 cm long. Fronds irregularly pinnately compound, usually bipinnate, oblong to ovate lanceolate, acute to round at apex, cuneate at base, ca 3 x 1.5 cm; pinnae 2-6 in pairs. Sori at first acroscopic branches of the primary segments; involucre tubular to campanulate, less than 1.5 mm long, copiously winged and immersed in segments; mouth dilated and expanded broadly, almost circular.

Abundant on moist rocky walls.

Laful.

India (Great Nicobar Island); Thailand, Malaysia to New Zealand.

### 2. **VANDENBOSCHIA** Copel.

Epiphytic. Rhizome short to long creeping, rather thick, hairy. Fronds pinnately compound, cell walls uniformly thin; involucre cup-shaped with entire mouth, receptacles long.

About 25 species, cosmopolitan; 1 in Gt. Nicobar Island.

***Vandenboschia maxima*** (Blume) Copel. Philip. J. Sci. 67: 54. 1938.

Herbs *ca* 25 cm high. Rhizome covered with dark brown, multicellular hairs. Stipes terete, *ca* 15 cm long, winged almost at base, with hairs. Fronds *ca* 40 cm long, 4 pinnate; ultimate segments narrow, linear with only one vein in each segment. Sori terminal on lobes; indusia tubular, mouth somewhat expanded, slightly 2 lipped; receptacles long exserted; cells small, irregular in shape, wall wavy, thin.

Common along the roads, inland forests.

37 km on east-west road, path to Shompen village.

India (Nicobar Islands); Thailand, Vietnam, Taiwan, S. Japan, Malaysia and Pacific Islands.

### HYMENOPHYLLOPSIDACEAE

About 4 genera and many species, cosmopolitan; 2 genera and 3 species in Gt. Nicobar Island.

- 1 a. Fronds tufted or approximate with false veinlets absent ....1. *Cephalomanes*
- b. Fronds distant with false veinlets .....2. *Crepidomanes*

#### 1. CEPHALOMANES Presl.

Terrestrials. Rhizome stout, short, erect, with short fibrous roots. Stipe covered with stiff, long, dark brown, multicellular hairs. Fronds simply pinnate; indusia tubular; receptacle exserted; veins with very thick walled brachysclereids.

About 10 species, tropics; 1 in Gt. Nicobar Island.

***Cephalomanes javanicum* (Blume) v.d. Bosch, Hymen. Jav. 30. 1861.**

Terrestrials. Rhizome covered with fibrous roots and a tuft of fronds. Stipe wingless, covered with brownish hairs. Fronds pinnate, lanceolate, gradually narrowed both upwards and downwards, *ca* 20 x 4 cm; rachis narrowly winged; pinnae many, with short stalks. Sori on acroscopic side of upper pinnae, 2 to 5 on each pinnae; fertile pinnae deeply cut on both sides of each sorus, sorus placed at apex of a lobe and tips of involucre on the line of the edges of pinnae; involucre tubular, truncate at mouth, narrowly winged; receptacles long extruded.

Rare on slopes or on inland forests.

8 and 37 km on east-west road.

## 2. CREPIDOMANES Presl.

Epiphytes. Rhizome filiform, hairy, usually rootless. Fronds dwarfed and digitate to medium sized, pinnately compound, the ultimate segments or lobes entire at margin; false veinlets present either marginal or oblique; involucre obconic to campanulate, winged, with bilabiate mouth; receptacles extended.

About 20 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Submarginal false veinlets absent; involucre mouth elongated, acute .....  
.....2. *C. latealatum*
- b. Submarginal false veinlets present; involucre mouth rounded, expanded  
.....1. *C. bilabiatum*

1. ***Crepidomanes bilabiatum*** (Nees ex Blume) Copel., Philip. J. Sci. 67: 59. 1938.

Epiphytic. Rhizome covered with black hairs; roots few. Stipes *ca* 3 cm long, winged. Fronds distant, ovate to narrowly ovate, tripinnatifid, *ca* 14 x 5 cm; submarginal veins present, interrupted, other false veins also present, variable in number. Sori on apices or short axillary lobes; involucre tubular, *ca* 1.8 mm long, winged, mouth bilabiate, lips round to acute, as well as long.

Rare on moist tree trunks, in dense forests.

36 km on east-west road.

India (Nicobar Islands); Thailand, West Malaysia.

2. ***Crepidomanes latealatum*** (v.d. Bosch) Copel. Philip. J. Sci. 67: 60. 1938.

Epiphytic. Rhizome covered with hairs; roots few. Stipes *ca* 2.5 cm long, winged at base, with black hairs at base. Fronds narrowly ovate to

lanceolate, ca 14 x 5 cm, bipinnatifid to tripinnatifid, without submarginal veins but many short scattered veins. Sori on the apices; involucre tubular, winged, mouth 2 lipped, more or less elongated and acute at apex; receptacles exserted.

Rare on moist tree trunks in inland forests.

Kopenheat, 36 km on east-west road.

### CYATHEACEAE

About 2 genera and 650 species in the world; 1 genus and 2 species in Gt. Nicobar Island.

### CYATHEA Sm.

Tree ferns, with erect, massive stout trunks. Paleae present; hairs present or not. Stem with persistent leaf bases; stipules matted with adventitious roots. Fronds usually very large, pinnately compound, coriaceous, arranged spirally at the apex of the stem; veins free. Sori superficial, dorsal; indusia either complete, globose at first covering sorus, finally splitting into lobes or absent or vestigial; sporangia small, shortly stalked, attached to short or elongated receptacle, often with paraphyses; spores tetrahedral.

About 600 species, throughout humid tropics, in mountains; 2 in Gt. Nicobar Island.

- 1 a. Stipes stramineous to dark brown coloured; spines short and scales, 5-10 mm long; rachis pale to dark brown, setae small; lowermost segment of pinnae not deeply lobed; veins 9-10 pairs with bullate scales sac like and narrow uniseriate, multicellular hairs on lower surface .....1. *C. albosetacea*
- b. Stipes glossy dark chestnut coloured; stipes 1-3 mm long and many persistent scales; rachis chestnut coloured, bearing short stout spines or spinules and densely clothed with long spreading hairs; lowermost segments of pinnae deeply lobed; veins 5-6 pairs with large bullate scales and dense simple hairs present on both surfaces .....2. *C. nicobarica*

1. **Cyathea albo-setacea** (Bedd.) Copel., Philip. J. Sci. ser. C (Bot.) 4: 55. 1909.

Trees; trunk *ca* 10 m high. Fronds *ca* 2.5 m long. Stipe stramineous, with many short spines and scattered scales. Pinnae *ca* 1 m long; pinna rachis pale to dark brown, warty to spinulose, clothed with hairs and narrow shining scales. Pinnules *ca* 13 x 2.5 cm, sessile, acuminate, lower ones 1-2 basal segments almost free, rest of pinnules almost lobed to costa; veins 9-10 pairs, usually forked, margin crenate. Sori copious, along costules, scales and hairs present on lower surface of costae and costules; bullate scales sac-like, whitish, with narrow uniseriate, multicellular, caducous hairy tip, abundant on lower surface; spores pale, trilete, verrucoid.

Common in dense tropical evergreen forests.

6, 20 km on east-west road.

*Note:* Endemic to Nicobar Islands.

2. ***Cyathea nicobarica*** Balakr. & R.D. Dixit in Indian J. Forestry 10 (1): 44. 1987.

Trees. Rhizome not seen. Fronds 1-2 m long, tufted. Stipes glossy, chestnut coloured, spinulose, with many persistent scales and hairs; scales pale brown with setose margins; setae abundant and covered in apical part with smooth lower part; rachis chestnut coloured, with short spines. Fronds bipinnate; pinnae *ca* 30 x 15 cm; pinnules *ca* 10 x 2.5 cm, deeply lobed; costules 4-5 mm long, bearing many light white bullate scales possessing long uniseriate, multiseptate hairy tips on lower surface; veins 5-6 pairs, each forked into 1-2 pairs, rarely simple. Sori not seen.

Rare along shaded places, inland forests.

8 km on east-west road.

*Note:* Endemic to Nicobar Islands.

## LINDSAEACEAE

About 10 genera and 250 species, tropics; 1 genus and 6 species in Gt. Nicobar Island.

**LINDSAEA** Dryand. ex Smith.

Terrestrial. Rhizome well developed, covered with hairs and scales. Fronds pinnate to bipinnate, glabrous or pubescent; pinnae oblique, lower margin straight and entire, upper margin lobed; veins dichotomously forked, free. Sori usually marginal, terminal on veinlets, joining the apex of veins to form fusion, sori along the margin of lobes; indusia opening outwardly; spores tetrahedral, smooth or minutely warty.

About 200 species, pantropics and tropics; 6 species in Gt. Nicobar Island.

- 1 a. Rhizome epiphytic, long creeping, climbing on tree trunks, clothed with broad triangular scales.....4. *L. parasitica*
- b. Rhizome terrestrial, short creeping, clothed with narrow lanceolate scales .....2
- 2 a. Fronds simply pinnate with generally not dimidate pinnae.....3
- b. Fronds simply pinnate with dimidate pinnae.....5
- 3 a. Veins anastomosing.....2. *L. ensifolia*
- b. Veins free.....4
- 4 a. Lamina uni or tripinnate in the basal region.....5. *L. tenera*
- b. Lamina bipinnate throughout .....6. *L. tetragona*
- 5 a. Stipe stramineous; veins irregularly anastomosing.....3. *L. malayensis*
- b. Stipe more or less castaneous or purplish; veins regularly anastomosing .....1. *L. cultrata*

**1. *Lindsaea cultrata* (Willd.) Sw., Syn. Fil. 119. 1806.**

Terrestrial herbs. Rhizome short creeping, scaly near apex. Stipe dark stramineous. Fronds simply pinnate or bipinnate; pinnules less deeply lobed; veins distinct on lower surface, rather regularly anastomosing to form 4-8 areoles, oblique to lower edge. Sori continuous along the margin of fertile lobes or rarely interrupted.

Rare on rocks on moist shady places.

35 and 37 km on east-west road.

2. ***Lindsaea ensifolia*** Sw., Schrad. J. Bot. 1800(2): 77. 1801.

Terrestrial herbs. Rhizome scaly apically, bearing fronds close together. Stipes stramineous at least at base. Fronds simply pinnate, ovate to oblong lanceolate; lateral pinnae 3-7 pairs, linear lanceolate, caudately acuminate at apex, cuneate rounded at base, entire, ca 20 x 2 cm; veins anastomosing forming 2-4 rows of areoles at each side of costa. Sori continuous along margin; indusia firm, nearly reaching the edges.

Rare on rocks, shady places.

35 km on east-west road.

3. ***Lindsaea malayensis*** Houltt., Gard. Bull. Singapore 5: 69. 1930.

Terrestrial herbs. Rhizome scaly near the apex. Stipe stramineous, quadrangular. Fronds simply pinnate or bipinnate with 1 or 2 lateral pinnae; rachis pale, quadrangular; lateral pinnae linear, pinnate, subsessile, ca 20 x 2.3 cm; terminal pinnae larger, ca 25 x 2.5 cm; pinnules sessile more than 30 pairs; veins irregularly anastomosing, distinct on both surfaces. Sori separated into 3 or 4 pieces by shallow sinus at upper edge; indusia narrow, not reaching the margin of pinnules.

Rare on humus rich floors of dense forests.

35 km on east-west road.

India (Nicobar Islands); Malay Peninsula, Thailand.

4. ***Lindsaea parasitica*** (Roxb. ex Griff.) Hieron in Hedwigia 62: 14. 1920.

Climbing epiphytic herbs. Rhizome long creeping, densely scaly. Stipe ca 10 cm long, dark brown at base. Fronds bipinnate, oblong in outline, ca 35 x 23 cm; pinnae about 6 pairs, linear shortly stalked; pinnules sessile, oblique, veins all free except those joined by sori. Sori continuous on upper and outer edge; indusia firm, entire, reaching the edge of pinnules.

Rare on tree trunks, in dense forests.

35 km on east-west road.

*Note:* India (Great Nicobar Island); Malay Peninsula, Thailand.

5. ***Lindsaea tenera*** Dryand. Trans. Linn. soc. 3: 42, t. 10. 1797 (non Kaulf. 1824, not of later authors); Ghosh and Dixit, Bull. Bot. Surv. India 20(1-4):170. f. 1-2. 1979).

Terrestrial. Rhizome slender, 1-2 mm in diam., creeping; scales pale to dark brown, fragile, ovate-lanceolate, ending in a terminal gland. Stipes *ca* 14 cm long shining stramineous to medium brown; lamina broadly ovate-lanceolate, 10-20 cm long, pale green, tripinnatifid in the basal region, pinnatifid in apical part, with 2-8 pinnae to a side. Pinnae shortly petiolate, ovate to oblong-lanceolate *ca* 7 x 2.8 cm, pinnules ascending, rounded-shombic, *ca* 15 x 10 mm, with the incision of very irregular depth, the upper pinnules little incised the terminal segments broader and more obtuse. Venation lax, veins free, furcate. Sori interrupted in incised pinnules; indusium pale brown; spores yellowish. Verruculose, trilete.

Rare in inland forest.

30 & 35 km. on est-west road; 38 km. on north south road.

*Note :* Endemic to Andaman & Nicobar Islands.

6. ***Lindsaea tetragona*** Kramer in Blumea 15: 564. 1967.

Terrestril. Rhizome short creeping, covered with reddish scales. Stipes stramineous, quadrangular, *ca* 30 cm long. Fronds oblong, bipinnate, *ca* 40 cm long, with 3-9 pinnae to a side and terminal one; primary rachis stramineous, 4 angular; pinnae sessile; fertile pinnae slightly broadened at the sorus; veins immersed. Sori uni- or binerved; spores pale brown, triletes smooth.

Rare in inland forests.

6 km on east-west road, Harmind Nagar.



*Note:* India (Great Nicobar Island); Celebes, Fiji, Solomon Islands, Tahiti.

### THELYPTERIDACEAE

About 32 genera and several species, cosmopolitan; 6 genera and 7 species in Gt. Nicobar Island.

- 1 a. Lower pinnae not or little reduced; glandular hairs absent from lower surface of veins and sporangium stalks .....2
- b. Lower pinnae gradually or abruptly reduced; glandular hairs present .....3
- 2 a. Spores trilete .....6. *Trigonospora*
- b. Spores monolete .....4. *Pronephrium*
- 3 a. Basal pinnae abruptly reduced; lowest minute; lower surface of pinnae with spherical glands; lower surface of costae bearing flat scales .....4
- b. Basal pinnae gradually reduced; lowest never minute; lower surface of pinnae bearing very small pale glandular hairs or large elongate orange glands; costae lower surface smooth .....5
- 4 a. Veins all free, no glands or hairs on sporangium .....5. *Pseudocyclosorus*
- b. Veins anastomosing at least basal vein; short club-shaped glandular hairs present on sporangium .....3. *Cyclosorus*
- 5 a. Unicellular hairs present on sporangium stalks; glands lacking .....2. *Christella*
- b. Unicellular hairs absent; glands present on sporangium stalks .....1. *Amphineuron*

#### 1. AMPHINEURON Holtt.

Terrestrial. Rhizome short, with narrow scales. Stipes minutely hairy. Fronds large pinnate; pinnae deeply lobed; short acicular hairs present on lower surfaces; basal veins always from costules. Sori near the tip of veins, indusiate or exindusiate; indusia glandular hairy; sporangia slender, stalked; stalks hairy; spores dark, irregularly rugose.

About 15 species, East Africa to Polynesia; 1 species in Gt. Nicobar Island.

**Amphineuron immersum** (Blume) Holtt. in Nayar & Kaur, Comp. to Bedd. Handb. 203. 1974.

Terrestrial. Rhizome short creeping. Stipe slender. Fronds deeply pinatifid with numerous pairs of normal pinnae and 1 or 2 pairs of reduced basal pinnae. Sori on shallow depression in the lamina; indusia persistent, usually with glandular margins.

Rare in inland forests.

35 km on east-west road.

## 2. **CHRISTELLA** Leveillie

Terrestrial herbs. Rhizome with scales and hairs. Fronds bipinnatifid with lobed pinnae; sinus membrane present; lower pinnae never or gradually shortened, but not abruptly shortened; upper surface of costae grooved; veins anastomosing. Sori indusiate; sporangium lacking hairs and glands; stalk hairy with unicellular glandular hairs; spores dark, tuberculate or ridged.

**Christella papilio** (Hope.) Holtt. in Nayar & Kaur, Comp. to Bedd. Handb. 208. 1974.

Terrestrial. Rhizome with scales and hairs. Fronds many, gradually reduced, pinnae extending almost to base of stipe; strongly auricled; auricles curving behind the stipe. Fertile fronds taller than sterile one. Sori indusiate; sporangia lacking hairs and glands; stalk hairy with unicellular glandular hairs; spores dark, tuberculate.

Rare in inland forests.

37 km on east-west road.

## 3. **CYCLOSORUS** Link.

Terrestrial. Rhizome long creeping. Fronds bipinnatifid, basal pinnae not reduced; veins anastomosing, spherical glandular cells present on lower surface of the veins and at the end of the hairs on sporangial stalks.

About 4 species, tropics & subtropics; 1 in Gt. Nicobar Island.

**Cyclosorus heterocarpus** (Blume) Ching in Bull. Fam. Mem. Inst. Bot. 8: 180. 1938.

Terrestrial herbs *ca* 45 cm high. Rhizome thick. Lower pinnae suddenly reduced, a variable number of small auricles occurring on stipe; upper pinnae surface densely covered with short hairs. Sori indusiate; indusia large persistent; spores black.

Rare on moist places.

Leela nallah.

*Note:* India (A & N Islands); S. China, Malaysia.

#### 4. **PRONEPHRIUM** Presl.

Terrestrial. Rhizome suberect, sparsely palcate. Fronds simple pinnate with entire or slightly lobed pinnae; basal pinnae not reduced; veins anastomosing. Sori exindusiate or indusiate, spreading along veins; indusia hairy, glandular; sporangia often hairy or glandular; spores with a continuous wing.

About 70 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Lamina distinctly 3 foliate ..... 2. *P. triphyllum*  
 b. Lamina not 3 foliate, rather simple pinnate ..... 1. *P. cuspidatum*

1. **Pronephrium cuspidatum** (Bl.) Holtt. in Blumea 20: 123. 1972 *excl. syn. praeter* Bl.

Terrestrial herbs. Rhizome with scales and hairs. Stipes *ca* 55 cm long, black with scales. Fronds pinnate; lamina *ca* 30 x 20 cm, drying reddish in colour; pinnae 4-5 pairs, dimorphous, fertile one smaller than sterile ones; veins 7-12 pairs, anastomosing, excurrent veins free, lower surface with hooked hairs, upper glabrous. Sori near the costules; sporangia with hooked hairs.

Rare in dense forests.

Laful.

2. **Pronephrium triphyllum** (Sw.) Holttum var. **parishii** (Bedd.) Kao  
in Fl. Taiwan 1: 431. 1975.

Terrestrial herbs. Rhizome wide creeping, covered with scales. Fronds pinnate, scanty hairy; pinnae 5 pairs; veins anastomosing. Sori indusiate, spreading along veins; spore monolete, spinose.

Rare inland forests.

Laful.

### 5. **PSEUDOCYCLOSORUS** Ching.

Terrestrial. Rhizome short creeping, with scales. Stipes scaly near base, glabrous above. Fronds bipinnate; apical pinna not pinnae-like, basal pinnae abruptly reduced; veins free, hairy on both surfaces. Sori indusiate; indusium firm, pale, glabrous; sporangia 2-3 celled, short hairs with swollen end cell.

About 12 species, south-east Asia; 1 in Gt. Nicobar Island.

**Pseudocyclosorus ochthodes** (O. Ktze.) Holtt. in Nayar & Kaur, Comp. to Bedd. Handb. 204. 1974.

Undershrubs. Rhizome short creeping, with thin scales. Fronds bipinnatifid, ca 3 m high, clustered, lower surface of pinnae clothed with hairs. Sori indusiate; indusia peltate.

Common in inland forest.

18 km on east-west road.

### 6. **TRIGONOSPORA** Holtt.

Terrestrial herbs. Rhizome erect. Fronds tripinnatifid; pinnae not reduced at base; acrophores at the base of pinnae not swollen; veins free, rarely anastomosing. Sori medial, indusiate; sporangia glabrous, stalk hairy; spores trilete, minutely papillate.

About 8 species, south-east Asia to China; 1 in Gt. Nicobar Island.

**Trigonospora ciliata** (Benth.) Holtt., Blumea 19(1): 29. f. 4, 49. 1971.

Erect terrestrial herbs. Rhizome scaly, villous. Fronds bipinnatifid, densely villous; pinnae obliquely auricled at base, largest pinnae ca 6 x 1 cm, lobed; veins 3-5 pairs in each lobe, simple, free. Sori medial, indusiate; indusia small, setose hairy.

Rare in inland forests, moist places.

Nevy Dera.

### ASPLENIACEAE

About 17 genera and several species, cosmopolitan; 1 genus and 6 species in Gt. Nicobar Island.

### ASPLENIUM L.

Terrestrial or epiphytic. Rhizome short creeping, sometimes erect, scales clathrate, glabrous. Fronds simple to pinnately compound, glabrous to scaly; veins free, uniting at apex to form submarginal veins. Sori elongate along veins, superficial, indusiate; indusium small (rarely exindusiate) usually along basioscopic side of each fertile veinlet; spores monolet, perisporate, smooth or spinulose.

About 700 species, cosmopolitan; 6 species and 1 variety in Gt. Nicobar Island.

- 1 a. Fronds simple .....2
- b. Fronds pinnate or more compound .....3
- 2 a. Veins all free .....1. *A. batuense*
- b. Veins anastomosing at margin; joining the apices of veinlets...3. *A. nidus*
- 3 a. Fronds pinnate .....4
- b. Fronds bipinnate or more compound .....5
- 4 a. Midrib of pinna not grooved above but usually raised .....6. *A. tenerum*
- b. Midrib of pinna grooved above .....2. *A. falcatum*
- 5 a. Pinnae 3-8 cm long .....5. *A. sublasperifolium*
- b. Pinnae ca 10 cm or more long .....4. *A. nitidum*

1. **Asplenium batuense** v.A. v.R. in Bull. Dept. Agr. Ind. Neerl. 18: 13. 1908.

Epiphytes. Rhizome long creeping, clothed with scales. Stipes short *ca* 2 cm long. Fronds simple, *ca* 100 x 12 cm, narrowed towards base, acuminate at apex; veins oblique to midrib, distinct but not raised on either side, 1 or 2 times forked. Sori indusiate, starting *ca* 3 mm from midrib extending upto  $\frac{3}{4}$  of distance from midrib to the margins; indusia papyraceous.

Rare, climbing on the tree bases in fresh water swamp forests.

28 km on east-west road.

India (Great Nicobar Island); Western Malaysia.

2. **Asplenium falcatum** Lam., Encycl. 2: 306. 1786.

Epiphytic. Rhizome short creeping. Stipes *ca* 30 cm long, covered with few deciduous scales. Fronds tufted, *ca* 75 cm long, pinnate; pinnae stalked, 6-20 each side, subopposite, lanceolate caudate, margins lobed, serrated, base unequal with obliquely truncate; veins furcate, oblique. Sori linear reaching nearly to margins.

Common on trees, inland forests.

Kopenheat, Baludera, Campbell Bay to Chengappa Bay, Koshindon.

3. **Asplenium nidus** L., Sp. Pl. 2: 1079. 1753.

### Key to the Varieties

- 1 a. Fronds *ca* 20 cm or more broad; sori close, often about 1 mm apart, usually reaching less than half way from costa ..... *A. nidus* var. *nidus*  
 b. Fronds *ca* 7 cm broad; sori usually more than 1.5 mm apart, usually occupying the whole length of veins except base and tip .....  
 ..... *A. nidus* var. *phyllitidis*

var. *nidus*

Epiphytic. Rhizome short, erect, with scales. Stipe *ca* 5 cm long, scaly at base. Fronds simple *ca* 100 x 20 cm, broadest at middle, apex and base gradually attenuate; veins once or twice forked. Sori along veins, extending from near midrib, halfway to the margin; indusia linear, narrow.

Common on tree trunks.

Campbell Bay.

var. **phyllitidis** (D. Don) Bir in J. Indian Bot. Soc. 567. 1964.

Very similar to var. *nidus*, differs in having Rhizome scales brown, broader. Fronds *ca* 80 x 7 cm; midrib raised below. Sori usually reaching more than halfway to margin, often occupying 3/4 of the length of veins.

Rare on mossy tree trunks, inland forests.

18, 26, 36.8 km on east-west road; Kopenheat.

4. **Asplenium nitidum** Sw., Syn. Fil. 84. 280. 1806.

Epiphytes. Rhizome scaly. Stipes *ca* 40 cm long. Fronds bipinnate, elliptic, acuminate at apex, narrowed at base, *ca* 60 x 25 cm; rachis dark glabrous, grooved on upper surface; veins subdichotomously 3-5 times forked, visible on both surfaces. Sori linear; indusia thin, pale.

Rare on moist tree trunks.

Campbell Bay.

5. **Asplenium sublasperitifolium** Ching in Nat. Syst. 5: 13. 1936.

Epiphytes. Rhizome short creeping, densely covered with scales. Stipes stout, *ca* 35 cm long, grooved. Fronds *ca* 100 x 40 cm, bipinnate to tripinnatifid; veins 1-3 times forked, distinct on both sides. Sori *ca* 4 mm long; indusia light brown; spores pale brown, translucent, slightly winged on one side.

Rare on mossy trees, inland forests.

8 km on east-west road, 24 km on road to Indira point.

*Note:* India (Great Nicobar Island); Malay Peninsula, S. China.

**6. *Asplenium tenerum* G. Forst., Prod. 80. 1786.**

Epiphytes. Rhizome short with scales. Stipes *ca* 15 cm long, scaly throughout. Fronds pinnate, widest at base, acuminate at apex, *ca* 27 x 8.5 cm; rachis winged; veins visible on both surfaces, simple or basal acroscopic ones forked. Sori elongate along veins, *ca* 4 mm long, from near costa to below sinus; indusia thin, persistent, *ca* 0.8 mm broad.

Rare on inland forests.

25 km on north-south road, 26 km on east-west road, Campbell Bay.

*Note:* India (Great Nicobar Island); Malay Peninsula.

## ATHYRIACEAE

About 23 genera and many species, tropics and subtropics; 1 genus and 1 species in Gt. Nicobar Island.

## DIPLAZIUM Sw.

Terrestrial herbs. Rhizome creeping, covered with brown scales. Stipes stout, erect or trailing. Fronds tufted, decompound; veins free except few anastomosing but without free included veinlets. Sori elongate, double on each side of vein, each furnished with linear indusium, the one opening interiorly, the other exteriorly.

About 400 species, tropical & north temperate; 1 in Gt. Nicobar Island.

***Diplazium esculentum* (Retz.) Sw. in Schard. J. Bot. 1801; 312. 1803.**

Terrestrial. Rhizome covered with fibrous stiff roots and scales. Stipes *ca* 60 cm long. Fronds bipinnate *ca* 1.5 cm high; lamina spreading; veins 6-10 pairs. Sori linear, occupying whole length of veins; indusium linear; sporangia stalked; spores oval, dark, hyaline, exine papillate.



Common along streams, inland forests.

Dogmar river bank.

## ASPIDIACEAE

About 52 genera and many species, cosmopolitan; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Rhizome creeping; fronds deeply lobed; rachis winged .....2. *Tectaria*
- b. Rhizome erect; fronds not lobed; rachis not winged .....1. *Luerssenia*

### 1. LUERSSENIA Kuhn

Monotypic genus, only Sumatra; same species reported first time in Gt. Nicobar Island.

***Luerssenia kehdingiana* Kuhn in Bot. Centralbl. 11: 77. 1882.**

Terrestrial, ca 70 cm high. Rhizome thick, clothed with dark brown scales. Fronds simple, subdimorphic, entire; sterile fronds on short stipes, 10-17 cm long; lamina elliptic lanceolate, ca 40 x 6.5 cm, gradually tapering on both sides but long narrowly decurrent on the lower side, apex acute; venation reticulate with free included veinlets; fertile fronds on much longer stalks, ca 50 cm long, lamina much narrower, ca 40 x 2 cm, oblong lanceolate, long decurrent at base. Sori indusiate; indusium elongate hipocrepiform; sori terminal on veinlets, elongated, one on each areole, 1-6 in longitudinal rows; spore yellow, monolete.

Rare along the stream sides, inland forests.

38 km on north-south road.

### 2. TECTARIA Cav.

Terrestrial. Rhizome suberect. Stipe long, slender. Fronds pinnate or more compound, thin; multicellular hairs present on the upper surface of lamina; veins regularly anastomosing, with included, free veinlets. Sori small; indusia reniform, regularly scattered all over the ventral surface of lamina.

**Tectaria vasta** (Blume) Copel., Philip. J. Sci. 2C: 411. 1907.

Terrestrial herbs, ca 1.5 m high. Rhizome scaly. Stipes long, slender. Fronds simply deeply lobed, lobes connected by a wing extending to the base of the scaly stipe. Lamina of fertile fronds, little reduced. Sori with large persistent indusia develop mostly on secondary cross veins and form 2 regular rows between the main cross veins.

Common near streams, inland forests.

26 and 37 km on east-west road.

### BOLBITIDIACEAE

About 8 genera and several species, tropical and pantropical; 1 genus and 2 species in Gt. Nicobar Island.

### BOLBITIS Schott.

Terrestrial to low epiphytic ferns. Rhizome covered with scales. Fronds dimorphic, simple pinnate or rarely bipinnate. Stipes stramineous. Lamina margin with or without teeth; veins free or anastomosing with free veinlets; fertile fronds contracted; longer than the sterile fronds, acrostichoid, rarely in part, sterile. Sori close, black on maturity; spores monolet, perisporate.

About 85 species, pantropical; 2 species in Gt. Nicobar Island.

- 1 a. Fronds simple with entire margins .....2. *B. sinuata*
- b. Fronds pinnately compound; pinnae serrate .....1. *B. appendiculata*

1. **Bolbitis appendiculata** (Willd.) Iwatsuki in Acta Phytotax. Geobot. 18: 48. 1959.

Terrestrial herbs. Rhizome thick, clothed with scales. Stipes ca 25 cm long. Fronds pinnate, 15-100 cm long; lamina ca 50 x 30 cm, herbaceous, shining green in texture; rachis with a narrow wing; pinnae alternate, 20-80, opposite, oblique at base, acuminate at apex, serrate, lowermost pinnae strongly deflexed; terminal segments triangular; veins anastomosing; fertile fronds pinnate to tripinnate, lowermost pinnate, stalked. Sori restricted all over the lower surface.

Rare on rocks, near streams.

Rosen point, Campbell Bay.

2. **Bolbitis sinuata** (Presl.) Hennipm. in Blumea 18: 148. 1970.

Terrestrial herbs. Rhizome short, covered with scales. Fronds dimorphic, simple or pinnate, with entire or undulate margins; lamina thick rarely proliferous; lamina of fertile fronds borne on lower stipes, reduced and lower surface covered with sporangia.

Rare on rocks, moist places.

36 km on north-south road.

India (Great Nicobar Island); Thailand, New Guinea, Malaysia.

### NEPHROLEPIDACEAE

About 3 genera and several species, tropics and pantropics; 1 genus and 2 species in Gt. Nicobar Island.

### NEPHROLEPIS Schott

Terrestrial or epiphytic. Rhizome short, suberect, scaly. Fronds large, lanceolate or narrower in outline, pinnate; pinnae closely placed, slightly falcate, lower ones reduced and distantly placed, articulate, sessile; veins free, ending in distinct hydathodes within margin. Sori dorsal to submarginal, terminal on veinlets, round to elongate; indusia attached at base; sporangia mixed; spores bilateral.

About 30 species, pantropics; 2 in Gt. Nicobar Island.

- |   |    |                                                                         |                        |
|---|----|-------------------------------------------------------------------------|------------------------|
| 1 | a. | Sori borne near margin; pinnae auricled .....                           | 2. <i>N. hirsutata</i> |
|   | b. | Sori borne between margin and costa; pinnae at base, not auricled ..... | 1. <i>N. biserrata</i> |

1. **Nephrolepis biserrata** (Sw.) Schott, Gen. Fil. ad. t. 3. 1834.

Epiphytic, pendulous herbs. Rhizome suberect, fronds drooping at apex, covered with scales. Stipes ca 40 cm long, densely scaly. Fronds

pinnate, *ca* 150 cm long; pinnae lanceolate, acuminate at apex, rounded at base, *ca* 18 x 2 cm; basal pairs of pinnae gradually shortened, margins serrulate, teeth remote, veins free, once or twice forked near costa. Sori round, in one row; indusia reniform, round, *ca* 1.5 mm diam.

Rare on moist tree trunks.

Galathea Bay to Indira point, Campbell Bay.

**2. *Nephrolepis hirsutula* (Forst.) Presl. Tent. Pterid. 79. 1836.**

Terrestrial herbs. Rhizome short, scales dense, appressed, hairy at margins. Stipes *ca* 30 cm long, scaly throughout. Fronds *ca* 100 cm long, pinnae auricled. Sori round, submarginal, indusia reniform, dark brown, margins pale.

Rare in inland forests.

38.7 km on east-west road.

### **DOUBTFUL SPECIES**

***Nephrolepis falcata* (Cav.) C. Chr. An. Dansk. Bot. Ark. 9: 15. 1937.**

An epiphytic fern on fallen logs in the beach.

*Note:* The plant record from Great Nicobar is by Thothathri et al. 1973; its identity is doubtful.

### **LOMARIOPSIDACEAE**

About 9 genera and several species, tropics; 1 genus and 1 species in Gt. Nicobar Island.

### **LOMAGRAMMA J. Sm.**

Terrestrial. Rhizome climbing on tree trunks. Fronds 3-5 rows; young parts of rhizome and fronds densely scaly. Stipes gradually decurrent at their bases to ridges of rhizome. Fronds simply pinnate; veins forming a uniform network of 3 or more rows of oblique areoles without including

veinlets and without main veins. Fertile fronds with pinnae narrower than sterile pinnae, covered beneath with sporangia; paraphyses present, about as long as sporangia; spores lacking perispore.

About 18 species, tropics; 1 in Gt. Nicobar Island.

**Lomagramma sumatrana** v.A.v.R., Bull. Jard. Bot. Btzg. III. 2: 185. 1920.

Terrestrial. Rhizome climbing on tree trunks, densely clothed with scales. Stipes *ca* 10 cm long. Lamina *ca* 40 x 7 cm, pinnate; pinnae 20-30 pairs, lower ones slightly reduced and more distant; veins distinct, forming uniform network of 3 or more rows of oblique areoles without included veinlets and without main veins. Sterile fronds *ca* 90 cm long; fertile pinnae narrower than the sterile ones, *ca* 15 x 0.5 cm. sori not seen.

Rare near rocky streams in inland forests.

26 km on east-west road.

Only vegetative stage.

India (Great Nicobar Island); North Sumatra and Malay Peninsula.

## DAVALLIACEAE

About 10 genera and several species, tropical & subtropical; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Indusia attached at base and sides (tubular); rhizome 5-20 mm diam. .... 1. *Davallia*
- b. Indusia attached at base (scale like); rhizome 1-3 mm in diam. .... 2. *Humata*

### 1. DAVALLIA Sm.

Epiphytic or terrestrial. Rhizome creeping, paleae ciliate. Stipe auriculated to rhizome. Fronds decompose, coriaceous; veins free. Sori terminal on veinlets; indusia elongated, attached by base and sides, cup-

shaped; sporangia slender, stalked; annulus incomplete, vertical; spores oblong to reniform, hyaline.

About 40 species, tropical & subtropical; 2 in Gt. Nicobar Island.

- 1 a. False veinlets present between true veins; indusium pointed; length and width nearly same .....1. *D. denticulata*
- b. No false veins present; indusium truncate; length greater than width .....2. *D. solida*

1. **Davallia denticulata** (Burm.f.) Mett. ex Kuhn, Fil. Deck. 27. 1867.

Terrestrial or epiphytic. Rhizome densely covered with scales. Stipes *ca* 40 cm long. Fronds subtriangular, gradually narrowing towards acuminate apex, quadripinnatifid to quadripinnate; veins distinct on lower surface; false veinlets present. Sori small, placed at margin of lobes; indusia cup-shaped.

Common on tree trunks, inland forests.

Kopenheat; Galathea to Indira point.

2. **Davallia solida** (Forst.) Swa., Schard. J. Bot. 1800(2): 87. 1801.

Epiphytic. Rhizome covered with brown scales. Stipes *ca* 25 cm long. Fronds subdeltoid, *ca* 30 cm long and wide, tripinnate; veins visible, but not raised. Sori terminal, at margin of ultimate segments; involucre cup-shaped, about twice as long as wide.

Rare on tree trunks.

29 km on east-west road, Campbell Bay.

2. **HUMATA** Cav.

Epiphytic. Rhizome long creeping, densely scaly with peltate scales. Stipes articulated to rhizome. Fronds simple to tripinnate. Sori round, terminal on veinlets, marginal; indusia scale like, attached only base, or rarely by the sides.

About 50 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Fronds dimorphic .....1. *H. heterophylla*  
 b. Fronds not dimorphic .....2. *H. pectinata*

**1. *Humata heterophylla* (Sm.) Desv., Prod. 323. 1827.**

Epiphytic or lithophytic herbs. Rhizome densely scaly. Fronds dimorphic. Sterile fronds: stipes *ca* 2.5 cm long, narrowly winged; lamina simple, oblong, acuminate at apex, rounded to cuneate at base, *ca* 9 x 2.5 cm; veins 2-3 forked, all free. Fertile fronds: stipes *ca* 2.5 cm long, winged; lamina linear, lanceolate, *ca* 9 x 1 cm, lobed to half way. Sori terminal on veinlets, 3-5 on each lobe; indusia brown, entire.

Rare on trees and also on rocks.

Campbell Bay.

India (Nicobar Islands); Malaysia to Pacific Is.

**2. *Humata pectinata* (Sm.) Desv., Prodr. 323. 1827.**

Epiphytic herbs. Rhizome densely scaly throughout. Stipes *ca* 15 cm long, sparsely scaly. Fronds oblong, acuminate, round at base, *ca* 17 x 4.5 cm, lobed nearly to rachis. Sori along the margin of lobes, a little inside the margin; indusia round, *ca* 1 mm broad.

Rare on tree trunks.

Campbell Bay, Pulobaha.

India (Andaman & Nicobar Islands); Sumatra to Solomon Islands.

## BLECHNACEAE

About 12 genera and 250 species, cosmopolitan; 1 genus and 2 species in Gt. Nicobar Island.

**BLECHNUM L.**

Terrestrial herbs. Rhizome ascending or erect, paleate. Fronds simple pinnate, spreading, coriaceous; few basal pairs of pinnae reduced to auricle on the axis; veins parallel, free. Sori linear, elongate, confluent along both sides of midrib; indusia linear, firm, attached dorsally along the sides of midrib; sporangia large, crowded; spores monolete.

About 200 species, cosmopolitan; 2 in Gt. Nicobar Island.

- 1 a. Pinnae narrow, *ca* 2 cm wide; first fronds of young plants deeply lobed ...  
 .....2. *B. orientalis*  
 b. Pinnae broad, *ca* 4 cm wide; first fronds of young plants simple with  
 auricled stipes .....1. *B. finlaysonianum*

**1. *Blechnum finlaysonianum* Hook. & Grev., Ic. Fil. t. 225. 1831.**

Terrestrial herbs. Rhizome massive. Fronds pinnate with many pairs of long, rather broad, entire pinnae and below them, small auricles reaching almost to the base of stipe. Sterile fronds red colour. Sori developed on each side of the costa, close to it; indusia linear; spores monolete.

Rare on moist places.

25 km on east-west road.

India (Andaman & Nicobar Islands); Thailand, Malay Peninsula.

**2. *Blechnum orientale* L., Sp. Pl. 2: 1077. 1753.**

Terrestrial herbs. Rhizome massive. Stipes *ca* 75 cm long, bearing small auricles, 2-3 cm apart, throughout. Fronds tufted, gigantic, *ca* 1.75 m high, tips covered with scales; lamina *ca* 130 x 50 cm, pinnate; pinnae many, close, oblique, gradually narrow towards apex; veins free, simple or forked. Sori copious, linear on either side of midrib, throughout; indusia firm, arising from both sides of costae, opening inwardly, margin entire; spores round to oval, dark brown.

Common in open places, inland forests.

8, 33 and 35 km on east-west road.



*Additional List***HYMENOPHYLLACEAE**

**Nesopteris grandis** (Copel.) Copel., Philipp. J. Sci. 67: 66. 1938; Dixit, Ghosh & Ghosh in Bull. Bot. Surv. India 1997 (in press). *Trichomanes grande* Copel., Philipp. J. Sci. C - 6: 70. 1911.

Terrestrial. Rhizome erect; stipe fascicled *ca* 20 cm long. rachis and upper part of the stipe narrowly winged, sparsely puberulous. Fronds 20-35 x 10-15 cm long, tufted, narrowly ovate, margins quadripinnatifid, bearing clavate trichomes on lower surface; veins fine. Sori indusiate.

Rare in inland forests.

India (Gt. Nicobar Islands); Philippines, Java. New Generic record for Indian flora.

**THELYPTERIDACEAE**

**Pronephrium nakalkeuim** Dixit & Balakr. in Indian Fern. Journ. 7: 1-4. f. 1-3. 1990

Terrestrial. Rhizome long creeping, clothed with sparse scales and hooked hairs. Fronds slightly dimorphic; fertile fronds slightly contracted, 0.5-1 cm apart; stipe 48 cm long, thick, stramineous, sparsely scaly in the basal region, glabrous above; pinnae alternate *ca* 2 pairs, terminal pinnae with lobed margins like lateral pinnae but larger in size, lateral pinnae 14-16 x 2-2.5 cm, elliptic-lanceolate, gradually tapering at both ends, cuneate but not auricled at base, acuminate at apex, margins irregularly lobed; lower surface hairy, terminal pinnae 20 x 2.8 cm, strongly lobate in the basal region. Veins anastomosing, horizontal, 6-8 pairs, excurrent, veinlets irregular in occurrence, short ending into inconspicuous hydathodes. Sori exindusiate, round and medial on veinlets, confluent into crescent shaped sori in maturity; sporangia bearing hooked hairs.

Rare on shady hill slopes

Campbell Bay to 10 km one ast - west road.

*Note:* Endemic to Gt. Nicobar Island.

**THELYPTERIDACEAE**

**Pronephrium menisciocarpon** (Blume) Holtt., Blumea 20: 111. 1972;  
Dixit, Ghosh & Ghosh in Bull. Bot. Surv. India 1996 (in Press.)  
*Aspidium menisciocarpon* Blume, En. Pl. Jav. 142. 1828.

Terrestrial. Rhizome short creeping. Fronds tufted, dimorphous. Sterile fronds: stipe *ca* 20 cm long, hairy; lamina 30-40 cm long, consisting 4-6 pairs of pinnae. Fertile fronds: stipe *ca* 45 cm long; pinnae 7-10 x 1.5-2.5 cm. Sori medial to supermedial, slightly elongate; indusia with many short hairs; sporangia bearing 0-2 setae; spores with longitudinal and cross wings.

Rare in inland forests near streams.

Campbell Bay to Shompen hut forests, 27 km east-west road.

*Note:* India (Gt. Nicobar Islands); Malesia, Sumatra, Borneo, W. Java, Philippines etc.

**GNETACEAE**

About 30 genera and 40 species, tropical and temperate regions; 1 genus and 2 species in Gt. Nicobar Island.

**GNETUM L.**

Climbing monoecious or dioecious evergreen shrubs or trees. Flowers whorled in the axils of the cup-shaped bracts of axillary or terminal solitary or panicle spikes often surrounded with jointed hairs. Staminate flowers: perianth narrowly clavate, entire or valvately 2 fid; anther cells usually 2, sessile, dehiscing terminally. Pistillate flowers: ovules ovoid or globose, inner integument produced into a narrow tube. Seeds drupaceous.

About 30 species, tropical Asia, Africa, America & Pacific regions; 2 species in Gt. Nicobar Island.

- 1 a. Lianas; ovary and seeds stipitate ..... 2. *G. scandens*
- b. Trees; ovary and seeds sessile ..... 1. *G. gnemon*

1. **Gnetum gnemon** L., Mant. Pl. 125. 1767.

Trees, *ca* 8 m high; bark white. Leaves opposite, elliptic lanceolate to broadly oblong, acuminate at apex, cuneate at base, *ca* 20 x 8 cm; petioles *ca* 1.25 cm long. Spikes *ca* 2.5 cm long, slender; cupular bracts at length distant. Seeds ovoid, acute, orange to red, *ca* 1.5 cm long.

Scattered in inland forests near coast.

*Fl. & Fr.*: Feb.-July.

Alexandra river, Galathea Bay to Indira point.

2. **Gnetum scandens** Roxb., Fl. Ind. 3: 518. 1832.

Lianas with flattened and twisted stems. Leaves opposite, oblong or ovate, obtusely cuspidate at apex, cuneate at base, *ca* 20 x 12 cm; lateral nerves *ca* 10 pairs; petioles *ca* 1.25 cm long. Flowers in green cylindrical catkins. Fruits orange coloured, *ca* 2.5 cm long, stipe *ca* 1.3 cm long.

Scattered in inland forests.

*Fl. & Fr.*: Jan.-March.

Pulobaha Bay.

## CYCADACEAE

About 9 genera and 90 species, tropical & subtropical regions; 1 genus and 1 species in Gt. Nicobar Island.

## CYCAS L.

Palm like trees or shrubs. Leaves pinnate. Male cones apparently terminal, peduncled; scales cuneate, closely imbricate, apex long acuminate. Ovaliferous scales loosely imbricate, leaf like, pinnatifid, with 1-5 pairs of ovules on the margin of stalk. Seeds large, ovoid or ellipsoid, compressed.

About 15 species, mostly in tropical Asia; 1 in Gt. Nicobar Island.

**Cycas rumphii** Miq., Bull. Sci. Phys. Nat. Neerl. 2: 45. 1839.

Evergreen palm like trees, *ca* 3 m high, with a rough simple or sometimes forked stem. Leaves *ca* 1.8 m long, collected at the top of the stem, dark green and glossy; leaflets many, 15-25 cm long, confluent in the upper part of the leaf. Flowers in orange coloured scaly cones. Fruits globular *ca* 5 cm in diam., woody, smooth, orange coloured when ripe.

Common in the littoral zone along the coasts.

*Fl. & Fr.*: Throughout the year.

Galathea to Indira point, 16 km on north-south road.

India (Andaman & Nicobar Islands); Myanmar.

## DICOTYLEDONS

### RANUNCULACEAE

About 50 genera and 1900 species, mostly in temperate and alpine regions, some in subtropical & temperate areas; 2 genera & 2 species in Gt. Nicobar Island.

- 1 a. Plants climbing by means of twining petiole; terminal leaflets normal; petals absent .....1. *Clematis*
- b. Plants climbing by means of tendrils; terminal leaflets modified into tendrils; petals present .....2. *Naravelia*

#### 1. CLEMATIS L.

Climbers; branches furrowed. Leaves opposite or fascicled at nodes, simple, 3 foliolate; petioles and petiolules often twining. Flowers solitary or in fascicles at the nodes or in axillary or terminal cymes or panicles. Sepals petaloid. Petals absent. Stamens numerous. Carpels (3) 5- many; style persistent, pilose. Achenes stalked, laterally compressed.

About 250 species, temperate & subtropical; 1 in Gt. Nicobar Island.

**Clematis smilacifolia** Wall. ssp. **andamanica** Kapoor in Kew Bull. 19: 331. f. 1. 1965; M.A. Rau in Fl. India 1: 76. 1993.

Woody climbers. Leaves simple or 1-3 foliolate, broadly ovate or elliptic-ovate, cordate at base, obtuse-acute at apex, *ca* 18 x 14 cm; lateral veins 7-8. Flowers in axillary cymes with long pedicels, *ca* 4 cm across, purplish white. Staminal filaments linear, *ca* 15 mm long, white, glabrous; anthers *ca* 6 mm long, connectives produced 0.5 mm beyond anther thecae. Achenes broadly ovate, pilose.

Rare along the streams in interior inland forests.

*Fl. & Fr.*: Sept.-March.

Dogmar river.

Endemic to A & N Islands.

## 2. NARAVELIA DC.

Climbing shrubs. Leaves opposite, 3 foliolate, with terminal leaflets usually forming a tendril. Flowers in axillary or terminal panicles, bisexual. Sepals caducous. Staminodes 6-12, petaloid. Stamens many. Carpels with one ovule. Achenes linear, stipitate with persistent twisted feathery tails.

About 4 species, Indo-Malaysian; 1 in Gt. Nicobar Island.

*Naravellia laurifolia* Wall. ex Hook. f. & Thom. in Fl. Ind. 3: 1855.

Climbing shrubs. Leaves opposite, 3 foliolate, *ca* 9 x 6 cm; petioles *ca* 2.5 cm long; terminal leaflets modified into tendril. Panicles *ca* 6 cm long, divaricately branched. Flowers many, yellowish white, *ca* 0.5 cm across. Carpels *ca* 3.5 mm long, hairy.

Rare, climbing over the bamboo thickets in inland forests.

*Fl. & Fr.*: Nov.-July.

Laful.

India (Great Nicobar Island); Malay Peninsula.

**DILLENIACEAE**

About 14 genera and 400 species, in tropical and subtropical regions; 1 genus and 2 species in Gt. Nicobar Island.

**DILLENIA L.**

Trees. Leaves large; petioles channelled above. Flowers showy, solitary or terminal racemes, rarely fasciculate; bracts and bracteoles caducous. Sepals 5. Petals 5, yellow or white, larger than sepals. Stamens numerous; anthers linear, opening by apical pores or longitudinal slits. Pseudocarp indehiscent, enclosed by thickened sepals.

About 60 species, in tropical & subtropical regions; 2 species in Gt. Nicobar Island.

- 1 a. Flowers *ca* 3 cm across; anthers opening by longitudinal slits.....  
 .....2. *D. pentagyna*  
 b. Flowers *ca* 12 cm across; anthes opening by apical pores .....  
 .....1. *D. andamanica*

1. ***Dillenia andamanica*** Parkinson in Indian For. 61: 425, t. 29. 1935; Majumdar, Fl. India 1: 152. 1993.

Trees, *ca* 20 m high. Leaves narrowly obovate to oblanceolate, acute at base, obtuse at apex, entire or dentate along the margins, *ca* 45 x 15 cm; lateral nerves *ca* 45 pairs; petioles *ca* 2 cm long. Flowers solitary or in pairs. Sepals sericeous outside, ciliate along margins. Petals obovate, yellow. Carpels 8; styles recurved. Fruits subglobose, *ca* 2.5 cm across, orange in colour.

Rare in inland forests.

*Fl. & Fr.*: March-July.

Way to Dogmar river, Casuarina Bay.

*Note*: Endemic to A & N Islands.

2. ***Dillenia pentagyna*** Roxb., Pl. Cor. 1: 21, t. 20. 1795; Majumdar in Fl. India 1: 156. 1993.

Trees, *ca* 20 m high. Leaves oblong lanceolate, obtuse or cuneate at base, obtuse at apex, entire to dentate along margins, *ca* 50 x 20 cm; lateral nerves 20-50 pairs, pubescent on nerves; petioles *ca* 5 cm long; stipules wing like. Flowers 2-7 umbellate, yellow, *ca* 3 cm across. Sepals orbicular elliptic, accrescent. Petals deep yellow. Stamens in 2 series. Fruits drooping, subglobose, *ca* 15 x 13 mm, fleshy, yellow, orange or red, 1(2) seeded; seeds ovoid.

Rare in inland forests.

*Fl. & Fr.*: Jan.-June.

Laful.

## ANNONACEAE

About 122 genera and 1200 species in tropics; 8 genera and 16 species in Gt. Nicobar Island.

- 1 a. Anther locules not concealed at top by overlapping connectives; sepals and outer petals not distinguishable .....5. *Orophea*
- b. Anther locules concealed at top by overlapping connectives; sepals and outer petals distinguishable .....2
- 2 a. Sepals imbricate; petals imbricate in one or both series .....8. *Uvaria*
- b. Sepals valvate; petals valvate in both series .....3
- 3 a. Petals spreading in flowers or apices free, almost similar and equal .....4
- b. Petals, outer sometimes spreading, inner ones not spreading but remaining erect, dissimilar and unequal .....6
- 4 a. Petals flat, spreading from the base, not covering stamens & carpels .....6. *Polyalthia*
- b. Petals conniving at the concave base covering stamens & carpels .....5
- 5 a. Peduncles flattened and hooked .....2. *Artabotrys*
- b. Peduncles not flattened nor hooked .....3. *Friesodielsia*
- 6 a. Inner petals usually 3-quetrous, sometimes ovate-elliptic, touching other vertically .....1. *Anaxagorea*
- b. Inner petals connivent, arching over the stamens & carpels forming a dome .....7

- 7 a. Flowers unisexual .....7. *Pseuduvaria*  
 b. Flowers bisexual .....4. *Goniothalamus*

### 1. ANAXAGOREA St.-Hill.

Small trees. Flowers small, leaf opposed or terminal and extra axillary, solitary. Sepals 3, valvate, connate at base. Petals 6(3+3), valvate, subequal. Stamens many; anthers extrorse or sublateral. Ripe carpels follicular, clavate, stalked, dehiscent by 2 valves; seeds 1-2, exarillate, shiny.

About 30 species, in tropics; 1 species in Gt. Nicobar Island.

*Anaxagorea javanica* Blume, Fl. Jav. Anon. 1: 66. 1830; Hore in Bull. Bot. Surv. India 26: 21. (1984) 1985.

Trees, ca 3 m high. Leaves elliptic oblong, acute to acuminate at apex, cuneate at base, ca 18 x 7 cm, glabrous; lateral nerves 8-10 pairs; petioles 1 cm long. Inflorescences axillary. Flowers greenish outside, fragrant. Sepals glabrous to minutely puberulous, adpressed to petals. Outer petals greenish, inner reddish. Stamens white. Stigma cone shaped. Follicles red.

Rare in inland forest.

*Fl. & Fr.*: Nov.-March.

Laful.

*Note*: India: Great Nicobar Islands; Borneo, Java, Singapore.

### 2. ARTABOTRYS R.Br.

Shrubs; climbing by means of persistent hook like peduncles. Flowers solitary or several, fascicled on woody, hooked recurved leaf opposed peduncles. Sepals 3. Petals 6(3+3). Stamens many. Carpels few or many. Ripe carpels subsessile, ovoid; seeds-2, rarely 1.

About 100 species, in S.E. Asia to Australia, also in Africa; 1 in Gt. Nicobar Island.



**Artabotrys nicobarianus** D.Das in Bull. Bot. Surv. India 11: 194. 1969;  
Debika Mitra in Fl. India 1: 252.

Scandent shrubs. Leaves elliptic, cuneate at base, caudate at apex, *ca* 13.5 x 5.5 cm, glabrous; petioles *ca* 5 mm long. Flowers many; bracts minute, tomentose. Sepals tomentose outside. Petals dissimilar; outer ones clawed, limb linear lanceolate, tomentose; inner ones united at clawed base, tomentose. Anthers short, connectives convex, beaked in front. Carpels few, densely strigose; stigma sessile.

Rare in inland forests.

*Fl.*: March-April; *Fr.*: Not known.

Galathea Bay to Pulobaha.

*Note*: Endemic to Great Nicobar Island.

### 3. **FRIESODIELSIA** van Steenis

Climbers. Flowers leaf opposed or extra axillary. Sepals 3, valvate. Petals 6(3+3), valvate. Stamens many. Carpels oblong or cylindric, strigose. Ripe carpels many, ovoid or oblong, stalked; seed one.

About 55 species, in South-East Asia & Philippines; 2 in Gt. Nicobar Island.

- 1 a. Pedicels of flowers *ca* 1 cm long .....1. *F. forniculata*
- b. Pedicels of flowers 3-4 cm long .....2. *F. khoshooi*

1. **Friesodielsia forniculata** (Roxb.) D.Das in Bull. Bot. Surv. India 5: 43 & 93. 1963; Debika Mitra in Fl. India 1: 264. 1993.

Climbers; young branches tomentose. Leaves lanceolate or oblong lanceolate, rounded at base, acuminate at apex, *ca* 18 x 7 cm, glabrous and glaucous above, hoary pubescent beneath, petioles *ca* 7 mm long. Flowers extra axillary, solitary. Sepals connate at base, 5 nerved, pubescent on midrib, reddish outside. Petals greenish to pale yellow. Carpels oblong; style curved; stigma subcapitate. Ripe carpels 8-10, oblong, apiculate, *ca* 2 cm long, verrucose, pubescent at base & apex; seed 1.

Rare in inland forests.

*Fl. & Fr.*: May-Dec.

6 km on east-west road.

2. **Friesodielsia khoshooi** Vasud. & T. Chakrab. in J. Econ. Tax. Bot. 6: 435. 1985; Debika Mitra in Fl. India 1: 265. 1993.

Scandent shrubs. Leaves oblong-elliptic, subcordate at base, acute at apex, *ca* 23 x 10 cm, glabrous above, thinly tawny tomentose beneath; petioles *ca* 8 mm long. Flowers solitary, creamy yellow; pedicels *ca* 4 cm long, golden brown, hirsute outside. Petals golden brown outside. Ripe carpels oblong ellipsoid, apiculate at apex, *ca* 1.4 x 0.9 cm, hirsute; stalks *ca* 5 mm long.

Rare along the streams of littoral forests.

*Fl. & Fr.*: Apr.-Aug.

Laful.

*Note*: Endemic to Great Nicobar Island. Rare.

#### 4. **GONIOTHALAMUS** (Bl.) Hook.f. & Thom.

Small trees. Flowers solitary or few in fascicles, axillary or extra axillary, sometimes cauliflorous. Sepals 3. Petals 6 (3+3). Stamens many. Carpels many, cylindrical; stigma simple or 2 fid. Ripe carpels subsessile; seeds 1, rarely 2-4.

About 115 species, in tropics; 1 in Gt. Nicobar Island.

**Goniothalamus malayanus** Hook.f. & Thom., Fl. Ind. 107. 1855; Debika Mitra in Fl. India 1: 236. 1993.

Trees *ca* 10 m high. Leaves elliptic oblong, attenuate acute at base, cuspidate acuminate at apex, *ca* 20 x 7 cm, glabrous, except pubescent midrib below; petioles *ca* 1 cm long. Flowers axillary, fragrant; pedicels

pubescent; bracts 1-3, brown pubescent. Sepals pubescent outside, glabrous inside. Ripe carpels oblong, *ca* 3.5 cm long, sometimes constricted, apiculate and stipitate; stalks *ca* 5 mm long; seeds 2-5, ovoid, shiny red brown.

Rare in inland forests.

*Fl. & Fr.*: May-Sept.

Nevy Dera.

India (Great Nicobar Island); Malay Peninsula, Sumatra, Borneo, Sarawak.

### 5. OROPHEA Bl.

Small trees. Leaves membranous, pellucid dotted. Flowers axillary or supra axillary, solitary or few together in cymes or 2 seriate in racemes. Sepals 3 valvate. Petals 6(3+3). Stamens 3-9. Ripe carpels elongate cylindric or globose, fleshy, red; seeds 1-4.

About 60 species, in S.E. Asia to New Guinea; 1 in Gt. Nicobar Island.

***Orophea katschallica*** Kurz in J. Bot. 4: 323-324. 1875; Debika Mitra in Fl. India 1: 225. 1993. 'Tonyoge (Onge)'.

Trees, *ca* 10 m high. Leaves oblong-lanceolate or elliptic, subcuneate or rounded at base, acuminate at apex, *ca* 18.5 x 7.5 cm, glabrous above, puberulous beneath; petioles *ca* 4 cm long. Flowers creamy white. Stamens 9 in two rows, 3 outer staminodes, 6 inner fertile. Carpels 3, hairy. Fruits linear oblong, narrow at base, constricted between seeds, pointed at apex, *ca* 10 cm long; seeds 6-8 pale brown with minute transverse furrows.

*Fl. & Fr.*: June-Jan.

Laful.

*Note*: Endemic to A & N Islands.

6. **POLYALTHIA** Bl.

Small trees. Flowers solitary or few together, axillary. Sepals 3, valvate. Petals 6(3+3), valvate. Stamens numerous. Ripe carpels few to many; berries stalked, rarely sessile; seeds 1-5.

About 120 species, S.E. Asia, Africa, China, Australia and New-Zealand, 4 in Gt. Nicobar Island.

- 1 a. Petals *ca* 1.5 cm long .....3. *P. parkinsonii*
- b. Petals more than 1.5 cm long .....2
- 2 a. Petals *ca* 1.4 cm wide .....2. *P. lateriflora*
- b. Petals less than 1 cm or rarely 1.2 cm wide .....3
- 3 a. Petals strap shaped, 10-12 mm wide; ripe carpels *ca* 1.2 cm long, often 2 seeded, constricted between seeds .....1. *P. cauliflora*
- b. Petals linear to oblong lanceolate, *ca* 8 mm wide; ripe carpels 1.5-5 cm long, 1 seeded, carpels not constricted .....4. *P. simiarum*

1. ***Polyalthia cauliflora*** Hook.f. & Thom. var. ***desmantha*** (Hook.f. & Thom.) Sinclair in Gard. Bull. Singapore 15: 295. 1955; Debika Mitra in Fl. India 1: 269. 1993.

Trees, *ca* 5 m high. Leaves elliptic-lanceolate, rounded at base, acutely acuminate at apex, *ca* 23 x 6.5 cm, glabrous, except for midrib; lateral veins *ca* 12 pairs; petioles *ca* 5 mm long. Flowers generally on trunks or in axils of fallen leaves. Sepals pubescent outside. Petals pinkish brown, strap shaped. Ripe carpels *ca* 1.2 x 1 cm, wrinkled when dry, 1-2 seeded.

Rare in hill slopes, inland forests.

*Fl. & Fr.*: May-Jan.

45 km on north-south road; 39 km on east-west road.

*Note*: India (Great Nicobar Island); Indonesia, Thailand.

2. ***Polyalthia lateriflora*** (Blume) Kurz in J. As. Soc. Beng. 43(2): 52. 1874; Debika Mitra in Fl. India 1: 273. 1993.

Trees, *ca* 20 m high. Leaves oblong to elliptic oblong, rounded or subcordate at base, acuminate at apex, entire, *ca* 40 x 18 cm; petioles *ca* 7 mm long. Flowers in fascicles on stem or older branches. Sepals tomentose outside. Petals greenish yellow, reddish at base. Ripe carpels ovoid to ellipsoid, blunt at apex, *ca* 3.5 x 6 cm, red when ripe; stalks *ca* 4.5 cm long, 1 seeded; seeds longitudinally grooved.

Common in inland forests.

*Fl.*: June-July; *Fr.*: Nov.-June.

17 km on east-west road.

*Note*: India (Andaman & Nicobar Islands); Myanmar.

3. ***Polyalthia parkinsonii*** Hutch. in Bull. Misc. Inf. Kew 1917; 25. 1917; Debika Mitra in Fl. India 1: 275. 1993.

Trees, *ca* 20 m high. Leaves lanceolate, slightly oblique and obtuse at base, long acuminate at apex, *ca* 20 x 6 cm; petioles *ca* 10 mm long. Flowers many in dense fascicles on leafless branches. Sepals minutely pubescent. Petals densely tomentose outside sparsely tomentose inside. Ripe carpels subglobose, *ca* 1 cm in diam., more or less shiny; stipe short; seed 1.

Common in inland forests.

*Fl. & Fr.*: Nov.-March.

Alexandra river, Laful.

*Note*: Endemic to A & N Islands.

4. ***Polyalthia simiarum*** (Hook.f. & Thom.) Hook.f. & Thom., in Fl. Brit. India 1: 63. 1872 *p.p.*; Debika Mitra in Fl. India 1: 276. 1993.

Trees, *ca* 20 m high. Leaves ovate oblong, subcordate rounded at base, acute at apex, entire, *ca* 30 x 11 cm; lateral nerves 12-18 pairs; petioles *ca* 9 mm long. Flowers yellowish green *ca* 4 cm across, 3-5 fascicled in axils of fallen leaves. Sepals pubescent outside. Petals greenish yellow to

purplish. Ripe carpels ellipsoid, apiculate, *ca* 3.5 cm long, glabrous, orange red to bluish when ripe; stalks *ca* 4 cm long; seed 1, oblong-ovoid, transversely ribbed.

Rare in inland forests.

*Fl. & Fr.*: April-Nov.

35 km on north-south road, 38.5 km on east-west road.

## 7. PSEUDUVARIA Miquel

Small trees. Flowers small, unisexual, solitary or fascicled in the axils of leaves. Sepals 3 valvate. Petals 6(3+3) valvate. Male flowers: stamens very small; carpels absent. Female flowers with a ring of staminodes or with 1 or 2 fertile or reduced stamens; carpels tomentose. Ripe carpels many, densely tomentose, stalked or sessile, smooth or warted; seeds 1-several.

About 17 species, S.E. Asia, Indonesia, Philippines & New Guinea; 2 in Gt. Nicobar Island.

- 1 a. Ripe carpels subglobose, minutely pubescent ..... 1. *P. prainii*
- b. Ripe carpels globose, verrucose with longitudinal ridges on one side .....  
..... 2. *P. rugosa*

1. *Pseuduvaria prainii* (King) Merr. in Philipp. J. Sci. (Bot.) 10: 255. 1915; Debika Mitra in Fl. India 1: 248. 1993.

Trees, *ca* 15 m high. Leaves elliptic-oblong, cuneate at base, shortly acuminate at apex, *ca* 22 x 8 cm, glabrous, pubescent on midrib; petioles *ca* 7 mm long. Flowers yellowish green, solitary or 2-3 together. Sepals broadly ovate, tomentose outside, glabrous inside. Stamens in male flowers numerous. Ripe carpels few, subglobose, truncate at both ends, rugulose, minutely pubescent; stalks *ca* 10 mm long.

Rare in inland forests.

*Fl. & Fr.*: March-Dec.

Laful.

*Note:* Endemic to A & N Islands.

2. ***Pseuduvaria rugosa*** (Blume) Merr. in Philip. J. Sci. (Bot.) 10: 255. 1915.

Trees, *ca* 12 m high. Leaves elliptic oblong, cuneate at base, shortly acuminate at apex, *ca* 18 x 6 cm; petioles *ca* 8 mm long. Fruits globose, green, surface rough.

Frequent in hill forests.

*Fl.*: Not seen; *Fr.*: April-May.

Laful.

India (Great Nicobar Island); Malay Peninsula, Java, Philippines.

## 8. UVARIA L.

Scandent or sarmentose shrubs. Flowers terminal or leaf opposed, in few flowered cymes, rarely solitary, yellow, purple or reddish brown. Sepals 3. Petals 6(3+3). Stamens numerous, outer sometimes sterile. Carpels many, linear-oblong. Ripe carpels many, dry or berries; seeds few to many, 1-2 striate.

About 150 species in tropics; 4 in Gt. Nicobar Island.

- 1 a. Leaves densely hairy beneath .....2  
b. Leaves glabrous, sometimes pubescent when young .....3
- 2 a. Petals less than 1.5 cm long .....4. *U. rufa*  
b. Petals more than 1.5 cm long .....1. *U. cordata*
- 3 a. Stalk of ripe carpels 4-15 cm long .....2. *U. lurida*  
b. Stalks of ripe carpels 1-2 cm long .....3. *U. nicobarica*

1. ***Uvaria cordata*** (Dunal) Alston, Handb. Fl. Ceylon, Suppl. 6: 4. 1931; Debika Mitra in Fl. India 1: 289. 1993.

Scandent shrubs. Leaves elliptic-oblong to ovate oblong, cordate at base, acuminate at apex, ca 28 x 13.5 cm, glabrous, except midrib. Flowers 3-4, clustered in extra axillary cymes. Sepals united. Petals reddish brown. Stamens: outer ones staminodes; inner ones fertile. Ripe carpels ca 4 cm long, scarlet; seeds many, in 2 rows, shiny dark brown.

Common in inland forests.

*Fl. & Fr.*: June-Sept.

Laful, Between Chingenh and Indira point.

2. ***Uvaria lurida*** Hook.f. & Thom., Fl. Ind. 101. 1855; Debika Mitra in Fl. India 1: 292. 1993 var. ***lurida***

Woody climbers. Leaves oblong-lanceolate, subcordate at base, acuminate at apex, ca 29 x 6.5 cm; petioles ca 1.5 cm long. Flowers terminal or leaf opposed. Sepals connate at base, pubescent inside. Petals brick red, densely pubescent inside. Ripe carpels ca 4 cm long, cylindric; stalks ca 6 cm long; seeds 3-6 in single rows.

Rare in inland forests, along river banks.

*Fl. & Fr.*: Jan.-Oct.

Dogmar river.

3. ***Uvaria nicobarica*** Raizada & Sahni in Indian For. 87: 101. 1961; Debika Mitra in Fl. India 1: 293. 1993.

Large woody climbers. Leaves broadly elliptic to oblanceolate, rounded to cuneate at base, acuminate at apex, ca 17 x 9.5 cm; petioles ca 5 mm long, pubescent. Ripe carpels ca 3 cm long; pericarp yellow; seeds ca 8, uniseriate, shiny chocolate-brown.

Rare in inland forests.

*Fl.*: Oct.-Nov.

Trinkat Champlong Bay.



*Note:* Endemic to Gt. Nicobar Island. Endangered.

4. **Uvaria rufa** Blume, Fl. Java 19, t. 4 & 13 c. 1828; Debika Mitra in Fl. India 1: 293. 1993.

Climbers. Leaves elliptic-lanceolate, cordate at base, acuminate at apex, *ca* 13 x 6 cm; petioles *ca* 5 mm long. Flowers in cymes, 1-4, rarely solitary, extra axillary, rusty tomentose. Sepals connate at base. Petals bright red to dull reddish purple, pubescent on both surfaces. Outer stamens staminodes. Carpels quadrate, *ca* 5 mm long, pubescent; seeds many in 2 rows, reddish brown, smooth.

Rare in inland forests.

*Fl. & Fr.*: May-Sept.

Campbell Bay, Chengappa Bay.

*Note:* India (Andaman & Nicobar Islands); Thailand, Malaysia, Indonesia, Philippines, New Guinea, Laos, Cambodia & Vietnam.

### MENISPERMACEAE

About 73 genera and 350 species, mainly tropical, extending to N. America & temperate Asia; 11 genera and 12 species in Gt. Nicobar Island.

- 1 a. Perianth scarcely differentiated into sepals and petals .....2  
 b. Perianth frequently differentiated into sepals and petals .....4
- 2 a. Endocarp curved, smooth or fibrous, less ornamented .....1. *Anamirta*  
 b. Endocarp straight, smooth, sometimes strongly rugose .....3
- 3 a. Leaves subpeltate; lamina base 3(5) nerved; main basal lateral nerves running along with the midrib for 4-15 mm before diverging outwards; inflorescences lax panicle, glabrous; petals absent; endocarp ellipsoid, smooth, rounded at apex .....5. *Fibraurea*  
 b. Leaves not peltate; lamina base 3-5 nerved; all nerves diverging directly from lamina base; inflorescences a raceme, several from protruberances on old stems, ferruginous pubescent; petals 6, with involute margins; endocarps compressed, rugose or rugulose, acute at apex .....10. *Tinomiscium*

- 4 a. Cotyledons not foliaceous; endosperm non ruminant .....5
- b. Cotyledons divaricate, foliaceous; endosperm ruminant .....9
- 5 a. Stamens free; synandrium absent; carpels 3 .....6
- b. Stamens connate, forming synandrium; carpel one .....7
- 6 a. Leaves both peltate & non peltate, glabrous; petioles glabrous; sepals 6  
..... 4. *Diploclisia*
- b. Leaves not peltate, tomentose beneath; petioles pubescent; sepals 9 .....  
.....7. *Pericampylus*
- 7 a. Inflorescences umbellate or condensed disc like capitula; sepals & petals  
free; stigma 3-8 cleft .....9. *Stephania*
- b. Inflorescences paniculate, cymose or racemiform; sepals free or connate;  
petals connate; stigma 3 cleft .....8
- 8 a. Sepals free; drupes ridged in 2 rows; bracts & bracteoles broadly ovate-  
orbicular .....2. *Cissampelos*
- b. Sepals connate; drupes tuberculate in 3-6 rows; bracts & bracteoles linear  
lanceolate or absent .....3. *Cyclea*
- 9 a. Drupes subelliptic .....11. *Tinospora*
- b. Drupes shortly horse-shoe shaped .....10
- 10 a. Leaves triplinerved at base; sepals marked with red streaks .....  
.....6. *Haematocarpus*
- b. Leaves pinnately nerved; sepals without marking ..... 8. *Pycnarrhena*

### 1. ANAMIRTA Colebr.

Lianas. Inflorescences usually cauliflorous (staminate ones axillary), paniculate. Sepals 6, imbricate. Petals absent. Male flowers: synandrium shortly peduncled, with clusters of 30-35 anthers. Female flowers: staminodes 6-9; carpels 3. Drupes subreniform, globose, with terminal 3-fid gynophore.

1 species, India, Sri Lanka, China to Malaysia; 1 in Gt. Nicobar Island.

*Anamirta cocculus* (L.) Wight & Arn., Prodr. 1: 446. 1834; Pramanik in Fl. India 1: 311. 1993.

Climbers. Leaves broadly ovate, cordate to truncate at base, subacute at apex, *ca* 28 x 24 cm, glabrous; basal nerves 3-5(7) palmate; petioles *ca* 18 cm long, swollen at nodes. Inflorescences *ca* 40 cm long, paniculate. Flowers yellowish white. Drupes *ca* 1 x 0.8 cm, white, turning dark blue, glabrous.

Rare in inland forests.

*Fl. & Fr.*: Aug.-Dec.

Campbell Bay.

## 2. CISSAMPELOS L.

Lianas. Male flowers in axillary corymbose cymes, solitary or fascicled; sepals 4, obovate; petals connate; stamens connate into a peltate synandrium. Female flowers clustered in axils of imbricating leafy bracts, in racemes : tepals 2, adnate to bracts; staminodes absent; carpel 1. Drupes ovoid with sub basal style scar; seeds horse shoe-shaped.

About 30 species, pantropical; 1 in Gt. Nicobar Island.

*Cissampelos pareira* L. var. *hirsuta* (Buch.-Ham. ex DC.) Forman in Kew Bull. 22: 356. 1968; Gangopadhyay in Fl. India 1: 317. 1993.

Lianas. Leaves ovate to orbicular, apiculate, peltate-cordate at base, *ca* 5.5 x 4 cm, hairy beneath; petioles *ca* 10 cm long. Female inflorescences longer than the male, with many conspicuous bracts. Flowers greenish white. Drupes ovoid subglobose, red colour, pilose.

Rare in inland forests.

*Fl. & Fr.*: June-Sept.

Galathea mouth, 10 km east-west road.

## 3. CYCLEA Arn. ex Wight

Lianas. Inflorescences axillary panicles. Male flowers: sepals 4(5), free or connate, lobed; Petals 4; stamens 4 or 5, connate into a peltate

synandrium. Female flowers: sepals 1 or 2; petals 1 or 2, rarely absent; carpel 1, stigma 3 fid. Drupes obovoid, curved with 6 rows of tubercles; seeds curved.

About 29 species, India, China and S.E. Asia; 2 in Gt. Nicobar Island.

- 1 a. Flowers without bracts and bracteoles .....2. *C. pendulina*  
b. Flowers with bracts and bracteoles .....1. *C. peltata*

1. ***Cyclea peltata*** (Lam.) Hook.f. Thom., Fl. Ind. 201. 1855; Gangopadhyay in Fl. India 1: 325. 1993.

Lianas. Leaves 3-angular, ovate or oblong, obtuse or subcordate at base, apiculate at apex, ca 15 x 8 cm; 5 nerved; petioles ca 5 cm long. Male inflorescences a panicle of congested cymes, ca 30 cm long; flowers greenish; calyx puberulous; corolla glabrous. Female inflorescences a panicle ca 5 cm long, sepals pilose, petals glabrous; staminodes 6; carpels 3. Drupes obovoid, pilose; seeds curved.

Common in littoral forests.

Fl. & Fr.: April-May.

Laful, 39 km on north-south road, 37 km on east-west road.

2. ***Cyclea pendulina*** Miers in Cont. Bot. 3: 243. 1871; Gangopadhyay in Fl. India 1: 326. 1993.

Climbers. Leaves subovate, rounded or emarginate at base, mucronate at apex, ca 12 x 8 cm; 5-nerved; petioles ca 6 cm long. Male inflorescences a panicle, ca 18 cm long; calyx tubular, 4 toothed, pilose; corolla subcampanulate, glabrous; synandrium exserted, 4 loculed. Female inflorescences subglobose cymules, ca 20 cm long; sepals pilose; petals glabrous; ovary pilose, stigma 3 fid.

Rare in inland forests.

Fl.: Nov.-Feb.; Fr.: Not seen.

35 km on east-west road.

*Note:* Endemic to Gt. Nicobar Island.

#### 4. **DIPLOCLISIA** Miers

Lianas. Inflorescences supra axillary or cauliflorous, racemose cymes. Sepals 6. Petals 6. Male flowers: Stamens 6, filaments free. Female flowers: staminodes 6; carpels 3, stigma recurved. Drupes laterally compressed, curved; seeds curved.

About 2 species in tropics; 1 in Gt. Nicobar Island.

**Diploclisia glaucescens** (Blume) Diels in Engler, Pflanze 46: 225. f. 77. 1910; Pramanik in Fl. India 1: 327. 1993.

Lianas. Leaves broadly ovate, cordate at base, acuminate at apex, ca 11 x 8 cm, crenate; petioles ca 12 cm long. Panicles lax, spreading. Flowers pale yellow. Drupes obovoid, ca 2.5 x 0.6 cm, yellow to orange.

Rare in inland forests.

*Fl. & Fr.:* March-Aug.

Alexandra river mouth, 35 km towards Indira point.

#### 5. **FIBRAUREA** Lour.

Lianas. Inflorescences lax panicles, often ramiflorous. Sepals 6-9. Petals absent. Male flowers: stamens 3-6, filaments thick, with a collar around anther base. Female flowers: staminodes 6, subulate; carpels 3. Drupes on knob like carpophore, oblong with subterminal stylar scar; seeds oblong, narrow grooved.

About 2 species, S.E. Asia, China; 1 in Gt. Nicobar Island.

**Fibraurea tinctoria** Lour., Fl. Cochinch. 626. 1790; Pramanik in Fl. India 1: 314. 1993.

Lianas. Leaves elliptic-ovate or oblong, rounded at base, acuminate at apex, ca 26 x 14 cm; petioles ca 13 cm long, swollen at base. Flowers

yellowish white. Male flowers: stamens 6. Female flowers: staminodes subulate; carpels ellipsoid. Drupes oblong, pendulous, green in young, yellowish on ripe.

Rare in inland forests.

*Fl. & Fr.*: Jan.-Dec.

Laful, Galathea river, 41 km on east-west road.

India (Andaman & Nicobar Islands); Myanmar, Thailand; Vietnam, Java, Malaysia & Sumatra.

*Note* : Juice from stems used for stomach disorder.

## 6. HAEMATOCARPUS Miers

Lianas. Inflorescences axillary, terminal or cauliflorous panicle or raceme. Flowers yellowish white. Sepals 12-15 in 3 whorls. Petals 6. Male flowers with 6 stamens, filaments free. Female flowers: staminodes 6, minute; carpels 6, style reflexed. Drupes 1-4, oblong ellipsoid, narrow at base, stalked; seeds curved.

About 3 species, tropics of S.E. Asia; 1 in Gt. Nicobar Island.

**Haematocarpus validus** (Miers) Bakh.f. ex Forman in Kew Bull. 26: 420. 1972; Gangopadhyay in Fl. India 1: 340. 1993.

Lianas. Leaves ovate elliptic, obtuse at base, acuminate or obtuse at apex, *ca* 18 x 8 cm; petioles *ca* 3.5 cm long. Flowers greenish yellow. Sepals and petals with dark lines and spots. Drupes 3-6, ovoid-ellipsoid, glabrous, *ca* 5 x 2.5 cm, red.

Rare in inland forests.

*Fl. & Fr.*: Throughout the year.

Dogmar river sides.

## 7. PERICAMPYLUS Miers

Lianas. Flowers in axillary racemes. Sepals 9 in 3 whorls, hairy outside. Petals 6. Male flowers: stamens 6, free. Female flowers: staminodes 6, clavate; carpels 3, style short, 2 partite. Drupes 3, curved with basal style scar; endocarp horse-shoe shaped, dorsally crested, echinate; seeds curved.

About 3 species, tropical and subtropical Asia; 1 in Gt. Nicobar Island.

**Pericampylus glaucus** (Lam.) Merr., *Interpr. Rumph. Herb. Amboin.* 219. 1917; Pramanik in *Fl. India* 1: 330. 1993.

Scandent shrubs. Leaves broadly 3 angular-ovate, subpeltate, cordate at base, acute at apex, *ca* 10 x 8 cm; basal nerves 5, palmate; petioles *ca* 7 cm long, tomentose. Inflorescences fascicled or paniculate cymes, *ca* 4 cm long. Flowers yellowish white. Sepals hairy outside. Petals glabrous. Drupes subglobose, echinate, red purplish to black.

Rare in inland forests.

*Fl. & Fr.*: April-Aug.

Campbell Bay, Chengappa Bay.

## 8. PYCNARRHENA Hook.f. & Thom.

Lianas. Inflorescences axillary or ramiflorous, usually cymose, rarely 1-flowered or fasciculate. Flowers yellowish white. Sepals 6-15 in 3 whorls. Petals 0-5, minute. Male flowers: stamens 5-18, clustered. Female flowers: carpels 3-6 with recurved styles and stigma. Drupes ellipsoid to subglobose.

About 9 species, in South China, Indo-Malaysia to N. Australia; 1 in Gt. Nicobar Island.

**Pycnarrhena lucida** (Teijsm & Binn.) Miq. in *Ann. Mus. Bot. Lugd.-Bat.* 4: 87. 1868; Gangopadhyay in *Fl. India* 1: 341. 1993.

Lianas. Leaves elliptic, acute or obtuse at base, acuminate at apex, *ca* 12 x 5.5 cm, puberulous or glabrescent; main nerves 6; petioles *ca* 2

cm long, swollen at both ends. Inflorescences axillary or ramiflorous, fasciculate 1-few flowered. Flowers yellowish white. Drupes globose, 8-15 mm diam., glabrous, red when mature.

Rare in inland forests.

*Fl. & Fr.*: Sept.-March.

15 km on east-west road.

India (Andaman & Nicobar Islands); Thailand, Cambodia, Malaysia, Sumatra, West Java.

#### 9. **STEPHANIA** Lour.

Climbers. Inflorescence of sessile flowers, in solitary or umbellate heads. Flowers yellowish white. Sepals 6-10, free. Petals 3-5. Male flowers: stamens monadelphous with 6 anthers, connate into a terminal ring on the staminal column. Female flowers: carpel 1, style short, 3-6 partite. Drupes obovoid.

About 35 species, tropics; 1 in Gt. Nicobar Island.

*Stephania japonica* (Thunb.) Miers var. **discolor** (Blume) Forman in Kew Bull. 11: 56. 1956.; Gangopadhyay in Fl. India 1: 337. 1993.

Climbers. Leaves broadly ovate, peltate, cordate at base, acute acuminate at apex, ca 17 x 15 cm, glabrous above, puberulous beneath. Flowers yellowish white. Male flowers with 6-8 stamens. Female flowers: carpels-1, style 3-5 lobed. Drupes sessile or shortly stalked, obovoid, red at maturity.

Rare in shaded places in inland forests.

*Fl. & Fr.*: March-Dec.

36 km on east-west road.



10. **TINOMISCIUM** Hook.f. & Thom.

Lianas. Inflorescences racemose, on old leafless stems. Flowers yellowish white. Sepals 9 in 3 rows. Petals 6 with involute edges. Male flowers: stamens 6, free, opposite to petals. Female flowers: staminodes 6; carpels 3, stigma lobed. Drupes 3, much compressed; style scar terminal; seeds flat.

1 species in S.E. Asia; same in Gt. Nicobar Island.

**Tinomisium petiolare** Hook.f. & Thom., Fl. Ind. 205. 1855; Pramanik in Fl. India 1: 315. 1993. *T. nicobaricum* Balakr. in New Botanist 7: 7-9, ff. 2-7. 1980. *p.p.*

Lianas. leaves ovate to broadly ovate or elliptic, rounded at base, acute at apex, *ca* 20 x 13 cm, glabrous; basal nerves 3-5; petioles *ca* 7 cm long, swollen at base and often at apex. Flowers yellowish white. Drupes 3, ellipsoid, narrowed at base; stipe short.

Rare in mixed inland forests.

*Fl. & Fr.*: Aug.-April.

Galathia river, 10 km on east-west road.

11. **TINOSPORA** Miers

Climbing shrubs. Inflorescences axillary or terminal racemes or panicles. Flowers yellowish white. Sepals 6 in 2 series. Petals 6. Male flowers: stamens 6. Female flowers: staminodes 6; carpels 3, style 2 fid. Drupes 1-3, dorsally convex, ventrally flat; seeds curved.

About 32 species, tropical Africa, Madagascar, Asia to Australia; 1 in Gt. Nicobar Island.

**Tinospora cordifolia** (Willd.) Hook.f. & Thom., Fl. Ind. 184. 1855; Pramanik in Fl. India 1: 346. 1993.

Lianas; stems with lenticles. Leaves broadly ovate-cordate, sinuate at base, cuspidate acuminate at apex, *ca* 15 x 13 cm; petioles *ca* 7 cm

long, swollen and geniculate at base. Drupes globose, red; endocarp smooth, without tubercles.

Rare in littoral forests.

*Fl. & Fr.*: Nov.-March.

Pilobabha beach.

### PAPAVERACEAE

About 26 genera & 200 species, temperate & subtropical regions; 1 genus in Gt. Nicobar Island.

### ARGEMONE L.

Prickly erect herbs with yellow latex. Flowers in terminal, solitary, yellow in colour. Sepals 2-3, caducous. Petals 4-6, caducous. Stamens many. Capsules ellipsoid, prickly; seeds numerous.

About 22 species, mostly Mexican; 1 in Gt. Nicobar Island.

*Argemone mexicana* L., Sp. Pl. 508. 1753; Debnath & Nayar in Fl. India 2: 2. 1993.

Prickly herbs with yellow latex. Leaves sinuate pinnatifid, spinulose-dentate, prickly on both surfaces. Flowers terminal, solitary, yellowish in colour. Capsules ellipsoid, 3-6 valved, spiny; seeds many, reticulate-ribbed.

Common in littoral forests.

*Fl. & Fr.*: Jan.-Dec.

Indira point.

### CAPPARACEAE

About 45 genera and 600 species, tropical and subtropical; 1 genus and 1 species in Gt. Nicobar Island.

**CRATAEVA L.**

Trees. Leaves 3 foliolate; lateral leaflets usually asymmetrical. Inflorescence a terminal corymbose raceme. Flowers bisexual, subtended by deciduous bract. Receptacle with gland. Stamens 10-many, basally connate with gynophore. Gynophore as long as stamens. Ovary glabrous. Berries many seeded, with a hard rind.

About 8 species, pantropical; 1 in Gt. Nicobar Island.

**Crataeva religiosa** Forst. f., Pl. Escul. Ins. Occ. Austral. 45. 1786;  
Raghavan in Fl. India 2: 325. 1993. 'Barun' (Hindi)

Small trees; twigs with many lenticels. Leaflets 11-15 x 4.5-7 cm, lanceolate or elliptic, shortly stalked, pale beneath, dark green above. Corymbs lax, ca 25 flowered. Flowers showy ca 4 cm across, yellowish white. Sepals ovate acuminate. Petals white. Stamens dark red or violet. Berries covered with flat, pale, dry papillae on maturity.

Rare in inland forests.

*Fl. & Fr.*: March-June.

Galathea national Park.

**FLACOURTIACEAE**

About 79 genera and 880 species, Pantropical or subtropical, few temperate; 3 genera & 3 species in Gt. Nicobar Island.

- 1 a. Petals absent ..... 1. *Casearia*
- b. Petals present ..... 2
- 2 a. Leaves crowded at apices of branches, 3-5 pliveined at base; stamens numerous, filaments free ..... 2. *Pangium*
- b. Leaves not crowded at apices of branches, pinnately veined from base; stamens 4-5, filaments connate into a column ..... 3. *Ryparosa*

### 1. CASEARIA Jacq.

Small trees or shrubs. Flowers in axillary fascicles. Calyx 4-5 lobed. Petals absent. Stamens 10-12, alternating with the staminodes. Carpels 3; stigma capitate or obscurely 3-lobed. Capsules globose or ovoid; dehiscence loculicidal; seeds numerous, embedded in a fleshy aril.

About 250 species, mostly American; 1 in Gt. Nicobar Island.

**Casearia grewiaefolia** Vent. var. **gelonoides** (Blume) Sleumer in Fl. Males. I, 6: 994. 1972; Mitra in Fl. India 2: 394. 1993.

Trees, ca 20 m high. Leaves variable, ovate oblong or elliptic oblong, broadly cuneate or subcordate at base, acuminate at apex, ca 19 x 8.5 cm; 3-5 nerved at base; petioles ca 12 mm long. Flowers whitish to yellowish green. Calyx pubescent outside. Stamens 8(10); staminodes with a tuft of hairs at apex. Capsules in axillary clusters, ellipsoid, ca 3 x 1.8 cm, green, ripe orange yellow; stipe ca 5 mm long; aril orange red.

Rare in littoral forests along the streams.

*Fl. & Fr.*: Sept.-May.

39 km on east-west road; Koshin don, Alexandra river mouth.

India (Andaman & Nicobar Islands); Indonesia, Malaysia, Java, Philippines.

### 2. PANGIUM Reinw.

Large trees. Flowers in axillary racemes, unisexual. Sepals 2 or 3. Petals 5(6) with large scales at base. Male flowers: stamens 20-25; pistilode absent. Female flowers solitary or 2-4; ovary 1-celled, stigma sessile, 2-4 lobed; staminodes 5-6. Fruits large, oblong-ovoid, pericarp woody wrinkled; seeds many.

1 species, throughout Malaysia; 1 in Gt. Nicobar.

**Pangium edule** Reinw., Syll. Ratisb. 2: 13. 1825; Mitra in Fl. India 2: 424. 1993.

Trees, *ca* 40 m high. Leaves crowded at apices of branches, broadly ovate, cordate at base, acuminate at apex, *ca* 30 x 20 cm, glabrous above, rusty scurfy beneath; palmately 5-7 veined; petioles swollen at base, *ca* 30(50) cm long. Male flowers in racemes *ca* 10 cm long, few flowered. Female flowers solitary or 2-4 together in corymbs. Berries ovoid oblong, beaked at apex, *ca* 25 x 12 cm, indehiscent; seeds *ca* 20, enclosed by white fleshy aril.

Rare in littoral forests.

*Fl. & Fr.*: April-Nov.

Laful.

India (Great Nicobar Island); Malaysia.

Fruits aromatic and edible when ripe.

### 3. RYPAROSA Bl.

Trees. Flowers small, unisexual. Male in long axillary racemes. Females in short racemes or solitary. Calyx united; pistilode absent. Female flowers with large silky scales at base of petals; staminodes 4-5, connate into unilocular densely hairy ovary; stigmas 2-3. Fruit a capsular berry, globose, pulpy; seeds 1-3.

About 18 species, S.E. Asia; 1 in Gt. Nicobar Island.

**Ryparosa javanica** (Bl.) Kurz in J. Bot. 11: 234. 1873; Mitra in Fl. India 2: 426. 1993.

Trees, *ca* 30 cm high. Leaves elliptic or oblong elliptic, cuneate or obtuse at base, acuminate at apex, *ca* 35 x 17 cm; petioles *ca* 6 cm long. Male flowers pale yellowish, in pendulous, *ca* 30 cm long racemes. Female flowers in much shorter racemes. Berries globose, *ca* 30 cm dim., greyish, scurfy lenticellate, crowned with knob like remnants of stigmas; seeds 1(2); aril fleshy, light yellow.

Rare in inland forests.

*Fl.*: Jan.-April; *Fr.*: July-Dec.

Laful, 36 km on east-west road.

India (Andaman & Nicobar Islands); Malay Peninsula, New Guinea.

### XANTHOPHYLLACEAE

1 genus and 40 species, south & south-east Asia, Australia & Solomon Islands; 1 species in Gt. Nicobar Island.

### XANTHOPHYLLUM Roxb.

Trees or shrubs. Racemes axillary or terminal, simple or paniculate, patently branched. Flowers 2-3 nate. Sepals 5. Petals 5. Stamens 8(10), all free or 2 partially adnate to keel, 4 coherent with other petals singly at base, 2 free. Disk hypogynous. Ovary 1 loculed. Fruits 1 seeded, indehiscent drupes, globose.

About 40 species, south-east Asia, India, Australia & Solomon Islands; 1 in Gt. Nicobar Island.

***Xanthophyllum vitellinum* (Blume) Dietr., Syn. Pl. 2: 1277. 1840; Banerjee & Balakr. in Fl. India 2: 499. 1993.**

Trees, *ca* 30 cm high. Leaves ovate oblong, subacute at base, shortly acuminate at apex, margins undulate, *ca* 25 x 11 cm; petioles *ca* 15 mm long. Racemes *ca* 20 cm long. Sepals wrinkled and thickened at base. Petals pale violet, later turning to yellow or brown. Fruits *ca* 2 cm dim., often wrinkled, dull or shiny, usually light brown.

Rare in inland forests.

*Fl. & Fr.*: March-June.

33 km on north-south road.

India (Andaman & Nicobar Islands); Malaysia, Indonesia, Philippines.

**PORTULACACEAE**

About 19 genera and 580 species, cosmopolitan; 1 genus and 1 species in Gt. Nicobar Island.

**PORTULACA L.**

Fleshy herbs. Flowers terminal, solitary or clustered. Sepals 2, united at base, adnate to ovary. Petals 4-6, distinct or united at base. Stamens 8 or numerous. Ovary 1 celled; styles deeply 3-8 fid. Capsules membranous; seeds numerous, compressed, reniform.

About 200 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Portulaca oleracea** L., Sp. Pl. 445. 1753; Vasudeva Rao in Fl. India 3: 4. 1993.

Subsucculent herbs. Leaves cuneate oblong or obovate, usually truncate, whorled above; stipular hairs scarious, minute or absent. Flowers yellow. Capsules dehiscent above the base; seeds reniform, black, granulate.

Common in agricultural lands, and wet places.

*Fl. & Fr.*: Throughout the year.

Laful.

**CLUSIACEAE**

About 40 genera & 1000 species, pantropical; 2 genera & 5 species in Gt. Nicobar Island.

- 1 a. Style absent; stigma radiate; ovary bi to plurilocular; fruits baccate; cotyledons absent or minute; lateral venation differentiated into primary or secondary, reticulate; petiole base usually foveolate ... .....2. *Garcinia*
- b. Style elongate; stigma peltate; ovary 1-locular; fruits drupaceous; cotyledons large, well developed; lateral venation undifferentiated, striate; petiole base not foveolate .....1. *Calophyllum*

## 1. CALOPHYLLUM L.

Trees or shrubs; branchlets 4 angular; latex yellowish. Inflorescences axillary or terminal paniced or racemes, sometimes fascicled. Flowers pedicelled. Sepals 4. Petals 0 or 4. Stamens many, free or in phalanges. Ovary unilocular; ovules solitary, basal; stigma peltate. Drupes 1-seeded.

About 187 species, tropical Asia & America; 3 in Gt. Nicobar Island.

- 1 a. Leaves more than 25 x 7 cm; fruits large over 8 x 4 cm .....2. *C. macrocarpum*
- b. Leaves less than 25 x 7 cm; fruits small ca 5 x 3 cm .....2
- 2 a. Lamina with less than 10 lateral veins; petals present; fruits 2.5-5 x 2.5-4 cm .....1. *C. inophyllum*
- b. Lamina with more than 12 lateral veins; petals absent; fruits 1-1.6 x 0.8-1 cm .....3. *C. soulattri*

1. **Calophyllum inophyllum** L., Sp. Pl. 513. 1753; N.P. Singh in Fl. India 3: 92. 1993.

Large trees, ca 20 m high. Leaves broadly elliptic oblong, cuneate to rounded at base, emarginate, retuse or subacute at apex, ca 20 x 6 cm; petioles ca 1.5 cm long. Racemes ca 30 cm long, axillary, 5-15 flowered. Flowers polygamous, bisexual, white, fragrant. Petals 4 reflexed. Stamens numerous, connate into 4-6 bundles. Drupes globose, shortly apiculate, yellowish, pulpy; stone subspherical, smooth, rounded at apex.

Rare in littoral forests.

*Fl. & Fr.*: Dec.-Aug.

Galathea to Indira point, 20 km on north-south road, Koshin don.

2. **Calophyllum macrocarpum** Hook.f., Fl. Brit. India 1: 273. 1874; N.P. Singh in Ind. J. For. Addl. ser. 1: 3. 1990.

Trees, ca 20 m high; exudate orange. Leaves oblong to elliptic, acute at base, shortly and bluntly acuminate at apex, ca 30 x 8.5 cm; lateral veins 5-10; petioles ca 5.3 cm long. Racemes axillary ca 4.5 cm long, 7-15 flowered, minutely puberulous. Flowers ca 2.5 cm in diam. Sepals 4.



Petals 4. Stamens numerous; filaments connate. Drupes ellipsoid, narrowed at both ends, acute at apex.

Common along the rivers in interior forests.

*Fl. & Fr.*: April-Sept.

20 km on road to Indira point.

India (Nicobar Islands); South Thailand, Malay Peninsula to Borneo.

3. ***Calophyllum soulattri*** Burm.f., *Fl. Ind.* 2: 121. 1768; N.P. Singh in *Fl. India* 3: 96. 1993.

Trees, *ca* 40 cm high. Leaves ovate to ovate oblong, cuneate at base, acute to acuminate at apex, *ca* 25 x 7 cm; lateral veins 12-28 pairs; petioles *ca* 2 cm long. Racemes *ca* 4 cm long, axillary, rarely terminal, 7-20 flowered. Flowers white, *ca* 15 mm diam., scented. Drupes *ca* 16 x 15 mm, mucronate with persistent style base, smooth.

Rare in inland hill forests.

*Fl. & Fr.*: March-Oct.

Campbell Bay, Galathea mouth, 36 km on east-west road.

India (Andaman & Nicobar Islands); S.E. Asia, Vietnam to Australia, Solomon Islands; Philippines.

## 2. **GARCINIA L.**

Trees. Leaves coriaceous; lateral nerves reticulate. Inflorescences axillary or terminal umbel, racemes rarely solitary flowers. Sepals 4-5 persistent. Petals 4-5 imbricate. Male flowers: stamens numerous, free or in few free or connate phalanges; pistilode often present. Female flowers: staminodes free or connate; ovary 2-12 locular; stigmas 2-12, sessile, radiate, entire or lobed. Fruits a berry; seeds few-many, enclosed in pulpy aril.

About 200 species, tropics of old world, especially Asia, Africa; 2 species in Gt. Nicobar Island.

- 1 a. Sepals and petals 4 .....1. *G. cowa*  
 b. Sepals and petals 5 .....2. *G. nervosa*

1. ***Garcinia cowa*** Raxb. ex Dc., Prod. 1: 561. 1824; N.P. Singh in Fl. India 3: 108. 1993.

Trees, *ca* 18 m high. Leaves broadly lanceolate, acute at both ends, apex sometimes acuminate, *ca* 17 x 7 cm; lateral veins 12-16 pairs; petioles *ca* 13 mm long. Flowers yellow in colour. Berries *ca* 4 cm diam., depressed, globose, smooth, dark yellow; seeds 4-8, oblong with soft aril.

Rare in inland forests.

*Fl. & Fr.*: Dec.-Sept.

40 km on east-west road.

2. ***Garcinia nervosa*** Miq., Ann. Mus. Bot. Ludg.-Bat. 1: 208. 1864; N.P. Singh in Fl. India 3: 121. 1993.

Small trees, *ca* 6 m high. Leaves oblong lanceolate, rounded at base, shortly acuminate at apex, 35 x 15 cm, margins recurved; lateral veins 17-20 pairs; petioles *ca* 10 mm long. Flowers yellowish green. Female flowers: staminodes 5, alternating with disc lobes; ovary globose; stigmas 5 lobed, reddish yellow. Berries pomiform, 5 loculed, crowned by stigmas.

Rare in mixed forests.

*Fl. & Fr.*: May-Aug.

27 km on east-west road; 38 km on north-south road.

India (Andaman & Nicobar Islands); Malay Peninsula, Singapore.

**ACTINIDIACEAE**

About 3 genera and 47 species, East Asia to N. Australia and tropical America; 1 genus and 1 species in Gt. Nicobar Island.

**SAURAUIA Willd.**

Shrubs or trees; branches with tubercular dots and scales. Leaves at the end of the branchlets. Flowers axillary, solitary or in cymes or lateral panicles. Sepals 5, persistent. Petals 5. Stamens many, adnate to the base of petals. Ovary 3-5 locular; styles 3-5; stigmas simple. Berries globose; seeds numerous, albuminous.

About 300 species, tropical & subtropical America, Asia & Australia; 1 in Gt. Nicobar Island.

**Saurauia bracteosa** DC. in Mem. Soc. Phys. Hist. Nat. Geneve 1: 422. 1822; Paul in Fl. India 3: 199. 1993.

Trees, *ca* 8 m high. Leaves elliptic oblong, rounded at base, acuminate at apex, *ca* 35 x 15 cm, dentate serrate, scaly above, densely tomentose & scaly beneath; petioles *ca* 5 cm long. Flowers in corymbs; bracts foliaceous, scaly. Sepals small, outer 2 unequal, ovate lanceolate, scaly, inner 3 ovate with or without scales. Petals notched at apex. Berries *ca* 1 x 0.6 cm, densely white, tomentose; seeds pyramidal, reticulate.

Rare in littoral forests.

*Fl. & Fr.*: Feb.-April.

Campbell Bay, Laful.

*Note*: India (Great Nicobar Island); Indonesia (Java).

**MALVACEAE**

About 88 genera and 2300 species, tropical, subtropical and temperate regions; 4 genera & 4 species in Gt. Nicobar Island.

- 1 a. Styles twice as many as carpels .....4. *Urena*
- b. Styles as many as carpels or styles undivided and stigma entire .....2

- 2 a. Fruit schizocarp; staminal column at apex split into numerous filaments .....2. *Sida*  
 b. Fruit capsule; staminal column at apex 5 toothed or truncate; filaments projecting from outer surface of the column .....3
- 3 a. Style undivided with ribbed or lobed stigma .....3. *Thespesia*  
 b. Style divided into 5 spreading branches .....1. *Hibiscus*

### 1. HIBISCUS L.

Herbs or under shrubs. Flowers axillary, solitary or in terminal lax racemes or panicles. Epicalyx segments 3. Calyx 5 lobed. Corolla large and showy. Staminal column shorter or as long as petals. Ovary 5 locular. Capsules loculicidally dehiscent, 5 or 10 loculed; seeds many in each locule, reniform, subglobose.

About 250 species, tropics & subtropics; 1 in Gt. Nicobar Island.

***Hibiscus tiliaceus* L.**, Sp. Pl. 694. 1753; Paul in Fl. India 3: 322. 1993  
 ssp. *tiliaceus*

Trees, ca 15 m high. Leaves unlobed, orbicular, deeply cordate at base, acute to acuminate at apex, ca 20 x 20 cm; petioles ca 15 cm long; stipules ovate to oblong. Flowers yellow with dark purple centre. Capsules ca 2 cm across, globose with short beak, tomentose; seeds reniform.

Common in littoral forests.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, Alexandra river.

### 2. SIDA L.

Herbs or undershrubs. Flowers axillary, solitary or in clusters or in racemes or panicles. Calyx campanulate, 5 lobed. Corolla yellow. Staminal column shorter than petals. Carpels 5-14; stigma capitate. Schizocarps globular; mericaps more or less 3-gonous, mucous or with 2 beaks; seeds ovoid-oblong to reniform, glabrous.

About 200 species, tropics and subtropics; 1 in Gt. Nicobar Island.

**Sida acuta** Burm.f., Fl. Ind. 147. 1768; Paul in Fl. India 3: 281. 1993.

Undershrubs, *ca* 2 m high. Leaves lanceolate or elliptic lanceolate, acute at apex, *ca* 9 x 2.5 cm, serrate, 3 nerved at base; petioles *ca* 6 mm long. Flowers yellow colour. Mericarps 6-10, somewhat tetrahedral, awns *ca* 1.5 mm long; seeds 3-angled, ovoid, glabrous.

Common along road sides on dry sandy soil.

*Fl. & Fr.*: Sept.-Jan.

Pulobabi, 41 km on east-west road.

### 3. **THESPESIA** Sol. ex Correa

Trees or shrubs. Flowers solitary, axillary or in racemes. Epicalyx 3 or 6, caducous. calyx persistent. Corolla yellow with dark purple centre. Staminal column shorter than petals. Ovary 5 loculed; stigma 5 lobed. Capsules globose or pyriform; pericarp woody; seeds 3-many in each locule.

About 18 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Thespesia populnea** (L.) Sol. ex Correa in Ann. Mus. Herb. Paris 9: 290, t. 8. f. 1. 1807; Paul in Fl. India 3: 352. 1993.

Trees, *ca* 10 m high. Leaves orbicular, deltoid, ovate or oblong, deeply cordate at base, acute to acuminate at apex, *ca* 20 x 15 cm; 7 nerves at base; petioles *ca* 15 cm long. Flowers light yellow. Capsules *ca* 3.5 cm across, with scales, enclosed by persistent calyx; seeds ovoid, pubescent.

Common along sea shore forests.

*Fl. & Fr.*: May-Jan.

20 km on north-south road; Galathea river mouth, Indira point.

## 4. URENA L.

Undershrubs. Flowers axillary, solitary or in clusters. Epicalyx 5 lobed. Calyx 5 lobed. Corolla rotate, pink, purplish red. Staminal column as long as petals. Ovary 5-loculed; style divided at middle into 10 arms, stigma discoid. Schizocarps subglobose, mericarps 5, triangularly obovoid, covered with glochidiate spines; seeds obovoid-trigonus.

1 species, pantropical; 1 in Gt. Nicobar Island.

**Urena lobata** L., Sp. Pl. 692. 1753; Paul in Fl. India 3: 380. 1993. ssp. **lobata**

Undershrubs, ca 2 m high. Leaves angled or shallowly lobed, ovate to orbicular, cordate at base, obtuse to acute or rounded at apex, ca 12 x 12.5 cm; 3-9 nerved; petioles ca 12 cm long. Flowers axillary solitary or 2-3 in clusters. Epicalyx cupular in fruit, appressed to mericarps. Schizocarps globose, glochidiate, spines with 4-5 retrorse short hooks at the top; seeds reniform, hairy.

Common in littoral forests.

*Fl. & Fr.*: Aug.-Dec.

Dogmar river, Campbell Bay, Lakshman beach.

## STERCULIACEAE

About 68 genera and 1100 species, tropics and subtropics; 3 genera and 5 species in Gt. Nicobar Island.

- 1 a. Woody climbers; petals present; flowers bisexual .....1. *Byttneria*  
 b. Trees; petals absent; flowers unisexual .....2
- 2 a. Leaves scaly beneath; fruits samaras .....2. *Heritiera*  
 b. Leaves with scales beneath; fruits follicular .....3. *Sterculia*

## 1. BYTTNERIA Loebl.

Herbs, shrubs or trees, often climbers, usually prickly. Flowers minute bisexual, in axillary or terminal umbellate cymes. Sepals 5, connate at

base. Petals 5. Staminal cup with inner series of 5 stamens and outer series of 5 staminodes, alternating with stamens. Ovary 5 loculed, style entire or 5 fid. Capsules globose, spiny, septocidally 5 valved; seeds 1 in each locule.

About 50 species, tropics; 1 in Gt. Nicobar Island.

**Byttneria grandifolia** DC., Prodr. 1: 486. 1824; Mallick in Fl. India 3: 410. 1993.

Woody climbers. Leaves suborbicular or ovate oblong, cordate at base, abruptly acuminate at apex, 10-20 x 8-18 cm; 5-7 nerved at base; petioles ca 13 cm long, grooved. Flowers axillary, umbellate cymes. Capsules ca 4 cm diam., globose, woody covered with sharp prickles; seeds 3 angular.

Rare in inland forests, in shaded places.

*Fl. & Fr.*: April-March.

36 km on east-west road.

## 2. **HERITIERA** Aiton.

Trees, usually lofty, buttressed. Flowers small, unisexual, in axillary panicles. calyx 5-6 toothed. Petals absent. Male flowers : anthers 8-10, arranged in a ring at the top of column. Female flowers: ovaries 5-6, nearly free; style short, incurved; stigmas 5, thick. Samaras with an ellipsoid or globose nut, woodyepicarp, keeled.

About 35 species, tropical Asia, Australia, Pacific regions and Africa; 1 species in Gt. Nicobar Island.

**Heritiera littoralis** Dryand. in Aiton, Hort. Kew. ed. 2, 3: 546. 1789; Mallick in Fl. India 3: 429. 1993.

Trees, ca 25 cm high. Leaves elliptic to oblong, subcordate and oblique at base, rounded mucronate at apex, ca 20 x 10 cm, silver scaly beneath; petioles ca 1 cm long. Flowers in axillary panicles or spikes, silver scaly pubescent. Fruits oblong-compressed, oblong, ca 8 x 5 cm, strongly keeled; pericarp spongy, floating.

Common in littoral forests.

*Fl. & Fr.*: July-March.

4.5 km & 20 km on north-south road.

### 3. STERCULIA L.

Trees. Inflorescences axillary or terminal racemes or panicles. Calyx tube 5 toothed. Petals absent. Receptacles produced into an elongated gynandrophore. Stamens 5-15; anthers crowded together at tip of gynandrophore, surrounding reduced pistillodes; staminodes absent. Pistils 3-6, stalked, each 1 locular, 2-many ovuled. Follicles woody, stalked, with many arillate smooth seeds.

About 350 species, tropical regions; 4 in Gt. Nicobar Island.

- 1 a. Calyx lobes broadly ovate, spreading .....2  
 b. Calyx lobes linear or linear lanceolate, conniving at tip .....3
- 2 a. Leaves subcordate at base; inflorescences few branched ... 1. *S. cordata*  
 b. Leaves deeply cordate at base; inflorescences many branched .....  
 .....2. *S. macrophylla*
- 3 a. Leaves ca 20 cm long; calyx globose, lobes short, connived at tips .....  
 .....3. *S. parviflora*  
 b. Leaves ca 30 cm long; calyx widely campanulate, lobes long, somewhat spreading .....4. *S. rubiginosa*

1. ***Sterculia cordata*** Bl., Bijdr. 83. 1825; Mallick in Fl. India 3: 459. 1993.

Trees, ca 10 m high; bark & petioles rusty velutinous. Leaves elliptic-obovate, subcordate at base, abruptly acuminate at apex, ca 28 x 14 cm, glabrous above, rusty velutinous beneath; nerves 12 pairs; petioles ca 7 cm long. Flowers axillary, few branched panicles. Male flowers: stamens 10 on 2.5 mm long column. Female flowers: ovary obscurely 5 lobed, with 5 groups of 2 sterile anthers at base; gynandrophore 1 mm long; stigma 5 lobed.



Rare in inland forests.

*Fl.*: Sept.-Nov.; *Fr.*: Not seen.

37.5 km on north-south road; 40 km on east-west road.

2. ***Sterculia macrophylla*** Vent., Hort. Malm. 2, t. 91. 1805; Mallick in Fl. India 3: 468. 1993.

Trees, *ca* 25 m high. Leaves broadly ovate to suborbicular, cordate at base, acutely acuminate at apex, *ca* 40 x 30 cm, glabrous above, hairy beneath; petioles *ca* 12 cm long. Panicles deflexed, much branched, rusty tomentose. Calyx cup-shaped, densely hairy, 5 lobed. Male flowers: staminal column *ca* 1.5 mm long. Female flowers: ovaries on short gynandrophore, 5 angled; stigma 5-lobed. Follicles 1-5, villous, *ca* 3.5 x 2 cm; seeds 1 or 2.

Common in inland hill forests.

*Fl. & Fr.*: May-July.

Laful, 32 km on east-west road.

3. ***Sterculia parviflora*** Roxb., Fl. Ind. 3: 147. 1832; Mallick in Fl. India 3: 468. 1993.

Trees, *ca* 30 cm high. Leaves oblong or ovate elliptic, rounded at base, acuminate at apex, *ca* 20 x 10 cm, glabrous above, pubescent beneath; petioles *ca* 3 cm long, thickened at top. Follicles 3-5 cm long, oblong, beaked, pendulous, crimson red, coriaceous; seeds oblong black.

Rare in littoral forests.

*Fl.*: Not seen; *Fr.*: Jan.-June.

Dhar Bay.

4. ***Sterculia rubiginosa*** Vent., Hort. Malm. 2, t. 91. 1805; Mallick in Fl. India 3: 470. 1993.

Trees, *ca* 18 m high; rusty villous. Leaves oblong to obovate-oblong rounded or obtuse at base, acuminate at apex, *ca* 27 x 11 cm, glabrous above, pubescent beneath; petioles *ca* 5 mm long, hispid. Panicles many flowered at the apices of branchlets or in axils of fallen leaves, sparsely hispid. Follicles *ca* 8 cm long, lanceolate, beaked, downy externally, glabrous, crimson inside; seeds black, *ca* 12 mm long.

Common in disturbed forests.

*Fl. & Fr.*: Nov.-March.

41 km on east-west road.

### TILIACEAE

About 50 genera and 750 species, tropics; 2 genera and 3 species in Gt. Nicobar Island.

- 1 a. Fruits covered with hooked bristles all over the surface .....2. *Triumfetta*  
b. Fruits unarmed .....1. *Grewia*

#### 1. GREWIA L.

Trees or shrubs. Inflorescences axillary, leaf opposed or terminal, solitary or clustered, pedunculate, umbellate cymes or panicles. Flowers white or yellow. Sepals 5 free. Petals 5 glandular at base. Stamens many usually free, inserted on gynophore. Ovary 2-4 celled; style 1; stigma lobed. Drupes crustaceous or fleshy, often lobed, with 1-4 stones.

About 150 species, tropics of Asia, Australia & Africa; 2 in Gt. Nicobar Island.

- 1 a. Scandent shrubs; inflorescences cymose, terminal or leaf opposed .....  
.....1. *G. acuminata*  
b. Trees; inflorescences paniculate, terminal .....2. *G. calophyllum*

1. ***Grewia acuminata*** A.L. Juss. in Ann. Mus. Natl. Hist. Nat. 4: 91. t. 48. 1804; Daniel & Chandrab. in Fl. India 3: 494. 1993.

Scandent shrubs, *ca* 8 m high. Leaves elliptic-oblong or ovate lanceolate, rounded at base, acuminate at apex, *ca* 15 x 7 cm, crenate-ser-

rate; 3 nerved; petioles *ca* 1.2 cm long. Flowers yellowish white, in axillary cymes. Drupes *ca* 1.6 cm diam., subglobose, 4 lobed, purple glabrescent.

Rare along the road sides.

*Fl. & Fr.*: May-Sept.

Campbell Bay; 4.5, 11 and 26 km on north-south road.

2. ***Grewia calophylla*** Kurz ex Masters in Fl. Brit. India 1: 392. 1874; Daniel & Chandrab. in Fl. India 3: 496. 1993.

Trees, *ca* 20 m high. Leaves ovate lanceolate or oblong elliptic, rounded or subacute at base, acuminate at apex, *ca* 19 x 9 cm, coriaceous; 3 nerved; petioles *ca* 1 cm long. Flowers in terminal panicles, pink in colour. Drupes orange yellow, *ca* 4.5 x 2.3 cm, obovoid, tapering at base, woody with sticky exudate.

Rare in littoral forests, also in inland forests along streams.

*Fl. & Fr.*: April-Dec.

1.5 km from Jhow Nallah towards Navy Dera; Laful, 20 km on north-south road, Campbell Bay.

*Note*: Endemic to Andaman & Nicobar Islands.

### DOUBTFUL TAXA

- Grewia heterotricha*** Masters in Fl. Brit. India 1: 385. 1874; Daniel & Chandrab. in Fl. India 3: 500. 1993.

Scandent shrubby trees *ca* 8 m high. Flowers light yellow. Fruits greenish brown.

Rare along river banks.

*Fl. & Fr.*: Jan.-April.

Galathea river bank.

*Note:* The plant record from Gt. Nicobar is by Thothathri et al., 1973.

## 2. TRIUMFETTA L.

Herbs or undershrubs, covered with stellate hairs. Flowers yellowish, in dense cymes. Sepals 5, oblong. Petals 5. Stamens many or twice as many as sepals, free, inserted above. Carpels 2-5, syncarpous; stigma 2-5 lobed. Capsules globose or oblong, spiny, indehiscent or 3-6 valved; seeds 1-2 in each cell.

About 150 species, tropics; 1 in Gt. Nicobar Island.

**Triumfetta repens** (Bl.) Merr. & Rolfe in Philipp. J. Sci. 3: 111. 1908; Daniel & Chandrab. in Fl. India 3: 520. 1993.

Woody creepers. Leaves elliptic to ovate orbicular, broadly rounded to acute at base, rounded obtuse at apex, 3 x 2 cm, dentate-serrate, pubescent on both surfaces, larger leaves 3-5 lobed; petioles *ca* 1.3 cm long. Inflorescence 2-3 flowered, leaf opposed cymes. Flowers yellowish. Capsules *ca* 1.5 cm across, densely echinate, 3-4 loculed.

Rare on sandy beaches.

*Fl. & Fr.*: April-Nov.

Kopenheat.

India (Nicobar Islands); Thailand, Malaysia, Australia, Madagascar.

## ELAEOCARPACEAE

About 9 genera and 400 species, tropics and subtropics; 1 genus and 3 species in Gt. Nicobar Island.

## ELAEOCARPUS L.

Large or medium sized trees. Flowers in axillary racemes. Sepals 5, petals 5, fimbriate at apex. Stamens many, sometimes subaggregated into groups. Disc flat, cushion shaped. Ovary 3-5 locular; stigma entire. Drupes

with a woody rugose or tubercled pyrene; pyrenes 1-5 or rarely more loculed; locules usually 1 seeded.

About 200 species, Asia, Australia, Pacific regions; 3 in Gt. Nicobar Island.

- 1 a. Petals broader towards base, narrowed towards apex .....3. *E. petiolatus*  
 b. Petals narrowed towards base, broader towards apex .....2
- 2 a. Leaves 24-40 cm long; pyrenes compressed, strongly rugose .....  
 .....1. *E. aristatus*  
 b. Leaves ca 20 cm long; pyrenes terete, tubercled .....2. *E. macrocerus*

1. ***Elaeocarpus aristatus*** Roxb., Fl. Ind. 2: 599. 1832; Murti in Fl. India 3: 533. 1993.

Trees, ca 40 m high. Leaves obovate, elliptic or oblanceolate, cuneate at base, rounded or subacute at apex, ca 40 x 10 cm, serrulate or entire, midrib prominent, with glands in the axils of lateral veins beneath; petioles ca 4.5 cm long, swollen at both ends, geniculate. Racemes ca 20 cm long, axillary. Flowers white, fragrant. Drupes ca 3.5 cm long, ellipsoid, pyrenes oblong, pointed at both ends, compressed, 1 or rarely 2 loculed.

Rare in littoral and inland forests.

*Fl. & Fr.*: April-Oct.

Dogmar river.

2. ***Elaeocarpus macrocerus*** (Turcz.) Merr. in J. Arn. Arb. 32: 183. 1951; Murti in Fl. India 3: 545. 1993.

Trees, ca 12 m high. Leaves obovate oblong or spatulate, cuneate at base, subacute at apex, ca 20 x 12 cm, serrate. Racemes ca 10 cm long, axillary, corymbose. Flowers dull white, ca 2.5 cm across. Pyrenes terete, strongly tubercled, unilocular, 1 seeded.

Rare in evergreen inland forests along streams.

*Fl. & Fr.*: March-June.

Campbell Bay, 17 km on east-west road, Laful.

3. **Elaeocarpus petiolatus** (Jack) Wall. ex Steudal, Nom. Bot. ed. 1: 545. 1840; Murti in Fl. India 3: 546. 1993.

Trees, *ca* 20 m high. Leaves elliptic lanceolate or oblong-elliptic, narrowed at base, bluntly acuminate at apex, *ca* 20 x 9 cm, serrulate or entire; petioles *ca* 6.5 cm long. Racemes *ca* 12 cm long, axillary. Flowers white, *ca* 1.5 cm across. Drupes *ca* 2 cm long, oblong-obovoid, smooth; pyrenes rugose, tubercled.

Rare in inland forests.

*Fl. & Fr.*: Dec.-Sept.

36 km on east-west road.

## LINACEAE

About 12 genera and 290 species, cosmopolitan; 1 genus & 1 species in Gt. Nicobar Island.

### INDOROUCHERA Hall.f.

Trees, erect or scandent shrubs with revolute, woody tendrils. Flowers in axillary fascicles or in short fascicled spikes, yellow, subsessile, 5 merous, subtended by bracteoles. Sepals 5. Petals 5. Stamens 10, all fertile; filaments connate into short tube. Ovary 3-5 locular; styles 3-5; stigmas cuneate 2 lobed. Drupes subglobose, stone 3-6 angled, locules 1-2 seeded; seeds compressed.

About 4 species, Indo-Malaysia; 1 in Gt. Nicobar Island.

**Indorouchera griffithiana** (Planch.) Hall.f. in Meded. Rijksherb. Leiden No. 35: 50. 1918; Hajra in Fl. India 3: 577. 1993.

Climbing woody shrubs; branchlets 1-2 hooked at base. Leaves obovate lanceolate or elliptic, cuneate at base, caudate acuminate at apex, *ca* 14 x 4.5 cm; lateral nerves 7-10 pairs; petioles *ca* 2 cm long. Flowers *ca* 8 mm across, sessile, fragrant. Drupes *ca* 7 mm long, ellipsoid, orange red, 1 seeded.

Rare in inland forests.

*Fl. & Fr.*: April-Dec.

Laful, Galathea river, 6 km on east-west road.

India (Nicobar Islands); Malaysia.

## RUTACEAE

About 150 genera and 900 species, widely distributed in southern hemisphere, especially in Australia & South Africa; 3 genera, 4 species and 2 varieties in Gt. Nicobar Island.

- 1 a. Leaves composed of 1 leaflet only .....2
- b. Leaves imparipinnate, composed of more than 3 leaflets .....2. *Glycosmis*
- 2 a. Scandent shrubs; flowers in axillary fascicles; fruits ca 1.25 cm in diam.  
..... 3. *Paramignya*
- b. Small trees; flowers in axillary cymes; fruits ca 2.5 cm in diam. ....  
.....1. *Atalantia*

### 1. ATALANTIA Correa

Unarmed or spinous shrubs or small trees. Flowers axillary, rarely terminal, fascicled or in short racemes, corymbs or panicles. Calyx 3-5 lobed. Petals 3-5, free or connate at the stamens forming a tube. Stamens 6-8(15), inserted around an annular disc. Ovary 2-4 celled; stigma capitate. Berries subglobose, 1-5 celled, 1-5 seeded.

About 10 species, tropical Asia & Australia; 2 in Gt. Nicobar Island.

- 1 a. Unarmed shrubs; leaf tip blunt; stamens free; calyx regularly lobed .....  
.....2. *A. smilacifolia*
- b. Armed shrubs; leaf tip retuse; stamens connate; calyx irregularly lobed ...  
.....1. *A. monophylla*

1. ***Atalantia monophylla* (L.) Correa** in Ann. Mus. Natl. Hist. Nat. 6: 383. 1805.

Small trees. Leaves 1 foliolate; leaflets lanceolate or elliptic-lanceolate, bluntly acuminate, emarginate at tip, *ca* 12 x 4 cm; petioles channelled with 2 subulate stipular scales at base. Flowers white, puberulous in fascicles or contracted corymbose axillary cymes. Berries globose like a lime, rugose & glandular outside, 4 celled; cells 1 seeded.

Rare in littoral forests.

*Fl. & Fr.*: July-Feb.

Koshin Don, Pulo baha.

**2. *Atalantia simplicifolia* (Roxb.) Tanaka in J. Bot. 68(48): 232. 1930.**

Trees, *ca* 10 m high. Leaves 1 foliolate; leaflets elliptic, tapering to both ends, *ca* 10 x 5 cm; nerves 10-14 pairs; petioles *ca* 8 mm long. Racemes short, few flowered. Flowers *ca* 1.25 cm long. Berries globose, 1.2 x 1.5 cm, sparsely pitted, greenish yellow.

Rare in littoral forests.

*Fl. & Fr.*: Oct.-June.

32 km on north-south road, Galathea Bay, Indira point.

**2. GLYCOSMIS Correa**

Unarmed shrubs or trees. Inflorescences paniced, usually axillary. Flowers 5 merous, bisexual, sessile. Calyx 4-5 partite. Petals 4-5, imbricate. Stamens 8-10, free, dialated below. Disc stipitate. Ovary 2-5 celled; style short; stigma broad & flat. Berries globular or ellipsoid, 1-3 seeded.

About 20 species, in Asia & Australia; 1 species & 2 varities in Gt. Nicobar Island.

- 1 a. Leaves smaller *ca* 23 cm long; leaflets obtuse, rounded or rarely obtusely or shortly acuminate at apex and surface opaque ..... 1. *G. mauritiana* var. *andamanensis*
- b. Leaves slightly larger *ca* 35 cm long with lustre leaflets long acuminate at apex ..... 2. *G. mauritiana* var. *insularis*



**Glycosmis mauritiana** (Lam.) Tanaka in Bot. Nat. 1928: 159. 1928 var. **andamanensis** (Naray.) Mitra & Subramanyam in J. Arn. Arb. 50: 157. 1969.

Shrubs *ca* 4 m high. Leaves *ca* 23 cm long, 3-5 foliolate, imparipinnate or paripinnate; leaflets subsessile, elliptic lanceolate, shortly acuminate at apex, cuneate at base, *ca* 21 x 7 cm, margins entire, wavy, sometimes sparsely dentate. Inflorescences panicle, axillary, brown pubescent. Flowers white. Berries ovoid, 1 cm across, yellow, glandular, pitted.

Rare in moist dense forests.

*Fl. & Fr.*: Dec.-May.

Koshin Don, east bank forests of river Galathea.

*Note*: Endemic to A & N Islands.

**Glycosmis mauritiana** (Lam.) Tanaka var. **insularis** (Kurz) Tanaka in J. Ind. Bot. Soc. 16: 229. 1937.

Small trees, *ca* 7 m high. Leaves *ca* 35 cm long, paripinnate, 3-5 foliolate; leaflets subsessile elliptic lanceolate, long acuminate at apex, cuneate at base, *ca* 15 x 6.6 cm, margins entire and wavy. Inflorescences panicle, axillary, brown, pubescent. Flowers white. Berries ovoid, 1 cm across, glandular pitted.

Rare in hill forests.

*Fl. & Fr.*: Dec.-May.

34 km on north-south road.

### DOUBTFUL TAXA

**Glycosmis pilosa** Narayan ex Tanaka in J. Ind. Bot. Soc. 16: 230. 1937.

Shrubby trees. Leaves 3-5 foliate; leaflets alternate. Young fruits green, mature ones light pink with 2 seeds.

*Note:* Endemic to A & N Islands.

The plant record from Great Nicobar is by Thothathri *et al.*, 1973.

### 3. **PARAMIGNYA** Wight

Erect or climbing shrubs, unarmed with axillary spines. Flowers large, axillary, solitary or fascicled. Calyx cupular or small, 4-5 lobed. Petals 4-5, free, imbricate. Stamens 8-10, inserted around the columnar disk; filaments free. Ovary 3-5 celled. Berries ovoid or subglobose, often contracted at the base, 1-5 seeded, rind thick; seeds large, oblong, much compressed.

About 6 species, Indo-Malayan region; 1 in Gt. Nicobar Island.

**Paramignya andamanica** (King) Tanaka in Bull. Soc. Bot. France 75: 712. 1928.

Scandent shrubs. Leaves 1-foliolate, elliptic oblong, acute at apex, rounded at base, *ca* 14 x 6.5 cm, glabrous, scented; lateral nerves obscure; petioles *ca* 2 cm long. Flowers white. Fruits *ca* 1.25 cm diam., globular or obscurely 2 lobed.

Common in littoral forests.

*Fl. & Fr.*: Sept.-Dec.

Lakshman beach, Campbell Bay along beach forests.

*Note:* Endemic to A & N Islands.

## **BURSERACEAE**

About 16 genera and 200 species, distributed in the tropics; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Leaflets margin serrate; drupes elliptic, usually 3 gonous, with persistent woody calyx .....1. *Canarium*
- b. Leaflets margin entire; drupes ellipsoid, more or less compressed on ventral side, not trigonous; without persistent calyx .....2. *Dacryoides*

## 1. CANARIUM L.

Large resinous trees. Flowers in terminal or axillary panicles or racemes. Calyx 3 lobed. Petals 3, usually longer. Stamens 3-6, partly or fully connate; pistillode sometimes present. Disc intrastaminal, in female adnate to receptacle and in male well developed, united with stamens. Ovary 3-locular. Drupes elliptic with hard fleshy outer coat, stone triquetrous, 1-3 celled.

About 90 species, tropical Asia; 1 in Gt. Nicobar Island.

**Canarium euphyllum** Kurz in J. As. Soc. Bengal 2: 295. 1872.

'Dhup'

Trees, *ca* 20 m high. Leaves *ca* 90 cm long, collected at the ends of branchlets; leaflets *ca* 8 pairs, ovate to oblong lanceolate, acuminate at apex, rounded or truncate at base; lateral nerves conspicuous, serrulate. Flowers *ca* 0.6 cm in diam., in axillary panicles. Drupes *ca* 2.5 cm long, ovoid-ellipsoid; seeds 3 quetrous.

Rare in inland forests.

*Fl. & Fr.*: Nov.-Feb.

Dogmar river, Chuglam.

India (Andaman & Nicobar Islands); Myanmar, Malay Peninsula, Java.

## 2. DACRYOIDES Vahl

Resinous trees. Panicles axillary or terminal. Flowers 3 merous, small, unisexual. Calyx shortly dentate. Petals thickened at top. Male flowers: stamens 6, on the margin of a cupular, glabrous disk; pistilodes minute. Female flowers: staminodes 6; ovary 3 celled; stigma 3 lobed. Drupes ovoid to olive shaped, orbicular; pyrene not very hard, 3 celled.

About 30 species, south east Asia; 1 in Gt. Nicobar Island.

**Dacryoides rugosa** (Blume) H.J. Lam., Ann. Jard. Bot. Btzg 42. 203. t. 11. f. 64. 1932.

Trees, *ca* 60 m high; young branchlets pubescent, warted. Leaflets 5-7, ovate oblong, acuminate at apex, obtuse at base, *ca* 15 x 5 cm; petioles swollen at both ends. Panicles crowded at the tops of the branchlets. Male panicles *ca* 60 cm long. Female panicles few flowered, *ca* 23 cm long. Flowers *ca* 3 mm long, yellowish. Drupes ovoid, slightly oblique, *ca* 25 x 15 mm, pink, ripe one purple; seed one.

Rare in inland forests.

*Fl. & Fr.*: Jan.-April.

37 km on east-west road.

India (Nicobar Islands); Java, Borneo.

### OCHNACEAE

About 30 genera and 250 species, pantropical chiefly in S. America & Africa; 1 genus & 1 species in Gt. Nicobar Island.

### OCHNA L.

Small trees. Leaves alternate; stipules intrapetiolar, connate, caducous. Inflorescences cymose or thyrsoid panicles. Flowers bisexual, regular, hemispherical terminal torus, turning red with age. Sepals 5. Petals 5-10. Stamens many. Ovary 5-10 lobed; style gynobasic, persistent. Drupes 3-5 on swollen torus; 1 seeded.

About 85 species, tropical Asia & Africa; 1 in Gt. Nicobar Island.

**Ochna integerrima** (Lour.) Merr. in Trans. Amer. Phil. Soc. n.s. 24(2); 2: 265. 1935.

Shrubs or trees, *ca* 8 m high. Leaves lanceolate or oblong lanceolate, acute, *ca* 25 x 6 cm, serrate; petioles *ca* 2.5 mm long. Inflorescences many flowered cymes. Flowers yellow. Sepals dark red in fruits. Drupes 2-4, *ca* 9 x 7 mm.

Rare in inland forests.

*Fl. & Fr.*: March-Apr.

Dogmar river side.

## MELIACEAE

About 50 genera and over 800 species, mainly in tropics; 6 genera and 12 species in Gt. Nicobar Island.

- 1 a. Leaves 3 foliolate .....5. *Sandoricum*  
b. Leaves pinnate .....2
- 2 a. Leaves paripinnate .....3  
b. Leaves imparipinnate .....4
- 3 a. Littoral trees with 1-3 pairs of opposite leaflets .....6. *Xylocarpus*  
b. Inland trees; leaflets 8-13 .....3. *Chisocheton*
- 4 a. Stigma on an elongate style .....4. *Dysoxylum*  
b. Stigma subsessile .....5
- 5 a. Petals 4-5; fruits berry .....1. *Aglaia*  
b. Petals 3; fruits capsule .....2. *Aphanamixis*

### 1. *AGLAIA* Lour.

Large trees. Inflorescences panicles. Flowers bisexual or polygamo dioecious, 4-5 merous. Petals free or shortly adnate to staminal tube. Disc obscure. Stamens 5-10, staminal column short globose, entire or dentate. Ovary 1-3 locular; stigma subcapitate, sessile. Berries 1-3 seeded with coriaceous pericarp; seeds with or without pericarp.

About 250 species, Indo-Malayan; 2 species in Gt. Nicobar Island.

- 1 a. Scales orange brown, pale brown or almost white throughout ....1. *A. edulis*  
b. Scales at least partly reddish brown .....2. *A. sylvestris*

1. *Aglaia edulis* (Roxb.) Wall., Calc. Gard. Rep. 26. 1840.

Trees, *ca* 15 m high; branches stout with dense, dark brown, stellate hairs. Leaves dark shining green, *ca* 80 cm long; leaflets 9-13, alternate and opposite, subcoriaceous, oblong to elliptic, acuminate at apex, rounded or cuneate at base, *ca* 12 x 7 cm, upper surface rugulose & pitted, stellate-pubescent beneath; nerves 12-16; petioles *ca* 0.5 cm long. Fruits *ca* 2 cm in diam., subglobose, yellow tomentose, indehiscent; locule 1 or 2; each containing 1 seed.

Rare in inland forests.

*Fl.*: Not seen; *Fr.*: May-June.

27 km on east-west road.

India (Andaman & Nicobar Islands); Bangladesh, Java, Borneo, Fiji.

**2. *Aglala sylvestris* (M. Roem.) Merr., Interpr. Rumph. 210, 1917.**

Trees, *ca* 50 m high; bark reddish brown; twigs with dense dark brown scales. Leaves *ca* 65 cm long; leaflets 13-19, oblong or oblong-lanceolate, shortly acuminate at apex, somewhat unequal at base, *ca* 24 x 6.5 cm, thinly leathery with scales; veins 12-20. Flowers small in rusty panicles. Petals 5. Staminal tube longer than corolla; anthers 5, included. Fruits *ca* 2 x 2 cm, compressed, reniform, almost 2 lobed, coppery brown; each lobed with 1 seed.

Rare in inland forests.

*Fl. & Fr.*: Nov.-March.

Chingengh, Dhar Bay, 4 km on north-south road, Koshin Don, Laful, 16 & 31 km on east-west road.

India (Andaman & Nicobar Islands); Sumatra, Malaysia.

**2. APHANAMIXIS Blume**

Trees. Flowers polygamous, in spikes or racemes. Sepals usually 5. Petals 3. Staminal tube with 3-6 anthers; pistillode small. Ovary 3 locular,

stigma 3 lobed. Capsules subfleshy; locule 1 seeded, fully or partially enclosed by orange-red or yellow aril.

About 3 species, Indo-Malayan; 1 in Gt. Nicobar Island.

**Aphanamixis polystachya** (Wall.) Parker in Ind. For. 57: 486. 1931.

Small trees, *ca* 20 m high, bark greyish brown. Leaves *ca* 1 m long with *ca* 15 leaflets; leaflets oblong lanceolate, asymmetrical, *ca* 16 x 6 cm. Inflorescences *ca* 60 cm long. Flowers yellowish white. Stamens 6. Ovary villous. Capsules *ca* 4 cm diam., pink red, coriaceous; seeds with dark brown glossy testa and red aril.

Rare along streams.

*Fl. & Fr.*: March-April.

Dogmar river.

### 3. CHISOCHETON Blume

Trees or shrubs. Flowers in panicles or racemes at ends of long peduncles, axillary or cauliflorous, usually unisexual. Calyx 3-6 lobed. Petals 4-6 in 1 or 2 rows, free or united with staminal tube base, white to pink. Staminal tube cylindrical with entire to lobed margin; anthers 4-10, usually within tube. Disc fleshy or tubular. Ovary 2-4 celled; stigma capitate. Capsules subglobose, often beaked, 2-4 celled; seeds arillate.

About 24 species, Indo-Malayan; 3 in Gt. Nicobar Island.

- 1 a. Fruits with long stipe, *ca* 3 cm long; pericarps spongy; rachis channelled ending in claw like pseudogemmule and stellate pubescent .....2. *C. longistipitatus*
- b. Fruits without long stipe, *ca* 5 mm long; pericarps not spongy; rachis not channelled .....2
- 2 a. Calyx smaller *ca* 2.5 mm long; petals 4 in number; anthers smaller and spherical; fruits without any lobes .....3. *C. nicobarianus*
- b. Calyx *ca* 6 mm long; petals 4-6 in number; anthers not small; fruits with 3 lobes .....1. *C. grandiflorus*

1. ***Chisocheton grandiflorus* (Kurz) Hiern** in Hook.f., Fl. Brit. India 1: 552. 1872.

Trees, *ca* 20 m high; bark rough with corky warts, cut rather dry, reddish. Leaves paripinnate; leaflets 8-13, oblong or oblong lanceolate, *ca* 20 cm long, softly pubescent beneath. Flowers *ca* 1.25 cm long, in dense racemes, arranged in tawny-tomentose, axillary panicles. Calyx 4 toothed. Petals pubescent. Capsules loculicidally 3 valved.

Common in inland forests.

*Fl. & Fr.*: Nov.-March.

40 km on east-west road.

India (Andaman & Nicobar Islands); Myanmar, Malaysia.

2. ***Chisocheton longistipitatus* (F.M. Bailey) L.S. Smith** in Proc. Roy. Soc. Queensl. 70: 29. 1959.

Trees, *ca* 20 m high; bark dark brown, lenticellate. Leaves *ca* 80 cm long; leaflets 2-6 pairs, *ca* 20 x 10 cm, elliptic-oblong, sparsely stellate pubescent, midrib sunken; lateral nerves 14-18. Racemes *ca* 40 cm long, 3-6 branches; branches 2-8 cm long. Calyx subsessile. Petals 4-5. Staminal tube 5 lobed, pubescent in middle; anthers 5. Disc cupular. Capsules subglobose with long stipes; pericarp spongy; seeds 2-3, discoid.

Rare in inland forests.

*Fl. & Fr.*: Nov.-March.

40 km on east-west road.

India (Andaman & Nicobar Islands); Malay Peninsula.

3. ***Chisocheton nicobarianus* H.S. Debnath & P.V. Sreekumar** in J. Econ. Tax. Bot. 16(3): 553. 1992.

Trees, *ca* 30 m high. Leaves *ca* 60 cm long; leaflets 3-8 pairs; ovate-oblong or elliptic, acuminate at apex, sparsely pubescent adaxial, *ca* 20 x



6 cm; nerves 8-14 pairs; petioles *ca* 8 mm long, hispid. Panicles axillary or supra axillary, *ca* 60 cm long. Flowers white, *ca* 14 mm long, fragrant. Calyx hispid. Petals 4, spatulate, disc absent. Staminal tube 8 lobed, lobes bidentate at apex; stamens 8. Capsules spherical, *ca* 3.5 cm in diam.; stipe *ca* 5 mm long; seeds 2, discoid, exarillate.

Rare in inland forests.

*Fl. & Fr.*: March-June.

Laful.

*Note*: Endemic to Great Nicobar Islands.

#### 4. DYSOXYLUM Blume

Trees. Leaves pinnate; leaflets opposite or alternate, base oblique. Inflorescences axillary panicles. Flowers 4-5 merous. Calyx 3-5 lobed. Petals free or adnate to staminal column. Anthers inserted near tip. Disc cupular, as long as ovary. Ovary 2-5 locular; stigma peltate. Capsules woody coriaceous; seeds with or without aril.

About 100 species, Indo-Malayan & Australia; 4 in Gt. Nicobar Island.

- 1 a. Flowers pentamerous .....2. *D. arborescens*  
 b. Flowers tetramerous .....2
- 2 a. Terminal leaflets present .....4. *D. densiflorum*  
 b. Terminal leaflets absent .....3
- 3 a. Calyx cupular, 4 toothed, short .....1. *D. alliaceum*  
 b. Calyx cup-shaped, subentire, about half the length of flower .....  
 .....3. *D. binectiferum*

#### 1. *Dysoxylum alliaceum* (Bl.) Bl. Bijdr. 172. 1825.

Trees *ca* 15 m high; bark dark brownish green, cut brownish yellow with an offensive smell. Leaves *ca* 40 cm long; leaflets 6-9, ovate to ovate oblong, shortly acuminate at apex, oblique at base, *ca* 20 x 7.5 cm. Flowers white, tinged with purplish pink, unpleasant smell, *ca* 6 mm in diam. Fruits obovoid, 2-3 lobed, *ca* 2.5 cm long.

Rare along the streams, inland forests.

*Fl. & Fr.*: Dec.-Feb.

34 km on east-west road.

*Note*: Endemic to Andaman & Nicobar Islands.

2. **Dysoxylum arborescens** (Blume) Miq. in Ann. Mus. Bot. Lugd. Bat. 4: 24. 1868.

Trees, 30 m high; twigs greyish. Leaves *ca* 45 cm long, imparipinnate with 4 pairs of leaflets; leaflets elliptic caudate, base narrowed, *ca* 12 x 6 cm; nerves 6-8 pairs. Panicles extra axillary, *ca* 25 cm long. Flowers white. Disc shortly tubular. Fruits *ca* 2.5 cm diam, spherical, glabrous, bright pink with *ca* 5 valves; seeds ovoid.

Common near streams, inland forests.

*Fl. & Fr.*: Nov.-May.

Campbell Bay to Chengappa Bay, Kopenheat to Koshin Don.

India (Andaman & Nicobar Islands); Borneo, Malacca.

3. **Dysoxylum binecteriferum** (Roxb.) Hook.f. ex Bedd. in Trans. Linn. Soc. London 25: 212. 1866.

Trees, *ca* 20 m high. Leaves *ca* 1 m long, paripinnate, subglabrous; leaflets 3-4 pairs; elliptic lanceolate, oblique, coriaceous, *ca* 14 x 5 cm. Panicles *ca* 25 cm long. Flowers foetid. Disc tubular. Capsules large woody, 5 cm in diam., 2-4 seeded; seeds exarillate.

Rare in evergreen dense moist forests.

*Fl. & Fr.*: Nov.-March.

Laful.

4. **Dysoxylum densiflorum** (Bl.) Miq., Ann. Mus. Bot. Lugd. Bat. 4: 9. 1868.

Trees, *ca* 20 m high. Leaves in dense terminal spirals, *ca* 1.5 m long, imparipinnate; leaflets *ca* 8 pairs, elliptic or oblong acuminate at apex, subcuneate or unequal at base; lateral nerves 10-12 pairs. Spikes in clusters from the trunk or thick branches, *ca* 10 cm long. Flowers white. Disc longer than ovary. Fruits obovoid, *ca* 4 x 2 cm, silky grey green, hairy, 3-4 valved; seeds 3-4, shiny black.

Rare in inland hill forests.

*Fl. & Fr.*: Nov.-March.

Laful, 31 km on east-west road.

India (Nicobar Islands); Java.

#### 5. **SANDORICUM** Cav.

Large trees. Leaves 3 foliolate. Flowers in axillary panicles, pentamerous. Calyx cup-shaped, tube adnate to ovary base, lobes short. Petals 5, free. Staminal tube cylindrical, tipped with 10 short appendages; anthers 10. Disc free, tubular, margin toothed. Ovary 4-5 locular; stigma 4-5 lobed. Drupes with 1-5 pyrenes, pyrenes 1-2 seeded.

About 7 species, Indo Malayan; 1 in Gt. Nicobar Island.

**Sandoricum koetjape** (Burm.f.) Merr., Philipp. J. Sc. Bot. 7: 237. 1912.

Large trees, *ca* 40 m high. Leaves pinnately 3 foliolate, *ca* 40 cm long; petioles pubescent, *ca* 20 cm long; leaflets broadly ovate, shortly acuminate, *ca* 20 x 12 cm, glabrous above, puberulous beneath; petiolules *ca* 7.5 cm long. Flowers yellow in narrow axillary panicles. Fruits *ca* 8 cm in diam., flattened globose, yellow or brownish when ripe, velvety, with latex in pericarp; seeds enclosed in thin cartilaginous endocarp.

Rare in hill forests.

*Fl. & Fr.*: Nov.-Feb.

41 km on east-west road.

### 6. XYLOCARPUS Koenig

Glabrous trees. Leaves 2-4 foliolate. Flowers unisexual in short axillary thyrses. Calyx 4 lobed. Petals 4, white. Staminal tube with 8 included anthers and 8 appendages. Disc large, red cushion shaped. Ovary 4 celled. Capsules subspherical, pendulous, tardily dehiscent by 4 leathery valves from apex; seeds 5-20, large, irregularly tetrahedral.

About 6 species, tropics; 1 in Gt. Nicobar Islands.

**Xylocarpus moluccensis** (Lam.) M.Roem., Synops. Monogr. 1: 124. 1846.

Small trees, *ca* 8 m high; bark with pungent odour. Leaves *ca* 25 cm long; leaflets 3-4 pairs, elliptic-ovate, subacute at apex, broad at base, *ca* 10 x 4 cm. Panicles *ca* 12 cm long. Petals white. Capsules large, *ca* 8 cm in diam., globose, green; seeds brown.

Common in interior hill forests.

*Fl. & Fr.*: Nov.-March.

28 km on east-west road.

### DICHAPETALACEAE

About 4 genera and 20 species, tropics; 1 genus & 2 species in Gt. Nicobar Island.

### DICHAPETALUM Thou.

Trees, shrubs or lianas. Leaves spiral, rarely pseudo-distichous, glandular. Inflorescences axillary, dichotomously branched or glomerulous. Flowers 5 merous. Stamens episealous. Disc consisting of 5 intrastaminal, epipetalous lobes. Drupes lobed, tomentose.

About 200 species, most of them endemics in Africa; 2 in Gt. Nicobar Island.

- 1 a. Leaves densely pubescent beneath; fruits 1-7, entire or 2 lobed, pericarp without sutures .....2. *D. timoriense*
- b. Leaves glabrous beneath; fruits 1-4, distinctly 2-3 lobed, pericarp with distinct sutures .....1. *D. platyphyllum*

1. ***Dichapetalum platyphyllum*** Merr. in Philipp. J. Sci. 30: 401. 1926.

Lianas, ca 5 m high; branchelets faintly ribbed, gland dotted. Leaves oblong-elliptic or obovate, acuminate or obtuse at apex, cuneate or oblique at base, ca 20 x 9.2 cm; lateral nerves 5-9 pairs. Infructescences distinctly stalked. Drupes 1-4, globose, ca 3 cm across, 3-lobed; seeds 3, 1 in each locule, pear shaped, violet brown when dry.

Rare in inland forests.

*Fl.*: Not seen; *Fr.*: Sept.-Nov.

Alexandra river.

India (Nicobar Islands); Malay Peninsula, Philippines.

2. ***Dichapetalum timoriense*** (DC.) Boerl., Handl. 1: 199. 1890.

Lianas; young branches densely pubescent. Leaves oblong, elliptic-ovate to orbicular, abruptly acuminate at apex, cuneate or rounded at base, ca 20 x 12 cm; lateral nerves 5-8 pairs. Flowers white. Drupes 1-7, ca 3.5 cm in diam., ovoid, pear shaped or 2 lobed, densely fulvous, velvety pubescent, golden brown when fresh; seeds 1 or 2.

Rare in inland forests.

*Fl. & Fr.*: June-Sept.

20 km on east-west road; between Chingenh and Indira point.

India (Great Nicobar Island); Malay Peninsula.

## OLACACEAE

About 25 genera and 250 species, tropics; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Fertile stamens isomerous with opposite petals ..... 1. *Anacolosa*  
 b. Fertile stamens anisomerous or twice or thrice the number of petals .....  
 ..... 2. *Olax*

### 1. ANACOLOSA Blume

Shrubs or small trees. Inflorescences cymose, axillary. Flowers yellowish-white. Calyx cup-shaped, 5-7 toothed. Petals 5-7, free. Stamens concealed in cavity of petals, slightly adnate to their base. Ovary imperfectly 2-3 celled below, 1 celled above; stigma lobed. Drupes surrounded by accrescent disc; stone crustaceous; 1 seeded.

About 15 species, tropics; 1 in Gt. Nicobar Island.

*Anacolosa frutescens* (Bl.) Bl., Muss. Lugd. Bat. 1: 251. 1850.

Small trees, *ca* 8 m high. Leaves ovate-elliptic or ovate-lanceolate, acuminate at apex, cuneate or rounded at base, *ca* 16 x 5.5 cm; lateral nerves 3-8 pairs. Flowers in axillary, pale yellow, *ca* 3 mm long. Drupes obovoid, *ca* 1.2 cm long, deep yellow, minutely velvety.

Rare in marshy places.

*Fl. & Fr.*: Oct.-May.

Galathea mouth.

India (Andaman & Nicobar Islands); Myanmar, Malay Peninsula.

### 2. OLAX L.

Trees or shrubs, often scandent. Racemes axillary, simple or branched. Calyx minute. Petals greenish white, hypogynous. Staminodes 5-6, bifid. Ovary free, surrounded by cup-shaped, hypogynous disc; stigma 3 lobed. Drupes globose, enveloped by accrescent calyx, 1 celled, 1 seeded.

About 40 species, tropics; 1 in Gt. Nicobar Island.

*Olax imbricata* Roxb., Fl. Ind. 1:169. 1820.

Scandent shrubs. Leaves ovate oblong or oblong lanceolate, acute or acuminate at apex, rounded at base, *ca* 15 x 5.8 cm; lateral nerves 4-7 pairs. Flowers greenish white, fragrant, *ca* 1.2 cm long. Drupes globose, *ca* 1.2 cm across, orange.

Rare in scrub forests.

*Fl. & Fr.*: Dec.-Oct.

34 km on east-west road.

India (Andaman & Nicobar Islands); Myanmar, Malay Peninsula.

### ICACINACEAE

About 58 genera and 400 species, tropics; 4 genera and 5 species in Gt. Nicobar Island.

- 1 a. Climbing shrubs or lianas .....3. *Iodes*
- b. Erect trees or shrubs .....2
- 2 a. Anther filaments glabrous; drupes with thick fleshy appendages on lateral side and longitudinal median furrows on ventral side .....1. *Codiocarpus*
- b. Anther filaments bearded below cells, on back or on connectives; drupes not as above .....3
- 3 a. Flowers bisexual; disc prominent; drupes large, *ca* 5.5 cm long .....4. *Stemonurus*
- b. Flowers unisexual; disc absent or obscure; drupes small, *ca* 2.8 cm long .....2. *Gomphandra*

#### 1. CODIOCARPUS Howard.

Trees. Leaves spirally arranged. Inflorescences cymose, axillary or on leafless branches. Flowers yellowish white. Calyx cup-shaped. Petals inflexed at apex. Male flowers: stamens exserted; pistillodes present. Female flowers: staminodes present; ovary with a lateral oblong swelling; stigma obscurely 3-lobed. Drupes oblong, flattened; seed 1.

2 species, 1 in Philippines, the other in A & N Islands.

**Codiocarpus andamanicus** (Kurz) Howard. in Brittonia 5: 57. 1943.

Trees, *ca* 12 m high. Leaves oblong to elliptic-lanceolate, acuminate at apex, rounded or cuneate at base, *ca* 24 x 10 cm; lateral nerves 3-12 pairs. Flowers yellowish-white. Drupes oblong, *ca* 3.5 cm long; seed with 6-7 veins.

Common in littoral forests.

*Fl. & Fr.*: Dec.-May.

Laful, Kopenheat, Koshin Don, 40 km on east-west road.

*Note*: Endemic to Andaman & Nicobar Islands.

## 2. **GOMPHANDRA** Wall. ex Lindl.

Trees or shrubs. Leaves spirally arranged. Flowers in cymes, loose to subcapitate. Calyx cupular. Petals inflexed at tips. Male flowers: stamens free; pistillodes conspicuous. Female flowers: stigma thick-discoïd. Drupes crowned by large persistent stigma; seed 1.

About 35 species, S.E. Asia to Solomon Islands; 2 in Gt. Nicobar Island.

- 1 a. Leaves coriaceous; inflorescences compact, umbelliform; corolla lobes broadly oblong, obtuse; drupes narrowly ellipsoid .....1. *G. comosa*
- b. Leaves membranous to chartaceous; inflorescences with more laxly arranged and divergent branches; corolla lobes ovate, acuminate; drupes oblong .....2. *G. tetrandra*

### 1. **Gomphandra comosa** King, in J. As. Soc. Beng. 64. 2: 112. 1895.

Trees, *ca* 4 m high. Leaves oblong to elliptic-oblong, rarely lanceolate, acuminate at apex, attenuate or oblique at base, *ca* 17 x 9.8 cm; lateral nerves 5-8 pairs. Inflorescences *ca* 1.4 cm long. Flowers greenish white. Drupes *ca* 2.8 x 1 cm, with 10 irregular longitudinal ridges on dorsal side and 1 single ridge on ventral side; seeds ellipsoid, smooth on dorsal side, wrinkled on ventral side.

Rare in inland forests.



*Fl. & Fr.*: June-March.

Laful, 6 and 15 km on north-south road, 4 km on east-west road.

*Note*: Endemic to Andaman & Nicobar Islands.

2. **Gomphandra tetrandra** (Wall. ex Roxb.) Sleum. in Notizbl. Bot. Gart. Berlin Dahl. 15: 238. 1940.

Trees, *ca* 18 m high; branchlets pubescent when young, later glabrous. Leaves elliptic to oblanceolate, acuminate at apex, cuneate at base, *ca* 15 x 6.3 cm; lateral nerves 5-8 pairs. Cymes axillary, puberulous, dichotomously branched, *ca* 2.5 cm long. Flowers *ca* 3 mm long. Drupes smooth; seeds large, integument striated.

Frequent in hill forests.

*Fl. & Fr.*: May-July.

Laful.

### 3. **IODES** Blume

Climbing shrubs. Inflorescences cymose. Calyx cup-shaped, persistent in female. Petals connate at base. Male flowers: stamens equal in number and opposite lobes of corolla; pistilodes rudimentary. Female flowers: ovary sessile, stigma 5-lobed. Drupes surrounded at base by persistent calyx; seed 1.

About 14 species, tropics; 1 in Gt. Nicobar Island.

**Iodes cirrhosa** Turcz. in Bull. Soc. Nat. Moscou 27(2): 281. 1854.

Lianas; branchlets pubescent. Leaves broadly ovate to elliptic, acute at apex, subcordate at base, *ca* 15 x 8 cm; lateral nerves 3-5 pairs. Male inflorescences in much branched, many flowered, lax cymes *ca* 35 cm long. Female inflorescences few flowered, *ca* 6 cm long. Drupes oblong-ellipsoid, *ca* 2 x 1.5 cm, laterally compressed, crested; seeds pubescent.

Rare in littoral forests.

*Fl. & Fr.*: April-Oct.

3 & 37 km on north-south road.

India (Nicobar Islands); Java, Philippines.

#### 4. **STEMONURUS** Blume

Trees. Leaves spiral. Umbels axillary and generally solitary. Flowers yellowish-white. Calyx cup-shaped. Petals connate at base. Staminal filaments shortly bearded below anther. Ovary 1-locular with 2 pendent ovules; stigma punctiform. Drupes with outer fibrous endocarp; seed 1.

About 12 species, Indo-Malayan; 1 in Gt. Nicobar Island.

***Stemonurus secundiflorus*** Blume, Bijdr. 649. 1826.

Trees, *ca* 20 m high. Leaves oblong-elliptic, acute at apex, cuneate at base, *ca* 20 x 9 cm; lateral veins 7-10 pairs. Inflorescences *ca* 6.5 cm long, axillary. Flowers yellowish green, *ca* 4 mm long. Drupes woody, narrowed and pointed at apex, orange yellow; seeds ellipsoid.

Common in coastal forests.

*Fl. & Fr.*: Throughout the year.

Baludera, 31 km on north-south road, Kopenheat, Koshindon.

India (Nicobar Islands); Java, Malay Peninsula.

### CELASTRACEAE

About 90 genera and over 1000 species, tropics & subtropics; 3 genera and 4 species in Gt. Nicobar Island.

- |   |                                               |                            |
|---|-----------------------------------------------|----------------------------|
| 1 | a. Leaves distichous; stamens 2 .....         | 2. <i>Nicobariodendron</i> |
|   | b. Leaves opposite; stamens 3-5 .....         | 2                          |
| 2 | a. Lianas or scandent shrubs; stamens 3 ..... | 3. <i>Salacia</i>          |
|   | b. Small trees; stamens 4-5 .....             | 1. <i>Euonymus</i>         |

1. **EUONYMUS** Tournf. ex L.

Shrubs or small trees. Leaves opposite, usually decussate. Inflorescences axillary, cymose, rarely flowers in fascicles. Flowers 5 or 4-merous. Calyx deeply lobed. Petals spreading or reflexed. Disc distinct. Stamens inserted on disc. Fruits loculicidal capsules; seeds black, aril orange.

About 175 species, tropical & subtropical Asia; 1 in Gt. Nicobar Island.

**Euonymus javanicus** Blume, Bijdr. 1146. 1825.

Trees, ca 20 m high. Leaves broadly elliptic to ovate-oblong, acute to acuminate at apex, cuneate or rounded at base, ca 20 x 9 cm; lateral nerves 5-7 pairs. Inflorescences axillary fascicles. Flowers greenish-white, with purple base. Fruits obovoid, ca 1.5 cm across, 1 or 2 seeded, 3-4 angled, apiculate at apex.

Rare in inland forests.

*Fl. & Fr.*: Sept.-April.

39 km on north-south road, Alexandra river.

2. **NICOBARIODENDRON** Vasud. & T. Chakrab.

Dioecious trees. Leaves distichous. Inflorescences axillary simple or compound racemes. Male flowers: calyx 4-5 segmented; petals 4-5, free, inserted on edge of disc; stamens 2, free, inserted near base of petals; anthers 2 celled; pistilode sunken in receptacle. Drupes 1 locular, 1 seeded, subtended by persistent calyx.

1 species occurring in Nicobar Islands.

**Nicobariodendron sleumeri** Vasud. & T. Chakrab. in J. Econ. Tax. Bot. 7: 514. 1986.

Trees, ca 50 m high. Leaves oblong-elliptic to obovate-elliptic, shortly acuminate at apex, cuneate at base, ca 10 x 4 cm; lateral nerves 5-9 pairs, faint above, prominent beneath. Male inflorescences axillary racemes,

often compound, *ca* 11 cm long. Drupes oblong-ellipsoid or narrowly obovoid, *ca* 2 x 1 cm, unilocular, 1 seeded, dark brown, thin walled.

Rare in inland forests.

*Fl. & Fr.*: July-Sept.

35 km on east-west road.

*Note*: Endemic to Nicobar Islands.

### 3. SALACIA L.

Scandent or climbing shrubs. Flowers small, axillary, fascicles or in cymes, thyrsoid or paniced. Calyx 5-lobed. Petals 5. Disc fleshy. Stamens 3, inserted at base of free part of pistil. Ovary partly or completely immersed in the disk. Drupes 1-3 celled, red or orange; seeds 1-many, embeded in mucilaginous pulp.

About 200 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Woody climbers; flowers 8-12 in the axils of leaves; fruits large *ca* 2.8 cm in diam. ....2. *S. macrosperma*
- b. Scandent shrubs; flowers *ca* 4 in the axils of leaves; fruits smaller, *ca* 1.25 cm diam. ....1. *S. chinensis*

#### 1. *Salacia chinensis* L., Mant. 2: 293. 1767.

Climbing shrubs; branchlets pinkish-brown, lenticellate. Leaves broadly elliptic to elliptic oblong, acuminate at apex, cuneate at base, *ca* 16 x 9 cm, shallowly serrate; lateral nerves 3-10 pairs. Flowers pale green, *ca* 5 mm long. Fruits globose or ellipsoid, in pairs, ripen orange red, 1 locular, 1-2 seeded; seeds globose.

Common in beach forests.

*Fl. & Fr.*: June-May.

5 & 20 km on north-south road, Campbell Bay, Lakshman beach, Dongi Nalla.

2. *Salacia macrosperma* Wight, IC. t. 962. 1845.

Woody climbers. Leaves elliptic-oblong or oblanceolate, acute or acuminate at apex, rounded or cuneate at base, *ca* 12 x 7 cm, entire; lateral nerves 4-5 pairs. Flowers greenish, in axillary fascicles. Fruits globose to obovoid, reddish, wrinkled when mature, *ca* 3 x 2.5 cm, not pulpy.

Rare in littoral forests.

*Fl. & Fr.*: June-March.

Campbell Bay.

## RHAMNACEAE

About 70 genera and 1500 species, cosmopolitan; 4 genera and 5 species in Gt. Nicobar Island.

- 1 a. Plants armed .....4. *Ziziphus*  
    b. Plants unarmed .....2
- 2 a. Branches often with tendrils; fruits usually 3 winged .....2. *Gouania*  
    b. Branches without tendrils; fruits wingless or with a single apical wing ...3
- 3 a. Leaves palminerved .....1. *Colubrina*  
    b. Leaves penninerved .....3. *Smythea*

## 1. COLUBRINA Rich ex Brongn.

Scandent shrubs or trees. Leaves basally 3-5 nerved. Flowers in short axillary cymes. Calyx 5 fid. Petals 5 clawed, hooded, inserted at edge of disc. Ovary 3 loculed; style 3 cleft. Capsules globose; seeds compressed, 3-gonous.

About 30 species, chiefly tropical America; 1 in Gt. Nicobar Island.

*Colubrina asiatica* (L.) Brongn., in Mem. Fam. Rhamn. 62. 1826.

Straggling shrubs, *ca* 5 m high. Leaves membranous, ovate or ovate-lanceolate, acuminate at apex, oblique at base, *ca* 8.5 x 6 cm; lateral nerves

2-3 pairs; stipules deltoid. Flowers yellowish-green, *ca* 0.5 cm across, in axillary cymes. Capsules obscurely 3-lobed, 3 seeded; seeds brownish black.

Rare in littoral forests.

*Fl. & Fr.*: Nov.-March.

Campbell Bay, Galathea to Indira point, Lakshman beach.

## 2. *GOUANIA* Jacq.

Climbing shrubs; branches circinately tendrilar. Inflorescences terminal or axillary racemes or panicles. Flowers pentamerous. Stamens enclosed in petals. Ovary 3-loculed; style 3-cleft. Schizocarpic capsules woody; seeds with hairy testa.

About 70 species, tropics; 1 in Gt. Nicobar Island.

*Gouania leptostachya* DC., Prodr. 2: 40. 1825.

Climbing shrubs or lianas; tendrils axillary. Leaves glabrous above, hairy on veins, beneath, ovate, acute to acuminate at apex, cordate at base, *ca* 9.7 x 7.5 cm; 3-nerved. Flowers greenish-white, *ca* 3 mm long. Capsules green, obconical, *ca* 9 x 13 mm, 3 valved, crowned by persistent calyx; seeds 3.

Common in forest edges, inland forests.

*Fl. & Fr.*: Oct.-May.

37 km on north-south road, 18 km towards Indira point.

## 3. *SMYTHEA* B.C.Seem. ex A. Gray

Woody climbers. Inflorescences of axillary fascicles, rarely paniced. Flowers pentamerous. Calyx 5-lobed, hairy. Petals small, bilobed, alternate with sepals. Stamens opposite the petals. Ovary 2-locular; styles-2, recurved. Fruits capsular, 1-celled, dehiscing vertically into valves, supported by persistent calyx at base; seed 1.

About 7 species, Myanmar, Malay Peninsula Archipelago and Fiji; 1 in Gt. Nicobar Island.

***Symthea lanceata* (Tul.) Summerh** in Kew Bull. 1928: 389. 1928.

Scandent shrubs. Leaves elliptic-oblong to elliptic-lanceolate, acuminate at apex, oblique rounded or cuneate at base, *ca* 13 x 5 cm, entire to distantly dentate; lateral nerves 3-6 pairs. Flowers greenish white. Capsules greyish when dry, ovoid-lanceolate, *ca* 8 x 3 cm, compressed; seeds orbicular.

Rare in littoral forests.

*Fl. & Fr.*: Feb.-July.

Campbell Bay.

India (Nicobar Islands); Java, Philippines, New Guinea.

#### 4. **ZIZIPHUS** Tourn. ex P. Mill.

Shrubs or trees. Inflorescences in axillary or terminal cymes or thyrses. Flowers 5-merous. Petals cucullate. Stamens inserted below disc. Disc flat or pitted. Fruits a drupe; stone 1-4 celled, 1-4 seeded.

About 135 species, temperate and tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves glabrous, rarely pubescent on the main nerves .....1. *Z. horsfieldii*
- b. Leaves tomentose beneath .....2. *Z. rugosa*

#### 1. **Ziziphus horsfieldii** Miq., Fl. Ind. Bat. 1: 643. 1855.

Scandent shrubs, armed with stipular prickles. Leaves ovate-oblong or ovate, obtusely acuminate at apex, oblique and rounded at base, *ca* 7.5 x 4.5 cm, crenate-serrate; petioles pubescent. Flowers yellowish. Drupes axillary, pendulous, globose-obovoid, *ca* 1.5 x 1.5 cm, warty, green when young ripen yellow.

Rare in inland forests, near streams.

*Fl. & Fr.*: Jan.-June.

Laful, Dogmar river.

India (Andaman & Nicobar Islands); Java.

2. **Ziziphus rugosa** Lam., Encycl. 3: 319. 1789.

Straggling shrubs. Leaves glabrous above, densely tomentose beneath, elliptic, ca 15 cm long. Flowers greenish, densely pubescent. Drupes ca 7.5 mm long; stone 1 celled, 1 seeded.

Rare in inland forests.

*Fl. & Fr.*: March-May.

Dogmar river.

*Note*: Description is based on the plant record from Great Nicobar by Thothathri *et al.* 1973.

## VITACEAE

About 12 genera and 700 species, tropical & subtropical regions; 3 genera & 5 species in Gt. Nicobar Island.

- |   |                                                                      |                       |
|---|----------------------------------------------------------------------|-----------------------|
| 1 | a. Flowers unisexual; stigma usually 4 lobed .....                   | 3. <i>Tetrastigma</i> |
|   | b. Flowers bisexual; stigma entire .....                             | 2                     |
| 2 | a. Leaves simple or digitately 5 foliolate; berries 1-2 seeded ..... | 2. <i>Cissus</i>      |
|   | b. Leaves palmately compound; berries 2-4 seeded .....               | 1. <i>Cayratia</i>    |

### 1. CAYRATIA A.L. Juss.

Climbing shrubs; tendrils usually branched. Flowers 4 merous, in axillary corymbs or umbels. Calyx obscurely lobed. Petals valvate, spreading. Disc 4 lobed, adnate to ovary. Stamens 4. Berries 2-4 seeded; seeds with 1-2 deep ventral grooves.

About 45 species, southern & eastern Asia; 1 in Gt. Nicobar Island.

***Cayratia trifolia* (L.) Domin** in Biblioth. Bot. 89: 370. 1927.



Climbers. Leaves *ca* 22 cm long; leaflets ovate-elliptic or rhomboid to orbicular, obtuse or acuminate at apex, cuneate or rounded at base, *ca* 15 x 5 cm; serrate or dentate. Cymes *ca* 4 cm long. Flowers greenish-white, *ca* 5 mm across. Berries globose, *ca* 1.1 cm across, ripening black or violet; seeds *ca* 6 mm.

Common in edges of inland forests.

*Fl. & Fr.*: March-May.

Campbell Bay, Galathea river mouth, 25 km on east-west road, Baludera, Laful.

## 2. *CISSUS* L.

Climbing shrubs. Leaves more or less fleshy. Cymes leaf opposed, umbellate. Flowers 4-merous. Petals expanding. Disc cupular, 4-lobed or 4 distinct glands. Ovary 2 celled; style subulate; stigma small. Berries fleshy, 1-2 seeded.

About 350 species, tropical & subtropical regions; 2 in Gt. Nicobar Island.

- 1 a. Leaves pubescent or tomentose beneath .....1. *C. aristata*
- b. Leaves glabrous .....2. *C. repens*

### 1. *Cissus aristata* Blume, Bijdr. 183. 1825.

Climbers; stems grooved. Leaves ovate, acuminate at apex, cordate at base, *ca* 15 x 10 cm, bristly serrate. Inflorescences umbellately branched, ultimate cymes subcorymbose. Berries ovoid or subglobose, *ca* 6 mm diam., dark purple when ripe.

Common in shady places, inland forests.

*Fl. & Fr.*: July-March.

Campbell Bay, Galathea bridge at 34.5 km on east-west road.

### 2. *Cissus repens* Lam., Encycl. 1: 31. 1783.

Climbers; branchlets ribbed. Leaves broadly ovate, acuminate at apex, cordate or truncate to rounded at base, *ca* 12 x 10 cm, distantly wavy dentate. Cymes opposite to leaves and forming terminal leafy inflorescences, *ca* 4 cm long. Flowers small, greenish-yellow. Berries globose or ovoid, 6 mm long 1 seeded.

Common in inland forests.

*Fl. & Fr.*: May-Dec.

40 km on east-west road.

### 3. TETRASTIGMA Planch.

Climbing shrubs; tendrils entire or 2 fid. Inflorescences axillary or leaf opposed cymes. Flowers 4 merous. Calyx lobed, dentate or truncate. Petals free. Disc thick, persistent in fruits. Stamens inserted under disc; staminodes minute. Ovary embeded in disc, 2 celled. Berries 1-4 seeded.

About 90 species, south-east Asia, Indo-Malayan & Australia; 2 species in Gt. Nicobar Island.

- 1 a. Branchlets lenticellate; petals rusty puberulous outside .....1. *T. andamanicum*
- b. Branchlets smooth; petals glabrous outside .....2. *T. campylocarpum*

1. **Tetrastigma andamanicum** (King) Suesseng. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20. d: 319. 1953.

Lianas. Leaves mostly 3-foliolate or pedately 4-5-foliolate; leaflets oblong to elliptic or ovate, shortly cuspidate or acuminate at apex, cuneate or oblique at base, *ca* 19 x 10 cm, serrate; lateral nerves 6-12 pairs. Cymes axillary, many flowered, much branched, spreading, puberulous, pedunculate. Flowers *ca* 2 mm long. Berries globular-ovoid, *ca* 2 x 2 cm, green with scanty pulp; seed 1, ovoid, grooved on one face, 3 ridged on either side.

Common in coastal forests.

*Fl. & Fr.*: Jan.-May.

Galathea to Indira point.

*Note:* Endemic to Andaman & Nicobar Islands.

2. ***Tetrastigma campylocarpa* (Kurz) Planch.** in DC. Mon. Phan. 5: 437. 1887.

Lianas; stem terete with slightly swollen nodes. Leaves 3-foliolate; leaflets elliptic or obovate, acuminate at apex, oblique or cuneate at base, *ca* 14 x 7 cm, crenate or toothed; lateral nerves 10-11 pairs. Panicked cymes *ca* 8 cm long. Flowers yellowish-green, *ca* 3 mm long. Fruits 1 seeded; seeds cylindrical, curved, transversely wrinkled.

Common on road sides.

*Fl. & Fr.:* Nov.-Feb.

2 and 15 km on east-west road.

## LEEACEAE

1 genus and 34 species, paleotropical; 3 species in Gt. Nicobar Island.

### LEEA van Royen ex L.

Trees, shrubs or herbs. Inflorescences corymbose cymes. Flowers bisexual, 4-5 merous. Petals and stamens connate with disc. Ovary inserted on disc, 3-6 celled; style short; stigma swollen. Berries depressed globose, 3-6 celled, 3-6 seeded; seeds wedge shaped.

About 30 species, paleotropical; 3 species in Gt. Nicobar Island.

- 1
  - a. Petiolar stipule a narrow wing, *ca* 10 mm broad, somewhat persistent, scar usually narrow .....1. *L. angulata*
  - b. Petiolar stipule obovate, over 10 mm broad, early caducous, scar broad .....2
- 2
  - a. Leaves 3-foliolate or 1 pinnate; corolla tube and anther lobes above 4 mm long; staminal tube 2.3 mm long or more .....2. *L. grandifolia*
  - b. Leaves 1-3 pinnate; corolla tube and anther lobes below 4 mm long; staminal tube below 2.2 mm long .....3. *L. indica*

1. ***Leea angulata*** Korth ex Miq., Ann. Mus. Bot. Lugd. Bat. 1: 97. 1963.

Shrubs or small trees, *ca* 5 m high. Leaves 2-3 pinnate, *ca* 15 cm long, rachis winged at base; leaflets numerous, hairy at nerve axil, cuneate to oblique at base, *ca* 12 x 15 cm, coarsely serrate; lateral nerves 4-10 pairs. Inflorescences solitary or geminate, 5-10 cm long. Berries *ca* 1.5 cm across; seeds *ca* 4 x 3 mm.

Common in coastal forests.

*Fl. & Fr.*: Feb.-Nov.

Galathea to Indira point, Campbell Bay, 38 km on north-south road.

India (Nicobar Islands); Java.

2. ***Leea grandifolia*** Kurz, in J. Bot. 13: 325. 1875.

Shrubs or small trees, *ca* 7 m high. Leaves *ca* 42 cm long; leaflets 3-7, ovate or elliptic, acute to acuminate at apex, rounded at base, *ca* 39 x 25 cm, shallowly serrate; lateral nerves 8-15 pairs. Inflorescences *ca* 8 cm long. Flowers white-grey, *ca* 5 mm long. Berries *ca* 1.2 cm across, ripen black; seeds greyish black.

Common in coastal forests.

*Fl. & Fr.*: Feb.-Nov.

18 km towards Indira point, 7 km on north-south road.

*Note*: Endemic to Nicobar Islands.

3. ***Leea indica*** (Burm.f.) Merr. in Philipp. J. Sc. Bot. 14: 245. 1919.

Shrubs or small trees, *ca* 10 m high. Leaves *ca* 50 cm long; leaflets oblong elliptic to ovate lanceolate, sharply acuminate at apex, cuneate at base, *ca* 23 x 10 cm, coarsely crenate serrate. Berries *ca* 1.2 cm across, ripens greenish brown, orange or bluish black.

Common in beach forests.

*Fl. & Fr.*: Throughout the year.

8 and 37 km on east-west road, Campbell Bay.

## SAPINDACEAE

About 15 genera and 2000 species, tropics; 5 genera and 6 species in Gt. Nicobar Island.

- 1 a. Leaves 3-foliolate .....1. *Allophylus*  
 b. Leaves simple or pinnate .....2
- 2 a. Seeds naked .....3. *Lepisanthes*  
 b. Seeds with sarcotesta and or ariloid or with thickened cup-shaped placenta below seed .....3
- 3 a. Indumentum of stellate hairs .....2. *Harpulia*  
 b. Indumentum of solitary hairs or plants glabrous .....4
- 4 a. Fruits spiny .....4. *Nephelium*  
 b. Fruits smooth to wrinkled when dry .....5. *Pometia*

### 1. ALLOPHYLUS L.

Shrubs or small trees. Racemes axillary, simple or branched. Flowers polygamo-dioecious, white or yellow. Sepals 4, in opposite pairs, 2 outer smaller. Petals 4. Disc usually with 4 glands, opposite petals. Stamens 8, inserted on receptacle inside disc. Ovary 2 lobed. Scizocarp indehiscent, 1 or 2 lobed, bright red; seeds with fleshy aril.

About 190 species, tropics & subtropics; 2 in Gt. Nicobar Island.

- 1 a. Leaflets coarsely serrate or crenulate along margins, subcoriaceous, puberulous or glabrescent along midribs and petioles; fruits globose .....1. *A. cobbe*  
 b. Leaflets serrate along margins in upper half and entire in lower half, coriaceous, glabrous; fruits obovoid to subglobose .....2. *A. dimorphus*

#### 1. *Allophylus cobbe* (L.) Raeusch. Nomencl. Bot. ed. 3. 108. 1797.

Small trees or shrubs, ca 3 m high. Leaves ca 20 cm long; leaflets ovate-elliptic or oblanceolate, acuminate at apex, attenuate or oblique at

base, *ca* 25 x 9 cm; lateral nerves 6-12 pairs. Flowers white, *ca* 1 mm across, fascicled in clusters or 3-4 on inflorescences axis. Fruits globose, *ca* 8 mm across, ripen orange.

Common in littoral and inland forests.

*Fl. & Fr.*: March-Nov.

13 & 16 km on north-south road, Indira point, 25 km on east-west road.

**2. *Allophylus dimorphus* Radlk. Sapind. Hol. Ind. 17: 56. 1879.**

Shrubs, *ca* 2 m high. Leaflets elliptic or rhomboid, acuminate at apex, cuneate and oblique at base, *ca* 10.5 x 4.8 cm. Racemes *ca* 3.5 cm long. Flowers greenish white, *ca* 1 mm long. Fruits subglobose.

Rare in inland forests.

*Fl. & Fr.*: Feb.-May.

Galathea, Pulobabi, 41 km on east-west road, Campbell Bay.

India (Nicobar Islands); Malay Peninsula, Philippines.

**2. *HARPULIA* Roxb.**

Medium sized trees. Leaves paripinnate. Flowers dioecious, regular, pentamerous. Sepals hairy. Petals longer than calyx. Stamens 5-8. Ovary 2-3 celled. Fruits 2-3 lobed, 2-seeded, shortly stipitate.

About 25 species, tropics to subtropics; 1 species in Gt. Nicobar Island.

***Harpulia cupanioides* Roxb., Fl. Ind. 2: 442. 1824.**

Trees. Leaflets 3-6 pairs, oblong-lanceolate, acuminate at apex, oblique cuneate or rounded at base, *ca* 20 x 7 cm; lateral nerves 8-15 pairs. Panicles axillary or pseudoterminal, *ca* 25 cm long. Flowers yellowish-white, *ca* 8 mm diam. Fruits reniform, transversely ellipsoid, *ca* 5 x 2.5 cm, truncate at base, 2-lobed, ripens yellowish-orange to red.

Rare in inland forests.

*Fl. & Fr.*: May-Dec.

13 km on north-south road.

### 3. LEPISANTHES Blume

Trees or shrubs. Leaves pari or imparipinnate. Inflorescences terminal panicles rarely cauliflorous. Flowers unisexual. Petals mostly distinctly clawed. Drupes sessile or sometimes shortly stipitate; seeds with shining brown to black testa.

About 40 species, tropics; 1 in Gt. Nicobar Island.

*Lepisanthes rubiginosa* (Roxb.) Leenh. in Blumea 17: 82. 1969.

Medium sized trees, ca 15 m high. Leaves ca 60 cm long; leaflets 5-13, broadly ovate oblong or oblong lanceolate, acuminate at apex, oblique or cuneate at base, ca 19 x 9 cm; lateral nerves 9-12 pairs. Panicles ca 27 cm long, pubescent. Flowers white, ca 3 mm diam. Drupes ovoid ellipsoid or globose, ca 2 x 1.2 cm, ripens dark-purple or scarlet.

Common in inland forests, especially along river sides.

*Fl. & Fr.*: Dec.-Jun.

Dogmar river, Alexandra river side, 38 km on north-south road.

### 4. NEPHELIUM L.

Medium sized trees, rarely shrubs. Leaves spirally arranged, paripinnate. Flowers polygamous, actinomorphic. Calyx cup-shaped, 4 to 6 merous. Petals small. Stamens 4-10. Pistil densely hairy, ovary warty, 2 or rarely 1 loculed. Fruits 1 or 2 lobed, warty to spiny, rarely smooth.

About 22 species, south-east Asia; 1 in Gt. Nicobar Island.

*Nephellium uncinatum* Radlk. ex Leenh. in Blumea 31: 421. 1986.

Trees, *ca* 60 m high; bark whitish, branchlets rusty tomentose. Leaves 4-8-jugate; leaflets glabrous on upper side, hairy on midrib and veins on lower side, elliptic or oblong lanceolate, cuneate at base, acuminate at apex, *ca* 10 x 3 cm; lateral nerves 9-20 pairs. Fruits red, solitary or with an undeveloped one, *ca* 3.5 x 2.5 cm, epicarp set with thick warts tapering to filiform appendages; 1 seeded.

Rare in inland forests.

*Fl.*: Not seen; *Fr.*: May-June.

India (Nicobar Islands); Borneo.

### 5. *POMETIA* J.R. & G. Forst.

Trees often with prominent buttresses. Leaves paripinnate. Inflorescences terminal or rarely axillary thyse. Flowers regular, 5-merous. Calyx disc to shallowly cup-shaped. Petals wanting. Disc annular with 5 pits for stamens. Stamens 5. Ovary 2 lobed. Fruits simple with scar of style at base; seeds covered by aril.

About 2 species and 7 formas distributed in Sri Lanka, Malaysia to Samoa, North Siam, South Yunnan, Indo-China and Formosa; 1 species and 1 forma in Gt. Nicobar Island.

*Pometia pinnata* J.R. & G. Forst. Cher. Gen. Pl. 110. t. 55. 1776. f. *glabra* (Blume) Jacobs in Reinwardtia 6: 125. 1962.

Trees, *ca* 30 m high. Leaves *ca* 90 cm long; leaflets basal pair like auricles, suborbicular to elliptic, *ca* 4 cm long, upper ones suborbicular to elliptic-oblong, rarely ovate, acuminate at apex, subcordate or cuneate at base, *ca* 33 x 11 cm, dentate; lateral nerves 8-25 pairs. Inflorescences *ca* 60 cm long. Flowers pale red or yellow, *ca* 2 mm across. Fruits oblong, *ca* 3.5 x 3 cm, ripens brownish black; seed 1, oblong with an oblique and truncate at apex.

Common in littoral forests.

*Fl. & Fr.*: Dec.-May.

41 km on east-west road, Laful.



**SABIACEAE**

About 4 genera and 46 species; in south-east Asia, China, Japan & Mexico to Brazil; 1 genus & 1 species in Gt. Nicobar Island.

**MELIOSMA Blume**

Trees. Leaves alternate, simple or imparipinnate. Inflorescences in terminal, sometimes axillary panicles. Flowers small, bisexual, irregular. Sepals 5-13. Petals 5, outer 3 larger, inner 2 smaller. Disc annular, 5 dentate. Stamens 5; 2 fertile, 3 sterile. Ovary 2 locular. Drupes oblong to globose, 1 loculed, 1 seeded; seedes exalbuminous.

About 25 species, south-east Asia & Central America; 1 in Gt. Nicobar Island.

**Meliosma lanceolata** Bl., Cat. Gew. Buitenz. 32. 1823.

Trees, ca 10 m high; branchlets pinkish brown, sparsely lenticellate. Leaflets 7-12, elliptic to oblong elliptic or rarely oblanceolate, caudate acuminate at apex, cuneate at base, ca 20 x 7 cm; midrib flat or sunken on upper surface, entire; lateral nerves 5-10 pairs. Panicles ca 120 cm long, pendulous, scattered rufouspubescent. Flowers white. Drupes oblong; endocarp ca 1 cm diam.

Rare in mixed evergreen forests.

*Fl. & Fr.*: June-Dec.

Laful, 26 km on east-west road.

India (Nicobar Islands); Sumatra & Borneo.

**ANACARDIACEAE**

About 60 genera and 600 species, tropics, also occurs in Mediterranean region, East Asia and America; 5 genera and 8 species in Gt. Nicobar Island.

- |   |                          |   |
|---|--------------------------|---|
| 1 | a. Leaves simple .....   | 2 |
|   | b. Leaves compound ..... | 4 |

- 2 a. Drupes on fleshy hypocarp .....5. *Semecarpus*
- b. Drupes not on fleshy hypocarp .....3
- 3 a. Drupes small, *ca* 1.2 cm in diam. ....1. *Buchanania*
- b. Drupes large, *ca* 10 cm in diam. ....4. *Mangifera*
- 4 a. Carpels 5, ovary 5-celled .....2. *Dracontomelon*
- b. Carpels 3, ovary 1-celled .....3. *Lannea*

### 1. **BUCHANANIA** Spreng.

Trees. Panicles terminal and axillary. Flowers bisexual. Calyx 3-5 lobed, persistent. Petals 4-5, recurved. Disc 5-lobed. Stamens 8-10, inserted at base of disc. Carpels free, seated in the cavity of disc, 1 fertile, 1-celled, 1-ovuled, the rest of them empty. Drupes tipped by style base; seeds gibbous.

About 25 species, tropics; 1 in Gt. Nicobar Island.

***Buchanania splendens*** Miq., Fl. Ind. Bat. Suppl. 1: 524. 1861.

Trees, *ca* 30 m high. Leaves oblanceolate or elliptic-lanceolate, acuminate at apex, cuneate at base, *ca* 30 x 8 cm; lateral nerves 7-20 pairs; petioles stout. Panicles *ca* 18 cm long. Flowers pale yellow, *ca* 2 mm long. Drupes *ca* 1.2 cm diam., with a lateral median ridge on pericarp, woody when ripe, purple black; 1 seeded.

Rare in littoral forests.

*Fl. & Fr.*: Aug.-July.

Way to Lakshman beach.

India (Andaman & Nicobar Islands); Malay Peninsula, Indonesia.

### 2. **DRACONTOMELON** Blume

Trees. Leaves spirally arranged. Panicles axillary and subterminal. Flowers pentamerous. Sepals free. Petals free. Disc cup-shaped, crenate. Stamens inserted at base of disc. Ovaries sessile, hairy, 1-ovuled; styles

connate by their obtuse, stigmatiferous tips. Drupes depressed, globose, pyrenes flattened; seeds compressed.

About 8 species, in Asia to West Polynesia & Fiji; 1 species in Gt. Nicobar Island.

**Dracontomelon dao** (Blanco) Merr. & Rolfe. in Philipp. J. Sci. 3: 108. 1908.

Trees, *ca* 30 m high; young shoots tawny pubescent. Leaves *ca* 45 cm long; leaflets 10-20, elliptic-oblong or ovate-oblong, acuminate at apex, obliquely rounded at base, *ca* 20 x 8.5 cm; lateral nerves 10-17 pairs. Panicles *ca* 27 cm long, pubescent. Flowers pale-white, *ca* 8 mm across. Drupes *ca* 3 cm diam., with persistent calyx, ripens yellow.

Rare in inland forests.

*Fl. & Fr.*: Aug.-April.

Galathea river bank.

### 3. **LANNEA** A. Rich.

Trees. Spikes crowded on twig apices or on short axillary shoots, in axils of fallen leaves. Flowers 4(5) merous, unisexual. Calyx persistent. Petal imbricate. Disc annular. Stamens attached at outer base of disc. Ovary sessile; styles 3-4 short, truncate. Drupes flattened laterally, 1 seeded.

About 70 species, tropics; 1 in Gt. Nicobar Island.

**Lannea coromandelica** (Houtt.) Merr. in J. Arnold. Arbor. 19: 353. 1938.

Trees, *ca* 10 m high. Leaves crowded at the tips of branchlets; leaflets ovate-oblong, *ca* 12 x 4 cm, glabrous. Panicles terminal or subterminal. Flowers purplish or yellowish, tinged with red. Drupes reniform, *ca* 1 x 0.6 cm, compressed, incipient fruits green, ripen red.

Common in littoral forests.

*Fl. & Fr.*: March-June.

Laful, 37 km on north-south road.

#### 4. MANGIFERA L.

Trees. Panicles terminal and in upper leaf axils, many flowered. Flowers 4-6 merous, polygamous. Sepals free. Petals much larger than calyx with 3-5 ridges like, basally connate nerves. Disc lobed, tuberculate. Fertile stamens 1(2); staminodes 2-5. Ovary sessile, 1-celled, 1-ovuled; style lateral. Drupes large, fleshy, pyrene compressed, fibrous, 1-seeded.

About 70 species, in Sri Lanka, Myanmar, India, Thailand, Indo-China, Malaysia to Solomon Islands; 3 species in Gt. Nicobar Island.

- 1 a. Sepals glabrous outside .....2. *M. nicobarica*
- b. Sepals pubescent outside .....2
- 2 a. Stamens 4-5, 1 fertile; ovary globose; drupes ellipsoid blunt .....1. *M. camptosperma*
- b. Stamens 1; ovary obliquely and broadly ovoid; drupes ovoid, acuminate .....3. *M. sylvatica*

1. ***Mangifera camptosperma*** Peierle, Fl. Forest Cochinch. t. 363a. 1897.

Trees, ca 40 m high; bark greyish; branchlets pale yellowish-brown. Leaves oblong, oblanceolate or elliptic-lanceolate, acuminate to caudate at apex, cuneate at base, ca 45 x 8 cm; lateral nerves 15-25 pairs. Panicles ca 30 cm long, densely pubescent. Drupes ca 9 x 8 cm, ripens yellow; seeds reniform, ca 8 x 3.5 cm.

Common in inland forests.

*Fl. & Fr.*: Jan.-July.

Campbell Bay to Chengappa Bay, Indira point, Dhar Bay.

2. ***Mangifera nicobarica*** Kosterm. in Kosterm. & Bompard., Monogr. Mangoes. 1993.

Trees, ca 20 m high; branchlets greyish-yellow, lenticellate. Leaves elliptic to oblanceolate, acute to shortly acuminate at apex, cuneate at base,

ca 14 x 4.5 cm; lateral nerves 8-12 pairs. Panicles ca 15 cm long. Flowers white.

Rare in dense mixed forests.

*Fl.*: Nov.-Dec.; *Fr.*: Not seen.

Galathea bridge on east-west road.

India (Great Nicobar Island); Malay Peninsula, Borneo, Sumatra.

**3. *Mangifera sylvatica* Roxb., Fl. Ind. 2: 438. 1824.**

Trees, ca 4.5 m high. Leaves elliptic-lanceolate, acuminate at apex, cuneate at base, ca 36 x 12.5 cm; lateral nerves 13-30 pairs. Panicles ca 9 cm long. Flowers white or yellow, ca 2.5 cm across. Drupes ca 10 cm long, ripen yellow.

Rare in inland forests.

*Fl. & Fr.*: Feb.-April.

Koshin Don.

**5. SEMECARPUS L.f.**

Trees. Panicles in upper leaf axils and terminal. Flowers 5-6 merous, polygamous or dioecious. Sepals deciduous. Petals free. Disc broad, annular, densely hairy. Stamens inserted at base of disc. Styles 3; stigma large, lobed. Drupes fleshy, compressed, 1-seeded, testa coriaceous.

About 60 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves ca 30 cm long; ovary pubescent .....2. *S. prainii*
- b. Leaves ca 60 cm long; ovary glabrous .....1. *S. kurzii*

**1. *Semecarpus kurzii* Engl. in DC., Monog. Phan. 4: 478. 1883.**

Trees, ca 20 m high. Leaves oblong lanceolate or elliptic lanceolate, shortly acuminate or emarginate at apex, cuneate at base, ca 60 x 13 cm;

lateral nerves 11-30 pairs. Flowers greenish to pale yellowish, *ca* 1.2 cm across. Drupes obliquely ovoid, *ca* 4.5 x 3 cm, ripens orange with a deep furrow on one side and a ridge on the other, hypocarp obconical when young, 1 cm across, slightly discoid when mature.

Rare in littoral & inland forests.

*Fl. & Fr.*: July-May.

Laful, 8, 36, 38 km on east-west road, 4 km on north-south road.

*Note*: Endemic to Andaman & Nicobar Islands.

**2. *Semecarpus prainii* King, in J. As. Soc. Beng. 65(2): 511. 1896.**

Trees, *ca* 25 m high. Leaves lanceolate to oblanceolate, abruptly acuminate or obtuse at apex, cuneate at base, *ca* 30 x 9 cm; lateral nerves 18-26 pairs. Panicles *ca* 40 cm long, lateral branches *ca* 18 cm long. Flowers white, *ca* 1 cm across. Drupes obliquely and broadly obovoid, *ca* 2.2 x 1.4 cm, greenish yellow to scarlet, hypocarp obconical.

Rare in littoral forests.

*Fl. & Fr.*: April-Feb.

Baludera.

India (Andaman & Nicobar Islands); Malay Peninsula.

## CONNARACEAE

About 16 genera and 35 species, tropics; 2 genera and 5 species in Gt. Nicobar Island.

- 1 a. Petals glabrous; pistils 5 merous, heterotristylous; ovary oblique-ovoid; calyx accrescent in fruits; seeds ellipsoid to subglobose .....2. *Rourea*
- b. Petals glandular-ciliate along margin, below middle & apex; pistil one, heterodistylous; ovary globose; calyx not accrescent in fruits; seeds more or less bean shaped .....1. *Connarus*

1. **CONNARUS L.**

Lianas or small trees. Leaves imparipinnate; leaflets pellucid glandular punctate. Inflorescences terminal and often in upper leaf-axils, paniculate. Flowers bisexual, 5-merous. Sepals slightly confluent at base. Petals free. Stamens connate at base. Ovary and style densely pilose. Fruits compressed, pericarp dry.

About 100 species, pantropical; 4 in Gt. Nicobar Island.

- |   |                                                       |                            |
|---|-------------------------------------------------------|----------------------------|
| 1 | a. Petals glabrous outside .....                      | 2                          |
|   | b. petals pubescent outside .....                     | 3                          |
| 2 | a. Fruits 1.5-3.8 x 1-2 cm, pericarp thin .....       | 4. <i>C. semidecandrus</i> |
|   | b. Fruits 3.5-7 x 2-4 cm, pericarp thick, woody ..... | 3. <i>C. planchonianus</i> |
| 3 | a. Fruits sessile .....                               | 1. <i>C. nicobaricus</i>   |
|   | b. Fruits stipitate .....                             | 2. <i>C. paniculatus</i>   |

1. **Connarus nicobaricus** King in J. As. Soc. Beng. 66(1): 6. 1897.

Scandent shrubs. Leaves *ca* 25 cm long; leaflets 3-5, lateral *ca* 11.3 cm long, terminal larger, broadly ovate, apex with short blunt point, base broad and rounded; lateral nerves 6-7 pairs. Panicles as long as leaves, rusty pubescent. Flowers *ca* 3.5 mm long, crowded near ends of branchlets. Follicles subcompressed, obtuse, *ca* 3.7 x 2.5 cm, faintly striate longitudinally, pubescent inside.

*Distr.*: South Nicobar Island (King, *l.c.*).

*Note*: Endemic to Great Nicobar Island.

Description is based on literature.

2. **Connarus paniculatus** Roxb., Fl. Ind. 3: 139. 1832.

Lianas or trees, *ca* 10 m high; branches pinkish brown, minutely tomentose at tip, lenticellate. Leaves 2-3 jugate or 3 foliolate; leaflets elliptic or ovate, blunt to shortly acuminate at apex, rounded at base, *ca* 17 x 9.5 cm; lateral nerves 4-8 pairs. Flowers light brown, *ca* 6 mm long. Fruits *ca* 3 x 2.2 cm, green, ripens orange or yellow.

Common in inland forests.

*Fl. & Fr.*: July-May.

Galathea river mouth.

3. **Connarus planchonianus** Schellenb. in Kew Bull. 375. 1927.

Lianas, *ca* 5 m high. Leaves 1-2 jugate, usually 5-foliolate; leaflets oblong to lanceolate or elliptic, obtusely acuminate at apex, cuneate or rounded at base, *ca* 16 x 9 cm, entire; lateral nerves 4-8 pairs. Flowers white, *ca* 2 mm long. Folicles compressed, ellipsoid to obovoid, green, turning yellowish orange.

Common on littoral forests, also slopes of inland forests.

*Fl. & Fr.*: Aug.-Oct.

Campbell Bay, Alexandra river bank, 36 km on east-west road.

India (Nicobar Islands); Malay Peninsula, Myanmar, Java.

4. **Connarus semidecandrus** Jack. Mal. Misc. 2(7): 39. 1822.

Scandent shrubs, branchlets pubescent. Leaves *ca* 22 cm long, 3-5 foliolate; leaflets elliptic lanceolate or elliptic oblong, blunt to acuminate at apex, cuneate at base, *ca* 20 x 8 cm; lateral nerves 5-12 pairs. Flowers white or yellowish, *ca* 3 mm long. Fruits ovoid-oblong, compressed, pointed, striate; seeds glossy, black.

Rare in inland forests.

*Fl. & Fr.*: April-Sept.

41 km on east-west road.

2. **ROUREA** Aubl. (*nom. cons.*)

Lianas or erect shrubs. Leaves imparipinnate. Inflorescences paniculate. Flowers 5 merous. Sepals 5, minutely pubescent. Petals



lanceolate, 2-3 times as long as sepals, deciduous. Stamens 10, confluent at base. Fruits with persistent calyx.

About 100 species, tropics; 1 in Gt. Nicobar Island.

**Rourea minor** (Gaertn.) Leenh. in Steenis Fl. Males., ser. I. 5: 514. 1958.

Lianas. Leaves *ca* 25 cm long, pinnate; leaflets 5-11, suborbicular, ovate to lanceolate, oblong or elliptic, acuminate to caudate at apex, cuneate or oblique at base, *ca* 14 x 6.5 cm, entire; lateral nerves 2-8 pairs. Inflorescences *ca* 15 cm long paniced. Flowers white, *ca* 5 mm across. Fruits with persistent calyx, *ca* 25 x 7 mm; seed-1.

Rare in inland forests.

*Fl. & Fr.*: June-Sept.

34 km on north-south road, 39.3 km on east-west road.

### FABACEAE

About 480 genera and 12,000 species, throughout tropics, subtropics & warm temperate regions; 10 genera & 14 species in Gt. Nicobar Island.

- 1 a. Stamens all free or connate at base only .....9. *Sophora*
- b. Stamens distinctly connate higher up in 1-2(-3) bundles .....2
- 2 a. Leaves paripinnate; leaflets opposite .....8. *Sesbania*
- b. Leaves simple, unifoliolate, imparipinnately 3-many foliolate, or sometimes digitately 3(-7) foliolate .....3
- 3 a. Pod jointed when ripe and transversely septate, usually breaking up into 1-seeded segment .....4
- b. Pod not jointed, 1-many seeded .....5
- 4 a. Inflorescences umbellate, axillary; flowers solitary in one primary bract .....2. *Dendrolobium*
- b. Inflorescences terminal & leaf-opposed, varied; flowers rarely solitary in one primary bract .....4. *Desmodium*
- 5 a. Leaves with opposite leaflets; pods usually dehiscent .....6
- b. Leaves with alternate leaflets; pods indehiscent .....7

- 6 a. Trees; pods woody ovoid-oblong; inflorescences racemose .....7. *Pongamia*
- b. Scandent shrubs; pods thin, winged, oblong; inflorescences paniculate ...  
.....3. *Derris*
- 7 a. Calyx and pods covered with bristles .....6. *Mucuna*
- b. Calyx & pods not as above .....8
- 8 a. Style bearded below stigma; petals equal; stamens diadelphous ....10. *Vigna*
- b. Style not bearded below stigma; petals subequal; stamens monadelphous  
.....9
- 9 a. Herbaceous climbers; calyx with 2 upper lips much wider and longer than  
the lowers 3; stipules swollen at the insertion .....1. *Canavalia*
- b. Woody lianas; calyx not as above; stipules lanceolate .....5. *Dioclea*

### 1. CANAVALLIA Adans.

Twining or erect herbs. Leaves 3-foliolate. Flowers large, purple, pink or white in raceme-like thyrses. Calyx tubular, 2-lipped. Corolla much exserted. Stamens monadelphous. Style beardless. Pods linear flat & woody, mostly dehiscent, ribbed on both sides of the upper sutures; many seeded.

About 50 species, tropical & subtropical regions; 2 in Gt. Nicobar Island.

- 1 a. Leaflets obovate, obtuse or emarginate at apex, cuneate at base .....  
.....2. *C. maritima*
- b. Leaflets ovate, acute or acuminate at apex, rounded or subcordate at base  
.....1. *C. cathartica*

#### 1. *Canavalia cathartica* Thou. in Desv. Bot. 1: 81. 1813.

Scandent or twining herbs. Leaves 3-foliolate, thinly clothed with appressed hairs. Racemes axillary, with long peduncles. Flowers pink, ca 2.5 cm long. Pods thick broadly turgid, ca 20 x 4 cm, ribbed on sides of the upper sutures; 6 seeded.

Common in beaches.

*Fl. & Fr.*: Dec.-April.

Campbell Bay, 4 and 37 km on north-south road.

2. **Canavalia maritima** (Aubl.) Thou., J. Bot. Desv. ser. 2:1. 80. 1813.

Creeping herbs. Leaves 3-foliolate; leaflets thinly clothed with appressed hairs. Racemes axillary, with long peduncles, few flowered. Flowers red. Pods *ca* 12.5 x 2.5 cm, glabrous, 4-6 seeded.

Common on sandy sea-shores.

*Fl. & Fr.*: Sept.-March.

Laful.

2. **DENDROLOBIUM** (Wight & Arn.) Benth.

Shrubs or small trees, leaves 3(1)-foliolate; stipules free or connate. Racemes of umbels, axillary or short pedunculate. Flowers pedicellate, bracteate. Calyx campanulate, 4-lobed. Corolla white or pale yellow. Stamens monadelphous. Pods dehiscent, more or less moniliform, but rarely reticulate veined; seeds transversely oblong-elliptic or quadrate.

11 species, Asia, Malaysia, New Guinea, Australia & Africa; 1 in Gt. Nicobar Island.

**Dendrolobium umbellatum** (L.) Benth. in Miq., Pl. Jungh. 216. 1852.

Shrubs, *ca* 4 m high; branches densely covered with hairs. Leaves tri-foliolate; leaflets subcoriaceous, ovate-oblong, *ca* 8 x 5 cm, upper surface glabrous, lower puberulous, obtuse at apex; petioles *ca* 4 cm long. Flowers axillary, in loose umbels. Calyx with dense silky hairs. Corolla *ca* 10 mm long. Pods *ca* 4 x 0.5 cm, 4-5 jointed, segments broadly oblong, constricted on both sutures, with appressed hairs & reticulate veins.

Common in sea-shores & littoral forests.

*Fl. & Fr.*: Nov.-March.

Lakshman beach, Galathea Bay, Campbell Bay.

20 km on north-south road.

3. **DERRIS** Lour.

Climbers, rarely trees. Flowers copious, usually fascicled, showy, in axillary or terminal racemes or panicles. Calyx campanulate, nearly truncate. Corolla much exserted. Stamens usually monadelphous of the upper one free. Ovary sessile few ovuled; style incurved, filiform; stigma capitate. Pods rigid, thin, flat, indehiscent, oblong, if one seeded strap shaped, if few seeded, with a distinct wing down the upper & both sutures.

About 50 species, tropics; 3 in Gt. Nicobar Island.

- 1 a. Vexillary stamens free throughout; flowers paniced..... 2. *D. heptaphylla*
- b. Vexillary stamens united with the others; flowers fascicled on turgid nodes.....2
- 2 a. Pods glabrous; flowers pale pink .....3. *D. trifoliata*
- b. Pods pubescent; flowers white tipped pink .....1. *D. elegans*

1. **Derris elegans** Benth. in Miq. Pl. Jungh. 1: 252. 1852. var. **elegans** f. **elegans**.

Lianas; branchlets pubescent. Leaves *ca* 30 cm long; leaflets-5 (rarely 3 to 7), terminal one largest, oblong-lanceolate, *ca* 20 x 10 cm, glabrous above, red pubescent beneath, nerves 6-8 pairs. Racemes *ca* 7.5 cm long, villous. Calyx pubescent, black purple. Corolla white tipped pink; standard orbicular-oblong, eglandular. Pods rounded oblong *ca* 3.75 x 2.5 cm, flat pubescent; seeds 1(2).

Rare in littoral forests.

*Fl. & Fr.*: Nov.-March.

5 km on north-south road, Campbell Bay.

India (A & N Island); Malaysia, Myanmar, Indonesia, Philippines.

2. **Derris heptaphylla** (L.) Merrill, Interpr. Rumph., Herb. Amboin. 273. 1917.

Woody sarmentose shrubs, *ca* 15 m high. Leaves *ca* 40 cm long; leaflets 5-7, ovate to ovate-oblong, shortly cuspidate at apex, round or deltoid at base, *ca* 12 x 7.5 cm; nerves 5-7 pairs. Panicles of long racemes, *ca* 30 cm long. Flowers distant. Calyx cup-shaped, silky, *ca* 0.5 cm long, green. Corolla *ca* 1.5 cm long; keel & wings white; standard orbicular, base cordate apple green, ecallose. Stamens diadelphous. Pod strap-shaped, sinuate between the seeds, upper suture narrow-winged, *ca* 20 x 3.75 cm.

Common in inland forests.

*Fl. & Fr.*: Oct.-March.

Alexandra river, Lakshman beach, 5 and 35 km east-west road, 37.5 km on north-south road.

### 3. *Derris trifoliata* Lour., Fl. Cochinch. 433, 1790.

Lianas; bark covered with lenticels. Leaves *ca* 120 cm long; leaflets 3-5, subcoriaceous, oblong 5-10 cm long, subacute, stalked. Inflorescences in short peduncled, axillary racemes, sometimes paniced *ca* 10 cm long. Flowers 1.2 cm long, white. Calyx campanulate, minutely toothed, glabrous. Corolla red. Pods oblong, 4 x 2.5 cm, thin, flat, sessile, glabrous.

Common in coastal forests.

*Fl. & Fr.*: Feb.-March.

Baludera, Nevy Dera, Alexandra river, Jhow Nalah towards Nevy Dera.

### 4. *DESMODIUM* Desv.

Herbs or undershrubs. Leaves 1, 3 or 5 foliate; stipules spinescent, persistent. Flowers small in axillary or terminal racemes. Calyx campanulate, upper 3 often sub-connate. Corolla white or purplish. Stamens 10, diadelphous rarely monadelphous. Ovary sessile or stalked; style incurved; stigma minute, capitate. Pods of several, 1-seeded joints, compressed.

About 250 species mostly in temperate & tropical regions; 2 in Gt. Nicobar Island.

- 1 a. Leaves 1-foliolate .....2. *D. zonatum*  
 b. Leaves 3-foliolate .....1. *D. laxiflorum*

1. ***Desmodium laxiflorum* DC.**, Ann. Sci. Nat. Paris 4: 100. 1825.

Undershrubs, *ca* 2 m high; branches clothed with dense short hairs. Leaves 3-foliolate; leaflets membranous, ovate or broadly oblong, acute or sometimes obtuse at the apex, *ca* 7 x 5 cm, pubescent on upper surface with minutely appressed hairs beneath; petioles *ca* 2 cm long. Racemes axillary & terminal. Calyx densely hairy. Pods *ca* 3 x 0.2 cm, 5-7-jointed, constricted on both sutures.

Common in hill slopes, inland forests.

*Fl. & Fr.*: Oct.-Jan.

27.8 km & 40 km on east-west road.

2. ***Desmodium zonatum* Miq.**, Fl. Ind. Bat. 1, 1: 250. 1850.

Herbs, *ca* 60 cm high. Leaves simple; blades subcoriaceous, upper glabrous, lower pubescent, ovate, or oblong lanceolate, acute at apex; petioles *ca* 2 cm long, pubescent. Racemes terminal, *ca* 10 cm long. Flowers 1-2, remotely arranged. Calyx pubescent, teeth deltoid. Corolla pink. Pods *ca* 6 x 0.2 cm, pendulous, 4-8 jointed, constricted on both sutures.

Rare in inland forests.

*Fl. & Fr.*: Sept.-March.

Alexandra river.

## 5. **DIOCLEA** Kunth.

Woody climbers. Leaves 3-foliolate. Flowers often appearing without the leaves in elongate racemes, blue or pink. Calyx campanulate. Corolla large; keel incurved not beaked. Stamens monadelphous. Ovary sessile, few ovuled; style incurved, glabrous; stigma capitate. Pod oblong turgid, 1-2 seeded, flattened along the upper suture.

About 18 species, tropical America; 1 in Gt. Nicobar Island.

**Dioclea hexandra** (Ralph) Mabberly in Manilal, Bot. Hist. Hort. Malab. 98. 1980.

Lianas, *ca* 10 m high. Leaves *ca* 22.5 cm long, 3-foliolate; leaflets subcoriaceous, glabrous, ovate acuminate, base rounded truncate, *ca* 12.5 x 7.5 cm; petioles *ca* 10 cm long. Racemes *ca* 30 cm long. Flowers subsessile. Calyx campanulate. Corolla pink, or violet and white. Pods 1 or 2 seeded, oblong-obovate, flattened, *ca* 10 x 5 cm, thick along the top edge, yellowish silky, becoming glabrous; seeds discoid, dark brown, *ca* 2 cm in diam.

Rare along the water streams.

*Fl. & Fr.*: Oct.-March.

Laful, 25 km on east-west road, along Galathea river side.

India (Andaman & Nicobar Islands), Thailand, Malay Peninsula, Java.

## 6. MUCUNA Adanson

Climbers. Leaves large, 3-foliolate. Flowers large, dark purple. Calyx campanulate, bristly, upper teeth connate lower longer. Corolla much exserted; a standard half as long as keel. Stamens diadelphous. Ovary sessile; ovules many; style incurved, beardless. Pods oblong or linear, thick, large, covered with very irritating bristles.

About 100 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Mucuna gigantea** (Willd.) DC., Prodr. 2: 405. 1825.

Woody climbers. Leaves *ca* 22.5 cm long, with subcoriaceous leaflets; leaflets oblong, cuspidate at apex, cuneate at base, laterals oblique, 12 x 6.75 cm. Inflorescences short umbelliform corymbs. Flowers pale yellow. Calyx green with pungent bristles. Corolla yellow, 2-3 cm long. Pods broadly winged along the sutures, *ca* 14 x 5 cm, flattened, densely covered with deciduous brownish irritating bristles.

Rare in beach forests.

*Fl. & Fr.*: Nov.-March.

Pulokunio.

## 7. PONGAMIA Vent.

Trees. Leaves odd-pinnate. Inflorescences racemes. Flowers pink. Calyx campanulate subtruncate. Corolla much exserted; standard broad silky, keel blunt, petals cohering at the tip. Stamens monadelphous. Ovary sub-sessile, 2-ovuled; style glabrous. Pods woody, flattened, oblong, indehiscent.

Species 1, Indo-Malaya to S. China & Ryukyus, extended to N. Australia; 1 species in Great Nicobar Island.

*Pongamia pinnata* (L.) Pierre, Fl. For. Cochich. t. 385. 1899.

Trees, *ca* 8 m high. Leaves *ca* 15 cm long, leaflets 5-7, elliptic or ovate-oblong, glabrous, acuminate at apex, *ca* 10 x 6 cm. Flowers 1.5 cm long, pinkish white in axillary racemes. Calyx brownish, pubescent, truncate. Corolla light purple. Pods woody, slightly falcate, turgid *ca* 6 x 3 cm, indehiscent, strongly flattened; 1-seeded.

Common in beach forests.

*Fl. & Fr.*: Feb.-April.

Campbell Bay, Koshin Don, Laful.

## 8. SESBANIA Scop.

Herbs or small trees. Leaves evenly pinnate. Flowers in terminal and axillary racemes, yellowish, red or orange. Calyx campanulate, 2-lipped or 5-toothed. Corolla exserted. Petals all clawed; standard broad, keel blunt or curved beaked. Stamens diadelphous. Pods elongate linear septate between the seeds, dehiscent; seeds many.



About 40 species, cosmopolitan 1 in Gt. Nicobar Island.

**Sesbania sesban** (L.) Merr., Philippine J. Sci. Bot. 7: 235. 1912.

Shrubs, *ca* 3 m high, glabrous. Leaves pinnate *ca* 12 cm long; leaflets 20-40, linear-oblong, apiculate or mucronate, *ca* 2 cm long. Flowers 4-12 in axillary racemes. Calyx campanulate. Petals yellow. Pods linear, pendulous, twisted, *ca* 20 cm long.

Rare along road sides.

*Fl. & Fr.*: Nov.-March.

Link road, Campbell Bay.

## 9. SOPHORA L.

Trees or shrubs. Leaves odd-pinnate. Flowers showy, yellow or violet purple. Racemose or paniced. Corolla much exserted. Stamens free, nearly to base. Pods moniliform, joints turgid.

About 50 species, tropical & temperate regions; 1 in Gt. Nicobar Island.

**Sophora tomentosa** L., Sp. Pl, 373, 1753.

Small trees; branchlets greyish, tomentose. Leaves *ca* 15 cm long; leaflets 15-19, subcoriaceous, obovate, 2.5-5 cm long, obtuse, thinly greyish tomentose above, densely so beneath. Racemes terminal, *ca* 15 cm long. Flowers yellowish. Pedicels densely sericeous, articulate below the calyx. Calyx obliquely truncate. Corolla bright yellow. Pods *ca* 15 cm long, finely tomentose, separated by as many narrow joints, each joint separated by a stipe as long as itself; 6-8 seeded.

Rare along roadsides.

*Fl. & Fr.*: Nov.-May.

Chengappa Bay, Koshin Don, Dongi Nallah, Pulokunio.

10. **VIGNA** Savi

Climbers. Leaves 3-foliolate; stipules persistent. Flowers yellow, white or purple, in clustered racemes. Calyx campanulate. Corolla much exserted. Stamens diadelphous. Pods long & slender; many seeded.

About 150 species, tropics & subtropics; 1 in Gt. Nicobar Island.

**Vigna marina** (Burm.f.) Merr. Inter. Herb. Amb. 285. 1917.

Climbers; stems glabrous. Leaves 3-foliolate; leaflets broadly ovate to oblong-ovate, *ca* 6 cm long, obtuse at apex. Scapes axillary erect, *ca* 10 cm long, with many racemosely arranged flowers at the top. Flowers yellow *ca* 18 mm. Pods subcylindrical, reflexed, *ca* 5 cm long, 5-6 seeded.

Common in sea-shores.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, Chenpappa Bay, Laful, Navy Dera.

**CAESALPINIACEAE**

About 152 genera and 2800 species, tropics and subtropics; 5 genera & 7 species in Gt. Nicobar island.

- 1 a. Leaves simple, apex acute, emarginate or deeply bilobed or consisting of 2 free leaflets .....2
- b. Leaves compound .....3
- 2 a. Main nerves-1, very asymmetrically placed; fruits not or shortly stipitate, arcuate-ovoid or subreniform, indehiscent .....3. *Cynometra*
- b. Main nerves 3-4, palmate, arcuate; fruits stipitate, oblong or linear, dehiscent .....1. *Bauhinia*
- 3 a. Leaves pinnate .....4. *Intsia*
- b. Leaves bipinnate .....4
- 4 a. Fruits with a single seed at the base and oblique winged above .....5. *Peltophorum*
- b. Fruits not winged .....2. *Caesalpinia*

**1. BAUHINIA L.**

Trees, shrubs or climbers with circinate tendrils. Leaves consisting of 2 lobes, palmately ribbed. Flowers showy in simple or paniced, often corymbose racemes. Calyx turbinate, cylindric or spathaceous with 5 teeth or lobed. Petals 5, distinctly clawed, imbricate. Stamens 10, or reduced to 5 or 3. Pods oblong or linear, flattened, woody, dehiscent; seeds orbicular.

About 200 species, tropics; 1 in Gt. Nicobar Island.

**Bauhinia stipularis** Korth. in Venh. nat. Gescl. Ned. Bezitt. Bot. 92. 1841; Bandopadhyay & B.D. Sharma in J. Bomb. Nat. Hist. Soc. 91(1): 160. 1994.

Climbing shrubs; tendrils circinate, simple, woody; young shoots densely brown-hirsute, slender, *ca* 10 cm long with many imbricating stipules. Leaves ovate, shallowly cordata at base, *ca* 14 x 12 cm, glabrous; lobes 2-5 cm long, acute to sub-acute; nerves 11-13, ridged beneath, puberulous; petioles *ca* 9 cm long, glabrous. Inflorescences simple corymbose racemes, 8-10 x 10-12 cm; rachis puberulous with scars of fallen bracts. Flowers *ca* 6 cm across, white to light cream coloured. Fertile stamens 3; staminodes 2 or 3. Ovary shortly stiped, flattened, silky tomentose, many ovuled; style *ca* 1.8 cm long; stigma swollen, peltate.

Rare in inland forests.

*Fl.*: June-July.

15 km on east-west road; 18 km on north-south road; Galathea Bay to Pulobaha Bay.

India (Great Nicobar Island); Sumatra.

**DOUBTFUL TAXA:**

**Bauhinia ferruginea** Roxb., Fl. Ind. 2: 331. 1832.

The plant record from Great Nicobar by Kurz. (1876) is doubtful.

## 2. CAESALPINIA L.

Shrubs or woody climbers, usually prickly. Leaves large, bipinnate. Flowers often showy, in lax racemes, in the upper leaf axils or in dense panicles at ends of branches. Calyx deeply cleft, nearly to the base, 5 lobed. Petals usually yellow. Stamens 10, filaments glandular or villous at base. Ovary sessile, few ovuled; style persistent. Pods prickly or not, oblong, flattened or turgid; seeds ovate or orbicular.

About 60 species, tropics & subtropics; 2 in Gt. Nicobar Island.

- 1 a. Ovary glabrous; pods flat, woody not spiny; 1-seeded .....2. *C. cristata*  
 b. Ovary bristly; pods turgid, not woody, spiny, 1-3-seeded .....1. *C. bonduc*

1. **Caesalpinia bonduc** (L.) Roxb., Fl. Ind. ed. 2. 2: 362. 1832, *pro parte excl. pl. descr. emend.*

Climbers armed with straight or recurved prickles. Leaves *ca* 50 cm; pinnae 3-9 pairs; leaflets 8-12 pairs; ovate lanceolate, *ca* 4 x 2 cm, acute or rounded & mucronulate at the top, unequal at base. Racemes supraaxillary, sometimes branched, some with male other with female flowers (anthers without pollen). Pedicels *ca* 6 mm, pubescent. Petals yellow. Staminal filaments hairy. Ovary hairy & bristly. Pods stalked, elliptic *ca* 8 x 4 cm, bristly; seeds 2, subglobular, *ca* 20 mm, greyish.

Common in coastal forests.

*Fl. & Fr.*: July-Nov.

Chengappa Bay, Campbell Bay.

2. **Caesalpinia cristata** L., Sp. Pl. 380. 1753.

Climbers, armed with recurved prickles. Stipules awl-shaped. Leaves *ca* 20 cm long; pinnae 2-4 pairs; leaflets 2-4 pairs, opposite, elliptic-ovate or lanceolate, *ca* 6 x 3 cm, obtuse or shortly acuminate at top, rounded or cuneate at base. Racemes axillary, and combined into terminal panicles. Flowers yellow. Pods stalked, subelliptic or rhombic in outline, *ca* 7 x 3.5 cm, obtuse to acute at the top & base; seeds 1 flattened subreniform 12 x 20 mm.

Common in littoral forests.

*Fl. & Fr.*: Sept.-Jan.

Koshin Don, Campbell Bay.

### 3. CYNOMETRA L.

Trees or shrubs. Flowers small in short, often fasciculate, axillary or cauliflorous racemes. Receptacle short. Sepals 4-5, reflexed during anthesis. Petals 5, oblanceolate not exserted. Stamens 10, free. Ovary 2-ovuled; style filiform. Pods indehiscent, arcuate ovoid or subreniform, most often woody valved, smooth or rugulose.

About 150 species, pantropic; 1 in Gt. Nicobar Island.

***Cynometra ramiflora* L., Sp. Pl. 382. 1753.**

Trees, *ca* 30 m high. Leaves with 1-2 pairs of leaflets; rachis *ca* 7 cm, glabrous or pubescent; leaflets orbicular or elliptic, *ca* 6 x 3 cm, apex acute. Racemes axillary *ca* 2.5 cm long. Flowers small. Pods ovate-elliptic, with shallowly rugose to undulated surface & subterminal beak, *ca* 5 x 4 cm.

Rare along the streams.

*Fl. & Fr.*: Nov.-March.

Galathea river bank.

### 4. INTSIA Du Petit-Thouars

Trees. Inflorescences terminal or lateral racemes or panicles. Receptacle elongate. Sepals 4. Petals 1, orbicular, clawed. Stamens 3, fertile; filaments long, connate at base with 4-7 staminodes. Pods flat, thin, 2 valved seeds few, flat, without aril.

About 7 species from Madagascar to the Pacific Islands; 1 in Gt. Nicobar Island.

***Intsia bijuga* (Colebr.) O.Kunze, Rev. Gen. Pl. 191. 1891.**

Trees *ca* 40 m high. Leaves with 2 pairs of leaflets (rarely 3); leaflets normally asymmetric, ovate-obovate with rounded base, apex rounded, often slightly emarginate, *ca* 18 x 10 cm. Inflorescences, *ca* 8 cm long, branched panicles. Calyx glabrous *ca* 10 mm long. Petals white or pink. Fertile stamens 3; staminodes 4-7. Pods *ca* 25 x 4 cm, varying in shape; seeds *ca* 8, orbicular, flat.

Common in coastal forests.

*Fl. & Fr.*: Nov.-March.

Chengappa Bay, 18 km on north-south road.

### 5. PELTOPHORUM (Vogel) Walp.

Trees. Leaves evenly bipinnate; leaflets small, numerous. Flowers yellow in axillary and terminal, paniced racemes. Calyx 5. Petals 5, oblong. Stamens 10, free. Pods oblong, flat with wing along each suture.

About 15 species in tropics & subtropics; 1 in Gt. Nicobar Island.

***Peltophorum pterocarpum* (DC.) Backer ex Heyne, Nutt. Pl. Ned.-Ind. 2: 755. 1927.**

Trees. Leaves bipinnate; pinnae 8-10 pairs; leaflets 10-15 pairs. Flowers yellow, in large erect terminal paniced racemes, rusty tomentose. Sepals coppery red. Pods *ca* 10 cm long, coppery red, flat, winged along both sutures; seeds 1-3, brown.

Common in beaches.

*Fl. & Fr.*: Aug.-May.

Campbell Bay, Galathea.

## MIMOSACEAE

About 56 genera and 2800 species, tropics & subtropics; 1 genus and 2 species in Gt. Nicobar Island.

2. **ARCHIDENDRON** F.V. Muell.

Trees or shrubs, with inconspicuous, caducous stipules. Leaves bipinnate, with glands on petiole, rachis and pinnae. Inflorescences of pedunculate heads of corymbs, collected in panicles. Flowers bisexual. Calyx gamosepalous, valvate, 5 toothed. Corolla gamopetalous, valvate, 5-lobed. Stamens numerous; filaments united into a tube; anther eglandular. Ovary stalked or sessile. Pods compressed or turgid, spirally curved; seeds funiculate without aril.

About 100 species in Sri Lanka, New Guinea, North Australia and Thailand; 2 in Gt. Nicobar Island.

- 1 a. Branchlets angular; pods hairy out side .....1. *A. clypearia*  
 b. Branchlets terete; pods glabrous out side .....2. *A. ellipticum*

1. **Archidendron clypearia** (Jack.) I. Nielson, *Adansonia* 2. 19: 15. 1979.

Small trees, *ca* 15 m high. Leaves *ca* 30 cm long; pinnae 3-6, *ca* 10 cm long; leaflets 3-7 pairs trapizoid, midrib diagonal, stiffy papery, glabrous, dark green above, glaucous pubescent beneath, ovate to sub lanceolate, sessile, base asymmetrically cuneate, apex acuminate, *ca* 3.75 x 1.8 cm, tomentose. Panicle very lax, *ca* 30 cm long. Flowers in small corymbs at the branch ends, *ca* 9 mm. diam. Calyx cup-shaped, puberulous, teeth 3-angular. Corolla white glabrous, lobes puberulous. Staminal tube as long as corolla tube. Pods *ca* 20 x 1 cm, compressed, contorted in a spiral, somewhat sinuate between the seeds, coriaceous, yellowish-orange outside, reddish inside, tomentose; seeds without aril.

Common along the road sides, inland forests.

*Fl. & Fr.*: Sept.-April.

Laful, Galathea, Campbell Bay, 4 & 6 km on east-west road.

India (Nicobar Island); Malay Peninsula.

2. **Archidendron ellipticum** (Bl.) I. Nielson, *Adansonia* 2, 19: 21. 1979.

Trees, *ca* 6 m high. Leaves; rachis glabrous, *ca* 15 cm long; pinnae 2 pairs; leaflets 2-4 paired, elliptic oblong acuminate at apex dark shining green, glabrous, base rounded to broadly cuneate, 20 x 9 cm long; nerves 4-6 pairs. Panicles *ca* 20 cm long, lax, puberulous, heads of 2-6 sessile flowers. Calyx silky, teeth 3-angular. Corolla, white. Staminal tube as long as the corolla tube. Pods forming a circle, *ca* 8 x 3.5 cm, compressed, coriaceous, yellowish outside, reddish orange within, glabrous; seeds oblong, 6-8, black with a blue bloom, 2.5 cm long.

Common in hill slopes.

*Fl. & Fr.*: Sept.-April.

5 & 28 km on east-west road, Campbell Bay, Chengappa Bay, 35 km on north-south road.

India (A & N Islands); Malaysia, Thailand.

#### DOUBTFUL TAXA:

***Adenanthera pavonia* L., Sp. Pl. 384. 1753.**

Unarmed trees. Leaves bipinnate, 4-6 pairs, *ca* 20 cm long, shortly stalked; leaflets 6-9 pairs, alternate, obtuse-oblong, shortly stalked. Flowers small, in 5-15 cm long, spicate racemes. Calyx campanulate. Petals valvate, connate at base. Pods *ca* 25 x 1.2 cm, falcate; seeds 10-12, bright scarlet.

*Note*: The plant record from Great Nicobar is by Kurz (1876). No specimens are available nor collected subsequently by any one.

#### ROSACEAE

About 100 genera and 2000 species, cosmopolitan; 1 genus & 1 species in Gt. Nicobar Island.

#### RUBUS L.

Sarmentose shrubs, almost prickly. Leaves, simple or compound; stipules free or adnate to the petioles. Flowers in terminal & axillary corymbose, white or red. Calyx 5 lobed, persistent in fruit. Petals 5.



Stamens many. Ripe carpels many, fleshy, one seeded, on a conical dry or spongy receptacle.

Species 250, cosmopolitan; 1 in Gt. Nicobar Island.

**Rubus moluccanus** L. var. **angulosus** Kalkman in Blumea 29(2): 364. 1984.

Straggling shrubs *ca* 6 m high; branches covered with minute, hooked prickles. Leaves simple, margin serrate, 3-5 lobed; petioles *ca* 6 cm long. Inflorescences terminal and axillary panicles. Flowers 1.5 cm across. Calyx hirsute. Petals white, glabrous or with some hairs outside. Fruits scarlet red, globose.

Common in inland forests in shaded places.

*Fl. & Fr.*: June-Nov.

10 km on east-west road; Campbell Bay, Galathea Bay.

## RHIZOPHORACEAE

16 genera and 120 species, tropical, mostly old world; 4 genera & 6 species in Gt. Nicobar Island.

- 1 a. Littoral; seeds germinating on the tree .....2  
 b. Inland; seeds not germinating on the tree .....3
- 2 a. Sepals & petals 4; stamens 8-12; stilt roots present .....4. *Rhizophora*  
 b. Sepals & petals 8-14; petals bilobed or emarginate; knee noots present ...  
 .....1. *Bruguiera*
- 3 a. Branchlets solid; flowers in pedunculate cymes ... .....2. *Carallia*  
 b. Branchlets hollow; flowers in fascicles .....3. *Gynotroches*

### 1. BRUGUIERA Lam.

Buttressed trees. Flowers solitary or in 2-5, pedunculate cymes. Calyx, 8-14 lobed. Petals as many as calyx lobes. Stamens twice, as many as petals. Ovary inferior; seeds usually solitary, viviparous.

6 species in tropics; 1 in Gt. Nicobar Island.

**Bruguiera gymnorhiza** (L.) Savaginy in Lam. Encycl. 4: 696. 1798.

Trees, *ca* 40 m high. Leaves elliptic-oblong, coriaceous, acute at apex, cuneate at base, *ca* 20 x 7 cm stipules reddish. Flowers solitary. Calyx pink. Petals : outer margin fringed with white silky hairs. Hypocotyl cigar- shaped, slightly angular, with a blunt narrowed apex, *ca* 25 x 2 cm.

Common in Mangrove forests.

*Fl. & Fr.*: Jan.-May.

Lakshman beach; 16 km on north-south road, Alexandra river side.

## 2. **CARALLIA** Roxb.

Trees. Leaves decussate with large interpetiolar stipules. Flowers small, sessile, in short dichotomous, axillary cymes. Calyx produced into a short tube, beyond the ovary, teeth 5-8. Petals inserted with stamens on the edge on a crenulated disk, lining the calyx tube. Ovary inferior, 4-celled; ovules 2 in each cell. Fruits small, globose, coriaceous.

About 10 species, distributed in Madagascar, Indo-Malaysia & North Australia, 1 in Gt. Nicobar Island.

**Carallia brachiata** (Lour.) Merr. in Philipp. Sci. 15: 249. 1919.

Trees, *ca* 30 m high. Leaves elliptic-ovate to oblanceolate, margins recurved, acute at apex, cuneate at base, *ca* 12 x 6.5 cm; stipules *ca* 2.5 cm long. Inflorescences solitary, 2 or 3-chotomously branched, *ca* 6 cm long. Flowers pedicellate or sessile. Fruits, globose, *ca* 7 mm in diam., seeds reniform.

Common in beach forests, on sandy soil.

*Fl. & Fr.*: Feb.-June.

15 km on north-south road.

### 3. GYNOTROCHES Blume

Trees. Leaves entire; stipules lanceolate. Flowers in axillary fascicles; bracteolate. Calyx deeply 4-5 lobed. Petals 4-5, unguiculate. Stamens twice the number of calyx lobes. Ovary superior, 4-6 celled. Fruits berry, few to many seeded, globose.

1 species in Myanmar, Siam, Malaysia, to Micronesia; 1 in Gt. Nicobar Island.

*Gynotroches axillaris* Bl. Bijdr. 219. 1815.

Small trees, *ca* 20 m high. Leaves oblong to elliptic, shortly acuminate at apex, *ca* 24 x 8 cm, coriaceous; petioles *ca* 1 cm long. Flowers small, yellowish green. Calyx ovate, *ca* 2.5 mm long. Male flowers: with petals and perfect stamens; ovary often empty; Female of hermaphrodite flowers with longer pedicels; petals and stamens often smaller, or the latter sometimes barren; stigma radially lobed. Berries *ca* 4 mm diam, many seeded, globular, pulpy, scarlet to purplish red.

Rare in dense mixed inland forests.

*Fl. & Fr.*: July-Dec.

27 km and 34 km on east-west road, Koshin Don.

India (Nicobar Islands); Myanmar, Java, Malay Peninsula, Philippines.

### 4. RHIZOPHORA L.

Large trees with numerous aerial roots into the mud. Leaves thick, ovate or elliptic mucronate; stipules large, deciduous. Inflorescences a few flowered cymes. Calyx 4-lobed, persistent in fruits. Petals 4. Stamens 8-12. Ovary 2-celled, half-inferior. Fruits conical, leathery.

About 7 species along the tropical coasts; 3 in Gt. Nicobar Island.

- 1 a. Inflorescences 2-flowered; flowers sessile; petals glabrous .....1. *R. apiculata*
- b. Inflorescences 2-5 (12)-flowered; flowers pedicelled; petals hairy .....2

- 2 a. Style obscure or very short, *ca* 1.5 mm .....2. *R. mucronata*  
 b. Style foliform, 4-6 mm .....3. *R. stylosa*

**1. *Rhizophora apiculata* Blume, Enum. Pl. Jav. 1: 91. 1827.**

Trees, *ca* 30 m high, branching sympodial. Leaves elliptic oblong to sub-lanceolate, acute at apex, cuneate at base, *ca* 18 x 8 cm; petioles *ca* 3 cm. Inflorescences 2 flowered. Flowers sessile. Calyx lobes yellow to reddish. Petals membranous, glabrous. Stamens mostly-12, 4 epipetalous, 4 episepalous. Ovary enclosed by disk. Hypocotyl cylindrical.

Common in Mangrove forests.

*Fl. & Fr.*: Throughout the year.

Magar Nallah, Campbell Bay, Galathea river mouth.

**2. *R. mucronata* Lam., Encycl. 6: 189. 1804.**

Trees, *ca* 25 m high; branching not distinctly, sympodial. Leaves broad-elliptic, acute at both ends, *ca* 18 x 10 cm; petioles *ca* 5.5 cm. Inflorescences 2-5 flowered cymes. Flowers pedicellate. Calyx lobed, triangular. Petals villous, fleshy. Stamens-8. Hypocotyl cylindrical, rugose.

Common in Mangrove forests.

*Fl. & Fr.*: Throughout the year.

Nevy Dera, Galathea river mouth.

**3. *Rhizophora stylosa* Griff. Notul. Pl. As. 4: 665. 1854.**

Small trees, *ca* 10 m high; branching not sympodial. Leaves broadly elliptic, blunt at apex, cuneate at base, *ca* 12 x 6 cm; petioles *ca* 3.5 cm. Inflorescences 3-4 times forked, 5-8-flowered, cymes. Flowers pedicellate. Calyx after anthesis, pale yellow. Petals densely villous along margins. Stamens 8. Ovary enclosed by disk; Hypocotyl cylindrical.

Rare in Mangrove forests.

*Fl. & Fr.*: Throughout the year.

Pulo Babi.

India (Nicobar Islands); Malay Peninsula.

## COMBRETACEAE

About 20 genera and over 600 species; tropics and subtropics; 2 genera and 5 species in Gt. Nicobar Island.

- 1 a. Scandent shrubs; petals present; calyx limb deciduous .....1. *Combretum*
- b. Trees; petals absent; calyx limb persistent .....2. *Terminalia*

## COMBRETUM Loebl.

Scandent shrubs. Flowers bisexual or polygamous. Calyx tube constricted above the ovary. Petals small, inserted between the calyx lobes. Stamens 8-10. Ovary inferior, 1-celled; style subulate; ovules 2-6, pendulous. Fruits with 4-5 wings, indehiscent; seed one.

About 250 species, tropical regions of America, Africa & Asia; 1 in Gt. Nicobar Island.

***Combretum punctatum* Bl. ssp. *squamosum* (Roxb. ex G. Don) Excell**  
in Steenis Fl. Males. 4: 539. 1954.

Scandent shrubs. Leaves opposite, subcoriaceous, covered with glandular scales on both surfaces, broadly elliptic, acuminate at apex, rounded at base, ca 11 x 7 cm. Inflorescences terminal panicles of elongated spikes. Flowers yellowish white, fragrant. Fruits suborbicular, sparsely scaly; with 4 thin flexible wings.

Rare in forest edges.

*Fl. & Fr.*: Oct.-Feb.

11 km on east-west road, 18 km towards Indira point.

## 2. TERMINALIA L.

Large trees. Flowers sessile, small, greenish or white, generally in long spikes. Calyx tube produced above the ovary. Petals absent. Stamens 10,

inserted on the calyx tube. Fruits ovoid, various in size, smooth or angular or winged, indehiscent; seeds solitary.

About 250 species, in humid & semi-humid tropics; 4 species in Gt. Nicobar Island.

- 1 a. Petioles long; fruits winged .....1. *T. bialata*  
 b. Petioles short; fruits not winged .....2
- 2 a. Leaves subcordate or auriculate at base; fruits boldly angled .....  
 .....2. *T. catappa*  
 b. Leaves tapering at base or not auricled; fruits angled .....3
- 3 a. Spikes solitary axillary .....4. *T. procera*  
 b. Spikes terminal & lateral, often paniced .....3. *T. citrina*

1. ***Terminalia bialata*** Steud., Nom. ed 2(2): 668. 1821.

'Safed chuglam'

Large trees. Leaves crowded at the end of branchlets, glabrous, obovate, shortly acuminate at apex, tapering at base, ca 15 x 10 cm. Spikes axillary, usually as long as the leaves. Male flowers at the upper & hermaphrodite ones of the lower part of the spikes. Flowers small, greenish yellow, with minute deciduous bracts. Fruits butterfly-shaped, with 2 broad, stiff, veined wings.

Rare in inland forests.

*Fl. & Fr.*: June-April.

Galathea to Indira point.

India (Andaman and Nicobar Islands); Myanmar, Malaysia.

2. ***Terminalia catappa*** L., Syst. Nat. ed. 12. 2. 674. 1767.

Trees, ca 35 m high. Leaves chartaceous, spirally arranged & crowned at the end of the branches, obovate or elliptic-obovate, shortly acuminate at apex, auricled at base, ca 10 x 17 cm. Spikes grey or rusty tomentose, the upper males, lower hermaphrodite; bracts minute. Calyx lobes ovate, 3-angular. Fruits compressed drupe, with two ridges.

Common in beach forests.

*Fl. & Fr.*: March-July.

Laful, 32 km on north-south road.

3. ***Terminalia citrina* (Gaertn.) Roxb. ex Flem. in As. Res. 11: 183. 1810.**

Trees, *ca* 30 m high, buttressed at base. Leaves chartaceous, opposite or sub-opposite elliptic-lanceolate, shortly acuminate at apex, rounded or broadly cuneate at base, *ca* 16 x 7 cm; petioles *ca* 3.5 cm. Flowers small, dull yellow, sessile, all hermaphrodite, in terminal panicles; bracts filiform. Calyx teeth glabrous outside, pubescent inside. Drupes oblong-lanceolate, 20-30 x 8-20 mm, obscurely 5-angled, dull orange yellow.

Common in beach forests.

*Fl. & Fr.*: Aug.-Feb.

Lakshman beach.

4. ***Terminalia procera* Roxb., Hort. Beng. 33. 1814.**

Large trees, *ca* 40 m high. Leaves lanceolate or obovate-oblong, tapering towards the petiole, rounded or shortly acuminate at apex, coriaceous, *ca* 30 x 10 cm; petioles *ca* 1.5 cm long. Spikes solitary axillary, simple, the hermaphrodite ones situated near the base. Flowers white, star-shaped, woolly within. Calyx salver shaped. Drupe ellipsoidal, *ca* 3.75 cm long, obscurely angled but not compressed or keeled.

Common in the inland forests.

*Fl. & Fr.*: March-Sept.

33 km on east-west road.

*Note*: Endemic to Andaman and Nicobar Islands.

## MYRTACEAE

About 100 genera & 3000 species, tropics & subtropics; 1 genus & 3 species in Gt. Nicobar Island.

## SYZYGIUM Gaertn.

Trees or shrubs. Inflorescences terminal, axillary or cauline, usually paniculate or racemose, sometimes few-flowered & cymose. Flowers 4-5 merous, sessile or pedicelled. Hypanthial cup broadly funnel-shaped, clavate, rarely cylindrical; pseudostipe usually present. Petals free. Stamens many, inserted at the mouth of calyx tube. Fruits globose or pyriform, sepals usually present.

About 1000 species, spread over tropical Asia and Africa; 3 species in Gt. Nicobar Island.

- 1 a. Leaves leathery; lateral nerves of the leaves many .....2. *S. gratum*
- b. Leaves not leathery; lateral nerves less than 12 pairs, not fine & close together .....2
- 2 a. Twigs brownish white; leaves ca 12 cm long ... .....1. *S. floculiferum*
- b. Twigs not brownish white; leaves ca 20 cm long .....3. *S. samarangense*

1. ***Syzygium floculiferum*** (M.R. Henderson) Sreek. in J. Econ. Tax. Bot. 17(2): 454. 1993.

Trees, ca 40 cm high. Leaves obovate, elliptic or oblong-elliptic, narrow & decurrent at base, acuminate at apex, ca 12 x 5.5 cm, upper surface blackish brown when dry, lower side paler, yellowish brown; petioles ca 1 cm long. Panicles terminal or axillary, ca 10 cm long. Flowers small, ca 3 mm long, sessile or subsessile. Calyx 2-3 mm long, lobes 4. Petal lobes 4, pale brown when dry. Stamens numerous. Ovary 2 celled; style 1.5 mm long, stigma terminal. Fruits not seen.

Rare in inland forests.

*Fl.*: Feb.-Aug.; *Fr.*: Not seen.

40 km east-west road.



India (Great Nicobar Island); Malay Peninsula, Singapore.

2. **Syzygium gratum** (Wight) S.N. Mitra, in Indian Forester 99: 100. 1973.

Small trees; bark orange brown. Leaves lanceolate to ovate-lanceolate, narrowly bluntish acuminate at apex, acute or obtuse at base, 2.5-9 x 1-3.5 cm, coriaceous and somewhat glaucous opaque beneath; petioles short. Flowers in dense clusters, white axillary or terminal panicles. Calyx, longitudinally ribbed, 5-lobed. Petals 5, orbicular. Fruits ovoid, black when ripe, crowned by the small calyx lobes.

Rare in inland forests.

*Fl. & Fr.*: Jan.-May.

Way to Chengappa Bay.

3. **Syzygium samarangense** (Bl.) Merr. & Perry in J. Arn. Arb. 19: 115. 216. 1938.

Trees, *ca* 40 m high. Leaves thinly coriaceous, ovate to oblong-lanceolate, blunt or acuminate at apex, rounded or subcordate at base, *ca* 15 x 8 cm; petioles short. Flowers white, *ca* 4 cm in diam., in two or three, short axillary or terminal corymbose racemes. Calyx tube turbinate. Fruits apple or pear shaped, *ca* 5 cm diam, depressed, turbinate, white & glossy, crowned by the inflexed calyx lobes.

Rare in littoral forests.

*Fl. & Fr.*: Feb.-July.

Baludera, Campbell Bay, Kopenheat, Pilo-Kunj.

India (Andaman & Nicobar Islands); Myanmar, Malay Peninsula, Java, Thailand.

### BARRINGTONIACEAE

About 5 genera and 53 species, paleotropical; 2 genera and 5 species in Gt. Nicobar Island.

- 1 a. Calyx tube glabrous, hardly produced above ovary; limb consisting of 3-5 free lobes or entirely closed before anthesis; inflorescences spiciform or racimiform, unbranched; fruits woody, fibrous .....1. *Barringtonia*
- b. Calyx tube densely pubescent, abruptly passing into a cup-shaped limb, latter obtusely 4 lobed; inflorescences paniculiform; fruits fleshy .....  
.....2. *Chydenanthus*

### 1. **BARRINGTONIA** Forst.

Evergreen trees. Flowers in long terminal and lateral spikes or racemes. Bracts deciduous. Calyx tube scarcely produced above the ovary, 2-4 lobes. Petals 4 rarely 5, adnate to stamens. Stamens many, in several series, connate shortly into tube at base. Ovary 2-4 celled. Fruits fibrous fleshy, 4-angular.

About 40 species, tropics of Africa, Asia, Australia and Polynesia; 4 in Gt. Nicobar Island.

- 1 a. Calyx closed in bud splitting into 2-3 lobes .....2
- b. Calyx not closed, 4 (rarely 5) lobed .....3
- 2 a. Racemes short, erect; flowers *ca* 7.5 cm wide; fruits 4 angled, very large  
.....1. *B. asiatica*
- b. Racemes pendulous; flowers *ca* 2.5 cm wide; fruits ovoid ....3. *B. racemosa*
- 3 a. Ovary tetragonous without any grooves .....4. *B. reticulata*
- b. Ovary teretish with 4 distinct grooves .....2. *B. pendula*

1. ***Barringtonia asiatica*** (L.) Kurz, Prelim. Rep. For. & Veg. Pegu Append. A. 65 & 52. 1875.

Small trees. Leaves obovate, narrowed at base, rounded to retuse at apex, *ca* 30 x 16 cm; petioles very short. Racemes terminal. Flowers large, showy. Calyx closed over the bud, rupturing into 2 unequal segments. Stamens in 6 whorls, tinged with pink. Fruits *ca* 10 cm in diam., turbinate, 4-5 angled.

Common in littoral forests.

*Fl. & Fr.*: Jan.-Aug.

Lakshman beach, Campbell Bay, Galathea Bay.

2. **Barringtonia pendula** (Griff.) Kurz, J. As. Soc. Bengal 46(2): 71. 1877.

Trees, *ca* 6 m high. Leaves narrow elliptic to oblong elliptic, shortly acuminate at apex, cuneate attenuate at base, *ca* 30 x 8.5 cm, repand to entire; lateral nerves 10-14 pairs; petioles *ca* 4 cm long. Inflorescences terminal and lateral, pendulous, *ca* 45 cm long. Flowers sessile, *ca* 8 mm long. Calyx lobes 4, fimbriate at margin. Petals 4, fimbriate. Stamens many, connate below in 4 whorls, innermost one staminodes. Ovary 4 loculed, glabrous or sparsely puberulous, with 4 distinct grooves on the corner; style 1, filiform.

Rare in inland forests.

*Fl. & Fr.*: May-June; *Fr.*: Not seen.

Navy Dera.

India (Nicobar Islands); Malay Peninsula.

3. **Barringtonia racemosa** (L.) Spreng., Syst. Veg. 3: 127. 1826.

Small trees, *ca* 8 m high. Leaves obovate-oblong or oblanceolate, serrate-crenulate, acute or acuminate at apex, cuneate at base, *ca* 30 x 14 cm; petioles shortly winged, *ca* 1 cm. Racemes or spikes pendulous, mostly terminal. Flowers sessile, pinkish. Calyx closed in bud, rupturing 2-3 segments. Petals cream coloured. Stamens many. Fruits *ca* 7 x 4 cm, ovoid or oblong ovoid, crowned with persistent calyx segments, 4 angled.

4. **Barringtonia reticulata** (Bl.) Miq, Fl. Ind. Bat. 1(1): 490. 1850.

Trees, *ca* 12 m high. Leaves narrowly elliptic to oblong lanceolate, shortly acuminate at apex, cuneate attenuate at base, *ca* 35 x 8.5 cm; lateral nerves 10-16 pairs; petioles *ca* 5 cm long. Inflorescences terminal, pendulous, *ca* 50 cm long. Flowers *ca* 12 mm long, sessile. Calyx lobes 4, fimbriate at margins. Petals 4, fimbriate. Stamens in 4 whorls, innermost one staminodes. Ovary tetragonous, 4 loculed; style 1, terete, filiform.

Rare in inland forests.

*Fl.*: May-Aug.; *Fr.*: Not seen.

Laful.

India (Andaman & Nicobar Islands); Java, Sumatra, Malay Peninsula.

## 2. **CHYDENANTHUS** Miers.

Trees. Inflorescences terminal paniced or racemes, many flowered; pedicels articulate; bracteoles near articulation, caducous. Calyx cup shaped, obscurely 4 lobed. Petals 4, basally adhering to staminal tube. Stamens tubular at base. Ovary 2 or 3 celled. Fruits fleshy, 1 celled.

1 species in tropics; 1 in Andaman & Nicobar Islands.

**Chydenanthus excelsus** (Blume) Miers in Trans. Linn. Soc. ser. 2: 112. 1875.

Trees, *ca* 8 m high. Leaves ovate-oblong, glabrous, coriaceous, crenulate, acute at apex, cuneate at base, *ca* 27 x 9.7 cm; petioles *ca* 2.4 cm long. Inflorescences paniced, *ca* 16 cm long. Flowers pinkish-white. calyx puberulous, 4 lobed, margins fimbriate. Petals 4. Stamens many, monadelphous, all united below to form tubular column, all fertile, a few inner most reduced to hairy staminodes. Ovary 2 celled; stigma minute; ovules 1, each celled. Fruits ellipsoid, obtusely 4 angled, brown grey, warty, *ca* 15 cm long.

Rare in inland forests.

*Fl. & Fr.*: Feb.-Aug.

Galathea, Navy Dera, Indira point, Laful, 40 km on east-west road.

India (Andaman & Nicobar Islands); Myanmar, Java.

## **MELASTOMATACEAE**

About 240 genera & over 3,000 species, tropical & subtropical; 6 genera and 7 species in Gt. Nicobar Island.

- 1 a. Anthers opening by a single terminal pore .....3  
b. Anthers opening by slits .....2
- 2 a. Calyx tube smooth; panicles terminal .....1. *Astronia*  
b. Calyx tube verrucose; cymes small, axillary ..... 6. *Pternandra*
- 3 a. Seeds curved .....4  
b. Seeds straight .....5
- 4 a. Stamens unequal .....2. *Melastoma*  
b. Stamens equal .....5. *Otanthera*
- 5 a. Fruits capsular .....4. *Ochthocharis*  
b. Fruits baccate .....3. *Neodissochaeta*

### 1. *ASTRONIA* Blume

Trees. Leaves opposite, 3-nerved. Flowers in terminal panicles, small, white or purple. Calyx tube campanulate, glabrous or puberulous. Petals 4-5. Stamens 8-12, equal. Ovary inferior, 2-5 celled, glabrous at apex; stigma capitate. Fruits capsule; seeds many.

Species about 70, in Malaysia, Polynesia & Formosa; 1 species in Gt. Nicobar Island.

***Astronia macrophylla* Bl. Bijdr. Fl. Ned. Ind. No. 17: 1080. 1825.**

Trees, ca 12 m high. Leaves elliptic or broad-elliptic, acute at base, acuminate at apex, ca 30 x 17 cm, undersurface along the nerves furfuraceous, 3-5 plinerved; petioles ca 10 cm long, reddish. Inflorescences ca 17 cm long, densely tomentose. Calyx tube 10 ribbed. Petals 5, brown. Stamens 10. Capsules globose, crowned with persistent calyx, reddish, brownish when dry; seeds dehiscing by 6-8 longitudinal valves.

Rare along the stream sides.

*Fl. & Fr.*: June-Nov.

Laful, 15, 26 & 33 km on east-west road.

India (Great Nicobar Island); Malay Peninsula, Java, Celebes, Moluccus.

## 2. MELASTOMA L.

Strigose or villous shrubs. Flowers terminal solitary, clustered or paniced, showy, purple, 5 or 6-7 merous. Calyx tube with hairs, lobes-5, petals equal in number to the calyx lobes. Stamens-10, unequal. Fruits coriaceous or somewhat fleshy; dehiscing irregularly; seeds cuneate, many, curved.

About 75 species south-eastern Asia, extending to North Australia and Pacific Islands; 2 in Gt. Nicobar Island.

- 1 a. Bracts large; calyx teeth long .....2. *M. malabathricum*  
b. Bracts small; calyx teeth short .....1. *M. affine*

### 1. *Melastoma affine* D.Don, in Mem. Wern. Soc. 4: 288. 1823.

Shrubs; branches with dense hairs & scales. Leaves elliptic or ovate-oblong, acute at apex, acute to obtuse at base, ca 12 x 4 cm, surface covered with hairs; 3-5 nerved. Cymes terminal, 3-7 flowered. Calyx tubes hairy, 5-lobes. Petals-5. Stamens 10, dimorphous. Fruits coriaceous, included in the calyx tube.

Common along the streams, and on moist rocky slopes.

*Fl. & Fr.*: March-Dec.

12, 30 & 38 km on east-west road.

India (Great Nicobar Island); Java, Malay Peninsula, Australia, Singapore.

### 2. *Melastoma malabathricum* L., Sp. Pl. 390. 1753.

Shrubs, ca 1.5 m high. Leaves bright green, ovate-oblong to elliptic, acute at apex, obtuse at base, ca 12 x 5 cm; strongly 3 nerved; petioles ca 15 mm long. Cymes terminal or subterminal, 3-7 flowered. Flowers rose coloured to purplish, 5-merous. Berries 1 cm in diam, short ovoid, truncate; seeds minute.

Common in inland forests.

*Fl. & Fr.*: Throughout the year.

20 km north-south road, 20 km on east-west road.

### 3. NEODISSOCHAETA Bakh.f.

Woody climbers. Flowers in terminal panicles, 4-merous. Calyx tube campanulate. Petals 4. Stamens 8, unequal, 4 of them fertile, the other ones reduced to staminodes. Ovary 4 celled, apex glabrous, or densely hairy; stigma not winged. Berries ovoid or elliptic; seeds cuneate, rostrate.

About 16 species, extending from Pinang, and Malacca, throughout Malaya to Philippines; 1 in Gt. Nicobar Island.

*Neodissochaeta celebica* (Blume) Bakh. f. in Meeded. Bot. Mus. Herb. Rijks. Univ. Utrecht, 91: 141. 1943.

Scandent shrubby trees; branchlets, panicles, undersurface of leaves & petioles covered with stellate tomentum. Leaves oblong-ovate, entire, acuminate at apex, rounded at base, *ca* 12 x 4.5 cm; petioles *ca* 1.2 cm long. Inflorescences terminal panicles *ca* 10 cm long. Flowers white. Calyx stellately brown tomentose, mouth lobed. Petals 4, white. Stamens 4, unequal, anthers clavate, connectives produced dorsally into a 3-angular appendage. Fruits subglobular, purple.

Rare in inland forests.

*Fl. & Fr.*: July-Oct.

26 km, 35 km & Galathea bridge in east-west road.

India (Great Nicobar Island); Borneo, Malay Peninsula, Celebes.

### 4. OCHTOCHARIS Blume.

Shrubs or small trees; young parts densely clothed with brown indumentum. Inflorescence an axillary fascicle or thyrses or terminal thyrses.

Flowers 5 merous, rarely 4 merous. Sepals connate. Petals ovate, elliptic or obovate. Stamens 8 or 10. Fruit a thin walled globose capsule.

Species 7, distributed in Asia, Africa; 1 in Gt. Nicobar Island.

**Ochthocharis bornensis** Bl., Mus. Bot. Lugd. Bat. 1: 40. 1849.

Shrubs, *ca* 2 m high. Leaves ovate-lanceolate, acuminate at apex, rounded at base, *ca* 13 x 4.5 cm, margins serrulate; petioles *ca* 4 cm long. Inflorescences fasciculate in the axils of fallen leaves. Flowers 5 merous. Hypanthium campanulate. Petals ovate, whitish with pink. Stamens 10, alike. Fruits *ca* 5.3 x 5.8 mm, slightly wider than long, crowned by the appressed torus.

Rare in marshy places.

*Fl. & Fr.*: Throughout the year.

Galathea river mouth.

India (Great Nicobar Island); Borneo.

## 5. OTANTHERA Bl.

Scandent shrubs; branches covered with scales or hairs. Inflorescences terminal or axillary, 2-3 chotomously branched, many flowered panicles. Calyx tube ovoid, teeth 5-6, Petals 5-6, obovate. Stamens 10-12. Ovary half inferior, 5-6 celled; style thickened upward; stigma truncate. Berries 5 or 6 celled, more or less pulpy, irregularly rupturing; seeds many, curved, minutely punctate.

About 15 species, tropical regions of Asia, Australia, 1 in Gt. Nicobar Island.

**Otanthera nicobarensis** Teijsm. in Natur. Tijdschr. Med. Indic. Bat. 25: 427. 1863.

Scandent shrubs, *ca* 2 m high. Leaves ovate-elliptic or ovate-oblong, acute or obtuse at base, acuminate at apex, *ca* 8.5 x 4 cm, 5-nerved; petioles *ca* 2 cm long. Inflorescences terminal lax panicles. Flowers 5-merous.



Calyx tube cup-shaped, lobes 3-angular. Petals pink or rosy. Stamens 10, equal. Berries nearly as long as the calyx tube, crowned with deflexed calyx teeth; seeds many, muricate.

Common in slopes of inland forests.

*Fl. & Fr.*: Sept.-June.

Magar Nallah, 3 km on east-west road, Campbell Bay.

*Note*: Endemic to Nicobar Islands.

## 6. **PTERNANDRA** Jack.

Glabrous shrubs or small trees. Inflorescences axillary cymes or panicles. Flowers small. Calyx tube verrucose, limb, truncate, obscurely 4 toothed. Petals 4, bluish or white. Stamens 8, equal. Ovary inferior, 4-celled; style long; stigma clavate. Berries ovoid, truncate; seeds many.

Species 6 from Pinang & Malacca through Malaya to Philippines; 1 in Gt. Nicobar Island.

**Pternandra coerulescens** Jack. in Malay. Misc 2(6): 61. 1822.

Trees, *ca* 30 high; branchlets cylindric, smooth. Leaves lanceolate or elliptic to ovate, acute or acuminate at apex, narrowed or rounded at the base, 3-nerved from the base; petioles flattened, *ca* 10 mm long. Inflorescences glomerulate, cymose to paniculate, few to many flowered. Bracts persistent. Calyx tube campanulate, 4-toothed. Petals blue in colour. Staminal filaments flattened, violet. Style slender; stigma clavate. Fruits pulpy, subglobose, 4-6 mm, capped by the thinner margin of the calyx; seeds numerous.

Rare in mixed forests.

*Fl. & Fr.*: Throughout the year.

31, 37, 34 & 39 km on east-west road, Galathea river bank. 7 km north-south road.

India (Great Nicobar Island); Pinang, Malay Peninsula to Philippines.

### MEMECYLACEAE

One genus and 300 species, distributed in the tropics; 4 species in Gt. Nicobar Island.

### MEMECYLON L.

Shrubs or trees; branchlets flattened & 2 grooved or 4 angled. Flowers in small axillary rarely terminal simple or paniced cymes or umbels. Flowers 4-merous, bluish or white. Calyx tube campanulate. Petals 4, blue or white. Stamens 8, equal; anthers short, opening by slit. Berries, globose or ellipsoid, crowned with the calyx margin, 1-seeded.

Species about 300, mostly in India, Malaya Peninsula & Archipelago, several in tropical Africa, few in Polynesia & Australia; 4 species in Gt. Nicobar Island.

- 1 a. Leaves sessile, bases coriaceous, stem clasping .....2. *M. caeruleum*
- b. Leaves petioled, bases narrow or rounded .....2
- 2 a. Flowers in cymes.....3. *M. edule*
- b. Flowers in umbels or thyrseoid .....3
- 3 a. Anthers globose (Circular) .....4. *M. garcinoides*
- b. Anthers curved ('C' Shaped) .....1. *M. andamanicum*

1. **Memecylon andamanicum** King in Journ. As. Soc. Beng. 69: 85. 1899.

Shrubs, ca 5 m high. Leaves oblong-lanceolate, bluntly acuminate at apex, cuneate at base, ca 9 x 3.5 cm; petioles ca 6 mm, venation obscure. Inflorescences umbellate in the axils of the leaf or from the scars of fallen ones. Flowers blue. Calyx campanulate, truncate above. Petals suborbicular. Stamens exserted, bluish, anthers curved (C-shaped) with a distinct gland. Fruits small, depressed, globose, on slender stalk, 5 mm diam.

Frequent in inland forests.

*Fl. & Fr.*: April-Sept.

Laful, Kopenheat, 19 km on north-south road, 38 km on east-west road.

*Note*: Endemic to A & N Islands.

**2. *Memecylon caeruleum* Jack. in Malay. Misc. 1(5): 26. 1820.**

Small trees, *ca* 10 m high. Leaves sessile, elliptically ovate to ovate-oblong, acute to obtuse at apex, broadly rounded, cordate at base, *ca* 16 x 7 cm, venation obscure on both surfaces. Inflorescences cymose, many flowered. Bracts persistent. Flowers intense blue. Calyx glabrous. Petals coriaceous, dark purple to deep blue. Staminal filaments deep blue; anthers curved C-shaped, gland distinct. Fruits ellipsoid, smooth-glabrous, *ca* 15 x 9 mm, crowned by the persistent calyx, remnant.

Rare in moist evergreen hill forests.

*Fl. & Fr.*: July-Nov.

26, 35 & 38 km on east-west road.

India (Andaman & Nicobar Islands); Malay Peninsula.

**3. *Memecylon edule* Roxb., Pl. Cor. 1: 59. 1798.**

Small trees. Leaves elliptic, cuneate at base, obtuse to rounded or notched at the apex, *ca* 9 x 4 cm, veins invisible; petioles *ca* 6 mm long. Flowers brilliant blue in many flowered cymes, axillary or from the scars of fallen leaves. Calyx truncate or 4 lobed. Petals suborbicular. Anthers *ca* 2 mm long, connective curved with distinct gland. Fruits globose, *ca* 8 mm diam, yellowish green and turning red to dark blue, pericarp thin.

Rare in beach forests.

*Fl. & Fr.*: May-Sept.

Way to Chengappa Bay.

4. **Memecylon garcinioides** Bl. Mus. Bot. Lugd.-Bat. 1(23): 358. 1851.

Trees, *ca* 12 m high. Leaves lanceolate to elliptic, acuminate at apex, cuneate & decurrent at base, *ca* 10 x 4 cm, venation obscure or invisible; petioles 3-5 mm long. Inflorescences thyrsoid to umbel-shaped. Infructescences *ca* 1.5 cm long. Fruits 5-6 mm in diam, globose, pale green. Calyx remnant slightly raised, areolus *ca* 2 mm wide.

Rare in inland forests.

*Fl.*: Not seen; *Fr.*: July-Aug.

35 km on east-west road.

India (Nicobar Islands); Thailand, Indonesia, Malaysia.

## LYTHRACEAE

About 25 genera & 550 species, cosmopolitan; 2 genera & 2 species in Gt. Nicobar Island.

- 1 a. Herbs; flowers and fruits less than 3 mm long .....1. *Ammannia*
- b. Trees; flowers and fruits more than 5 mm long .....2. *Lagerstroemia*

### 1. AMMANNIA L.

Herbs. Cymes axillary. Flowers 4(5) merous. Calyx tube ribbed, 4-lobed. Petals 4, rarely absent. Stamens 4 or 5. Ovary 4(5) celled; style short. Capsules equalling or exceeding the membranous or thick hypanthium; seeds ovoid, minute.

About 30 species, cosmopolitan; 1 in Gt. Nicobar Island.

***Ammannia baccifera* L., Sp. Pl. 120. 1753.**

Erect herbs, *ca* 70 cm high. Leaves oblong-elliptic or oblanceolate, cuneate at base, acute at apex, *ca* 5 x 0.7 cm, margins entire. Cymes dichasial, sub-sessile. Flowers 4(5) merous. Capsules globose *ca* 1.5 mm across; seeds *ca* 20, turgid.

Common in marshy places.

*Fl. & Fr.*: Oct.-Jan.

20 km on east-west road, 4 km on north-south road.

## 2. LAGERSTROEMIA L.

Trees. Leaves opposite. Panicles terminal and axillary. Flowers showy, 6-merous. Calyx tube campanulate ribbed or smooth, lobes 6. Petals 6, showy, crumpled. Stamens several, inserted near the bottom of the calyx-tube. Ovary 4-6 celled. Fruits large woody capsule, sitting in persistent calyx; seeds numerous, compressed and winged at apex.

About 53 species, tropical Asia to North Australia; 1 in Gt. Nicobar Island.

*Lagerstroemia ovalifolia* Teijsm. & Bim. in *Kruid. Arch.* 3. 410. 1840.

Trees, ca 20 m high. Leaves ovate, oblong or obovate, acute or obtuse at both ends, ca 13 x 5.5 cm, minutely pubescent on nerves and mid-ribs; petioles, ca 5 mm long. Panicles terminal. Calyx pinkish, green 6-9 ridged, winged. Petals pinkish-purple, crisped, undulate at margins. Stamens numerous. Fruiting calyx persistent, thick, hard; lobes patent. capsules elliptic-oblong or subglobose, ca 25 x 16 mm, shortly nipped or blunt.

Rare in scrub forests, open places.

*Fl. & Fr.*: May-Sept.

30 km on north-south road, Laful, Campbell Bay.

India (Great Nicobar Island); Malay Peninsula.

## SONNERATIACEAE

2 genera and 7 species, tropics; 1 genus & 1 species in Gt. Nicobar Island.

## SONNERATIA L.f.

Evergreen trees. Leaves opposite, coriaceous, entire, with indistinct venation. Flowers large. Calyx persistent, thickly coriaceous, with 3

angular segments. Petals absent or as many as the calyx lobes. Stamens many, arranged in a ring at the mouth of the calyx. Caducous. Ovary free; many celled. Fruits fleshy, indehiscent; seeds numerous angular.

Species 5, along tropical shores of east Africa & adjacent Islands; Asia, Malaysia & North Australia; 1 in Gt. Nicobar Island.

**Sonneratia caseolaris** (L.) Druce in Rep. Bot. Exch. Cl. Brit. Isles. 3: 424. 1913.

Small trees, with many strong breathing roots, i.e. pneumatophores. Leaves variable in shape, elliptic, oblong or obovate, cuneate at base blunt or rounded at apex *ca* 13 x 5 cm. Flowers 4-5 cm in diam., buds pointed. Calyx purplish inside. Petals narrow reddish-white. Stamens white; filaments thread like. Fruits fleshy.

Common in Mangrove habitats, along river sides.

*Fl. & Fr.*: Jan.-July.

Alexandra River side & near the mouth Galathea Bay.

### CRYPTERONIACEAE

About 5 genera and 11 species, Indo-Malaysia, Peru & Bolivia; 1 genus & 1 species in Great Nicobar Island.

### CRYPTERONIA Bl.

Trees. Racemes elongate in branched panicles. Flowers polygamous i.e. male & bisexual on different branches, minute, white or green with short linear bracts at the base. Calyx tube cup-shaped, segments 5. Petals absent. Male flowers: Stamens long as many as calyx teeth exerted, alternating with calyx segments, surrounding a rudimentary ovary. Bisexual flowers: stamens short; ovary 2 celled; style cylindric. Capsules 2-celled, 2 valved, crowned by persistent style; seeds numerous.

About 4 species, S.E. Asia & Malaysia; 1 species in Gt. Nicobar Island.

**Crypteronia paniculata** Bl., Bijdr. 1151. 1826.

Trees, *ca* 30 m high. Leaves elliptic or oblong rounded to cuneate at base, acuminate to cuspidate at apex, 10-22 x 5-10 cm; petioles *ca* 10 mm long. Inflorescences axillary or terminal panicles, *ca* 30 cm, pendulous. Flowers small, yellowish green. Sepals 3-angular. Petals absent. Stamens 5, reduced & permanently inflexed in female flowers. Ovary reduced in male flowers, subglobose, 2-locular; style *ca* 2 mm long; stigma capitate. Capsules obovoid, recurved, 2 valves.

Common in inland forests.

*Fl. & Fr.*: Dec.-May.

17 km on east-west road.

India, (Andaman and Nicobar Islands); Java, Myanmar.

**ONAGRACEAE**

About 17 genera and 600 species, tropical & temperate regions; 1 genus and 3 species in Gt. Nicobar Island.

**LUDWIGIA** L.

Slender herbs, erect or creeping and rooting at nodes. Flowers usually solitary, axillary. Calyx tube scarcely produced above ovary; lobes 3-5, persistent or deciduous. Petals as many the sepals. Stamens as many as or twice as many as the sepals, inserted with the petals. Ovary inferior. Capsules 4-5 valved; seeds numerous.

About 75 species, cosmopolitan; 3 in Gt. Nicobar Island.

- 1 a. Seeds dimorphic; pollen grains shed singly .....1. *L. hyssopifolia*  
 b. Seeds not dimorphic; pollen grains shed in tetrads .....2
- 2 a. Seeds uniseriate in each cell .....3. *L. prostrata*  
 b. Seeds pluriseriate in each cell .....2. *L. octovalis*

1. **Ludwigia hyssopifolia** (G.Don) Exell, Garcia de Orta 5: 471. 1957.

Branched herbs, *ca* 1 m high. Leaves lanceolate to elliptic, narrowly cuneate at base, acuminate at apex, *ca* 9 x 3 cm; petioles *ca* 1.8 cm. Flowers pale yellow. Capsules thin walled, linear *ca* 3 cm long; seeds dimorphic.

Common weed along the drains.

*Fl. & Fr.*: Aug.-Jan.

Campbell Bay; 42 km on east-west road, Magar Nallah, 4 km on north-south road.

2. ***Ludwigia octovalis* (Jacq.) Raven in Kew Bull. 15: 476. 1962.**

Branched herbs, *ca* 3 m high. Leaves lanceolate or linear-lanceolate, *ca* 14 x 4 cm; petioles *ca* 1 cm long. Flowers yellow, solitary, axillary. Capsules thin walled, with 8 darker ribs, *ca* 4.5 x 0.8 cm; seeds brown.

Common near streams.

*Fl. & Fr.*: Aug.-Jan.

Campbell Bay, Dogmar river bank.

3. ***Ludwigia prostrata* Roxb., Fl. Ind. 1: 441. 1820.**

Prostrate or decumbent herbs. Leaves elliptic, cuneate at base, acute at apex, *ca* 13 x 2.7 cm; petioles *ca* 2.5 cm long. Flowers yellow, sessile, 4-fid. Capsules glabrous thin walled, slightly 4 angled, pale brown, *ca* 22 x 1 mm; seeds pale brown.

Common in inland forests, shaded places.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, Galathea river.

## PASSIFLORACEAE

About 12 genera and 600 species, tropical and warm temperate; 2 genera & 2 species in Gt. Nicobar Island.



- 1 a. Flowers unisexual; corona absent or inconspicuous .....1. *Adenia*  
 b. Flowers bisexual; corona inconspicuous .....2. *Passiflora*

### 1. **ADENIA** Forsk.

Climbers. Cymes axillary, few or many flowered on long peduncles, often with tendrils. Flowers greenish to yellowish. Calyx tubular, limb 5 lobed. Petals 5, free or partially adnate with the calyx tube, greenish or white. Male flowers: Corona a ring of threads arising near the base of calyx tube or wanting; glands of disc 5; androecium cup-shaped; filaments 5; ovary absent. Female flowers: Corona a membranous fold; glands of disc-5, strap-shaped; Staminodes 5; ovary globose to fusiform, stigmas-3. Capsules 3 valved; seeds numerous, attached by funicles.

About 92 species, tropical & subtropical Africa, Madagascar, S.E. Asia, Malaysia & North & N.E. Australia; 1 in Gt. Nicobar Island.

***Adenia penangiana*** (Wall. ex. G.Don.) de Wilde var. ***penangiana*** de Wilde, in Blumea 15: 266. 1967.

Climbers, ca 6 m high. Leaves broadly ovate-elliptic to oblong, apex distinctly acuminate, rounded or subpellate at base, ca 12 x 5.5 cm; petioles eglandular; tendrils branched. Capsules ca 6 x 3 cm (excluding the 2.5 mm long gynophore), glabrous, oblong, acute, 3-valved; seeds flattened, nearly smooth or shallowly pitted.

Common in littoral forests.

*Fl. & Fr.*: May-August.

4 km on north-south road.

### 2. **PASSIFLORA** L.

Climbers. Leaves, palmately lobed, margins mostly glandular-dentate. Flowers solitary. Bracts & bracteoles often large. Calyx tube saucer-shaped to cylindrical; lobes 5. Petals 5, inserted on the throat of calyx tube. Corona extra-staminal, with several rows of filiform segments & shallow cup surrounding the gynophore. Stamens 5 on gynandrophore. Ovary 1-celled, with many ovules; styles usually 3; stigma capitate. Berries fleshy, indehiscent.

About 500 species, America, Asia & Australia; 1 in Gt. Nicobar Island.

**Passiflora foetida** L., Sp. Pl. 959. 1753.

Climbing foetid herbs. Leaves ovate, 3-lobed, acute or acuminate at apex, cordate at base, gland hairy; petioles *ca* 6 cm long; stipules semi-auriculate. Flowers white, solitary or in diads; pedicels 2-5 cm long; involueral bracts 2-pinnatifid, segments gland-hairy. Calyx 1.5 cm long. Petals oblong, white. Gynophore 0.7 cm long. Fruits globose; seeds reticulate, 0.8 x 0.35 cm.

Rare in scrub jungles, waste places.

*Fl. & Fr.*: July-Dec.

41 km on east-west road; 10 km on north-south road.

## CUCURBITACEAE

About 110 genera & 640 species, tropical & subtropical, rarely in temperate regions; 2 genera & 2 species in Gt. Nicobar Island.

- 1 a. Calyx without scales at the base; male flowers without bracts ....1. *Coccinia*
- b. Calyx with 2-3 scales at its base; male flowers with large enveloping bracts  
.....2. *Momordica*

### 1. COCCINIA Wight & Arn.

Herbs; tendrils simple or 2-fid. Flowers white. Calyx 5 toothed. Corolla 5 lobed. Male flowers: solitary or racemose; stamens 3, inserted at base of calyx tube, filaments connate, pistilode absent. Female flowers: solitary; staminodes-3, oblong or subulate; ovary ovoid, oblong or linear; style slender; stigma 3 lobed. Fruits ovoid or oblong, baccate, indehiscent, many seeded; seeds ovate.

About 13 species, mostly confined to tropical Africa; one in Gt. Nicobar Island.

**Coccinia grandis** (L.) Voigt. Hort. Suburb. Calc. 59. 1845.

Twiners; stem smooth, grooved or angled. Leaves 3-5 lobed, palmately 5-nerved, margins glandular tipped. Flowers white. Fruits fusiform-ellipsoid, slightly beaked, bright scarlet when ripe; seeds embedded in red pulp; yellowish grey.

Common in cultivated lands & along way sides.

*Fl. & Fr.*: Throughout the year.

Laful.

## 2. MOMORDICA L.

Scandent herbs. Flowers monoecious or dioecious, yellow or white. Calyx 5-lobes. Corolla 5-partite. Male flowers: stamens 5, inserted at mouth of calyx-tube; filaments free; pistilodes absent or glanduliform. Female flowers: solitary; staminodes absent or glandular; ovary oblong or fusiform; stigmas 3, entire or bifid. Fruits oblong, fusiform or cylindric, baccate, indehiscent or 3 valved; seeds turgid or campanulate.

About 60 species, cosmopolitan; 1 in Gt. Nicobar Island.

**Momordica charantia** L., Sp. Pl. 1009. 1753;

Climbers; stems puberulous. Leaves reniform or suborbicular, ca 12 x 10 cm, glabrous, prominently nerved, 5-7 lobed; tendrils simple. Flowers monoecious, yellow. Fruits oblong, 8-20 cm long, muricate-tuberculate, 3-valved; seeds compressed, subtridentate at both ends, sculptured.

Common in cultivated lands.

*Fl. & Fr.*: July-Oct.

Laful.

## ARALIACEAE

About 55 genera and 1150 species, chiefly tropical and subtropical, a few in cool temperate zones; 2 genera & 3 species in Gt. Nicobar Island.

- 1 a. Ovary 1-celled; albumen ruminated .....1. *Arthrophyllum*  
 b. Ovary 5-celled; albumen uniform .....2. *Schefflera*

### 1. *ARTHROPHYLLUM* Bl.

Shrubs or small trees, unarmed. Leaves, lower alternate & compoundly pinnate, upper most opposite & simple, intermediate 3 foliate; stipules united within the petiole. Inflorescences compound umbels, either solitary, terminal or in clusters of specialised leafy branches. Flowers, bisexual. Calyx on undulate rim, sometimes with 5 indistinct teeth, petals 4-6, valvate. Stamens 4-6. Ovary 1-celled, 1-ovuled; style short, simple. Fruits ovoid, not angular; seeds subglobose.

About 3 species in Malasia, Indol-China to Philippines, New Guinea & New Caledonia; 1 in Gt. Nicobar Island.

***Arthrophyllum diversifolium* Bl., Bijdr. 879. 1825.**

Small trees, *ca* 20 m high. Leaves clustered at the end of branches, imparipinnate, with 7-8 pairs of leaflets. (often bipinnate or the floral leaves 3-foliolate); leaflets ovate-oblong or elliptic, subacute at apex, cuneate or rounded at base, *ca* 24 x 11 cm; petioles *ca* 40 cm. Flowers white, umbellately clustered. Calyx limb surrounding the corolla base like a cup. Petals 5. Stamens 5. Berries ovoid-oblong.

Common in mixed inland forests.

*Fl. & Fr.*: March-April.

Galathea river bank, 11 & 38 km on east-west road.

India (A & N Islands); Java, Malay Peninsula.

### 2. *SCHEFFLERA* J.R. & G. Forest.

Climbing shrubs or small trees. Leaves spirally arranged. Flowers in umbels or racemes, arranged in panicles or compound racemes; bracts pubescent, deciduous or persistent; pedicels not articulate. Flowers polygamous. Calyx margins entire or 5 dentate. Petals 5-7, valvate. Stamens 5-7. Ovary 5-7 celled; styles united into a column or none; stigmas

distinct. Fruits globose or ovoid, 5-7 seeded, angled or not; seeds laterally compressed; endosperm uniform.

About 400 species, tropics of both hemispheres; 2 in Gt. Nicobar Island.

- 1 a. Lianas or scandent climbers or straggling shrubs .....1. *S. elliptica*  
 b. Large trees .....2. *S. longifolia*

1. ***Schefflera elliptica*** (Bl.) Harms. in Engler & Prantl., Pflanzenf. 3(8): 39. 1894.

Large straggling shrubs. Leaves palmately compound, 5-7 foliate; common petioles ca 15 cm long; leaflets oblong or ovate-elliptic, coriaceous, glabrous on both sides, acuminate at apex, subacute at base, ca 15 x 8.5 cm; petiolules 2.5 cm or more. Flowers greenish white or yellow in umbels. Fruits ovoid, bluntly ridged, yellow when ripe, 5-angled.

Common in inland & littoral forests.

*Fl. & Fr.*: Mar.-Aug.

Baludera, C. Bay, Lakshman beach & Galathea river.

2. ***Schefflera longifolia*** (Bl.) R. Viguier. in Ann. Sci. Nat., 10(10): 356. 1909.

Large trees, ca 10 m high. Leaves digitately, 5-7 foliolate; petioles 80 cm long, glabrous, finely ribbed, base spathaceous with numerous warted growths; leaflets ovate, oblong, coriaceous, glaucous beneath, broadly serrate on margin, acuminate at apex, rounded at base, ca 35 x 13 cm. Inflorescences terminal umbels, shorter than leaf; panicles 35-50 cm long, tawny-tomentose, umbels numerous, comprising 25-35 flowers, peduncle ca 3.5 cm long; bracts boat shaped. Flowers ca 6 mm long, numerous, white to dull brownish. Calyx poorly developed or absent. Petals valvate in bud, 8-lobed, ovate, fused petals forming an operculum on the disc. Stamens 8. Ovary covered by disc.

Rare in mixed forests.

*Fl.*: Dec.-Jan.; *Fr.*: Not seen.

38 km on east-west road.

India (Great Nicobar Island); Myanmar, Malay Peninsula.

### CORNACEAE

About 10 genera & 90 species, tropical & temperate regions; 1 genus and 1 species in Gt. Nicobar Island.

### MASTIXIA Bl.

Trees, *ca* 25 m high; young parts pubescent. Panicles terminal, many flowered. Flowers hermaphrodite, 2-bracteolate. Bracts small. Calyx tube campanulate pubescent or silky, 4 or 5 lobed. Petals 4 or 5, leathery, valvate, silky. Stamens 4 or 5; anthers cordate-oblong. Ovary 1-celled. Drupes ellipsoid or ovoid crowned by the calyx teeth; seeds ellipsoid.

About 13 species, tropics; 1 in Gt. Nicobar Island.

***Mastixia trichotoma* Bl.**, Bijdr. 655. 1826. var. ***maingayi* (Clarke) Danser** in *Blumea* 1: 63. 1934.

Trees, *ca* 17 m high; branchlets, under surface of leaves & panicle densely, softly woolly. Leaves decussate, elliptic, acuminate at apex, acute to obtuse at base, *ca* 15 x 7 cm, entire, subcoriaceous; petioles *ca* 3.5 cm long. Panicles *ca* 12 cm in diam. Flowers densely woolly. Fruits ovoid, greyish green, supported by persistent calyx lobes.

Rare along the road side, inland forests.

*Fl. & Fr.*: June-July

34.5 km on east-west roads.

India (Great Nicobar Island); Java, Singapore.

### ALANGIACEAE

1 genus with 17 species, tropics & subtropics; 1 species in Gt. Nicobar Island.

**ALANGIUM** Lam. nom. cons.

Shrubs, sometimes climbing or small trees. Flowers in axillary fascicles or contracted cymes, hermaphrodite. Calyx tube adnate to ovary, limbs 5-10, toothed. Petals 5-10. Stamens as many as petals or twice or thrice; filaments hairy. Ovary 1-3 celled. Fruit a berry, crowned by accrescent calyx limb.

About 17 species, tropics & subtropics; 1 species in Gt. Nicobar Island.

**Alangium javanicum** (Bl.) Wangerin in Engl. Pflanzenr. 4: 220 b, Heft 41: 14. 1910.

Trees, *ca* 15 m high. Leaves elliptic to oblong thin coriaceous, penninerved, acuminate at apex, cuneate at base, entire, 12-20 x 4-7 cm; petioles *ca* 1 cm long. Inflorescences fulvous-pubescent, short, 4-8 flowered. Calyx lobe 6(5), truncate, soft-pubescent. Petals 6(5), pubescent. Stamens 6(5); filaments woolly. Style pilose; stigma elongate with 4 longitudinal stripes; ovule-1. Drupes ellipsoidal, 15-20 x 12-15 mm, obscurely grooved.

Rare along the river side forests.

*Fl. & Fr.*: Jan.-March.

Alexandra river bank.

India (Andaman & Nicobar Islands); Java, Malay Peninsula.

**RUBIACEAE**

About 500 genera and 6000 species in tropical and subtropical regions, extending upto temperate zones; 22 genera and 37 species (3 varieties) in Gt. Nicobar Island.

- |   |                                          |    |
|---|------------------------------------------|----|
| 1 | a. Ovules more than 2 in each cell ..... | 2  |
|   | b. Ovules solitary in each cell .....    | 13 |
| 2 | a. Flowers in globose head .....         | 3  |
|   | b. Flowers not in globose head .....     | 4  |

- 3 a. Climbing shrubs; peduncles forming hooks .....22. *Uncaria*  
b. Trees or erect shrubs; peduncles not forming hooks .....14. *Neolamarkia*
- 4 a. Fruits capsule .....5  
b. Fruits berry .....9
- 5 a. Corolla lobes 3; stamens 3 .....2. *Coptophyllum*  
b. Corolla lobes 4-5 (upto 9); stamens 4-5 (upto 9) .....6
- 6 a. Flowers tetramerous .....7  
b. Flowers pentamerous (sometimes corolla lobes 4-9) .....8
- 7 a. Herbs or climbers; calyx turbinate .....8. *Hedyotis*  
b. Small or medium trees; calyx campanulate .....18. *Petunga*
- 8 a. Lateral nerves 20-30 pairs; flowers in scorpioid cymes .....6. *Greenea*  
b. Lateral nerves 7-12 pairs; flowers in terminal or axillary cymes .....  
.....15. *Ophiorrhiza*
- 9 a. Corolla lobes valvate .....10  
b. Corolla lobes twisted .....11
- 10 a. One calyx lobe transformed into showy bracts .....12. *Mussanda*  
b. All calyx lobes normal .....13. *Mycetia*
- 11 a. Woody climbers; berry pulpy; ovary 2 celled .....16. *Oxyceros*  
b. Trees, shrubs or bush; berry pulpy or woody .....12
- 12 a. Flowers small .....3. *Diplospora*  
b. Flowers large .....4. *Gardenia*
- 13 a. Corolla lobes twisted in bud .....14  
b. Corolla lobes valvate .....17
- 14 a. Flowers 4 merous .....15  
b. Flowers 5 merous (sometimes corolla lobes 4-9) .....16
- 15 a. Style entire .....17. *Pavetta*  
b. Style bifid .....9. *Ixora*
- 16 a. Flowers 5 merous; fruits berry .....20. *Tarenna*  
b. Flowers 5-9 merous; fruits drupe .....7. *Guettarda*



- 17 a. Flowers unisexual .....21. *Timonius*  
 b. Flowers bisexual .....18
- 18 a. Radicle superior .....1. *Canthium*  
 b. Radicle inferior .....19
- 19 a. Calyx confluent .....11. *Morinda*  
 b. Calyx not confluent .....20
- 20 a. Style branches 2 .....21  
 b. Style branches 3-9 .....10. *Lasianthus*
- 21 a. Stipules intrapetiolar .....19. *Psychotria*  
 b. Stipules interpetiolar .....5. *Geophila*

### 1. CANTHIUM Lam.

About 200 species in tropics; 2 in Gt. Nicobar Island.

Armed or unarmed shrubs or trees. Flowers axillary, fascicled or in cymes, rarely solitary. Calyx tube short, 4-5 dentate. Corolla greenish or white, funnel-shaped; throat with ring of deflexed hairs within; lobes 4-5. Stamens 4-5. Disc annular ovary 2 celled; ovules solitary in each cell. Drupes subglobose or didymous; pyrenes 2; seeds oblong.

- 1 a. Branches pubescent; pyrenes wrinkled .....1. *C. dicoccum*  
 b. Branches glabrous; pyrenes smooth .....2. *C. glabrum*

1. ***Canthium dicoccum*** (Gaertn.) Teijsm & Binnend Cat. Hort. Bog. 113. 1866.

Unbranched trees, ca 15 m high, tender parts pubescent. Leaves elliptic-ovate, abruptly acuminate at apex, acute to rounded at base ca 12 x 7 cm; stipules lanceolate; petioles 1 cm. Cymes laxly dichasial. Calyx glabrous. Corolla, cream coloured, lobes 5-6. Stamens 5-6. Stigma capitate. Drupes ellipsoid-globose, 0.8 cm across.

Rare in beach forests.

*Fl. & Fr.*: Oct.-March.

Campbell Bay.

2. **Canthium glabrum** Bl. Bijdr. 967, 1825.

Small unbranched trees. Leaves ovate-oblong to oblong-lanceolate, shortly acuminate, *ca* 15 x 9 cm, entire, thin coriaceous. Cymes small, compressed. Flowers 5-merous, small. Calyx turbinate. Corolla tube spherically inflated, lobes spreading. Stigma capitate. Drupes obovate-oblong, *ca* 2 cm long, smooth.

Rare along river bank.

*Fl.*: Not seen; *Fr.*: Jan.-March.

Galathea river bank.

India (Andaman & Nicobar Islands); Myanmar, Java, Malaya.

2. **COPTOPHYLLUM** Korth.

Small erect simple shrubs. Flowers pentamrous in heads surrounded by large white involucre bracts. Calyx tube ovoid, lobes-5. Corolla infundibuliform; lobes 5, short. Stamens 5, inserted below the corolla. Disc annular. Ovary 2-celled; style with 2 truncate arms. Capsules membranous, 2-celled; seeds many.

About 4 species in S.E. Asia; 1 in Gt. Nicobar Island.

**Coptophyllum nicobaricum** (Balakr.) Deb. & Rout, in Taxon 40 (2) : 324. 1991.

Undershrubs, *ca* 60 cm high. Leaves oblanceolate, acute at apex, cuneate at base, *ca* 25 x 5 cm, glabrous, dark green above, pale green and puberulous beneath; lateral nerves 16-20; petioles *ca* 2 cm long; stipules linear-lanceolate. Inflorescences globose capitate, *ca* 2.5 cm long. Calyx white, 5-lobed; lobes minutely puberulous at apex. Corolla white, tubular, glabrous outside, villous inside, lobes-3. Stamens-3, included. Capsules oblong, ovoid, 0.8 x 0.6 cm, thin walled; seeds numerous, red-brown.

Rare in inland forests.

*Fl. & Fr.*: June-July.

15 km on east-west road.

*Note*: Endemic to Gt. Nicobar Island.

### 3. DIPLOSPORA DC.

Shrubs or trees. Flowers small in axillary cymes or fascicles, pale green or white. Calyx tube short, truncate, 4-5 toothed. Corolla 4-5 lobes, twisted in bud. Stamens 4-5 inserted in corolla mouth. Ovary 2 (or 3) celled; style branches linear or oblong. Berries ovoid or globose; seeds few.

About 15 species in tropics; 1 in Gt. Nicobar Island.

***Diplospora singularis*** Korth. in Ned. Kruidk. Arch. 2 : 201.

Small trees, all parts glabrous. Leaves broadly oblong to elliptic-lanceolate, shortly, acuminate at apex, acute at base, ca 18 x 5 cm, entire; petioles short; stipules triangular, acute. Flowers fascicled, small, greenish white. Calyx 4-lobed, glabrous, truncate, teeth minute. Corolla tube throat villous, lobes linear, oblong. Berri crowned by the enlarged calyx.

Rare in interior hill forests.

*Fl. & Fr.*: July-April.

4 km on north-south road; 6 km on east-west road; Lakshman beach.

### 4. GARDENIA L.

Shrubs or trees. Flowers terminal or axillary, solitary or in fascicles or cymes, white changing to yellow. Calyx truncate or lobed. Corolla tube long or short; lobes 5 contracted. Stamens 5, inserted in the throat of corolla; Ovary unilocular, with many ovules. Berries large ovoid or globose, coriaceous fleshy; seeds compressed.

About 250 species in tropical & subtropical regions; 1 in Gt. Nicobar Island.

**G. tubifera** Wall. in Roxb. Fl. Ind. ed. Carey & Wall. 2 : 560. 1832.

Shrubs, *ca* 2 m high. Leaves obovate-lanceolate, cuspidate at apex, base much narrowed, *ca* 23 x 8 cm; lateral nerves 18 pairs; puberulous beneath; petioles *ca* 0.8 cm long; stipules glabrous. Flowers subterminal or axillary at the end of branches, subsessile. Calyx 2 cm long, tubular, truncate. Corolla tube cylindric, lobes 6-9. Fruits globose, saffron yellow, smooth, crowned with persistent calyx lobe.

Rare in inland forests.

*Fl. & Fr.*: March-July.

Laful.

India (Nicobar Islands); Sumatra, Java, Borneo.

### 5. GEOPHILA D. Don.

Small creeping herbs. Flowers small, white, solitary, subsessile or in peduncled umbels. Calyx tube obovoid. Corolla funnel-shaped; lobes 4-7. Stamens many. Ovary 2-celled; style slender, bifid. Fruits pulpy red or black; pyrenes 2, plano-convex.

About 16 species, tropics; 1 in Gt. Nicobar Island.

**Geophila repens** (L.) Johnston in Sargentia 8 : 281. 1949.

Prostrate creeping herb, pubescent. Leaves orbicular to reniform or ovate, acute or obtuse at apex, cordate at base, *ca* 3 x 3 cm; petioles slender, pubescent; stipules orbicular to broadly ovate. Calyx lobes-5. Corolla salver shaped, 5-oblong lobes. Stamens 4. Drupes red, soft with 2-twisted pyrenes.

Rare in inland forests.

*Fl. & Fr.*: Sept.-Dec.

Kopenheat.

**6. GREENEA** Wight & Arn.

Shrubs. Flowers small in paniced scorpioid cymes. Calyx turbinate; lobes 4 or 5, one longer than the others. Corolla funnel-shaped, pubescent outside; lobes 4-5. Stamens 4-5 insert in corolla mouth; filaments short; anthers bifid at both ends. Ovary 2 (or 3) celled; style filiform; stigmas 2. Capsules small, glabrous, 2-celled, dehiscent into 2-valves, opening septicidally; seeds falcate.

About 6 species Indo-Malayan; 1 in Great Nicobar Island.

**Greenea jackii** Wight & Arnot., Prodr. 404. 1834.

Evergreen shrub, young branches pubescent. Leaves obovate, lanceolate, pubescent or glabrous, membranous, abruptly acuminate at apex, base narrowed into a very short petiole, ca 50 x 15 cm; lateral nerves 20-30 pairs, slender; stipules ca 2.5 cm, acute. Panicles subsessile, pubescent, 2-3 crotomously branched. Flowers white. Calyx 4-toothed, pubescent. Corolla funnel-shaped. Capsules 0.25 cm in diam; 2-lobed, globular, minutely pubescent.

Common in moist dense hilly forests.

*Fl. & Fr.*: Nov.-April.

26 km, 34 & 35 km on east-west road.

India (Nicobar Islands); Myanmar, Malay Peninsula, Singapore.

**7. GUETTARDA** L.

Trees or shrubs. Flowers secund on the branches of axillary forked peduncled cymes, white. Calyx campanulate. Corolla tube cylindric, lobes 4-9. Stamens 4-9. Ovary 4-9 celled; style filiform; stigma capitate. Drupes globular or flattened round; endocarp woody, 4-9 celled.

About 45 species, mostly American ; in Gt. Nicobar Island.

**Guettarda speciosa** L., Sp. Pl. 991. 1753.

Trees, *ca* 15 m high. Leaves decussate, broadly ovate to orbicular, apex obtuse, cordate at base, *ca* 15 x 9 cm, subcoriaceous; lateral nerves 6-9 pairs, puberulous along nerves; petioles *ca* 3 cm long; stipules foliaceous. Flowers white in axillary cymes on long peduncles. Calyx truncate. Corolla funnel-shaped. Stamens 7 or 8 included at middle of tube. Ovary 5 locular, stigma capitate. Drupes globular.

Common in coastal forests.

*Fl. & Fr.*: March-August.

Baludera, 20 km on north-south road; Koshin Don; 18 km on road to Galathea, Lakshman beach.

### 8. HEDYOTIS L.

Herbs or shrubs, rarely climbers. Flowers in terminal or axillary, often condensed cymes, small, usually white or lilac. Calyx tube globose, ovoid or turbinate, teeth 4. Corolla funnel-shaped or campanulate; lobes-4., throat sometimes hairy. Stamens 4. Ovary 2-celled; ovules many. Fruits small capsular, crustaceous, rarely fleshy, many seeded.

About 450 species in tropical & subtropical regions; 4 in Gt. Nicobar Island.

- |   |                                             |                           |
|---|---------------------------------------------|---------------------------|
| 1 | a. Capsules indehiscent. ....               | 2                         |
|   | b. Capsules dehiscent. ....                 | 3                         |
| 2 | a. Leaves linear or linear lanceolate. .... | 2. <i>H. paradoxa</i>     |
|   | b. Leaves elliptic-lanceolate. ....         | 4. <i>H. vestita</i>      |
| 3 | a. Leaves elliptic-oblong. ....             | 1. <i>H. biflora</i>      |
|   | b. Leaves linear to lanceolate. ....        | 3. <i>H. verticillata</i> |

#### 1. *Hedyotis biflora* (L.) Lam. Tab. Ency. 1 : 272. 1791.

Herbs *ca* 50 cm high. Leaves decussate, elliptic-oblong, apex obtuse-acute to apiculate, base acute, *ca* 4 x 2.5 cm; lateral nerves 3 pairs, obscure. Panicles *ca* 6 cm long. Flowers nearly 3, sessile, stalk elongating in fruits. Calyx truncate, 4-angled. Corolla white, campanulate; Stamens subexserted. Capsules 4 x 3 mm, loculicidal, 4-angled, pitted.

Rare in moist places.

*Fl. & Fr.*: Nov.-Feb.

Kopenheat.

**2. *Hedyotis paradoxa* Kurz in J. As. Soc. Ben. 2 : 135. 1876.**

Under shrubs, branches smooth, or terete, robust. Leaves sessile, long linear or linear lanceolate, acute, ca 15 x 2 cm; lateral nerves obscure; stipules membranous with ciliate bristles. Cymes axillary, globose dense flowered. Calyx teeth subulate, hispid, longer than the globose pedicelled fruits. Capsules small, crustaceous, smooth, 6-seeded.

Rare along the river banks, marshy places.

*Fl. & Fr.*: Jan.-Dec.

Dogmar river bank.

*Note*: Endemic to Andaman & Nicobar Islands.

**3. *Hedyotis verticillata* (L.) Lam., Tab. Encycl. 1 : 271. 1792.**

Annual herbs, prostrate or creeping; stem terete. Leaves linear to lanceolate, acute or acuminate at apex, sessile, ca 3.5 x 1 cm, margin revolute, 1-nerved; stipules long ciliate. Flowers 2-6, in axillary clusters, rarely solitary. Calyx shortly, tubular, densely hispid. Corolla white. Capsules, ovoid with long bristles.

Rare in inland forests.

*Fl. & Fr.*: Oct.-Nov.

41 km on east-west road.

**4. *Hedyotis vestita* R. Br. ex G. Don., Gen. Syst. 3 : 526. 1835.**

Stout herbs, branches terete, villous. Leaves elliptic-lanceolate, acuminate, 4.5-10 cm long, greenish when dry; stipules membranous with

long cilia; lateral nerves 5-7 pairs. Cymes villous, small, axillary. Flowers pink, very small, crowded in heads. Calyx teeth subulate. Capsules small, 0.15 cm in diam, globose, hairy.

Rare in marshy places.

*Fl. & Fr.*: Sept.-Dec.

40 km on east-west road.

## 9. IXORA L.

Shrubs or small trees. Flowers in dense or lax terminal corymbose cymes, tetramerous, pedicellate. Bracts leaf like; bracteoles-2. Calyx cupular, teeth persistent. Corolla salver-shaped; tube slender, long; lobes shorter than the tube, spreading. Stamens-4. Ovary 2-celled; ovule 1-per cell; style filiform; stigma bifid. Fruits globose or didymous, drupaceous berry, with 1-2 pyrenes; seeds peltate.

About 400 species in the tropical regions; 5 species & 3 varieties in Gt. Nicobar Island.

- 1 a. All inflorescence branchlets (both upper and lower ones) opposite, articulate .....2
- b. Upper inflorescence branchlets never opposite or articulate .....4
- 2 a. Pair of reduced leaves present at the base of the peduncle .....3
- b. Reduced leaves absent from the base of the peduncle .....3. *I. cuneifolia*
- 3 a. Leaves lanceolate-oblong, apex caudate-acuminate or moderately mucronate .....5. *I. tenuifolia*
- b. Leaves obovate-ovate or elliptic lanceolate, apex acuminate, bluntish apiculate or rounded .....1. *I. barbata*
- 4 a. Inflorescences corymbose; the basal branchlets of the inflorescences subtended by the reduced leaves connected by enlarged stipules .....4. *I. grandifolia*
- b. Inflorescence subpaniculate; the basal branchlets of the inflorescences subtended by reduced leaves connected by normal stipules.....2. *I. brunnescens*



1. ***Ixora barbata* Roxb. ex Sm. in Rees, Cycl. 19: n. 6. 1811.**

Large shrubs or small trees, 2-15 m high; branches glabrous. Leaves ovate, ovate-oblong or elliptic, acute at apex, rounded at base, *ca* 25 x 13 cm, glabrous; lateral nerves 10-12 pairs; petioles *ca* 1.5 cm long; stipules *ca* 0.7 cm long, broad, hairy and glandular beneath. Inflorescences trichotomous cymes, compact, 8-30 cm broad; peduncles *ca* 10 cm long, nearly glabrous. Flowers 60-90 per head, white, pedicelled or sessile. Calyx glabrous or pubescent. Corolla, *ca* 3.6 cm long, lobes oblong. Fruits 0.7-0.8 cm long, smooth, globose, green.

Common along the road sides.

*Fl. & Fr.*: March-Nov.

13 km on north-south road.

2. ***Ixora brunnescens* Kurz, J. As. Soc. Beng. 41: 317. 1872.**

Shrubs or small trees, *ca* 12 m high. Leaves obovate or oblong, rounded at base, acuminate, obtuse or retuse at apex; lateral nerves 9-16 pairs; petioles 0.4 cm long; stipules *ca* 1 cm long. Inflorescences terminal panicles, forming a trichotomous cymes. Flowers white, 50-80 per head. Calyx nearly glabrous. Fruits *ca* 0.6 x 0.6 cm, globose; whitish green, ripe fruits having red or black strips.

Common in coastal forests.

*Fl. & Fr.*: Jan.-Dec.

14 & 32 km north-south road; Kopenheat; Pilo Kunji; Campbell Bay; Koshindon, Lakshman beach, Indira point.

*Note*: Endemic to A & N Islands.

3. ***Ixora cuneifolia* Roxb. var. *macrocarpa* Kurz in J. Asiat. Soc. Bengal 45(3): 134. 1876; Chakrabarty et al., J. Econ. Tax. Bot. 11(1): 57. 1988.**

Shrubs, *ca* 3 m high. Leaves oblong or elliptic-lanceolate, coriaceous, glabrous above, pubescent beneath, base cuneate, narrowed into the

petiole, *ca* 12 x 4.5 cm; stipules with short filiform cusps. Inflorescences terminal panicles. Flower white, fragrant. Fruits red.

Rare in coastal forests.

*Fl. & Fr.*: April-July.

Great Nicobar Island (Kurz l.c. 1876).

*Note*: Endemic to Great Nicobar Island.

**4. *Ixora grandifolia* Zall & Mor., Syst. Verz. 65. 1846.**

**Key to Varieties**

- 1 a. Leaf base acute or cordate; lateral nerves 10-14 pairs .....2
- b. Leaf base acuminate; lateral nerves 15-20 pairs .....var. *rosella*
- 2 a. Flower bud glabrous outside .....var. *grandifolia*
- b. Flower bud pubescent outside ..... var. *kurzeana*

**var. *grandifolia***

Shrubs or small trees, *ca* 18 m high. Leaves elliptic, ovate, obovate or lanceolate, mucronate or rounded at apex, *ca* 24 x 11.5 cm; lateral nerves 10-20 pairs; petioles *ca* 2 cm long; stipules *ca* 1.3 cm long, glabrous above, hairy beneath. Corymbs 10-20 cm wide, nearly sessile. Flowers white or rosse colour; pedicel pubescent. Calyx glabrous, lobes beared at the throat, obtuse. Fruits 1 x 1.2 cm, green, mature black.

Common in hill forests.

*Fl. & Fr.*: Sept.-Jan.

Koshin Don, 14 km north-south road; 28, 38 km on east-west road; Campbell Bay, Laful.

var. *kurzeana* (Teysm. & Binn.) Hook.f., Fl. Brit. India 3: 143. 1880.

Leaves lanceolate thin, narrowed into a stout petiole. Cymes corymbiforms. Corolla, 2.5-3.6 cm long.

Rare in inland forests.

*Fl. & Fr.*: June-Jan.

31 km on north-south road; 33 km on east-west road.

*Note*: Endemic to Nicobar Islands.

var. *rosella* (Kurz) Hook.f., Fl. Brit. India 3: 143, 1880.

Leaves glabrous, acuminate at apex, ca 24 x 10.5 cm; lateral nerves parallel. Flowers rose colour. Calyx 0.2-0.5 cm long, pubescent. Corolla 2-3 cm long, lobes oblong. Anthers 0.4-0.5 cm long.

Rare in beaches.

*Fl. & Fr.*: March-April.

Rosen point, Campbell Bay.

*Note*: Endemic to A & N Islands.

5. *Ixora tenuifolia* Brem. in Ind. For. 85(7): 374, 1959.

Small trees; branches glabrous. Leaf base contracted, 15.5-37 x 6-11 cm, glabrous; lateral nerves 15 pairs; petioles ca 2 cm long. Inflorescence lax, corymbose, glabrous; peduncle 0.13 cm long; bracts 0.4 cm long. Flowers ca 60 per head. Calyx glabrous, lobes ovate. Corolla tube glabrous, obtuse, bearded at the throat with white hairs.

Rare in littoral forests.

*Fl. & Fr.*: Not known.

Galathea Bay (B. Subramanyam: 23049 DD).

Endemic to Great Nicobar Island.

*Notes*: No specimens of this taxon are available for study. Description is based on literature.

**10. LASIANTHUS Jack.**

Shrubs or small trees, usually hairy. Flowers small, white (rarely pink), in axillary sessile peduncled fascicled cymes. Calyx-tube short, with 4-5 long, acute lobes. Corolla funnel or salver shaped, throat villous, lobes 4-5. Stamens 4-6. Style with 3-9 stigmas; Drupes pulpy blue, more rarely white, globular or obovoid, containing 3-9, 3 angled, 1-seeded pyrenes.

About 100 species, tropics; 1 in Gt. Nicobar Island.

***Lasianthus cyanocarpus* Jack.** in Trans. Linn. Soc., 14: 125. 1823.

Evergreen hirsute shrubs, 60-90 cm high. Leaves elliptic, lanceolate or oblanceolate, chartaceous, abruptly or long acuminate, base acute, ca 25 x 6.4 cm; lateral nerves 7-10 pairs, obliquely arched. Flowers sessile, small in cymes, enveloped by bracts; bracts many, ovate-lanceolate. Calyx teeth linear ciliate. Corolla tube, hispid, yellow. Drupes oval, villous, blue, sappy containing usually 4-pyrenes.

Rare in mixed forests along streams.

*Fl. & Fr.*: May-June.

Galathea bridge and 35 km on east-west road; Chingenh.

**11. MORINDA L.**

Small trees or shrubs. Flowers in peduncled simple paniced globose heads; heads terminal or axillary, ebracteate, unisexual or bisexual, 4-6 merous. Calyx-tube short, fleshy, limb absent. Corolla white, salver shaped, tube medium, throat hairy, lobes 5(rarely 4-7). Stamens many. Ovary-2; ovules solitary; style 2-branched. Fruit a fleshy syncarp of 1 seeded pyrenes.

About 80 species, tropical regions; 1 in Gt. Nicobar Island.

***Morinda citrifolia* L.,** Sp. Pl. 176. 1753.

Small tree with white bark; branchlet stout, glabrous. Leaves broadly elliptic or ovate, shortly acuminate or acute, attenuate at base, 15-20 x 8-

10 cm, glabrous, glandular pits in the axils of lateral nerves; stipules large, oblong, entire, 2-3 fid, glabrous. Flowers small, head globose. Calyx limb truncate. Corolla white. Fruits ovoid, 2.5 cm long, fleshy, white.

Common in mixed inland forests

*Fl. & Fr.*: April-July.

Kopenheat; Galathea to Indira point, Galathea Bay.

## 12. MUSSANDA L.

Shrubs. Flowers in terminal compound cymes. Calyx-turbinate or oblong, lobes 5, one on the central flower in a cyme very large petaloid white (or coloured). Corolla tubular, tube elongate, usually silky, 5-lobed. Orange or yellow or large red. Stamens-5, inserted on the throat or below; ovary 2-celled; style filiform; stigmas linear. Fruits green, baccate oblong; seeds minute.

About 40 species, tropics of Asia, Africa & Polynesia; 3 in Gt. Nicobar Island.

- |   |                                        |                          |
|---|----------------------------------------|--------------------------|
| 1 | a. Beries hairy, 1-1.2 cm long .....   | 2                        |
|   | b. Berries glabrous, 1.5 cm long ..... | 1. <i>M. frondosa</i>    |
| 2 | a. Leaves 10-25 x 5-9 cm .....         | 2. <i>M. macrophylla</i> |
|   | b. Leaves 7.5-10 x 3.5-5.6 cm .....    | 3. <i>M. villosa</i>     |

### 1. *M. frondosa* L., Sp. Pl. 177. 1753.

Shrubs, glabrous tomentose. Leaves elliptic-oblong or ovate, acuminate at apex, rounded at base, ca 12 x 5 cm long, velvety on both sides; nerves prominent beneath; petioles ca 3.8 cm long, pubescent. Cymes paniculate, terminal, contracted. Flowers on stout pubescent pedicel. Calyx lobes, elongate, lanceolate, much longer than the ovary. Corolla pubescent, silky or hirsute, lobes broadly ovate. Berries obovoid, glabrous.

Common in inland forests.

*Fl. & Fr.*: July-Nov.

Laful, 25.8 km, 37 km on east-west road; 38 km north-south road.

2. **M. macrophylla** Wall. in Roxb. Fl. Ind. ed. Carey & Wall. 2: 228. 1832.

Large erect subscandent shrubs, branches stout. Leaves ovate to elliptic lanceolate, entire, membranous, pubescent above, abruptly acuminate at apex, acute at base, *ca* 25 x 8.5 cm; stipules lanceolate, bifid. Cymes trichotomous, short peduncled. Flowers orange coloured, crowded. Calyx tube *ca* 0.3 cm long, lobes foliaceous, ciliate. Corolla 2.5 cm long, tube hirsute, lobes orange, throat villous. Berries 1.2 cm long, broadly ellipsoid, hairy.

Rare along roads in hill forests.

*Fl. & Fr.*: Sept.-Dec.

28.7 km on east-west road.

3. **M. villosa** Wall. ex Hook in Fl. Brit. India 3: 91. 1880.

Scandent shrubs, branches hispid. Leaves ovate to elliptic, suborbicular, entire, rounded to truncate at base, *ca* 14.5 x 12 cm, hispid on the upper surface; lateral nerves 12 pairs; petioles *ca* 1.5 cm long, hairy. Inflorescence terminal, cymes, *ca* 12 cm long, hispid. Flowers orange colour. Fruits 1.2 cm long, oblong, sparsely hairy.

Rare along rivers.

*Fl. & Fr.*: March-April.

Galathea river.

India, (Nicobar Islands); Java, Malay Peninsula.

### 13. MYCETIA Reinw.

Shrubs with white shiny bark. Flowers axillary or terminal cymes, crowded, numerous, yellow or white. Calyx tube globose, lobes short. Corolla tube slender, lobes 4-5. Stamens 4-6 inserted on tube. Ovary 2-celled. Fruits a fleshy berry.

About 25 species, Indo-Malaya to China; 1 in Gt. Nicobar Island.

***Mycetia javanica* (Bl.) Reinw. ex Korth. Netherl. Kruid. 118. 1841.**

Undershrubs, *ca* 60 cm high. Leaves elliptic-lanceolate or obovate, acute or acuminate at apex, narrowed at base, *ca* 30 x 12 cm, slightly decurrent along petiole, sparsely pubescent above, sparsely rather densely pubescent beneath; lateral nerves *ca* 20 pairs; petioles *ca* 7 cm. Inflorescences terminal panicle, hardly longer than the petiole, shortly peduncled. Flowers yellow. Berries *ca* 0.6 cm across, depressed-globose, pericarp thick, spongy; seeds many, black, minute.

Rare along stream.

*Fl. & Fr.*: June-December.

17, 37 km east-west road; Laful, 15 & 32 km on north-south road.

#### 14. **NEOLAMARCKIA** Bosser

Trees. Flowers in terminal globose heads, pentamerous, bisexual. Calyx tube strongly coherent; limb tubular; lobes oblong or spatulate, persistent. Corolla tubular or infundibuliform; lobes imbricate in bud. Stamens inserted in throat. Ovary 2-celled in lower part, 4 celled in upper part; ovules numerous per cell; style filiform; stigma fusiform. Fruits capsular, close together in a head; seeds numerous, small, cylindric.

About 3 species in Indo-Malayan; 1 in Gt. Nicobar Island.

***Neolamarckia cadamba* (Roxb.) Bosser in Adansonia 6(3): 245-248. 1984.**

Trees, *ca* 25 m high. Leaves ovate, elliptic-oblong, ovate-cordate, acuminate at apex, base rounded, *ca* 25 x 12 cm, coriaceous, glossy above; lateral nerves pubescent beneath; petioles *ca* 3 cm. Flowers white or yellow, small, collected in globular head. Calyx lobe obtuse, pilose. Corolla lobes erect lanceolate. Capsules compressed angular, closely packed.

Common in disturbed forests.

*Fl. & Fr.*: Dec.-Sept.

34 km on north-south road; Campbell Bay.

### 15. OPHIORRHIZA L.

Small herbs rarely woody at base. Flowers small, white or pink in dichotomous branched terminal (rarely axillary) cymes. Calyx short, 5 toothed or lobed. Corolla tube cylindric or funnel-shaped, lobes 5 valvate. Stamens 5, inserted in tube. Ovary 2-celled; ovules numerous; style filiform; stigmas-2, linear or oblong. Capsules coriaceous, flattened, or obcordate, broader than long, dehiscing at the top; seeds many, minute.

About 150 species, Indo-Malaysian; 3 in Gt. Nicobar Island.

- 1 a. Bracts present .....2
- b. Bracts absent .....2. *O. mungos*
- 2 a. Leaves glabrous above; inflorescences pubescent; fruits flat wedge shaped  
      ..... 1. *O. infundibularis*
- b. Leaves densely pubescent above; inflorescences hirsute; fruits laterally  
      compressed, oblong-elliptic .....3. *O. nicobarica*

1. ***Ophiorrhiza infundibularis*** Balakr. in Bull. Bot. Surv. Ind. 24: 61. 1982.

Herbs, ca 50 cm high. Leaves ovate-lanceolate, rounded, acuminate at apex, cuneate at base, ca 15 x 6 cm, glabrous above, puberulous beneath; lateral nerves 10-14 pairs; petioles ca 5 cm long, sparsely puberulous. Inflorescences terminal, solitary, puberulous, cymes ca 5 cm long. Flowers heterostylous, pale purplish white. Calyx tube 5-angled, puberulous outside. Corolla funnel-shaped, 5-lobed. Fruits flat, truncate, wedge shaped, with persistent calyx lobes.

Rare in inland forests.

*Fl. & Fr.*: June-Nov.

31-32 km on east-west road.

*Note*: Endemic to Nicobar Islands.



2. ***O. nicobarica*** Balakr. in Reinwardtia 9: 411. 1980.

Herbs, *ca* 45 cm high. Leaves ovate-lanceolate, obliquely cuneate or acute at base, shortly acuminate at apex, *ca* 13 x 6 cm, densely pubescent above, hairy on nerves beneath; lateral nerves 10-12 pairs; petioles *ca* 5.5 cm long, hispid. Inflorescences cymose, dichotomous, hirsute. Calyx 5 lobed, tube cup-shaped. Corolla white, 5-lobed, truncate. Stamens 5, dimorphous. Ovary 2-celled; style heterostylous; stigma 2 lobed. Fruits *ca* 10 x 5 mm, laterally compressed, transversely oblong-elliptic, brownish red.

Rare in stream sides.

*Fl. & Fr.*: Aug.-Sept.

17, 37 & 25.6 km on east-west road.

*Note*: Endemic to Great Nicobar Island.

3. ***Ophiorrhiza mungos*** L., Sp. Pl. 150. 1753.

Erect glabrous herbs, *ca* 40 cm high. Leaves elliptic or elliptic-lanceolate, long acuminate at apex, tapering at base, narrowed into the petiole, *ca* 11.5 x 4.5 cm; nerves pubescent beneath. Cymes *ca* 7 cm across, glabrous or pubescent; bracts absent. Calyx short triangular. Corolla white, lobe short, obtuse. capsules *ca* 1 cm across, compressed, protruded beyond the calyx.

Rare in inland forests.

*Fl. & Fr.*: July-March.

Galathea Bay, Laful, Kopenheat, 38 km north-south road.

16. **OXYCEROS** Lour.

Shrubs or trees, unarmed or spiny. Flowers in axillary or terminal cymes, solitary or fascicled, white or yellowish. Calyx tubular or campanulate; lobes 4-5. Corolla funnel or salver form; tube long or short, throat glabrous or hairy; lobes 4-5. Stamens 4-5, exserted. Ovary 2-celled, rarely

3-4; style short or slender; stigma fusiform, entire or 2 fid; ovules numerous. Fruits berries; seeds angular.

About 100 species, tropics; 1 in Gt. Nicobar Island.

***Oxyceros longiflora*** (Lam.) Yamazaki in J. Jap. Bot. 45: 339. 1970.

Large rambling glabrous shrubs, armed with strong sharp spines. Leaves ovate elliptic or oblong, coriaceous, often glandular at the nerve axil petioles, *ca* 20 x 7 cm; lateral nerves 5-8 pairs, with tuft of hairs in clusters, peduncles short or long; bracts triangular, coriaceous. Berries *ca* 1.2 cm long, ovoid, globose, obscurely ribbed.

Common in disturbed forests.

*Fl.*: March-May; *Fr.*: June-July.

13 km on north-south road.

## 17. PAVETTA L.

Shrubs or small trees. Flowers white in terminal or axillary corymbs or panicles, tetramerous. Bracts & bracteoles membranous. Calyx 4-dentate, truncate. Corolla salver form. Stamens inserted in throat of corolla tube. Ovary 2-locular; ovules solitary per locule. Drupes, globose, or 2-lobed, 2-seeded, black.

About 400 species, in tropics; 1 in Gt. Nicobar Island.

***Pavetta indica*** L., Sp. Pl. 110. 1753.

Shrubs, *ca* 6 m high. Leaves oblong-obovate to lanceolate, apex sub-acute to shortly acuminate, base attenuate, *ca* 21 x 6 cm; petioles *ca* 2.5 cm long. Cymes terminal, sessile. Flowers white. Berries 0.8 cm across, 2-seeded.

Rare in inland forests.

*Fl. & Fr.*: May-August.

Alexandra river bank, Chengappa Bay.

18. **PETUNGA** DC.

Small or medium sized trees. Flowers small, white with bracts in pairs in axillary spikes. Calyx tube campanulate, lobes 4, short. Corolla, funnel-shaped, mouth villous, lobes 4. Stamens-4. Ovary 2-celled; ovules 2-8 pendulous; style cylindric with 2 broad linear pubescent stigmas. Berries small, 2-celled; seeds imbricate.

About 10 species, Malay-Peninsula; 1 in Gt. Nicobar Island.

*Petunga racemosa* (Roxb.) K. Schum. in Engl. & Prantl. Pflanzenfam. 4(4): 80. 1891.

Bushy shrubs, ca 3 m high. Leaves oblong-lanceolate to lanceolate, acute at base, acute or acutely acuminate at apex, 6-20 x 2.5-4 cm; lateral nerves 10-16 pairs; petioles ca 0.8 cm long, pubescent. Spikes sessile. Flowers small, white, arranged in 2-4 rows. Calyx glabrous, teeth triangular. Corolla villous at the throat. Style sparingly pilose. Berries elliptic to globose with 4-14 seeds.

Common in inland forests.

*Fl.*: Oct.-Dec.; *Fr.*: Dec.-April.

37 km on north-south road; Koshindon.

India (Nicobar Islands); Malay Peninsula.

19. **PSYCHOTRIA** L.

Herbs, shrubs or climbers. Flowers small, green or white, in terminal, rarely axillary cymes or heads. Calyx-tube short. Corolla tube short, lobes 5. Stamens as many as corolla lobes. Ovary 2-celled; style bifid. Fruits baccate, ovoid or oblong when dried smooth or ridged, red, white or black; seeds 2-plano-convex, inner face smooth or grooved, back rounded, ridged.

About 550 species, tropics; 4 in Gt. Nicobar Island.

- 1 a. Seeds without any ridges .....2. *P. platyneura*
- b. Seeds with ridges .....2

- 2 a. Large scandent shrubs; leaves 6.2-8.8 cm long .....3. *P. sarmentosa*  
b. Small erect shrubs; leaves 12.6-25.5 cm long .....1. *P. andamanica*

1. ***P. andamanica*** Kurz in Lond. J. Bot. 328. 1875.

Small evergreen shrubs. Leaves elliptic-obovate to oblong-lanceolate, membranous, greenish-brown when dry, glabrous, shortly acuminate at apex, base narrowed, *ca* 23 x 9 cm; lateral nerves 8-10 pairs; petioles *ca* 5 cm long; stipules large, ovate, 2 fid, deciduous. Cymes glabrous or sometimes rusty pubescent, 7.5 cm in diam, sub sessile. Flowers small greenish white, shortly pedicellate. Calyx truncate, teeth short, broad. Corolla 0.2 cm long, villous at the throat. Berries ellipsoid, 0.5 cm long, smooth; seeds 5-ribbed.

Rare in inland forests.

*Fl. & Fr.*: Jan.-Dec.

Campbell Bay.

*Note*: Endemic to A & N Islands.

2. ***P. platyneura*** Kurz in Trimen. Jour. Bot. 327. 1875.

Shrubs, glabrous. Leaves elliptic to lanceolate or obovate, entire, coriaceous abruptly acuminate, tapering at the base, *ca* 17 x 6.3 cm; lateral nerves 18-22 pairs, prominent; petioles *ca* 2.5 cm long; stipules large, glabrous, broad ovate. Cymes *ca* 2.4 cm long, terminal. Flowers small on short pedicels in small cymes. Calyx short, glabrous, 5-minutely toothed. Corolla small, glabrous. Berries small obovoid, base contracted, black, smooth, crowned by the calyx limb.

Common in interior hill forests.

*Fl. & Fr.*: Jan.-Dec.

Koshin Don, Laful, 8.6 & 35 km on east-west road; Campbell Bay.

*Note*: Endemic to A & N Islands.

3. **P. sarmentosa** Blume, Bijdr. 964. 1824.

Large scandent shrubs. Leaves obovate, oblanceolate or elliptic, coriaceous, acute to obtuse at apex, base acute, *ca* 8.8 x 4 cm; lateral nerves 6-8 pairs, distinct; petioles *ca* 0.5 cm long. Cymes glabrous subsessile. Flowers many, pedicelled. Calyx 0.1 cm long, dilated towards apex, nearly truncate. Corolla 0.2 cm long, tube bearded at throat. Fruits *ca* 0.4 cm long, globose-ellipsoid, ribbed when dry.

Rare in inland forests.

*Fl. & Fr.*: March-May.

37 km on east-west road; Campbell Bay.

20. **TARENNA** Gaertn.

Shrubs, often hairy. Flowers white in terminal corymbs or compact cymes. Calyx tube campanulate, 5-toothed. Corolla cylindric or funnel-shaped, throat hairy, 5 lobed. Stamens 5. Ovary 2-celled; style short; stigma long, fusiform. Fruits baccate, 2-celled; 2-seeded; seeds planoconvex.

About 40 species, tropics; 1 in Gt. Nicobar Island.

**Tarenna weberaefolia** (Kurz) Balakr. Bull. Bot. Surv. Ind. 22. 175. 1982.

Bushy shrubs; branches slender, terete. Leaves elliptic or obovate-lanceolate, acuminate, *ca* 17 x 5 cm, membranous; lateral nerves 8-10 pairs. Cyme sessile, glabrous. Flowers pedicelled; ebracteolate. Calyx teeth triangular, obtuse. Corolla lobes linear-oblong, longer than the tube, throat woolly. Fruits *ca* 1 cm diam.

Rare in inland and coastal forests.

*Fl. & Fr.*: Nov.-June.

Kondul; 33 km on north-south road; Campbell Bay, Chengappa Bay.

*Note*: Endemic to A & N Islands.

21. **TIMONIUS** Rumph.

Trees or shrubs. Flowers small yellow or white, unisexual in axillary cymes. Males with few or many secund flowers. Females 1-3 on longer peduncles. Calyx tube short campanulate, limb persistent. Corolla coriaceous, silky, tube cylindric glabrous inside, lobes 4-5. Stamens as many as corolla lobes. Disc hairy. Ovary many celled; ovules 1 in each cell; style short, hairy; stigmas several, linear. Drupes ovoid or globose; epicarp fleshy; seeds cylindric.

About 30 species, tropics; 1 in Gt. Nicobar Island.

**Timonius jambosella** (Gaertn.) Thw., Enum. 153. 1859.

Trees, *ca* 8 m high. Leaves lanceolate or elliptic-lanceolate, acuminate, tapering to short petiole, *ca* 10 x 6 cm, glabrous, minutely silky on nerves beneath with tufts of hairs in the axil, margin recurved; lateral nerves 5-6 pairs, curving upwards; petioles *ca* 1.8 cm long. Flowers small, sessile, polygamous; male 3-12 flowered cymes; female solitary on long peduncle. Drupes small, globose, ribbed.

Rare in coastal forests.

*Fl. & Fr.*: April-August.

Alexandra river, Pulobaha.

India ( A & N Islands); Singapore.

22. **UNCARIA** Schreb.

Woody climbers. Flowers in globosse heads, peduncled; panicles without flowers converted into stout hooks. Calyx cylindric, 5 lobed. Corolla tube long; narrow, throat glabrous, lobes 5. Stamens short on corolla mouth. Ovary fusiform; style long, slender. Capsules fusiform, 2-valved; seeds numerous, minute, winged at each end.

About 40 species, mostly Malayan; 1 in Gt. Nicobar Island.

**Uncaria lanosa** Wall. var. **ferrea** (Bl.) Ridsdale., forma **ferrea** (Bl.) Ridsdale in Blumea 24: 87. 1978; Rao in J. Econ. Tax. 18(1): 241. 1994.

Scandent hairy shrubs; branches hirsute. Leaves elliptic-ovate to ovate, abruptly acuminate at apex, rounded at base, 8-15 x 4-6 cm, membranous, greenish when dry, pilose above, pubescent beneath; lateral nerves 8-10 pairs, distinct; petioles 3 mm long; stipules bifid. Flowers small, subsessile, on small receptacle forming on lax globular head, ca 1.5 cm across. Calyx lobes linear-subulate. Corolla tube glabrous outside. Capsules subsessile, obovate, spindle-shaped, crowned by calyx lobes.

Common in inland forests.

*Fl. & Fr.*: Dec.-June.

15, 33 & 41 km on east-west road; 37 km on north-south road.

India (Nicobar Islands); Malay Peninsula, Borneo, Sumatra, Lesser Sunda Is.

## ASTERACEAE

About 700 genera & 13500 species, cosmopolitan; 9 genera & 11 species in Gt. Nicobar Island.

- 1 a. Capitula heterogamous; florets both ray and disk .....2  
b. Capitula homogamous; florets all ligulate or tubular .....5
- 2 a. Anthers distinctly tailed .....5. *Pluchea*  
b. Anthers not tailed .....3
- 3 a. Palaea of receptacle flat, never conical .....4  
b. Palaea of receptacle concave, embracing the achenes .....6. *Spilanthes*
- 4 a. Palaea bristle like; flowers white .....3. *Eclipta*  
b. Palaea linear or oblanceolate; flowers yellow .....9. *Wedelia*
- 5 a. Anther cells tailed or auricled .....4. *Gynura*  
b. Anther cells cleft at base or subentire .....6

- 6 a. Leaves opposite .....1. *Ageratum*
- b. Leaves alternate .....7
- 7 a. Style branches subulate, hairy .....8
- b. Style branches linear, obtuse, truncate or appendiculate .....2. *Blumea*
- 8 a. Pappus leathery, coroniform .....7. *Struchium*
- b. Pappus of 1-many hairs .....8. *Vernonia*

## 1. *AGERATUM* L.

Erect aromatic herbs. Heads small, in dense terminal corymbs, homogamous. Involucres campanulate; bracts many, pilose. Corolla tubular, lobes 5. Anthers appendiculate at the apex. Style appendages papillose. Achenes oblong 4-5 ribbed; pappus of *ca* 5 aristate scales.

About 45 species, in tropical America & warm countries; 1 in Gt. Nicobar Island.

***Ageratum conyzoides* L.**, Sp. Pl. 839. 1753; B.P. Uniyal, Fl. Ind. 12. 348. 1995.

Herbs, *ca* 40 cm high. Leaves opposite, ovate, subacute at apex, 5-8 x 3-5 cm, crenate, 3-nerved. Heads many flowered; involucral bracts many, 2-seriate, prominently 2-nerved. Corolla white or blue. Achenes ribbed pappus of 4 scales.

Common along the road sides.

*Fl. & Fr.*: Throughout the year.

Magar Nallah, Campbell Bay.

## 2. *BLUMEA* DC.

Herbs or undershrubs, usually aromatic. Heads heterogamous, disciform, either solitary or in lax or compact panicles. Involucres campanulate or urceolate; bracts numerous, multiseriate. Florets numerous, outer ones female, central ones bisexual. Female corolla filiform, 2-5 lobed; bisexual corolla tubular, 4-5 lobed. Anthers sagittate at base with caudicles



(tails). Style branches filiform, obtuse at the apex. Achenes oblong 5-10 ribbed; pappus hairs slender, reddish or white.

About 50 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Pappus reddish ..... 1. *B. junghuhniana*  
 b. Pappus white ..... 1. *B. laciniata*

1. ***Blumea junghuhniana*** (Miq.) Boerl. Handl. Fl. Ned. Ind. 2(1): 239. 1891; S. Kumar in Fl. India 13: 127. 1995.

Undershrubs; stems and leaves densely, silky tomentose. Leaves oblong-obovate to oblong-lanceolate, margins coarsely dentate with spreading teeth, ca 30 x 11 cm, pinnatifid-lobed, narrowed at base. Heads in large terminal panicles. Involucral bracts longer than florets, linear, margins scarious, densely pubescent on dorsal surface. Corolla of bisexual florets yellow, tubular, 5-lobed, pubescent. Corolla of female florets filiform, 2 or 3 lobed, glabrous. Achenes 10-ribbed, pubescent. Pappus red.

Common in waste lands.

*Fl. & Fr.*: Throughout the year.

6 km on east-west road; 7 & 18 km on north-south road; Laful; Lakshman beach & Campbell Bay.

India (A & N Islands); Indonesia, Malaya, New Guinea, Philippines.

2. ***Blumea laciniata*** (Roxb.) DC., Prodr. 5: 436. 1836; S. Kumar in Fl. India 13: 128. 1995.

Stout aromatic herbs, ca 3 m high. Lower leaves membranous, apex obtuse, base attenuate into the petiole, ca 20 x 7 cm, often toothed, lobes dentate. Heads numerous, corymbosely or paniculately arranged; peduncles villous, glandular; involucral bracts white hairy. Corolla of bisexual florets yellow, tubular, 5-lobed, pubescent. Corolla of female florets filiform, 2-3 lobed, glabrous. Achenes cylindric, 10-ribbed, hairy pappus, white.

Rare along the road sides.

*Fl. & Fr.*: Throughout the year.

17, 27 & 39 km on east-west road.

### 3. ECLIPTA L.

Erect or prostrate herbs. Inflorescences solitary or heads. Heads radiate, heterogamous. Involucral bracts 2 or more series. Ray florets numerous, 2 seriate; disc florets fewer, tubular, 4 lobed at the apex. Anthers obtuse. Style branched. Achenes oblong or obovate, triquetrous, tuberculate; pappus of thick scales.

About 4 species, tropics; 1 in Gt. Nicobar Island.

*Eclipta prostrata* (L.) L., Mant. Pl. 2. 286. 1771; H.J. Chowdhery in Fl. India 12: 381. 1995.

Prostrate, decumbent-erect, hairy herbs, ca 30 cm high. Leaves opposite-subsessile, elliptic lanceolate, mucronulate at apex, crenulate at base, ca 5 x 1.5 cm. Heads ca 5 mm in diam, terminal or axillary. Ray florets ligulate, bidentate, white; disc florets tubular, 4-5 lobed. Achenes dark brown, dorsiventrally compressed, angled; pappus of thick scales.

Common in moist places.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, 30 km on north-south road.

### 4. GYNURA Cass.

Herbs, rarely undershrubs, glabrous or hispid. Heads solitary or corymbose; homogamous, disciform, yellow or purple. Flowers all bisexual. Involucres cylindric or subcampanulate; bracts 10-12, 1-seriate, with scarious margins. Receptacles flat, pitted or fimbriate. Anthers base entire or sub-auriculate. Style arms slender, the tips long, subulate, hispid. Achenes narrow, many ribbed; pappus hairs white, copious, soft.

About 100 species, tropics & subtropics; 1 in Gt. Nicobar Island.

**Gynura aurantiana** (Bl.) DC., Prodr. 6: 300. 1838; R. Mathur in Fl. India 13: 217. 1995.

Herbs, densely purplish hairy. Leaves ovate, acute to acuminate, lyrate-pinnatifid with 2-8 lateral lobes, serrate, ca 8 x 4.5 cm; petioles 1-1.5 cm long. Inflorescences terminal on long branches with 1-3 capitula. Capitula campanulate; bracteoles densely purplish hairy. Involucral bracts 8-12, scarious margins. Florets all tubular; tube yellow. Style arms orange, much exserted, hairy. Achenes pale brown, 1.5 mm long, ribbed, glabrous; pappus of white hairs.

Common in inland forests along the road sides.

*Fl. & Fr.*: April-May.

33 km on east-west road.

#### 5. **PLUCHEA** Cass.

Shrubs or undershrubs. Heads white, yellow or purple, heterogamous, disciform in terminal, leafless corymbs or subsolitary, small involucral bracts in few unequal series, margins scarious. Receptacles flat. Ray florets numerous; corolla purplish upward, apically 2-3 toothed. Disc florets few or many; corolla tubular. Campanulate; limb 5 lobed. Achenes cylindrical, 3-6 ribbed, strigose often glandular. Pappus bristles slender, scanty, in one series.

About 30 species in tropical & subtropical regions; 1 species in Gt. Nicobar Island.

**Pluchea indica** (L.) Less. in Linnaea. 6: 150. 1831. S. Kumar in Fl. India 13: 154. 1995.

Shrubs ca 1 m high, glabrous. Leaves obovate or oblanceolate, acute obtuse or apiculate at apex, minutely serrate, 2-5 cm long, gland dotted, narrowed into a small petiole. Heads in compound terminal corymb, 0.6 cm in diam, pubescent. Achenes minute, ribbed, nearly glabrous; pappus white, scanty, spreading.

Common in coastal forests.

*Fl. & Fr.*: May-Dec.

Laful, 30, 32, 38 & 36 km on north-south road.

## 6. **SPILANTHES** Jacq.

Herbs. Heads discoid, sometimes radiate, peduncled, solitary or collected into panicles, axillary or terminal. Involucral bracts 1-2 seriate. Ray florets few, female, with 2-3 dentate ligules. Disc florets tubular 3-5 lobed, bisexual. Anthers acute below. Achenes dorsally compressed, sometimes trigonous, glabrous or hairy. Pappus absent.

***Spilanthes paniculata*** Wall. ex. DC. Prodr. 5: 625. 1836. H.J. Chowdhery, in Fl. India. 12. 410. 1995.

Stout herbs. ca 50 cm high. Leaves opposite, petiolate, ovate-elliptic to elliptic, narrowed at base, acute or obtuse at apex. Heads 6-8 mm in diam., in axillary and terminal panicles. Involucral bracts 2 seriate. Ray florets few, ca 5 mm long. Disc florets ca 3 mm long. Achenes dorsally compressed, ciliate along the margins; pappus of 2-3 stiff awns.

Common in wet places.

*Fl. & Fr.*: May-Dec.

Campbell Bay, 15 & 40 km east-west road; 4 km north-south road.

## 7. **STRUCHIUM** P.Browne

Herbs. Inflorescences single or heads, clustered, axillary. Heads discoid. Involucral bracts 3-4 seriate, margin scarious. Corolla 3-4 lobed. Anthers sagittate to acute at base. Style bifid. Achenes angular, ribbed; pappus coroniform.

Monotypic, distributed in Mexico, W. Indies, America, Africa & Indian subcontinent; 1 species in Gt. Nicobar Island.

***Struchium sparganophorum*** (L.) Kuntze, Rev. Gen. Pl. 1: 366. 1891; B.P. Uniyal in Fl. India 13: 347. 1995.

Herbs, *ca* 1 m high; rooting from basal nodes. Leaves simple, alternate, elliptic, narrow at both the ends, dentate, *ca* 15 x 4.5 cm, subglabrous; petioles *ca* 1.5 cm long, somewhat amplexicaul. Inflorescences axillary, globose. Heads discoid, 5 mm across. Involucral bracts in 3-4 series, ciliolate. Corolla purple, salver-shaped. Anthers sagittate. Achenes, glabrous, 3-4 ribbed; pappus coroniform, cartilaginous.

Rare in littoral forests.

*Fl. & Fr.*: Throughout the year.

Indira point.

### 8. **VERNONIA** Schreb.

Herbs, shrubs or trees. Heads homogamous, few to many flowered, in axillary or terminal peduncled panicles. Involucral bracts many seriate, or purplish. Anthers sagittate below. Achenes angled or ribbed, hairy or glabrous; pappus usually biseriate.

About 1000 species, mostly in America, Africa, Asia & Australia; 2 in Gt. Nicobar Island.

- 1 a. Achenes silky pubescent; eglandular .....1. *V. cinerea*
- b. Achenes glabrous; glandular .....2. *V. patula*

1. ***Vernonia cinerea*** (L.) Less., *Linnaea* 4: 291. 1829; B.P. Uniyal in *Fl. India* 13: 367. 1995.

Herbs, *ca* 80 cm high. Leaves various, obtuse or acute, serrate, undulate or entire, *ca* 8.5 x 4 cm, glabrous, pubescent villous or glandular beneath; petioled or sessile. Heads in terminal corymbose panicles, *ca* 5 mm across, 18-20 flowered. Involucral bracts 4-seriate, with few glands. Achenes terete, appressedly silky, faintly ribbed; pappus white or fulvous, biseriate.

Common in grass lands.

*Fl. & Fr.*: Throughout the year.

Laful, Lakshman beach, 17 km on east-west road, 15 km on north-south road.

2. **Vernonia patula** (Dryand.) Merr. in Philip. J. Sci. 3: 439. 1908; B.P. Uniyal in Fl. India, 13: 376. 1995.

Herbs, *ca* 70 cm high; stems terete, ribbed, pubescent; young branches greyish villous. Leaves broadly ovate-elliptic, acute or acuminate at apex, subentire, *ca* 10.5 x 4.5 cm, silky villous, glandular beneath. Heads at the top of dichotomous, branches, terminal or in the upper axils. Involucral bracts 4-seriate, sparsely greyish villous, glandular, spine tipped. Corolla glandular. Achenes 5-angled, glabrous, glandular, *ca* 1.5 mm long; pappus white, uniseriate.

Common in coastal areas.

*Fl. & Fr.*: Throughout the year.

Galathea to Indira point, Chingenh.

India (Andaman & Nicobar Islands); Myanmar, Malay Peninsula, Thailand, Japan, China.

#### 9. **WEDELIA** Jacq.

Herbs or shrubs. Heads solitary terminal, peduncled, heterogamous. Ray florets several female; corolla yellow or white; ovary compressed; style curved. Disc florets yellow, numerous, bisexual or rarely male, tubular, campanulate, 5 lobed; anther bases sagittate; style arms broad. Achenes of ray & disc florets cuneate-obovate, triquetrous or laterally compressed; pappus none or cup like or 1-2 weak awns.

About 70 species in the tropical & subtropical regions; 1 in Gt. Nicobar Island.

**Wedelia biflora** (L.) DC. in Wight., Contrib. Bot. Ind. 18. 1834; A.J. Chowdhery in Fl. India 12: 422. 1995.

Straggling or climbing herbs. Leaves oblong-ovate, long or shortly acuminate, cuneate at base, 3-nerved, serrate, *ca* 6 x 3.5 cm, hispid on

both surfaces, petiolate. Heads solitary or several in loose cymes. Flowers yellow. Achenes dark brown; pappus a minute dentate cup with one or two weak bristles.

Common in littoral forests.

*Fl. & Fr.*: Throughout the year.

Galathea to Indira point, Lakshman beach, Koshin Don Beach.

### GOODENIACEAE

About 12 genera and 200 species; tropics mainly in Australia; 1 genus and 1 species in Gt. Nicobar Island.

### SCAEVOLA L.

Small trees or shrubs. Inflorescences axillary, subsessile. Flowers bisexual, zygomorphic. Calyx tube adnate to ovary, 5 lobed. Corolla gamopetalous, 5 lobed. Stamens 5. Ovary inferior or subinferior, 1-2 celled; stigma 2-lobed. Drupes, more or less fleshy, with a hard stone, containing 1 or 2 seeds.

About 80 species, mostly in tropics; 1 species in Gt. Nicobar Island.

***Scaevola sericea* Vahl, Symb. Bot. 2: 37. 1791.**

Shrubs, *ca* 7 m high. Leaves spirally arranged, sessile, mostly crowded at the ends of the branchlets. Obovate to spatulate, fleshy, rounded at apex, long attenuate at base, *ca* 25 x 10 cm, dentate or entire. Inflorescences cymose *ca* 4 cm long, with few flowers. Flowers white, *ca* 2.5 cm long. Drupes globular, *ca* 1.5 cm, diam.

Common along littoral forests.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, 20 km on north-south road, Baludera.

## MYRSINACEAE

About 35 genera and 1000 species, mainly in tropics; 3 genera, 6 species & 1 variety in Gt. Nicobar Island.

- 1 a. Calyx fleshy; ovary half inferior, partially united to calyx; fruits many seeded .....3. *Maesa*
- b. Calyx membranous; ovary superior, free from calyx; fruits 1-seeded .....2
- 2 a. Corolla lobes imbricate or valvate in bud; flowers unisexual, or if perfect, stigma ligulate .....2. *Embelia*
- b. Corolla lobes twisted in bud; flowers perfect; stigma never ligulate .....1. *Ardisia*

1. *ARDISIA* Swartz.

Trees or shrubs. Inflorescences paniculate, corymbose or sub-umbellate, terminal or axillary. Flowers perfect, 5 or 4 merous. Sepals free or shortly connate at base, 4-5 lobed. Corolla 4-5 lobed. Stamens sagittate. Ovary globose; style long, filiform. Fruit a globose 1-seeded drupe, red or black; seeds covered by membranaceous remnant of placenta.

About 250 species, tropical America, Pacific Islands, East Indies & Asia; 2 species & 1 variety in Gt. Nicobar Island.

- 1 a. Peduncles axillary panicles carrying lax flowered; pedicels long; leaves acuminate on both ends ... .....*A. oxyphylla*
- b. Peduncles axillary in corymbs, more flowered; pedicels not much long; leaves bluntly acute at apex; attenuate at base .....*A. solanacea*

1. *Ardisia oxyphylla* Wall. ex DC., Prodr. 8. 130. 1844.

Small trees, ca 12 m high; bark pinkish spots present. Leaves alternate, elliptic, narrowed at both ends, ca 12 x 4 cm sub-coriaceous, entire, nerves numerous distinct; petioles ca 1.2 cm long. Peduncles ca 7.5 cm long, slender. Panicles lax flowered; pedicels ca 8 mm long. Flowers milky white. Fruits 6 mm, globose, hardly striate.

Common in hill forests.

13 km on north-south road; 24 km towards Indira point.



India (A & N Islands); Myanmar, Malay Peninsula.

***Ardisia oxyphylla* Wall. ex DC. var. *attenuata* DC.** in Trans. Linn. Soc. London. 17. 119. 1834.

Small trees, *ca* 8 m high. Leaves elliptic, acute at apex, attenuate at base, entire, subcoriaceous, 17 x 6 cm; lateral nerves, numerous, distinct; petioles *ca* 1.2 cm long. Peduncles *ca* 7 cm long more slender. Panicles lax flowered; pedicels *ca* 1.8 cm long. Flowers red or pink. Fruits *ca* 6 mm, globose, hardly striate.

Rare in moist dense forests.

*Fl. & Fr.*: Oct.-Feb.

East bank forest of river Galathea.

India (A & N Islands); Myanmar.

*Note* : Very similar to *A. oxyphylla* but differs with leaf base being attenuate; peduncles more slender & flower pink.

## 2. ***Ardisia solanacea* (Poir) Roxb., Pl. Cor. t. 27. 1795.**

Shrubs, *ca* 5 m high. Leaves obovate-oblong or elliptic, acute or shortly acuminate, base narrowed or cuneate, glabrous. Racemes axillary corymbose or umbels. Flowers pinkish, 1-1.5 cm across. Calyx lobes elliptic, obtuse, in fruit enlarged, orbicular, closely pressed to the berry. Fruits subglobose *ca* 0.9 cm in diam., blackish.

Common in shaded places of inland forests.

*Fl. & Fr.* : June - Feb.

Campbell Bay; Way to Koshindon from Kopenheat; Lakshman beach.

## 2. **EMBELIA** Burm. f.

Climbing or erect shrubs, sometimes trees. Leaves glandular. Inflorescences terminal or axillary racemose paniculate or simple racemes. Flowers bisexual or unisexual, 4 or 5 merous, small, ebracteolate. Calyx

free, persistent. Corolla usually imbricate; stamens inserted on the corolla with glands on the connectives. Style short; stigma capitate. Drupes subglobose; (1 rarely 2) seeded.

About 150 species; tropics; 3 in Gt. Nicobar Island.

- 1 a. Flowers 5-merous; racemes terminal; leaves elliptic; fruits *ca* 0.5 cm across. ....2
- b. Flowers 4-merous; racemes axillary; leaves oblong-obovate; fruits 1-2 cm across. ....3. *E. viridiflora*
- 2 a. Branches & leaves brown villous; leaves obtuse at base, acute at apex. ...1. *E. microcalyx*
- b. Branches & leaves not villous; leaves narrowed at both ends. ....2. *E. ribes*

1. ***Embellia microcalyx*** Kurz. in Jour. Bot. 13 : 328. 1875.

Scandent shrubs; branches brown villous. Leaves elliptic, obtuse at both ends, *ca* 8 x 4 cm, entire, rusty villous beneath; nerves slender; petioles *ca* 5 mm long. Panicles terminal, dense flowered, pubescent. Flowers minute, light yellow, fragrant. Petals 5, greenish white. Drupes *ca* 0.5 cm across.

Rare in inland hill forests.

*Fl. & Fr.* : Feb. - June.

4 km on east-west road; 38 km on north-south road.

*Note* : Endemic to Nicobar Islands.

2. ***Embellia ribes*** Burm. f., Fl. Ind. 62. t. 23. 1768.

Climbing shrubs; stems and branches drooping or pendulous, with tubercled-lenticels. Leaves elliptic-lanceolate, acute at apex, rounded or narrowed at base, *ca* 8 x 3 cm. Panicles terminal or on upper axils. Flowers greenish white, small, polygamous. Sepals hairy. Petals greenish-white, pepillose. Drupes *ca* 0.5 cm across.

Rare along the road sides, hanging from the hill slopes.

*Fl. & Fr.* : May - Oct.

32.5 km on east-west road; 38 km on north-south road; Lakshman beach.

3. ***Embelia viridiflora*** (A. DC.) Scheff., Comm. Myrs. Archip. Ind. 45, 1867.

Climbers. Leaves mostly elliptic, rarely oblong or obovate, acute at base, entire, acute or rarely obtuse at apex, *ca* 24 x 9 cm; veins strongly reticulate, raised and prominent on both sides, primary 10-12 pairs; petioles *ca* 3 cm long. Inflorescences racemes, *ca* 4 cm long, arising from the axils of old branches, subtended by a cluster of empty bracts, 8-12 flowered; bracts oblong. Flowers bisexual. Calyx 4-segmented; segments triangular, sparsely glandular-ciliate at margin. Petals 4, free, glabrous & shiny punctate outside, densely papillose, inside & at margins, creamy yellow. Stamens-4. Fruits ovoid, *ca* 12 x 8 mm, brown, shiny, apiculate, 1-seeded.

Common in inland forests.

*Fl. & Fr.* : June - Nov.

41 km on east-west road; bank of river Galathea on north-south road; Galathea river bank.

### 3. **MAESA** Forsk.

Shrubs or small trees. Leaves usually with transparent streaks. Inflorescences racemes or panicles; bracteate. Flowers small, bi or unisexual. Sepals adnate to ovary, persistent. Berries fleshy, many seeded.

About 200 species in the old tropics ; 1 in Gt. Nicobar Island.

***Maesa andamanica*** Kurz, For. Fl. Brit. Burma, 2 : 575. 1877.

Straggling shrubs with fine warted branchlets. Leaves ovate-acuminate, rounded at the base, *ca* 10 x 5 cm, entire or denticulate; petioles slender, *ca* 1.25 cm long. Flowers small cream coloured or white on slender pedicels in short axillary racemes. Fruits yellowish when ripe, *ca* 0.5 cm across.

Common along the stream.

*Fl. & Fr.* : Jan. - May.

Galathea Bay to Pulobaha Bay; 15 km on east-west road.

## SAPOTACEAE

About 40 genera and over 600 species, tropics of both hemispheres; 2 genera & 3 species in Gt. Nicobar Island.

- 1 a. Sepals uniseriate, imbricate; stamens 5-6; staminodes present. .... 2. *Planchonella*
- b. Sepals 2-seriate, outer series valvate; stamens 12-15; staminodes absent. .... 1. *Palaquium*

### 1. PALAQUIUM Blanco

Large trees, usually very lactiferous. Flowers fascicled, pedicelled, usually below the leaves in the axils of fallen one, white, fragrant. Calyx 6-parted. Corolla campanulate, 6-lobes, lanceolate, acute, outer 3 valvate, inner 3 imbricate. Stamens 12-18, in 2 series. Staminodes absent. Ovary villous, 6-celled; style subulate. Berries oblong or globose, fleshy, 1-2 seeded; seeds large, without endosperm.

Absent 50 species in tropical Asia; 2 species in Gt. Nicobar Island.

- 1 a. Tertiary nerves running predominantly parallel to secondary nerves; leaf stalk hairy, hairs often extending up to midrib. .... 1. *P. semarum*
- b. Tertiary nerves laxly reticulate; leaf stalk & underside of midrib glabrous or nearly so..... 2. *P. sukoei*

1. ***Palaquium semarum*** H.J. Lam. in Bull. Jard. Bot. Buitenz. ser. 3 (7) : 43. 1925.

Trees, ca 20 m high; young branchlets, tomentose. Leaves spatulate, oblong-obovate, rounded & obtusely caudate-acuminate at apex, narrowly cuneate or decurrent at base, 8-12 x 3-6 cm, glabrous & glossy green above, pale green beneath, drying papery reddish-brown; midrib raised and densely reddish woody beneath; lateral nerves 19-26, pairs; petioles ca 2.5 cm long. Flowers in 2-7 flowered clusters on axils of leaf scars

below the terminal crowded leaves. Sepals reddish, woolly outside. Corolla white or pale yellow. Stamens-12, epipetalous; filaments filiform; anthers sagittate.

Rare in littoral forests.

*Fl.* : July - Sept.; *Fr.* : Not Seen.

18-19 km on east-west road.

India (Great Nicobar Island); Malaya, Sumatra S.E. Asia.

2. ***Palaquium sukoei***. C.E.C. Fischer in Kew. Bull. 1933 : 365. 1933.

Trees, *ca* 30 m high; branchlets glabrous. Leaves crowded at the tips of branchlets, obovate, elliptic-obovate, more or less cuneate at base, entire, rounded to obtuse or emarginate at apex, 7-16 x 2-6 cm; lateral nerves 9-15 pairs, inconspicuous above; petioles *ca* 3.5 cm long. Flowers white, solitary, axillary. Sepals 3+3, the outer broadly ovate-oblong to 3-angular, inner wide oblong-elliptic, brown tomentose outside, rufous pubescent inside. Corolla glabrous, hairs only near the base of stamens. Stamens 12. Ovary ferrugineous-sericeous, 6-locular. Fruits ellipsoid, *ca* 4.5 x 2.5 cm, brown, 1-seeded; pedicels *ca* 2.5 cm long, thick.

Rare in inland forests.

*Fl. & Fr.* : Oct. - March.

37.5 km on east-west road.

India (A & N Islands); Malay Peninsula, Myanmar.

## 2. **PLANCHONELLA** Pierre

Trees; bark red to reddish brown. Flowers small, in axillary fascicles, sub-sessile or short pedicelled. Sepals 5 or 6, imbricate, orbicular. Corolla lobes 5-6. Stamens, 5, opposite corolla lobes; staminodes generally 5. Ovary hairy, 5-chambered; style short. Berries 1-5 seeded.

About 100 species in S.E. Asia, Malasia, Australia & Pacific Islands; 1 in Gt. Nicobar Island.

**Planchonella firma** (Pierre) Dubard. in Ann. Mus. Col., Marseille, ser. 2 (10) : 59. 1912.

Small trees, young parts red-pubescent. Leaves coriaceous, oblong-lanceolate, short acuminate at apex, base acute, *ca* 12.5 x 3.75 cm midrib impressed above; lateral nerves 12-16 pairs, elevate beneath, rusty-pubescent; petioles *ca* 3.75 cm long, pubescent. Flowers 4-6 in fascicles, axillary. Sepals pubescent, *ca* 4 mm long. Corolla hairy outside, lobes oblong, *ca* 4 mm long. Ovary villous. Berries oblong or obovoid, glabrous; seed-1.

Rare in inland forests.

*Fl. & Fr.* : Oct. - March.

Galathea Bay to Indira point.

India (Nicobar Islands); Malay Peninsula.

### EBENACEAE

About 5 genera and 250 species, widely in tropics; 1 genus & 1 species in Gt. Nicobar Island.

### DIOSPYROS L.

Trees or shrubs. Flowers 4-5 or sometimes 3-merous, dioecious, axillary, subsessile or in short cymes. Calyx 3-5 lobed. Corolla tubular, salver-shaped or campanulate, lobes 3-5. Male flowers: stamens 3-60. Female flowers with 0-16 staminodes; Ovary 3-5, or 10 celled; stigmas 1-4. Fruits globose or ellipsoid, often with a much enlarged calyx; seeds oblong, usually compressed, with ruminated endosperm.

About 200 species in the tropics; 1 species in Gt. Nicobar Island.

**Diospyros cauliflora** Bl., Bijdr. 668. 1825; Vasudeva Rao. in J. Econ. Tax. Bot. 7 : 629. 1985 'Tendu'

Small trees, *ca* 7m high. Leaves, elliptic, lanceolate or obovate, acute or attenuate at base, acuminate at apex, *ca* 40 x 12 cm, long. Fruits fasciculate on tubercles of trunk & old branches, ovoid ellipsoid or globose, apiculate or beak at apex, green & densely brown or red tomentose especially at apex, *ca* 2 cm in diam; fruiting calyx 4-lobed; lobes strongly reflexed, densely woolly tomentose; seeds 4, ovate oblong, flattened on two sides.

Rare in inland forests, mostly near streams.

*Fl. & Fr.* : Nov. - May

Jhau Nallah, Chengappa Bay, Galathea river bank.

India (Great Nicobar Island) ; Java, Malay Peninsula.

### SYMPLOCACEAE

Only one genus & about 250 species, tropics; 3 species in Gt. Nicobar Island.

### SYMPLOCOS L.

Trees or shrubs. Racemes or spikes, axillary, simple or compound, sometimes reduced to a single flower. Flowers white, hermaphrodite. Calyx tube adnate to ovary, lobes 5. Corolla 5-lobed with short tube, free nearly to base. Stamens numerous, 30 to 100 adnate to the base of the corolla. Ovary inferior, 2-5 celled; stigma capitate. Drupes oblong, base sub-globose, narrowed upwards, 1-3 seeded; seeds oblong, curved.

Species about 300, tropical & subtropical, Asia, Australia & America; 3 in Gt. Nicobar Island.

- 1 a. Embryo curved.....2
- b. Embryo straight .....3. *S. racemosa*
- 2 a. Branches paniced racemose .....2. *S. odoratissima*
- b. Branches simple racemes.....1. *S. fasciculata*

1. *Symplocos fasciculata* Zoll., Syst. Verz. 136. 1854.

Slender trees, *ca* 15m high. Leaves oblong, lanceolate, long-acuminate at apex, rounded or rhomboid, at base, *ca* 10 x 3.75 cm, glabrous, except midrib beneath, minutely pilose, serrate; nerves 5-7 pairs; petioles *ca* 5 mm long. Cymes or short pubescent racemes fascicled in axils, many flowered. Flowers pale yellow. Calyx lobes pubescent. Corolla small, glabrous, white. Stamens 20-25 in 5 bundles. Fruits obliquely ovoid, narrowed to a cylindric beak, deep blue.

Rare in inland forests.

*Fl. & Fr.* : June - Nov.

33 km east-west road.

India (Nicobar Islands); Java, Borneo, Malay Peninsula.

2. ***Symplocos odoratissima*** (Blume) Choisy ex. Zoll. Syst. Verz. Ind. Arch. 136. 1854.

Trees, *ca* 20 m high. Leaves elliptic or elliptic-obovate, short acuminate at apex, base cuneate, *ca* 15x5 cm, glabrous, entire, or serrate; nerves 8-10 pairs; petioles *ca* 1.5cm long. Panicles of racemes axillary in upper leaves, grey pubescent, *ca* 5 cm long. Calyx pubescent. Corolla tube very short, lobes ovate obtuse, pubescent on back, white. Stamens in 5 bundles, 80-100. Fruits ampulliform, 1.25 cm long, corky, rusty pubescent; seeds 1-3; embryo curved.

Rare in inland forests.

India (Great Nicobar Island); Java, Malay Peninsula.

*Note* : The plant record from Great Nicobar is by Sahni, (No. 22900 DD) and the description is based on literature.

3. ***Symplocos racemosa*** Roxb., Fl. Ind. 2 : 539, 1832.

Small trees, *ca* 4 m high. Leaves oblong to obovate-lanceolate, bluntish acuminate or apiculate at apex, tapering downwards *ca* 12 x 4 cm, more or less serrulate. Flowers small, in axillary villous tomentose racemes, yellow. Calyx deeply 5 lobed. Petals 5. Stamens many. Fruits subcylindric, bluish black when fully ripe.



Common in inland forests.

*Fl. & Fr.* : Jan. - Nov.

41.5 km on east-west road, Dogmar river.

## OLEACEAE

About 29 genera & 600 species in tropical & temperate regions; 3 genera & 3 species in Gt. Nicobar Island.

- 1 a. Corolla lobes imbricate. ....2. *Jasminum*  
 b. Corolla lobes valvate.....2
- 2 a. Radicle inferior; scandent shrubs.....3. *Myxopyrum*  
 b. Radicle superior; small trees .....1. *Chionanthus*

### 1. CHIONANTHUS L.

Trees or shrubs. Inflorescences axillary, rarely terminal, panicle, condensed & fasciculate. Flowers dioecious, white. Calyx 4 parted. Corolla 4 lobed. Stamens 2. Ovary 2 loculate with 2 ovules in each locule; stigma 2-lobed. Drupes ovoid, 1-seeded, dark blue when ripe.

About 100 species, tropical & subtropical regions, few in temperate; 1 in Gt. Nicobar Island.

***Chionanthus ramiflorus* Roxb., Fl. Ind. 1 : 106. 1820.**

Trees, *ca* 10 m high, branches woody, lenticellate. Leaves oblong or elliptic-oblong or oblanceolate, *ca* 30 x 10 cm, attenuate at base, acute at apex, entire, glabrous, coriaceous; nerves 8-14 pairs; petioles *ca* 3.5 cm long, channelled. Panicles lax, *ca* 4 cm long. Flowers in fascicles, yellow. Calyx *ca* 2 mm long, 4 lobed. Petals *ca* 2.5 mm long, two petals jointed in a pair, *ca* 1/3 of the length from the base. Drupes ellipsoid, elongate, green, 2 x 0.6 cm.

Common in the edges of the forests.

*Fl. & Fr.* : Feb. - April.

Campbell Bay, Galathea river bank, 3 & 15 km on north-south road.

*Doubtful taxa :*

**Chionanthus palembanicus** Miq., Fl. Ind. Bot. Suppl. 558. 1861.

Small trees. Leaves elliptic-oblong, entire, glabrous, obtusely acuminate at apex, cuneate at base, *ca* 20 x 6.5 cm, lateral nerves 10-11 pairs. Petioles *ca* 2 cm long. Panicles *ca* 12 cm long, glabrous. Flowers yellow. Drupes ovoid to oblong, *ca* 3 cm long, 1 seeded, bluish black.

*Note :* This species record from Great Nicobar is by Kurz. (1876).

## 2. JASMINUM L.

Erect or scandent shrubs. Flowers white or yellow, regular, axillary or terminal, trichotomous, cymes, rarely solitary. Calyx funnel-shaped, 5-10 lobed. Corolla salver-shaped, white, pink or yellow, lobes 4-10. Stamens-2. Ovary 2-celled, each cell with usually 2 ovules; style cylindrical; stigmas 2. Berries 2 lobed; seeds usually one in each lobe.

About 300 species, mainly of warm temperate regions of the old world; 1 in Gt. Nicobar Island.

**Jasminum multiflorum** (Burm. f.) Andr. Bot. Repos. 8 : 496. 1807. Var. **nicobaricum** Thoth. in Bull. Bot. Surv. India 5 : 99. 1963.

Climbing shrubs; branchlets glabrous. Leaves simple, alternate, ovate to ovate-oblong, glabrous, subcoriaceous, cuspidate at apex, retuse at base, *ca* 15.8 x 0.8 cm; lateral nerves 7-9 pairs; petioles *ca* 2 cm long, grooved, puberulous above. Inflorescences axillary & terminal, trichotomous cymes, *ca* 9 cm long. Flowers *ca* 3.8 cm long, white, fragrant. Calyx 6-lobed, glabrous below, teeth puberulous, longer than the tube. Corolla white, 7-8 lobed. Ovary globose; style slender; stigma bifid.

Rare on hill slopes.

*Fl.* : Dec. - March; *Fr.* : Not seen.

32 km on east-west road.

*Note* : Endemic to Nicobar Islands.

*Doubtful taxa* :

**Jasminum acuminatissimum** Bl. Mus. Bot. Lugd. Bot. 1 : 276. 1849.

Scandent shrubs. Fruits greenish brown in axillary cymes.

Rare along river bank.

*Fl. & Fr.* : Dec. - March

Dogmar river.

*Note* : This species record is from Great Nicobar by Thothathri *et al.*, (1973).

### 3. MYXOPYRUM Bl.

Large evergreen, scandent shrubs; quadrangular, glabrous. Inflorescences axillary or terminal, trichotomous panicles, hairy to glabrous. Flowers small, yellow; bracts minute or absent. Calyx campanulate, 4-lobed. Corolla 4 lobed. Stamens-2; anthers ovate. Ovary 2-celled; ovules 1-2 in each cell; style short; stigma subsessile, broad. Fruit berry, 1-2 seeded.

About 12 species from Indo-China & Indo-Malayan regions; 1 in Gt. Nicobar Island.

**Myxopyrum smilacifolium** Bl. Mus. Bot. Ludg. Bat. 1: 320. 1849.

Scandent shrubs. Leaves oblong to ovate or cordate, cuneate at base, acuminate at apex, ca 17 x 8 cm, entire or rarely toothed; lateral nerves 3 or 5, conspicuous; petioles ca 1.5 cm, glabrous. Cymes axillary, rarely terminal, 10-20 cm long, hairy. Flowers in clusters. Calyx linear or linear spatulate. Corolla ca 4 mm long. Berries ca 6 mm in diam, 1-seeded, sub-globose, obovoid, red in colour.

Common in littoral low land forests.

*Fl. & Fr.* : April - June.

Kopenheat to Pulobabi, 2 km on east-west road, Galathea National Park, Indira point.

### APOCYNACEAE

About 130 genera and over 1200 species, tropical and subtropical; 11 genera & 12 species in Gt. Nicobar Island.

- 1 a. Trees, rarely herbs or undershrubs. ....2
- b. Scandent or climbers. ....8
- 2 a. Leaves alternate .....2. *Cerbera*
- b. Leaves opposite or whorled.....3
- 3 a. Leaves whorled. ....4
- b. Leaves opposite.....5
- 4 a. Tertiary nerves of leaves scalariform or branching into veins of higher order; fruits drupaceous..... 9. *Rauvolfia*
- b. Tertiary nerves of leaves reticulate; fruits a follicle.....1. *Alstonia*
- 5 a. Tertiary nerves of leaves branching into veins of higher order; fruits baccate .....4. *Hunteria*
- b. Tertiary nerves of leaves not branching into veins of higher order (reticulate or scalariform); fruits not baccate.....6
- 6 a. Fruit a drupe.....7
- b. Fruit a follicle..... 10. *Tabernaemontana*
- 7 a. Leaves obovate; petioles 12-30 mm long; bracts foliaceous; inflorescences 8-15 cm long. ....7. *Neisosperma*
- b. Leaves elliptic to oblong; petioles 2-7 mm long; bracts not foliaceous; inflorescences 5-10 cm long.....6. *Kopsia*
- 8 a. Lateral nerves 30-45 pairs, closely parallel; tertiary nerves branching into veins of higher order.....3. *Chilocarpus*
- b. Lateral nerves of leaves 4-20 pairs, arcuate or distantly parallel; tertiary nerves reticulate or scalariform..... 9
- 9 a. Fruit baccate; obovoid, 7-9.5 x 6.5-8.5 cm..... 11. *Willughbela*
- b. Fruit a follicle.....10

- 10 a. Ovary 1(fruit only at full maturity splitting into 2 follicles).... 8. *Parsonsia*  
 b. Ovaries 2, free or shortly connate.....5. *Ichnocarpus*

### 1. *ALSTONIA* R. Br.

Tree or shrubs. Flowers in subterminal corymbose cymes. Calyx short, 5-lobed. Corolla salver-shaped. Stamens near the top of the tube, included. Disc annular. Carpals 2; stigma minute or 2-toothed. Follicles-2, linear, slender.

About 30 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves with closely parallel lateral nerves; corolla lobes overlapping to the left..... 1. *A. kurzii*  
 b. Leaves with distant lateral nerves; corolla lobes overlapping to the right ..... 2. *A. macrophylla*

1. *Alstonia kurzii* Hook. f., Fl. Brit. India. 3 : 643. 1882. 'Chatium'

Trees, ca 20 m high. Leaves whorled, obovate-oblong, acute to alternuate at base, obtuse or retuse at apex, ca 20 x 8 cm, entire; lateral nerves 25-30 pairs; petioles ca 5 mm long. Inflorescences terminal cymes, ca 9 cm. Flowers white, fragrant. Fruit a follicle, paired, linear, 20-30 x 0.2-0.3 cm; seeds compressed, comose.

Common in littoral forests.

Fl. & Fr. : Jan. - Dec.

Indira point.

Note : Endemic to A & N Islands.

2. *Alstonia macrophylla* Wall. ex G. Don, Gen. Hist. 4 : 87. 1837.

Shrubs or small trees. Leaves whorled, cuneate-obovate to oblanceolate, cuneate-attenuate at base, shortly acuminate at apex, ca 30 x 10 cm; lateral nerves 12-22 pairs; petioles ca 10 mm long. Inflorescences in terminal peduncled, 2-3 chotomously branched cymes, ca 8 cm long. Flowers white, fragrant. Fruits follicles, paired, linear-terete, ca 35 x 0.5 cm, striate, glabrous.

Rare in the mixed forests.

*Fl. & Fr.* : May - Oct.

Great Nicobar Island (Kurz, 1876).

India (A & N Islands); Indonesia, Malaysia, Philippines.

## 2. **CERBERA L.**

Small trees. Flowers large, white or red in terminal cymes. Calyx 5 partite, glandular. Corolla funnel-shaped; throat ribbed or with pubescent scales. Stamens included. Disc wanting. Ovary of 2 distinct carpels, united by the style; style filiform; stigma 2-lobed. Ovules 4 in each carpel. Fruits 1 or 2, globose to ellipsoid, 1 or 2 seeded; pericarp thick, fibrous, woody; seeds broad.

About 4 species, distributed in Madagascar, tropical Asia to Australia & Pacific Islands; 1 in Gt. Nicobar Island.

***Cerbera odollam* Gaertn., Fruct. 2 : 193. t. 124, f. 1. 1791.**

Trees, *ca* 18 cm high. Leaves crowded at the tips of branches, alternate, oblong-lanceolate to narrowly oblong, cuneate at base, cuspidate or acute at apex, *ca* 33 x 6 cm; lateral nerves 15-25 pairs; petioles *ca* 6 cm long. Inflorescences terminal, peduncled, pleiochasial corymbiform cymes, *ca* 27 x 12 cm; bracts foliaceous. Flowers white with yellow throat, fragrant. Fruits drupaceous, ovoid-ellipsoid, *ca* 8.5 x 5.5 cm ; 1-2 seeded.

Rare in coastal forests.

*Fl. & Fr.* : Jan. - Dec.

Beach near the Alexandra river, Laful, Galathea.

## 3. **CHILOCARPUS Bl.**

Sarmentose shrubs. Flowers small in axillary cymes. Calyx short, 5-lobed, eglandular. Corolla tube cylindric, throat naked; lobes 5, twisted to the right. Stamens at or below the middle of the tube. Disc absent. Ovary 1-celled; style short; stigma ovoid or conical, tip obscurely 2-toothed;

ovules many, 2-seriate on each placenta. Berries fleshy, 2-valved; seeds embedded in pulp.

About 9 species distributed in Malayan & Australian regions; 1 in Gt. Nicobar Island.

**Chilocarpus denudatus** Bl. var. **nicobaricus** Gang. & T. Chak. in J. Econ. Tax. Bot. 16 : 37. 1992.

Climbers. Leaves narrowly oblong to oblong-elliptic, acute-attenuate at base, acuminate at apex, *ca* 15 x 4.5 cm; lateral nerves closely parallel, 30-45 pairs; petioles *ca* 12 mm long. Inflorescences axillary & terminal peduncled, unbranched umbelliform cymes, *ca* 8 cm long. Flowers fragrant, creamy white. Fruits baccate, ellipsoid-obovoid, 3.5 x 2.5 cm, brown, smooth, glabrous, thick-walled; stalks *ca* 3 mm long, stout.

Rare in mixed forests.

*Fl. & Fr.* : Sept. - Feb.

40 x 41 km on east-west road, Galathea river bank, 13 km on north-south road.

*Note* : Endemic to Great Nicobar Island.

#### 4. **HUNTERIA** Roxb.

Trees. Flowers small in terminal axillary or subterminal cymes. Calyx, small 5 lobed, eglandular. Corolla salver-shaped. Stamens above the middle of the tube. Disc absent. Carpels 2, distinct ; style filiform, top thickened, stigma shortly 2-fid. Fruits ovoid or oblong, oblique or recurved fleshy berries, 1-seeded or 2 celled; seeds oblong.

About 3 species, tropics of S.E. Asia; 1 in Gt. Nicobar Island.

**Hunteria zeylanica** (Retz.) Gardn. ex. Thw., Enum. Pl. Zeyl. 191. 1860.

Trees, *ca* 6 m high, branchlets reddish brown. Leaves opposite, oblong or oblong-elliptic, obtuse to acute & sometimes unequal at base, bluntly acuminate at apex, *ca* 20 x 7.5 cm; lateral nerves 18-35

pairs; petioles *ca* 15 mm long. Inflorescences terminal & axillary, peduncled, few branched cymes. Flowers white to pale yellowish. Fruits baccate, paired, subglobose, 2 x 1.8 cm, shortly beaked at apex, red when ripe.

Common in inland forests.

*Fl. & Fr.* : Jan. - Dec.

39 km on east-west road; Koshin Don, Laful.

### 5. ICHNOCARPUS R. Br.

Twining shrubs. Panicles axillary and terminal. Flowers small. Calyx 5-lobed, eglandular. Corolla salver-shaped, tube inflated in the middle, lobes twisted to the right. Anthers connivent and adnate to the ovoid stigma. Fruits of thin paired follicles; seeds comose.

About 6 species distributed in India, Malayan & Australian regions; 1 in Gt. Nicobar Island.

*Ichnocarpus volubilis* (Lour.) Merr. in Philipp. J. Sci. 21 : 506. 1922.

Scandent; branchlets puberulous. Leaves opposite, ovate to elliptic, rounded to obtuse at base, acute to shortly caudate at apex, *ca* 14 x 7 cm; lateral nerves 8-10 pairs. Inflorescences terminal & axillary panicles of corymbiform cymes. Flowers white to yellowish-white, rusty pubescent outside. Follicles paired.

Rare in coastal forests.

*Fl. & Fr.* : June - Sept.

Navy Dera, Laful.

### 6. KOPSIA Blume

Trees or shrubs, Flowers in terminal cymes. Calyx 5 partite, eglandular within, glandular at tips. Corolla salver-shaped, throat hairy. Stamens included. Disc of 2 glands. Carpels 2. Fruits of 2, obovoid or obliquely quadrate carpels, each 1-celled, 1-seeded; seeds oblong.



About 5 species, Malayan regions; 1 in Gt. Nicobar Island.

**Kopsia arborea** Blume, Cat. Gew. Btzig. 13. 1823.

Trees, *ca* 10 m high. Leaves opposite, narrowly elliptic, oblong-elliptic, cuneate to acute at base, bluntly acuminate at apex, *ca* 15 x 5 cm; lateral nerves 12-18 pairs; petioles *ca* 5 mm long. Inflorescences terminal & axillary corymbose cymes, *ca* 10 cm long. Flowers pink or white, fragrant. Fruits, drupaceous, 1-2, ovoid, *ca* 3 x 1.5 cm, acute at apex, glabrous, black to brownish.

Rare in mixed forests.

Laful.

India (Andaman & Nicobar Islands); Sumatra, Java.

## 7. NEISOSPERMA Rafin.

Small trees. Flowers large, white or red, in terminal cymes. Calyx 5 partite, eglandular within. Corolla funnel-shaped. Stamens included. Disc wanting. Ovary of 2 distinct carpels, united by the style; stigma 2-lobed. Fruits 1 or 2, globose to ellipsoid, 1-2 seeded; pericarp thick, fibrous; seeds broad, without wing.

About 4 coastal species, Madagascar, tropical Asia to Australia & Pacific Islands; 1 species in Gt. Nicobar Island.

**Neisosperma oppositifolium** (Lam.) Fosb. & Sac. in Micronesia 8(1-2): 48, 1972.

Small trees. Leaves opposite, crowded at the tips of branches, cuneate-obovate to elliptic-obovate, cuneate-attenuate at base, obtuse to apiculate at apex, *ca* 28 x 12 cm; lateral nerves 15-35 pairs; petioles *ca* 3 cm long. Inflorescences terminal and axillary branched corymbose cymes. Flowers white. Fruits drupaceous, paired, ovoid to semiterete, bright yellow when ripe, *ca* 8 x 6 cm.

Common in tidal forests & shaded places of coastal forests.

*Fl. & Fr.* : Jan. - Dec.

20 km on north-south road, Koshin Don, Baludera.

### 8. **PARSONSIA** R. Br.

Twining shrubs. Flowers small, white, in terminal or axillary cymes. Calyx 5 partite, glandular or eglandular within or with 5 scales. Corolla salverform. Anthers half-exserted, acute, conniving, over and adhering to the stigma. Disc of 5 lobes or scales. Ovary 2-celled. Fruits cylindric; carpel separate eventually from the two placentae; seeds linear or oblong, top narrowed & bearing long hairs.

About 15 species, tropical Asia to Australia & New Zealand; 1 in Gt. Nicobar Island.

***Parsonsia alboflavescens*** (Dennst.) Mabberley in Taxon 26 : 532. 1977.

Climbers. Leaves opposite, ovate-elliptic to oblong, obtuse at base, shortly caudate or mucronate at apex, ca 16.5 x 7.5 cm; lateral nerves 6-8 pairs : prominent beneath; petioles ca 3 cm long. Inflorescences axillary corymbose cymes, ca 15 cm long. Flowers yellowish white or creamy. Follicle solitary, linear-lanceolate, 15 x 3 cm, glabrous, apex acute.

Common in littoral forests.

*Fl. & Fr.* : Jan. - Dec.

Kopenheat, Campbell Bay, 37 km on north-south road, Navy Dera Laful, Alexandra river.

### 9. **RAUVOLFIA** L.

Shrubs or trees. Flowers in cymes alternating with the terminal leaves. Calyx eglandular within. Corolla lobes 5. Stamens 5, included, at the middle of the tube. Disc large, cupular. Ovary of 2 distinct or connate carpels united by the style; style filiform; stigma 2-fid. Drupes 1 or 2, 1-seeded.

About 100 species, tropical America; 1 in Gt. Nicobar Island.

**Rauvolfia sumatrana** Jack in Malay Misc. 1(5) : 22. 1820.

Trees, *ca* 10 m high. Leaves whorled (3-4 together), oblong-elliptic, cuneate-attenuate to acute at base, shortly acuminate at apex, *ca* 20 x 5 cm; lateral nerves 25-35 pairs, petioles *ca* 15 mm long. Inflorescences terminal, few together, unbranched or polychotomously branched, umbellate cymes, *ca* 20 cm. Flowers white. Fruits drupaceous, 1-2 together, globose or ovoid, stalk *ca* 15 mm long.

Fairly common in inland forests.

*Fl. & Fr.* : April Dec.

Way to Indira point, 40 km on north-south road, Koshin Don, Kopenheat, Campbell Bay.

India (Andaman & Nicobar Islands); Malay Peninsula, & Sumatra.

#### 10. TABERNAEMONTANA L.

Trees or shrubs. Flowers white, in terminal and axillary cymes. Calyx 5 lobed, usually glandular. Corolla lobes imbricating to the left tube, dilated above the middle. Stamens at or above the middle of the corolla tube distinct carpels united by the style ; stigma 2 lobed. Fruits of 2 coriaceous or fleshy follicles; follicles 1-many seeded.

Over 100 species throughtout the tropics; 1 in Gt. Nicobar Island.

**Tabernaemontana crispa** Roxb., Fl. Ind. 2 : 25. 1832.

Shrubs or small trees, *ca* 7 m high. Leaves opposite, broadly to narrowly oblong-elliptic to obovate, acute-attenuate at base, acuminate at apex, *ca* 30 x 11 cm; lateral nerves 8-14 pairs; petioles *ca* 1.5 cm long. Inflorescences terminal or axillary, 2-3 chotomously branched cymes, *ca* 15 cm long. Flowers white, *ca* 2.5 cm in diam. Follicle in pairs, shortly beaked and curved at apex, *ca* 3.5 x 1 cm.

Common in beach forests and inland forests.

*Fl. & Fr.* : Jan. - Dec.

Alexandra river, Laful, 41.5 km on east-west road, Chengappa Bay, Campbell Bay.

*Note* : Endemic to A & N Islands.

# 11. WILLUGHBEIA Roxb.

Glabrous shrubs. Flowers in axillary cymes. Calyx 5-lobed. Corolla salver-shaped, mouth naked or with fleshy glands; lobes overlapping to the left. Stamens included in the tube. Disc absent. Ovary 1-celled. Berries large, glabrous, many seeded; seeds imbedded in pulp.

About 10 species distributed in Malaya & East Asia; 1 in Gt. Nicobar Island.

**Willughbela edulis** Roxb., Pl. Cor. 3 : 77. t. 280. 1820.

Scandent shrubs; branchlets tendrilled. Leaves opposite, ovate to ovate-oblong, rounded to obtuse at base, bluntly acuminate at apex, *ca* 20 x 9 cm; lateral nerves 15-20 pairs; petioles *ca* 15 mm long. Inflorescences axillary cymes, puberulous. Flowers cream coloured. Berries pyriform *ca* 7 x 5 cm, yellowish red, many seeded.

Rare in dense inland forests.

*Fl. & Fr.* : Nov. - Dec.

30 km on east-west road.

## ASCLEPIADACEAE

About 200 genera and 2000 species, tropics & subtropics; 7 genera & 8 species in Gt. Nicobar Island.

- 1 a. Filaments free; pollen masses glandular .....2. *Finlaysonia*
- b. Filaments connate; pollen masses waxy.....2
- 2 a. Pollen masses in pairs in each cell (20 in all) .....3. *Genianthus*
- b. Pollen masses solitary in each cell (10 in all)..... 3

- 3 a. Corolla lobes imbricate .....4
- b. Corolla lobes valvate.....6
- 4 a. Corona absent .....5. *Sarcolobus*
- b. Corona present.....5
- 5 a. Cymes various; coronal process fleshy; completely adnate to the staminal column..... 6. *Tylophora*
- b. Cymes umbelliform, pendulous; coronal scales spreading, cuspidate, free at the apex of staminal column..... 7. *Wattakaka*
- 6 a. Corolla urceolate or cylindric; corona minute..... 1. *Dischidia*
- b. Corolla rotate; corona very large, stellate..... 4. *Hoya*

### 1. **DISCHIDIA** R. Br.

Herbs or under shrubs, usually rooting and climbing on trees or rocks. Leaves fleshy. Inflorescences racemes. Flowers small, white, red or violet. Calyx small, lobes oblong ovate. Corolla urceolate tubular; mouth villous. Coronal scales 5, inserted on the staminal tube; column short; anther tip membranaceous; pollen masses one in each cell, compressed, waxy. Stigma flat or conical. Follicles narrowly conical, acuminate; seeds minute, flat, ovate, coma long.

About 100 species tropical & subtropical regions; 1 in Gt. Nicobar Island.

***Dischidia benghalensis*** Coleb. in Trans. Linn. Soc. 12. 357, t. 15. 1834.

Epiphytic, slender, creeping shrubs. Leaves oblong, narrowed at base, obtuse or rounded at tips, glaucous, ca 5 x 0.7 cm. Umbels very short, peduncled, few flowered. Flowers yellowish white. Calyx red. Corolla greenish-white. Follicles slender, acuminate, ca 3.75 cm long.

Rare on inland forest trees.

*Fl. & Fr.* : April - Nov.

4 km on north-south road, 38.5 km on east-west road; Pulokunio.

## 2. FINLAYSONIA Wall.

Climbers. Leaves fleshy. Flowers in 2 or 3 cymose, axillary branched cymes. Calyx short. Corolla lobes, broad, orbicular, overlapping to right. Coronal scales 5, close to stamens. Stamens in throat of the Corolla; filaments slender; anthers adnate to style. Pollen-masses in pairs in each cell. granular; corpuscle tips slightly dilated. Stigmas 5 angled. Follicles turgid, narrowed at both ends, 1-3 winged; seeds ovate with few hairs along the edge.

1 species, in Bengal, Siam & Malay Peninsula; 1 in Gt. Nicobar Island.

**Finlaysonia obovata** Wall., Pl. As. Rar. 2. 48. t. 162. 1832.

Climbers. Leaves obovate, blunt at apex, cuneate at base, *ca* 12.5 x 6.25 cm; petioles *ca* 2.5 cm long. Inflorescences cymose in the axils of leaves. Flowers pink in colour. Follicles green, fleshy ovoid, hooked, *ca* 7.5 x 5 cm; seeds flat, brown, numerous.

Common in mangrove forests.

*Fl. & Fr.* : March - Nov.

Campbell Bay.

*Note* : Description is based on literature. The plant record from Great Nicobar is by Thothathri, *et al.*, (1973).

## 3. GENIANTHUS Hook. f.

Twining shrubs. Flowers in axillary subsimple or dichotomously branched cymes. Calyx minute. Corolla tube short; lobes narrow, villous to the tip on inner surface. Corona of 5 scales adnate to the column. Staminal column minute. Pollen masses 2 in each cell, minute, waxy. Stigma sessile, capitate. Follicles wick blunt, often woolly; seeds flat, winged & plumed.

About 6 species, Indo-Malayan ; 1 in Gt. Nicobar Island.

**Genianthus hore** Vasud. in J. Econ. Tax. Bot. 6 (3) : 732-733. 1985.

Twining shrubs. Leaves elliptic, entire, subcoriaceous, apiculate at apex, obtuse at base, *ca* 14 x 7 cm; petioles *ca* 3 cm long, tomentose. Inflorescences few flowered cymes. Flowers yellow. Corolla rotate, with short tube, 5 lobed. Pollinia 2 in each locule of anther. Ovaries free.

Rare in jungles along road sides.

*Fl.* : Oct. - March. *Fr.* : Not seen.

Kopenheat.

*Note* : Endemic to Great Nicobar Island.

#### 4. HOYA R. Br.

Epiphytic climbers; rooting at the nodes. Leaves thick, fleshy. Inflorescences axillary or terminal umbels, often flowers solitary. Calyx small. Corolla rotate, lobes valvate. Corona 5, fleshy lobes, sometimes spurred. Pollinai erect. Follicles 1 or 2, slender.

About 200 species, mostly Asiatic ; 1 in Gt. Nicobar Island.

**Hoya parasitica** Wall. in Wight. Contrib. 37. 1837.

Epiphytic shrubs. Leaves ovate-elliptic or ovate lanceolate, acute or acuminate at apex, rounded or subacute at base, *ca* 15 x 5 cm; 3-5 nerved from the base. Inflorescences axillary, umbels. Flowers white with purplish pink centre, *ca* 0.6 cm in diam. Corona stellately spreading. Follicles striate, *ca* 12 cm long.

Rare in inland forests.

*Fl. & Fr.* : March - Oct.

Laful, Koshin Don.

#### 5. SARCOLOBUS Br.

Herbs, climbing and trailing. Leaves fleshy. Flowers crowded in axillary, corymbiform cymes. Calyx with 5 minute scales at base. Corolla

campanulate. Corona absent. Filaments connate in a short tube; anthers broad with spatulate appendage. Pollinia solitary, obovate with long filiform twisted caudicles. Follicles thick, fleshy, globose and smooth or oblong and 2 keeled; seeds large.

About 3 species, Indo-Malayan; 1 in Gt. Nicobar Island.

**Sarcolobus globosus** Wall. in Asiat. Res. 12. 568. t. 5. 1816.

Twiner. Leaves coriaceous, ovate or ovate-oblong, acuminate at apex, round at base, *ca* 12 x 5 cm; nerves 5-7 pairs; petioles *ca* 1.25 cm long. Inflorescences axillary cymes. Flowers numerous, light purple, *ca* 1.25 cm in diam. Follicles brown and rough *ca* 10 cm long.

Rare in mangrove forests.

*Fl. & Fr.* : March - Nov.

Campbell Bay.

*Note* : Description is based on literature. The plant record from Great Nicobar is by Thothathri *et al.*, (1973).

## 6. TYLOPHORA R. Br.

Twiners. Cymes axillary, umbelliform or racemose. Flowers small, yellow or purple. Calyx 5 lobed, glandular within. Corolla rotate, deeply lobed. Corona of small fleshy tubercles adnate to the very short column; anthers small, with inflexed tips. Pollen masses one on each cell, minute, globose or ovoid, waxy. Stigma disciform. Follicle 2 or 1, acute, sometimes winged.

About 100 species, in Asia, Australia & Pacific Islands, few in Africa; 2 in Gt. Nicobar Island.

- 1 a. Leaves ovate; inflorescences umbelled; flowers rather large..... 1. *T. indica*
- b. Leaves elliptic-lanceolate; inflorescences corymbose; flowers small.....
- .....2. *T. tenuis*

1. **Tylophora indica** (Burm. f.) Merr. in Philipp. J. Sci. Bot., 19. 373. 1921.



Twining under shrubs. Leaves oblong, or ovate-lanceolate, slightly cordate at base, acute or apiculate at apex, *ca* 10 x 5 cm, glabrous above, pubescent beneath. Flowers *ca* 9 mm in diam, pale reddish-purple; in lateral umbellate cymes. Follicles lanceolate, *ca* 7 cm long, glabrous; seeds ovate truncate.

Rare in inland forests.

*Fl. & Fr.* : Feb. - July

Galathea river, 38 km on north-south road.

## 2. *Tylophora tenuis* Bl., Bijdr. 1062. 1827

Climbers. Leaves fleshy membranous, lanceolate or ovate-lanceolate, base rounded, acute at apex, *ca* 5 x 2.5 cm; petioles *ca* 1.25 cm long or less. Panicles between petioles, slender, spreading, much branched. Flowers small, purple. Follicles lanceolate, dagger shaped, *ca* 7.5 cm long., acuminate; seeds ovate, winged, toothed below.

Rare in inland forests.

*Fl. & Fr.* : Feb. - July

Galathea river, Dogmar river, Kopenheat.

## 7. *WATTAKAKA* Hassk.

Twining shrubs. Cymes axillary, umbelliform. Flowers green. Calyx-lobes ovate, glandular or not. Corolla rotate, deeply lobed. Coronal scales 5, fleshy, adnate to the staminal column; column short, fleshy. Anthers with a short membranaceous inflexed tip. Pollen masses waxy, solitary in each cell. Stigma conical. Follicles thick, hard, winged or ribbed; seeds comose.

About 8 species, in tropical Asia, & Southern China; 1 in Gt. Nicobar Island.

*Wattakaka volubilis* (L. f.) Stapf. in Curtis, Bot. Mag. Sub. t. 8976. 1923.

Twining shrubs. Leaves broadly ovate or suborbicular, acuminate at apex, rounded or cordate at base, *ca* 15 x 10 cm, glabrous or softly pubescent, with a few small glands. Flowers in lateral, drooping umbellate cymes, yellowish green. Follicles *ca* 10 x 4.5 cm, slightly tapering to a blunt point, rugosely striate; seeds ovate, comma 4-5 cm long.

Rare in inland forests.

*Fl. & Fr.* : April - Sept.

Indira point.

### LOGANIACEAE

About 30 genera and nearly 800 species, tropics and subtropics; 2 genera and 4 species in Gt. Nicobar Island.

- 1 a. Leaves small, non-succulent; 3-5 nerved at base; corolla tube short, 0.2-0.25 cm long; lobes valvate..... 2. *Strychnos*
- b. Leaves large, succulent; penninerved; corolla tube 4-5 cm long; lobes twisted to the left..... 1. *Fagraea*

#### 1. FAGRAEA Thunb.

Trees or shrubs, sometimes scandent. Leaves coriaceous, fleshy; petioles dilated at base or united by stipular sheath. Cymes terminal, simple or corymbose or racemose. Flowers white or red fleshy. Calyx deeply 5 lobed. Corolla with a long tube, lobes 5, twisted to the left in the bud. Stamens 5. Ovary 2-celled. Fruit 1 or 2 celled berry; seeds many.

Over 40 species, Indo-Malayan, China & Australia; 2 in Gt. Nicobar Island.

- 1 a. Flowers red, rather small in terminal racemes; fruits *ca* 1.25 cm long; sepals not enlarged..... 2. *F. racemosa*
- b. Flowers white, large in terminal cymes. Fruits *ca* 15 cm long; surrounded by enlarged sepals at base..... 1. *F. auriculata*

1. *Fagraea auriculata* Jack. in Malay. Misc. 2. n. 7 : 82 : 1822.

Large trees, *ca* 30 m high. Leaves coriaceous, oblanceolate or obovate, subacute at apex, narrowed at base, *ca* 35 x 10 cm; nerves 6-8 pairs; petioles *ca* 3 cm long, with thick large auricles at base. Cymes 1-5 flowered, subsessile. Calyx ellipsoid. Corolla white. Stamens 5. Berries *ca* 15 cm long, blunt conical surrounded by enlarged sepals at base, lead colour, dehiscing into 5 lobes.

Rare in dense mixed forests.

*Fl. & Fr.* : July - Dec.

27.2 km on east-west road, 18 km on north-south road.

India (Nicobar Islands); Myanmar, Indonesia, Malay Peninsula, Singapore, China.

**2. *Fagraea racemosa* Jack. in Roxb. Fl. Ind. 2 : 35. 1824.**

Trees, *ca* 15 m high. Leaves thick, coriaceous, elliptic, shortly abruptly blunt acuminate at apex, base shortly narrowed, *ca* 35 x 10 cm; lateral nerves 5-7 pairs. Racemes terminal, condensed. Flowers reddish white. Corolla fleshy colour. Stamens included. Berries ovoid, 1.25 cm long; sepals not enlarged and surrounded at base.

Rare in the vicinity of mangrove swamps.

*Fl. & Fr.* : July - Feb.

Galathea, Alexandra river, Kopenheat, Campbell Bay.

India (A & N Islands); Myanmar, Indonesia, Borneo, & Malay Peninsula.

**2. STRYCHNOS L.**

Trees or scandent shrubs. Flowers in terminal or axillary cymes. Flowers small, yellowish green or white. Calyx small, 4-5 lobed. Corolla tube short or long, 4-5 lobed valvate. Stamens 5, inserted on the corolla tube. Ovary 2-celled; stigma capitate or 2 lobed. Fruits globose or oblong berries; seeds 1-many.

About 80 species, in tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves broad, usually 4-6 cm, broad; inflorescences long peduncled, over 2.5 cm long; flowers tubular, 1-1.5 cm long..... 2. *S. wallichiana*
- b. Leaves narrower, usually 1.5 cm broad; inflorescences subsessile or shortly peduncled; peduncles less than 1 cm long; flowers shorter, less than 0.7 cm long..... 1. *S. quintuplinervis*

1. *S. quintuplinervis* A.W. Hill. in Kew. Bull. 1970. 166. 1917.

Climbers or straggling shrubs. Leaves ovate, ovate-lanceolate or elliptic, caudate or abruptly acuminate at apex, rounded or cuneate at base, ca 8 x 3.5 cm, shining above, prominently 3-nerved beneath; tendrils hooked, ca 5 cm long. Corymbs subsessile, dense. Flowers greenish yellow, often reddish tinged, ca 0.5 cm across. Berries ovoid, 2-3 cm long.

Rare along streams in inland forests.

*Fl. & Fr.* : Jan. - May.

Galathea river.

*Note* : Easily recognised by hooked tendrils and subsessile corymbs.

2. *Strychnos wallichiana* Benth. in J. Linn. Soc. 1 : 102. 1857.

Lianas; bark grey or greyish-brown. Leaves oblong, oblong-lanceolate or elliptic-lanceolate, abruptly acuminate at apex, obtuse, cuneate at base, ca 16 x 6 cm, shining, tendrils often in pairs; lateral nerves 3. Corymbs ca 10 cm long. Flowers ca 1.5 cm long, tubular, yellowish-green, often with a purplish tinge. Corolla lobes recurved, throat villous. styles emerging. Fruits globose, ca 1.5 cm in diam, greenish-white, beaked.

Rare in inland forests.

*Fl. & Fr.* : April - Nov.

35 km on east-west road.

*Note* : Easily marked by 3 nerved leaves & tubular flowers.

**BORAGINACEAE**

About 85 genera and 1500 species, cosmopolitan ; 3 genera & 4 species in Great Nicobar Island.

- 1 a. Leaves fleshy, densely silky pubescent; fruits dry when mature... 1. *Argusia*
- b. Leaves not as above; fruits drupaceous..... 2
- 2 a. Leaves subentire or repand; stigma 4-lobed..... 2. *Cordia*
- b. Leaves entire or serrate; stigma 2-lobed..... 3. *Tournefortia*

**1. ARGUSIA Boehmer**

Trees or shrubs, often subscandent. Inflorescences terminal, forked, scorpioid cymes. Flowers many, small, sessile, densely arranged, white or greenish. Sepals 5 or 4. Corolla tube, cylindric, 5 or 4 lobes. Stamens 5, included. Ovary 4-celled. Fruits dry when mature, mesocarp vesicular, corky; endocarp dividing into 2-parts.

About 3 species in temp. & tropical Asia ; 1 in Gt. Nicobar Island.

*Argusia argentea* (L. f.) Heine in Fl. Nouv. Caled. ed., Depend. 7 : 109. Pl. 24, 1976.

Small silky trees, ca 4 m high. Leaves densely sericeous, alternate, the terminal whorled, obovate or spatulate, obtuse at apex, attenuate at base, subsessile. Flowers small in branch scorpioid cymes. Corolla 4 mm across. Fruits dry when mature, globose, 4 mm diam., with 2 pyrenes, each 2-celled, each cell 1-seeded.

Rare in seashores.

*Fl. & Fr.* : Jan. - Nov.

Kopenheat, Indira point, Gol tikri.

**2. CORDIA L.**

Trees or shrubs. Leaves alternate. Flowers in dichotomous cymes or clusters, polygamous; perfect flowers smaller than male flowers. Calyx

tubular, teeth short, irregular, persistent. Corolla tubular, 4-8 lobed, recurved. Stamens 4-8. Ovary 4-celled, glabrous; style terminal; stigma 4-lobed. Drupes ovoid or ellipsoid, 1-seeded.

About 180 species, in tropics; 1 in Gt. Nicobar Island.

***Cordia subcordata* Lam., Tab. Encycl. 2 : 421. 1792.**

Small trees, *ca* 10 m high. Leaves broadly ovate, acute or apiculate at apex, rounded or subcordate at base, *ca* 20 x 12.5 cm; lateral nerves 4-7 pairs, prominent; petioles *ca* 7.5 cm long. Flowers large, bright orange coloured. Fruits globose, hard, *ca* 2.5 cm in diam; seeds angular, furrowed.

Common along all sea shores.

*Fl. & Fr.* : March - Dec.

Galathea river mouth, Gol tikri, Chingenh.

### 3. **TOURNEFORTIA L.**

Trees or shrubs, rarely herbs, often rambling. Inflorescences terminal, forked, scorpioid. Flowers many, small, sessile or subsessile, densely arranged, white or greenish. Sepals 4 or 5. Corolla tube cylindric, 4-5 lobes. Stamens 4 or 5 included. Ovary 4-celled; style terminal, short; ovules 1 in each cell. Fruits small, ovoid, somewhat drupe like, 2 or 1 seeded pyrenes.

About 100 species, tropics ; 2 species to Gt. Nicobar Island.

- |   |                          |                        |
|---|--------------------------|------------------------|
| 1 | a. Flowers 5-merous..... | 1. <i>T. ovata</i>     |
|   | b. Flowers 4-merous..... | 2. <i>T. tetrandra</i> |

1. ***Tournefortia ovata* Wall. ex G. Don, Gen. Syst. 4 : 369. 1838.**

Subscandent shrubs, *ca* 1 m high; stems angular, pubescent. Leaves ovate-elliptic, rounded-cuneate at base, acuminate at apex, *ca* 15.5 x 7.5 cm, entire or subentire; 4-7 nerved, sparsely hairy; petioles *ca* 2.75 cm long. Flowers white in terminal or leaf opposed, lax, dichotomously branched cymes. Drupes ovoid, lobed with persistent calyx; nutlets 2, beaked, tuberculate on the back.

Common on road side, disturbed forests.

*Fl. & Fr.* : Oct. - March.

40 km on east-west road, Laful.

India (A & N Islands); Myanmar, China.

**2. *Tournefortia tetrandra* Bl. Bijdr. Fl. Nederl. Ind. 845. 1826.**

Herbaceous climbers. Leaves fleshy-membranous, dark green, ovate, obtuse to minutely cuneate at base, acuminate at apex, *ca* 12 x 6.75 cm, margin subentire; petioles *ca* 1.5 cm long. Cymes, terminal and axillary. Flowers white. Drupes 4-grooved, subglobose.

Common in inland forests.

*Fl. & Fr.* : Sept. - Dec.

Campbell Bay, 25 km on east-west road; Laful, Dogmar river.

India (Nicobar Islands); Malay Peninsula.

## CONVOLVULACEAE

About 55 genera and over 1650 species, both tropical & temperate regions of the world; 4 genera and 10 species in Gt. Nicobar Island.

- 1 a. Pollen spinulose (echinate) .....2. *Ipomoea*  
    b. Pollen smooth..... 2
- 2 a. Styles absent; stigma 1..... 1. *Erycibe*  
    b. Styles well developed; stigmas 2.....3
- 3 a. Capsule operculate; stems winged..... 4. *Operculina*  
    b. Capsules valvate (opening by 4-valves or somewhat irregularly dehiscent);  
       stems not winged.....3. *Merremia*

1. **ERYCIBE** Roxb.

Climbing lianas; branches ferrugineous-tomentose. Inflorescences short axillary cymes or in terminal racemes or panicles. Flowers white or yellow. Bracts minute, caducous. Sepals 5, tomentose. Corolla small, tube campanulate, 5 lobes, dark brown hairy. Stamens 5, included. Ovary globose, 1-celled; ovules 4; stigma large, sessile globose or conic, 5 or 10 ridged. Berries fleshy, indehiscent, 1-seeded.

About 70 species, mostly Indo-Malayan; 1 in Gt. Nicobar Island.

**Erycibe griffithii** Clarke in Hook. f., Fl. Brit. India 4 : 182. 1883.

Climbing lianas; branchlets pubescent. Leaves elliptic blunt cuspidate at apex, base narrowed usually blunt, ca 14 x 5 cm, glabrous; lateral nerves 6-8 pairs; petioles ca 6 mm long. Cymes solitary or clustered, 4-9 flowered, pubescent. Flowers small. Sepals pubescent. Corolla cream coloured. Fruits coriaceous, scurfy outside, ca 3.75 cm long.

Rare in inland forests.

Fl. & Fr. : Nov. - Aug.

Laful.

India (A & N Islands); Malay Peninsula., Java.

2. **IPOMOEA** L.

Twining prostrate or erect shrubs. Flowers axillary, in clusters or solitary, usually showy; bracts variable. Calyx deeply lobed, outer lobes larger, persistent, more or less enlarged in fruits. Corolla campanulate, 5 lobed. Stamens included or exerted; filaments dilated at base, unequal in length. Ovary 2-4 celled; style simple; stigma capitate. Capsules dehiscent, 4-6 valved.

About 500 species, tropics and subtropics; 6 in Gt. Nicobar Island.

- |   |                             |                        |
|---|-----------------------------|------------------------|
| 1 | a. Corolla salverform.....  | 4. <i>I. macrantha</i> |
|   | b. Corolla funneliform..... | 2                      |



- 2 a. Sepals pubescent on the outer surface..... 2. *I. campanulata*
- b. Sepals glabrous ..... 3
- 3 a. Leaves palmately lobed..... 5. *I. mauritiana*
- b. Leaves not palmately lobed..... 4
- 4 a. Leaves suborbicular, usually 2 lobed at the apex..... 6. *I. pes-caprae*
- b. Leaves ovate or oblong..... 5
- 5 a. Aquatic herbs; stems often thick or spongy..... 1. *I. aquatica*
- b. Terrestrial herbs..... 3. *I. gracilis*

**1. *Ipomoea aquatica* Forsk. Fl., Aeg.-Arab. 44. 1775.**

Prostrate, trailing herbs. Leaves broadly or narrowly 3-angular, ovate or oblong-lanceolate, glabrescent, apex acute or obtuse, base cordate-hastate, ca 4 x 5 cm. Flowers purple or white; in few flowered cymes. Fruits ca 1 cm long, globose or grey pubescent.

Common in marshy places.

*Fl. & Fr.* : Dec. - March

4 km on north-south road, 10 km on east-west road.

**2. *Ipomoea campanulata* L., Sp. Pl. 160. 1753.**

Woody climbers, young parts pubescent or glabrous. Leaves ovate to orbicular, rarely ovate-oblong, glabrous above, pubescent beneath, acute at apex, ca 15 x 12 cm, margins undulate or entire. Inflorescences in cymes. Flowers purple with dark throat. Sepals accrescent in fruits. Fruits 1.5 cm long., ovoid, brown.

Common in inland forests.

*Fl. & Fr.* : Oct. - March

40 km on east-west road.

**3. *Ipomoea gracilis* R. Br., Prodr. 484. 1810.**

Prostrate herbs. Leaves ovate, broadly ovate to oblong or orbicular to reniform, acute or obtuse at apex, cordate at the base, ca 10 x 7.5 cm, glabrous on both surfaces; petioles ca 8 cm long. Inflorescences 1 or several flowered; pedicels longer than the sepals. Capsules globose; seeds 4, black.

Rare in beach forests.

*Fl. & Fr.* : Sept. - Dec.

Galathea river mouth.

**4. *Ipomoea macrantha* Roem. & Schult., Syst. Veg. 4 : 251. 1819.**

Climbers ; stems glabrous, terete, tubercled. Leaves broadly ovate to reniform-ovate, glabrous, acute to acuminate at apex, broadly cordate at base, ca 16 x 12 cm. Flowers white; in solitary or 2-3 in cymose clusters. Fruits 2.5 cm across, ovoid, glabrous.

Common in coastal forests.

*Fl. & Fr.* : Sept. - Dec.

Campbell Bay & Casuarina Bay.

**5. *Ipomoea mauritiana* Jacq. Coll. Bot. 4 : 216. 1791.**

Large twiners; stems woody at base; herbaceous near tips. Leaves 5-7 lobed, lobes ca 8 cm long, ovate, glabrous, apex acuminate. Flowers purple to rose pink; in many flowered corymbs or cymes. Capsules ovoid, glabrous, 1.4 cm long, surrounded by sepals; seeds 4, black.

Common in coastal forests.

*Fl. & Fr.* : Sept. - Dec.

Laful, 7 km on north-south road.

**6. *Ipomoea pes-caprae* (L.) R. Br. in Turkey, Narr. Exped. R. Zaire 477. 1818.**

**Key to subspecies**

- 1 a. Leaves deeply lobed at the apex; lateral veins prominent and parallel. ....  
 .....ssp. *pes-caprae*
- b. Leaves emarginate at apex; venation typically reticulate.....  
 .....ssp. *brasiliensis*

**ssp. *pes-caprae***

Prostrate herbs. Leaves deeply lobed at the apex at an obtuse or sub-acute angle; lateral veins prominent & parallel. Flowers purple red. Outer sepals smooth to slightly wrinkled. Ovary basally 4 celled; stigma 2 lobed. Seeds covered with thick long tomentum.

Common in beaches.

*Fl. & Fr.* : Throughout the year.

Alexandra river.

**ssp. *brasiliensis* (L.) Oostr.** in *Blumea* 3 : 533. 1940.

Leaves emarginate at the apex; venation typically reticulate. Flowers purple red or pure white. Outer sepals prominently wrinkled. Ovary basally 4 or 6 celled; stigma 2 or 3 lobed; seeds covered with very short tomentum.

Common in beaches.

*Fl. & Fr.* : Throughout the year.

Campbell Bay, 16 km on north-south road.

**3. *MERREMIA* Dennst. ex Endlich.**

Climbing or erect or prostrate herbs or shrubs. Inflorescences pedunculate, 1-many flowered cymes; bracts short. Flowers usually yellow-white. Sepals subequal. Corolla campanulate or funnel-shaped, mostly glabrous. Stamens often unequal; anther twisted. Disc prominent. Ovary

2 or 4 locular, 4-ovuled; style simple; stigma bilobed. Capsules dehiscing by 4 valves or irregularly.

About 80 species in the tropics ; 1 in Gt. Nicobar Island.

**Merremia peltata** (L.) Merr., Interpr. Rumph. Herb. Amb. 441. 1917.

Climbing shrubs. Leaves long-petioled, orbicular to ovate-orbicular, peltate, *ca* 18 x 14 cm. Inflorescences axillary with 1-2 flowers in cymes. Flowers yellow. Stamens 5, unequal; anthers twisted. Capsules 4-valved, 1 to 4 locular; seeds 4.

Common in disturbed forests.

*Fl. & Fr.* : Nov. - March

India (A & N Islands) ; Java, Malay Peninsula, Philippines, Australia.

#### 4. OPERCULINA S. Manso

Twiners; stems, peduncles and pedicels winged. Flowers axillary, solitary or in few flowered cymes. Sepals large, coriaceous, much enlarged in the fruits. Corolla funnel-shaped, white or yellow. Stamens & style included; filaments filiform; anthers spirally twisted. Ovary glabrous, 2-celled; style 1, filiform; stigma bi-lobular. Fruits large dry capsules; seeds 4 or more.

About 15 species, tropics; 1 in Gt. Nicobar Island.

**Operculina riedeliana** (Oliv.) van. Oost., Blumea 3 : 366. 1939.

Climbing shrubs; stems 4-angled, not winged. Leaves ovate-orbicular, entire acuminate at apex, cordate at base, *ca* 12 x 9 cm, glabrous; lateral nerves 10-12 pairs; dark green above pale below; petioles *ca* 6 cm long. Cymes few flowered, axillary; peduncles 2-10 cm long; pedicels pubescent, *ca* 5 cm long. Flowers pale pink with purple colour inside. Calyx persistent, white at apex. Capsules clavate, globose, 1-1.5 cm in diam; seeds black, pilose.

Common in beach forests.

*Fl. & Fr.* : July - Feb.

Campbell Bay.

(A & N Islands); Malay Peninsula, Java.

### SOLANACEAE

About 90 genera and 200 species, tropical and temperate regions ; genera & 2 species in Gt. Nicobar Island.

- 1 a. Calyx inflated into a membranous bladder, enclosing the fruit.... 1. *Physalis*
- b. Calyx persistent, but nerves inflated into bladder and not enclosing the fruit. .... 2. *Solanum*

#### 1. *PHYSALIS* L.

Herbs. Flowers usually solitary, axillary, 5-merous. Calyx campanulate, toothed or lobed, accrescent and inflated in fruit. Corolla subrotate. Berries globose, enveloped in the bladder like calyx.

About 200 species distributed in America, Asia, Africa, and Australia; 1 in Gt. Nicobar Island.

*Physalis minima* L., Sp. Pl. 183. 1753.

Herbs, ca 40 cm high. Leaves entire, sinuate or toothed, ovate, rounded at base, acuminate at apex, ca 5 x 3 cm. Flowers small, yellow, solitary. Calyx campanulate, 5-fid, enlarged and subglobose in fruit. Stamens 5, attached near the base of the corolla. Berries ca 6 mm across; seeds minutely rugose.

Common in waste lands.

*Fl. & Fr.* : Sept. - Nov.

Galathea river to Indira point, 5 km on east-west road, Indira point.

## 2. SOLANUM L.

Herbs, shrubs or small trees, prickly or unarmed. Flowers in dichotomous or racemose, lateral or terminal cymes. Calyx campanulate. Corolla lobed. Stamens usually 5. Berries partially enclosed by calyx.

About 1500 species, tropical & temperate regions; 1 in Gt. Nicobar Island.

*Solanum torvum* Sw., Prodr. 47. 1788.

Shrubs, ca 3 m high; stems with hooked prickles. Leaves ovate-elliptic to oblong, entire-lobed, rounded or cordate at base, acute or obtuse at apex, ca 15 x 12 cm, sparsely prickly in the midrib. Flowers in many flowered, sessile or shortly peduncled cymose corymbs; pedicels glandular hairy. Calyx glandular. Corolla white. Berries ca 1.5 cm across, on a persistent calyx.

Rare in waste lands.

*Fl. & Fr.* : Sept. - Dec.

Campbell Bay.

## SCROPHULARIACEAE

About 220 genera and 3000 species, cosmopolitan; 5 genera and 7 species in Gt. Nicobar Island.

- 1 a. Fruit a thin walled berry; undershrubs ca 2.5 m high..... 1. *Cyrtandroemia*  
 b. Fruit a capsule; herbs ca 40 cm high..... 2
- 2 a. Corolla rotate, tetramerous, pilose; stamens and stigma exerted.....  
 .....4. *Scoparia*  
 b. Corolla bilabiate, not pilose; stamens and stigma not exerted..... 3
- 3 a. Anther lobes parallel..... 3. *Mecardonia*  
 b. Anther lobes divergent..... 4
- 4 a. Calyx winged or keeled, gamosepalous..... 5. *Torenia*  
 b. Calyx not winged or keeled; sepals free or nearly so..... 2. *Lindernia*

**1. CYRTANDROEMIA Zoll.**

Shrubs. Leaves opposite. Flowers in the axils of the fallen leaves in many flowered cymes; bracts small. Calyx tubular, 5-toothed, enlarged in fruits. Corolla large, white, subequal. Stamens 4 in 2 pairs. Capsules globose or oblong, enclosed in calyx; seeds reticulately ribbed.

About 12 species, S.E. Asia; 1 in Gt. Nicobar Island.

**Cyrtandroemia nicobarica** Balakr. in Notes Roy. Bot. Gard. Edinb. 35. 115-120. 1976.

Shrubs, *ca* 2.5 m high; stem 4-angular. Leaves elliptic-lanceolate, cuneate at base, acute to shortly acuminate at apex, *ca* 27 x 12 cm, serrate at margins; lateral nerves 11-15 pairs; petioles *ca* 2.5 cm long. Inflorescences of scorpioid cymes, *ca* 12 cm long, many flowered; bracts linear-oblongate, puberulous. Flowers white. Calyx 5 ridged. Stamens 4; Berries thin walled, *ca* 2.1 cm long with persistent styler base and an enclosed accrescent calyx; seeds embedded in the pulp.

Common along the waysides of disturbed forests.

*Fl. & Fr.* : Nov. - March.

28.5 & 35 km on east-west road; Campbell Bay.

*Note* : Endemic to Nicobar Islands.

**2. LINDERNIA Al.**

Herbs. Leaves opposite. Flowers small, solitary in axils, without bracteoles. Calyx tubular-campanulate, 5 parted. Corolla tubular; upper lip 2 lobed; lower 3-lobed. Stamens 2 or 4; the upper 2 always fertile; lower fertile or reduced to staminodes. Capsules linear to globose, septi-cidal.

About 80 species, tropical and temperate regions; 3 in Gt. Nicobar Island.

- 1 a. Capsules linear-cylindric, twice as long as the calyx lobes or longer.....1. *L. antipoda*  
.....
- b. Capsules ovoid spherical, about equalling the calyx or shorter.....2
- 2 a. Nearly glabrous herbs; calyx cleft up to the middle or less; flowers bluish-violet..... 2. *L. crustacea*
- b. Pubescent herbs; calyx divided to the base or nearly so; flowers white. ...  
.....3. *L. viscosa*

1. ***Lindernia antipoda* (L.) Alston** in Trimen., Handb., Fl. Ceylon 6 : 214. 1931.

Decumbent herbs. Leaves elliptic-lanceolate or obovate, shallowly serrate, narrowed towards base, *ca* 5 x 0.6 cm. Flowers bluish purple in axillary, solitary or leafy racemes. Stamens 2; staminodes clavate, yellow, Capsule cylindric.

Common in disturbed forest areas.

*Fl. & Fr.* : July - Nov.

Campbell Bay, 17 & 39 km on east-west road & 35 km on north-south road; Dogmar river.

2. ***Lindernia crustacea* (L.) F.V. Muell.** Syst. Census. Austrl. Pl. 97. 1887.

Herbs, *ca* 20 cm high. Leaves ovate, entire or crenate, rounded or cordate at base, *ca* 2 x 1.5 cm, penni-nerved; petioles *ca* 8 mm long. Flowers white, axillary, solitary and subracemose. Calyx 5 ribbed. Corolla white, violet or purple. Stamens 4. Capsules *ca* 8 mm long, obovate or elliptic-oblong, apiculate.

Common in marshy places.

*Fl. & Fr.* : Aug. - Nov.

4 km on north-south road; Galathea river.

3. ***Lindernia viscosa* (Hornem.) Boldingh.** Zakff : Java 165. 1916.



Herbs, *ca* 15 cm high. Leaves ovate-oblong, serrate-dentate, hairy, *ca* 3.4 x 1.3 cm. Flowers in axillary and terminal racemes. Capsules subglobose, yellowish green.

Rare in marshy places.

*Fl. & Fr.* : Sept. - Oct.

Laful, 24 km on north-south road.

### 3. MECARDONIA Ruiz. & Pavon.

Herbs. Flowers axillary; bracteoles 2 at base of pedicels. Calyx deeply 5 parted. Corolla obscurely 2 lipped. Stamens 4, didynamous. Capsules equalling calyx, septicidal; seeds reticulate.

About 15 species, tropical & sub temperate regions of America ; 1 in Gt. Nicobar Island.

**Mecardonia procumbens** (Miller) Small, Fl. South East U.S. 1065. 1903.

Creeping herbs. Leaves subsessile, crenate-serrate, ovate-lanceolate, *ca* 1.5 x 0.7 cm. Flowers axillary; pedicels *ca* 1.3 cm long; bracteoles *ca* 5 mm long. Inner calyx lobes narrower. Corolla yellow. Stamens 4, didynamous. Capsules equalling the calyx, septicidal; seeds reticulate.

Common in waste lands.

*Fl. & Fr.* : Sept. - Nov.

27 & 32 km on east-west road, Campbell Bay; 35 km on north-south road.

### 4. SCOPARIA L.

Herbs, or undershrubs. Leaves opposite or whorled. Flowers axillary. Calyx deeply 4-partite. Corolla rotate, subregular. Stamens 4, unequal. Capsule septicidal, 2 valved; seeds pitted.

About 20 species, tropical America ; 1 in Gt. Nicobar Island.

**Scoparia dulcis** L., Sp. Pl. 116. 1753.

Undershrubs, *ca* 1 m high. Leaves opposite and 3-nately whorled, elliptic or rhomboid, *ca* 7.5 x 4.5 cm, entire or serrate, glandular. Flowers almost regular 3 to 6 in each axillary whorl, often forming whorled racemes. Calyx lobes 4, oblong. Corolla white, throat hairy. Anthers sagittate. Capsules subglobose, *ca* 3 mm in diam, septicidal, Valves 2-fid; seeds angled.

Rare in waste lands.

*Fl. & Fr.* : Throughout the year.

Campbell Bay, 42 km on east-west road.

#### 5. TORENA L.

Herbs. Flowers axillary or in pseudoumbels or racemes, ebracteolate. Calyx 5 lobed, prominently ribbed or winged. Corolla 2-lipped. Stamens 4, didynamous. Capsules included, septicidal; seeds pitted.

About 50 species, tropics ; 1 in Gt. Nicobar Island.

**Torena violacea** (Azaola). Penn. in J. Arn. Arb. 24 : 255. 1943.

Herbs, *ca* 20 cm high; stems sparsely hairy. Leaves petiolate, ovate acute at apex, cuneate at base, *ca* 3.5 x 2.2 cm, margins crenate-serrate. Flowers axillary subumbellate. Calyx ovoid or oblong. Corolla pale bluish. Staminal filaments glabrous or minutely toothed. Fruiting calyx ovoid or oblong, *ca* 20 mm long, winged.

Rare in marshy places.

*Fl. & Fr.* : Sept. - Nov.

Laful.

#### GESNERIACEAE

About 100 genera and 1,500 species, tropics, a few in temperate regions; 4 genera & 5 species in Gt. Nicobar Island.

- 1 a. Fruits berries.....2
- b. Fruits capsules.....3
- 2 a. Perfect stamens 4; fruits ovoid or globose..... 3. *Rhynchoetechum*
- b. Perfect stamens 2; fruits cylindrical..... 2. *Cyrtandra*
- 3 a. Epiphytic herbs; leaves fleshy; flowers red..... 1. *Aeschynanthus*
- b. Terrestrial cauline herbs; leaves not fleshy i.e., papery; flowers white.....  
.....4. *Stauroanthus*

### 1. AESCHYNANTHUS Jack.

Scandent epiphytic vines. Leaves fleshy or coriaceous. Inflorescences axillary or in terminal heads. Flowers showy, scarlet, yellow or green. Calyx tubular, curved, 2-lipped. Stamens 4, didynamous, exserted. Ovary superior, cup-shaped; style slender, long; stigma small, peltate. Capsules cylindric, 2-valved; seeds many, minute hairy.

About 182 species, S.E. Asia; 1 in Gt. Nicobar Island.

*Aeschynanthus volubilis* Jack, in Trans. Linn. Soc. 14. 42. t. 3. f. 3. 1823.

Scandent. Leaves opposite with short petioles, ovate-oblong, acute at apex, attenuate at base, *ca* 2.2 x 5.5 cm; petioles *ca* 10 mm. Flowers axillary, pairwise on a common peduncle; bracts broadly ovate-orbicular caducous. Calyx campanulate. Corolla bright red above, yellowish base below. Upper lip densely glandular, hairy within. Staminal filaments filiform, upper ends glandular hairy. Capsules *ca* 20 cm long, cylindrical.

Rare along streams.

*Fl. & Fr.*: April-June.

Lafu, Nevy Dera, 17 km on east-west road.

India (Nicobar Islands); Malay Peninsula, Java, Sumatra.

### 2. CYRTANDRA Forst.

Small shrubs. Cymes axillary, many flowered; bracts opposite and connate in a cup. Calyx tubular, 5-lobed. Corolla funnel-shaped, white,

usually 2-lipped. Stamens 2, adnate to corolla. Ovary oblong; stigma globose or bilobed. Fruit brown cylindric, beaked fleshy berry; seeds minute, many.

About 300 species, Polynesia & Philippines; 2 in Gt. Nicobar Island.

- 1 a. Bracts 8-12 mm long; corolla ca 3.2 x 2 cm, outside densely covered with long brown silky hairs; leaves broad, (elliptic-lanceolate); petiole 3-6 cm long, sharply marked off from the lamina ..... 2. *C. occidentalis*
- b. Bracts 10-15 mm long; corolla ca 1.8 x 1.2 cm, less pubescent; leaves elliptic-oblongate; petioles 1-2 cm long, very narrowly winged at apex ..... 1. *C. burttii*

1. ***Cyrtandra burttii*** Balakr. in Notes Roy. Bot. Gard. Edinburgh 35(1): 115. 1976.

Undershrubs, ca 60 cm high; stems subquadrangular, densely hairy at apex. Leaves opposite, subequal, elliptic-oblongate, obliquely narrowly cuneate at base, acuminate at apex, serrulate, ca 29 x 10 cm; lateral nerves 12-15 pairs; petioles ca 2 cm long, narrowly winged at apex. Umbels axillary; peduncles ca 10 mm long; bracts in a whorl around pedicels, linear-lanceolate, covered with golden hairs beneath. Calyx campanulate, golden hairy. Corolla bilabiate pubescent outside, lobes-5. Disc unilateral, minutely 3 dentate. Berries, linear-ellipsoid, curved, ca 3 x 0.4 cm, with persistent calyx & style; seeds numerous.

Rare in inland forests.

*Fl. & Fr.*: Aug.-Nov.

17 km from Campbell Bay to Alexandra river; 35 km on east-west road.

*Note*: Endemic to Great Nicobar Island.

2. ***Cyrtandra occidentalis*** Balakr. & B.L. Burtt in Notes Roy. Bot. Gard. Edinburgh 37(1): 153. 1978.

Undershrubs, ca 100 cm high. Leaves elliptic-lanceolate, oblique, cuneate at base, acuminate at apex, serrulate, ca 24 x 9 cm, pilose; lateral

nerves 12-16 pairs; petioles *ca* 6 cm long. Cymes axillary, many flowered; peduncles *ca* 5 mm long; bracts ovate oblong, hyaline, pilose. Calyx campanulate, 5 lobed. Corolla infundibuliforms, bilabiate, covered on the outside with long golden silky hairs. Disc cupular. Berries linear-ellipsoid, curved, with persistent calyx, *ca* 2.6 x 0.6 mm; seeds minute.

Common in inland forests.

*Fl. & Fr.*: April-Aug.

25 & 36.8 km on east-west road, Galathea river banks.

*Note*: Endemic to Great Nicobar Island.

### 3. RHYNCHOTECHUM Bl.

Herbs or undershrubs. Cymes axillary, simple or branched, pedunculate, many flowered. Flowers small, white. Calyx 5-parted. Corolla campanulate, deeply 5 lobed. Stamens-4, inserted on base of corolla, short; staminodes small or absent. Ovary round; style much longer. Berries small, globose, pulpy; seeds minute, ovoid, many.

About 12 species, Indo-Malayan; 1 in Gt. Nicobar Island.

***Rhynchotechum parviflorum* Bl., Bijdr. 775. 1825.**

Herbs, *ca* 90 cm high. Leaves lanceolate, acute at apex, cuneate at base, *ca* 20 x 7 cm, serrate; petioles *ca* 2.5 cm long. Cymes 2-4 on basal part of stem, lax branched, densely villous; bracts numerous. Calyx densely covered with hairs. Corolla white. Fruits ovoid-globose, hairy, *ca* 1.25 cm long.

Rare along streams in inland forests.

*Fl. & Fr.*: June-Sept.

Navy Dera.

India (Nicobar Islands); Penang, Java.

**4. STAURANTHERA Benth.**

Succulent, pubescent herbs. Inflorescences axillary corymbiform. Calyx campanulate, 5 lobed. Corolla campanulate, 2-lobed. Stamens-4, inserted at the base of corolla tube, didynamous; staminodes minute. Ovary ovoid; style short. Capsules depressed, globose, irregularly splitting.

About 4 species in S.E. Asia; 1 in Gt. Nicobar Island.

**Stauranthera grandiflora** Benth., Scroph. Ind. 57. 1835.

Herbs, *ca* 15 cm high. Leaves alternate to opposite, oblong, very oblique at base, acuminate at apex, crenulate, *ca* 12 x 4 cm, dark green, minutely pubescent; lateral nerves 8-9 pairs; petioles *ca* 2.5 cm long. Cymes pubescent, *ca* 8 cm long. Calyx lobes lanceolate-ovate. Corolla violet with yellow tinge in inner side of the tube. Capsules *ca* 5 mm diam, breaking up irregularly.

Rare along streams of inland forests.

*Fl. & Fr.*: June-Sept.

Laful.

India (Great Nicobar Island); Malay Peninsula.

**BIGNONIACEAE**

About 120 genera and 650 species, tropics of N. America, Africa, Madagascar and Asia; 2 genera & 2 species in Gt. Nicobar Island.

- 1 a. Calyx spathaceous, split on one side; corolla *ca* 16 cm long; capsules *ca* 50 x 2.5 cm, curved ..... 1. *Dolichandrone*
- b. Calyx not spathaceous; corolla *ca* 3.5 cm long; capsules hanging not curved, torulose, *ca* 20 x 0.4 cm ..... 2. *Radermachera*

**1. DOLICHANDRONE (Fenzl) Seem**

Trees. Leaves opposite, pinnate. Flowers in terminal racemes or panicles, few, large. Calyx spathaceous, cleft down the front. Corolla tube

long, dilate above; lobes 5, equal, edge crisped. Stamens 4, didynamous, included. Ovary sessile. Capsules elongate, terete, 2-valved; seeds numerous, flat, winged.

About 15 species, Africa & Australia; 1 in Gt. Nicobar Island.

**Dolichandrone spathacea** (L.f.) K.Schum., Fl. Kais. Wilh. Land. 123. 1889.

Trees, *ca* 5 m high. Leaves about 30 cm long; leaflets 5-8; ovate-lanceolate, acuminate at apex, unequal at base, *ca* 12 x 4.5 cm, glabrous; petiolules slender. Flowers white, in short terminal racemes. Capsules *ca* 50 x 2.5 cm, curved, cylindrical, pointed & obscurely winged.

Common in marshy places.

*Fl. & Fr.*: March-June.

Campbell Bay, Casuarina Bay.

## 2. **RADERMACHERA** Zoll. & Mor.

Small trees. Leaves bipinnate. Flowers white or pinkish, axillary or terminal panicles. Calyx truncate or lobed, deep reddish. Corolla funnel-shaped, upper lips 2, lower 3 lobed, white or pinkish. Stamens 4; filaments hairy at the base. Capsules usually tubercled or torulose; septum cylindric, pitted; seeds small with hyaline wings.

About 8 species, south-east Asia; 1 in Gt. Nicobar Island.

**Radermachera pinnata** (Blanco) Seem. ssp. *acuminata* (Steen.) Steenis in *Blumea* 23(1): 129. 1976.

Small trees, *ca* 8 m high. Leaves bipinnate; leaflets opposite, oblanceolate, acuminate at apex, cuneate at base, *ca* 11 x 4 cm. Panicles terminal & axillary. Calyx without ridges, deep reddish. Corolla pinkish commonly with some yellow streaks in the mouth. Capsules *ca* 20 x 0.4 cm, terete, hanging; seeds thin flat, small with oblong blunt hyaline wings.

Common in littoral & inland forests.

*Fl. & Fr.*: Nov.-March.

Laful, Campbell Bay, 6.5 km on east-west road, 40 km on north-south road, Galathea river mouth.

*Note*: India (Nicobar Islands); Java, Malay Peninsula.

## ACANTHACEAE

About 250 genera and 2500 species, tropics; 7 genera and 8 species in Gt. Nicobar Island.

- 1 a. Lianas ..... 7. *Thunbergia*  
b. Erect or prostrate herbs or shrubs ..... 2
- 2 a. Stamens 4 ..... 3  
b. Stamens 2 ..... 5
- 3 a. Anthers 1-celled ..... 1. *Acanthus*  
b. Anthers 2-celled ..... 4
- 4 a. Ovules more than 2 in each cell i.e., capsules 6 or more seeded .....  
..... 2. *Hygrophila*  
b. Ovules 2 in each cell i.e., capsule 1 to 4 seeded ..... 6. *Strobilanthes*
- 5 a. Anther-cells inserted at equal level ..... 5. *Pseuderanthemum*  
b. Anther-cells inserted at distinctly unequal level ..... 6
- 6 a. Anther-cells not spurred at base ..... 4. *Peristrophe*  
b. Anther-cells at least the lower one with a basal spur like appendage .....  
..... 3. *Mananthes*

### 1. ACANTHUS L.

Shrubby herbs. Leaves stiff, usually spiny. Flowers in a terminal spike; bracts ovate; bracteoles, 2 or absent, similar. Sepals free, 2 inner narrower than outer. Corolla 2-lipped. Stamens 4. Capsules ellipsoid, woody, bright brown, 2-seeded; seeds discoid, glabrous.

About 10 species, south Europe to Polynesia; 2 in Gt. Nicobar Island.



- 1 a. Stiff erect tidal swamp plants; leaves spiny ..... 1. *A. ilicifolius*  
 b. Unarmed climbers; leaves some or all entire..... 2. *A. volubilis*

**1. *Acanthus ilicifolius* L., Sp. Pl. 639. 1753.**

Shrubs, *ca* 60 cm high with stout, stiff, cylindrical spinescent branches. Leaves prickly, elliptical to elongate-oblong lobed, spinulose along the margins and ending in sharp spines, *ca* 25 x 7.5 cm, nearly sessile. Spikes *ca* 15 cm long, with several flowers; bracteoles large. Sepals free, 2-outer round-ovate. Corolla large, showy blue. Anthers bearded. Capsules oblong, *ca* 2.5 x 1.25 cm.

Common in tidal swamps and creeks.

*Fl. & Fr.*: Oct.-March.

Dogmar river.

**2. *Acanthus volubilis* Wall., Pl. As. Rar. 2, 56, t. 172. 1830.**

Twining herbs, *ca* 1 m high. Leaves lanceolate, acuminate mucronulate at apex, narrowed to the base, entire, unarmed, *ca* 15 x 4 cm, petioles *ca* 1.25 cm long. Spikes terminal, *ca* 12.5 cm long, narrow. Calyx lobes as long. Corolla white to light pink, *ca* 2.5 cm long. Capsules green, ellipsoid.

Rare in tidal swamps & creeks.

*Fl. & Fr.*: Feb.-April.

Campbell Bay.

India (Andaman & Nicobar Islands); Java, Malay Peninsula.

**2. *HYGROPHILA* R.Br.**

Marshy herbs, sometimes armed. Inflorescences axillary, of sub-sessile whorls or 1-many flowered, rarely in terminal heads; bracts and bracteoles large, often covering calyx. Calyx lobes 4-5 partite. Corolla

bilabiate. Stamens 4, didynamous, included; staminodes absent. capsules oblong-linear; seeds compressed, hairy when wet.

About 80 species, tropics; 1 in Gt. Nicobar Island.

**Hygrophilla erecta** (Burm.f.) in Candollea. 5: 230. 1934.

Erect or ascending herbs. Leaves obovate to oblong, acute or obtuse at base, apically rounded acute at apex, *ca* 16 x 5 cm, entire or subcrenate, glabrous or densely pubescent beneath or on both surfaces. Flowers axillary; spurious whorls few to many flowered. Corolla violet or white. Capsules oblong-linear, *ca* 20 cm; seeds 7-16, covered with mucilaginous hairs.

Common in swampy or moist places.

*Fl. & Fr.*: Oct.-Dec.

Campbell Bay.

### 3. MANANTHES Bremek

Shrubs. Leaves with cystolith. Flowers in terminal, simple or sparingly branched lax spikes or racemes; bracts 1-3 in the axils, triangular-subulate. Flowers sessile or shortly pedicelled; bracteoles small. Calyx deeply 5 partite. Corolla small, bilabiate. Stamens 2, inserted at base; staminodes none. Ovary cells 2-ovuled; stigma 2 lobes. Capsules stipitiform, solid at base; seeds 4 or fewer, densely obtusely tuberculate.

About 5 species, S. China to Japan; 1 in Gt. Nicobar Island.

**Mananthes sumatrana** (Miq.) Bremek in Verh. Nederl. Akad. Wetensch., Amst., Afd. Natuurk. Sect. 2: 45. 2: 59. 1948.

Shrubs, *ca* 1.5 m high; stems thin, shortly pubescent. Leaves elliptic-oblong or ovate, cuneate or obtuse at base, long acuminate at apex, *ca* 18 x 6 cm, entire; petioles *ca* 4 cm or more. Spikes 15-30 cm long; rachis thin, densely covered with hairs. Calyx coated with patent hairs. Corolla white. Capsules short hairy, *ca* 1 cm high.

Common in marshy low lying areas along the road sides.

*Fl. & Fr.*: Oct.-Dec.

14 & 38 km on north-south road, Baludera, Dogmar river.

India (Nicobar Islands); Java, Malay Peninsula.

#### DOUBTFUL SPECIES:

***Mananthes vasculosa*** (Nees) Bremek, in Verh. Nederl. Akad. Wetensch. Amst., Afd. Natuurk., Sect. 2: 45. 2: 59. 1948.

This species is recorded from Great Nicobar by Kurz (1876). No specimens are available.

#### 4. **PERISTROPHE** Nees

Spreading herbs. Inflorescences usually of panicles of cymes. Flowers shorter than bracts. Calyx lobes 5, linear, acute. Corolla hairy, tube thin; limb bilabiate. Stamens 2, exserted; staminodes absent. Capsules stipitate; seeds papillose, glochidiate.

Species about 20, tropics, south Africa to New Caledonia and Southern Japan; 1 in Gt. Nicobar Island.

***Peristrophe acuminata*** Nees in Wall. Pl. As. Rar. 3: 113. 1832; Kurz in J. As. Soc. Bengal 11. 3: 142. 1876.

Herbs, *ca* 90 cm high. Leaves lanceolate, acuminate at apex, narrowed at base, *ca* 7.5 x 1.25 cm; petioles *ca* 1.25 cm long. Cymes short, *ca* 1.25 cm long, shortly peduncled. Corolla white, upper sides of lobes light rose with a cream coloured blotch & 8 purple spots in the mouth. Capsules *ca* 1 cm long.

Rare in waste lands.

*Fl. & Fr.*: Not known.

Great Nicobar Island (Kurz, *l.c.* )

India (Nicobar Islands); Malay Peninsula, Java.

### 5. **PSEUDERANTHEMUM** Radlk.

Herbs. Inflorescences usually of racemes or spikes, often paniced; bracts & bracteoles small. Calyx 5-partite, longer than bracts. Corolla tube elongate, cylindrical, 5 lobed. Stamens 2, slightly exserted; staminodes often present. Capsules clavate; seeds compressed, rugose.

About 120 species, tropics; 1 in Gt. Nicobar Island.

**Pseuderanthemum album** (Roxb.) Merrill. in J. As. Soc. Mal. 1: 37. 1923.

Herbs, stems woody upwards; bark whitish. Leaves opposite, elliptic, acuminate at apex, cuneate at base, *ca* 12 x 4.5 cm; petioles *ca* 3 cm long. Spikes paniced, minutely pubescent. Corolla tubular, *ca* 3 cm long, rosy-white but the inner lip of the petal red dotted. Stamens 2.

Common in the dense forests.

*Fl.*: Oct.-Jan.; *Fr.*: Not seen.

Near Satish bridge (east-west bank of river Galathea); 38 km on north-south road.

India (A & N Islands); Java, Malay Peninsula, Myanmar.

### 6. **STROBILANTHES** Bl.

Herbs or undershrubs. Flowers often showy in heads or strobilate, solitary or panicles or cymose or in small clusters of panicles; bracts prominent or small & caducous; bracteoles 2 or absent. Sepals subequal free near to base. Corolla tubular, campanulate, lobes round. Stamens 4. Capsules narrow ellipsoid, short stalked, 4 seeded.

About 200 species; Africa, Asia & Australia; 1 in Gt. Nicobar Island.

**Strobilanthes glandulosus** Kurz in J. As. Soc. 2: 92. 1873.

Herbs, *ca* 50 cm high. Leaves narrowly elliptic, subobtusely cuneate at both ends, *ca* 10 x 3 cm, crenate; petioles *ca* 7 mm long. Spikes

numerous, sticky; lowest bracts leaf like subpersistent. Flowers distant in opposite pairs or in small heads. Calyx hairy. Corolla yellow. Capsules 8 mm long, clavate, compressed, pubescent; seeds 4.

Rare in marshy places.

*Fl. & Fr.*: Sept.-Nov.

39 & 41 km on east-west road.

*Note*: Endemic to A & N Islands.

## 7. THUNBERGIA Retz

Lianas. Leaves subequal, palmately veined. Peduncles axillary. Flowers racemose; bracts large, broad oblong, base truncate. Calyx obsolete, a mere rim or with 8-12 teeth. Corolla showy, blue, white or orange; tube cylindric or campanulate. Stamens 4, didynamous, included. Ovary 2 celled, 4 ovuled; stigma lobes triangular, opposite. Capsules globose, with long oblong-beak; seeds 4, globose, hollowed or flattened at base.

About 200 species in the tropical regions; 1 in Gt. Nicobar Island.

**Thunbergia laurifolia** Lindl. in Gard. Chron. 260. 1856.

Lianas. Leaves broad oblong or ovate, glabrous entire or with a small lobe at the base, lower leaves broad at base, undulate and toothed; upper ones lanceolate, entire, *ca* 12.5 x 5 cm; petioles *ca* 2.5 cm long. Cymes axillary 1-3 or 4 flowered, terminal several flowered; bracts 2.5 cm long; pedicels 1.25 cm long. Corolla bright blue, tube campanulate. Capsules *ca* 6 mm long, with 2.5 cm long beak.

Rare in inland forests.

*Fl. & Fr.*: Oct.-Jan.

Nevy Dera, 5 km on north-south road, 25 & 32 km on east-west road.

India (A & N Islands); Malay Peninsula.

## VERBENACEAE

About 75 genera and over 3000 species, tropics and subtropics; 7 genera and 10 species in Gt. Nicobar Island.

- 1 a. Fertile stamens 2 .....5. *Stachytarpheta*  
b. Fertile stamens 4.....2
- 2 a. Leaves digitately 3-7 foliolate .....3  
b. Leaves all simple .....4
- 3 a. Shrubs or small trees, *ca* 5 m high; petioles not winged; drupes *ca* 5 mm across ..... 7. *Vitex*  
b. Large trees *ca* 30 m high; petioles not winged; drupes more than 2 cm across ..... 6. *Teijsmanniodendron*
- 4 a. Flowers sessile or subsessile (pedicels less than 2 mm) .....5  
b. Flowers pedicelled (pedicels more than 5 mm) .....6
- 5 a. Shrubs; inflorescences cymose centrifugal .....1. *Callicarpa*  
b. Creeping herbs; inflorescences capitate or cylindric spikes, centripetal ...  
.....3. *Phyla*
- 6 a. Exserted part of stamens over 1 cm long; pyrenes 1-4, each 1-seeded ...  
.....2. *Clerodendrum*  
b. Stamens not much exserted; pyrene 1, 4-seeded..... 4. *Premna*

1. *CALLICARPA* L.

**Shrubs; stems tomentose. Inflorescences paniculate cymes, axillary, smaller than leaves. Flowers 4-merous, subsessile. Calyx cupular, truncate to dentate. Corolla tube short. Stamens equal, exserted; anther cells gland-dotted. Drupes globular, black, small; pyrenes 4, each 1-seeded.**

About 140 species, tropical and subtropical; 1 in Gt. Nicobar Island.

***Callicarpa longifolia* Lam., Encycl. Meth. 1: 563. 1783.**

Shrubs, *ca* 6 m high. Leaves oblong-elliptic or elliptic-lanceolate, long acuminate at apex, base narrowed, cuneate, *ca* 20 x 5 cm, hairy along nerves, dentate; petioles *ca* 15 mm long. Cymes 3-6 cm across. Flowers greenish-white or pink. Fruits white when ripe, *ca* 0.25 cm across.

Rare in coastal forests.

*Fl. & Fr.*: July-Nov.

Galathea to Indira point, Galathea Bay.

## 2. CLERODENDRUM L.

Shrubs or small trees. Inflorescences a panicled cymes or corymbs; bracts often conspicuous or not. Flowers 5-merous, usually irregular. Calyx often accrescent. Corolla limb slightly 2-lipped. Stamens 4, didynamous, long exserted. Ovary imperfectly 4-locular; style elongate; stigma bifid. Drupes 4 lobed, with 4, 1-seeded pyrenes.

About 400 species, tropical & subtropical regions; 3 in Gt. Nicobar Island.

- 1 a. Flowers in axillary cymes; scandent shrubs..... 1. *C. inerme*  
 b. Flowers in terminal panicles; shrubs or small trees.....2
- 2 a. Flowers white, in rusty pubescent cymes..... 3. *C. viscosum*  
 b. Flowers bright-red .....2. *C. paniculatum*

### 1. *Clerodendrum inerme* (L.) Gaertn. Fruct. 1: 271, t. 75. 1788.

Scandent shrubs. Leaves membranous, elliptic, acute or rounded at tip, base narrowed, glabrous, *ca* 8.75 x 4 cm; petioles *ca* 1.25 cm long. Cymes axillary, few flowered. Flowers in threes on the branch-ends. Calyx campanulate, enlarged in fruit. Corolla white, tube slender, cylindric, *ca* 2.5 cm long, villous inside. Stamens long exserted, dark pink. Drupes obovoid, 1.25 cm long; pyrenes 4.

Common in inland forests.

*Fl. & Fr.*: Jan.-June.

Campbell Bay, Navy Dera, Pulobabi.

### 2. *Clerodendrum paniculatum* L., Ment. Pl. 90. 1767.

Shrubs, *ca* 2 m high. Leaves membranous, ovate or orbicular, more or less deeply lobed, lobes acute 3 to 7, cordate, sparsely hairy or nearly glabrous above, densely glandular beneath, *ca* 30 x 20 cm; petioles *ca* 15 cm long. Panicles pyramidal, *ca* 30 cm long; branches red and flowers numerous. Calyx divided nearly to the base. Corolla bright red. Stamens long exserted, pink. Drupes obovate, black.

Rare along streams in inland forests.

*Fl. & Fr.*: Nov.-March.

Lakshman beach, Campbell Bay to Chengappa Bay, Koshin Don, Laful, 10 km on east-west road.

**3. *Clerodendrum viscosum* Vent., Jard. Malm. 1: t. 25. 1803.**

Softy tomentose shrubs or small trees. Leaves entire, ovate, shortly acuminate at apex, cordate at base, *ca* 16 x 12 cm; venation subpalmate, 5 ribbed. Panicles terminal, lax, *ca* 20 cm long. Flowers white; bracts inconspicuous. Calyx silky pubescent. Drupes globose *ca* 8 mm across, black when ripe.

Rare in evergreen inland forests.

*Fl. & Fr.*: Jan.-May.

Kopenheat, 7 km on north-south road, 6 km on east-west road.

**3. PHYLA Lour.**

Herbs. Leaves serrate. Flowers in globose, elongating to cylindric heads. Calyx 2-4 lobed. Corolla salver-shaped, limb more or less 2-lipped. Stamens 4. Fruits dry of 2 bony pyrenes.

About 100 species, chiefly tropical American; 1 species in Gt. Nicobar Island.

***Phyla nodiflora* (L.) Greene in Pittonia 4: 46. 1899.**

Prostrate herbs, rooting at nodes. Leaves fleshy, obovate-spathulate or oblanceolate, *ca* 2.75 x 1.75 cm, upper half serrate-dentate, lower half



entire, narrowed, pubescent or glabrescent. Flowers pale pink, purple or white, in elongated, solitary, bracteate, pedunculate spikes. Calyx and corolla 2-lipped. Stamens-4, didynamous. Fruits *ca* 1 mm across, enclosed within the persistent calyx, 1-seeded pyrenes.

Common in moist & marshy places.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, 3 km on east-west road.

#### 4. PREMNA L.

Shrubs or trees. Flowers white or green, in terminal corymbs, rarely panicles; bracts small. Calyx campanulate or tubular, 2-lipped or truncate. Corolla small, funnel-shaped, white, villous inside, 2-lipped or 5 lobed. Stamens 4, usually exserted in corolla throat. Ovary 2-4 celled; stigma bifid. Drupes small globose, or obovoid, black, pulpy; pyrenes 4-celled; seeds usually 1, oblong.

About 40 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Tips of branches, petioles, rachises of inflorescences and calyx densely coated with fine stellate hairs ..... 2. *P. pyramidata*
- b. Stellate hairs not present ..... 1. *P. corymbosa*

1. ***Premna corymbosa*** (Burm.f.) Rottl. & Willd. in Ges. Naturf. Freunde Berlin Neue Schriften ser. 2. 4: 187. 1803.

Small trees, *ca* 8 m high. Leaves broadly ovate to oblong, cordate, truncate-cuneate at base, narrowed or acuminate at apex, *ca* 16 x 11 cm, entire; petioles *ca* 2 cm long. Corymbs *ca* 15 cm long, pubescent. Calyx often with glands, distinctly bilabiate. Corolla greenish white, thinly pubescent outside, rarely glabrous. Drupes black 4-6 mm diam., pyrene basally ribbed and provided with a pore, apically tubercled.

Common in littoral forests.

*Fl. & Fr.*: April-Oct.

Chengappa Bay, Campbell Bay.

**2. *Premna pyramidata* Wall. ex Schauer in DC. Prod. 11. 633. 1847.**

Trees, *ca* 100 m high. Leaves, ovate acuminate at apex, cordate, round or attenuate at base, *ca* 30 x 18 cm, glabrous above, glaucescent beneath, stellate tomentose on midrib; nerves 7-10 pairs; petioles *ca* 8 cm long or more, pubescent. Cymes in a pyramidal panicles, *ca* 30 cm long. Flowers crowded on branch tips, greenish white. Calyx campanulate, stellate pubescent. Corolla 2-lipped, greenish-white. Drupes globose or obovoid, pale green, *ca* 7 mm long.

Common in inland forests.

*Fl. & Fr.*: April-August.

4, 18, 25 km on east-west road; Laful.

**5. STACHYTARPHETA Vahl**

Herbs or shrubs. Leaves dentate. Inflorescences terminal, centripetal spikes. Flowers sessile and subtended by persistent bracts, 4 merous. Calyx tubular, ribbed, dentate. Corolla salverform. Stamens 2; staminodes 0-2, linear, small. Ovary 2 locular; style elongate, persistent; stigma subcapitate. Drupes included in calyx, breaking into 2, 1 seeded pyrenes.

About 40 species in tropical America; 1 in Gt. Nicobar Island.

***Stachytarpheta jamaicensis* (L.) Vahl, Enum. 1: 206. 1804.**

Undershrubs or herbs; branches greenish. Leaves ovate, obtuse or subacute at apex, cuneate at base, *ca* 8 x 5 cm, glabrescent, dentate. Spikes erect, stout, *ca* 35 cm long. Flowers blue, *ca* 8 mm long. Fruits dry, sunk in the thickened rachis.

Common in the wastelands.

*Fl. & Fr.*: June-Nov.

Campbell Bay, 1 km on north-south road.

6. **TEIJSMANNIODENDRON** Koord

Medium sized trees; branches pubescent. Leaves digitately compound; petioles winged. Flowers in opposite cymes, combined into terminal panicles; bracts small. Calyx campanulate. Corolla bilabiate. Stamens-4, inserted in or below the middle of the corolla-tube, exerted, distinctly didynamous; staminodes absent. Ovary incompletely 2-celled; style 1, slightly bifid at apex. Drupes woody, large, indehiscent, 1-celled, 1-seeded.

About 10 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaflets oblong-lanceolate or lanceolate, ca 6.5 cm across; leaflets 4 ..... 2. *T. pteropodum*  
 b. Leaflets elliptic to obovate, ca 15 cm or more across; leaflets 5-7 foliolate ..... 1. *T. peralata*

1. ***Teijsmanniodendron peralata*** (King) Balakr. in Bull. Bot. Surv. India 22: 176. 1982.

Trees, ca 30 m high. Leaves stiff; leaflets elliptic to obovate, acute at apex, base narrowed, midlobe 15-50 x 7.5-15 cm; nerves prominent beneath; petioles 7.5-15 cm long, broad winged, nearly 10 cm across; petiolules very short or absent. Panicles ca 60 cm long, on angled peduncles ca 20 cm long or less; branches 5-7.5 cm long with short cymules. Flowers numerous. Calyx urceolate, pubescent, pink, ca 2.5 cm long. Corolla campanulate, pubescent outside, villous inside, bright blue, brown marked inside. Drupes woody, ovoid-conic, 3.75 x 2 cm; pericarp very thick.

Rare, edges of inland forests.

*Fl. & Fr.*: May-Aug.

5 km on east-west road from Campbell Bay, 27 km on north-south road.

India (Nicobar Islands); Malay Peninsula.

2. ***Teijsmanniodendron pteropodum*** (Miq.) Bakh. in Bull. Jard. Bot. Buitenz. Ser. 3(3): 29. 1921.

Trees, *ca* 30 m high. Leaves 4-foliolate; leaflets long-lanceolate or oblong-lanceolate, acuminate at apex, cuneate at base, lower pair only much smaller than upper ones, 10-15 x 2.5-7.5 cm; petioles *ca* 17 cm long, broadly winged, wings over 2.5 cm wide on each side. Panicles terminal and axillary, subsessile, *ca* 30 cm long; branches 10 cm long, glabrous, branchlets or cymes of few pinkish white flowers. Drupes ovoid-oblong, 3 x 2.5 cm.

Rare in inland forests.

*Fl. & Fr.*: Nov.-May.

5 km on east-west road.

India (Nicobar Islands); Malay Peninsula.

## 7. VITEX L.

Shrubs or small trees. Leaves usually 3-7 foliolate, long petiolate. Inflorescences paniculate cymes. Flowers irregular, 5 merous. Calyx cupular, toothed, subaccrescent. Corolla bilabiate; tube short, with a ring of hairs at the base of staminal filaments. Stamens 4, didynamous, exserted. Ovary imperfectly 2-locular, stigma slightly bifid at apex. Drupes enclosed by calyx.

About 250 species, tropics; 1 in Gt. Nicobar Island.

*Vitex negundo* L., Sp. Pl. 638. 1753.

Large silvery tomentose shrubs or small trees. Leaflets 3-5, middle one slightly longer petiolulate, entire, lanceolate, acuminate *ca* 12 x 2 cm, membranous. Panicles terminal, sometimes also from upper axils, *ca* 15 cm with short cymose branches. Corolla blue. Drupes globular, *ca* 3 mm across.

Rare in littoral forests.

*Fl. & Fr.*: April-Nov.

Campbell Bay.

**LAMIACEAE**

About 180 genera and 3500 species, cosmopolitan; 3 genera, 3 species in Gt. Nicobar Island.

- 1 a. Stamens declinate, lying upon or enclosed in the lower lip..... 2
- b. Stamens erect, ascending or spreading ..... 3. *Pogostemon*
- 2 a. Flower whorls axillary; calyx subequally 5 toothed ..... 1. *Hyptis*
- b. Flower whorls in terminal spike or racemes; calyx 2-lipped; upper lip large  
      ..... 2. *Ocimum*

**1. HYPTIS Jacq.**

Herbs. Inflorescences in verticillate cymes or clustered axillary or terminal racemes or rarely forming heads. Calyx campanulate to tubular, 5 toothed. Corolla obscurely 2 lipped. Stamens didynamous. Fruitlets ellipsoidal, smooth or slightly reticulate.

About 250 species, tropical America & East Indies; 1 in Gt. Nicobar Island.

***Hyptis rhomboides* Mart. & Gal. in Bull. Acad. Brux. 11(2): 188. 1844.**

Suffrutescent herbs, ca 150 cm high, hairy. Leaves ovate to elliptic, cuneate at base, acute at apex, ca 10 x 5 cm, margins serrate, both surfaces minutely hairy, glandular dotted beneath; petioles ca 4 cm long. Inflorescences in cymes, forming capitate clusters, axillary or terminal. Flowers sessile, purple-white. Fruitlets ellipsoidal, smooth, 1.2 mm long.

Common in road sides, rocky loam.

*Fl. & Fr.*: Sept.-Dec.

Campbell Bay, 10 km on east-west road.

**2. OCIMUM L.**

Herbs or undershrubs; strongly aromatic. Flowers in whorls of 6-10, arranged in spikes, racemes or panicles; bracts minute. Calyx tubular,

bilipped, deflexed and accrescent in fruit. Corolla 2-lipped. Stamens 4, didynamous. Nutlets 4.

About 150 species, tropical & warm temperate regions; 1 in Gt. Nicobar Island.

***Ocimum tenuiflorum* L., Sp. Pl. 597. 1753.**

Undershrubs; stems and branches clothed with spreading reddish-purple hairs. Leaves ovate-oblong or elliptic-oblong, obtuse or acute, *ca* 3 x 2 cm; entire or sub-serrate. Flowers reddish pink. Nutlets ellipsoid, minutely warty, dark brown.

Rare in wastelands.

*Fl. & Fr.*: Throughout the year.

Campbell Bay, 31 km on north-south road.

### 3. **POGOSTEMON** Desf.

Herbs or shrubs. Spikes or racemes, solitary or panicled. Calyx tubular, subequally 4-5 toothed. Corolla bilabiate. Stamens 4, didynamous, exserted. Disk subentire. Ovary 4-partite; stigma bifid. Nutlets 4, ovoid or oblong, smooth, basal scar small.

About 40 species, China & Indo-Malaysia; 1 in Gt. Nicobar Island.

***Pogostemon auricularius* (L.) Hassk. in Tijdschr. Nat. Gesch. Physiol. 10: 127. 1843.**

Herbs, *ca* 50 cm high. Leaves elliptic to ovate, cuneate at base, acute at apex, *ca* 6 x 2 cm; margins serrate; petioles *ca* 8 cm long. Spikes terminal, *ca* 10 cm long. Flowers sessile, purple violet. Corolla tubular, minutely hairy on upper parts, 4 lobed. Fruitlets ovoid, 3-ribbed, acute at apex.

Common in marshy places.

*Fl. & Fr.*: Sept.-Dec.

Satish bridge near Galathea river, east-west road; 25 km on north-south road.

## NYCTAGINACEAE

About 30 genera and 300 species, mainly distributed in the tropics and subtropics of both hemispheres; 2 genera & 2 species in Gt. Nicobar Island.

- 1 a. Trees; stamens 6-14; anthocarp *ca* 4 cm long..... 2. *Pisonia*  
 b. Herbs; stamens 2-3; anthocarp 3 mm long..... 1. *Boerhavia*

### 1. BOERHAVIA L.

Prostrate herbs, woody at base; stem often purple, swollen at the nodes. Leaves opposite. Inflorescences axillary or terminal, forming umbels or heads or often large, lax panicles; bracteoles small, caducous. Perianth infundibuliform or campanulate, 5 lobed. Stamens 1-6, long exserted. Ovary sessile or nearly so; style long exserted; stigma peltate or capitate. Anthocarp clavate, turbinate, fusiform or ovoid, 5-10 ribbed, glabrous or more often viscid glandular; seeds with longitudinally folded embryo.

About 20 species, tropics and subtropics; 1 in Gt. Nicobar Island.

***Boerhavia diffusa* L., Sp. Pl. 3. 1753.**

Ascending-erect herbs. Leaves ovate-oblong or lanceolate, acute to obtuse at apex, truncate to rounded at base, *ca* 4 x 3 cm; petioles *ca* 4 cm long. Inflorescences capitate or paniculate. Flowers pink. Anthocarp clavate, 3 x 1 mm, turbinate, fusiform or obovoid.

Rare in waste lands.

*Fl. & Fr.*: Aug.-Sept.

41 km on east-west road, Indira point.

### 2. PISONIA L.

Trees or shrubs, with or without spines. Leaves opposite or spirally arranged. Inflorescences axillary or terminal (rarely cauliflorous),

paniculate or corymbose; pedicels with 1-3, small, caducous bracts. Flowers bisexual or unisexual. Perianth tubular, urceolate or infundibuliform, 5-10 lobed. Stamens 5-13, in 1 or 2 whorls. Ovary sessile, elongate on a small disc; style longer than ovary; stigma capitate or fimbriate. Anthocarp oblong, coriaceous, 5-ribbed; seeds 1, with a deep longitudinal furrows.

4 species, tropics; 1 in Gt. Nicobar Island.

***Pisonia umbellifera*** (J.R. & G. Forst.) Semm., Bonpl. 10: 154. 1862.

Trees, *ca* 15 m high; branches glabrous. Leaves ovate-lanceolate, slightly attenuate towards the base, acuminate-rounded at apex, *ca* 25 x 11 cm; petioles *ca* 4 cm long. Corymb terminal. Flowers bisexual or unisexual. Perianth campanulate, 5 angled. Stamens 6-14, unequal in length. Anthocarp elongate, *ca* 4 cm long, with 5 viscid ribs; pedicels *ca* 1.5 cm long.

Common in the interior forests.

*Fl. & Fr.*: Jan.-March.

Alexandra river, 40 km on east-west road.

India (A & N Islands); Malay Peninsula.

## AMARANTHACEAE

About 65 genera and 850 species, cosmopolitan; 4 genera & 4 species in Gt. Nicobar Island.

- 1 a. Leaves opposite .....2
- b. Leaves alternate .....3. *Amaranthus*
- 2 a. Spikes long, narrow, lowest flower finally remote; flowers deflexed after anthesis .....3
- b. Flowers in a dense globose or cylindrical head .....2. *Alternanthera*
- 3 a. Modified flowers with hooked spines .....4. *Cyathula*
- b. Modified flowers without hooked spines .....1. *Achyranthes*



## 1. **ACHYRANTHES** L.

Herbs. Leaves opposite. Spikes terminal or axillary, many flowered. Flowers bisexual, deflexed after anthesis; bracts and bracteoles spinescent, winged at base. Perianth segments 5, free. Stamens 5 alternating with pseudostaminodes; filaments united at base into a cup. Ovary 1-ovuled; style short; stigma capitate. Fruits indehiscent utricles, shed with persistent perianth.

About 100 species, tropics & subtropics, mostly in Africa & Australia; 1 in Gt. Nicobar Island.

**Achyranthes bidentata** Bl., Bijdr. Fl. Nederl. Ind. 545. 1826.

Erect or ascending herbs; stems 4-gonous, flaccid, glabrous. Leaves elliptic-oblong or ovate-lanceolate, rounded or cuneate at base, acuminate at apex, ca 15 x 7 cm, subentire, thinly hairy. Flowers in axillary and terminal, ca 40 cm long spikes, greenish white. Utricles 2 mm long.

Common in waste lands.

*Fl. & Fr.*: Nov.-Jan.

37 km on east-west road.

## 2. **ALTERNANTHERA** Forsk.

Herbs. Leaves opposite. Inflorescences axillary or terminal, sessile or peduncled heads, sometimes spikes. Flowers bisexual. Perianth 5 lobed, free, equal or unequal, usually dorsally compressed. Stamens 2-5; filaments basally uniting into a short cup, free part alternating with usually forked pseudostaminodes. Utricle indehiscent, falling with perianth.

About 200 species, tropical & subtropical regions; 1 in Gt. Nicobar Island.

**Alternanthera sessilis** (L.) R.Br. ex DC., Cat. Pl. Hort., Bot. Monsp. 4: 77. 1813.

Prostrate herbs; stems and branches green to purplish; rooting at nodes. Leaves linear lanceolate to oblong, ovate or obovate-spathulate, shortly acuminate at apex, cuneate at base, *ca* 9 x 2 cm. Flowers in axillary, sessile, subglobose heads, whitish. Utricles, *ca* 0.15 cm long, obreniform, compressed with thickened margins; seeds orbicular.

Common in marshy places.

*Fl. & Fr.*: Throughout the year.

Kopenheat, mouths of Alexandra river and Galathea river.

### 3. AMARANTHUS L.

Herbs, unarmed or spinous. Leaves alternate, usually petioled. Inflorescences of floral clusters collected into axillary & terminal, solitary or paniced spikes. Flowers unisexual. Perianth 3-5, free. Stamens as many as perianth lobes; filaments free; staminodes none. Ovary ovoid, compressed, enclosing a single, erect ovule; style 1; stigmas 2-3. Utricle membranous, single-seeded.

About 60 species, tropical & temperate regions; 1 in Gt. Nicobar Island.

*Amaranthus viridis* L., Sp. Pl. 2. 1405. 1763.

Herbs, *ca* 25 cm high. Leaves deltoid-ovate to rhomboid-ovate, obtuse and emarginate at apex, shortly cuneate below, *ca* 7 x 4.5 cm. Flowers in slender, axillary or terminal, often paniculate spikes, green. Utricles subglobose, not or slightly exceeding the perianth, strongly rugose throughout; seeds round, slightly compressed, dark brown to black, shining.

Rare in waste places.

*Fl. & Fr.*: Nov.-Jan.

41 km on east-west road.

#### 4. CYATHULA Blume

Herbs or undershrubs. Leaves opposite, sessile entire. Inflorescences long terminal spikes. Flowers in stalked clusters; cluster composed of 1-3 perfect flowers and few imperfect flowers, reduced to tepals with hooked awn. Perianth 5 lobes, free. Stamens 5; filaments fused at base into a small cup; free portion alternating with pseudostaminodes. Utricle thin walled, indehiscent.

About 25 species in Africa, Madagascar, Sri Lanka, China, Malaysia; 1 in Gt. Nicobar Island.

**Cyathula prostrata** (L.) Bl., Bijdr. 549. 1826.

Creeping-ascending herbs. Leaves rhomboid ovate, hairy especially towards axil, ca 7.5 cm long. Flowers pale violet, polygamous, in small drooping clusters, arranged in pedunculate racemes. Utricle thin walled.

Rare in waste lands, inland forests.

*Fl. & Fr.*: Oct.-Jan.

16 km on east-west road, Galathea river bank.

#### POLYGONACEAE

About 30 genera and 800 species, cosmopolitan; 1 genus and 3 species in Gt. Nicobar Island.

#### POLYGONUM L.

Herbs or shrubs. Leaves alternate; stipules connate into a tubular membranous ocrea, sheathing stem. Inflorescences usually spiciform heads or panicle racemes; bracts and bracteoles ocreaceous. Flowers usually bisexual, regular. Perianth segments 5, free or connate at base, sepaloid or petaloid. Disc annular or glandular. Stamens 5-8. Fruit a nut, covered by the persistent perianth.

About 200 species, cosmopolitan; 3 in Gt. Nicobar Island.

- 1 a. Flowers in heads .....3. *P. chinense*
- b. Flowers in simple or paniced racemes .....2
- 2 a. Pseudo-spikes dense; bracts closely imbricate .....1. *P. barbatum*
- b. Pseudo-spikes lax; bracts remote .....2. *P. caespitosum*

1. ***Polygonum barbatum* L., Sp. Pl. 362. 1753.**

Erect to creeping-ascending herbs; stems terete; ocreae *ca* 2.5 cm long, appressed-pubescent; mouth ciliate with *ca* 2 cm long hairs. Leaves subsessile, lanceolate-oblong, acute at base, acuminate at apex, glabrous or appressed-pubescent, *ca* 20 x 3 cm. Pseudospikes *ca* 5 cm long, appressed-pubescent; peduncles *ca* 10 cm long, usually combined into panicles; bracts glabrous or ciliate, *ca* 3 mm long. Perianth white or whitish-pink, *ca* 3 mm long; segments oblong rounded. Nuts ovoid-ellipsoid, 2 mm long.

Common in marshy places, along river beds.

*Fl. & Fr.*: Oct.-Jan.

Galathea mouth and east bank of river.

2. ***Polygonum caespitosum* Bl., Bijdr. 532. 1825.**

Erect-ascending, creeping herbs; stems glabrous; ocreae thinly appressed-pilose on the nerves, with *ca* 1 cm long cilia on the upper margin. Leaves elliptic-lanceolate to oblong, cuneate or acute at base, attenuate or acuminate at apex, *ca* 8 x 3 cm, glabrous except appressed-hairy nerves and margins; petioles *ca* 1.5 cm long. Pseudospikes thin on 4-6 cm long peduncles, interrupted below, 2-10 cm long, often combined into panicles. Nuts brown, polished, *ca* 2 mm long.

Common in marshy localities.

*Fl. & Fr.*: Nov.-Jan.

Kopenheat, Campbell Bay.

3. ***Polygonum chinense* L., Sp. Pl. 363, 1453.**

Drooping herbs, with a woody base; stems flexuous, glabrous; ocreae obliquely divided near the base, glabrous. Leaves oblong-elliptic, truncate or cuneate at base, acuminate at apex, *ca* 20 x 7 cm, sub entire-crenulate, glabrous, often with a median brown blotch, gland-punctate; petioles *ca* 1.5 cm long. Pseudospikes numerous in glandular-pubescent, widely branched, corymbs. Perianth white or pink. Nut 3-gonous, *ca* 2.5 mm long.

Common in marshy waste places.

*Fl. & Fr.*: Oct.-Jan.

Galathea river bank.

## ARISTOLOCHIACEAE

About 7 genera and 600 species, mainly tropical & subtropical, few in temperate regions; 2 genera & 2 species in Gt. Nicobar Island.

- 1 a. Erect or creeping shrubs; perianth regular; stamens only at base united with the style; ovary 4 celled; capsules slender, long; indehiscent .....2. *Thottea*
- b. Climbers; perianth irregular; stamens entirely united with style; ovary 6 celled; capsules oblong; dehiscent .....1. *Aristolochia*

### 1. ARISTOLOCHIA L.

Twining herbaceous vines. Leaves petiolate, 3-7 ribbed; petioles sometimes dilated at base. Inflorescences of fascicled short racemes or of solitary flowers. Flowers bisexual, pedicelled, irregular. Perianth tubular, inflated below, constricted into a short or long neck, bearing 2-3 dentate elongate lip. Stamens 6, sessile, fused with style. Ovary 6-locular; style 6-fid. Capsules 6 valved; seeds flat winged all round.

About 350 species, tropical and temperate regions; 2 in Gt. Nicobar Island.

- 1 a. Leaves trilobed .....1. *A. jackii*
- b. Leaves entire .....2. *A. tagala*

1. *Aristolochia jackii* Steud., Nom. Bot. ed. 2(1): 132. 1840.

Slender climbers; stems longitudinally striated, somewhat angular. Leaves trilobed-shortly narrowed, cordate at base, *ca* 16 cm long, central lobes 3-8 x 5-6 cm, broadly oblong, obtuse or acute at apex, lateral lobes curved, rounded, obtuse at apex, thinly coriaceous, glabrous, trinerved at base; lateral nerves 1-2 pairs, distinct, flattened above, slightly elevated beneath; petioles *ca* 7 cm long, glabrous. Racemes axillary, *ca* 4 cm long. Flowers 4-5; bracts ovate, acute, glabrous, exserted at margin. Perianth *ca* 5.5 cm long, with 4-5 longitudinal veins, pale violet. Gynostegium *ca* 2 mm long, with 3-angular 6-fid apex. Anthers 12. Ovary glabrous with 6-longitudinal striations. Capsules globular, *ca* 4 cm across, smooth, 6-valved.

Rare in inland forests. Climbing on *Ficus* trees associated with *Merremia peltata*

*Fl. & Fr.*: June-Sept.

38 km on east-west road, Laful.

India (Nicobar Islands); Malaysia.

2. *Aristolochia tagala* Cham. in Linnaea 7: 207. t. 5. f. 3. 1832.

Slender climbers. Leaves entire, glabrous, ovate or ovate-oblong, acute at apex, cordate at base, *ca* 15 x 10 cm; petioles *ca* 2.5 cm long. Racemes axillary, *ca* 3.75 cm long, lax puberulous; bracts small, leafy, oblong. Perianth *ca* 5 cm long, base globose then curved, cylindric, pale green ending in a 2-lobed funnel, upper lobe very short, lower tongue-shaped, brownish black, *ca* 3.75 cm long. Capsules strongly ribbed, *ca* 4 cm long; seeds winged, 3-angular.

Rare in inland forests.

*Fl. & Fr.*: Sept.-Nov.

Campbell Bay, Dogmar river, Galathea River.

## 2. THOTTEA Rottb.

Erect, sub scandent undershrubs. Leaves usually triplinerved; nerves and reticulations prominent. Inflorescences of axillary cymes or short racemes. Flowers actinomorphic, purple. Perianth lobes spreading. Stamens 6-12, free or in groups and adnate to style. Ovary 4-locular; style 4-fid. Capsules 4-valved; seeds not winged, 3 angled.

About 25 species, mainly in the tropics of south-east Asia; 1 in Gt. Nicobar Island.

*Thottea tomentosa* (Bl.) Ding-Hou in Blumea 27: 328. 1981.

Creeping and rooting undershrubs; stems ascending, ca 15 cm long, hairy, bearing 1-5 normal leaves at apex. Leaves coriaceous, ovate, oblong-ovate, with cordate base, obtuse or acute at apex, 3-5 nerved, ca 20 x 14 cm, glabrous above tomentose beneath; petioles ca 3 cm long. Racemes 1 or 2, paniced from near base of stem, close to the ground, hairy; bracteoles 2, semipersistent. Perianth yellow with purple; tube ca 4 mm long; lobes broadly ovate, obtuse or shortly acuminate. Capsules ca 5 x 0.4 cm, dark purple, quadrangular, narrowed at both ends, indehiscent.

Rare in inland hill forests & along streams.

*Fl. & Fr.*: Nov.-Feb.

7 km on north-south road, Campbell Bay to Chengappa Bay, 11 km on east-west road.

India (A & N Islands); Malay Peninsula, Java, Myanmar.

## PIPERACEAE

About 8 genera and 3000 species, tropics; 1 genus and 2 species in Gt. Nicobar Island.

## PIPER L.

Climbing shrubs, rooting at nodes. Leaves alternate with deciduous stipules, petioled, often oblique at base, palmately ribbed. Inflorescences

spikes, unisexual, leaf-opposed. Flowers small, rarely bisexual, bracteate; perianth absent. Stamens 2-4; pistilode absent. Stigmas 2-5, sessile or on short style. Fruit a berry, 1-seeded.

About 2000 speices, in tropics; 2 in Gt. Nicobar Island.

- 1 a. Petioles *ca* 0.6 cm long; peduncles of spikes *ca* 0.3 cm long .....  
 .....2. *P. pedicellosum*  
 b. Petioles *ca* 2.5 cm long; peduncles of spikes *ca* 3 cm long .....1. *P. betel*

**1. *Piper betel* L., Sp. Pl. 28. 1753.**

Glabrous, climbers. Leaves fleshy, ovate or ovate-oblong, cordate or obliquely, rounded at base, acuminate at apex, *ca* 18 x 11 cm; 5-7 nerved, glabrous or white hairy beneath; petioles *ca* 2.5 cm long. Spikes 3-12 cm long; peduncles *ca* 3 cm long; bracts ellipsoid, obovate or orbicular, 1-1.5 x 1 mm. Flowers dioecious or monoecious. Stamens 2, very short. Stigmas 3-5. Berries green, 1-1.5 cm in diam.

Common in inland forests.

*Fl. & Fr.*: Nov.-Jan.

Galathea, way to Lakshman beach, 20 km on east-west road.

**2. *Piper pedicellosum* Wall. ex DC., Prodr. 16(1): 343. 1869.**

Large woody climbers with thick nodes. Leaves coriaceous, elliptic-ovate, base round or equally cordate or unequally, *ca* 7.5 x 7 cm; nerves 7-9; petioles *ca* 0.7 cm long, rather thick. Male spikes not seen. Female spikes; peduncles *ca* 0.3 cm long, glabrous, rachis thick, pubescent, hairy, *ca* 2.5 cm long; bracts obovate-oblong. Ovary free; stigmas 4, rarely 3, ovate-oblong, acute. Drupes globose, small; pedicels 0.2 cm long, puberulous.

Rare in inland forests.

*Fl. & Fr.*: Jan.-June.

37 km on east-west road, Kopenheat.



India (Nicobar Islands); Malay Peninsula.

### MYRISTICACEAE

About 16 genera and 380 species in the tropics; 3 genera & 4 species in Gt. Nicobar Island.

- 1 a. Flowers in the axils of persistent or fallen leaves in many flowered panicles; anthers united to a very shortly stalked or almost sessile (i.e. staminal column sessile) globose or obconical body, dorsally, entirely adnate or with free apex; aril entire or nearly so ..... 1. *Horsfieldia*
- b. Flowers solitary, axillary or inflorescences otherwise; staminal filaments below the anthers united to a shorter or longer column (i.e. column stalked) bearing at apex distinct or connate anthers; aril incised or more or less deeply lacinate ..... 2
- 2 a. Staminate flowers with anthers stellately spreading from peltate disc of column; fruit longer than broad; aril lacinate only at top ..... 2. *Knema*
- b. Staminate flowers with anthers around column below its apex; fruits about as broad as long; aril lacinate to the base ..... 3. *Myristica*

#### 1. *HORSFIELDIA* Willd.

Trees. Leaves glaucous beneath, often reddish tomentose, with indistinctly reticulate nerves. Inflorescences in cymes, umbels or panicles, few flowered, axillary or in the axils of caducous leaves. Flowers large, pedicellate; bracteoles persistent. Perianth urceolate or campanulate, 3-dentate. Stamens in cylindric column, shorter than the calyx; anthers 12-30, connate into a long column. Stigmas sessile, bilobed. Fruits often very large, oblong or ovoid, pericarp woody.

About 85 species, tropical Asia from India to China and Polynesia; 2 in Gt. Nicobar Island.

- 1 a. Leaves ca 30 cm long; petioles ca 1.2 cm long; panicles densely brown-hairy apically; perianths 2-fid, 1.5 mm long; fruits ca 2.2 cm in diam., globose ..... 2. *H. irya*
- b. Leaves ca 20 cm long; petioles ca 2.5 cm long; panicles glabrous or with a few hairs apically; perianths 3-fid, 2.5-4 cm long ..... 1. *H. glabra*

1. *Horsfieldia glabra* (Blume) Warb. Mon. Myrist. 68. 313. 1897.

Trees, *ca* 30 m high with brownish bark; branches drooping. Leaves oblong-lanceolate, shortly acuminate at apex, narrowed at base, *ca* 20 x 12 cm; lateral nerves 14-20 pairs, spreading and not evenly parallelled; petioles *ca* 2.5 cm long. Inflorescences axillary. Panicles, glabrous or with a few hairs apically. Flowers small, unisexual, yellowish. Staminal cone almost 3-fid, sessile globose, with slightly impressed apex; anthers 10-25, much curved. Fruits ovoid-ellipsoid, *ca* 4 cm long.

Common in inland forests.

*Fl. & Fr.*: Dec.-June.

Kopenheat, 33 & 37 km on east-west road, 19 km on north-south road; Laful.

**2. *Horsfieldia irya* (Gaertn.) Warb. Mon. Myrist. 68. 317. 1897.**

Trees, *ca* 60 m high. Leaves distichous, lanceolate or oblong-lanceolate, acuminate at apex, base rounded or cuneate, *ca* 30 x 8.5 cm, glabrous; lateral nerves 9-20 pairs. Flowers very small unisexual yellowish, in axillary compound panicles. Perianth 2-fid. Male panicles *ca* 16 cm long; perianth globose *ca* 1.5 mm long; staminal cone terminating into a short, thick filamental column, obconical, deeply impressed at apex; anthers 6-18. Female panicles *ca* 5 cm long; perianth globose-obovoid, fleshy *ca* 2.5 cm long. Fruits globose or ellipsoid, *ca* 2.5 cm long.

Common in inland forests.

*Fl. & Fr.*: Dec.-Aug.

Laful.

India (A & N Islands); Java, Malay Peninsula, Celebes.

**2. *KNEMA* Lour.**

Trees. Inflorescences of racemes or umbellate fascicles in axils of existing or fallen leaves; peduncles thick, persistent; bracteoles at the base of perianth or the pedicels. Perianth 3-lobed, hairy outside. Stamens 8 or more; filaments and connective connate forming a pellate disc; anthers

stellately spreading from the disc, sessile or stalked. Ovary ovoid hairy; stigma subsessile, connate into a disc & laciniate or free. Fruits fleshy; aril laciniate only at top.

About 70 species in tropical Asia; mostly Indo-Malaya; 1 in Gt. Nicobar Island.

***Knema andamanica*** (Warb.) de. Wilde in Blumea 25(2): 370. 1979. ssp. ***andamanica***

Trees, *ca* 16 m high; young twigs densely grey-brown or yellowish-brown, scurfy tomentulose. Leaves oblong to lanceolate, attenuate at base, acute or subacute at apex, 8-30 x 2-8.5 cm; lateral nerves 12-24 pairs; petioles *ca* 2 cm long. Inflorescences sessile or *ca* 5 mm peduncled, simple or forked, 3-15 flowered in male, 2-6 flowered in female. Flowers *ca* 0.3 mm long, yellowish-brown. Fruits 1 or 2 per infructescence, ellipsoid, at tip rounded or faintly pointed, base rounded, *ca* 20 x 16 mm, rusty or rufous brown tomentose; stalked *ca* 4 mm long.

Rare in dense mixed forests.

*Fl. & Fr.*: Nov.-June.

Campbell Bay, Galathea, 27 & 40 km on east-west road; Laful, 13 km on north-south road.

*Note*: Endemic to A & N Islands.

### 3. MYRISTICA Gronov.

Trees. Inflorescences of cymes, umbels or of fascicled flowers in leaf axils, sometimes on old wood; peduncle thick, persistent or not; bracteoles persistent, at base of perianth. Perianth 3-lobed. Stamens 8 or more; filaments & connectives connate into a column & produced beyond the elongate, sub-erect anthers. Ovary ovoid, glabrous or hairy; stigmas sessile, connate, except at apex. Fruits fleshy; aril of seeds laciniate from base.

About 72 species & 23 varieties; S.E. Asia to Australia, & Polynesia; 1 in Gt. Nicobar Island.

**Myristica elliptica** Wall. ex Hook. f. & Thom., Fl. Ind. 1: 162. 1855.

Trees, *ca* 30 m high. Leaves elliptic to linear-oblong or oblanceolate, cuneate at base, acuminate at apex, *ca* 25 x 8 cm, subglaucous beneath; lateral nerves *ca* 12 pairs. Flowers not seen. Fruits ovoid orange-red, terminal, solitary, *ca* 4.5 x 2.2 cm; tip pointed-blunt; aril scarlet red much branched, loosely fitting; stipitate; seeds cylindric, narrowed at top.

Common along shady places in hill forests.

*Fl.*: Not known; *Fr.*: May-Aug.

Laful, 18 km on east-west road.

India (Nicobar Islands); Malay Peninsula.

### MONIMIACEAE

About 22 genera and 150 species, tropical & temperate regions; 1 genus & 1 species in Gt. Nicobar Island.

### KIBARA Endl.

Aromatic trees. Leaves opposite, entire or toothed. Flowers 1-sexual, small, in short axillary or lateral cymes or panicles; bracts minute or absent. Male flowers: perianth short, teeth or lobes 4, 2 seriate, mouth contracted; disk annular or tubular; anthers subsessile, 5-8, 2 seriate. Female flowers: perianth circumsciss above the disk; carpels many, free; style very short; ovules pendulous. Fruit sessile or stipitate drupe on the enlarged perianth tube; seeds pendulous.

About 10 species, tropical Asia & Australia; 1 in Gt. Nicobar Island.

**Kibara coriacea** (Bl.) Endl. ex Hook. f. & Thoms., Fl. Ind. 1: 166. 1855.

Trees, *ca* 8 m high. Leaves opposite, elliptic, obtuse-acute or acuminate at apex, cuneate at base, *ca* 19 x 10 cm, entire, dark green above pale below; petioles *ca* 1.5 cm long. Cymes branched from base; branches and pedicels long. Slender. Flowers green, pale orange, yellow when ripe, unisexual; bracts minute. Perianth 2, *ca* 4 mm long. Stamens 5-7, included;

anthers dehiscing apically and transversely. Drupes 1-15, ca 2.5 cm long, ovoid, glossy green, orange or violet when ripe.

Rare in hill forests.

*Fl. & Fr.*: May-Nov.

Koshin Don, 38 km north-south road, 27 km on east-west road, Laful.

India (Nicobar Islands); Java, Malay Peninsula.

## LAURACEAE

About 47 genera and 1900 species, mainly of tropics and subtropics; 5 genera & 7 species in Gt. Nicobar Island.

- 1 a. Inflorescences enclosed up to or during flowering time by an involucre of bracts..... 4. *Litsea*
- b. Inflorescences not enclosed; in bud or during flowering time by an involucre of bracts.....2
- 2 a. Leaves whorled 4 or more at each node; internodes long.....1. *Actinodaphne*
- b. Leaves opposite or alternate, never whorled at least in young twigs .....3
- 3 a. Anthers 2-locular .....3. *Dehaasia*
- b. Anthers 4-locular.....4
- 4 a. Leaves opposite, prominently 3-nerved at base .....2. *Cinnamomum*
- b. Leaves alternate, penninerved .....5. *Nothophoebe*

### 1. ACTINODAPHNE Nees

Trees or shrubs. Leaves whorled, pinnately nerved. Flowers small, unisexual, in axillary and terminal sessile or peduncled clusters or short racemes bearing bracteate umbellules of about 5-flowers; bracts, caducous. Perianth-tube short, lobes-6, subequal. Stamens in male 9, arranged in 3 rows; innermost rows glandular, rows 1 & 2 eglandular; all introrse 4-celled. Staminodes in female 9, rows 1 and 2 linear or spatulate, row 3 linear glandular; ovary ovoid narrowed to style; stigma dilated. Drupes on the flat or concave; perianth tube, much enlarged.

About 70 species, in Indo-Malayan to Japan; 1 in Gt. Nicobar Island.

**Actinodaphne procera** Nees, Syst. Laurin. 605. 1836.

Trees, *ca* 30 m high; pilose in a young stage. Leaves usually 5 in number, elliptic-oblong-lanceolate, acuminate obtuse or acutish at apex, distinctly cancellate beneath, *ca* 45 x 18.5 cm; lateral nerves prominent. Flowers small, white, unisexual, in axillary or terminal racemes. Male racemes, *ca* 5 cm long, in the axils of fallen leaves; flowers solitary or fascicled along axils. Female fruiting pedicels, *ca* 1 cm long, very thick. Fruits 2.5 x 3.5 cm, globose, on maturity becomes black-red.

Common in hill forests.

*Fl. & Fr.*: May-July.

34 km on east-west road; Laful, between Chengen to Indira point.

India (Nicobar Islands); Java.

## 2. CINNAMOMUM Schaeffer

Small trees with aromatic bark and leaves. Leaves usually opposite, triplinerved. Inflorescences a paniculate cyme, axillary and terminal; bracts caducous. Flowers bisexual, pedicelled. Perianth 6-lobes. Stamens 9 in 3 whorls; outer 2 whorls introrse, inner whorl, extrorse; 4th whorl of cordate staminodes. Ovary enclosed in perianth tube.

About 130 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Cinnamomum bejolghota** (Buch-Ham.) Sweet Hort. Brit. 344. 1824.

Leaves linear-oblong, acuminate, narrowed down to the petiole, glabrous above, almost glaucous and rusty pubescent beneath. Panicles long peduncled. Fruit 1.2 cm long, smooth, obtuse.

Bark aromatic.

Rare in inland forests.

*Fl. & Fr.*: Not seen.

8 km on east-west road.

### 3. DEHAASIA Bl.

Trees. Leaves alternate, often fascicled on branch ends. Flowers small, bisexual, in axillary, peduncled, loose flowered panicles. Stamens-9; the anthers of 2 outer whorls introrse, 3rd whorl extrorse with two large glands to each filament; staminodes of 4th whorl small or absent; ovary sessile. Drupes oblong, black, on a thick fleshy red peduncle.

About 10 species, Indo-Malayan; 1 in Gt. Nicobar Island.

**Dehaasia candolleana** (Meissn.) Kostermans in Bot. Jarb., 93(3): 431. 1973.

Trees, *ca* 15 m high; young parts reddish tomentose. Leaves, usually sub-whorled at top of branches, obovate or oblanceolate, acute or blunt at apex, narrowed at base, glaucous beneath, 15 x 7.5 cm; nerves 8-10 pairs; petioles *ca* 2 cm long. Panicles axillary *ca* 15 cm long, appressed pubescent. Flowers small, yellowish 2-sexual. Perianth broadly ovate-semicircular, hairy deciduous. Perfect stamens 9; arranged in 3 rows; staminodes absent. Drupes ovoid-oblong *ca* 2 cm; pedicels cylindric, thick about as long.

Common in inland forests.

*Fl. & Fr.*: May-Nov.

40 km on east-west road, 27 km on north-south road.

India (A & N Islands); Myanmar, Malay Peninsula.

### 4. LITSEA Lam.

Trees or shrubs. Leaves alternate, subopposite or opposite. Flowers dioecious in pseudoumbels, surrounded by an involucre of persistent or subpersistent large, decussate bracts. Tepals 6 or absent. Fertile stamens in the male flowers 9-12 or more; outer 2 whorls eglandular; 3rd & inner

whorls glandular; anthers all introrse or the basal pair of 3rd staminal whorl lateral; ovary in male flower stipiform or absent. Female flowers: equal number of staminodes as stamens in male flowers: stigma pellate, conspicuous. Fruits seated in a more or less developed cup or disc; perianth usually caducous.

About 400 species, tropical Asia; 2 in Gt. Nicobar Island.

- 1 a. Petioles *ca* 2 cm long; fruiting pedicels 1 cm long; fruits 2 cm in diam. ...  
.....2. *L. pastulata*
- b. Petioles *ca* 3.5 cm long; fruiting pedicels 6 mm long; fruits 1 cm in diam.  
.....1. *L. glutinosa*

1. ***Litsea glutinosa*** (Lour.) C.B. Robins. in Philip. J. Sci. Bot. 6: 321. 1911.

Small trees, *ca* 18 m high; apices of stems soft pubescent. Leaves spirally arranged, elliptic-oblong or obovate, acute or blunt, glabrous, young silvery tomentose beneath, *ca* 30 x 13.5 cm; lateral nerves 6-11 on either side of midrib, prominent beneath; petioles *ca* 3.5 cm long. Involucres 3-6 arranged in umbel like racemes canescent, 6-13 flowered; peduncles 2.5 cm long. Tepals 0-3. Flowers unisexual. Stamens or staminodes 9-15, pilose, glands long stalked. Fruiting pedicels obconical *ca* 6 mm. Berries globose, *ca* 1 cm diam.

Common in littoral forests.

*Fl. & Fr.*: Feb.-June.

Chingenh, Alexandra river, 38 km on north-south road.

2. ***Litsea pastulata*** Gamble in Bull. Misc. Inf. Kew. Bull. 1910. 359. 1910.

Small trees, *ca* 5 m high; branches smooth, terete, glabrous. Leaves elliptic to oblong-elliptic acute at base, acuminate or obtuse at apex, *ca* 30 x 11 cm, entire, glabrous, coriaceous, glaucescent below, midrib flat on upper surface; lateral nerves 7-10; petioles *ca* 2 cm long. Flowers not known, fruits globose, black 2 cm in diam; pedicels short, thick, perianth shortly cup-shaped; 1 cm long, 2.5 cm in diam.



Rare in inland forests.

*Fl.*: Not known; *Fr.*: May-June.

25 km on east-west road.

India (Great Nicobar Islands); Malay Peninsula.

### DOUBTFUL TAXA

3. ***Litsea kurzii*** King ex Hook. f., Fl. Brit. India, 5: 164, 1886.

Small trees. Leaves elliptic or broadly elliptic, more or less rounded at base and apex, velvety brown tomentose beneath, *ca* 22.5 x 10 cm; lateral nerves 8-12; petioles *ca* 2 cm. Flower heads many, in old leaf scars below the leaves. Male umbels axillary in clusters, 5 flowered; bracts thin, sparsely tomentose. Flowers densely villous. Perianth-lobes large. Stamens 6-10, rows 1 & 2 without glands, rows 3 with 2 glands. Fruits greenish in axillary clusters.

Rare in inland forests.

*Fl. & Fr.*: March-April.

Campbell Bay, Casuarina Bay.

*Note*: Endemic to A & N Islands. The identity of plant record from Great Nicobar by Thothathri *et al.*, 1973 needs to be reconfirmed after fresh collections.

4. ***Litsea monopetala*** (roxb.) Pers., Syn. Pl. 2: 4. 1801.

Small trees, *ca* 15 m high. Leaves broadly oval to elliptic-oblong, with cuneate-obtuse-rounded or cordate at base, acute or obtuse at apex, *ca* 17 x 9 cm; lateral nerves 6-13; petioles *ca* 2.25 cm long. Umbellules axillary, numerous flowers, pubescent; involucre densely pubescent. Fruiting stalk slightly thickened, not obovoid. Berries 1.2 cm long.

Rare in Galathea river bank.

*Fl. & Fr.* March-April.

Galathea river bank.

*Note:* No specimens of plant record from Great Nicobar by Thothathri *et al.*, 1973 are available nor there are any subsequent collections.

## 5. NOTHOPHOEBE Blume

Trees or shrubs. Leaves alternate. Flowers bisexual in axillary or sub-terminal panicles; cymules usually sub-umbellate. Perianth tube very short; lobes-6. Stamens 9; filaments short; rows 1 & 2 introrse, row 3 extrorse; glands 2, villous, round at base (rarely absent); staminodes very small, ovate, triangular. Ovary ovoid; style slender. Fruits ellipsoid or oblong-ovoid in the enlarged-perianth tube.

About 13 species, Malaya & Polynesia; 2 in Gt. Nicobar Island.

- 1 a. Leaves smaller, stiffy, coriaceous, base cuneate-attenuate; lateral nerves 5-9 pairs; petioles *ca* 2.5 cm long ..... 1. *N. nicobaricus*
- b. Leaves large, chartaceous, base cordate, auricled; lateral nerves 7-12 pairs; petioles *ca* 1 cm long..... 2. *N. panduriformis* var. *paucinervia*

1. *Nothophoebe nicobaricus* T. Chakrab. & Vasud. in J. Econ. Tax. Bot. 6(2): 443. 1985.

Trees, *ca* 40 m high. Leaves broadly obovate to oblanceolate, occasionally elliptic-obovate, cuneate attenuate at base, abruptly & obtusely acuminate (acumen *ca* 15 mm long) to subacuminate at apex, *ca* 17 x 6.5 cm, entire; lateral nerves 5-9 pairs, prominent above, distinct beneath; petioles *ca* 2.5 cm long. Inflorescences axillary, paniculate, *ca* 10 cm long, scattered, puberulous towards apex; peduncle *ca* 4 cm long; bracts triangular, puberulous outside, glabrous inside. Flowers brownish yellow with pungent smell. Tepals 3+3. Stamens 9, triseriate, sessile; staminodes minute. Ovary ovoid, glabrous, unilocular; style *ca* 0.3 mm long, with a small peltate stigma.

Common in inland hill forests.

*Fl.*: Feb.-March; *Fr.*: Not seen.

40 km on east-west road.

*Note:* Endemic to Nicobar Islands.

2. **Nothaphoebe penduriformis** (Hook. f.) Gamble. var. **paucinervia** T. Chakrab. & Vasud. in J. Econ. Tax. Bot. 5(4): 997. 1984.

Trees, *ca* 20 m high. Leaves broadly cuneate-obovate to panduriform, narrowly cordate at base, shortly & abruptly caudate at apex, *ca* 26 x 14 cm; lateral nerves 7-12 pairs; petioles *ca* 10 mm long. Inflorescences axillary, or in axils of fallen leaves, *ca* 15 cm long, pedunculate (peduncle *ca* 8 cm long), rusty-tomentulose towards apex, sparsely towards base; bracts triangular. Flowers red and yellow; pedicels puberulous. Perianth rusty-puberulous outside; 3+3. Stamens 9, tri seriate; staminodes minute, densely pilose. Ovary ovoid, glabrous, unilocular; style *ca* 0.3 mm long, with a small pellate stigma.

Rare in inland forests.

*Fl.*: Oct.; *Fr.*: Not seen.

25 km on east-west road.

India (Nicobar Islands); Malaysia.

## CASSYTHACEAE

1 genus and 15 species, Australian, few South Africa and 1 widely distributed; 1 species in Gt. Nicobar Island.

## CASSYTHA L.

Twining parasites; stem attached to host by suckers. Leaves absent or reduced to scale. Inflorescences spicate or capitate; bracts deciduous. Flowers bisexual, small; bracteoles 3, persistent, subtending the calyx. Perianth lobes 6. Stamens-9, in 3 whorls. Staminodes of 4th whorl stipitate. Ovary, globular; style erect; stigma small. Drupes enclosed in enlarged perianth.

**Cassytha filiformis** L., Sp. Pl. 35. 1753.

Filiform, leafless, twining parasitic herbs. Flowers small, sessile, in lax, lateral, divaricate spikes; bracteoles ciliate. Perianth lobes 6, ciliate. Fruits white, globose, smooth, enclosed in fleshy perianth tube and crowned with erect perianth segments.

Rare in coastal scrub forests.

*Fl. & Fr.*: Throughout the year.

Alexandra river, Navy Dera, Lakshman Beach, Casuarina Bay.

### HERNANDIACEAE

About 63 genera and 40 species in tropics; 1 genus and 1 species in Gt. Nicobar Island.

### HERNANDIA L.

Evergreen trees. Leaves ovate-peltate, 3-7 nerved. Flowers monoecious, in involucre containing 3 flowers on branch-ends of panicle, central flower female, laterals male. Involucral bracts 3-4. Perianth lobes in male 3-6, in female 4-8. Stamens as many as and opposite to the perianth segments; filaments usually with glands at base; anthers 2 celled, dehiscent by valves. Staminodes in females usually 4. Ovary inferior; style included; stigma dilate. Fruits globular, black stony nut, enclosed in a white inflated involucre with an opening at the top.

Species about 10, tropical; 1 in Gt. Nicobar Island.

***Hernandia nymphaeifolia* (Presl.) Kubitzki., Bot. Jahrb. 90. 272. 1970.**

Medium sized trees, ca 18 m high. Leaves simple, spirally clustered on fleshy twigs, peltate, broadly ovate, large, acuminate at apex, sub cordate or rounded at base, 22 x 15 cm, entire but slightly recurved margins with 5-7 conspicuous basal nerves; petioles, ca 20 cm long. Flowers white, crowded in panicles, small. Fruit a dark coloured ribbed drupe inside a greenish-white globular receptacle about 3.75 cm in diam., with a circular opening at the top.

Rare in littoral forests.

*Fl. & Fr.*: Oct.-Dec.

Campbell Bay, 18.5 km north-south road, 18 km on road to Galathea, Lakshman beach.

India ( A & N Islands); Sri Lanka, Malay Peninsula.

### PROTEACEAE

About 50 genera and 950 species, Australia and South Africa, few in Asia, Africa and South America; 1 genus and 1 species in Gt. Nicobar Island.

### HELICIA Lour.

Trees or shrubs. Leaves coriaceous, alternate, entire or toothed. Flowers in terminal and axillary racemes, 2-sexual; bracts small or large. Perianths regular, tube slender; limb narrow ovate. Stamens long; anthers apiculate. Hypogynous scales free or connate. Ovary sessile; style slender, long. Fruits green, hard drupe; seeds 1 or 2, subglobose.

About 25 species, tropical Asia & Africa; 1 in Gt. Nicobar Island.

***Helicia serrata*** (R.Br.) Bl. in Ann. Sci. Nat. Bot. Ser. 2(1): 215. 1834.

Small trees, *ca* 4 m high; young branches brown hairy, later glabrescent. Leaves alternate, elliptic-oblong or subobovate, rounded obtuse or acuminate at apex, acute at base, *ca* 22 x 12 cm, serrate or entire; petioles *ca* 2 cm long. Racemes placed in the axils of present or fallen leaves, appressed brown hairy, *ca* 15 cm long; pedicels *ca* 5 mm long. Perianth initially white, later light yellow, *ca* 10 mm long. Disc scales free or shortly connate. Drupes ellipsoid, or fusiform, *ca* 4 cm long.

Rare in hill slopes.

*Fl. & Fr.*: Aug.-Nov.

39 km on east-west road.

India (Nicobar Islands); Java.

**THYMELAEACEAE**

About 40 genera and 360 species, temperate and tropical regions; 1 genus & 1 species in Gt. Nicobar Island.

**PHALERIA** Jack.

Trees. Leaves opposite. Flowers 2-sexual, in terminal or lateral, sessile heads; bracts involucriform, leafy, deciduous. Perianth-tube elongate; lobes 4-6, spreading; scales absent. Stamens 8-12, 2-seriate, exserted; filaments filiform; anthers small. Disk cupular or annulate. Ovary 2-celled; style filiform; stigma capitate. Drupes naked, succulent or fleshy, endocarp coriaceous or hard, 1-2 celled.

About 8 species, tropical Asia and Australia; 1 in Gt. Nicobar Island.

**Phaleria macrocarpa** (Scheff.) Boerl., Handl. Fl. Ned. Ind. 3: 111. 1900.

Trees, *ca* 5 m high. Leaves elliptic-oblong-lanceolate, cuneate at base, acuminate at apex, *ca* 14 x 5 cm, thinly coriaceous; lateral nerves 7-10 pairs; petioles *ca* 5 mm long. Heads 2-4 flowered, borne on the stem and at base of branchlets in the axils of leaves, shortly peduncled; involucre bracts 0-3. Perianth glabrous outside; tubes *ca* 12 mm long; lobes 4, inside papillose-hairy. Stamens included. Style much exserted. Fruits broadly ovoid-globose, *ca* 5 cm across, green but reddish when mature; wall of pyrene thick.

Rare in inland forests.

*Fl. & Fr.*: Jan.-June.

Navy Dera, Laful, Galathea river mouth.

India (Great Nicobar Island); Java, Malay Peninsula, New Guinea.

**BALANOPHORACEAE**

About 18 genera and nearly 100 species, mainly in tropics & subtropics; 1 genus & 1 species in Gt. Nicobar Island.

**BALANOPHORA J.R. & G.Forst.**

Dwarf, fleshy, root parasitic herbs with large tuberous warty rhizome. Leaf scales alternate opposite or whorled, imbricate, sometimes absent. Inflorescences terminal, usually bursting out of the rhizome, of fleshy spadices with numerous, stalked flowers often intermixed with bracts of spadices. Flowers uni or bisexual, regular. Perianth usually 3-merous, free or connate, valvate in bud, generally absent in female. Stamens as many as tepals, free to connate into synandrium. Ovary naked, 1-locular; ovule-1, pendulous; style simple. Fruit an indehiscent nut.

About 15 species, tropical Asia & Ausualia; 1 in Gt. Nicobar Island.

**Balanophora abbreviata** Bl., Enum, Pl. Jav. 1: 87. 1827.

Herbs; whole plant initially yellowish white turning yellow or brown, *ca* 20 cm long; rhizomes branched; branches obconical-obovoid, densely covered with stellate warts. Leaves few, not close together, erect-appressed, oblong, obtuse, *ca* 2.5 cm long. Inflorescences bisexual. Male flowers few, at the apex, of the 1-8 cm long peduncle; tepals rounded, *ca* 3 mm long. Spadix proper entirely female, oblong or oblong-clavate, *ca* 5 x 2 cm. Spadicels oblong; tops of style not or hardly exceeding the spadicels.

Rare in wet deciduous to semi-evergreen forests, on roots of *Sterculia* & *Syzygium* species.

*Fl. & Fr.*: Dec.-Feb.

Galathea Bay, Laful.

India (Great Nicobar Island); Java, Malay Peninsula.

**EUPHORBIACEAE**

About 300 genera & 5000 species, cosmopolitan; 19 genera & 39 species in Gt. Nicobar Island.

- 1 a. Inflorescences composed of cyathia .....12. *Euphorbia*
- b. Inflorescences not composed of cyathia .....2

- 2 a. Leaves opposite or whorled .....3
- b. Leaves alternate .....4
- 3 a. Stellate hairs present; leaves opposite; capsules depressed, 3 lobed, 10-18 mm in diam., echinate, readily dehiscent .....17. *Mallotus*
- b. Stellate hairs absent; leaves whorled; capsules subglobose, unlobed, 3-4 cm in diam., not echinate, tardily dehiscent .....6. *Blumeodendron*
- 4 a. Leaves densely or sparsely granular-glandular below .....5
- b. Leaves not granular-glandular .....6
- 5 a. Anthers 3-4 locular .....16. *Macaranga*
- b. Anthers 2 locular .....17. *Mallotus*
- 6 a. Stellate hairs or scales present.....7
- b. Stellate hairs or scales absent .....8
- 7 a. Inflorescences unisexual; petals absent .....5. *Baccaurea*
- b. Inflorescences bisexual; petals present .....10. *Croton*
- 8 a. Leaf-base distinctly asymmetrical .....9
- b. Leaf-base symmetrical .....11
- 9 a. Fruit a dry or fleshy 1-2 locular drupe .....11. *Drypetes*
- b. Fruit a 3-8 locular drupe or berry or 3-6 locular capsule .....10
- 10 a. Flowers without disk; styles more or less connate, often much reduced or rarely free .....14. *Glochidion*
- b. Flowers with disk; styles free, bifid or very rarely appreciably connate .....18. *Phyllanthus*
- 11 a. Petals present in male flowers .....12
- b. Petals absent in male flowers .....17
- 12 a. Stamens all free .....19. *Sphyranthera*
- b. Stamens (at least inner) connate or forming a column .....13
- 13 a. Inflorescence glomerate or fasciculate or flowers solitary axillary .....14
- b. Inflorescence otherwise .....16
- 14 a. Calyx segments clearly valvate, with obconic tube .....9. *Cleistanthus*
- b. Calyx segments imbricate, without such obconic tube.....15



- 15 a. Petals equalling or exceeding the calyx, brightly coloured; pistillode absent; ovules 1-per locule .....20. *Trigonostemon*  
 b. Petals shorter than calyx, not brightly coloured; pistillode present; ovules 2 per locule .....1. *Actephila*
- 16 a. Inflorescence racemose or pseudo-racemose or thyrsiform .....20. *Trigonostemon*  
 b. Inflorescence cymose .....15. *Jatropha*
- 17 a. Stamens united in phalanges .....21. *Ricinus*  
 b. Stamens free or united in a column .....18
- 18 a. Fruit echinate .....17. *Mallotus*  
 b. Fruit not echinate .....19
- 19 a. Male inflorescence fasciculate or flowers solitary axillary .....20  
 b. Male inflorescence otherwise .....25
- 20 a. Fruit a thick-walled, large (3-4 cm in diam.), tardily dehiscent capsule; male calyx closed in bud, splitting into 3-4 valvate segments; ovules 1 per locule .....6. *Blumeodendron*  
 b. Fruit a smaller, thin-walled capsule or a drupe or berry; male calyx open in bud, imbricate; ovules 1 per locule .....21
- 21 a. Stamens more than 8, free .....11. *Drypetes*  
 b. Stamens 3-8 .....22
- 22 a. Stigmas 1-2, shortly flabellate .....11. *Drypetes*  
 b. Stigmas more than 2, not flabellate .....23
- 23 a. Fruit a dry capsule .....24  
 b. Fruit a berry or drupe, or atleast initially fleshy .....7. *Breynia*
- 24 a. Flowers without disk .....14. *Glochidion*  
 b. Flowers with disk .....18. *Phyllanthus*
- 25 a. Male inflorescence spicate or racemose .....26  
 b. Male inflorescence cymose or thyrsoïd .....32
- 26 a. Male sepals imbricate; ovules 2 per locule .....27  
 b. Male sepals valvate or calyx much reduced & aestivation open or obscure; ovules 1-per locule .....29

- 27 a. Pistillode absent; male flowers very minute, densely crowded along rachis of spikes .....4. *Aporusa*  
 b. Pistillode present; male flowers not very minute, not densely crowded along rachis of racemes or spikes .....28
- 28 a. Stellate hairs often present; sepals free; female flowers without disk; fruit a fleshy indehiscent or dry dehiscent 2-3 locular capsule .....5. *Baccaurea*  
 b. Stellate hairs absent; sepals connate; female flowers with annular disk; fruit 1-locular (rarely 2 locular) drupe .....3. *Antidesma*
- 29 a. Male sepals valvate .....30  
 b. Male sepals much reduced, aestivation open or obscure .....13. *Excoecaria*
- 30 a. Anthers with distinct, free, erect or spreading thecae .....8. *Claoxylon*  
 b. Anthers with adnate or pendulous thecae .....31
- 31 a. Stamens few (4-8); style not plumose; leaves sometimes stipellate.....2. *Alchornea*  
 b. Stamens numerous; style plumose; leaves never stipellate .....17. *Mallotus*
- 32 a. Male sepals valvate .....33  
 b. Male sepals imbricate .....5. *Baccaurea*
- 33 a. Anthers 3-4 locular; leaves not stipellate, often granular-glandular beneath ..... 16. *Macaranga*  
 b. Anthers bilocular; leaves often stipellate at base, never granular-glandular beneath .....2. *Alchornea*

### 1. ACTEPHILA Bl.

Shrubs or small trees. Flowers axillary, bracteolate, heads or racemes. Calyx 5-fid, nearly to base. Petals 5, much smaller attached outside the disc. Stamens 5, surrounding at trifid pistillode; filaments free or united only at base. Disk cup-shaped. Ovary trilocular; styles-3, minute. Capsules dry, loculicidal or cocci, breaking into 2 valves, 1 or 2 seeded; seeds triquetrous.

About 10 species East Asia & Australia; 1 species in Gt. Nicobar Island.

**Actephila excelsa** (Dalz.) Muell.-Arg., *Linnaea* 32: 78: 1863.

Trees, *ca* 8 m high. Leaves oblong-elliptic to broadly obovate, acute to obtuse at base, entire, bluntly acuminate to subulate at apex, *ca* 45 x 22 cm; petioles 2-8 cm long. Inflorescences ramiflorous or axillary, fasciculate. Sepals 5. Petals 5. Male flowers: pedicels *ca* 5 mm long; disk flat, 5-lobed; stamens 5, inserted on the disk, connate; anthers orbicular; pistillode trifold. Female flowers: pedicels *ca* 5 cm long; disk flat; ovary subglobose, styles 3. Capsules depressed, *ca* 3 cm in diam., 3-lobed, verrucose or smooth, brown or green when dry; pedicels 1-5 cm long.

Rare in coastal forests.

*Fl. & Fr.*: Jan.-Dec.

38-40 km on east-west road on the way to Jhaunala.

## 2. *ALCHORNEA* L.

Shrubs or trees, pubescent. Flowers in terminal or axillary spikes or racemes, simple or paniced, apetalous. Disk absent. Male flowers: calyx globose, splitting into 2-4 valvate segments; stamens 6-8 or indefinite; filaments free or connate at base. Female flowers: sepals 3-6, imbricate; ovary 2 or 3 celled; styles linear, long, entire or bifid. Capsules 2 or 3 bivalved cocci; seeds subglobose.

About 50 species, tropics; 1 in Gt. Nicobar Island.

*Alchornea rugosa* (Lour.) Muell.-Arg., *Linnaea* 34: 170. 1865.

Shrubs or trees, *ca* 10 m high. Leaves obovate to elliptic, bluntly acuminate at apex, cuneate or attenuate at base, *ca* 28 x 10 cm, serrate to crenate; petioles 2-7 mm long; stipules subulate. Male inflorescences terminal, panicate, *ca* 25 cm long. Flowers dark crimson; calyx closed in bud; petals absent; disk absent; stamens 4. Female inflorescences terminal, simple or often with few branches, *ca* 15 cm long; flowers sessile to subsessile; sepals 4, ovate or oblong; ovary 3 mm diam., styles 3, simple. Capsules subglobose, *ca* 10 mm diam., strongly 3-lobed, glabrous, purplish green.

Common in littoral forests.

*Fl. & Fr.*: Jan.-Dec.

42 km on east-west road, Lakshman beach.

India (A & N Islands); Malay Peninsula.

### 3. ANTIDESMA L.

Trees or shrubs. Flowers dioecious, in racemes or spikes. Calyx 3-8 lobed. Petals absent. Disk fleshy, annular in female. Stamens 2-5 inserted on disk. Ovary 1-celled, 2-ovuled; stigmas 2-4. Drupes 1-seeded.

About 170 species in tropics; 3 in Gt. Nicobar Island.

- 1 a. Stipules foliaceous, broadly ovate, elliptic to orbicular, persistent .....2. *A. tetrandrum*  
b. Stipules not foliaceous, narrow, mostly subulate, less persistent .....2
- 2 a. Drupes larger, 10-12 mm long, oblique .....3. *A. tomentosum*  
b. Drupes smaller, 4-5 mm long, symmetrical .....1. *A. montanum*
1. *Antidesma montanum* Bl., Bijdr. 1124. 1825; Airy shaw in Kew Bull. 26: 358. 1972.

Trees, *ca* 12 m high. Leaves oblong-elliptic, acute at base, abruptly acuminate at apex, chartaceous, *ca* 16 x 6 cm; lateral nerves 6-9 pairs; petioles *ca* 7 mm long; stipules subulate. Male inflorescences axillary & terminal, spicate, branched, *ca* 7 cm long. Flowers subsessile; stamens 3-4. Female inflorescences axillary and terminal racemes, *ca* 12 cm long. Flowers pedicelled; ovary ovoid, *ca* 1.5 x 1 mm; stigmas terminal. Drupes rhomboid, *ca* 5 x 4 mm diam., often rugose.

Rare in disturbed forests.

*Fl. & Fr.*: Feb.-June.

5, 13 km on north-south road, Navy Dera, Laful.

2. *Antidesma tetrandrum* Bl., Bijdr. 1124. 1825.

Trees *ca* 20 m high. Leaves oblong to elliptic or broadly so, rounded to obtuse at base, entire, acuminate at apex, *ca* 25 x 10 cm; lateral nerves 7-11 pairs; petioles *ca* 2.5 cm long, puberulous; stipules foliaceous, *ca* 18 mm long, persistent. Male inflorescences terminal & axillary, few branched, *ca* 10 cm long. Drupes oblique, compressed, *ca* 4 x 3.5 mm diam., glabrous.

Scattered in dense mixed forests or inland hill forests.

*Fl. & Fr.*: April-Dec.

Laful, 31 km on east-west road.

India (Nicobar Islands); Sumatra, Java.

**3. *Antidesma tomentosum* Bl., Bijdr. 1126. 1825.**

Shrubs or trees, *ca* 5 m high. Leaves oblong-elliptic, rounded or often unequal at base, entire, abruptly acuminate at apex, *ca* 30 x 15 cm; lateral nerves 10-15 pairs; petioles *ca* 12 mm long, pubescent; stipules narrowly subulate. Male inflorescences axillary, spicate, simple, *ca* 10 cm long, tawny-pubescent; stamens 3-5. Female inflorescences in the axils of fallen leaves, spicate, simple, *ca* 20 cm long, pendulous tawny-pubescent. Drupes ovoid, oblique, compressed, *ca* 12 x 7 mm diam., glabrous, greenish-yellow, red when ripe stigmas terminal.

Scattered in mixed forests.

*Fl. & Fr.*: April-Nov.

39 km on east-west road, 13-14 km on north-south road, Nevy Dera.

India (A & N Islands); Malay Peninsula.

**4. *APORUSA* Bl.**

Trees. Leaves alternate, sometimes toothed. Flowers minute in spikes. Male very minute in axillary catkin like yellow spikes. Females sessile or short pedicelled in very short bracteate spikes. Calyx 4-lobed, persistent. Stamens 1-5. Ovary usually 2-celled; ovules 2 in each cell. Capsules 2-4 valved.

About 80 species, tropics; 1 in Gt. Nicobar Island.

**Aporusa villosa** (Lindl.) Baill., Et. Gen. Euphorb. 645. 1858.

Small trees, *ca* 10 m high. Leaves broadly ovate to oblong-elliptic, truncate or cordate or rounded at base, entire or serrate, bluntly acuminate at apex, *ca* 25 x 11 cm; lateral nerves 5-7 pairs; petioles *ca* 2 cm long, often pulvinate at apex. Male inflorescences axillary, 2-5 together, *ca* 5 cm long. Flowers minute; sepals 4; petals 0; stamens 2. Female inflorescences fasciculate or shortly peduncled, *ca* 1 cm long, ovary villous. Capsules ellipsoid, *ca* 18 x 13 mm diam., brownish-villous to glabrous, 2-3 loculed, sessile or subsessile, brown or dark reddish-brown when dry.

Common in inland forests.

*Fl. & Fr.*: Jan.-Dec.

38 km on east-west road.

## 5. **BACCAUREA** Lour.

Trees or shrubs. Flowers dioecious or monoecious in simple or compound spiciform racemes. Sepals 4-6. Stamens 4-8, free. Pistillode pubescent. Ovary 2-5 celled; ovules 2 in each cell. Fruits ovoid, globose or fusiform, 2-4 celled, pericarp leathery; seeds broad with fleshy often coloured coat.

About 80 species, tropics, 1 in Gt. Nicobar Island.

**Baccaurea sumatrana** (Miq.) Muell.-Arg., Linnaea 34: 466. 1866.

Shrubs or trees, *ca* 20 m high. Leaves obovate to oblanceolate, *ca* 19 x 7 cm, cuneate-attenuate at base, caudate-acuminate at apex, *ca* 19 x 7 cm; lateral nerves 4-7 pairs; petioles *ca* 4 cm long. Male inflorescences *ca* 5 cm long, tawny-furfuraceous; bracts lanceolate, shortly adnate to the lateral axis. Flowers pedicelled, sepals 3-4, oblong-elliptic to obovate, papillose; stamens 4-6. Female inflorescences *ca* 4 cm long. Flowers pedicelled; sepals 4, oblong, papillose-puberulous; ovary ovoid,

puberulous; styles obsolete; stigmas-2. Capsules ellipsoid or globose, ca 15 x 9 mm, bilocular, green, turning dark brown.

Common in inland forests.

*Fl. & Fr.*: Jan.-Dec.

Across Alexandra river; 21 km on north-south road.

India (Nicobar Islands); Malay Peninsula, Sumatra, Borneo.

## 6. BLUMEODENDRON (Muell.-Arg.) Kurz

Trees. Leaves alternate, opposite or whorled. Spikes or panicles, axillary, solitary or fascicled. Females shorter than males. Flowers apetalous in bud, globose. Male flowers: calyx ellipsoid, 3-4 cleft; stamens 14-35, free, filaments long, anthers globose; receptacle raised pulvinate glandular-lobed among the filaments. Female flowers: sepals 3-5; disk annular; ovary 2 or 3 celled; style linear-subulate, papillose within, connate at base. Capsules large; seeds large.

About 5 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves whorled; basal pair of lateral nerves extending half way up the lamina; minor nerves obscure; surface of leaves rough. Male inflorescence a condensed cyme .....1. *B. kurzii*
- b. Leaves mostly alternate or subopposite; basal pairs of lateral nerves extending only one third way up the lamina; minor nerves prominent; surface of leaves smooth. Male inflorescence elongate, pseudo-racemose .....2. *B. takbrai*

1. **Blumeodendron kurzii** (Hook.f.) J.J.Sm. in Koord. & Valet., Bijdr. No. 12 Boomsoorten Java, in Mended. Dep. Landb. No. 10: 463. 1910.

Trees, ca 15 m high. Leaves elliptic to oblong, obtuse, rounded or acute at base, entire, shortly cuspidate-acuminate at apex, ca 50 x 21 cm, coriaceous; lateral nerves 4-10 pairs; petioles ca 11 cm, pulvinate at apex; stipules obsolete. Male inflorescences borne in the axils of fallen leaves, ca 4 cm long, shortly pedunculate. Male flowers: calyx closed in bud, splitting valvately into 3-4 segments; receptacle pulviniform, closely glabular-lobulate; stamens ca 30. Female inflorescences not seen.

Infructescences in the axils of fallen leaves, racemose, *ca* 4 cm long. Capsules subglobose, *ca* 4 mm diam., unlobed, woody, 2-3 locular; pedicels *ca* 10 mm long; persistent styles 2-3, recurved, free.

Rare in mixed forests.

*Fl. & Fr.*: Jan.-Dec.

2 km on east-west road; 19-20 km on north-south road.

India (A & N Islands); Myanmar, Thailand, Malaya, Sumatra.

2. **Blumeodendron takbral** (Bl.) Kurz in J. As. Soc. Beng. 42(2): 248. 1873.

Trees, *ca* 30 m high. Leaves elliptic to obovate-elliptic, acute to obtuse at base, entire, shortly acuminate at apex, *ca* 20 x 8 cm, stiffly coriaceous, greenish-brown or coppery when dry; lateral nerves 7-9 pairs; minor nerves obscure or faint above, prominent and raised beneath, closely parallel, running at right angles to the midrib; petioles *ca* 5 cm long. Infructescences shortly racemose. Capsules subglobose, *ca* 3.5 cm diam., 3-locular, woody with grooved sutures.

Rare in inland forests.

*Fl.*: Not seen; *Fr.*: May-Oct.

34 km on east-west road.

India (Great Nicobar Island); Malaya, Java, Sumatra.

## 7. **BREYNIA** J.R. & G.Forst.

Shrubs; branchlets slender. Flowers monoecious, sometimes fascicled. Perianth 6 toothed or lobed, accrescent. Stamens 3, connate. Ovules 2 in each cell. Fruit a schizocarp.

About 25 species, tropical Asia; 2 in Gt. Nicobar Island.



- 1 a. Leaves thinly to stiffly coriaceous, usually glaucous beneath, margins conspicuously reflexed or revolute; fruits larger (6-10 mm diam.) .....1. *B. racemosa*
- b. Leaves thinner in texture, not or scarcely glaucescent beneath; margins flat; fruits smaller (4-6 mm diam.) .....2. *B. vitis-idaea*

1. **Breynia racemosa** (Bl.) Muell.-Arg., *Linnaea*. 441. 1966.

Shrubs, *ca* 6 m high. Leaves ovate to elliptic, rounded or obtuse at base, recurved at margins, acute to obtuse at apex, *ca* 7.5 x 4 cm; lateral nerves 3-5 pairs; petioles *ca* 5 mm long. Male inflorescences borne in the lower leaf axils, fasciculate, 2-3 flowered. Male flowers: calyx shortly obconic; stamens 3; anthers adnate to the column. Female inflorescences borne in the upper leaf axils, solitary. Female flowers: calyx yellow, scarcely enlarged in fruits; ovary subglobose; styles 3. Fruits globose, red or orange-red when ripe, uni-lobed, 3-locular.

Common along the edges of evergreen forests.

*Fl. & Fr.*: April-Dec.

Shastri Nagar to Galathea river; 35 km on east-west road.

India (Nicobar Islands); Thailand, Malaya, Sumatra, Borneo, Java, Philippines.

2. **Breynia vitis-idaea** (Burm.f.) C.E.C. Fischer in *Bull. Misc. Inf. Kew*. 1932: 65. 1932.

Shrubs or trees, *ca* 8 m high. Leaves ovate or elliptic to orbicular, rounded or acute at base, entire, acute to rounded at apex, *ca* 7 x 3.5 cm; lateral nerves 4-7 pairs; petioles *ca* 5 mm long. Inflorescences borne in the leaf axils. Male flowers: calyx tube obconic; stamens 3. Female flowers: calyx 2 mm diam., ovary depressed; styles 3, minute, simple. Fruits sub-globose.

Common in coastal forests.

*Fl. & Fr.*: Jan.-Dec.

Baludera.

8. **CLAOXYLON** Juss.

Shrubs or small trees. Flowers small, unisexual, in axillary or lateral spikes or racemes. Male flowers: calyx subglobose, 3-4 valvate segments; petals & disk absent; stamens many. Female flowers: calyx 3-4 valvate; disk absent or 5 petal like hypogynous scales alternate with the carpels; ovary 3-celled. Capsules 3 bivalved, cocci.

About 40 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves pubescent beneath; female inflorescences racemose; capsules globose, 7-10 mm diam., 3-locular, rounded at apex, not stipitate, dehiscing by raised sutures .....1. *C. indicum*
- b. Leaves glabrous beneath; female inflorescences abbreviated; capsules flattened subpyriform or flattened-globose, 10-15 mm diam., 2-locular, conspicuously rostrate at apex, mostly stipitate, sutures not raised .....2. *C. rostratum*

1. ***Claoxylon indicum*** (Reinw. ex Bl.) Hassk., Cat. Pl. Hort. Bogor. Alter. 235. 1844.

Trees, ca 15 m high. Leaves broadly ovate, elliptic, oblong to sub-orbicular, rounded to obtuse at base, coarsely dentate or crenate, shortly acuminate at apex, ca 45 x 25 cm; lateral nerves 6-8 pairs; petioles ca 18 cm long. Male inflorescences racemose, ca 40 cm long, puberulous. Flowers: calyx closed in bud, 2-4 segments; stamens 20-40; glands minute. Female inflorescences racemose, ca 14 cm long. Flowers: sepals 3, triangular-ovate; disk lobed; ovary subglobose; styles 3, short. Capsules sub-globose, bright red.

Frequent in beaches.

*Fl. & Fr.*: Jan.-Sept.

Laful.

2. ***Claoxylon rostratum*** Airy-Shaw, Kew. Bull. 32 : 389. 1978.

Trees, ca 12 m high. Leaves narrowly to broadly elliptic, cuneate or obtuse at base, obscurely sinuate-serrate, acuminate at apex, ca 37 x 15

cm; lateral nerves 5-8 pairs; petioles *ca* 14 cm long; stipules minute, glandular. Male inflorescences racemose, *ca* 25 cm long. Flowers: Calyx close in bud, segments 2-4, tomentellous; stamens *ca* 40; glands minute, purplish-puberulous towards apex. Female inflorescences *ca* 12 cm long, 7-15 flowered, umbellate. Flowers: sepals 3, broadly triangular-ovate, puberulous outside, disk shortly cupular, pilose outside, reddish-purple; ovary broadly ovoid; styles 2; recurved. Capsules flattened, sub-pyriform.

Scattered in inland forests.

*Fl. & Fr.* : Jan. - Dec.

24 km on east-west road.

*Note* : Endemic to A & N Islands.

### 9. CLEISTANTHUS Hook. f. ex Planch.

Trees or shrubs. Leaves bifarious. Flowers monoecious, in spikes or fascicles. Calyx usually 5 partite. Petals 5, minute. Disk turbinate or pulvinate. Stamens-5, connate; pistillode 3-lobed. Ovules 2 in each cell. Fruits capsules.

About 130 species, tropical Africa & Indo-Malayan regions; 1 in Gt. Nicobar Island.

**Cleistanthus balakrishnani** T. Chakrab. in J. Econ. Tax. Bot. 5 : 951. 1984.

Shrubs or trees, *ca* 8 m high. Leaves narrow, oblong to elliptic, acute at base, entire, caudate-acuminate at apex, *ca* 19 x 5 cm; lateral nerves 7-10 pairs; petioles *ca* 9 mm long, puberulous. Inflorescences axillary, glomerulate, borne on small-leaved, lateral branchlets. Male flowers: Calyx 5 segmented; tube shortly obconic, ochraceous-tomentellous; petals 5, unguiculate-flabellate; disk shortly cupular, adnate to calyx-tube; stamens 5; pistilode at the apex of staminal column, trilobed. Female flowers: Calyx & petals as in male, disk cupular, adnate to calyx-tube; ovary trigonous-globose; styles-3. Capsules somewhat depressed, puberulous green.

Rare in inland forests.

*Fl. & Fr.* : April - Sept.

*Note* : Endemic to Great Nicobar Island.

## 10. CROTON L.

Herbs or trees, stellately hairy or scaly. Leaves serrate, often glandular, 3-5 nerved at base, Racemes usually terminal. Calyx usually 5-lobed. Petals equal in number to calyx lobes. Stamens 10-many. Disk usually 5 lobed. Ovary hairy or scaly, 3 celled; ovules 1 in each cell. Schizocarp of 3 cocci.

About 700 species, tropics & subtropics; 1 in Gt. Nicobar Island.

***Croton argyratus* Bl., Bijdr. 602. 1825.**

Trees, upto 8 m high. Leaves elliptic, oblong to ovate, obtuse or rounded at base, entire or serrulate, acuminate at apex, *ca* 30 x 12 cm; lateral nerves 5-12 pairs; basal glands sessile; petioles *ca* 12 cm long. Racemes terminal & lateral, *ca* 12 cm long; the females solitary at lower nodes, the male fasciculate at upper nodes. Male flowers : sepals 5, elliptic-ovate; petals 5, spathulate; disk glands 5; stamens 10-12. Female flowers; sepals 5; petals small or obsolete; disk glands-5; Ovary subglobose; styles 3, bifid. Capsules subglobose, slightly 3-lobed, with grooved sutures.

Common along edges of forests.

*Fl. & Fr.* : Jan. - Dec.

Shastrinagar to Galathea river.

## 11. DRYPETES Vahl.

Trees or shrubs. Leaves exstipulate. Flowers dioecious, solitary or fascicled. Calyx 5 lobed. Stamens few to many. Disk annular or lobed. Ovary usually 2 celled; ovules 2 in each cell. Drupes 1-4, 1-seeded pyrenes.

About 200 species, tropics; 3 in Gt. Nicobar Island.

- 1 a. Ovary 1-locular; leaves crenate-serrate; drupes flattened or obovoid. .... 3. *D. sumatrana*
- b. Ovary 2-locular; leaves entire; drupes globose or subcubical. .... 2
- 2 a. Drupes subcubical..... 1. *D. bhattacharyae*
- b. Drupes globose..... 2. *D. microphylla*

1. ***Drypetes bhattacharyae*** T. Chakrab. in J. Econ. Tax. Bot. 7 : 453. 1985.

Shrubs or trees, *ca* 10 m high. Leaves elliptic to oblong-elliptic, unequal-sided & acute at base, entire, acuminate at apex, *ca* 28 x 10 cm; lateral nerves 4-14 mm long. Male flowers: *ca* 10 mm diam., sepals 4; stamens 10-13; disk plicate. Female flowers : sepals 4 ; disk annular; pubescent; ovary oblong-ellipsoid, bilocular, glabrous. Drupes orange-red when ripe, blackish-brown when dry; pedicels 5-12 mm long.

Common in littoral forests.

*Fl. & Fr.* : Jan. - Dec.

Ganges harbour, Dogmar river bank; Kopenheat; Campbell Bay.

*Note* : Endemic to A & N Islands.

2. ***Drypetes microphylla*** (Merr.) Pax. & Hoffm. in Engl. & Prantl. Pflanzenr. 15 : 237. 1922.

Trees, *ca* 18 m high. Leaves elliptic to oblong-elliptic, asymmetrical and acute at base, entire, abruptly caudate at apex, *ca* 10 x 3.5 cm, thinly coriaceous, glabrous, blackish above when dry; lateral nerves 5-8 pairs; petioles 5-10 mm long, glabrous. Flowers not seen. Drupes axillary, also in the axils of fallen leaves, globose, *ca* 17 mm diam., 2-locular, brown, softly & evenescently ochraceous-puberulous; disk annular; pedicels 12-15 mm long.

Rare in inland forests.

7 km on north-south road.

India (Nicobar Islands); Malay Peninsula, Sumatra, Borneo.

3. **Drypetes sumatrana** (Miq.) Pax. & Hoffm. in Engler. & Prantl. Pflanzennr. 15 : 270. 1922.

Trees, *ca* 20 m high. Leaves narrowly oblong-elliptic to lanceolate, unequal at base, shallowly crenate-serrate to subentire, caudate-acuminate at apex, *ca* 15 x 4 cm, midrib pubescent; lateral nerves 8-17 pairs; petioles *ca* 7 mm long. Inflorescences axillary, fasciculate. Male flowers: sepals 4 orbicular; stamens 18-21; disk flat, glabrous. Female flowers not seen. Drupes flattened obovoid to flattened-oblong-ellipsoid, *ca* 17 x 13 mm, ventrally longitudinally sulcate, 1-locular, glabrous, red when ripe, black brown when dry; fruiting pedicels *ca* 9 mm long.

Rare in inland forests.

*Fl. & Fr.* : Sept. - May.

Way to Lakshman beach.

India (Nicobar Islands); Myanmar, Thailand, Sumatra.

## 12. EUPHORBIA L.

Herbs or shrubs, milky. Leaves simple, alternate or opposite. Inflorescences of one female and many male flowers in a small 4 to 5 lobed, turbinate or campanulate perianth like involucre, lobes with thick glands in the sinuses; glands often with a petal like white or coloured limb. Male flowers of pedicelled stamens; perianth absent. Female flower a solitary pedicelled 3 celled, 3 ovuled ovary; styles 3, free or combined, simple or bifid. Capsules 3 bivalved cocci.

About 600 species, cosmopolitan; 3 in Gt. Nicobar Island.

- 1 a. Capsule ripening within the cyathium, bursting it open..... 3. *E. thymifolia*  
 b. Capsule ripening outside the cyathium, on an elongated, decurved pedicel.....2

- 2 a. Erect herbs; leaves larger (1-4 cm long) tapering at apex; cyathium aggregated into dense axillary globose clusters..... 2. *E. hirta*  
 b. Prostrate herbs; leaves smaller (2-6 mm long), rounded at the apex; cyathia sparsely distributed..... 1. *E. chamaesyce*

**1. *Euphorbia chamaesyce* L., Sp. Pl. 455. 1753.**

Prostrate herbs, *ca* 25 cm long. Leaves suborbicular or broadly-oblong, *ca* 6 x 5 mm serrulate at margins, sparsely puberulous to glabrous, dark reddish or dark greenish. Cyathia axillary, in small sessile clusters, pink. Fruits tricoccous, ovoid, beaked, *ca* 1.5 mm diam., whitish-puberulous on the keel.

Common in waste places.

*Fl. & Fr.* : Jan. - Dec.

Laful.

**2. *Euphorbia hirta* L., Sp. Pl. 457. 1753.**

Ascending herbs, *ca* 40 cm high; young stem with dense yellow multicellular hairs. Leaves obliquely rhombate-elliptic to oblong, acute at base, serrate at margins, acute at apex, *ca* 4 x 2 cm, pubescent, reddish-green; petioles *ca* 4 mm long. Cyathia axillary, in dense globose heads, shortly pedunculate, greenish-red. Capsules tricoccous, *ca* 2.5 mm diam., pubescent.

Common in waste places.

*Fl. & Fr.* : Jan. - Dec.

Indira point.

**3. *Euphorbia thymifolia* L., Sp. Pl. 454. 1753.**

Prostrate herbs, *ca* 25 cm high. Leaves broadly oblong to orbicular, *ca* 7 x 5 mm, minutely serrate at margins, sparsely puberulous to glabrous. Cyathia axillary, small, sessile clusters; glands minutely appendiculate. Capsules ovoid, *ca* 1.5 mm diam, appressed, whitish-puberulous.

Common in waste places.

*Fl. & Fr.* : Jan. - Dec.

27 km on east-west road.

### 13. EXCOECARIA L.

Shrubs or trees. Leaves sometimes opposite. Flowers monoecious, in spikes or racemes. Calyx 3-lobed, imbricate. Disk absent. Stamens 3, free. Ovule 1 in each cell. Schizocarp fleshy.

About 40 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Capsules trilocular, much smaller, *ca* 10 mm diam., borne in racemes, not black when dry.....1. *E. agallocha*
- b. Capsules globose, *ca* 3 cm diam., borne singly, black when dry.....2. *E. indica*

#### 1. *Excoecaria agallocha* L., Sp. Pl. ed. 2 : 1451. 1753.

Trees, *ca* 8 m high. Leaves elliptic or narrowly so, obtuse at base, crenulate-serrulate, acuminate at apex, *ca* 13 x 5.5 cm; lateral nerves *ca* 10 pairs; petioles *ca* 3 cm long, sulcate above. Male inflorescences axillary, densely spicate, *ca* 10 cm long. Flowers : minute : sepals 2-3, linear, disk absent; stamens 2-3, free. Female inflorescences axillary, racemose, few flowered, *ca* 5 cm long. Flowers : sepals 3; ovary 3 lobed; styles 3, shortly connate at base, recurved above. Capsules depressed, 3 lobed, glabrous, crustaceous.

Common along sea shores.

*Fl. & Fr.* : March - Dec.

Laful.

#### 2. *Excoecaria indica* (Willd.) Muell.-Arg. in Linnaea 32 : 123. 1863. *pro parte*.

Trees, *ca* 8 m high. Leaves oblong-elliptic or narrowly so, acute at base, serrate, acute at apex, *ca* 12 x 3.5 cm; lateral nerves 10-17 pairs;



petioles *ca* 10 mm long. Male inflorescences terminal, racemose, *ca* 8 cm long, dense flowered, puberulous. Flowers ochraceous-tomentellous. Calyx 3 lobed, lobes fimbriate; petals & disk absent; stamens 2-3, free or connate below into a column. Female inflorescences terminal or lateral, solitary. Flower: sepals 3, fimbriate; ovary globose, 3-locular, glabrous; styles 3, connate below in a column. Capsules globose; 3 cm diam., not lobed, smooth, black when dry.

Common along coastal forests.

*Fl. & Fr.* : May - June.

Laful.

#### 14. **GLOCHIDION** J.R. & G. Forst.

Trees. Flowers monoecious, in fascicles. Perianth 5-6 lobed, usually 2 seriate in male, in female often dentate. Disk absent. Stamens 3-8 in a column. Ovary 3-15 celled; ovules 2 in each cell; styles connate. Fruit a schizocarp.

About 250 species, tropics ; 2 in Gt. Nicobar Island.

- |   |    |                                                                       |                         |
|---|----|-----------------------------------------------------------------------|-------------------------|
| 1 | a. | Ovary unlobed; capsules unlobed or scarcely lobed, 7-10 mm diam. .... | 2. <i>G. sumatranum</i> |
|   |    | .....                                                                 |                         |
|   | b. | Ovary & capsules prominently lobed, larger, 13-16 mm diam.....        | 1. <i>G. calocarpum</i> |
|   |    | .....                                                                 |                         |

#### 1. **Glochidion calocarpum** Kurz in Trimen. J. Bot. 13 : 330. 1875.

Shrubs or trees, *ca* 12 m high. Leaves elliptic-oblong to suborbicular or oblong to ovate-oblong, asymmetric & rounded, obtuse to acute at base, entire, acuminate to sub-acuminate at apex, *ca* 25 x 11 cm; lateral nerves 6-10 pairs; petioles 5-8 mm long. Inflorescences axillary, sessile. Male flowers : tepals 3 + 3, oblong to ovate; stamens 5-6, connate. Female flowers: tepals as in male; ovary subglobose, 5-6 loculed; style conical, 5-6 lobed at apex. Capsules depressed, prominently 5-6, lobed, *ca* 16 mm diam.; fruiting pedicels *ca* 12 mm long.

Rare in coastal forests.

*Fl. & Fr.* : Jan. - Dec.

38 km on north-south road.

*Note* : Endemic to A & N Islands.

2. ***Glochidion sumatranum*** Miq., Fl. Ind. Bat. Suppl. I. 180. 450. 1861.

Shrubs or trees, *ca* 6 m high. Leaves ovate-oblong to ovate-lanceolate, oblique & acute to obtuse at base, entire, shortly acuminate at apex, *ca* 12 x 5 cm; lateral nerves 6-8 pairs; petioles *ca* 5 mm long. Inflorescences supra-axillary or rarely axillary, shortly peduncled. male flowers: tepals 3 + 3; ovary sub-globose, densely fulvous. Capsules depressed globose *ca* 10 mm diam., not or scarcely lobed, 5 loculed, with irregular ridges, persistent sty, blackish crimson when ripe; pedicels *ca* 6 mm long.

Common in scrub forests.

*Fl. & Fr.* : Feb. - Nov.

38 km on north-south road.

India (Nicobar Islands); Malay Peninsula, N. Australia.

## 15. **JATROPHA** L.

Herbs, shrubs or trees; often glandular and prickly. Leaves alternate, unlobed or digitately lobed; stipules often ciliate. Flowers in terminal cymes, monoecious, often petaloid. Petals 5, contorted, free or connate. Disk entire or with 5 glands. Stamens many, often filaments of all or the interior only connate. Ovary 2-4 celled; styles connate below, 2-fid, lobes entire or 2-lobed. Capsule of 2-4, 2-valved cocci, endocarp crustaceous or bony. Seeds ovoid or oblong, testa crustaceous, albumen fleshy.

About 175 species, tropics & subtropics also in N. America & S. Africa; 1 in Gt. Nicobar Island.

***Jatropha curcas*** L., Sp. Pl. 1006. 1753.

Shrubs, 2-4 m high; glabrous except shoots. Leaves orbicular-ovate to triangular-ovate, shortly unlobed or 3-5 lobed, orbicular-ovate to triangular-ovate, base cordate, caudate at apex, entire, *ca* 20-40 x 15-20 cm; petiole 5-15 cm long. Flowers greenish yellow; petals oblong, 7-8 mm long. Fruits 3-5 cm, globose, slightly 3-lobed, glaucous.

Fl. & Fr.: Jan.-Dec.

Settlement areas in and around Campbell Bay.

#### 16. *MACARANGA* Thou.

Shrubs or trees. Leaves usually peltate, often gland dotted. Flowers dioecious in panicles or racemes; bracteate. Perianth 2-5 lobed. Disk absent. Stamens 1-many, free. Ovary 2-6 celled; ovules 1 in each cell. Fruits schizocarps or loculicidal capsules, often muricate.

About 280 species, tropics; 4 in Gt. Nicobar Island.

- 1 a. Leaves distinctly 3-lobed..... 4. *M. triloba*  
    b. Leaves unlobed..... 2
- 2 a. Leaves large (lamina *ca* 1 m long); capsules smooth..... 2. *M. nicobarica*  
    b. Leaves smaller (lamina *ca* 40 cm long); capsules echinate..... 3
- 3 a. Bracteoles linear, entire with conspicuous apical gland..... 1. *M. indica*  
    b. Bracteoles ovate, lacinate-dentate, eglandular..... 3. *M. peltata*

#### 1. *Macaranga indica* Wight, Ic. Pl. Ind. Or. 5 : 23. t. 1883. 1852.

Trees, *ca* 16 m high. Leaves peltate; ovate-orbicular, rounded at base, entire, caudate-acuminate apex, *ca* 40 x 30 cm, thinly coriaceous; palminerved; petioles *ca* 20 cm long. Inflorescences axillary, paniculate; the males *ca* 15 cm long, the female subpyramidal, *ca* 19 cm long; bracteoles linear-spathulate, entire, with conspicuous apical gland. Capsules unilocular or didymous, echinate, *ca* 12 mm diam. (excluding spines).

Rare in hill forests near stagnant waters.

Fl. & Fr. : July - Nov.

41 km on east-west road.

2. **Macaranga nicobarica** Balakr. & P. Chakrab. in Gard. Bull. Singapore 31(1) : 57. 1978.

Shrubs or trees *ca* 10 m high. Leaves peltate, rounded at base, entire, shortly caudate at apex, *ca* 100 x 70 cm, chartaceous, glabrous above, sparsely pilose & reddish granular glandular beneath; palminerved; petioles *ca* 75 cm long. Inflorescences spicate-paniculate; the males *ca* 30 cm long; the females *ca* 15 cm long; bracteoles entire in males & shortly irregularly dentate in females. Capsules transverse, didymous, *ca* 6 x 10 mm, smooth, granular-glandular.

Rare in low land forests or shaded places in inland forests.

*Fl. & Fr.* : July - Oct.

*Note* : Endemic to Nicobar Islands.

3. **Macaranga peltata** (Roxb.) Muell.-Arg. in Linnaea 34 : 1010. 1866.

Trees, *ca* 15 m high. Leaves peltate, ovate-orbicular, rounded at base, cordate or cuspidate or acute at apex, *ca* 35 x 35 cm; palminerved; petioles *ca* 30 cm long. Inflorescences paniculate; the males *ca* 30 x 12 cm (peduncle *ca* 15 cm long); the females narrow *ca* 10 cm long; bracteoles ovate, laciniate-dentate, *ca* 10 mm long. Capsules didymous or tricoccus depressed, echinate, *ca* 12 mm diam., excluding spines.

Common in beach forests.

*Fl. & Fr.* : Jan. - Dec.

Kopenheat.

4. **Macaranga triloba** (Bl.) Muell.-Arg. Linnaea. 34 : 989. 1866.

Trees, *ca* 8 m high. Leaves broadly peltate; lamina 3-lobed, *ca* 25 x 19 cm, thinly coriaceous, glabrous above, sparsely hairy beneath on nerves; palminerved; nervules raised beneath; petioles *ca* 18 cm long; stipules thick, strongly convex-recurved, persistent. Infructescences *ca* 6 cm long. Capsules depressed, *ca* 12 mm diam., muricate.

Rare in inland forests, often along stream sides.

*Fl. & Fr.* : April - June.

Laful, Campbell Bay.

India (Nicobar Islands); Myanmar, Thailand, Malay Peninsula.

### 17. MALLOTUS Lour.

Trees or shrubs. Leaves rarely opposite, often peltate. Flowers dioecious, usually in panicles or racemes. Perianth 4, lobed. Disk absent. Stamens many. Ovules 1 in each cell. Fruit a capsule or schizocarp, often muricate or papillose.

About 150 species, tropics; 4 species & 2 varieties in Gt. Nicobar Island.

- 1 a. Female calyx spathaceous; leaves variable alternate or opposite; dried plant smelling of fenugreek.....2
- b. Female calyx not spathaceous; leaves either strictly alternate or strictly opposite; dried plant not smelling of fenugreek.....3
- 2 a. Leaves peltate..... 2. *M. peltatus*
- b. Leaves not peltate..... 1. *M. oblongifolius*
- 3 a. Branchlets markedly flattened; leaves of each pair of normal size & shape.  
..... 4. *M. resinusus*
- b. Branchlets terete; leaves of each pair exceedingly unequal, one being of normal size & shape, the other being reduced & stipuliform.....  
.....3. *M. penangensis*

1. ***Mallotus oblongifolius* (Miq.) Muel.-Arg. in Linnaea 34 : 192. 1865.**

#### Key to varieties

- 1 a. Ovary, style & capsules green, turning brownish when dry.....  
.....var. *oblongifolius*
- b. Ovary, style & capsules deep red, turning blackish-red when dry.....  
.....var. *rubriflorus*

**var. oblongifolius.**

. Shrubs or small trees, *ca* 8 m high. Leaves alternate to opposite, oblong to elliptic or ovate-elliptic, rarely suborbicular, narrowly cordate at base, glandular serrate or dentate, caudate-acuminate at apex, *ca* 36 x 15 cm; lateral nerves 5-10 pairs; petioles *ca* 12 cm long. Male inflorescences racemose *ca* 22 cm long, puberulose. Male flowers : stamens 30, free. Female inflorescences racemose, *ca* 25 cm long, puberulose. Flowers: ovary 3-locular, echinate; styles 3, united below into a conspicuous column. Capsules tricoccus, depressed, sparsely echinate; pedicels *ca* 5 mm long; seeds orbicular.

Common in littoral forests.

*Fl. & Fr.* : Jan. - Dec.

Koshin Don, Campbell Bay.

India (A & N Islands); S.E. Asia, Malaysia to New Guinea & N. Australia.

**var. rubriflorus** T. Chakrab. in J. Econ. Tax. Bot. 6 (2) : 496. 1985.

Shrubs *ca* 4 m high, differing from *var. oblongifolius* in the deep red ovary, style & capsules.

Common along the edges of forests or in coastal forests.

*Fl. & Fr.* : April - Dec.

4 km on east-west road., Dogmar river bank.

*Note* : Endemic to A & N Islands.

**2. Mallotus peltatus** (Geisl.) Muell.-Arg. in Linnaea. 34 : 187. 1865.  
**var. peltatus**

Shrubs or small trees, *ca* 8 m high, differing from *M. oblongifolius* only in its clearly peltate leaves.

Common in littoral forests.

*Fl. & Fr.* : Jan. - Dec.

Navy Dera, Dogmar river, Campbell Bay.

India (A & N Islands) ; Myanmar, Thailand, Malay Peninsula, Sumatra, Java.

3. ***Mallotus penangensis*** Muell.-Arg. *Linnaca* 34 : 186. 1865.

Shrubs or trees, *ca* 20 m high. Leaves opposite, oblong or often elliptic-oblong, acute or rounded at base, entire acuminate to caudate at apex, *ca* 26 x 8 cm; lateral nerves 5-9 pairs; petioles 4 cm long; stipules subulate, *ca* 10 mm long. Male inflorescences *ca* 7 cm long, puberulous. Flowers : sepals 3, recurved; stamens *ca* 90. Female inflorescences *ca* 11 cm long, tomentellous. Flowers : sepals 6, oblong to lanceolate, puberulous; ovary echinate, tomentose; styles 3. Capsules depressed, tricococcus, fulvous tomentellous, densely echinate & setose.

Common in inland forests.

*Fl. & Fr.* : Jan. - Dec.

9 km on east-west road; Laful ; 30 km on north-south road.

India (Nicobar Islands); Malay, Borneo, Philippines.

4. ***Mallotus resinusus*** (Blanco) Merr. *Sp. Bnco.* 222. 1918.

Trees, *ca* 8 m high. Leaves opposite, cuneate obovate to elliptic-oblong, cuneate or acute to obtuse at base, repend-dentate to entire, bluntly acuminate to cuspidate at apex, *ca* 30 x 15 cm; penninerved; lateral nerves *ca* 12 pairs; petioles *ca* 5 cm long. Inflorescences racemose, puberulous; the males *ca* 40 cm long; the female *ca* 10 cm long. Male flowers: Calyx closed in bud; sepals 3-4, reflexed, ovate-elliptic; stamens 24-35. Female flowers: triangular; ovary 5 mm diam; styles 4-5 mm long, plumose. Capsules depressed, 3(4) lobed, sparsely echinate, spines slender.

Common in Littoral forests.

*Fl. & Fr.* : Jan. - Dec.

Laful.

# 18. PHYLLANTHUS L.

Herbs or shrubs; branchlets slender. Leaves distichous. Flowers usually monoecious, solitary or fascicled. Perianth 4-6 lobed, biseriate, persistent in female. Disc cupular or glandular. Stamens 3-6. Ovary 3 or 4 celled; ovules 2 in each cell. Capsules loculicidal; seeds trigonous.

Over 600 species, tropics; 3 in Gt. Nicobar Island.

- 1 a. Herbs..... 1. *P. amarus*
- b. Shrubs or trees.....2
- 2 a. Fruits dry, dehiscent, capsular..... 2. *P. gomphocarpus*
- b. Fruits more or less fleshy indehiscent, baccate..... 3. *P. reticulatus*

1. **Phyllanthus amarus** Schum. & Thonn. in Kongl. Danske Vidensk. Selsk. Skr, 4 : 195. 1829.

Herbs, *ca* 40 cm high. Leaves elliptic-oblong, obtuse to rounded at base & apex, *ca* 11 x 6 mm thin; petioles *ca* 2 mm long. Inflorescences axillary; cymules-2 flowered (one male & the other being female). Male flowers: tepals 5, acute at apex; disk glands 5; stamens 3; filaments united into a column. Female flowers: tepals 5, acute at apex; disk deeply 5 lobed; ovary smooth; styles 3, each bifid. Capsules globose, *ca* 2 mm diam., brown; seeds longitudinally ribbed dorsal side.

Common in waste lands.

*Fl. & Fr.* : Jan. - Dec.

Campbell Bay to Indira point.

India (A & N Islands) Myanmar.

2. **Phyllanthus gomphocarpus** Hook. f., Fl. Brit. India. 5 : 301. 1887.

Shrubs, *ca* 2 m high. Leaves elliptic or ovate-oblong to lanceolate, asymmetric at base, entire, attenuate-acuminate at apex, *ca* 10 x 3 cm,



thin, glossy; lateral nerves 4-8 pairs; petioles *ca* 3 mm long. Male flowers: in axillary fascicles, crimson; tepals 4, ovate-lanceolate; disk glands 4; stamens 2, sessile. Female flowers: axillary, solitary, towards tips of the branchlets, crimson; tepals 3 + 3, subulate, fringed with capitate glands; disk dilated; ovary glabrous; styles 3, bifid. Capsules sub-globose, 3-lobed, pinkish-red.

Common in inland forests.

*Fl. & Fr.* : Jan. - Dec.

Indira point, Lakshman beach.

India (Nicobar Islands); Malay peninsula, Sumatra.

3. **Phyllanthus reticulatus** Poir, in Lam. Encycl. Meth. Bot. 5 : 298. 1804.

Scandent shrubs or trees, *ca* 4 m high. Leaves elliptic to oblong or obovate, rounded to obtuse or sometimes truncate or acute at base, entire, obtuse to rounded or often acute or apiculate at apex, *ca* 7 x 3 cm, coriaceous; lateral nerves 6-13 pairs; petioles *ca* 5 mm long. Inflorescences axillary, fasciculate (the males) or solitary on lateral fertile shoots (females), sometimes on leafless shoots (*ca* 6 cm long) simulating racemes. Male flowers: tepals 5, ovate; disk glands distinct; stamens 2 + 3; inner filaments connate into a column. Female flowers: tepals 5-6, ovate; disk annular; ovary 6-10 locular; styles short, spreading. Berries globose, 4-7 mm diam.

Rare in littoral forests.

*Fl. & Fr.* : March - Nov.

Campbell Bay, 42 km on east-west road.

### 19. **SPHYRANTHERA** Hook. f.

Trees or shrubs. Leaves alternate. Flowers minute, dioecious. Males inflorescences axillary or fasciculate, many flowered. Sepals 4; petals 4, free; disc glands bilobed at apex; stamens 8-10, free. Female inflorescences axillary or cauliflorous, more or less umbellate, 2-5 flowers; sepals 4-5;

petals absent; disk glands 3-4; ovary trilocular; styles 3, free. Capsules depressed, tricoccous, glabrous; seeds globose.

About 2 species, tropics; 1 in Gt. Nicobar Island.

**Sphyrantha lutescens** (Kurz) Pax. & Hoffm. in Engl. & in Hoffm. in Engl. & Horms., *Pflanzenfam.* ed. 2, 19c; 231. 1931.

Trees, *ca* 8 m high. Leaves elliptic to oblong or suborbicular, acute at base, shortly & bluntly acuminate at apex, *ca* 27 x 15 cm; lateral nerves 6-10 pairs; petioles *ca* 25 mm long. Male flowers : peduncles *ca* 10 mm long; pedicels 8-12 mm long; disk glands 4; stamens 8-10. Female flowers: peduncles *ca* 25 mm long; pedicels *ca* 50 mm long; ovary *ca* 1 mm diam., styles 3, deflexed, multifid with numerous fibrous-laciniate branches. Capsules depressed, *ca* 12 mm diam., smooth, pale greyish.

Common in coastal forests.

*Fl. & Fr.* : March - Dec.

Campbell Bay; Lakshman beach.

*Note* : Endemic to A & N Islands.

## 20. TRIGONOSTEMON Blume

Trees or shrubs. Flowers monoecious in racemes, spikes or cymes. Sepals 5. Petals 5 (absent in fema.e). Disc of 5 glands or cupular. Stamenms 3-5. Ovules 1 in each cell. Schizocarp of 3 cocci.

About 50 species, Indo-Malaya; 1 in Gt. Nicobar Island.

**Trigonostemon villosus** Hook., *Fl. Brit. India* 5 : 397. 1887. var. **nicobaricus** (T. Chakrab) Balakr. & T. Chakrab. in *Candollea* 46 : 629. 1991.

Trees, *ca* 7 m high. Leaves cuneate-oblongate or narrowly oblong-ovate to elliptic, narrowed & rounded at base, serrulate, caudate acuminate at apex, *ca* 30 x 7 cm; lateral nerves 10-16 pairs; petioles *ca* 20 mm long. Male inflorescences pseudo-racemose, *ca* 13 cm long, puberulous. Flowers: pedicels *ca* 5 mm long; sepals puberulous; petals

spathulate-obovate, blackish-crimson; disk glands 5; stamens 3, connate below into a column. Female inflorescences racemiform, ca 10 cm long, puberulous. Flowers : pedicels ca 4 mm long; sepals ovate-elliptic, puberulous; petals oblong-elliptic., blackish-crimson; disk glands 5; ovary globose, 3-lobed, densely yellow-villous; styles 3, bifid.

Rare in hill forests.

*Fl.* : Apr. - May.; *Fr.* : Not known.

9 km on east-west road.

*Note* : Endemic to Great Nicobar Island.

*Cultivated species* :

*Ricinus communis* L., Sp. Pl. 1007. 1753

## URTICACEAE

About 43 genera and 550 species, tropical and temperate regions; 7 genera & 8 species in Gt. Nicobar Island.

- 1 a. Herbs or under shrubs.....2
  - b. Small trees or large shrubs..... 5
- 2 a. Flowers aggregated on fleshy receptacles.....3
  - b. Flowers not aggregated on fleshy receptacles..... 5. *Pellionia*
- 3 a. Male flowers cymose; female flowers aggregated on fleshy receptacles ...
  - .....7. *Procris*
  - b. Male & female flowers aggregated on the fleshy receptacles.....4
- 4 a. Leaves alterate, sessile..... 3. *Elatostema*
  - b. Leaves opposite, petioled..... 2. *Cypholophus*
- 5 a. Inflorescences long spike; fruiting perianth dry..... 1. *Boehmeria*
  - b. Inflorescences short spike; fruiting perianth more or less fleshy.....6
- 6 a. Ovary free; stigma linear..... 6. *Pipturus*
  - b. Ovary adnate; stigma sub-peltate..... 4. *Oreocnide*

### 1. **BOEHMERIA** Jacq.

Shrubs or small trees. Leaves 3 nerved; stipules free or rarely connate. Flowers clustered often arranged in cymes. Achenes enclosed by perianth, often angled or winged.

About 100 species, tropics & subtropics ; 1 in Gt. Nicobar Island.

**Boehmeria nivea** (L.) Gaud., Voy. Uranie 12 : 499. 1830.

Shrubs, 1-2 m high. Leaves broadly ovate or orbicular, cuneate or subcordate at base, acute or acuminate at apex, ca 21 x 9 cm, crenate or serrate, chartaceous, deep green above, snow white except nerves beneath, 3-nerved; stipules free, subulate, deciduous; petioles ca 4.5 cm long, thin, slender ; secondary nerves parallel to each other. Panicles axillary, shorter than the petiole. Flowers in clusters. Style exserted. Achenes oblong, compressed, hairy.

Common in littoral forests.

*Fl. & Fr.* : April - Sept.

42 km on east-west road; Kopenheat; Indira point.

### 2. **CYPHOLOPHUS** Wedd.

Erect shrubs without stinging hairs. Leaves decussate, often unequal, pinnately nerved; stipules lateral. Flowers in axils of leaves or fallen leaves in subglobose, many flowered, dense clusters. Perianth 4-merous. Stamens 4. Achenes elliptic.

About 30 species, tropics & subtropics; 1 in Gt. Nicobar Island.

**Cypholophus moluccanus** (Bl.) Miq. in Ann. Mus. Bot. Ludg. Bat. 4 : 303. 1869.

Under shrubs, ca 1 m high; branches hairy. Leaves opposite, ovate to ovate-oblong, oblique on one side, rounded or subcordate on the other side at base, ca 23 x 8 cm, crenate-serrate, scabrous, densely hirsute on both surfaces, interstitial spaces very prominent especially when dry;

nerves 3, diverging from the base; stipulate; petioles *ca* 6 cm long. Flowers monoecious, clustered (in verticillasters) around axis leaving certain gaps, white.

Common in inland forests.

*Fl.* : April - July; *Fr.* : Not seen.

Laful.

India (Nicobar Islands), Java, Malay Peninsula.

### 3. **ELATOSTEMA** J.R. & G. Forst.

Slender, erect to prostrate herbs, without stinging hairs. Leaves alternate, stipulate, entire or crenate, palmately veined. Inflorescences axillary clusters of flowers. Flowers polygamo-dioecious. Perianth 4-5 partite in male, 3-4 partite in female. Stamens as many as perianth lobes; pistillodes; rudimentary. Staminodes present in female. Ovary tipped by a penicillate style.

About 200 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Leaves coriaceous, entire at margins; lateral nerves extending parallel to the margin from the base of the midrib; cystoliths crowded..... 1. *E. integrifolium*
- b. Leaves membranous, serrate above the middle at margins; lateral nerves confluent towards the margin; cystoliths scattered..... 2. *E. novarae*

1. ***Elatostema integrifolium*** (D. Don) Wedd. in DC. Prodr. 16(1) : 179. 1869.

Succulent herbs, *ca* 50 cm high, branches terete, reddish. Leaves oblong elliptic or lanceolate, oblique at base, caudate-acuminate at apex, acumen *ca* 6 cm long, *ca* 18 x 4.5 cm, entire, coriaceous, dark green above, pale grey beneath, minutely pubescent, cystoliths branched, crowded; petioles *ca* 3 mm long; lateral nerves 3-5 pairs extending parallel to the margin from the base of the midrib. Inflorescences in head, small, often lobed or branched. Flowers axillary, white, clustered, male & female in the same or separate axils or plants.

Common in inland forests.

*Fl. & Fr.* : April - July

Campbell Bay, 36.8 km on east-west road.

2. ***Elatostema novarae* Kurz** in J. As. Soc. Bengal. 45(2) : 149. 1878.

Glabrous, branched, under shrubs; ca 25 cm high. Leaves ovate-lanceolate or obliquely lanceolate, acute or cuneate at base, acuminate or caudate at apex, ca 15 x 4.2 cm, serrate above the middle, membranous, black when dry, cystoliths scattered; stipules 0.3-0.5 cm long., subulate, deciduous; lateral nerves confluent towards the margins; petioles 0.2-0.5 cm long. Flowers crowded in the axils, sub-glabrous, brown-green.

Rare in inland forests.

*Fl. & Fr.* : June - Sept.

18 km, 33 km on east-west road; Leela Nalah; 30 km on north-south road,

*Note* : Endemic to Nicobar Islands.

#### 4. **OREOCNIDE** Miq.

Trees or shrubs. Leaves alternate, penni or 3 nerved; stipules 2 fid. Flowers dioecious in heads, solitary or in lax cymes. Male flowers 4 merous. Stigmas often ciliate. Achenes adnate to the fleshy Calyx.

About 20 species, in south-east Asia; 1 in Gt. Nicobar Island.

***Oreocnide integrifolia* (Gaud.) Miq.** in Ann. Mus. Bot. Lugd. Bat. 4 : 306. 1869.

Small evergreen trees, ca 5 m high, branches pubescent. Leaves elliptic-oblong, lanceolate or oblanceolate, narrowed at base, acuminate, subacute or caudate at apex, ca 25 x 7.5 cm, entire membranous, drying brown; lateral nerves 8-10 pairs; slender; petioles 2.5-15 cm long; stipules silky villous. Flowers in clusters, globose, in small shortly peduncled,

dichotomously branched hispid cymes. Achenes *ca* 0.4 cm, free or adnate to perianth.

Rare along streams in hill forests.

*Fl. & Fr.* : April - July.

Laful.

### 5. PELLIONIA Gaudich.

Spreading herbs. Leaves alternate, with the opposing leaf reduced to nanophyll or absent with large axillary connate stipules. Inflorescences axillary, pedunculate, spreading (male), or contracted (female) cymes, rarely capituliform, dioecious or monoecious. Tepals 5, free, imbricate in male, in female deeply 5-partite, with dorsal, subapical horn. Stamens-5; pistillodes rudimentary. Ovary globose.

About 50 species, eastern Asiatic and Pacific ; 1 in Gt. Nicobar Island.

***Pellionia procrdifolia* Kurz in Trimen J. Bot. 330. 1873.**

Epiphytic, monoecious, scandent herbs, *ca* 1 m high; stems cauline. Leaves oblong-obovate or linear-oblong, unequally acute at base, shortly or abruptly acuminate at apex, *ca* 22 x 4.5 cm., entire membranous, dark green above pale below, nearly glabrous above puberulous beneath; lateral nerves 5-6 pairs; obscure above, distinct beneath. Male flowers in short panicle, white, peduncle, 1.2-3 cm long. Female flowers capitate, axillary.

Growing in low inland forests in open sunny places commonly seen epiphytic on *Pandanus*.

*Fl. & Fr.* : May - Nov.

Galathea river, Lakshman beach, Campbell Bay, Laful, Kopenheat.

*Note* : Endemic to Nicobar Islands.

## 6. PIPTURUS Wedd.

Trees or shrubs. Leaves 3-5 nerved; stipules bifid. Flowers monoecious or dioecious, in spicate or paniced clusters; bracts minute. Male flowers: perianth 4-5 fid; stamens 4-5; pistillode woolly. Female flowers on fleshy receptacles; perianth ovoid; ovary adherent to perianth; stigma linear, elongate. Achenes free within the thinly fleshy perianth.

About 10 species, Malayan to Pacific; 1 in Gt. Nicobar Island.

**Pipturus argenteus** (Forst. f.) Wedd. in DC. Prodr. 16(1) : 235. 1869.

Trees, *ca* 8 m high, branches pubescent. Leaves spirally arranged, broadly, ovate or ovate cordate, broadly cuneate or rounded at base, acute to acuminate at apex, *ca* 20 x 9.5 cm, crenate-serrate, chartaceous, nearly, glabrous, dark green above, white grey or silvery pubescent beneath; 3-nerved prominent beneath; petioles 2-9.5 cm long, slender, minutely pubescent; stipules ovate-lanceolate. Flowers small clustered in axillary spikes. Spike usually shorter than the petiole, pubescent. Flowers small clustered in axillary spikes. Male flowers: perianth 4-5; stamens 4-5, filaments long, recurved. Female flowers: perianth fleshy; style curved., stigma linear.

Rare in inland forests.

*Fl. & Fr.* : April - Oct.

Kopenheat.

India (Nicobar Islands); Malay Peninsula, Java.

## 7. PROCRIS Comm. ex Juss.

Succulent herbs or shrubs, often epiphytic. Leaves alternate, stipulate, entire or crenate, palmately veined. Male flowers in axillary cymes or clusters, the female only being on a receptacle. Achenes ovoid or elliptic striolate.

About 8 species, Asiatic, African & Polynesian; 1 in Gt. Nicobar Island.



**Procris laevigata** Bl. Bijdr. 508. 1825.

Epiphytic undershrubs, ca 1.5 m high. Leaves dimorphic, small & large, obliquely oblanceolate, acuminate, entire or crenate-serrate above, ca 10 x 6 cm, narrowed into short petiole. Flowers from the naked branches; males in small sessile clusters; female in shortly peduncled small receptacle. Achenes ovoid, slightly compressed.

Rare in beach forests.

*Fl. & Fr.* : Nov. - March.

Campbell Bay.

## MORACEAE

About 75 genera and 1850 species, tropics; 3 genera, 14 species and 1 variety in Gt. Nicobar Island

- 1 a. Inflorescences hollow receptacles; flowers hidden..... 2. *Ficus*  
 b. Inflorescences not hollow receptacles; flowers not hidden.....2
- 2 a. Woody climbers; flowers in heads, umbellate..... 3. *Poikilospermum*  
 b. Trees; flowers minute on globose receptacles which enlarge in fruiting.  
 ..... 1. *Artocarpus*

### 1. **ARTOCARPUS** J.R. & G. Forst.

Laticiferous, unarmed trees. Leaves alternate, entire or lobed, with cauducous large or small, amplexicaul stipules. Inflorescences cauliflorous or axillary, pedunculate, globose or ellipsoid, sometimes of elongate, dense spikes. Flowers dioecious. Perianth in male 2-4 fid, imbricate, sometimes tubular & bilobed, usually hairy in female; tubular, sunk in the inflorescences axis. Stamen 1; pistillode absent. Stigma single. Fruit usually an echinate, large, syncarp with the fleshy (edible) perianth, enclosing the seeds.

About 110 species in the tropics ; 1 in Gt. Nicobar Island.

**Artocarpus gomezlana** Wall. ex Trece. in Ann. Sci. Nat., Bot. ser. 3(8) : 118. 1847. ssp. *gomezlanus*.

Trees, *ca* 20 m high. Leaves broadly obovate-oblong or elliptic-oblong, acuminate at apex, base rounded or cuneate, often oblique, *ca* 25 x 15 cm, glabrous on both surfaces. Flower heads solitary in leaf axils. Mature receptacles, *ca* 1.7 cm long. Fruits subglobose, *ca* 8 cm across, yellow with pink flesh, smooth; seeds ellipsoid.

Rare in the dense inland forests.

*Fl. & Fr.* : Feb. - May

35 km on east-west road.

### DOUBTFUL TAXA

**Artocarpous chama** Buch.-Ham. in Mem. Wern. Soc. 5 : 331. 1826.

Trees, *ca* 120 m high; bark dark coloured; young branches and stipules with stiff hairs. Leaves broadly ovate or elliptic, base rounded to cordate, *ca* 30 x 20 cm; lateral nerves 12 pairs, prominent, with hairs; petioles *ca* 2.5 cm long. Fruits *ca* 10 cm in diam., yellow when ripe.

Rare in inland forests.

*Fl. & Fr.* : Feb. - Sept.

Great Nicobar Island.

*Note* : The plant record from Great Nicobar is by Balakrishnan *et al* (1989 Project Document Report). No authentic specimens are available.

### 2. FICUS L.

Habit various, often epiphytic, laticiferous. Leaves alternate, rarely opposite; stipules enclosing the terminal bud. Inflorescence a hypanthodium, variously arranged; receptacle (fig) flask shaped, sessile or stalked, subtended by 3 bracts, provided with a terminal mouth closed by imbricate bracts. Flowers inside the mouth of the fig, unisexual, numerous, minute, sessile or pedicelled of 4 kinds (staminate, pistillate gall or neuter), often intermixed with scales and hairs, all 4 types occur in the same receptacle or staminate and gall flowers in one set of receptacle &

pistillate flowers on another set. Perianth segments 2-6, free or partly connate, sometimes absent. Stamens 1-2, rarely more; anther 2-celled. Pistillode sometimes present. Staminodes absent in pistillate flowers; ovary sessile or stalked; style lateral; stigma various. Gall flowers similar to pistillate, but ovaries empty. Neuter flowers rarely present. Fruit fleshy syconium (fig) of tiny drupes or achenes.

About 1000 species, tropical & subtropical; 13 in Gt. Nicobar Island.

- 1 a. Leaves opposite..... 4. *F. hispida*  
b. Leaves alternate..... 2
- 2 a. Leaves serrate..... 3. *F. fulva*  
b. Leaves entire..... 3
- 3 a. Scandent or small epiphytes..... 4  
b. Trees or shrubs..... 6
- 4 a. Leaves hairy..... 8. *F. pendens*  
b. Leaves glabrous..... 5
- 5 a. Receptacles sessile..... 11. *F. subulata*  
b. Receptacles peduncled..... 10. *F. scandens*
- 6 a. Leaves caudate..... 9. *F. rumphii*  
b. Leaves not caudate..... 7
- 7 a. Receptacles peduncled..... 8  
b. Receptacles sessile..... 11
- 8 a. Leaves scabrous above..... 9  
b. Leaves not scabrous..... 10
- 9 a. Figs in pairs..... 12. *F. tinctoria*  
b. Figs solitary..... 2. *F. exasperata*
- 10 a. Leaves coriaceous or leathery; lateral nerves less but prominent; figs ca 1.5 cm in diam., pale yellow..... 7. *F. nervosa*  
b. Leaves chartaceous; lateral nerves more but less prominent; figs 0.5-1 cm in diam., orange yellow..... 5. *F. magnoliaefolia*

- 11 a. Receptacles enclosed in a calyptrate involucre..... 1. *F. altissima*  
 b. Receptacles not enclosed in calyptrate involucre..... 6. *F. microcarpa*

**1. *Ficus altissima* Bl., Bijdr. 444. 1826.**

Trees, *ca* 45 m high. Leaves elliptic to ovate-lanceolate, acute or rounded at base, obtuse at apex, *ca* 20 x 12 cm; lateral nerves 5-9 pairs; petioles *ca* 5 cm long; stipules lanceolate *ca* 4.5 cm long, sericeous villous outside. Figs (syconia) subglobose or ellipsoid, 2-3 cm, yellow, axillary, paired; basal bracts 3, ovate, *ca* 4 cm long, scarious. Achenes ellipsoid, shiny brown.

Rare in the littoral forests.

*Fl. & Fr.* : Oct. - June.

Campbell Bay.

**2. *Ficus exasperata* Vahl, Enum, Pl. 2 : 197. 1806.**

Small trees; twigs brown. Leaves narrowly to widely elliptic, ovate to obovate or oblong-lanceolate, cuneate at base, acute to acuminate at apex, *ca* 16 x 6 cm, denticulate on sinuate-crenate; lateral nerves 3-5 pairs; petioles *ca* 4 cm long; stipules short in pair, caducous. Figs axillary, mostly solitary, scabrid, ripening yellow; pedicels 0.8 cm long with 2-3 small scattered bracts. Male flowers ostiolar, sessile, in 1-2 rings; petals 3-4, oblong-spathulate; stamens one. Gall flowers sessile to pedicellate; sepals 4-6, lanceolate; ovary sessile, white; style pink. Female flowers as the gall. Seeds shortly oblong, slightly keeled, distinctly reticulate, *ca* 0.14 x 0.1 cm.

Rare and associated with *Calamus* in inland forests.

*Fl. & Fr.* : July - Nov.

19 km on east-west road.

**3. *Ficus fulva* Reinw. ex Bl., Bijdr. 478. 1825.**

Trees or shrubs, *ca* 15 m high. Leaves ovate, obovate or sub rhomboid, rounded or subcordate at base, acute or short apiculate at apex, *ca*

25 x 12 cm, dentate-serrate, rarely 3-5 lobed; basal nerves 3-5; lateral nerves 2-4 pairs; petioles *ca* 10 cm long; stipules broadly ovate, truncate at base, acute at apex. Syconia (fig) crowded towards stem apices, axillary, solitary or paired, ovoid, *ca* 15 mm, yellowish to brownish green, densely brown pilose; peduncles *ca* 2 mm long. Achenes obliquely ovoid, minutely tuberculate.

Common in inland disturbed forests.

*Fl. & Fr.* : July - Jan.

Kopenheat, 4 km on north-south road.

4. ***Ficus hispida*** L. f., Suppl. Pl. 442. 1781.

Small trees, *ca* 10 m high; stems and branches marked with raised rings; young branchlets hollow. Leaves opposite, with rough hairs, obovate, obovate-oblong or obovate-elliptic, shortly acuminate or acute at apex, base cordate or subcordate or round, *ca* 30 x 15 cm, scabrous above, hispid pubescent beneath, dentate-serrate; petioles *ca* 10 cm long; stipules ovate-acuminate, *ca* 1.4 cm. Figs *ca* 1.5 cm across, ovoid, globose, faintly ribbed and often with scattered bracts, greenish-yellow, tomentose, peduncled, axillary in pairs or cauliflorous or in racemose, leafless branches.

Common in inland forests.

*Fl. & Fr.* : Feb. - Dec.

Campbell Bay, Pulobaha to Galathea river.

5. ***Ficus magnolaefolia*** Bl., Bijdr. 448. 1825; Hore in Bull. Bot. Surv. India. 26 : 22. (1984). 1985.

Large trees; stem with milky juice. Leaves ovate-oblong or oblong-ovate, with obtuse or rounded base, distinctly acuminate at apex, *ca* 25 x 10 cm, chartaceous; nerves more but less prominent; petioles *ca* 2.5 cm long; stipules 2 cm long. Figs globose, 0.5-1 cm across, orange yellow; stalk *ca* 1.6 cm long.

Rare in evergreen forests.

*Fl. & Fr.* : Sept. - March.

Baldora, 16 mm on north-south road.

*Note* : Very near to *F. nervosa* Heyne ex Roth. The plant record from Great Nicobar is by B.S. Chengappa (DD).

**6. *Ficus microcarpa* L. f., Suppl. Pl. 442. 1781.**

Large or medium sized, evergreen trees, with dark grey bark and few aerial roots. Leaves alternate ovate, elliptic, rhomboid-elliptic or obovate, rounded or bluntly acuminate at apex, cuneate at base, *ca* 9 x 5 cm. Figs in axillary pairs, depressed-globose, glabrous, pink to purple when ripe; bracts 3, broadly ovate. Male flowers numerous, scattered. Female flowers usually sessile. Gall flowers sessile or pedicellate. Stamens 1, hardly exerted. Achenes smooth.

Common in littoral forests.

*Fl. & Fr.* : April - Nov.

Koshin Don.

**7. *Ficus nervosa* Heyne ex Roth, in Roem. & Schultz. Syst. 1 : 513. 1817.**

Large trees; bark greyish brown, smooth. Leaves obovate-oblong, oblong-elliptic, abruptly caudate acuminate at apex, base rounded, cuneate, coriaceous or leathery *ca* 22 x 8 cm; nerves less but prominent, much raised beneath; petioles *ca* 1.25 cm long; stipules *ca* 1.5 cm long, pubescent figs (syconia) globose, obovoid, *ca* 1.5 cm across, yellow turning reddish, 1-3 together; bracts small at the base of peduncles.

Rare in evergreen & littoral forests.

*Fl. & Fr.* : Sept. - March.

Lakshman beach.

**8. *Ficus pendens* Corner in Gard. Bull. Singapore 18 : 15. 1960.**

Scandent shrubs, *ca* 5 m high. Leaves ovate-elliptic or elliptic lanceolate, shortly acuminate at apex, narrowed or cuneate at base, *ca* 15 x 6 cm, villous nerves, lateral nerves 4-6 pairs; trinerved at base nerves; petioles *ca* 1.5 cm long. Figs in clusters of 1-4 in leaf axils, globose, 6-8 mm wide, densely villous, stalked; stalk 0.5-1 cm long, villous. Pistillate flowers *ca* 3 mm long, sessile; perianth lobes 4, linear-oblong, *ca* 2 mm long; ovary elliptic; style *ca* 1.5 mm long, attached at the apex of ovary. Seeds elliptic, *ca* 1.5 x 0.75 mm, keeled on both margins. Gall flowers shortly stalked, *ca* 2 mm long, pistillode present; perianth lobes 4, oblong. Staminate flowers not seen.

Rare in inland forests.

*Fl. & Fr.* : Sept. - Nov.

Laful.

India (Nicobar Islands); Malay Peninsula.

**9. *Ficus rumphii* Bl., Bijdr. 437. 1825.**

Medium sized trees, *ca* 10 m high; often epiphytic; bark greyish-brown, smooth. Leaves broadly ovate, acuminate at apex, base rounded or truncate, sometimes narrowed, cuneate, *ca* 15 x 8 cm, entire, glabrous; stipules *ca* 2.5 cm long. Figs *ca* 1.5 cm across, globose, blackish when ripe, sessile, usually in pairs. Achenes minutely tuberculate, mucilagenous.

Rare in littoral forests.

*Fl. & Fr.* : Sept. - Jan.

Koshin Don, Laful.

**10. *Ficus scandens* Roxb., Fl. Ind. 3 : 536. 1832.**

Scandent shrubs, trailing on rocks and ascending tall trees *ca* 6 m high. Leaves ovate to elliptically ovate, acute at apex, base round *ca* 12.5 x 7 cm; strongly 3 nerved, glabrous; petioles *ca* 2.5 cm long. Figs about 0.6 cm in diam., solitary or in pairs from the leaf axils or the scars of the fallen ones; globular; depressed, shortly stalked, yellow to crimson and rough when ripe.

Common in dense forests.

*Fl. & Fr.* : Nov. - March.

26.5 km on east-west road; Dogmar river.

**11. *Ficus subulata* Bl., Bijdr. 461. 1825.**

Erect or straggling, usually epiphytic with spreading branches; young parts pubescent. Leaves elliptic-lanceolate to obovate, caudate-acuminate or shortly acuminate at apex, base narrowed, *ca* 15 x 5 cm, entire, glabrous; petioles *ca* 4 mm long. Figs *ca* 0.6 cm across, globose, solitary or fascicled, sessile, yellow when ripe.

Rare along stream sides.

*Fl. & Fr.* : Dec. - March.

Galathea river banks.

**12. *Ficus tinctoria* Forst. f. *ssp. gibbosa* (Blume) Corner Gard. Bull. Singapore 17 : 476. 1960.**

Epiphytic or big trees; branches scabrid. Leaves narrowly elliptic, generally rhomboid, apex pointed, base cuneate, *ca* 15 x 3.5 cm, often yellowish beneath; 3 nerves at base, nerves and reticulations prominent below, petioles *ca* 1.25 cm long. Figs *ca* 2 cm diam., pear-shaped, shortly stalked, ripening greenish yellow then dull yellow or reddish orange.

Common in dense forests.

*Fl. & Fr.* : Nov. - March.

18 km on east-west road.

**3. *POIKILOSPERMUM* Zipp. ex Miq.**

Large climbers. Leaves alternate, entire, pinnately nerved; stipules connate, interpetiolar. Flowers dioecious in globose heads, flesh colour or pink. Male perianth 4-lobed. Stamens 4, erect. style short, undivided. Achenes small enclosed by perianth.



About 20 species, mainly Indo-Malaya ; 1 in Gt. Nicobar Island.

**Poikilospermum suaveolens** (Blume) Merr. in Contr. Arnold., Arb. 8 : 47. 1934. *pro parte*.

Woody climbers; twigs, 0.5-1.25 cm in diam. Leaves ovate, elliptic to obovate, rounded to cordate at base, sharp acute to obtuse at apex, *ca* 18 x 10 cm, entire, glabrous, rarely pubescent; lateral nerves 8-15 pairs; prominent; petioles *ca* 8 cm long; stipules 2-4 cm long. Inflorescences *ca* 6 cm long, dichotomously branched. Female inflorescences *ca* 6 cm long; floral capitula 3-5 cm in diam., in each inflorescence. Flowers pedicellate, perianth 2 + 2; ovary 1-2 mm long, stigma *ca* 1 mm long. Male flowers sessile; perianth pubescent, rarely glabrous; stamens 4, filaments straight; pistillode *ca* 1 mm long. Achenes 3-5 mm long, covered by the persistent calyx.

Rare in inland and littoral forests.

*Fl. & Fr.* : June - Dec.

Campbell Bay; 10 km on east-west road.

## ULMACEAE

About 15 genera & 200 species, tropical & temperate regions; 2 genera & 2 species in Gt. Nicobar Island.

- |   |                                 |                      |
|---|---------------------------------|----------------------|
| 1 | a. Leaves 3 nerved at base..... | 2. <i>Tremma</i>     |
|   | b. Leaves pinnately nerved..... | 1. <i>Gironniera</i> |

### 1. **GIRONNIERA** Gaud.

Trees or shrubs. Leaves usually entire; stipules intrapetiolar. Flowers dioecious in cymes or fascicles. Perianth 5-partite. Style 2-lobed. Drupes usually keeled.

About 30 species; 1 in Gt. Nicobar Island.

**Gironniera subaequalis** Planch. Ann. Sci. Nat. III, 10 : 339. 1848.

Trees, *ca* 10 m high. Leaves ovate-elliptic or elliptic-oblong, unequal at base, long acuminate at apex, *ca* 20 x 11 cm, entire or distantly serrulate for upper half; lateral nerves 6-8 pairs; ascending, flat above, raised beneath, scaberulous; petioles *ca* 1.4 cm long; stipules linear lanceolate. Cymes branched panicle, axillary; female flowers globular, clustered. Style persistent; stigma bifid, hairy, stigmatic arms, *ca* 1.5 cm long. Drupes *ca* 0.8 x 0.6 cm, solitary or 2-3, ovoid, compressed.

Rare in inland forests.

*Fl. & Fr.* : Jan. - Aug.

19 km on east-west road; Laful.

India (A & N Islands); Java, Malay Peninsula.

## 2. **TREMMA** Lour.

Trees or shrubs. Leaves 3 nerved at base, serrate. Flowers in axillary, subsessile cymes. Perianth 4-5 partite. Torus pilose. Drupes ovoid.

About 30 species, tropics & subtropics; 1 in Gt. Nicobar Island.

***Tremma tomentosa* (Roxb.) Hara, Fl. Eastern Himalayas 2 : 19. 1971.**

Shrubs or medium sized trees, *ca* 8 m high; branchlets clothed with white hairs. Leaves broadly ovate to ovate-elliptic, subcordate or rounded at base, mostly asymmetrical, acute to acuminate-caudate at apex, acumens *ca* 3 cm long, *ca* 16 x 7 cm, serrulate, scaberulous above, completely silky velvety beneath; nerves 4-6 pairs, ascending; petioles *ca* 1.2 cm long, densely pubescent. Cymes 5-15 flowered, pubescent. Tepals 4-5, ovate, acute. Ovary *ca* 0.1 cm long. Stigmatic arms slender, *ca* 0.1 cm long. Drupes *ca* 0.2 x 0.1 cm, ovoid, blue or black at maturity.

Common on sandy loam soil & in inland forests.

*Fl. & Fr.* : May - Sept.

Dogmar river, 4 and 34 km on north-south road; Campbell Bay.

**CASUARINACEAE**

Monotypic genus; 1 species in Gt. Nicobar Island.

**CASUARINA** Adans.

Trees or shrubs. Leaves reduced to subulate scales. Flowers minute. Carpophore ellipsoid, enclosed in the hard enlarged bracteoles.

About 40 species in the tropics; 1 in Gt. Nicobar Island.

*Casuarina equisetifolia* L., Amoen. Acad. 4 : 143. 1759.

Trees, ca 30 m high. Leaves 10-18 cm long, reduced to subulate scales in whorls of 6-7, connate at base. Flowers dioecious, minute. Male flowers in slender terminal spikes; tepals 2, lanceolate, ciliate; Stamens 1. Female flowers in ovoid bracteate heads. Tepals 0. Carpophore ca 2.5-3.5 x 1.5 cm, ellipsoid, enclosed in the hard enlarged bracteoles.

Common in littoral forests.

*Fl. & Fr.* : March - Sept.

3 km way back to Navy Dera; Campbell Bay.

**CERATOPHYLLACEAE**

Monotypic genus & several species in tropics & subtropics; 1 species in Gt. Nicobar Island.

**CERATOPHYLLUM** L.

Submerged, slender rootless herbs. Leaves whorled, dichotomously branching into toothed, linear segments. Flowers solitary, axillary, unisexual, regular. Perianth 6-12, scale like segments, persistent. Staminate flowers with 12-30 stamens; pistillode absent. Pistillate flowers without staminodes; ovary superior, sessile, 1-locular; style one; stigma simple. Fruit a warty nutlet, tipped with persistent style, with or without 2-spines near base.

About 10 species, tropics; 1 in Gt. Nicobar Island.

**Ceratophyllum demersum** L., Sp. Pl. ed. 1 : 992. 1753.

Aquatic monoecious rootless herbs, usually free floating, stem 20-30 cm, branched, densely leafy. Leaves finally dissected, segments linear or filiform, dentate. Flowers minute, axillary, solitary, sessile. Fruits ovoid or ellipsoid, straw coloured, tuberculate with 3 spines, *ca* 6 x 2 mm.

Rare in stagnant water.

*Fl. & Fr.* : June - Sept.

Galathea Bay (Thothathri *et al.*, 1975)

Description is based on literature.

## MONOCOTYLEDONS

### HYDROCHARITACEAE

About 16 genera and over 80 species, tropical & subtropical; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Leaves *ca* 100 x 1.7 cm; rhizome 1-2 cm thick, without scales; roots stout.  
..... 1. *Enhalus*
- b. Leaves 16 x 1.2 cm; rhizomes 0.2-0.5 cm thick, scales present; roots thin.  
..... 2. *Thalassia*

#### 1. ENHALUS L.C. Rich.

Submerged marine herbs; rootstock stout with fibrous strands. Leaves distichously arranged, 1-6, ribbon like, subamplexicaule, sheathing at base; scales absent. Flowers unisexual. Males small, white, numerous, in a 2-valved spathe. Female flowers much larger, solitary, in a 2-valved spathe. Fruits beaked, indehiscent; seeds cone shaped.

About 1 species, Indo-Malayan & Australian; 1 in Gt. Nicobar Island.

**Enhalus acoroides** (L.f.) L.C. Rich. ex Steud., Nom. Bot. ed. 2. 1 : 554. 1840.

Herbs, *ca* 2 m high. Leaves 1-6-ribbon like. Male flowers many, pedicellate, crowded on central conical axis; sepals and petals 3, transparent; stamens 3; pistillodes absent. Female inflorescences on long peduncles, 1 flowered, enclosed by 2 persistent spathes; sepals 3, rigid, reddish brown; petals 3, membranous, crested with numerous tanin cells; staminodes absent; ovary 1-locular with 3 carpels; styles 6, bipartite. Fruits ovoid, beaked; seeds few, obconical, testa mucilagenous.

Rare in shallow water.

*Fl. & Fr.* : Throughout the year.

Pulobaha Bay.

## 2. *THALASSIA* Banks & Soland ex Koenig.

Submerged marine herbs; rhizomes creeping, terete, rooting at nodes. Shoots erect with 2-6 distichously arranged leaves. Leaves linear, differentiated into sheaths and lamina; ligules absent. Inflorescences pedunculate, single flowered, subtended by 2 spathes. Flowers unisexual. Male flowers shortly pedicelled; tepals 3, elliptic; stamens 3-12. Female flowers subsessile; tepals 3; ovary muricate, 1-3 locular; hypanthium partly persistent; styles 6-8, bipartite. Fruits globose, warted, beaked; seeds conical.

About 2 species, coasts of Carribean, India & Pacific Ocean; 1 in Gt. Nicobar. Island.

*Thalassia hemprichii* (Ehrenb.) Aschers in Petermann, Mitt. 17 : 242. 1871.

Perennial herbs; rhizomes covered with scales. Leaves broadly linear, coriaceous with numerous parallel veins, *ca* 20 x 0.8 cm; sheathing at base. Peduncles 1-3, 1-flowered. Spathes connate on one side or on both sides. Staminate flowers short pedicelled; stamens 3-12, light yellow. Pistillate flowers subsessile; ovary 1-celled. Fruits beaked; seeds few.

Rare in shallow sea water.

*Fl. & Fr.* : Dec. - April.

Alexandra river towards east-west road.

### BURMANNIACEAE

About 17 genera and 125 species, tropics and subtropics; 1 genus and 1 species in Gt. Nicobar Island.

### BURMANNIA L.

Herbs. Leaves in basal rosettes and few scattered on stem; upper sometimes reduced to scales. Flowers solitary, fascicled or unilateral or branches of forked cymes. Perianth tubular, 3-winged; lobes 6, biseriate. Stamens 3. Ovary 3-celled; stigmas 3. Fruits dehiscent or indehiscent capsules; seeds many.

About 60 species, tropics & subtropics; 1 in Gt. Nicobar Island.

**Burmattia championii** Thw., Enum. Pl. Zeyl. 325. 1864; Hajra in Fascicles Fl. India 19 : 9. 1988.

Saprophytic, rhizomatous herbs, *ca* 6 cm high; stems slender, white, scaly. Scales spirally arranged, lanceolate acute, *ca* 4 cm long. Flowers yellowish white, *ca* 12 mm long. Outer perianth lobes erect, acute with involute lateral lobes; inner lobes spatulate. Stamens 3. Ovary oblong-obovoid; style filiform. Capsules ellipsoid, dehiscing irregularly; seeds many, dark brown.

Rare in inland forests, along streams.

*Fl. & Fr.* : June - Sept.

36.8 & 17 km on east-west road, Campbell Bay to Chengappa Bay.

India (Nicobar Islands); Sri Lanka, Indonesia, Malay Peninsula, Japan, New Guinea, China.

### ORCHIDACEAE

About 735 genera and 20000 species, cosmopolitan but most abundant in tropics; 27 genera, 33 species and 3 varieties in Gt. Nicobar Island.

- 1 a. Mainly terrestrial herbs without aerial roots; stems not pseudobulbous; leaves plicate, convolute, not succulent, not articulate to stem; inflorescences terminal; anther wall not caducous; pollinia soft, granular or sectile.....2
- b. Terrestrial or epiphytic plants, often with aerial roots; shoots with pseudobulbous stems or monopodial; leaves articulate to stems, cuspidate & more or less coriaceous or succulent; inflorescences lateral or rarely terminal; anther wall often drying up after anthesis into a caducous operculum; pollinia hard, very rarely soft. ....6
- 2 a. Base of stem erect with a close fascicle or coarse roots. ....7. *Corymborkis*
- b. Plants with decumbent stem like rhizome, rooting at the nodes; the apex curving upwards and bearing a terminal inflorescence.....3
- 3 a. Flowers resupinate i.e. upside down. ....4
- b. Flowers not resupinate.....13. *Hetaeria*
- 4 a. Lip hairy within..... 12. *Goodyera*
- b. Lip with a single gland or small group of papillae on either side near base or in spur.....5
- 5 a. End of lip not widening into blade.....27. *Vrydagzynea*
- b. End of lip rather abruptly widened to a transverse blade, commonly bilobed, often dentate or fringed.....2. *Anoectochilus*
- 6 a. Pollinia soft, waxy, without stalks or with caudicle, only very rarely stipes; anthers erect in early ontogeny. ....7
- b. Pollinia cartilaginous or bony, usually with stipes; anther incumbent (i.e. lying on) already from earliest stages in ontogeny, often strongly deflexed at maturity.....19
- 7 a. Pollinia mealy or sectile, 2 or 4 or too soft to form definite pollinia, without caudicles; leaves if present not articulate. ....8
- b. Pollinia either mealy or hard if soft usually 8, with caudicles; leaves usually articulate.....9
- 8 a. Climbers; leaves fleshy, oblanceolate .....26. *Vanilla*
- b. Erect herbs, leaves not fleshy, suborbicular herbs leaves not fleshy suborbicular .....15. *Nervilia*
- 9 a. Pollinia 4, hard with caudicles, superposed or ovoid.....17. *Pholidota*
- b. Pollinia (2) 4 to 8, soft or hard, with distinct caudicles.....10

- 10 a. Pollinia 8 (rarely 4), rather soft; terrestrial plants without pseudobulbs; leaves plicate with lateral inflorescences.....11  
 b. Pollinia 4, 6, or 8 rather hard; epiphytic plants with or without pseudobulbs; leaves not plicate; inflorescences terminal.....12
- 11 a. Pollinia 8.....22. *Spathoglottis*  
 b. Pollinia 4.....18. *Plocoglottis*
- 12 a. Flowers with 8 pollinia.....13  
 b. Flowers with 2, 4 or 6 pollinia.....15
- 13 a. 8 pollinia without a common caudicle.....14  
 b. 8 pollinia with a common caudicle.....23. *Thelasis*
- 14 a. Column not divided apically into 2 erect arms.....10. *Eria*  
 b. Column divided apically into 2 erect arms, which carry the stigma on their inner side. ....5. *Ceratostylis*
- 15 a. Pollinia 4 or 6, with caudicles.....16  
 b. Pollinia 4 (rarely 2) naked, without caudicles.....17
- 16 a. Pollinia 6.....3. *Appendicula*  
 b. Pollinia 4.....19. *Podochilus*
- 17 a. The non-rhizomatous erect part of shoot consisting of several internodes, fleshy, pseudobulbous or not, or if dominated by uninodal pseudobulb then with seemingly terminal inflorescences. ....18  
 b. The erect part of shoot consisting of single pseudobulbous internode; inflorescences lateral from the rhizomatous part. ....4. *Bulbophyllum*
- 18 a. The shoots consisting of several, quite long, thin internodes, only upper most pseudobulbous and with a single foliage leaf and 1 to few flowered inflorescences; branching usually at base of pseudobulbous internodes....  
 .....11. *Flickingera*  
 b. Pseudobulbs evenly fleshy throughout or sometimes thickened at nodes with sheath bearing leaf throughout their length; flowers usually borne from many nodes, simultaneously, on old stems after leaves fallen; inflorescences short, few flowered. ....9. *Dendrobium*
- 19 a. Sympodial plants. ....8. *Cymbidium*  
 b. Monopodial plants.....20



- 20 a. Pollinia porate.....14. *Luisia*
- b. Pollinia not porate.....21
- 21 a. Two pollinia masses, each completely divided in more or less unequal semiglobular free halves.....22
- b. Two pollinia more or less but not completely cleft or split.....25
- 22 a. Column foot not distinct.....23
- b. Column foot distinct.....24. *Thrixspermum*
- 23 a. Lip with distinct longitudinal median septum in spur. ....6. *Cleisostoma*
- b. Lip without longitudinal septum in spur.....24
- 24 a. Back wall tongue places close to spur entrance, pilose.....25. *Trichoglottis*
- b. Back wall tongue places deep in spur, not pilose.....20. *Pomatocalpa*
- 25 a. Spur or sac placed centrally on lip, the epichile (terminal part of lip) reduced or fleshy.....21. *Pteroceras*
- b. Spur or sac if present developed from hypochile (basal portion of lip). ...  
.....26
- 26 a. Spur insignificant; usually 1-forward pointing bifurcate appendage on lip flowers few, distichous..... 16. *Phalaenopsis*
- b. Spur conspicuous; forward pointing bifurcate appendage absent; flowers many, quaquaversal simultaneous..... 1. *Aerides*.

### 1. *AERIDES* Lour.

Epiphytic; stems rather long. Leaves bilobed. Flowers in long racemes, numerous, showy. Sepals broad, spreading, laterals adnate to column foot. Petals broad. Lip adnate to end of column foot, side lobes usually large (or absent), midlobe larger; spur pendent, calli absent. Column short. Anther 2-celled. Pollinia 2, globose. Rostellum bifid. Capsules oblong.

About 40 species, Indo-Malaya & China; 1 in Gt. Nicobar Island.

*Aerides emericli* Reichb.f. in Gard. Chron. 586. 1882.

Stems leafy, pendulous, ca 18 cm high. Leaves linear, thick, 2-lobed at apex, ca 30 x 4 cm. Racemes ca 30 cm long. Flowers pinkish or pale lilac, ca 1.25 cm in diam. Lip spurred; midlobe lanceolate, acute; side lobe rounded, entire; spur short, stout.

Frequent in coastal as well as inland forests.

*Fl. & Fr.* : April - July.

36 km on east-west road, Campbell Bay, Kopenheat.

*Note* : Endemic to Nicobar Islands.

## 2. ANOECTOCHILUS Bl.

Terrestrial; stems ascending. Leaves ovate-lanceolate, petiolate. Scapes glandular. Flowers medium sized. Upper sepals adnate to petals forming hood, lateral spreading. Lip adnate to column base; lateral lobes erect, midlobe bilobed. Column short with 2 wings in front. Pollinia clubbed on shield like disc. Rostellum long, 2 fid.

About 25 species. Indo-Malayan to China; 1 in Gt. Nicobar Island.

**Anoectochilus nicobaricus** Balakr. & T. Chakrab. in Bull. Bot. Surv. India 20 : 80. 1979. 'Jewel Orchid'.

Herbs *ca* 30 cm high, stems creeping below. Leaves 3-4, ovate-elliptic, obliquely rounded at base, acute at apex, *ca* 6 x 4 cm, dark-purplish with golden, reddish venation above, petioles *ca* 1.5 cm long. Inflorescences 4-8-flowered, solitary, terminal. Scapes *ca* 15 cm long. Flowers 4-6 per rachis, white, reddish hairy outside on sepals with 2 pink spots at apex of lip.

Rare in shaded places, inland forests.

*Fl.* : Nov. - Dec. ; *Fr.* : Not known.

6 km on east-west road, Galathea river.

*Note* : Endemic to Great Nicobar Island.

## 3. APPENDICULA Blume

Epiphytic; stems erect, leafy. Leaves distichous, articulate with sheaths. Flowers in axillary or subterminal racemes. Bracts persistent.

Upper sepals lanceolate, lateral prolonged below into mentum. Petals smaller. Lip base saccate adnate to column foot, entire; callus horse shoe shaped at base of lip. Column short, thick. Pollinia 4-8, pear shaped. Rostellum ovate-lanceolate, 2-fid. Capsules small, elliptic.

About 100 species, Indo-Malayan; 1 in Gt. Nicobar Island.

**Appendicula reflexa** Blume, Bijdr. 7 : 301. 1825.

Herbs; stems *ca* 40 cm high with numerous distichous leaves. Leaves oblong-elliptic, obtuse or rounded, shallowly 2-lobed at apex, base articulated with tube like sheaths, *ca* 4 x 1.3 cm. Racemes head like, terminally or laterally throughout stem. Flowers greenish-white.

Rare in inland forests.

*Fl. & Fr.* : June - Nov.

20 km on north-south road, Campbell Bay to Chengappa Bay, Galathea Bay.

India (Great Nicobar Island) Thailand, Sumatra, New Guinea.

#### 4. **BULBOPHYLLUM** Thou.

Epiphytic herbs, with creeping rhizome and 1-jointed pseudobulb. Leaves 1-2, subterminal on pseudobulbs. Inflorescences umbellate or racemes, on separate scape from rhizome. Flowers without mentum. Sepals unequal. Petals shorter than lateral sepals. Lip fleshy, sessile or clawed, entire, sometimes auricled at base, spathulate. Column short. Pollinia 4.

About 400 species, tropics; 1 in Gt. Nicobar Island.

**Bulbophyllum macranthum** Lindl., Bot. Reg. 30 : t. 13. 1844.

Herbs, *ca* 40 cm high; internodes *ca* 15 cm long; sheaths *ca* 3 cm long, with groups of fibres; pseudobulbs *ca* 5 cm long. Leaves oblong, broad and retuse at apex, narrowed at base, *ca* 20 x 6 cm; petioles *ca* 2.5 cm long. Flowers solitary, *ca* 5.5 cm long, resupinate, fragrant, purplish white; pedicels *ca* 2 cm long; bracts 3, hyaline. Column foot *ca* 5 mm

long, 3 lobed. Gynostegium 3 mm long; operculum oblong, hooded, *ca* 2 mm long. Capsules cylindric, oblong, ridged, blunt at apex, *ca* 3.5 cm long.

Common in littoral forests.

*Fl. & Fr.* : June - Nov.

2 km on north-south, Campbell Bay, Lakshman beach.

India (Great Nicobar Island); Thailand, Sumatra to New Guinea.

### 5. CERATOSTYLIS Bl.

Epiphytes; pseudobulbs absent; stems simple or branched. Leaves 1 or 2, fleshy. Flowers solitary or in tuft. Lateral sepals forming mentum. Petals narrow. Lip adnate to column foot by claw, blade entire, fleshy. Column short, tip broad. Pollinia 8.

About 50 species, Indo-Malaya, Polynesia; 1 in Gt. Nicobar island.

*Ceratostylis subulata* Bl., Bijdr. 7 : 206. 1825.

Herbs, *ca* 20 cm high; stems terete. Leaves crowded at apex, *ca* 5 cm long. flowers solitary or paired, creamy-white or yellow, *ca* 8 mm. Lip spathulate, clawed at base, thick at apex; disk with 2 raised lines. Column short, 2 lobed; foot long.

Rare in inland forests, shady places.

*Fl.* : Aug. - Dec.; *Fr.* : Not known.

Campbell Bay, 17 km on east-west road, Near Galathea Bridge, east-west road, Laful.

### 6. CLEISOSTOMA Bl.

Epiphytic herbs; stems pendulous. Leaves flat or terete, unequally 2-lobed. Inflorescences simple or branched panicles or racemes. Flowers spreading. Sepals & petals alike. Lip saccate, 3-lobed; lateral lobes erect, 3-angular; midlobe semiorbicular. Column short. Pollinia 2, often unequally split in halves.

About 90 species, south-east Asia; 1 in Gt. Nicobar Island.

**Cleisostoma uralense** (Hayata) Garay & Sweet in Orchid. S. Ryukyu Isl. 156. 1974.

Herbs, *ca* 40 cm high; stems leafy, pendulous. Leaves jointed, distichous, linear, bilobed at apex, *ca* 25 x 2 cm. Panicles *ca* 23 cm long, opposite to leaves. Flowers greenish yellow. Lip 3 lobed, spurred; lateral lobes falcate triangular; midlobe fleshy, with 2 fleshy calli on ventral surface & white callus at base near entrance to spur. Spur oblong, *ca* 1.5 mm long, septate, with thin retuse appendage. Column short. Pollinia 4 in 2 pairs. Capsules obovate.

Rare in littoral forests.

*Fl. & Fr.* : July - Oct.

Campbell Bay, Galthea river, Chengappa Bay.

India (Great Nicobar Island); Philippines, Taiwan, Formosa, Java, Malay Peninsula.

## 7. **CORYMBORKIS** Thou.

Terrestrial herbs. Flowers large, white, in short sessile, axillary panicles. Sepals & petals linear-spathulate. Column as long as petals, tip clavate, 2-lobed. Pollinia 2, pyriform. Rostellum shortly 2-fid. Capsules fusiform.

About 6 species, Africa, Indo-Malaya & Australia; 1 in Gt. Nicobar Island.

**Corymborkis veratrifolia** (Reinw.) Bl., Coll. Orchid. Arch. Ind. 125, tt. 42e & 43. 1859.

Leafy herbs, *ca* 1 m high. Leaves 2-seriate in lower part, spirally arranged in upper part, elliptic lanceolate, caudate-acuminate, sessile on sheaths, *ca* 45 x 10 cm. Panicles axillary, *ca* 15 cm, with several flowers. Flowers greenish-white. Lip erect from base of the column, linear, channelled, tip dilated, recurved, blade lanceolate. Column *ca* 2.7 cm long, tip clavate 2-lobed. Capsules greenish, linear, *ca* 2.5 cm long.

Common in inland & coastal forests.

*Fl. & Fr.* : June - Sept.

Casuarina Bay & Pulokunio, 20 km on north-south road, 25 km on east-west road, near Galathea, Pulokunji, Indira point.

### 8. CYMBIDIUM Sw.

Epiphytic or terrestrial with pseudobulbs. Racemes lateral, many flowered, erect or pendulous. Scape at base with sheaths. Flowers long pedicelled; bracts various. Sepals & petals subequal. Lip 3-lobed. Column long winged, without a foot. Pollinia 2, sessile on a strap-shaped gland.

About 50 species, Asia, Australia, Africa; 1 in Gt. Nicobar Island.

*Cymbidium bicolor* Lindl., Gen. Sp. Orchid. 164. 1833.

Epiphytic herbs; pseudobulbs covered with sheathing blades. Leaves 6-9, narrowly lanceolate, lorate, obliquely 2 lobed at apex, ca 35 x 2 cm; sheaths ribbed. Racemes ca 25 cm long, drooping, arising from base of pseudobulbs. Flowers 8-12, brownish red, ca 3.5 cm across. Petals greenish, yellow at margin, purplish brown band in middle. Lip ca 1.7 cm long, lobed, pale yellow, margins undulate, purplish-brown. Pollinia 2, furrowed.

Rare in inland forests.

*Fl.* : Aug. - Sept.; *Fr.* : Not seen

Campbell Bay.

### 9. DENDROBIUM Sw.

Epiphytic; stems sympodial with elongate or pseudobulbous shoots. Leaves fleshy. Flowers in short or long racemes, axillary. Dorsal sepals and lateral petals free, similar, lateral sepals adnate to column foot forming mentum. Lip varied, without or with callus at base, 3-lobed. Column short, angled or 2 toothed at tip; foot often long. Pollinia 4, without caudicles. Capsules elliptic or pear shaped.

About 900 species, tropical Asia, Japan, & Australia; 3 in Gt. Nicobar Island.

- 1 a. Plants maximum 25 cm high.....*D. shompenii*
- b. Plants more than 60 cm high.....2
- 2 a. Stems wiry without fleshy swollen internodes.....2. *D. pensile*
- b. Stems with at least some of the internodes fleshy, swollen.....  
.....1. *D. crumenatum*

**1. *Dendrobium crumenatum* Swartz in Schrad., J. Bot. 2 : 237. 1799.**

Epiphytic herbs, *ca* 60 cm high, often leafless when in flowers; stems lower part swollen into pseudobulbs. Leaves distichous, ovate-oblong, 2 lobed at apex, contracted at base, *ca* 6 x 2.5 cm, articulated with sheaths. Racemes 1 or rarely-flowered at the internodes of long leafless stem. Flowers white or tinged with pink, fragrant. Lip obovate-oblong, 3 lobed, terminal lobes ovate, crenulate denticulate. Column *ca* 2 mm long; foot with yellow fan-shaped gland at base. Pollinia ovate-oblong.

Scattered in littoral & inland forests.

*Fl.* : Aug. - Sept; *Fr.* : Not seen.

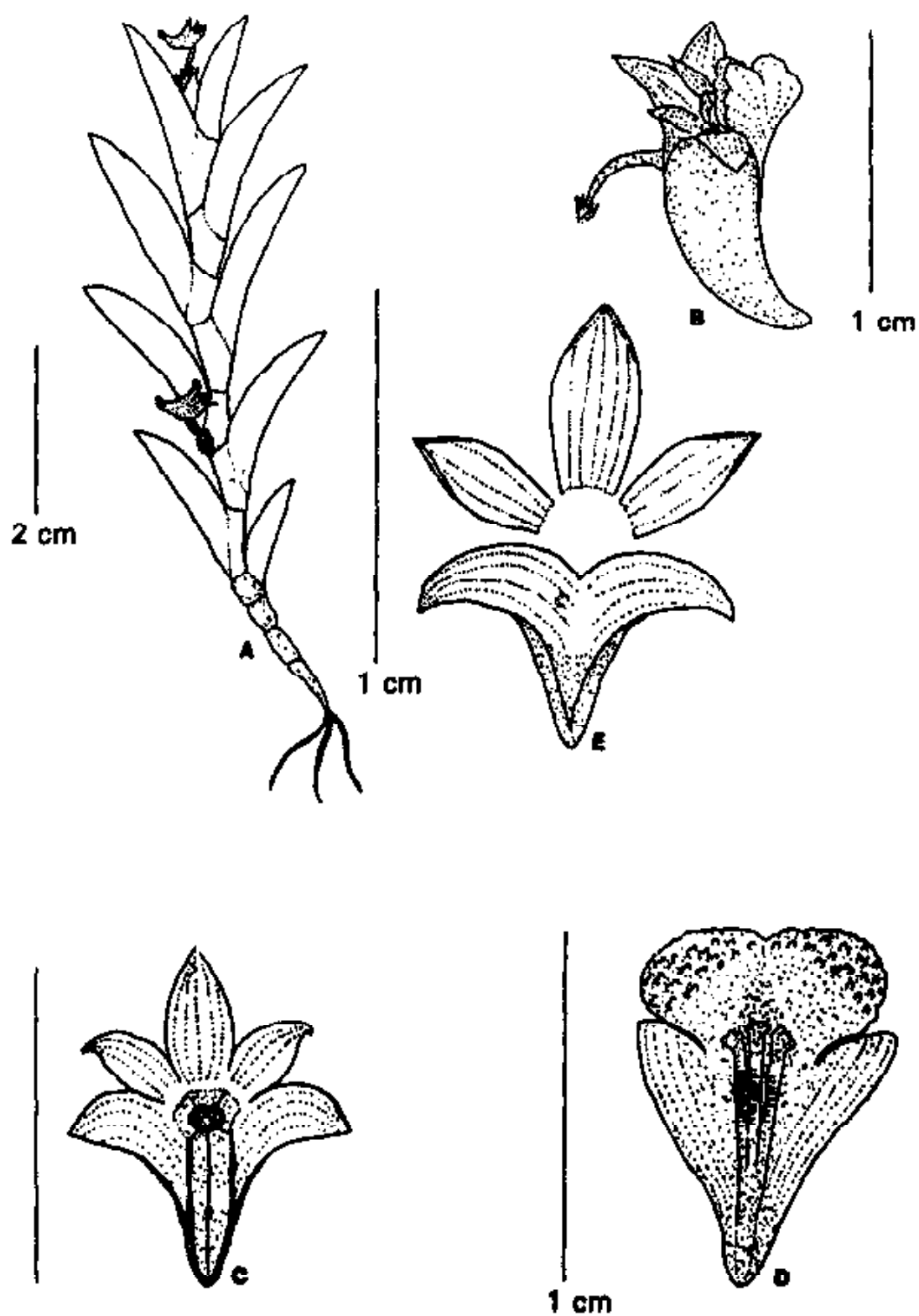
Campbell Bay, Kopenheat to Koshin Don, 15 km on north-south road.

India (Andaman & Nicobar Islands); Sri Lanka, Myanmar, Indo-China, Taiwan, Malay Peninsula, Java, Philippines.

**2. *Dendrobium pensile* Ridl., in J. Linn. Soc. 32 : 253. 1896.**

Pendulous herbs, *ca* 1 m high; stems covered with leaf sheaths. Leaves elliptic-lanceolate, oblong-lanceolate, narrowed at base, acute & minutely bidentate at apex, *ca* 10 x 2.5 cm, fleshy. Inflorescences 2 flowered. Flowers pale yellow, *ca* 1 cm long. Lip 3 lobed, wavy at margins, *ca* 8 x 4 mm; lateral lobes 3 angular, median ovate, acute, curved at tip; disc with many tubercles & 3 keels in middle. Column ovoid, 3 dentate at tip; foot curved.

Rare in inland forests.



*Dendrobium shompenii*. A. Habit; B. Flower lateral view; C. Flower front view, lip removed; D. Lip; E. Sepals and petals.



15 km on north-south road, 41 km on east-west road.

India (Nicobar Islands); Malay Peninsula, Singapore.

3. **Dendrobium shompenii** B.K. Sinha & P.S.N. Rao in Nord. J. Botany 18(1): 27-30. 1998.

Epiphytic herbs *ca* 25 cm high; stem with clasping leaves *ca* 6 mm wide. Leaves leathery, distantly distichous, 4-5 x 0.6 -0.8 cm nearly lanceolate, acuminate at apex, oblique at base, adaxial side convex, reflexed from the axis; sheaths 7-8 mm long, covering the stem. Inflorescences axillary and terminal; sterile bracts minute, scaly. Ovary with pedicel 6 mm, smooth. Flowers pale greenish yellow often with purple markings, *ca* 12 mm long. Sepals greenish yellow; dorsal sepal elliptic obovate, sub-acute, 5-nerved, smooth, 5 x 3 mm; lateral sepals obliquely elliptic, sub-acute, 4-nerved, smooth, 5 x 3 mm. Mentum distinctly larger than the dorsal sepal, hooded, *ca* 8 mm long. Petals elliptic obovate, acute at apex, 3-nerved, 4 x 2 mm, whitish yellow. Lip membranous, spatulate or obovate, spreading, 10 mm long with small side lobes and broad mid lobe, epichile retuse to bilobed, keeled with prominent lobed shining glands on the adaxial surface, 4 mm long; hypochile fan-shaped, 4-nerved, *ca* 7 mm long; keel running from the base of the lip to the base of the epichile, tripartite in its distal part, lateral branches short, middle one large, very prominent. Anthers bilocular, each locule containing 2 pollinia.

*Fl.*: March-May; *Fr.*: Not known.

Rare, growing epiphytically in semi-shaded condition, often on *Citrus* L. species.

27 km on east-west road from Campbell Jetty, near Shompen hut.

*Note*: Endemic to Gt. Nicobar Island.

#### 10. **ERIA** Lindl.

Epiphytes with swollen or depressed pseudobulbs. Leaves many or 2-3 only at the top of stem. Flowers generally in racemes, axillary or terminal. Sepals unequal; laterals forming mentum by attachment to column foot. Petals narrower. Lip sessile on the end of foot, 3-lobed. Column short.

Pollinia 8, pyriform, united in 2 groups of 4 with slender membranous caudicles. Capsules narrow, cylindric.

About 400 species, tropical Asia; 1 species & 2 varieties in Gt. Nicobar Island.

- 1 a. Pseudobulbs *ca* 3.75 cm long; leaves oblong-lanceolate, *ca* 23 x 2 cm; flowers white; lip with reddish lamellae on disc..... 1. *E. bractescens* var. *bractescens*
- b. Pseudobulbs *ca* 7.5 cm long; leaves elliptic, *ca* 12.5 x 5 cm; flowers white with pinkish brown lip..... 2. *E. bractescens* var. *kurzii*

**1. *Eria bractescens* Lindl. in Edw. Bot. Reg. 27. 1841. var. *bractescens***

Herbs with short rhizome; pseudobulbs with 2-5 leaves at apex. Leaves oblong-lanceolate, obtuse at apex, attenuate at base, *ca* 23 x 2 cm. Spikes *ca* 13 cm long. Flowers white, showy. Lip oblong, 3 lobed; lateral lobes long, falcate, acute, lanceolate, rosy; midlobe obovate, white. Column long; foot short, white with a rosy spot.

Rare in inland forests.

*Fl. & Fr.* : May - Aug.

Campbell Bay, Galathea Bay.

**2. *Eria bractescens* var. *kurzii* Hook. f., Fl. Brit. India 5 : 797. 1890.**

Epiphytic herbs; pseudobulbs with 2-4 leaves at apex. Leaves elliptic, acute at apex, attenuate at base, *ca* 18 x 5 cm. Spikes *ca* 18 x 5 cm long, many flowered. Flowers white with pinkish brown lip. Lip pinkish brown, ridges yellowish, 3 lobed.

Common in littoral forests.

*Fl.* : March - May; *Fr.* : Not seen.

Campbell Bay.

*Note* : Endemic to Andaman & Nicobar Islands.

**11. FLICKINGERA Hawkes**

Epiphytic herbs; stems drooping with pseudobulbs, arising at base of pseudobulbs. Flowers solitary, fragile, with small chaffy bracts at base. Mentum rather long. Lip 3-lobed; lateral lobes rising on either side of column, midlobe varying in shape, with 2-3 keels.

About 70 species, south-east Asia, Philippines; 1 in Gt. Nicobar Island.

**Flickingera fimbriata** (Bl.) Hawkes in Orch. Weekly 2. 46 : 454. 1961.

Herbs; stems much branched, rooting at nodes; pseudobulbs yellowish green, *ca* 7.5 x 1.5 cm. Leaves solitary on pseudobulbs, oblong-lanceolate to obovate, *ca* 18 x 4.5 cm. Flowers solitary in leaf axil at apex of pseudobulb, *ca* 2.2 x 3 cm, white to creamy yellow. Lip 3-lobed, creamy white with brownish red spots on side lobes; midlobe obovate, plicate, much folded sides, 2 fid at apex; keels on lip 3. Column 3-lobed at apex; foot longitudinally grooved. Pollinia 4.

Rare in inland forests.

*Fl. & Fr.* : June - Sept.

Kopenheat, 25 & 31 km on east-west road.

India (A & N Islands); Thailand, Malaysia, Celebes, Philippines, Java.

**12. GOODYERA R. Br.**

Terrestrial herbs. Leaves ovate-lanceolate, petioled. Flowers spicate. Upper sepals forming hood with petals, laterals free. Lip saccate attached to column, no side lobes or claw, boat shaped, tip small, acute, recurved with 1 or 2 calli or hairy within sac. Column short. Pollinia 2-4, club shaped, with 1 or 2 caudicles on small disc.

**Goodyera procera** (Ker.-Gawl.) Hook. f., Exot. Fl. 1 : t. 39. 1823.

Caespitose herbs; stems fleshy, *ca* 60 cm high, many leaves at base. Leaves elongate oblong, acute at apex, cuneate at base, *ca* 20 x 6 cm, 5-7

nerved; petioles *ca* 8 cm long, shortly sheathing at base. Spikes terminal, *ca* 15 cm long, many flowered. Flowers small, *ca* 3 mm in diam., whitish, fragrant. Petals spatulate. Lip semiglobose, *ca* 2.5 mm long, reflexed at apex, with glandular hairs and 2 callose protuberances inside. Column 2.5 mm long. Rostellum deeply cleft. Pollinia 2, granular.

Rare in shady humid places.

*Fl. & Fr.* : May - Aug.

Nevy Dera

### 13. HETAERIA Bl.

Terrestrial herbs. Spikes slender, dense. Upper sepals usually adnate to petals, pubescent. Lip uppermost boat-shaped with 2 or more calli inside, tip narrow, sides involute and often connate into tube. Column rather large with long rostellae arms. Pollinia 2, clavate, 2-fid, divided into numerous lobules on short stipe, ending in a small viscidium. Capsules ovoid-ellipsoid.

About 20 species, Africa, Indo-Malaya & Polynesia; 2 in Gt. Nicobar Island.

- |   |    |                                                                              |                           |
|---|----|------------------------------------------------------------------------------|---------------------------|
| 1 | a. | Herbs, <i>ca</i> 1 m high; leaves lanceolate, <i>ca</i> 7.5 x 2.5 cm. ....   | 1. <i>H. obliqua</i>      |
|   | b. | Herbs, <i>ca</i> 50 cm high; leaves ovate-elliptic, <i>ca</i> 9 x 4 cm. .... | 2. <i>H. oblongifolia</i> |

1. *Hetaeria obliqua* Bl. in Coll. Orchid. Arch. Ind. 104, t. 34, f. 1. 1858.

Herbs, *ca* 1 m high; stems long creeping, stout. Leaves oblique-lanceolate, dark green, often with median silver bar, *ca* 7.5 x 2.5 cm; petioles *ca* 2.5 cm long; sheathing at base. Scapes slender, pubescent. Spikes terminal *ca* 25 cm long. Flowers numerous, white dull red. Lip small, base boat-shaped, edges meeting at tip, rolled into narrow tube, then open spoon-shaped, white, 2 triangular toothed calli in lip. Column yellow. Pollinia 2-club-shaped.

Rare in inland forests.

*Fl.* : March - April; *Fr.* : Not seen.

Campbell Bay, Casuarina Bay.

India (Nicobar Islands); Malay Peninsula, Indonesia.

**2. *Hetaeria oblongifolia* (Bl.) Bl., Coll. Orch. t. 32. 1858.**

Herbs, *ca* 50 cm high. Leaves spirally arranged, obliquely ovate-elliptic to ovate-lanceolate, oblique at base, acute at apex, *ca* 10 x 4.5 cm, many nerved; petioles *ca* 3 cm long, sheathing at base. Spikes terminal, *ca* 30 cm long. Scape *ca* 20 cm long. Flowers many, whitish yellow, *ca* 5 mm long. Sepals pale yellow. Petals elliptic-obovate, 3-nerved, whitish yellow. Lip boat-shaped, *ca* 5 mm long, inside with prominent median ridge & 2 slender lateral ridges on either side, each lateral ridge at base with 2 or 3 fleshy appendages. Column *ca* 3 mm long, with 2 keels. Pollinia 2, clavate, 2 fid. Capsules ovoid-ellipsoid.

Rare on low hilly moist forest floor.

*Fl. & Fr.* : March - Sept.

Laful.

India (Nicobar Islands); Myanmar, Bangladesh, Java, Malay Peninsula, New Guinea & Australia.

**14. *LUISIA* Gaud.**

Epiphytic herbs; stems elongate, terete. Leaves fleshy, terete. Inflorescences extra axillary, many flowered spikes, rarely solitary. Flowers resupinate. Bracts persistent. Sepals oblong. Petals oblong, often longer and narrower. Lip sessile on a column, lateral lobes small, midlobe oblong or round, flat, spurless. Column short. Pollinia 2, globular, furrowed; caudicle flat.

About 30 species, Indo-Malaya, Polynesia; 1 in Gt. Nicobar Island.

***Luisia zeylanica* Lindl., Fol. Orchid. Lusie 3 : 1853.**

Herbs *ca* 20 cm with pseudobulbs ; stems terete, rigid, *ca* 18 cm long, surrounded by closely appressed tubular sheaths of leaves. Leaves stout, *ca* 12 cm long, slightly arched. Flowers small, few in axillary spikes *ca* 5 mm diam., purplish green. Lip fleshy, *ca* 4mm, usually 3 lobed; basal lobe subquadrate, longitudinally grooved. Column short, dark purple. Pollinia subglobose. Capsules pale greenish.

Rare in inland forests, marshy places.

*Fl. & Fr.* : May - Nov.

Kopenheat, 4 km on east-west road.

#### 15. *NERVILIA* Gaud.

Tuberous herbs usually with 1 cordate petioled leaf, appearing before the flowers. Leaves orbicular cordate, sometimes rounded, with diverging veins. Flowers in lax raceme or solitary, appearing after disappearance of leaf. Perianth connivent nodding, segments free. Lip entire (or 3 lobed) not spurred. Column long, thickening at apex. Pollinia 2-4, without disc or caudicle.

About 80 species, tropics & subtropics; 1 in Gt. Nicobar Island.

*Nervilia punctata* (Bl.) Makino in Bot. Mag. Tokyo 16 : 199. 1902.

Terrestrial 1 leaved herbs. Leaves suborbicular, cordate at base, 5 x 6 cm, 7-nerved; sheaths lower ovate-lanceolate, upper lanceolate, bilobed at apex; petioles *ca* 3 cm long. Inflorescences *ca* 18 cm long, 1 flowered. Flowers terminal, solitary, pale yellowish green with purplish spots. Lip 3 lobed, longitudinally keeled; lateral lobes ovate, midlobe oblong, subobtusate at apex, wavy at margins, white with light pink, purple spots inside. Column *ca* 6 mm long. Pollinia 2, furrowed, granular.

Rare in inland forests, prefers shady places.

*Fl.* : April - May; *Fr.* : Not known

Laful.

## 16. PHALAENOPSIS Bl.

Epiphytic herbs with short stem. Leaves oblong or obovate, few, coriaceous. Racemes short or long, pedicelled, sometimes several. Flowers showy. Sepals sub-equal. Petals larger. Lip spurless clawed or adnate to column base, 3-lobed; lateral lobes rounded, basally lobed on inner side, midlobe narrowed and variously awned at base. Column long. Pollinia 2 subglobose, cleft; caudicle with prominent glands.

About 35 species, Indo-China & Malaya; 1 species and 2 varieties in Gt. Nicobar Island.

1. *Phalaenopsis speciosa* Reichb. f. in Gard. Chron. n.s. 562. 1882.

- 1 a. Flowers white or rosy with darker blotch. Lip deep purple or reddish tinge, glabrous.....var. *speciosa*  
 b. Flowers ivory white, with reddish transverse patches. Lip yellowish, hairy.  
 .....var. *tetraspis*

var. *speciosa*

Herbs, ca 30 cm high. Leaves distichous, obovate-oblong-lanceolate, acute or obtuse at apex, cuneate at base, ca 30 x 6.5 cm, fleshy with short leaf sheaths. Racemes ca 30 cm long, many flowered. Flowers ca 5 cm in diam., white or rosy with darker blotches. Lip sessile, adnate to the foot of column, 3 lobed, deep purple or reddish tinge. Pollinia oblong.

Rare in inland forests.

Fl. : May - Aug. Fr. : Not known.

Laful.

Note : Endemic to Andaman & Nicobar Islands.

var. *tetraspis* (Reichb. f.) Sweet in Amer. Orch. Soc. Bull. 37 : 1092. 1968.

Herbs, ca 30 cm high. Leaves cuneately obovate, spatulate, ca 30 x 8 cm, thick, fleshy. Spikes ca 30 cm long, 3-5-flowered. Flowers white, with reddish transverse patches inside. Lip yellowish, hairy, base with 2 lobed thickening, each lobe with 2 subulate appendages. Pollinia oblong.

Rare in inland forests.

*Fl.* : May - Nov.; *Fr.* : Not seen.

17 km on east-west road, Navy Dera, Laful.

India (Andaman & Nicobar Islands); Java.

### 17. **PHOLIDOTA** Lindl.

Epiphytic herbs, with pseudobulbs, terminated by 1 or 2 leaves. Inflorescences terminal, racemose, many flowered. Flowers hidden with bracts. Lateral sepals boat-shaped, keeled, acute; dorsal broadly ovate, rounded. Petals narrower, linear, free. Lip deeply concave, saccate at base, 3 lobed. Column short, broadly winged. Pollinia 4, in 2 pairs, shortly attached to a membrane.

About 55 species, Indo-Malayan; 1 in Gt. Nicobar Island.

**Pholidota pallida** Lindl., Bot. Reg. Sub. t. 1777. 1836.

Herbs with creeping rhizome; pseudobulbs grooved, 2-5 cm in diam. with 1 or 2 leaves. Leaves elliptic lanceolate, acute at apex, *ca* 30 x 8 cm. Scapes arising from apex of rhizome. Racemes *ca* 40 cm long, drooping, flowers distichous. Bracts with 2 spiny projections at base, pale brown. Flowers yellowish white, small. Lip sessile, 3 lobed. Column short. Pollinia 4, waxy.

Rare in inland forests.

*Fl.* : June - Nov.; *Fr.* Not seen.

Baludera, Campbell Bay, Dogmar river, Chengappa Bay.

### 18. **PLOCOGLOTTIS** Bl.

Terrestrial herbs; rhizome creeping. Leaf 1 or several on stem, ovate-lanceolate, petioled. Scape from rhizome tall. Flowers in lax racemes. Sepals lanceolate. Lip shorter, clawed mobile, limb oblong. Column short, broad. Pollinia 4, each pair with a caudicle and round disc.



About 10 species, Malayan; 1 in Gt. Nicobar Island.

**Plocoglottis javanica** Bl., Bijdr. 380. t. 21. 1825.

Herbs *ca* 40 cm high; pseudobulbs *ca* 5 cm long. Leaves solitary on the pseudobulb, broadly elliptic, decurrent at base, acuminate at apex, *ca* 30 x 9 cm, 5-7 nerves; petioles *ca* 15 cm long. Inflorescences arising from base of pseudobulbs, lax racemes; peduncles *ca* 70 cm long, puberulous. Flowers pale yellow, *ca* 2.5 cm in diam. Sepals pale yellow with purplish pink spots. Petals yellow with pink blotches. Lip jointed to a short column foot, forming spur *ca* 2 mm long, 2 sided lobes at base, united to midlobe, acuminate recurved at tip. Pollinia subglobose.

Rare in dense inland forests.

*Fl.* : July - Nov.; *Fr.* : Not seen.

35 km on east-west road, laful.

India (Great Nicobar Island) Java, Malaya, Myanmar, Sumatra Thailand.

### 19. **PODOCHILUS** Bl.

Epiphytic, slender moss like herbs. Leaves distichous. Racemes terminal or lateral, few flowered. Flowers small. Upper sepals lanceolate; laterals broader forming mentum. Petals smaller. Lip little longer, entire or 3 lobed. Column short. Rostellum triangular, 2 fid. Pollinia 4 or 6, each pair enclosed in calyptriform caudicle. Capsules ellipsoid.

About 60 species, Indo-Malayan; 1 in Gt. Nicobar Island.

**Podochilus microphyllus** Lindl., Gen. Sp. Orchid. 234. 1835.

Much branched herbs; stems many, crowded together, *ca* 20 cm high. Leaves 2 ranked, closely arranged, narrowly elliptic, jointed & twisted at base, awned at apex, *ca* 9 x 2 mm. Racemes terminal or lateral, few flowered, *ca* 1.8 cm long. Flowers white with median purple lines one on each sepal & purple patch on centre of petals. Lip oblong-ovate, curved at middle, cordate at base, 3 nerved, attached to the tip of column foot,

divided at base into 2 lobes. Column with 2 arms. Pollinia 4, elongate, pyriform. Capsules ellipsoid, *ca* 3 mm long.

Rare in shaded inland forests.

*Fl. & Fr.* : Nov. - Aug.

30 & 35 km on east-west road.

India (Great Nicobar Island); Myanmar, Thailand, Malay Peninsula, Java.

## 20. **POMATOCALPA** Breda, Kuhl & v. Hass.

Epiphytic herbs. Leaves more or less distichous, linear or falcate, with persistent sheaths. Racemes axillary, short or long, densely flowered. Sepals & petals subequal. Lip with a saccate spur at base, 3 lobed; lateral lobes small, triangular; midlobe fleshy. Column short without foot. Rostellum 2 fid. Pollinia 2, divided into unequal halves, connected by slender stipe to a small viscidium.

About 30 species, south-east Asia, Philippines, Sri Lanka; 2 in Gt. Nicobar Island.

- 1 a. Racemes *ca* 15 cm long; flowers creamy yellow with pinkish brown striations..... 2. *P. wendlandorum*
- b. Racemes *ca* 40 cm long; flowers white with purple band within the margin. .... 1. *P. andamanicum*

1. **Pomatocalpa andamanicum** (Hook. f.) J.J. Sm. in Nat. Tijdschr. Ned. Ind. 72 : 173. 1912.

Epiphytic slender herbs. Leaves coriaceous, linear or falcate, recurved, unequally at apex, 2 lobed, *ca* 15 x 1.8 cm; sheaths annular. Racemes *ca* 40 cm long; bracts minute. Flowers *ca* 6 mm broad, white with purple band within margins. Lip 3 lobed, short truncate, yellow; midlobe very short, reniform; spur spotted with red, dorsal callus retuse. Pollinia globose. Capsules green.

Rare in inland forests.

*Fl. & Fr.* : June - Dec.

Campbell Bay.

*Note* : Endemic to Andaman & Nicobar Islands.

2. ***Pomatocalpa wendlandorum*** (Reichb. f.) J.J. Sm. in Nat. Tijdschr. Ned. Ind. 72 : 108. 1912.

Epiphytic herbs; stems short, *ca* 4 cm long. Leaves more or less distichous, narrowed at both ends, unequal at apex, *ca* 25 x 3 cm; midrib prominent; sheaths short, persistent. Flowers *ca* 2.5 mm in diam. Lip 3 lobed. Pollinia globose, strap linear, glands small. Capsules linear, oblong, *ca* 2.5 cm.

Rare in inland forests.

*Fl. & Fr.* : June - Dec.

Laful, Chengappa Bay.

## 21. **PTEROCERAS** van Hasselt & Hassk.

Epiphytic leafy or leafless herbs. Leaves articulate, fleshy. Racemes on the nodes, solitary or in pairs, simple often many flowered. Sepals & petals slightly differing or the lateral sepals broader and more or less decurrent along the column foot. Lip 3 lobed; median lobe very short, tuberos, sometimes lobed. Column slender, subclavate, often curved. Viscidium 2 lobed. Rostellum 2 dentate. Pollinia 2, borne on common long stipes.

About 30 species, tropics; 1 in Gt. Nicobar Island.

***Pteroceras barkeleyi*** (Reichb. f.) Holtt. in Kew Bull. 14 : 269. 1960.

Herbs, *ca* 60 cm or more high. Leaves *ca* 7 at the top of stem, widest near tip, gradually narrowed to base, *ca* 15 x 2 cm. Racemes *ca* 5 cm long, 4-5 flowered. Flowers *ca* 2.5 cm long, white. Sepals & petals pale yellow, thickly spotted with orange brown. Lip *ca* 12 mm long, 3 lobed, midlobe brown spotted. Column pale greenish yellow, *ca* 5 mm high. Pollinia globose. Capsules *ca* 14 cm long, needle like, curved.

Rare in dense inland forest.

*Fl. & Fr.* : May - Aug.

Laful

India (Andaman & Nicobar Islands); Malay Peninsula.

## 22. SPATHOGLOTTIS B.

Terrestrial herbs with pseudobulbs. Leaves long petioled. Scape lateral, tall, slender, bearing a succession of many flowers in racemes. Flowers large, yellow or crimson. Sepals & petals nearly equal. Lip 3 lobed. Column long, slender, curved, without foot. Pollinia 8, waxy, slightly cohering in 2 groups of 4.

About 40 species, Indo-Malaya, China, Australia, 1 in Gt. Nicobar Island.

*Spathoglottis plicata* Bl., Bijdr. 401, t. 76. 1825.

Herbs, *ca* 1 m high. Leaves 5-7, nearly distichous, linear lanceolate, acuminate at apex, narrowed at base, plaited, *ca* 80 x 4 cm; petioles *ca* 10 cm long. Racemes *ca* 10 cm long, dense flowered. Flowers light velvety purple, 3 x 3 cm. Lip 3 lobed, light purple; lateral lobes falcately wedge shape, incurved; midlobe reniform, widened and notched at apex. Column curved. Pollinia 8, obovoid, oblanceolate, attached in 4 to caudicle pointing to the apex of anther. Capsules *ca* 4 cm long, cylindrical, puberulous.

Common in inland forests, moist shady places.

*Fl. & Fr.* : June - Nov.

12, 27, 33, 36 & 39 km on east-west road.

India (Nicobar Islands); Thailand, Malaysia, Sumatra, Java, Phillipines, Cambodia, Vietnam.

23. **THELASIS** Bl.

Epiphytic herbs; pseudobulbs subglobose. Leaves 1 or 2, ligulate. Scapes from the base of pseudobulbs. Flowers small, racemes or spike. Sepals not widely spreading; dorsal sepals flat, lateral concave, keeled or winged. Petals narrow. Lip sessile at base of column, oblong or ovate. Column short without foot. Rostellum 2 fid. Pollinia 4 to 6, globose on a slender caudicle.

About 10 species, Indo-Malaya; 1 in Gt. Nicobar Island.

***Thelasis pygmaea*** (Griff.) Lindl. in J. Proc. Linn. Soc. 3 : 63. 1859 var. ***pygmaea***.

Epiphytic herbs; stems pseudobulbous, clothed with leaf sheaths. Leaves 2, linear oblong, shortly & obliquely 2 at apex, narrowed and sessile at base, ca 12 x 1.5 cm. Scapes ca 20 cm long, arising from the base of pseudobulbs. Spikes dense flowered at the tip of scape. Flowers pale greenish. Lip ovate-lanceolate, fleshy, sparsely gland dotted in the middle. Rostellum deeply forked at apex. Pollinia 8, minute, globose.

Rare in the edges of inland forests.

*Fl.* : April - May; *Fr.* : Not seen.

Campbell Bay, north-south road.

24. **THRIXSPERMUM** Lour.

Epiphytic herbs; stems long or rather short. Leaves oblong, flat or convolute. Racemes lateral, arising from stem. Flowers large or medium, opening 1 or 2 at a time. Sepals & petals subsimilar, lanceolate or ovate. Lip saccate at base, 3 lobed. Column foot short. Pollinia 2, divided into unequal halves, waxy, attached to large or broad viscidium.

About 60 species, Sri Lanka, Malasia, Philippines, Indonesia, Samoa; 1 in Great Nicobar Island.

***Thrixpermum hystrix*** (Bl.) Reich. f. in Trans. Lin. Soc. 30 : 14. 1874.

Herbs, *ca* 30 cm high; stems terete. Leaves oblong, rounded, emarginate at apex, fleshy, *ca* 4.5 x 1.8 cm; sheaths 1 cm long. Inflorescences long peduncled, dense flowered racemes. Flowers yellow, *ca* 1.2 x 1.5 cm; bracts fleshy, acicular. Dorsal sepals elliptic, subacute, 5 nerved; lateral sepals elliptic-lanceolate, acute, 5-6 nerved. Petals elliptic, oblanceolate, 3 nerved. Lip clawed, recurved at tip, 3 lobed; lateral lobes rounded with many hairs; midlobe subulate, thick, grooved. Column ovoid, *ca* 2 mm, operculum orbicular. Pollinia waxy. Capsules linear, terete, *ca* 10 x 0.4 cm.

Rare in dense inland forests.

*Fl. & Fr.* : May - Aug.

Laful.

India (Andaman & Nicobar Islands); Myanmar, Java, Thailand, Malaysia, Sumatra, Borneo.

## 25. TRICHOGLOTTIS Bl.

Epiphytic herbs; stems pendulous. Leaves distichous. Flowers mostly in panicles, rarely solitary or few in very short racemes. Sepals & petals similar, spreading. Lip boat-shaped or spurred, 3 lobed. Column short, thick, with a horn on each side. Pollinia 2, caudicle linear, disc large.

About 60 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Flowers reddish; sepals & petals reddish orange. .... 2. *T. quadricornuta*
- b. Flowers pale yellow; sepals & petals pale yellow..... 1. *T. cirrhifera*

1. **Trichoglottis cirrhifera** Teysm. & Binn. in Nat. Tijd. Ned. Ind. 493. 1853.

Herbs, *ca* 35 cm high; stems long, climbing. Leaves spreading, narrowly elliptic, acute at apex, narrow at base, *ca* 10 x 2 cm. Inflorescences 1 flowered, several at each node. Sepals & petals yellow with central part brown markings. Lip spurred at base, white, blade fleshy, 3 lobed; lateral lobes short, triangular, close to base of column; keels 2, hairy; midlobe fleshy, apex blunt, near base 2 lobules. Column short with horn on each side. Pollinia 4.

Rare in littoral forests.

*Fl.* : June - Aug.; *Fr.* : Not known.

*Note* : India (Great Nicobar Island); Thailand, Laos, Java, & Malay Peninsula.

2. *Trichoglottis quadricornuta* Kurz in J. As. Soc. Beng. 45 : 156, t. 13. 1876.

Herbs, *ca* 30 cm high; stems elongate, leafy, internodes *ca* 2 cm. Leaves fleshy, linear-lanceolate, subsessile, acuminate at apex, narrowed & twisted at base, *ca* 8 x 1.5 cm. Flowers solitary or 3-4 paniced. Sepals obovate-oblong, reddish; lateral sepals subfalcate. Petals reddish. Lip white with pink spots on middle, strongly arched, inflexed, 2 posterior lobes acute, twice as long as basal, with hirsute callus between them, terminal lobes reflexed, linear, 2 fid. Column short; spur 2 fid, white. Pollinia 2, globose.

Common in inland forests.

*Fl.* : Aug. - Feb.; *Fr.* : Not known.

Campbell Bay, 41 km on east-west road.

*Note* : Endemic to Nicobar Islands.

## 26. VANILLA Sw.

Fleshy climbers with ovate leaves. Racemes short, stout, axillary. Flowers usually large. Sepals & petals subequal, spreading. Lip large, 3 lobed or entire, flat or convolute. Column long. Rostellum entire or nearly so. Fruits long, fleshy, terete; seeds minute, globose.

About 110 species, tropics; 1 in Gt. Nicobar Island.

*Vanilla andamanica* Rolfe in Kew Bull. 1918 : 237. 1918.

Semiepiphytic herbs with climbing stems, up to several meters, bearing a leaf & root at each node; stems longitudinally grooved. Leaves

oblanceolate, fleshy, dark green, acuminate at apex, obtuse rounded at base, *ca* 20 x 4 cm; petioles *ca* 1.5 cm. Inflorescences axillary bearing many large flowers. Flowers white, fragrant, *ca* 4 x 2 cm. Petals greenish white. Lip pink with white patches, claw adnate to column, 3 lobed with hairy appendages inside. Column long, curved, near top. Rostellum white. Pollinia granular, without stipes. Capsules elongated, fleshy, 1 celled, *ca* 15 cm long, thickened at apex.

Rare in inland forests, shady places.

*Fl. & Fr.* : March - July.

20 km on road to Indira point.

*Note* : Endemic to Andaman & Nicobar Islands.

## 27. VRYDAGZYNEA Bl.

Terrestrial herbs with ascending stems. Leaves ovate or lanceolate; petioled. Inflorescences usually short spikes. Flowers small. Sepals & petals connivent. Lip entire, short, spur rather long, pendulous with 2 pedicelled glands inside. Column short, arms thick, erect. Pollinia 2, thick, club shaped on large disc.

About 25 species, Indo-Malayan; 1 in Gt. Nicobar Island.

*Vrydagzynea albida* (Bl.) Bl., Coll. Orchid. 75, t. 19. f. 2. 1858.

Herbs, *ca* 30 cm high. Leaves 6-8, obliquely oblong, acute at base, subacuminate at apex, *ca* 6 x 2.5 cm, glabrous; petioles with sheaths, *ca* 2 cm long; sheaths cup-shaped. Flowers white in terminal erect dense many flowered heads or slightly elongated capitate spikes. Sepals & petals not spreading. Lip spurred, *ca* 8 mm long; spur parallel to ovary, with 2 cup-shaped glands on back wall inside at about 1/3 way down from mouth, blade of lip entire, boat-shaped, white with light green, papillose, longitudinally keeled band at the centre. Pollinia 2, irregularly many lobed.

Rare in marshy places, inland forests.

*Fl. & Fr.* : June - Oct.



37 km on east-west road, near Shompen village.

India (Great Nicobar Island); Myanmar, Thailand, Malay Peninsula, Indonesia & Philippines.

## ZINGIBERACEAE

About 47 genera and 400 species, pantropics; 3 genera and 3 species in Gt. Nicobar Island.

- 1 a. Leaves spirally arranged; sheath tubular, closed..... 1. *Costus*
- b. Leaves distichous; sheath open on one side.....2
- 2 a. Anther connective truncate, crested..... 2. *Hornstedtia*
- b. Anther connective prolonged into a beak, enclosing style..... 3. *Zingiber*

### 1. *COSTUS* L.

Herbs. Leaves shortly petioled. Spikes terminal or on rhizome. Calyx tubular, 3 lobed. Corolla funnel-shaped. Lip obovate. Staminodes absent; stamens broad, crest long, acute or upcurved. Capsules woody, 3 locular; seeds angular.

About 40 species, pantropical; 1 in Gt. Nicobar Island.

*Costus speciosus* (Koen.) J.E. Sm. in Trans. Lin. Soc. 1 : 249. 1800.

Succulent herbs, ca 1 m high; stem spirally twisted; rhizome tuberous. Leaves oblong-lanceolate, acuminate at apex, rounded at base, ca 23 x 5 cm, glabrous above, silky pubescent beneath. Flowers white in dense spikes. Bracts bright red. Corolla pinkish. Labellum curved, ca 5 cm long, with cream coloured median band. Stamens yellow at apex. Capsules bright red; seeds black with fleshy white arils.

Common in inland forest.

*Fl. & Fr.* : May - Nov.

37 km on east-west road.

## 2. **HORNSTEDTIA** Retz.

Robust herbs; rhizomes fleshy. Leaves membranous; petioles short; ligules well developed. Inflorescences several, arising laterally from rhizome near base of spurious stem. Bracts numerous. Calyx tubular. Corolla lobes oblong. Lip large. Staminal filaments broad. Capsules globose or oblong, crowned by calyx; seeds numerous.

About 10 species, tropics; 1 in Gt. Nicobar Island.

**Hornstedtia fenzlil** (Kurz) K. Schum. in Engl. Pflanzens. 20 : 195. 1904.

Shrubs, *ca* 7 m high; aerial stem short, solid, rhizomatous, aromatic. Leaves broadly lanceolate, subattenuate at base, acuminate at apex, *ca* 90 x 7 cm; petioles *ca* 2.5 cm long. Spikes many flowered. Bracts 2 seriate; outer reddish brown, ciliate at margins, sterile; inner pale reddish, margins densely matted with whitish tomentum. Calyx 2 fid at mouth. Corolla 3 lobed. Labellum rhomboid, obscurely 3 lobed. Anthers ciliate at base. Capsules obovoid, irregularly ridged, pubescent, *ca* 2.5 x 1.5 cm; seeds black, aril white.

Rare in inland forests.

*Fl. & Fr.* : Nov. - July.

6, 26 & 33 km on east-west road.

*Note* : Endemic to Nicobar Islands.

## 3. **ZINGIBER** Boehmer

Rhizomatous herbs; stems leafy. Leaves lanceolate; ligules present. Inflorescences basal spikes. Flowers solitary or paired. Calyx membranous. Lip large with 2 lateral small lobes, 1 central large 2 fid lobe. Staminal filaments shorter than anther; anther cells spurless. Capsules loculicidal, enclosed in bracts; seeds dark, shining, covered with lacerate aril.

About 30 species, tropics; 1 in Gt. Nicobar Island.

**Zingiber zerumbet** (L.) Rosc. ex J.E. Sm., Exot. Bot. 2 : 103, t. 112. 1804.

Herbs *ca* 70 cm high. Leaves broad lanceolate, acuminate at apex, narrowed towards base, *ca* 35 x 8 cm; petioles *ca* 6 mm long; ligules hairy. Scapes *ca* 40 cm long. Spikes *ca* 12 cm long, green when young, red when old. Bracts hairy. Bracteoles persistent in fruiting. Corolla white. Capsules oblong; seeds ellipsoid, black.

Rare in littoral forests.

*Fl. & Fr.* : Sept. - Nov.

Chengappa Bay to Indira point, Galathea to Indira point.

### MARANTACEAE

About 30 genera and 400 species, tropics; 2 genera and 2 species in Gt. Nicobar Island.

- 1 a. Unbranched (stemless), caespitose herbs; pedicels proper without a glandular organ..... 2. *Phrynium*
- b. Dichotomously branched shrubs; pedicels proper with one massive, minute, distinct glandular organ..... 1. *Actoplanes*

#### 1. ACTOPLANES K. Schum.

Shrubs with slender stems. Leaves ovate-oblong; petioles short; sheaths long. Panicles lax. Bracts narrow. Flowers small, white. Staminal tube cylindric; staminodes obovate, unequal. Ovary 3 celled; style glabrous. Fruit indehiscent, globose, 1-3 seeded; seeds strongly grooved, without aril.

About 3 species, Indo-Malayan & Pacific region; 1 in Gt. Nicobar Island.

**Actoplanes canniformis** (Forst.) K. Schum. in Engl. Pflanzenr. 48 : 34. 1902.

Herbs, *ca* 3 m high. Leaf blades broadly ovate to lanceolate-oblong, acute at apex, rounded at base, *ca* 20 x 12 cm; petioles *ca* 2 cm long.

Inflorescences paniculate, bearing few to several spikes; spikes slender with 8-14 bracts. Calyx lobes white. Corolla *ca* 2.5 cm long. Staminal tube *ca* 3 mm long; outer staminodes 2, equal; inner yellowish, fleshy. Fruits globose, greenish white, 2 seeded.

Common in inland forests.

*Fl. & Fr.* : May - Oct.

Magar Nallah

India (Andaman & Nicobar Islands); Myanmar, Java, Malay Peninsula.

## 2. **PHRYNIUM** Willd.

Erect, caespitose herbs. Leaves radical; petioles long, sheathing. Inflorescences spiciform or subglobose heads with few large outer bracts and many inner bracts. Flowers 1 to 3 on a peduncle. Outer staminodes 2, unequal; inner ones 2, smaller; fleshy staminodes with lateral lobes; anther cells connate with petaloid appendage. Fruits indehiscent; seeds 3, aril 2 lobed.

About 30 species, tropical Africa & Indo-Malayan; 1 in Gt. Nicobar Island.

***Phrynium paniculatum*** Balakr. in Blumea 24 : 185. 1978.

Caespitose herbs, *ca* 2 m high; rhizomes suberect. Leaves many, spirally, crowded at apex of rhizome. Leaf blade elliptic to oblong-lanceolate, cuneate at base, acuminate at apex, *ca* 35 x 15 cm. Main peduncle terminal, *ca* 1.5 m long, bearing 1 leaf and inflorescences. Inflorescence lax panicles of spikes and spikelets, *ca* 15 cm long stalk, subtended by 10 cm long puberulous bracts; spikes 2-10, arranged in axils of spirally arranged bracts on main rachis. Flowers white. Staminodes 4; fertile stamens 1 celled. Capsules 3 lobed, hairy, reddish brown; seeds 3, oblong, dull brown; arils 2 lobed.

Rare in shady places near streams, inland forests.

*Fl. & Fr.* : May - Oct.

8 km and Galathea bridge on east-west road.

*Note* : Endemic to Great Nicobar Island.

### MUSACEAE

About 2 genera and 42 species, tropics; 1 genus and 1 species in Gt. Nicobar Island.

### MUSA L.

Herbs with rhizome; pseudostem formed by long, stiff leaf sheaths rolled around one another. Leaves arranged spirally, oblong. Flowers in spikes, unisexual, lower female, upper male. Bracts large, spathaceous. Calyx 3-5 lobed. Corolla as long as calyx, wrapped around the stamens and style. Perfect stamens 5; staminodes 1 or absent. Ovary inferior, 3 locular; stigma 6 lobed. Berries fleshy, oblong, trigonous; seeds subglobose, angled.

About 35 species, tropics; 1 in Gt. Nicobar Island.

***Musa acuminata*** Colla, Mem. Musa. 66. 1820.

Tree like stoloniferous herbs; pseudostems *ca* 5 m high. Leaf blades oblong, truncate at apex, rounded at base, *ca* 300 x 60 cm; petioles *ca* 90 cm long. Inflorescences pendent or bent downwards. Bracts red. Male hands 12-23 flowered, arranged in 2 rows. Female hands 12-26 flowered. Berries linear, curved, *ca* 14 x 3 cm; pedicels 1 cm long; seeds angled.

Rare in marshy places, inland forests.

*Fl. & Fr.* : Jan. - June.

33 km on east-west road.

### AMARYLLIDACEAE

About 86 genera and 1100 species, cosmopolitan; 1 genus and 1 species in Gt. Nicobar Island.

**CRINUM L.**

Herbs with tunicate bulbs. Leaves radical. Inflorescences umbellate, peduncled; pedicels solid, apically with 2 involucral bracts. Flowers large. Perianth connate below, forming a oblong tube. Stamens borne on tube throat; filaments free. Ovary 3 celled; stigma capitate. Capsules subglobose, indehiscent; seeds globose or angular.

About 130 species, tropics & subtropics; 1 in Gt. Nicobar Island.

***Crinum asiaticum* L.**, Sp. Pl. 293. 1753.

Herbs with large bulbs. Leaves many, fleshy, linear, strap-shaped, gradually narrowing above, clasping at base, *ca* 80 x 12 cm. Scapes *ca* 40 cm long. Umbels many flowered. Bracts linear-oblong, abruptly acuminate, *ca* 8 cm long. Flowers white. Capsules subglobose, beaked; seeds globose or rounded, angled.

Common in beach forests.

*Fl. & Fr.* : March - July.

Kopenheat, Lakshman beach.

**TACCACEAE**

About 2 genera and 31 species, tropics; 1 genus and 1 species in Gt. Nicobar Island.

**TACCA J.R. & G. Forst.**

Rhizomatous herbs; stems short. Leaves radical, simple lobed or laciniate. Scape tall, leafless. Flowers umbelled, green or purple with 2-6 large involucral bracts. Perianth 6 lobed. Stamens 6, adnate to tube; filaments short. Ovary 1 celled; stigmas 3. Fruits baccate or 3 valved; seeds numerous, ribbed.

About 30 species, tropics; 1 in Gt. Nicobar Island.

***Tacca leontopetaloides* (L.) O. Ktze.**, Rev. Gen. Pl. 2 : 704. 1891.

Erect tuberous herbs. Leaves solitary, broadly obovate or oblong-ovate, *ca* 30 cm across, Palmately 3 set, with 3 segments, lobed to dissected; petioles hollow, *ca* 60 cm long. Inflorescences umbellate, pedicels *ca* 80 cm long. Flowers greenish yellow, drooping, *ca* 1.8 cm across. Perianth lobes 6. Fruits subglobose, 6 ribbed, *ca* 2 x 1.7 cm, greenish yellow; seeds many, ovoid, ribbed.

Common in moist shady places in beach forests.

*Fl. & Fr.* : July - Sept.

Alexandra river, Navy Dera.

### **HYPOXIDACEAE**

About 7 genera and 120 species, tropicsl Asia; 1 genus and 1 species in Gt. Nicobar Island.

### **MOLINERIA** Colla.

Herbs with tuberous rootstocks. Leaves radical. Flowers yellow in dense bracteate heads. Perianth lobes sessile. Stamens 6; filaments short. Ovary subglobose, obscurely 3 angled, beaked. Fruits globose, hairy.

About 7 species in Indo-Malayan; 1 in Gt. Nicobar Island.

**Molineria latifolia** (Dryand.) Herb. ex Kurz in Tijdschr. Nederl. Ind. 37: 232. 1864.

Herbs, *ca* 50 cm high. Leaves lanceolate, acuminate at apex, *ca* 70 x 7 cm, membranous, plicate; petioles *ca* 7 cm long. Scape short. Spikes erect on peduncles, *ca* 10 cm long. Bracts ovate-lanceolate, acuminate, hairy. Flowers bright yellow. Perianth 6 partite; stipes of perianth long. Fruits *ca* 2.5 cm long; seeds black, ribbed, with minute papillae.

Common in shady places, inland forests.

*Fl. & Fr.* : May - Aug.

Campbell Bay to Chengappa Bay.

**DIOSCOREACEAE**

About 5 genera and 750 species, tropics, subtropics and temperate regions; 1 genus and 2 species in Gt. Nicobar Island.

**DIOSCOREA L.**

Scandent herbs, with tuberous roots. Inflorescences racemes, panicle or simple or fascicled spikes. Flowers regular, unisexual. Perianth 6, in 2 series. Staminate flowers : fertile stamens 6, rarely 3 fertile and 3 sterile; pistillode present or absent. Pistillate flowers : staminodes 0, 3 or 6; pistil single, ovary inferior, 3 locular; stigma 3, each bifurcate. Capsules 3 valved, often winged; seeds winged.

About 600 species, cosmopolitan; 2 species in Gt. Nicobar Island.

- 1 a. Stems slender; leaf base hastate, subtruncate or cordate; dark green above, greyish beneath..... 2. *D. vexans*
- b. Stems prickly; leaf base with rounded auricles; glaucous green..... 1. *D. glabra*

1. ***Dioscorea glabra*** Roxb., Fl. Ind. 3 : 804. 1832.

Climbers; tubers single or more than one. Leaves opposite or alternate, oblong-lanceolate, elliptic-ovate, rounded or auriculate at base, acuminate or mucronate at apex, ca 8 x 6 cm; basal nerves 5-7; petioles ca 8 cm. Male inflorescences ca 70 cm long, leafless; branches 1-5 together. Female inflorescences solitary or paired, ca 40 cm long. Capsules solitary, retuse at apex, obtuse at base, wings 18 x 20 mm; stipes 4 mm long.

Rare in inland forests, in open places.

Fl. & Fr. : July - Jan.

Casuarina Bay.

2. ***Dioscorea vexans*** Prain & Burkill in J. As. Soc. Beng. 4 : 456. 1908.

Climbers. Leaves opposite or subopposite, oblong-lanceolate or oblong-ovate, cordate or rarely hastate at base, acuminate at apex, ca 15 x 10 cm; basal nerves 5; petioles ca 6 cm long. Male flowers densely



packed on spikes, arranged on special leafless branches, *ca* 40 cm long, axis of spikes winged, with 15-25 flowers. Female flowers greenish yellow, solitary or paired, decurved, axis glabrous, angled. Capsules *ca* 15 x 12 mm; seeds with brown wall all round.

Rare in shaded places, inland forests.

*Fl. & Fr.* : Oct. - March.

13 km on north-south road, 27 km on east-west road.

*Note* : Endemic to Andaman & Nicobar Islands.

### AGAVACEAE

About 20 genera and 670 species, tropics and subtropics; 1 genus and 2 species in Gt. Nicobar Island.

### DRACAENA Vandelli ex L.

Erect or subscandent, woody shrubs. Inflorescences racemes or panicles. perianth long tubular. Stamens 6, included. Ovary superior; ovule 1 per locule; style subcapitate. Fruit a berry.

About 150 species, tropics and subtropics; 2 in Gt. Nicobar Island.

- 1 a. Small shrubs, *ca* 4 m high; panicles *ca* 25 cm long. .... 2. *D. brachyphylla*
- b. Large shrubs, *ca* 10 m high; panicles *ca* 50 cm long..... 1. *D. angustifolia*

#### 1. *Dracaena angustifolia* Roxb., Fl. Ind. 2 : 155. 1832.

Shrubs, *ca* 10 m high. Leaves with broad sheathing base, erect patent, linear-lanceolate, *ca* 60 x 2.5 cm. Panicles with several well developed branches, *ca* 60 cm long. Flowers 1-4 nate in axils of acute, scarious bracts; pedicels articulate at apex, *ca* 7 mm long. Perianth pale yellow. Berries *ca* 2.5 cm in diam., orange coloured.

Common in littoral forests.

*Fl. & Fr.* : Jan. Dec.

7 km on north-south road, Lakshman beach, Magar Nallah.

2. ***Dracaena brachyphylla*** Kurz, in J. As. Soc. Beng. 42. 2 : 242. 1873.

Shrubs, *ca* 4 m high. Leaves sessile with stem clasping leafy petiole like base; blade linear, acuminate at apex, *ca* 30 x 1.5 cm. Panicles *ca* 25 cm long, branched. Flowers white, *ca* 1.6 cm long; pedicels *ca* 8 mm long; bracts linear lanceolate; bracteoles ovate, membranous with scarious margins. Perianth pale yellowish, 6 cleft near base. Berries reddish brown, 3 lobed, *ca* 2 cm in diam.

Rare in littoral forests.

*Fl. & Fr.* : Feb. - Oct.

Galathea to Indira point, Alexandra river, Navy Dera.

*Note* : Endemic to Andaman & Nicobar Islands.

## COMMELINACEAE

About 40 genera and 300 species, tropics & subtropics; 3 genera & 3 species in Gt. Nicobar Island.

- 1 a. Fertile stamens 6; staminodes absent.....2
- b. Fertile stamens 3; staminodes present, 3-4. ....2. *Commelina*
- 2 a. Inflorescences terminal, paniculate; ovary 2-locular; staminal filaments glabrous..... 3. *Floscopa*
- b. Inflorescences dense cyme, capitate, attached to nodes; ovary 3-locular; staminal filaments bearded..... 1. *Amischotolype*

### 1. **AMISCHOTOLYPE** Hassk.

Stout herbs; stems creeping and rooting on lower side. Leaves petiolate; sheaths hairy. Inflorescences densely capitate at nodes. Flowers dull pink. Sepals 3, free, falcate. Petals 3, free. Stamens 6, all perfect. Ovary 3 celled. Capsules ellipsoid, 3 valved; seeds 1-2 in each locule, elliptic.

About 17 species, mainly eastern Asia & Africa; 1 in Gt. Nicobar Island.

***Amischotolype mollissima* (Bl.) Hassk. in Flora 46 : 392. 1863.**

Stout herbs. Leaves tufted on the apical part of stems, blade oblanceolate, acuminate at apex, *ca* 30 x 12.5 cm; petioles *ca* 10 cm long; sheaths cylindric, pubescent, enclosing whole stem. Flowers 6-12 together, in subsessile capitate cymes at nodes, pale violet. Capsules subglobose, pinkish red.

Rare in marshy places of inland forests.

*Fl. & Fr.* : April - Oct.

Nevy Dera, 15 & 37 km on east-west road, Campbell Bay to Chengappa Bay.

## 2. COMMELINA L.

Herbs; rooting at nodes. Leaves ovate-lanceolate with cylindrical sheaths at base. Inflorescences scorpioid cymes with 1 or 2 flowered branches, subtended by funnel-shaped spathe. Flowers uni or bisexual, zygomorphic. Sepals 3. Petals 3, blue. Perfect stamens 3; staminodes 2 or 3. Capsules 2 or 3 celled; seeds 1 or 2 in each cell, smooth or reticulate surface.

About 230 species, cosmopolitan; 1 in Gt. Nicobar Island.

***Commelina diffusa* Burm. f., Fl. Ind. 18, t. 7, f. 2. 1768.**

Straggling herbs. Leaves sessile, broadly lanceolate, abruptly acuminate at apex, narrowed at base, *ca* 8 x 2 cm; sheaths *ca* 1.4 cm long. Spathe solitary in almost all axils, ovate-cordate. Peduncle solitary, leaf opposed. Cymes branched, 1-3 flowered, bearing all male flowers; outer cymes with 3-4 perfect flowers. Flowers blue. Capsules broadly oblong, 5 seeded; seeds tubercled.

Common in marshy places.

*Fl. & Fr.* : June - Nov.

42 km on east-west road; Baludera, 31 km on north-south road.

### 3. **FLOSCOPA** Lour.

Decumbent herbs. Leaves aggregated on upper part of stem. Flowers in terminal panicle. Sepals 3, free. Petals 3, unequal. Stamens 6, all perfect. Capsules 2 celled, each with 1 seed; seeds oblong, striate.

About 25 species, tropics & subtropics; 1 in Gt. Nicobar Island.

**Floscopa scandens** Lour., Fl. Cochinch. 193. 1790.

Decumbent herbs. Leaves lanceolate, nearly sessile, pubescent, ca 8 x 2 cm; sheaths cylindric, hirsute, mouth ciliate. Panicles terminal. Flowers small, violet. Capsules 2 celled, ellipsoid; seeds elliptic, striate, ca 2 mm long.

Rare in moist places.

*Fl. & Fr.* : Oct. - June

37 km on east-west road.

## **FLAGELLARIACEAE**

About 3 genera and 10 species, tropics; 1 genus and 1 species in Gt. Nicobar Island.

### **FLAGELLARIA** L.

Woody climbers; stems scandent, climbing by the leaf tips, which become tendrils. Flowers yellowish white. Sepals subpetaloid. Petals little longer. Stamens 6. Ovary 3 celled; stigmas 3 lobed. Fruit a drupe.

About 4 species, tropics; 1 in Gt. Nicobar Island.

**Flagellaria indica** L., Sp. Pl. 333. 1753.

Climbing bushes, ca 15 m high, branches covered with closed leaf sheath. Leaves sessile, lanceolate, ca 20 x 4 cm, ending in fine tendril;

sheaths 2 auricled. Flowers clustered, sessile, in panicles, ca 40 cm broad, irregularly branched. Sepals 6, white. Fruits globose, red when mature.

Common in dense forests; sometimes abundant near coastal forests.

*Fl. & Fr.* : Throughout the year.

5 & 13 km on north-south road, Galathea river bank, Navy Dera.

## ARECACEAE

About 150 genera and 1500 species, tropics; 6 genera & 9 species in Gt. Nicobar Island.

- 1 a. Spadix infrafoliar.....2  
b. Spadix interfoliar.....4
- 2 a. Male flowers symmetric; sepals large..... 6. *Rhopaloblast*  
b. Male flowers asymmetric; sepals small.....3
- 3 a. Male flowers 1 on each side of female flowers..... 5. *Pinanga*  
b. Male flowers many, minute, solitary or 2 near towards the tip of branches.  
Female flowers large, solitary..... 1. *Areca*
- 4 a. Leaves not armed; littoral; fruits large, hexagonal..... 4. *Nypa*  
b. Leaves armed; inland habit; fruits small not hexagonal.....5
- 5 a. Leaflets mostly rhomboid; upper margins of leaflets erose; inflorescences  
with bisexual flowers..... 3. *Korthalsia*  
b. Leaflets linear-lanceolate, linear ensiform; upper marginal leaflets entire;  
inflorescences with unisexual flowers.....2. *Calamus*

### 1. ARECA L.

Tall slender palms. Leaves pinnate. Spadix infrafoliar. Male flowers many, minute; sepals minute; petals lanceolate; stamens 3-6. Female flowers much larger few at base of branches; sepals & petals orbicular; ovary 1-celled; stigmas 3, sessile. Fruits oblong; seeds with truncate base.

About 50 species, tropical Asia & Australia; 1 in Gt. Nicobar Island.

**Areca catechu** L., Sp. Pl. 1189. 1753.

Tall slender palms, *ca* 30 m high. Leaves pinnate, *ca* 2 m long; leaflets numerous. Spathe compressed. Spadix much branched, rachis stout, branches with filiform tips bearing more or less distichous male flowers; female flowers solitary at the bases and axils of branches. Fruits *ca* 5 cm in diam., smooth, orange or scarlet.

Common in inland forests as wild.

*Fl. & Fr.* : Sept. - Jan.

Kopenheat, Koshin Don, Chingenh, Chengappa Bay.

## 2. CALAMUS L.

Climbers with hooked spines. Leaves pinnate; sheaths cylindrical, spiny, ochreate; petioles and rachis spiny. Inflorescences axillary elongate, often ending in a clawed flagellum. Spathes many, passing into many bracts & bracteoles. Flowers unisexual, polygamo dioecious, solitary or binate (a pistillate with staminate), small, gathered into distichous or scorpioid spikelets. Calyx 3 toothed, cupular. Petals longer than calyx, free in staminate, tubular in pistillate. Stamens 6, connate; staminodes cupular. Ovary incompletely 3 locular, covered with scales. Drupes covered with numerous, polished scales.

About 250 species, tropics; 4 species in Gt. Nicobar Island.

- 1 a. Leaf distinctly cirrate.....2
- b. Leaf ecirrate or with vestigial cirrus..... 3. *C. pseudo-rivalis*
- 2 a. Spathe yellow with bristles like spines.....3
- b. Sheath green or yellow green with stout spines. .... 4. *C. unifarius*
- 3 a. Spines reddish-brown, completely covering the sheath..... 2. *C. dilaceratus*
- b. Spines black, present only below the knee..... 1. *C. andamanicus*

1. **Calamus andamanicus** Kurz, J. As. Soc. Beng. 43 : 211, t. 27 A. 1874.

Scandent ; stems cluster forming leaf sheaths, *ca* 10 cm diam. Leaves cirrate, *ca* 6 m long; sheath with distinct knee, armed with numerous small crest, spines & spicules; rachis smooth below, armed at intervals with robust claws; leaflets numerous, equidistant, *ca* 70 x 3.5 cm; prominently 3-nerved; bristles on both sides; margins ciliate. Male inflorescences shorter than leaves; partial inflorescences twice branched; rachilla bifarious with 15-20 male flowers. Female inflorescences *ca* 1 m long; partial inflorescences *ca* 60 cm long; rachillae with 8-11 female flowers, distichous. Drupes ovoid elliptic, conically beaked, *ca* 18 x 10 mm; scales not channelled at middle, arranged in 15 longitudinal series; seeds coarsely grooved.

Common in inland forests.

*Fl. & Fr.* : Nov. - July

Kopenheat, 20 km on north-south road, Chengappa Bay.

*Note* : Endemic to Andaman & Nicobar Island.

**2. *Calamus dilaceratus* Becc. in Rec. Bot. Surv. India 2 : 198. 1902.**

Climbing lianas. Leaves ecirrate; sheaths not completely tubular, open on ventral side, armed throughout; petioles *ca* 1 m long; leaflets subopposite, linear ensiform, 1.2 cm broad at middle, tapering at apices. Male inflorescences unknown. Female inflorescences erect from axis; primary bracts armed with spines; secondary bracts tubular, funnel-shaped; female rachilla with 1.5 cm long pedicels; female flowers unknown. Fruiting perianth divided into 6 lobes. Fruits ovoid, *ca* 1.2 cm long; scales in 21 series, pale yellow, channelled at middle; tips of scales brown, fimbriate;; seeds subglobose.

Rare in inland forests.

*Fl. & Fr.* : Not known.

Great Nicobar Island (Based on E. Man's herbarium collection).

*Note* : Endemic to Great Nicobar Island.

3. ***Calamus pseudo-rivalis*** Becc. in Ann. Roy. Bot. Gard. Calcutta 11 : 222. 1908. 'Safedbet'

Climbing rattans, *ca* 30 m high. Leaf *ca* 1 m long, ecirrate; petioles absent; rachis triangular, spiny; leaflets *ca* 45 x 2 cm, gradually smaller towards tip. Male inflorescence not seen. Female inflorescences *ca* 60 cm long. Fruits ovoid, *ca* 1.5 x 1 cm; scales in 21 vertical rows, deeply channeled, shiny yellow, turning violet on ripening.

Rare in evergreen forests.

*Fl. & Fr.* : Nov. - May.

13 km on east-west road.

*Note* : Endemic to Andaman & Nicobar Islands.

4. ***Calamus unifarius*** Wendel. in Bot. Zeit. 17 : 158. 1859. var. ***pentong*** Becc. & Hook. f. in Hook. f., Fl. Brit. India 6 : 458. 1893.

Robust climbers. Leaves cirrate, without cirrus, *ca* 2 m long; sheaths greenish with distinct knee, covered with spines; petioles short; leaflets broadly lanceolate, not many, subequidistant on rachis, each *ca* 30 x 5 cm; 5-7 nerved. Male inflorescences much branched; rachilla with 5 - 15 distichous flowers. Female inflorescences simply decompound similar to males, rachilla with 5-20 bifarious flowers. Fruits globose, 1 cm in diam., scales in 15 series, not distinctly channeled at middle; fruiting perianth pedicelliform; seeds irregularly globose, coarsely pitted.

Rare in inland forests.

*Fl. & Fr.* : April - Nov.

17 km on east-west road.

*Note* : Endemic to Andaman & Nicobar Islands.

### DOUBTFUL TAXA

- Calamus nicobaricus*** Becc. in Hook. f., Fl. Brit. India 6 : 446. 1882.



*Note* : This cane was described by Beccari based on E.H. Man's collection from Great Nicobar. Man's specimens were without fertile part. No old or recent collection was available for study as this cane could not be recollected.

Endemic to Great Nicobar Island.

### 3. KORTHALSIA Bl.

Climbers. Leaf sheaths without knee; ocrea prominent; leaflets arranged more or less regularly on rachis. Inflorescences in axils of uppermost reduced leaves, pendulous catkin like. Flowers bearing branches covered in spiral of bracts, each subtending a single hermaphrodite flower. Sepals jointed into a short basal tube. Stamens 6 jointed below the petals. Fruits tipped by stigmas; scales arranged in regular vertical rows.

About 35 species, tropics; 1 in Gt. Nicobar Island.

**Korthalsia laciniosa** Mart., Hist. Nat. Palm. 3 : 211. 1838      'Lal Bet'

Large scandent cane, ca 15 m high; stems ca 3 cm in diam. Leaves pinnate, ca 120 cm long, terminating in a long thorny whip like tendrill; rachis sparingly armed with short spines; leaflets equidistant, ovate or cuneate rhomboid, narrowed to a short petiole. Fruits slightly attenuate at base, prominently beaked; scales in 15 longitudinal series; faintly channelled at middle, margins dark brown, ciliate; seeds ovoid.

Common in inland forests.

*Fl. & Fr.* : June - Nov.

35 km on east-west road, Campbell Bay to Chengappa Bay, Galathea Bay.

India (Andaman & Nicobar Islands); Malay Peninsula.

### 4. NYPA Steck

Mangrove palm; stem creeping in mud very thick. Leaves pinnate, very large. Inflorescences subterminal, on short panicles, covered with

sheathing leaves. Male flowers in catkins with setaceous bracts. Female flowers in a head. Fruits an enormous head of obovoid irregular carpels, pyramidal angled, 1 seeded.

1 species, tropics; 1 species in Gt. Nicobar.

*Nypa fruticans* Wurm. in Verh. Batav. Geneestch. Kunsten. 1 : 350. 1781.

Mangrove palms. Leaves pinnatisect *ca* 9 m long; leaflets *ca* 2 m, rigid; petioles *ca* 150 cm long, stout. Spadix terminal, *ca* 2 m. Flowers monoecious; male in catkin-like lateral branches of spadix; female in globose terminal heads. Fruits large, globose, syncarp of many obovoid, hexagonal, 1-seeded carpels, with pyramidal tips; seeds grooved.

Common in mangrove creeks.

*Fl. & Fr.* : Sept. - March

Laful, Alexandra river side, Galathea Bay.

## 5. PINANGA Bl.

Slender monoecious trees. Leaves crowning the stem; leaflets opposite. Spathe solitary. Flowers ternate (a pistillate between 2 staminate flowers). Stamens many; staminodes 6. Ovary 1-locular, 1-ovuled. Drupes obconical with fibrous pericarp, 1-seeded.

About 110 species, tropical Asia & Africa; 1 in Gt. Nicobar Island.

*Pinanga manli* Becc. in Males. 3 : 178. 1886.

Trees, *ca* 18 m high. Leaves *ca* 3 m; leaflets many, strongly 1-3 nerved, ensiform, straight, longest (middle) *ca* 75 x 8 cm, 2-3 partite. Spadix infrafoliar, *ca* 50 cm long, shortly peduncled, branches 40-50, spirally arranged. Fruits brownish pink, ovoid, base acute, *ca* 10 x 8 mm, pericarp thin; seeds subglobose with reticulate raphe, albumen densely ruminant.

Rare in inland forests.

*Fl. & Fr.* : Nov. - June.

Dogmar river, Cambell Bay, Galathea Bay.

*Note* : Endemic to Andaman & Nicobar Islands.

## 6. RHOPALOBLASTE Scheff.

Monoecious tall palms; stems unarmed, annulate. Leaves at stem apex, paripinnate; petioles unarmed. Spathe 2, sword-shaped. Panicles of several slender spikes. Flowers in pairs, 1 male, 1 female or male at top, female at base. Male sepals ovate or lanceolate; stamens 6. Drupes ellipsoid, with apical remnant of style; seeds ellipsoid, grooved on one face.

About 5 species, tropics; 1 in Gt. Nicobar Island.

**Rhopaloblaste augustata** (Kurz) Moore in *Principes* 14: 79. 1970.

Large trees, *ca* 50 m high. Leaves *ca* 4 m high; leaflets sessile, narrowly linear, acuminate, 3 costate; petioles short; rachis flat above, furfuraceously tomentose. Spadix decompound, *ca* 1 m high. Male flowers: bracts broad, smooth; sepals broadly ovate; petals oblong-obtuse; stamens 6; pistillodes conical. Female flowers : sepals & petals nearly alike; staminodes 4-6; ovary ovoid, stigmas 3. Fruits in pendulous spikes, small, *ca* 2.5 cm long, elliptic-oblong, scarlet; seeds oblong.

Rare in inland forests.

*Fl. & Fr.* : March - June.

Dhar Bay

*Note* : Endemic to Great Nicobar Island.

*Cultivated species* :

*Cocos nucifera* L., *Sp. Pl.* 1188. 1753.

## PANDANACEAE

About 3 genera and 500 species, tropical; 2 genera and 3 species in Gt. Nicobar Island.

- 1 a. Woody climbers with clasping adventitious roots; staminate flowers; staminal filaments papillate; anthers blunt; pistillate flowers with staminodes; ovary many ovuled. ....1. *Freycinetia*
- b. Trees or shrubs, never climbing; adventitious roots not clasping; staminate flowers; filaments smooth; anthers apiculate; pistillate flowers without staminodes; ovary 1-ovuled.....2. *Pandanus*

### 1. FREYCINETIA Gaud.

Scandent shrubs; stems often slender, rooting. Leaves narrow, acuminate, linear, thorny. Bracts bright coloured, red or yellow. Spikes racemose. Males slender: staminal filaments filiform or conic. Female spikes stouter, often with staminodes; ovary 1-locular; seeds numerous; stigma sessile, horse-shoe shaped.

About 100 species, tropics, 1 in Gt. Nicobar Island.

*Freycinetia insignis* Blume, Rumph. 1 : 158. t. 42. 1837.

Woody climbers; stems *ca* 5 cm diam., marked with rings. Leaves linear-lanceolate, margins spiny only at base and top, *ca* 100 x 4 cm, coriaceous, dark green. Spikes long-peduncled; leaves immediately below it red tipped. Spathe ovate, acute. Spadices 3 nate, rarely 4-5 nate. Male spadices on 3.5 cm long peduncles; staminal filaments filiform. Female spadices robust, dark red, verruculose, *ca* 3.5 cm long peduncles; ovary long, narrow; stigmas 2-3. Fruiting spadices, terete, rounded at both ends, *ca* 12 x 4.5 cm, fleshy.

Common in inland forests. 25 and 30 km on east-west road; Galathea Bay.

*Fl. & Fr.* : Throughout the year.

India (Andaman & Nicobar Islands); Malay Peninsula, Java.

### 2. PANDANUS Parkinson

Shrubs or small trees with stilt roots. Leaves linear, acute, margins & keels spinulosely toothed, sheathing at base. Flowers dioecious, in terminal fascicled spadices, enclosed by fleshy coloured bracts. Staminate flowers with numerous stamens. Pistillate flowers with 1 celled ovary;

staminodes hypogynous; ovaries densely packed, each with many parietal ovules. Fruits 1-many celled woody or fleshy angular drupes; seeds minute.

About 600 species, tropics; 2 in Gt. Nicobar Island.

- 1 a. Small littoral trees, *ca* 5 m high; leaves *ca* 1.8 m long, whitish or pale green; marginal spines soft; fruits small *ca* 25 cm in diam.....2. *P. odoratissimus*
- b. Trees, *ca* 10 m high; leaves 3-5 m long, dark green above; marginal spines rather thick and rigid; fruits large *ca* 40 cm in diam.....1. *P. leram* var. *andamanensium*

1. ***Pandanus leram* Jones ex Fontana var. *andamanensium* (Kurz) B.C. Stone in Ceylon J. Biol. Sci. 11(2) : 118. 1975.**

Branched trees, *ca* 10 m high; stems smooth with numerous short sharp prickles, supported at the base by stilt roots. Leaves sword shape, tip more or less tail like point, *ca* 3m x 12 cm; marginal spines *ca* 4 mm long. Ripe carpels 7-10 x 3-7 cm, much broader than thick, red when ripe; stigmas 3-14, distributed over the top of the carpel. Fruits ellipsoid or globose, *ca* 40 cm in diam.

Rare in inland forests.

Campbell Bay, 38 km on north-south road near Indira point.

*Fl. & Fr.* : Throughout the year.

*Note* : Endemic to Andaman & Nicobar Islands.

2. ***Pandanus odoratissimus* L. f., Suppl. 64. 1781.**

Small trees, *ca* 4 m high, with aerial roots. Leaves ensiform, caudate-acuminate with upcurved marginal spines, *ca* 180 x 10 cm, glossy green, drooping. Male spadices many enclosed in long, white fragrant, caudate, acuminate spathes; stamens many in connate filaments. Female spadices solitary, terminal. Fruits ovoid, *ca* 25 cm in diam., orange yellow, rounded with subulate persistent style at apex.

Common in littoral forests.

*Fl. & Fr.* : April - Nov.

Alexandra river, Kopenheat, Galathea.

## ARACEAE

About 115 genera and 2000 species, tropical and temperate regions;  
6 genera and 10 species in Gt. Nicobar Island.

- 1 a. Plants climbing, typically with elongate internodes..... 2
- b. Plant not climbing; internodes short.....3
- 2 a. Sepals persistent; flowers 3 merous with tepals; leaves entire.....5. *Pothos*
- b. Spathes deciduous; flowers 2 merous, naked; leaves pinnately lobed or obliquely ovate.....6. *Rhapidophora*
- 3 a. Spadix with appendages.....4
- b. Spidix without appendages.....5
- 4 a. Spadix covered with fertile or sterile flowers, the sterile appendix rough....  
.....2. *Colocasia*
- b. Spadix with smooth and naked, terminal green or purplish appendix.....  
.....3. *Cryptocoryne*
- 5 a. Female flowers naked; ovules solitary; leaves oblong.....1. *Aglaonema*
- b. Female flowers subtended by a single staminode; ovules many; leaves deltoid ovate.....4. *Homalomena*

### 1. AGLAONEMA Schott.

Herbs. Leaves ovate or oblong. Spathe peduncled, boat-shaped, base shortly convolute, deciduous. Spadix as long or shorter, base nude, no appendage; upper male portion cylindric or clubbed. Male flowers: Stamens 2-4, oblong. Female flowers: ovary 1 or 2 celled; stigma discoid; ovules solitary. drupes fleshy, 1-seeded.

About 20 species, Indo-Malayan; 2 in Gt. Nicobar Island.

- 1 a. Stem stout; petioles *ca* 21 cm long, sheathing at base; lateral nerves *ca* 12 pairs.....2. *A. simplex*
- b. Stems slender; petioles *ca* 10 cm long, sheathed to the middle; lateral nerves *ca* 9 pairs.....1. *A. nicobaricum*

1. ***Aglaonema nicobaricum* Hook. f., Fl. Brit. India 6 : 530. 1893.**

Climbing herbs. Leaves ovate-oblong, shortly acuminate at apex, rounded, ca 25 x 11 cm. Peduncles equalling or shorter than the petioles. Spathes pinkish, ca 4 cm long. Spadix greenish white. Berries capitate, red coloured; seeds exalbuminous.

Rare in inland forests.

*Fl. & Fr.* : Not known.

Campbell Bay

*Note* : Endemic to Nicobar Islands.

The plant record from Great Nicobar is by King, 1899. No further collection has been reported.

2. ***Aglaonema simplex* B., Rumph. 1 : 52. t. 65. 1835.**

Climbing erect herbs. Leaves oblong, acuminate or subcordate at apex, acute, rounded or cordate at base, ca 30 x 11 cm. Peduncles short. Spathe 4 cm long, oblong, cuspidate. Berries capitate, red; seeds exalbuminous.

Rare along marshy places of inland forests.

*Fl. & Fr.* : March - Nov.

Galathea river, Koshin Don, Campbell Bay, 15 km east-west road.

India (Nicobar Islands); Myanmar, Java, Malacca.

2. **COLOCASIA Schott**

Rhizomatous herbs. Leaves ovate, peltate. Spathe in 2 parts: lower green and accrescent, upper elongate, yellow and deciduous. Spadix in 4 parts; lower pistillate with scattered sterile flowers, an interstice with sterile flowers at the spathe constriction, staminate portion often elongated, terminal naked appendix. Staminate flowers in synandria. Ovules many. Seeds elongate.

**Colocasia esculenta** (L.) Schott in Schott & Endl., Melet. Bot. 18. 1832.

Erect herbs. Leaves ovate subcordate, *ca* 40 cm long; petioles *ca* 50 cm long. Spathes yellow. Spadix *ca* 20 cm long. Male inflorescences longer; appendix *ca* 4 cm long. Female inflorescences as long as staminodes. Pistil green with intermixed whitish pistillode.

Common in open places.

*Fl. & Fr.* : Rainy season.

Campbell Bay, 10 km on north-south road.

### 3. **CRYPTOCORYNE** Fischer

Aquatic herbs with creeping rhizome. Spathe tubular with connate edges, limb ovate or lanceolate, coloured. Spadix short, in dilated base of spathe. Male portion conic, wrapped in an involute valve of spathe. Female flowers few in a single whorl; ovaries flask-shaped, many ovuled. Fruits capsular or several connate 2 valved carpels; seeds numerous.

About 50 species, Indo-Malayan, China; 1 in Gt. Nicobar Island.

**Cryptocoryne ciliata** (Roxb.) Fischer ex Schott Melet. 1 : 16. 1832.

Tuberous herbs. Leaves linear-oblong or lanceolate, lower half sheathing, midrib stout, *ca* 33 x 7.5 cm. Spathe tube *ca* 25 cm long; limb purple, oblong, cuspidate, densely fimbriate. Fruits long-peduncled, *ca* 2.5 cm diam., globose; seeds 6-8.

Rare in marshy places.

*Fl & Fr.* : Aug. - Nov.

Galathea river mouth.

### 4. **HOMALOMENA** Schott

Herbs with stout, rhizome. Spathe erect, convolute, persistent around fruits. Spadix enclosed. Staminate & pistillate flowers close together. Berries few to many seeded; seeds small.



About 30 species, tropics; 3 in Gt. Nicobar Island.

- 1 a. Leaves *ca* 30 cm long, deltoid ovate, much broad; spathe 6.5-9 cm long.  
.....1. *H. cordata*
- b. Leaves *ca* 20 cm long, elliptic or elliptic-oblong not much broad; spathe  
*ca* 3.5 cm long.
- 2 a. Petioles sheathing 1/2 of its length; spadix sessile.....3. *H. nutans*
- b. Petioles sheathing 1/4 of its length; spadix stipitate.....  
.....2. *H. griffithii* var. *ovata*

1. **Homalomena cordata** Schott in Schott & Endl., Melet. 1 : 20. 1832.

Herbs, root stock short, thick. Leaves deltoid ovate, acute, base hastate to cordate with shallow sinus, *ca* 30 x 30 cm; sheathing 1/3 of length. Peduncles *ca* 18 cm long. Spathes pale yellow, white within. Spadix shortly stipitate, stout. Female inflorescences as long as male.

Common in inland forests.

*Fl. & Fr.* : March - July.

Campbell Bay to Chengappa Bay, 5 & 36 km on north-south road, 5 km on east-west road, Laful.

2. **Homalomena griffithii** var. **ovata** (Schott) Engl. in Engl., Pflanze. Arac. Lasioid, 348. 1911.

Herbs, rhizome thick. Leaves elliptic-ovate, coriaceous, acuminate, much broader, base rounded or cuneate, *ca* 18 x 6.4 cm; lateral nerves 4-5 pairs; petioles *ca* 15 cm long. Peduncles many, short. Spathe linear-oblong, acute to rostrate. Spadix stipitate. Female inflorescences half the length of male.

Rare in inland forests.

*Fl. & Fr.* : March - July.

Campbell Bay.

India (Nicobar Islands); Malay Peninsula, Myanmar

The plant record from Great Nicobar is by Kurz, 1876.

3. **Homalomena nutans** Hook. f., Fl. Brit. India 6 : 535. 1893.

Herbs; rhizome slender, elongate. Leaves elliptic, coriaceous, acuminate at both ends, tip mucronate, *ca* 12.5 x 6.5 cm; lateral nerves inconspicuous; petioles stout. Peduncles *ca* 5 cm long, short, decurved above. Spathe turgid. Spadix sessile, shorter than spathe, nearly 1/2 of the spathe length. Female inflorescences half as long as male inflorescences.

Common in inland forests.

*Fl. & Fr.* : March - July.

15 km on east-west road, Laful, Galathea Bay.

India (South Nicobar Island); Myanmar.

5. **POTHOS** L.

Lianas with branched stems. Leaves distichous with sheathing, often winged petiole. Spadix peduncled, globose or slender. Flowers numerous, densely crowded, bisexual. Perianth lobes 6. Stamens 6. Ovary 3 celled. Berries 1-3 seeded; seeds without endosperm.

About 70 species, tropical Asia, Madagascar, Polynesia and Australia; 1 in Gt. Nicobar Island.

**Pothos macrocephalus** Scott. ex Hook. f., Fl. Brit. India 6 : 553. 1893.

Lianas. Leaves lanceolate, apiculate, *ca* 8.5 x 2 cm; petioles *ca* 8 cm long. Peduncles *ca* 5 cm long, curved, stout; bracts few to many. Spathes white, ovate or cordate. Spadix yellow, globose or pyriform. Berries 1-3 seeded; seeds exalbuminous.

Common in inland forests.

*Fl. & Fr.* : Rainy season.

Laful, Campbell Bay.

India (Nicobar Islands); Myanmar, Malay Peninsula.

### 6. RHAPHIDOPHORA Hassk.

Climbers. Leaves distichous. Spathe boat-shaped, deciduous. Spadix cylindric, sessile, usually floriferous to base. Perianth none. Stamens 3-6. Ovaries hexagonal at top; stigmas pulvinate or linear. Berries many seeded; seeds oblong.

About 60 species, tropical Asia to Australia & Polynesia; 2 in Gt. Nicobar Island.

- 1 a. Leaves pinnatifid i.e. much dissected.....1. *R. laciniata*  
b. Leaves not dissected.....2. *R. eximia*

1. **Rhaphidophora laciniata** (Burm. f.) Merrill, Philip. J. Sc. 19 : 342. 1921.

Climbers; stems *ca* 3.5 cm thick. Leaves ovate, dissected, base truncate or subcordate, lobes few, *ca* 45 x 25 cm; lateral nerves 5-8 pairs; petioles *ca* 30 cm long; sheaths pulvinate at leaf blades. Peduncles *ca* 18 cm long. Spathe yellow, deciduous. Spadix 10 cm long. Stigma punctate, subimmersed in the truncate style.

Common in inland forests.

*Fl. & Fr.* : July - Nov.

Baludera

2. **Rhaphidophora eximia** Schott in Bonplandia 5: 45. 1857.

Climbers with fleshy stems. Leaves oblong, longer than broad, obliquely truncate at base, acute at apex, unicostate, *ca* 60 x 13 cm; lateral nerves 4-7 pairs; petioles *ca* 20 cm long. Inflorescences axillary. Spathe *ca* 30 cm long, oblong, cuspidate. Spadix sessile. Flowers naked, bisexual, completely and densely covering the spadix. Berries many seeded; seeds oblong to reniform.

Rare in inland forests.

*Fl. & Fr.* : July - Nov.

Laful, 40 km north-south road.

### CYMODEACEAE

About 4 genera and 18 species, tropics; 1 genus and 1 species in Gt. Nicobar Island.

### HALODULE Endl.

Submerged herbs; rhizomes branched, moniliferous. Stems erect, bearing 1-4 leaves at each branch. Scales 2. Flowers dioecious, solitary axillary or terminal. Male flowers peduncled; stamens 2. Female flowers subsessile; carpels 2, free; style 1. Fruits globose; pericarp stony with tannin cells; seed 1, beak short, lateral or terminal.

About 70 species, tropics; 1 in Gt. Nicobar Island.

**Halodule uninervis** (Forsk.) Aschers in Boiss. Fl. Orient. 5 : 24. 1882.

Submerged marine herbs; roots 1-6 at each node; stems *ca* 30 cm long, bearing 2-4 leaves at each branch. Scales linear-oblong. Leaves narrowly linear, apex 3-fid, narrowed at base, entire, 3 nerves; sheaths *ca* 4 cm long. Male flowers subequal, dorsally connate at tip of stalk; stalks *ca* 2 cm long; anthers oblong, *ca* 3 mm long. Female flowers sessile, enclosed with leaf sheaths; ovaries ovoid; style *ca* 3 cm long. Fruits subglobose, 1 seeded.

Commonly seen in the intertidal region.

*Fl. & Fr.* : June - Aug. Kopenheat, Koshin Don.

### CYPERACEAE

About 70 genera & 3,800 species, cosmopolitan; 7 genera and 29 species (and 2 varieties) in Gt. Nicobar Island.

- |   |                           |   |
|---|---------------------------|---|
| 1 | a. Unisexual flowers..... | 2 |
|   | b. Bisexual flowers.....  | 3 |

- 2 a. Female flowers not enclosed by a sac like organ.....7. *Scleria*  
b. Female flowers enclosed by a small sac like modified prophyll..... 1. *Carex*
- 3 a. Hypogynous scales absent.....4  
b. Hypogynous scales present; Outer 2 hypogynous scales folded, transverse & sharply keeled, ciliate or spinulose on the keel, free or sometimes connate on the adaxial side. ....5
- 4 a. Glumes distichously arranged.....2. *Cyperus*  
b. Glumes spirally arranged.....3. *Fimbristylis*
- 5 a. Hypogynous scales numerous.....6. *Scirpodendron*  
b. Hypogynous scales definite in number.....6
- 6 a. Hypogynous scales 6. ....5. *Mapania*  
b. Hypogynous scales 2 .....4. *Hypolytrum*

### 1. CAREX L.

Herbs with leafy culms. Spikelets few or many, remote or clustered, unisexual, lower flowers female, upper ones male. Glumes imbricate, spiral. Males with 2-3 stamens. Female a compressed trigonous ovary with slender 2 or 3 fid style, enclosed in an urceolate sac (utricle). Nut biconvex or trigonous, enclosed in the utricle.

About 2000 species, cosmopolitan; 2 in Gt. Nicobar Island.

- 1 a. Nut irregularly rhomboid-ellipsoid, seated on a spongy, disc-like body; style strongly bent at the base; flowering stems arising singly or binate from the axils of the leaves.....2. *C. cryptostachys*  
b. Nut regularly trigonous, not seated on a spongy body; style not strongly bent; flowering stems terminal from the centre of the rosette of foliage leaves.....1. *C. cruciata*

1. *Carex cruciata* Wahlenb. in Kongl. Vetensk. Acad. Handl. Stockh. 24 : 149. 1803.

Rhizomatous herbs; rhizomes woody, covered with fibrous sheaths; stems 3 gonous. Leaves linear, as long or longer than stem; sheaths 3 gonous. Panicles ca 30 cm long, with 8-10 secondary panicles. Spikelets cylindrical, linear-oblong, ca 1.5 cm long. Female florets 4-5; glumes

ovate-oblong, aristate, reddish brown. Utricle subinflated, ellipsoid, faintly 3 gonous, abruptly narrowed into 2 fid beak. Male florets above the female ones; glumes ovate-lanceolate, shortly aristate.

Common in rocky slopes, inland forests.

*Fl. & Fr.* : July - Nov.

17 km on east-west road from Campbell Bay.

2. *Carex cryptostachys* Brongn. in Duperrey, Voy. La Coquillé Bot. Phan. 152, t. 25. 1828.

Herbs, *ca* 70 cm high; rhizome suberect. Leaves numerous, subradical, spirally arranged, linear-lanceolate, long acuminate at apex, *ca* 50 x 1 cm. Panicles axillary, *ca* 18 cm long. Spikes linear, lax; bracts linear, *ca* 1 cm long, shorter than spikelets, with funnel-shaped sheaths, and shorter blades. Spikelets lax flowered, *ca* 20 x 5 mm, apiculate at apex. Glumes *ca* 2 mm long, many nerved. Style thickened at upper half; stigmas 3, curved, papillose. Utricle oblong, obtusely trigonous, shortly beaked, *ca* 3.5 mm long, sparsely puberulous. Nut rhomboid-obovoid, yellow seated on a spongy disc-like body, *ca* 2 mm long.

Rare in inland forests.

*Fl. & Fr.* : July - Oct.

Campbell Bay.

## 2. CYPERUS L.

Herbs; culms often terete below, 3-gonous, leafy in lower part. Inflorescences capitate or more often, once, twice or rarely more anthelate, each ray subtended by bracts. Spikelets sessile or shortly peduncled. Glumes distichous; rachilla winged. Flowers bisexual. Stamens 3. Stigma 2 or 3 fid; nuts obovoid or 3 gonous.

About 500 species, cosmopolitan; 15 species in Gt. Nicobar Island.

- 1 a. Nut with a face against the rachilla (axis) of the spikelets, trigonous or when 2 sided, dorsiventrally compressed; stigmas 3 or 2.....2  
 b. Nut with an edge against the rachilla, bilaterally compressed, 2 sided; stigma always 2 fid.....12
- 2 a. Ripe nut tightly clasped by a much thickened, corky internode of the rachilla.....3  
 b. Rachilla internode not becoming corky.....4
- 3 a. Rhizomes long creeping; spikelets 1-flowered, disarticulating at the base, falling off entire.....10. *C. pedunculatus*  
 b. Rhizomes short, not stoloniferous; spikelets many flowered; when mature breaking up into short segments each containing a nut. ....9. *C. odoratus*
- 4 a. Spikelets spicately arranged i.e. at some distance from one another upon a more or less elongated rachis.....5  
 b. Spikelets digitately or stellately arranged i.e. at practically the same level upon a much shortened rachis, forming several to numerous clusters, sometimes part of them solitary or inflorescences capitate.....10
- 5 a. Spikelets 3-5 mm wide; glumes with strong ca 1 mm long mucro; annuals with fibrous roots.....15. *C. squarrosus*  
 b. Spikelets narrower and/or glumes muticous.....6
- 6 a. Leaves strongly septate-nodulose, coriaceous, very scabrous on margins and keel.....7. *C. javanicus*  
 b. Leaves not strongly septate nodulose.....7
- 7 a. Each spikelet maturing several to many nuts.....8  
 b. Each spikelet maturing 1-2 (3) nuts, rarely more than 1/2 cm long, falling off as a whole; spikelets dense, exactly cylindrical to slightly obovoid, ca 1 cm wide.....3. *C. cyperinus*
- 8 a. Rachilla of spikelets distinctly winged.....13. *C. rotundus*  
 b. Rachilla not or hardly winged.....9
- 9 a. Glumes orbicular or broadly ovate, keeled, mucronulate, 1-1.5 mm long; rachis of spikes glabrous & smooth; nut as long as the subtending glume; estoloniferous .....6. *C. iria*  
 b. Glumes ovate or elliptic, rounded on the back, muticous, 2-3 mm long; rachis of the spikes hispidulous or scabrid; nut about 1/2 as long as the subtending glume; perennials with creeping stolons.....11. *C. pilosus*

- 10 a. Glumes very small, ca 0.8 mm long, .....4. *C. difformis*  
 b. Glumes larger.....11
- 11 a. Leaves septate nodulose.....2. *C. compactus*  
 b. Leaves not septate-nodulose.....5. *C. diffusus*
- 12 a. Each spikelet maturing several to many nuts; inflorescences often umbel like.....12. *C. polystachyos*  
 b. Each spikelet usually maturing 1-nut but not rarely, some of them with 2 nuts in the same inflorescence; inflorescence a whitish or greenish head of 1-5 sessile glomerules with densely crowded, sessile spikelets; rachilla disarticulating at base, hence spikelets falling off entire.....13
- 13 a. Keel of glumes distinctly winged. ....8. *C. kyllingia*  
 b. Keel of glumes wingless.....14
- 14 a. Rhizomes horizontally creeping.....1. *C. brevifolius*  
 b. Rhizomes densely caespitose; stolons wanting.....14. *C. sesquiflorus*

1. **Cyperus brevifolius** (Rottb.) Hassk., Cat. Hort. Bog. 24. 1844.

Glabrous sedges, with slender rhizome, ca 30 cm high. Inflorescences capitate, consisting of terminal, globose to ovoid, ca 10 mm long head. Involucral bracts 3-4. Spikelets closely packed, spreading or obliquely erect, elliptic-oblong, strongly compressed, 1(2) flowered, falling off as a whole. First glume elliptic-lanceolate, 2nd ovate, 3rd & 4th boat-shaped, strongly compressed, mucronulate, acutely keeled, with 2-3 smooth keels. Nuts lenticular, obovate, yellowish brown.

Common in sandy soils.

*Fl. & Fr.* : July - Oct.

33 km on east-west road.

2. **Cyperus compactus** Retz., Obs. 5 : 10. 1789.

Sedges, ca 60 cm high, with short corm like rhizomes; culms solitary or few together, 3-gonous. Leaves few, linear. Bracts 3-5. Spikes with many, stellately arranged spikelets; rachis short. Spikelets jointed at base,



*ca* 15 x 1.5 mm, narrowly lanceolate, pale green, tinged with rusty brown. Rachilla with hyaline wings. Glumes *ca* 4 x 1.5 mm, linear-lanceolate, subacute at apex, 5-7 nerved. Nuts linear-oblong, trigonous.

Common in marshy places.

*Fl. & Fr.* : Rainy seasons.

Campbell Bay, Magar Nallah, 4 km on north-south road.

3. ***Cyperus cyperinus* (Retz.) Valck.**, Sur. Gesl. Cyp. Mal. Arch. 154. t. 6. f. 10. 1898.

Sedges, *ca* 90 cm high, with short rhizomes; stolons absent. Inflorescences simple (rarely subcompund), usually contracted and head-like. Involucral bracts 5-10. Rays 5-10, spreading. Spikes broadly cylindrical to obovoid, attenuated towards base, dense with 80 spikelets, *ca* 2 x 1 cm. Spikelets oblong-linear, subterete, 2-3 flowered, falling off as whole, *ca* 5 x 1.25 mm. Rachilla winged, hyaline. Glumes appressed, elliptic, obtuse, minutely mucronate, with 3 nerved keel & brownish green to fuscous, 3-4 nerved sides, *ca* 4 x 1.25 mm. Nut trigonous, ellipsoid, slightly curved, shortly apiculate, brown.

Common in sandy loam soil.

*Fl. & Fr.* : Rainy seasons.

Campbell Bay.

4. ***Cyperus difformis* L.**, Sp. Pl. 67. 1753.

Sedges *ca* 70 cm high, with purple fibrous roots. Leaves many; sheaths pale brown. Inflorescences terminal, simple or compound umbels. Bracts 2-3, leafy. Spikelets linear-oblong, *ca* 8 x 1.25 mm, *ca* 20 flowered. Rachilla not winged. Glumes orbicular, rounded or slightly emarginate at apex, membranous, 3 nerved, white hyaline on margins, *ca* 0.8 x 1 mm. Nuts obovate-elliptic, triquetrous.

Common in marshy places.

*Fl. & Fr.* : Rainy season.

20 km on road to Indira point.

5. ***Cyperus diffusus* Vahl, Enum. Pl. 2 : 321, 1806.**

Sedges *ca* 80 cm high, with short rhizomes. Inflorescences compound umbels, diffuse, usually lax, *ca* 30 cm across. Involucral bracts 4-10. Spikelets digitately arranged, 2-9 together, oblong, turgid compressed, 6-12 flowered. Rachilla persistent, narrowly winged. Glumes membranous, boat-shaped, broadly ovate to orbicular, obtuse, 3-nerved, margins hyaline, tip slightly recurved. Nuts triquetrous, ellipsoid, shortly apiculate, dark brown to black.

Common in sandy loam, inland forests.

*Fl. & Fr.* : July - Nov.

Kopenheat, 42 km on east-west road.

6. ***Cyperus iria* L., Sp. Pl. 45. 1753.**

Glabrous sedges, *ca* 60 cm high. Inflorescences terminal compound, diffuse umbels. Involucral bracts 3-4, leafy. Rachis flexuose, glabrous. Spikelets oblong, *ca* 8 x 2 mm, compressed, 6-20 flowered, golden yellow. Glumes obovate orbicular, 3-5 nerved, keeled, spreading, acutely ridged. Nuts obovoid-ellipsoid, triquetrous, punctate, dark brown.

Common in marshy places.

*Fl. & Fr.* : Rainy season.

Campbell Bay.

7. ***Cyperus javanicus* Houtt., Nat. Hist. 2 : 13. 1782.**

Tufted sedges, *ca* 90 cm high. Leaves canaliculate, rigid. Inflorescences large compound or compound umbels, *ca* 15 cm across. Involucral bracts 5-7. Spikes broadly cylindrical, obtuse with *ca* 50 spikelets, *ca* 2 x 1.5 cm. Rachis glabrous. Spikelets spicately arranged, oblong to

lanceolate, compressed, turgid, falling off as whole, 6-10 flowered, *ca* 9 x 2.5 mm. Rachilla broadly winged, yellowish white. Glumes broadly ovate, acute, keeled, 7-9 nerved, shining brown with green keel, margins whitish hyaline, *ca* 3.5 x 2.5 mm. Nuts triquetrous, ellipsoid, brown in colour.

Rare in marshy places, sandy soil.

*Fl. & Fr.* : July - Oct.

32 km on east-west road, Kopenheat.

India (A & N Islands); Malay Peninsula, Java.

8. **Cyperus kyllingia** Endl., Cat. Hort. Acad. Vindb. 1 : 94. 1842.

Laxly tufted sedges, with long creeping rhizomes. Leaves many, linear; sheaths purple-brown. Inflorescences terminal, single head, bearing globose, central spikes & 2-3 lateral spikes, *ca* 10 x 7 mm. Involucral bracts 3-4. Spikelets ovate-elliptic, *ca* 3.5 x 1.5 mm, 1 or 2 flowered. Glumes usually 5, the lowest 2 smaller & narrow, *ca* 1.5 mm long, remaining glumes *ca* 3.5 mm long, boat-shaped, straw-coloured, 3-5 nerved on each side of keels. Nuts oblong-obovate, biconvex, brownish.

Common in waste lands.

*Fl. & Fr.* : Rainy season.

Laful, Campbell Bay.

9. **Cyperus odoratus** L., Sp. Pl. 1 : 46. 1753.

Tufted sedges, *ca* 50 cm high. Leaves 5-8, flat. Inflorescences compound or decompound, rather loose to dense, *ca* 25 cm across. Involucral bracts 6-8. Spikes ovoid-oblong, *ca* 3 cm wide. Rachis narrowly winged, with 20-30 spikelets. Spikelets spicately arranged, subterete, linear, *ca* 20 flowered, *ca* 25 x 1.5 mm. Rachilla broadly winged. Glumes rigid, broadly ovate or elliptic, obtuse, muticous or minutely apiculate, rounded on the back, 5-9 nerved, reddish brown, margins hyaline, *ca* 3.5 mm long. Nuts falling off with an internode of the rachilla, trigonous, oblong.

Rare in marshy places.

*Fl. & Fr.* : July - Sept.

Campbell Bay.

10. ***Cyperus pedunculatus*** (R. Br.) Kern, Act. Bot. Neerl. 7 : 798. f. 4. 1958.

Erect, rhizomatous sedges, *ca* 80 cm high. Leaves crowded. Inflorescences head like, consisting of some digitately arranged, sessile, short spikes. Involucral bracts 4-5. Spikes ellipsoid, *ca* 15 x 10 mm. Spikelets sessile, densely crowded, ovoid, acute, slightly compressed, 1-flowered, falling off as whole, *ca* 5 x 2 mm. Glumes broadly ovate, hardly keeled, many nerved, minutely apiculate, 3 lower ones empty, 4th glume flowers bearing, uppermost vestigial. Nuts triquetrous, oblong, slightly compressed, shining.

Common on sandy soils.

*Fl. & Fr.* : July - Nov.

Galathea river beach, Alexandra river bank.

11. ***Cyperus pillosus*** Vahl, Enum. Pl. 2 : 354. 1806.

Tufted sedges, *ca* 1 m high; rhizomes clothed with scales. Inflorescences compound umbels. Involucral bracts 4-5. Primary rays 6-7. Spikelets 6-25 to the spikes, elliptic-lanceolate, compressed. Rachilla wingless. Glumes ovate, obtuse, rarely minutely mucronate, keeled, 5-7 nerved, reddish-brown, margins hyaline. Nut triquetrous, obovoid or ellipsoid.

Common in marshy places.

*Fl. & Fr.* : July - Nov.

Near Alexandra river mouth, Campbell Bay, Magar Nallah, Galathea river.

12. ***Cyperus polystachyos*** Rottb., Descr. & Icon. 39, t. 11. f. 1. 1773.

Tufted sedges, *ca* 50 cm high. Inflorescences simple or compound, contracted (rarely single head) to open, *ca* 15 cm across. Involucral bracts 4-6. Spikelets 2-15 to the spikes, linear-lanceolate, tapering to an acute apex, 8-15 flowered. Rachilla narrowly winged, persistent. Glumes sharply keeled, elliptic-ovate, muticous, *ca* 2.5 x 1 mm, keel green, 3-nerved. Nuts 2 sided, laterally compressed, oblong.

Common in paddy fields.

*Fl. & Fr.* : Rainy season.

Magar Nallah, 25 km on east-west road, Alexandra river mouth.

**13. *Cyperus rotundus* L., Sp. Pl. 45. 1753.**

Tufted sedges, *ca* 70 cm high, with long slender stolons. Inflorescences simple or compound terminal corymbs. Spikes turbinate with short rachis, bearing 3-6 spikelets. Involucral bracts 2-5. Spikelets linear, *ca* 30 x 2 mm. Rachilla winged. Glumes ovate, 5-7 nerved. Nuts obovate-oblong, triquetrous, minutely puncticulate.

Common in marshy places, also in waste lands.

*Fl. & Fr.* : Aug. - Dec.

Campbell Bay.

**14. *Cyperus sesquiflorus* (Torr.) Mattf. & Kuk., Pfl. R. Heft. 101. 591. f. 6, E-J. 1936.**

Tufted sedges, *ca* 60 cm high. Inflorescences capitate, whitish, straw coloured, consisting of terminal cylindrical head, *ca* 12 x 5 mm, and 1 or 2 lateral, subglobose, sessile heads, much smaller than the terminal one. Involucral bracts 3-5. Spikelets numerous, elliptic, strongly compressed, *ca* 2.5 x 1.25 mm, falling off as whole. Rachilla cylindric, disarticulating at base. Glumes hyaline, 1st & 2nd small, 3rd & 4th nearly equal in length, broadly ovate, acute, with smooth or hardly spinulose sharp keel, 5-7 nerved. Nuts biconvex, laterally compressed, obovate, shortly apiculate.

Common in waste marshy places.

*Fl. & Fr.* : July - Oct.

Campbell Bay.

**15. *Cyperus squarrosus* L., Cent. Pl. 2 : 6. 1756.**

Caespitose sedges, *ca* 20 cm high. Leaves ensiform. Anthela open or reduced to a single hemispherical spike. Involucral bracts 2-4. Spikes broadly ellipsoid, *ca* 2 x 1 cm, more or less echinate, yellowish green. Spikelets linear-oblong, squarrose. Glumes broadly oblong-ovate, prominently 7-9 nerved. Nuts oblong-obovoid, trigonous, obtuse or minutely apiculate at apex.

Common in agricultural fields.

*Fl. & Fr.* : Aug. - Nov.

Indira point, near Light house.

**3. *FIMBRISTYLIS* Vahl.**

Tufted rhizomatous sedges; culms suberect. Leaves at base only. Inflorescences 1-many, terminal spikelets in umbels or corymbs. Spikelets solitary or clustered, many flowered. Glumes spirally arranged. Bristles absent. Style more or less expanded below (style base), caducous at an articulation with the ovary; stigma 2 or 3 fid. Nuts obovoid, trigonous, usually stalked, no knob at apex.

About 200 species, tropics & subtropics; 7 in Gt. Nicobar Island.

- 1 a. Stigmas 3 fid; nuts trigonous or triquetrous, when dorsiventrally compressed with a raised dorsal angle. ....2
- b. Stigmas 2 fid; nuts strongly dorsiventrally compressed, biconvex or planoconvex.....4
- 2 a. Cauline leaves (at least the upper one) reduced to bladeless tubular sheaths; spikelets solitary.....3
- b. Cauline leaves with well developed blades, or all the leaves basal; spikelets in clusters.....2. *F. cymosa*

- 3 a. Spikelets lenticular with subacute apex.....7. *F. miliacea*
- b. Spikelets subglobose with obtuse apex.....6. *F. littoralis*
- 4 a. Leaves ligulate.....5
- b. Leaves eligulate.....6
- 5 a. Glumes hairy at least in the apical part.....4. *F. ferruginea*
- b. Glumes glabrous.....3. *F. dichotoma*
- 6 a. Spikelets small, 1-1.5 mm wide.....5. *F. griffithii*
- b. Spikelets 2-4 mm wide.....1. *F. albo-viridis*

1. **Fimbristylis albo-viridis** Clarke in Hook. f., Fl. Brit. India 6 : 638, 1893.

Tufted sedges, *ca* 60 cm high; culms slender. Leaves half as long as stem. Inflorescences simple or compound, loose, with few to several spikelets, *ca* 7 cm long. Involucral bracts 1 or 2. Spikelets solitary, oblong-obovoid, terete, densely many flowered, whitish green, often brownish, *ca* 7 x 2.5 mm. Rachilla narrowly winged. Glumes spiral, subchartaceous, glabrous, broadly ovate, obtuse, mucicous, not keeled with 3 nerves. Nuts biconvex, obovate, shortly stipitate, umbonulate, scaly verruculose, obsoletely reticulate, by transversely elliptic not impressed epidermal cells in 10-16 vertical rows, *ca* 1.25 x 0.9 mm.

Common in waste lands.

*Fl. Fr.* : July - Oct.

Campbell Bay.

2. **Fimbristylis cymosa** R. Br., Prodr. 228. 1810.

Tufted sedges, *ca* 60 cm high. Inflorescences varying from simple to compound open corymb. Rays when present 2-6. Bracts 1-3. Spikelets solitary to clustered, *ca* 5 x 2 mm, oblong-elliptic, obtuse, many flowered, light brown. Glumes ovate to broadly ovate, obtuse, membranous, brown with broad white hyaline margins, *ca* 1.5 x 0.7 mm, keels obtuse, obscurely 3-5 nerved. Nuts *ca* 1 x 0.5 mm, obovate, thickly biconvex, dark brown.

Common in waste lands.

*Fl. & Fr.* : Aug. - Nov.

Indira point.

3. ***Fimbristylis dichotoma* (L.) Vahl, Enum. Pl. 2 : 287. 1806.**

Sedges, *ca* 20 cm high. Leaves linear. Inflorescences compound umbels. Spikelets ellipsoid-oblong or ovoid-oblong, greenish brown, *ca* 0.4 x 0.2 cm. Glumes broadly ovate, mucronulate, scarcely keeled. Nuts biconvex, minutely stipitate, conspicuously tuberculate.

Common in marshy places.

*Fl. & Fr.* : July - Nov.

Campbell Bay.

4. ***Fimbristylis ferruginea* (L.) Vahl, Enum. Pl. 2 : 291. 1806.**

Tufted sedges, *ca* 30 cm high; rhizomes woody. Umbels subcompound, usually contracted. Bracts 2-3. Spikelets ovoid to ellipsoid, *ca* 1.5 cm long, terete, densely flowered. Glumes ovate-oblong, red brown, obtuse, apiculate, densely tomentose in apical part, *ca* 4 cm long. Nuts obovate, strongly compressed, pale brown.

Rare in marshy places.

*Fl. & Fr.* : September- October.

Kopenheat, 40 Km on east-west road.

5. ***Fimbristylis griffithii* Boeck. in Fl. 43 : 241. 1860.**

Glabrous sedges, *ca* 30 cm high. Umbels compound or subcompound, loose, with many spikelets, *ca* 7 cm long. Bracts 4-6, filiform. Spikelets solitary, ovoid or lanceolate, angular, acute, densely many flowered, *ca* 7 x 1.25 cm. Rachilla narrowly winged. Glumes triangular ovate, acute, sharply keeled, margins hyaline, *ca* 1.5 x 1 mm. Nuts biconvex, with acute edges, obovate, shortly stipitate, smooth.



Rare along the Galathea river bank.

*Fl. & Fr.* : Aug. - Nov.

Galathea river.

6. ***Fimbristylis littoralis*** Gaud in Freye. Voy. Bot. 413. 1826.

Glabrous sedges, *ca* 50 cm high, with fibrous roots. Spikelets discrete, subglobose, with obtuse apex, *ca* 2.5 x 1.5 mm. Glumes ovate-obovate, muticous, 3 nerved, *ca* 1.5 mm long, Nuts triquetrous, stipitate, 0.5 mm long, stramineous and verruculose.

Common in marshy places.

*Fl. & Fr.* : Sept. - Nov.

18 km on east-west road, Magar Nallah, Campbell Bay.

7. ***Fimbristylis millacea*** (L.) Vahl, Enum. Pl. 2 : 287. 1806.

Glabrous sedges, *ca* 30 cm high. Umbels loosely compound. Bracts 3-5. Spikelets ovoid to subglobose, 0.1-0.25 cm long. Glumes ovate to broadly ovate, obtuse brown, keeled. Nuts *ca* 0.1 cm long, narrowly obovate, obtusely trigonous, verruculose.

Common in rice fields.

*Fl. & Fr.* : Sept. - Nov.

Campbell Bay.

4. **HYPOLYTRUM** L.C. Rich.

Tufted herbs. Leaves broad, 3 nerved; culms with 1 or 2 leaves. Inflorescences terminal corymb, at times congested in a head, subtended by few leaf-like bracts not sheathing at base. Spikelets globose, small, of 1 terminal female flowers and 2 boat-shaped glumes containing 1 stamen each (squamallae). Style continuous with ovary. Nuts small, biconvex, bony; style forming a conical beak.

About 40 species, tropics; 1 in Gt. Nicobar. Island.

**Hypolytrum nemorum** (Vahl) Spr., Syst. Veg. 1 : 233. 1825.

Tufted sedges, *ca* 40 cm high; rhizomes short, woody. Leaves several in basal cluster, and few higher up on stem, linear-lanceolate, *ca* 25 x 3 cm. Panicles terminal, corymbosely much branched, dense or lax *ca* 13 cm across. Bracts 2-4, foliaceous. Spikelets terete, nearly all solitary, *ca* 3 mm long, obovoid-oblong. Glumes membranous, spiral, obovoid orbicular, *ca* 2 mm long, obtuse, brown. Flowers several, bisexual; perianth scales 2, lateral appressed to nut, hyaline, oblanceolate, *ca* 1.7 mm long, keeled. Stamens 2, in the axils of perianth scales. Style continuous with ovary; stigma 2 fid. Nuts sessile, broadly obovate, biconvex, *ca* 2.7 mm long, shortly beaked, smooth or rugulose.

Common in inland forests.

*Fl. & Fr.* : July - Nov.

Campbell Bay, Laful, 25 km on east-west road.

### 5. **MAPANIA** Aubl.

Tufted sedges with narrow or broad scabrid leaves. Inflorescences spike or head of spikes on the scape shorter than the leaves. Spikes containing many spikelets; each spikelet consisting of 1 ovate glume and 6 narrow hyaline, lanceolate, boat-shaped 3 keeled glume. Glumes spirally arranged; lower one empty, upper fertile. Flowers bisexual. Hypogynous scales 6; lower 2, boat-shaped, ciliate on keel, with a stamen in its axil; 3rd, concave or 2 keeled, with stamens in the axils; remaining 3 concave, empty. Style continuous with ovary, not or hardly incrassate at base; stigmas 3, rarely 2. Nuts terete or slightly angular, beaked, stipitate; exocarp thick, corky or fleshy.

About 50 species, tropics; 1 species and 2 varieties in Gt. Nicobar. Island.

**Mapania cuspidata** (Miq.) Uittien. in Jor. Arn. Arbo. 20: 213. 1939.

- 1 a. Leaf blades *ca* 90 x 3.5-6 cm, abruptly narrowed into the tail.....  
 .....var. *petiolata*  
 b. Leaf blades *ca* 40 x 2-3 cm, rather gradually passing in the tail.....  
 .....var. *angustifolia*

var. **angustifolia** (Uitt.) Uitt. in J. Arn. Arbo. 20 : 214. 1939.

Tufted sedges, *ca* 60 cm high, with deep root system; rhizomes *ca* 14 cm long, woody, obliquely descending, passing upwards, into a short stem, terminated by a crown of leaves. Leaves equidistant, petioles *ca* 20 cm long, dilated at base; leaf blades oblong to linear-oblong, narrowed at base, entire, apex-tapering into a linear tail, *ca* 40 x 3 *ca*, 3 nerved. Inflorescences axillary in lower leaves; scapes slender, smooth, *ca* 6 cm long. Basal scales ovato-lanceolate, striate with scarious margin, *ca* 2 mm long. Spike *ca* 18 mm long, oblong. Bracts shorter than head, similar to scales at base of scape. Bracteoles ovate, obtuse, *ca* 18 mm. Spikelets of 6 scales. Stamen anthers linear-oblong, yellow, exserted. Ovary *ca* 8 mm long; style continuous, persistent, branched into 2 slender, stigmatic lobes. Nuts ellipsoid, sessile.

Common on the forest floor.

*Fl. & Fr.* : Rainy season.

Galathea Bay.

India (Nicobar Islands); Philippines, Celebes, New Guinea, Malay Peninsula.

var. **petiolata** (Clarke) Uitt. in J. Arn. Arbo. 20 : 213. 1939.

Herbs *ca* 70 cm high. Leaves crowded; blades *ca* 90 x 6 cm, 3 nerved, abruptly narrowed into the tail. Other characters similar to var. *angustifolia*.

Common in inland forests, in rocky humus soil.

*Fl. & Fr.* : Sept. - Jan.

19 km on east-west road, Koshin Don, 38 km on north-south road.

India (Nicobar Islands); Thailand, Java, Malay Peninsula.

## 6. **SCIRPODENDRON** Zipp.-Kurz

Stout erect sedges, *ca* 70 cm high; rhizomes woody; stems stout. Leaves linear long acuminate, thorny. Spikes clustered, a head of many dense spikelets. Spikelets of 8-11 glumes, beside the bracteoles viz., lowest boat-shaped, opposite, monandrous; 3 uppermost quasiwhorled, narrow oblong, thin, empty; 3-6 intermediate, monandrous or sterile. Style long linear, base continuous with ovary; stigmas 3 fid. Nuts large, coarsely 6 ribbed, exocarp succulent, corky.

About 1 species, extending from Sri Lanka to Australia & Polynesia; 1 in Gt. Nicobar Island.

**Scirpodendron ghaeri** (Gaertn.) Merr. in Philip. J. Sci. 9 : 268. 1914.

Erect stout sedges *ca* 70 cm high; rhizomes woody; culms *ca* 60 cm high. Leaves *ca* 3 mm long, plicate, long acuminate at apex, plicate with 3 prominent nerves. Panicles dense, oblong-ovoid, *ca* 20 x 7 cm. Nuts conical, *ca* 1.5 cm long, coarsely 6 ribbed, exocarp corky.

Rare in marshy places, along river sides.

*Fl. & Fr.* : July - Nov.

Galathea river side, 25 km on east-west road, Campbell Bay to Chengappa Bay.

India (Nicobar Islands); Sri Lanka, Malaysia, Thailand, Celebes, New Guinea, Australia, Polynesia.

## 7. **SCLERIA** Bergus

Herbs; culms triangular, leafy. Leaves flat or keeled, 3 ranked; sheaths with more or less well marked tongue (contra ligule), opposite the blade. Inflorescences of one terminal and generally 1-several axillary panicles or spicate. Spikelets bisexual or unisexual, sometimes clustered into small groups (glomerules). Stigmas 3-fid. Nuts globose or ovoid, with a hard, smooth or sculptured wall and more or less 3 lobed disk or narrow stalk at base.

- 1 a. Middle leaves of the flowering stems clustered in groups of 2-3 forming pseudowhorls.....2. *S. scrobiculata*
  - b. Leaves not in pseudowhorls.....1. *S. terrestris*
1. ***Scleria scrobiculata*** Nees & Mey. ex Nees in Wight, Contrib. Bot. Ind. 117. 1834.

Sedges, *ca* 1.5 m high; stems robust, scabrid on the angles. Leaves in the middle part of stems, clustered in pseudowhorls of 2-5, gradually narrowed upwards, scabrid on margins; sheaths wingless or winged; contraligule short, hirsute ciliate. Panicles *ca* 70 cm long. Spikelets 2-3 together, unisexual. Male spikelets *ca* 4 mm long. Female spikelets evenly distributed along base of the branchlets, ovoid, rounded at base. Disk 3 lobed, 3 angular, thick, glabrous; lobes triangular. Nuts large, exserted from glumes, ovoid, umbonate, scrobiculate, rarely smooth, *ca* 3 x 2.5 mm.

Rare in marshy places.

*Fl. & Fr.* : July - Nov.

25 & 40 km on east-west road.

2. ***Scleria terrestris*** (L.) Fass. in Rhodora 26 : 159. 1924.

Stout sedge, *ca* 1 m high; rhizomes woody; stems scabrid; leafy throughout. Leaves *ca* 75 x 1 cm, 3 nerved, with brown, ciliate margins to the contraligule. Panicles branched. Glumes dark purple. Spikelets not crowded. Nuts white with a quadrately tessellate or reticulate pattern of hairy ridges. Disk bluntly 3 lobed with recurved sinuses.

Rare in marshy places.

*Fl. & Fr.* : July - Nov.

Dogmar river.

## POACEAE

About 620 genera and 10,000 species, cosmopolitan; 20 genera and 25 species in Gt. Nicobar Island.

- 1 a. Stems woody usually hollow; blades of normal leaves with a short pseudopetiole, articulate with a long persistent sheath; callus at apex of sheath often with a collar like rim behind the base of the pseudopetiole; spikelets often subtended by 1 or more glume like, bud bearing bracts (pseudoglumes) forming together a pseudospikelet.....2
- b. Stems not woody; if hard then leaf blades without pseudopetiole and not articulated with sheath, never with collar like callus; spikelets never arranged in alternate clusters of pseudospikelets.....3
- 2 a. Scandent bamboo; stamens 3. ....9. *Dinochloa*
- b. Erect bamboo; stamens 6.....1. *Bambusa*
- 3 a. Spikelets 2 flowered, falling entire at maturity, usually with upper floret hermaphrodite and the lower male or barren and if the latter, often reduced to a lemma or rarely the lemma entirely absent, all alike or more often differing in size, shape and structure, frequently dorsally compressed.....4
- b. Spikelets 1-many flowered, breaking up at maturity above the more or less persistent glumes, or if falling entire, then not 2-flowered in the lower floret male or barren and the upper hermaphrodite, usually more or less laterally compressed or terete or if 2-flowered and falling entire, the glumes and lemmas all membranous and with a globose wrinkled seed which splits the palea when mature.....15
- 4 a. Spikelets unisexual, male and female conspicuously dissimilar.....5. *Coix*
- b. Spikelets perfect, with one perfect floret, if unisexual then male and female spikelets similar, with or without reduced florets, occasionally 2 or more perfect florets.....5
- 5 a. Spikelets often paired, with one sessile and the other pedicelled, those of each pair similar or more often dissimilar, rarely solitary and all alike; glumes as long as the spikelets and enclosing the florets, more or less rigid and firmer than the lemmas which are both hyaline or membranous; upper lemma usually awned.....6
- b. Spikelets solitary or paired, more or less similar; glumes usually membranous, the lower usually smaller, or sometimes suppressed; lower lemmas mostly resembling the upper glume in texture; upper lemma papery to very tough & rigid, usually awnless.....10
- 6 a. Joints of the rachis and pedicel of the pedicelled spikelets (if not much reduced) swollen, 3 angled, reduced or flattened.....7
- b. Joints of the rachis and pedicel narrow, seldom thickened upwards, occasionally with a translucent longitudinal groove; sessile spikelets usually awned.....8

- 7 a. Sessile spikelets with a male and a hermaphrodite floret; upper lemma awned.....14. *Ischaemum*
- b. Sessile spikelets with a hermaphrodite floret only; or occasionally with a male floret below; upper lemma unawned.....4. *Coelorachis*
- 8 a. Spikelets in racemes which are not interrupted by spathes or solitary at the ends of the branches; the racemes collected into whorled panicles; joints of the pedicels not furrowed.....9
- b. Panicles of racemes which are interrupted by spathes, or the espatheate, racemes digitate or in pairs or solitary and terminal, sometimes the joints and/ or pedicels with translucent median furrows. ....8. *Dicanthium*
- 9 a. Spikelets dorsally compressed, in panicles of many pairs or in threes of which one is hermaphrodite.....18. *Sorghum*
- b. Spikelets compressed from the sides.....3. *Chrysopogon*
- 10 a. Spikelets dissimilar; the upper 4-6 male, deciduous; the lower 1-2 hermaphrodite or female, persistent.....20. *Thuarea*
- b. Spikelets all similar in shape and sex.....11
- 11 a. Spikelets arranged in more or less open panicles or with the panicles contracted and spike like.....7. *Cryptococcum*
- b. Spikelets arranged in one sided spikes or spike like racemes; spikes or racemes digitate or scattered, rarely solitary.....12
- 12 a. Lower glume and lowest internode of the rachilla not forming a swollen callus at the base of spikelet.....13
- b. Lower glume and lowest internode of the rachilla forming a swollen callus at the base of the spikelets; upper lemma mucronate or short awned.....13. *Eriochloa*
- 13 a. Lower glume developed, although sometimes small.....14
- b. Lower glume usually absent; spikelets planoconvex.....16. *Paspalum*
- 14 a. Leaf blades linear; racemes dense; culms erect or suberect.....10. *Echinochloa*
- b. Leaf blades lanceolate to ovate; racemes loose to moderately dense; culms creeping and ascending.....15. *Oplismenus*
- 15 a. Spikelets usually with 2 or more fertile florets, or if with 1 fertile floret then with sterile reduced florets above it.....16
- b. Spikelets with 1-fertile floret (male or female in unisexual 1-flowered spikelets) with or without 1 or 2 male or barren florets below it, the latter often much reduced.....19. *Sporobolus*

- 16 a. Lemma and rachilla glabrous or hairy, but with the hairs not enveloping the lemmas, or if so, then the lemma with a geniculate awn; low or moderately tall grass.....17
- b. Lemma or rachilla joints bearing long silky hairs which envelop the lemma; lemma awnless or with straight awn from the tip, often thin; tall grass usually large plum like panicles.....17. *Phragmites*
- 17 a. Lemmas usually 5-many nerved, awnless or awned; awn usually simple, not twisted below the knee.....2. *Centotheca*
- b. Lemmas usually 1-3 nerved; inflorescences of panicles or racemes.....18
- 18 a. Inflorescences of panicles; if racemes or spikes the spikelets not secund. ....19
- b. Inflorescences of racemes or panicles of racemes, the spikelets secund. ....6. *Cynodon*
- 19 a. Spikelets in open, contracted or spike like panicles.....12. *Eragrostis*
- b. Spikelets sessile or very short pedicelled; solitary spikes.....11. *Eleusine*

### 1. **BAMBUSA** Schreber

Shrubby or arboreous grasses; culm sheaths broad; limb triangular. Leaves linear-lanceolate, shortly petioled. Inflorescences pseudopanicule of spikelets, in heads or paniculate spikes. Spikelets with 1-many fertile flowers, supported by 1-3 empty glumes. Stamens 6. Ovary hairy at tip; style short; stigmas 1-3, plumose.

About 100 species, tropical & subtropical regions; 1 in Gt. Nicobar Island.

**Bambusa atra** Lindl. in Penny. Cyc. 3: 357. 1835.

Perennial herbs, ca 12 m high; culm sheaths almost rounded with blackish brown hairs when young. Leaves ca 25-37 x 2.5-7.5 pale beneath leaf sheaths ribbed, keeled and fringed with long stiff bristles at mouth.

Rare in inland forests.

*Fl. & Fr.* : Not known.

Laful.



## 2. CENTOTHECA Desv.

Herbs. Inflorescence a panicle; spikelets if 1 flowered, empty lemmas succeeding fertile florets; if many flowered-florets all bisexual or upper most few, reduced, laterally compressed, pedicelled; rachilla disarticulating between lemmas; lower & upper glumes unequal, 3-5 nerved, shorter than lemmas; lemma oblong-emarginate at apex, 5-9 nerved; palea short, 2-keeled. Lodicules 2. Stamens 2. Styles 2, free; stigmas 2, plumose.

About 4 species, tropics; 1 in Gt. Nicobar Island.

**Centotheca lappacea** (L.) Desv. in Nouv. Bull. Sci. Soc. Philom. Paris 2: 189. 1810.

Slender herbs, *ca* 1 m high. Panicles *ca* 10 cm long; spikelets oblong-lanceolate, acute, 1-many flowered, *ca* 5 mm long. Caryopsis 3 mm long, planoconvex.

Rare in moist places.

*Fl. & Fr.* : Sept. - Nov.

Kopenheat, 39 km on east-west road, Galathea Bay.

## 3. CHRYSOPOGON Trin.

Tufted herbs with narrow leaves. Panicles lax of whorled, branches 3-nate; 1 sessile spikelet & 2 pedicelled spikelets. Sessile spikelets laterally compressed, 2 flowered; glumes subequal; lower lemma hyaline, male or barren, upper lemma bisexual with geniculate awn. Pedicelled spikelets dorsally compressed; lower lemma hyaline, empty or enclosing a male floret.

About 25 species, tropical & subtropical regions; 1 in Gt. Nicobar Island.

**Chrysopogon aciculatus** (Retz.) Trin., Fund. Agrost. 188. 1822.

Herbs, *ca* 60 cm high. Panicles oblong with purplish tinge, *ca* 7 cm long. Sessile spikelets compressed, *ca* 3.5 mm long. Pedicelled spikelets lanceolate, *ca* 5 mm long, cuspidately acuminate. Caryopsis linear.

Common in agricultural lands.

*Fl. & Fr.* : Aug. - Oct.

Campbell Bay.

#### 4. COELORACHIS Brongn.

Robust perennial herbs. Racemes solitary, on long slender pedicels, numerous; rachis jointed. Spikelets in pairs, awnless. Sessile spikelets sunk in a groove in joint, bisexual, 1 or 2 flowered. Pedicelled spikelets less coriaceous, neuter.

About 12 species, cosmopolitan; 1 in Gt. Nicobar Island.

**Coelorachis glandulosa** (Trin.) Stapf ex Ridl., Fl. Malay Peninsula 5 : 204. 1925.

Erect, tufted herbs, *ca* 1.5 m high. Inflorescences in terminal spikes. Spikelets in pair, one sessile, other pedicelled. Sessile spikelets *ca* 5 mm long, bisexual. Pedicelled spikelets neuter, *ca* 2.5 mm. Caryopsis elliptic, swollen, brownish yellow.

Common in grass lands.

*Fl. & Fr.* : May - Nov.

Lafu

#### 5. COIX L.

Tall herbs. Inflorescences terminal; spikelets unisexual, basal female, enclosed in a hard polished utricle like bracts; upper male spikelets, fascicled in 2 or 3 rows.

About 5 species, tropical Asia; 1 in Gt. Nicobar Island.

**Coix lacryma-jobi** L., Sp. Pl. 972. 1753.

Robust glabrous herbs, *ca* 1.5 m high; rooting at lower nodes. Leaves linear-lanceolate, cordate at base, acuminate at apex. Inflorescence a false raceme, consisting of solitary, basal female spikelets enclosed in bracts and several male spikelets borne upwards on the same peduncle. Fruits broadly ovoid, bony, shining white.

Common in marshy places.

*Fl. & Fr.* : Aug. - Nov.

Dogmar river bank.

**6. CYNODON** Rich. ex Pers.

Stoloniferous herbs, with linear narrow leaves and slender erect culms with 3-6 terminal spreading slender spikes. Spikelets 1-flowered. Glumes persistent, membranous, 1 nerved; lemma laterally compressed, 3 nerved, hairy; palea 2 keeled, bisexual. Lodicules 2. Caryopsis turgid.

About 10 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Cynodon dactylon** (L.) Pers., Syn. Pl. 1 : 85. 1805.

Decumbent herbs, *ca* 40 cm high. Leaves linear-lanceolate, acute, glaucous, *ca* 10 x 0.5 cm; ligules with a rim of white hairs. Spikes 2-4, *ca* 7 cm long. Spikelets *ca* 2.5 mm long, crowded; glumes lanceolate, 1 nerved; lemmas silky, pubescent on keel. Caryopsis turgid, *ca* 1 mm long.

Common in agricultural lands.

*Fl. & Fr.* : Sept. - Jan.

Campbell Bay.

**7. CRYPTOCOCCUM** Stapf.

Geniculate or ascending herbs. Inflorescences open or contracted panicles. Spikelets long to short pedicelled, obliquely ovate, laterally com-

pressed, 2 flowered, deciduous; glumes 2, membranous, lower smaller, upper glume as long as spikelets, 3-5 nerved; lower lemma narrowly paleate, upper chartaceous, 3-5 nerved. Caryopsis free.

About 12 species, paleotropical; 1 in Gt. Nicobar. Island.

**Cryptococcum accrescens** (Trinn.) Stapf in Hook., Ic. Pl. sub. t. 3096. 1922.

Herbs, *ca* 60 cm high. Leaves linear-lanceolate, *ca* 15 x 0.2 cm; sheath margins ciliate. Panicles very lax, branches capillary; spikelets *ca* 1.3 mm long, compressed, minutely hispidulous at least on glume and lower lemma; pedicels long. Caryopsis free.

Rare in inland forests.

*Fl. & Fr.* : Sept. - Jan.

18 km towards Indira point.

### 8. **DICANTHIUM** Willemet

Tufted herbs, with narrow leaves. Inflorescences of 1-many, many jointed, articulate, spiciform racemes; spikelets dorsally compressed, 2 nate, sessile and pedicelled, similar in shape and size, but differing in sex, the lowest pair male or neuter. Sessile spikelets : lower glumes hyaline, many nerved; upper glumes boat-shaped, keeled; lower lemma shorter than lower glume, veinless; upper lemma reduced to stipe, awned from tip. Caryopsis oblong-obovate. Pedicelled spikelets : male, unawned.

About 15 species, paleotropical; 1 in Gt. Nicobar Island.

**Dicanthium pertusum** (L.) Clayton in Kew Bull. 32 : 4. 1977.

Tufted erect, rhizomatous herbs, *ca* 50 cm high. Leaves lanceolate, acuminate, *ca* 30 x 0.5 cm, crowded at base of culms. Inflorescences of 3-15, subdigitate paniculate racemes, silky hairy. Sessile spikelets *ca* 4 mm long; lower glumes cartilaginous, pitted, 5-9 nerved, blunt; upper glume acute with an awn. Pedicellate spikelets glabrous, pitted or not.

Frequent in waste lands.

*Fl. & Fr.* : Aug. - Nov.

Campbell Bay.

### 9. **DINOCHLOA** Buese

Long climbing bamboo with slender much branched stems; culm sheaths thick, wrinkled at base, broad ring remains after sheath fallen; limb long. Leaves lanceolate. Panicles long, slender, compound, of very small head of minute spikes; spikelets 1 flowered; empty glumes 1-4, blunt, broad; palea convolute, keeled. Stamens 3, free. Caryopsis globose, pea-shaped.

About 20 species, Myanmar, Indo-Malayan; 1 in Gt. Nicobar Island.

***Dinochloa scandens*** (Bl. ex Nees) O. Ktze., *Rev. Gen. Pl.* 773, 1891.

Scandent climbers, attaining 100 m length with zig zag-branches; internodes 22-45 cm long and 2.5 cm broad, dark green. Leaves alternate, ca 30 x 7.5 cm. Flowers in narrow terminal panicles.

Abundant in littoral forests.

*Fl. & Fr.* : Oct. - Dec.

Navy Dera.

India (Andaman & Nicobar Islands); Myanmar.

### 10. **ECHINOCHLOA** P. Beauv.

Herbs with tufted, creeping or floating culms and flat blades. Inflorescences panicle of spiciform racemes, arranged racemosely or slightly branched; main axis terminating in a few spikelets; spikelets ovate-elliptic, sessile or shortly pedicelled, 2 flowered, deciduous at maturity; lower & upper glumes herbaceous, lower glume shortly awned, distinctly nerved; upper glumes as long as spikelets, 5-nerved, muticous; lower

lemma like upper glume, paleate, male or empty; upper lemma coriaceous or chartaceous. Lodicules 2; stamens 2; styles 2; stigma plumose. Caryopsis free.

About 30 species, tropics; 3 in Gt. Nicobar Island.

- 1 a. Ligule a fringe of stiff hairs, at least in the basal leaves.....3. *E. stagnina*  
 b. Ligules entirely absent.....2
- 2 a. Spikelets 2.5-3 mm long; lower lemma & upper glume equally acute; spikes distantly arranged.....1. *E. colona*  
 b. Spikelets 3-4 mm long (excluding awn) ; lower lemma usually produced into variable awn; spikes relatively crowded.....2. *E. crusgalli*

**1. *Echinochloa colona* (L.) Link, Hort. Berol. 2 : 209. 1833.**

Erect or geniculately ascending herbs, *ca* 80 cm high, rooting at the lower nodes. Leaves linear acute, flaccid, *ca* 20 x 0.75 cm marked purplish brown band at the junction of blade & sheath. Panicle of racemes, *ca* 15 cm long, branches *ca* 3 cm long, appressed or ascending to the axis; pedicels 2 nate; spikelets 2-3 mm long, crowded, ovate to obovate-elliptic; glumes and lemmas neither awned nor cuspidate, acute. Caryopsis 2 mm long, planoconvex, broadly elliptic.

Common in moist places.

*Fl. & Fr.* : Sept. - Nov.

Laful, 32 km on east-west road, Campbell Bay.

**2. *Echinochloa crusgalli* (L.) P. Beauv., Ess. Agrost. 53, 761. 1812.**

Erect or prostrate herbs, *ca* 1.5 m high; rooting at lower nodes. Racemes solitary or 2-3 together, *ca* 20 cm long. Spikelets ovate-elliptic, *ca* 4 mm long; lower glumes orbicular, 5 nerved; upper 5-7 nerved; lower lemma barren, awned; upper fertile, ovate-elliptic. Caryopsis elliptic, 2 mm long.

Common in moist marshy places.

*Fl. & Fr.* : Sept. - Dec.

25 km on east-west road, Alexandra river, Magar Nalah, Dogmar river.

3. **Echinochloa stagnina** (Retz.) P. Beauv., Ess. Agrost. 53, 161. 171. 1812.

Geniculate ascending herbs, *ca* 1.5 m high; often rooting at lower nodes. Spikelets ovate to lanceolate-ovate, pubescent, *ca* 6 mm long. Caryopsis yellowish white, broadly elliptic.

Common in moist places.

*Fl. & Fr.* : Aug. - Nov.

Campbell Bay, Kopenheat.

# 11. ELEUSINE Gaertner

Tufted herbs with narrow linear leaves. Inflorescences of digitate or whorled secund spikes; spikelets solitary, sessile, laterally compressed, 3-many flowered; glumes persistent, acute or cuspidate, lower 1 nerved, upper 1-7 nerved; lemmas 3 nerved, keeled; palea 2 keeled. Caryopsis ellipsoid.

About 9 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Eleusine indica** (L.) Gaertn., Fruct. 1 : 8. 1789.

Erect herbs, *ca* 60 cm high. Spikes 2-7, digitate; rachis flattened; spikelets 3-6 flowered, *ca* 3.75 mm long. Caryopsis obliquely striated, reddish brown.

Common in agricultural lands.

*Fl. & Fr.* : July - Sept.

Laful, 4 km on east-west road, Galathea to Indira point, Campbell Bay.

12. **ERAGROSTIS** P. Beauv.

Glandular or eglandular herbs, with linear blades. Inflorescences densely crowded, contracted or effuse and spreading panicle; spikelets 2-many flowered, unawned, laterally compressed, long or short pedicelled, breaking up at maturity either from below upward or from above downwards; glumes acute, 1-3 nerved, subequal; lemmas acute, 3 nerved; palea hyaline, 2 keeled. Lodicules 2. Caryopsis ellipsoid.

About 300 species, tropics & subtropics; 3 in Gt. Nicobar Island.

- 1 a. Spikelets breaking up from apex downwards at maturity; rachis fragile.  
.....2. *E. tenella*
- b. Spikelets breaking up from below to upwards; rachis tough..... 2
- 2 a. Spikelets broadly ovate to ovate-oblong..... 3. *E. uniloides*
- b. Spikelets narrowly oblong or linear..... 1. *E. atrovirens*

1. **Eragrostis atrovirens** (Desf.) Trin. ex Steud., Nom. Bot. ed. 2. 1 : 562. 1840.

Tufted herbs, *ca* 80 cm high. Panicles *ca* 20 cm long, ovate or oblong. Spikelets *ca* 1.5 mm long, 5-15 flowered, linear. Caryopsis reddish brown, ellipsoid, 1 mm long.

Frequent in moist paddy fields.

*Fl. & Fr.* : Aug. - Nov.

Campbell Bay.

2. **Eragrostis tenella** (L.) P. Beauv. ex R. & S., Syst. Veg. 2 : 576. 1817.

Erect and weak herbs, *ca* 40 cm high. Panicles terminal, *ca* 15 cm long. Spikelets 4-9 flowered, 1-2.5 mm long; rachilla capillary, scabrous, fragile. Caryopsis pale to light brown, ovoid-ellipsoid, 0.5 mm long.

Common in agricultural fields.

*Fl. & Fr.* : Aug. - Nov.



32 km on east-west road, Campbell Bay, Kopenheat.

3. **Eragrostis uniloides** (Retz.) Nees ex Steud., Syn. Pl. Gum. 1 : 264, 1854.

Tufted erect herbs, *ca* 50 cm high. Panicles *ca* 18 cm long, open or contracted spikelets 10-many flowered, ovate-oblong, *ca* 12 x 3 mm, with purple tinge. Caryopsis obovoid to ellipsoid, laterally compressed, orange brown, *ca* 0.75 mm long.

Rare in waste lands.

*Fl. & Fr.* : Aug. - Nov.

Campbell Bay.

### 13. **ERIOCHLOA** Kunth

Tufted herbs, culms shortly creeping. Inflorescences spiciform, secund racemes; upper racemes sessile; spikelets solitary or fascicled, acute, 2 flowered, articulate with widened tip of pedicel, deciduous; base of spikelets thickened, knob like and forms capular rim; lower glume veinless or wanting; upper 5 nerved, hairy; lower lemma 5 nerved; upper lemma chartaceous, hardening in fruit. Lodicules 2; stamens 3; styles 2, free; stigmas plumose. Caryopsis dorsally compressed.

About 20 species, tropical & subtropical; 1 in Gt. Nicobar Island.

**Eriochloa procera** (Retz.) C.E. Hubb. in Kew Bull. 1930 : 256. 1930.

Tufted rhizomatous herbs, *ca* 1 m high, with swollen & pubescent nodes. Inflorescence a panicle; rachis angular; pedicels short, scabrid. Spikelets paired, rarely solitary, *ca* 3.5 mm long, acute, hispid; lower glume fused with rachis, upper 5 nerved, lower lemma empty, upper elliptic, mucronate. Caryopsis elliptic, smooth.

Rare in marshy places.

*Fl. & Fr.* : Aug. - Nov.

Campbell Bay.

#### 14. ISCHAEMUM L.

Tufted herbs, with creeping or ascending culms. Inflorescences of 2-many, spiciform racemes, arranged digitately. Spikelets 2-nate, sessile & pedicelled; spikelets usually in pairs, heteromorphous; lower glumes oblong, lower half hardened, tuberculate, bicuspidate at tip, winged; upper boat-shaped, keeled, shortly awned; lower lemma narrowed at tip, keeled; its palea hyaline, male; upper lemma entire, 2 fid, awned, 3-5 neved; its palea hyaline, bisexual. Lodicules 2; stamens 3; style 2 free; stigma plumose. Caryopsis oblong.

About 50 species, tropical & subtropical; 2 in Gt. Nicobar Island.

- 1 a. Spikelets awnless or the awn rudimentary, concealed.....1. *I. muticum*
- b. Spikelets prominently awned, awns well exerted.....2. *I. rugosum*

##### 1. *Ischaemum muticum* L., Sp. Pl. 1049. 1753.

Herbs, ca 80 cm high. Leaves ovate-lanceolate, acuminate, rounded or shallowly cordate at base, ca 10 x 1 cm; sheaths keeled. Racemes 2, concealed or hardly exerted from spathe, ca 3.5 cm long; joints turbinate, shortly keeled, triangular. Sessile spikelets oblong acute, ca 7 mm long, awnless. Pedicelled spikelets elliptic or oblong-lanceolate, 4-6 mm long, awnless, sometimes reduced into small rudimentary structure; pedicelled turbinate, ca 5 mm long.

Common in open places.

*Fl. & Fr.* : Aug. - Nov.

Galathea bay, 27 km on east-west road near Satish bridge, Campbell Bay.

##### 2. *Ischaemum rugosum* Salisb., Ic. Stirp. Rar. 1, t. 1. 1791.

Herbs, ca 60 cm high. Leaves linear-lanceolate, acuminate, with scabrid margins, ca 20 x 1.25 cm. Racemes 2, ca 10 cm long; joints and pedicels clavate, ciliate. Sessile spikelets ca 6 mm long, ovate-oblong,

callus bearded. Pedicelled spikelets variable, slightly shorter than the sessile spikelets.

Rare in marshy places.

*Fl. & Fr.* : Sept. - Dec.

10 km on north-south road.

### 15. **OPLISMENUS** P. Beauv.

Herbs; culms creeping near base. Inflorescences of spiciform, secund racemes with triquetrous rachis. Spikelets paired or solitary, 2 flowered, shortly pedicelled, articulate with short pedicels. Caryopsis wholly enclosed but free from indurate upper palea and upper lemma.

About 15 species, tropical & subtropical, 1 in Gt. Nicobar Island.

***Oplismenus compositus* (L.) Beauv., Ess. Agrost. 54, 168. 169. 1812.**

Herbs, *ca* 1.25 m high, with decumbent culms, rooting at base. Leaves ovate-lanceolate, base rounded, hairy below, *ca* 12 x 2 cm; sheaths ciliate. Panicles *ca* 15 cm long. Spikelets *ca* 5 mm long, 2-3 nate, lanceolate-oblong, often tinged with purple; lower glume 5 nerved, 2.5 mm long; upper glume 9 nerved, awned; lower lemma membranous, *ca* 4 mm long. Caryopsis dorsally compressed.

Common on sandy soils.

*Fl. & Fr.* : Sept. - Nov.

Kopenheat, Campbell Bay to Galathea.

### 16. **PASPALUM** L.

Perennial herbs; culms creeping and ascending. Inflorescences of spiciform racemes. Spikelets solitary, sometimes paired, 2-flowered, 2-seriate, convex on one side, shortly pedicelled, articulated with the tip of pedicel, deciduous; lower glume absent; upper glume and lower lemma similar; upper lemma firmly involute along margins, its palea similar in texture, with inflexed membranous margin. Caryopsis hemispheric.

About 250 species, tropics; 1 in Gt. Nicobar Island.

**Paspalum conjugatum** Berg. in Act. Helvet. Phys. Math. : 129, t. 8. 1772.

Creeping or stoloniferous herbs, *ca* 1 m high; rooting at nodes. Racemes 2, conjugate, rarely 3, *ca* 15 cm long; spikelets broadly elliptic or ovate, *ca* 2 mm long, greenish yellow. Caryopsis hemispheric, brown.

Common in agricultural lands.

*Fl. & Fr.* : Aug. - Nov.

Campbell Bay, 40 km on east-west road, Laful.

#### 17. PHRAGMITES Trin.

Tufted large, perennial herbs, Inflorescences compound panicle. Spikelets 3-10 flowered; rachilla disarticulating between lemmas; white ciliate; lowest florets abortive; succeeding one bisexual, uppermost sometimes reduced; glumes unequal, membranous, ovate-lanceolate, 1-5 nerved; lemmas dissimilar; lowest empty, abortive or male, persistent, longer than subtending glumes, 3-nerved, enclosing membranous 2 keeled palea; palea 2 keeled, 3 nerved, enclosing bisexual flowers.

About 3 species, cosmopolitan; 1 in Gt. Nicobar Island.

**Phragmites karka** (Retz.) Trin. ex Steud., Nom. Bot. ed. 2. 2 : 324. 1841.

Herbs, 2 m high; culms fistular. Leaves linear-lanceolate, acuminate, scabrid beneath, apex attenuate, *ca* 40 x 3 cm; sheaths loose, throat hairy; ligules membranous. Panicles *ca* 50 cm long, with filiform and spreading branches. Spikelets 9-12 mm long; rachilla hairs *ca* 6 mm long, silky brown. Caryopsis purplish, narrowly elliptic, 1.5 mm long.

Rare along sea shores.

*Fl. & Fr.* : Sept. - Jan.

42 km on east-west road, sea shores of Campbell Bay.

18. **SORGHUM** Moench.

Stout perennial herbs. Panicles erect or nodding with numerous slender branches, often whorled. Spikelets in pairs, 1 sessile and 1 pedicelled. Sessile spikelets dorsally compressed, elliptic-oblong, falling off at maturity. Pedicelled spikelets lanceolate. Caryopsis free, inside palea and bracts.

About 60 species, tropical & subtropical regions; 1 in Gt. Nicobar Island.

**Sorghum halepense** (L.) Pers., Syn. Pl. 1 : 121. 1805.

Stout herbs, *ca* 2 m high. Leaves broadly linear-lanceolate, acuminate, base rounded, *ca* 50 x 3.5 cm; sheaths glabrous; ligules ciliate. Panicles *ca* 35 cm long, decompound. Spikelets 2-nate, in pairs. Sessile spikelets *ca* 5 mm long, narrowly elliptic, acute. Pedicelled spikelets *ca* 5.5 mm long, lanceolate; lemma empty. Caryopsis dark brown, *ca* 1.4 mm long.

Rare in grass lands.

*Fl. & Fr.* : Aug. - Nov.

Indira point.

19. **SPOROBOLUS** R. Br.

Herbs with tufted culms. Inflorescence an open, contracted or spike like panicle; spikelets terete, 1 flowered, unawned, bisexual, on pedicels of unequal length; glumes membranous, shorter or as long as spikelets, unequal, often truncate; lower glume without nerve; upper 1 nerved; lemma 1-3 nerved; palea hyaline, 2 nerved. Lodicules 2. Caryopsis obovoid.

About 150 species, tropics & warm temperate regions; 1 in Gt. Nicobar Island.

**Sporobolus indicus** (L.) R. Br. var. **fertilis** (Steud.) Jovet. & Guedes in Bull. centre Et. Rech. Sc. Biarritz 7: 50. 1960 & Taxon 22 : 163. 1973.

Perennial herbs, *ca* 60 cm high. Leaves linear or linear-acuminate, rounded or shallowly cordate at base, *ca* 20 x 0.7 cm; ligules truncate, membranous. Panicles *ca* 20 cm long, contracted, spiciform; spikelets obovoid, *ca* 2.5 mm long, greyish, pedicelled. Caryopsis obovoid, reddish-brown.

Common in open places.

*Fl. & Fr.* : July - Dec.

Campbell Bay.

## 20. THUAREA Pers.

Prostrate herbs with creeping culms. Spikes terminal included in leaf sheath; spikelets uniseriate, jointed on one face of the rachis, dissimilar, upper 4-6 male, deciduous, lower 1-2 hermaphrodite or female, persistent. Caryopsis enclosed in the thickened rachis forming an obconic beaked nut.

1 species, south-east Asia & tropics; 1 in Gt. Nicobar Island.

*Thuarea involuta* (G. Forst.) R. Br. ex R. & S., *Suyst. Veg.* 2 : 808. 1817.

Perennial herbs, *ca* 20 cm high; culms long creeping, stoloniferous. Leaves lanceolate, *ca* 5 x 0.6 cm; sheaths ciliate on margins; ligule a row of hairs. Inflorescences terminal, one sided racemes, enclosed by spathe; spikelets dissimilar, upper 4-6 male, deciduous; lower 1-2, bisexual or female, persistent. Male spikelets *ca* 4 mm long. Pistillate spikelets bisexual, persistent.

Common in sea beaches.

*Fl. & Fr.* : July - Nov.

Thow Nalah, Kopenheat.



Littoral vegetation along rocky coast



Three story forest canopy - an over view at Indira point





*Cyathea albo-setacea* (Bedd.) Copel- An endemic tree fern



Mt. Thullier - view from Laful





Dense Fern vegetation in Biosphere Reserve



Littoral vegetation - Navy Dera





*Nypa fruticans* Wurmb. - A mangrove palm



*Argusia argentea* (L.F.) Heine (Boraginaceae)



*Schefflera longifolia* (Bl.) R. Viguier (Araliaceae)



*Crinum asiaticum* L. (Amaryllidaceae)





*Balanophora abbreviata* Bl. (Balanophoraceae)



*Tacca leontopetaloides* (L.) O. Ktze (Taccaceae) - edible tubers -  
Staple food of Shompen tribe.

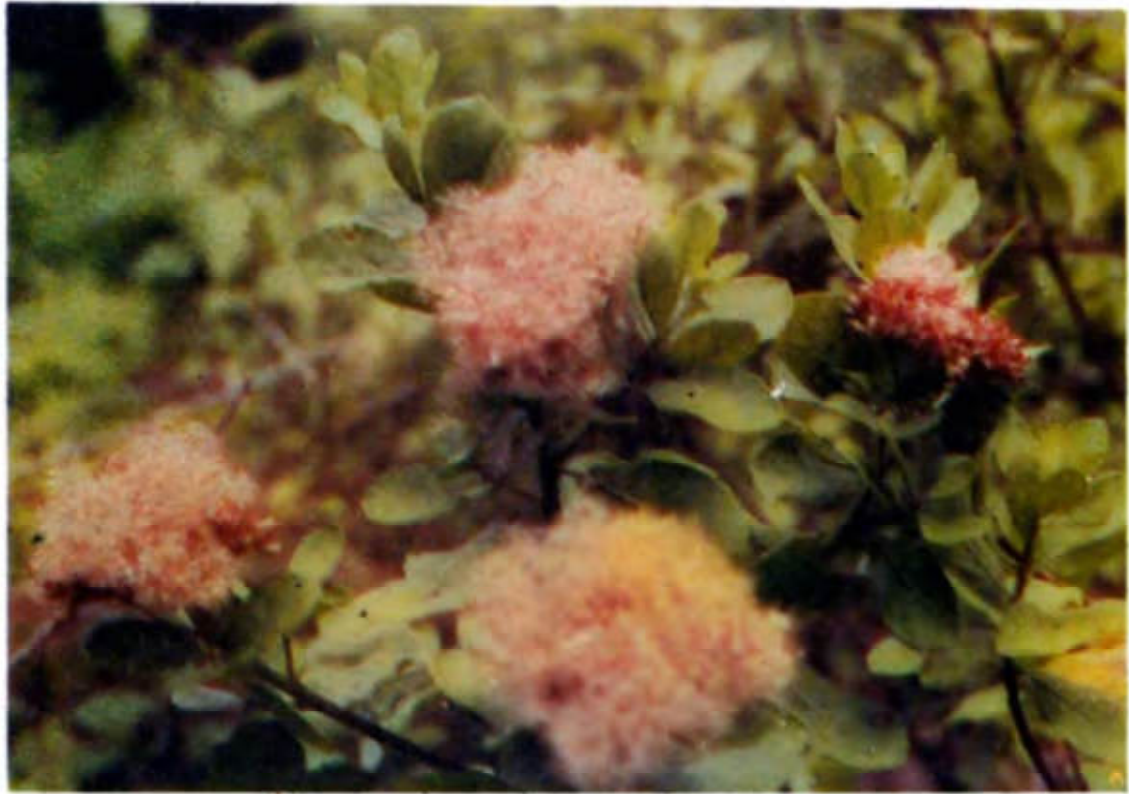


*Aglaonema simplex* Bl. (Araceae)



*Hunteria zeylanica* (Retz) Gard. ex Thw. (Apocynaceae)





*Pluchea indica* (L.) Less (Asteraceae)



*Hornstedtia fenzlii* (Kurz) Schum (Zingiberaceae) - Habit



*Hornstedtia fenzlii* (Kurz) Schum - fruits & flowers



*Jasminum multiflorum* Boj. (Oleaceae)





*Semecarpus kurzii* Engl. (Anacardiaceae)



*Blumeodendron kurzii* (Hk. f.) J.J. Sm. (Euphorbiaceae)





*Aporosa villosa* (Lindl.) Bail (Euphorbiaceae)



*Ophiorrhiza mungos* L. (Rubiaceae)



*Poikilospermum suaveolens* (Bl.) Merr. (Moraceae)



*Cissus aristata* Bl. (Vitaceae)





*Myxopyrum smilacifolium* Bl. (Oleaceae)



*Embelia microcalyx* Kurz (Myrsinaceae)





*Pandanus odoratissimus* L.F. (Pandanaceae) - Littoral tree



*Pandanus leram* Jones ex Fontea var. *andamanensium* (Kurz) Stone  
(Pandanaceae) - A staple food of Shompens





*Phlegmariurus phlegmaria*  
var. *filiforme* (Bl.) Ellis. (Huperziaceae)  
-epiphytic wild ornamental plant.



*Cycas rumphii* Miq. (Cycadeceae)  
- A common littoral gymnosperm



*Garcinia nervosa* Miq. (Clusiaceae)





*Vanilla andamanica* Rolfe (Orchidaceae) - a wild relative of cultivated *Vanilla* species



*Cyrtandroemia nicobarica* (L.) Alston (Scrophulariaceae)



*Sonneratia caseolaris* (L.) Druce (Sonneratiaceae) Mangrove tree



*Syzygium* sp. (Myrtaceae)





*Greenea jackii* Wt. & Arn. (Rubiaceae)



*Clerodendrum paniculatum* L. (Verbenaceae) - a wild ornamental

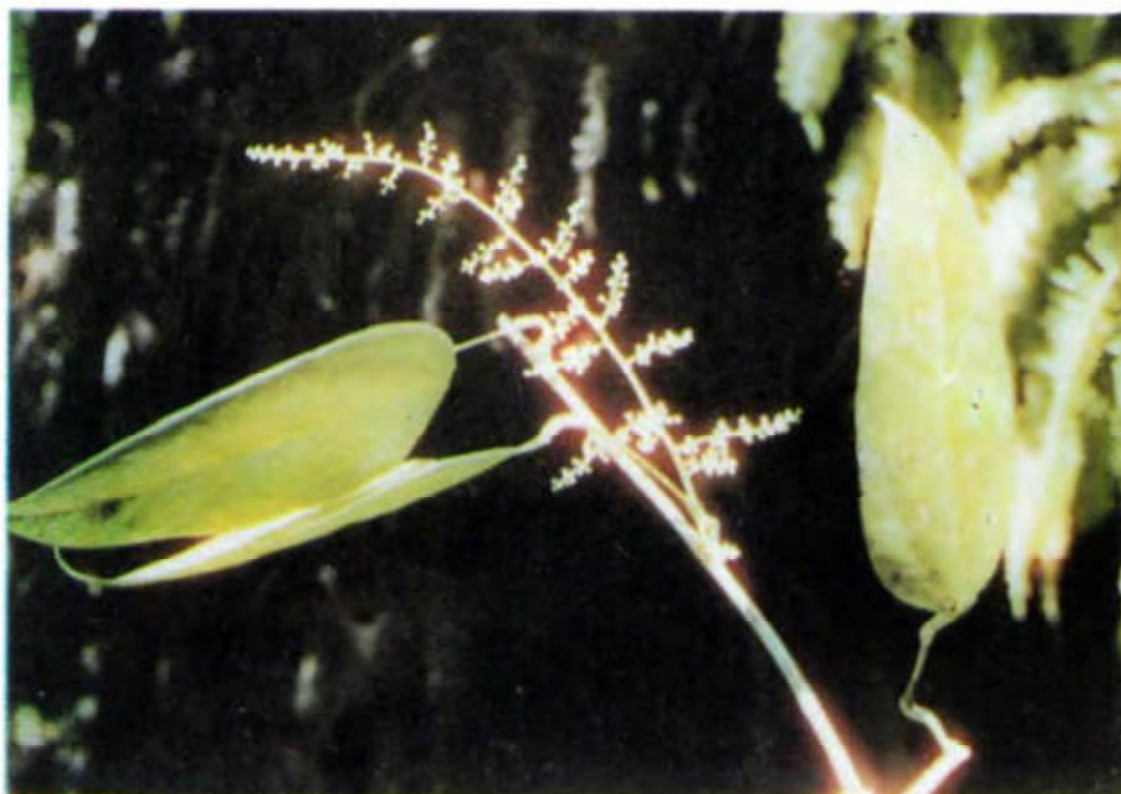




*Fagraea recemosa* Jack (Loganiaceae)



*Pycnarrhena lucida* (T. & B.) Miq. (Menispermaceae)



*Tinomiscium petiolare* Hk. f. (Menispermaceae)



*Heritiera littoralis* Dryand (Sterculiaceae)





*Casearia grweiaefolia* Vint.  
var. *gelonoides* (Bl.) Sleumer (Flacourtiaceae)



*Ardisia solanacea* (Poir) Roxb. (Myrsinaceae)



*Cerbera odollam* Gaertn. (Apocynaceae)



*Aglaia sylvestris* (M. Roem.) Merr. (Meliaceae)





*Ophiorrhiza mungos* L. (Rubiaceae)



*Mycetia javanica* (Bl.) Reinw. ex Korth (Rubiaceae)



*Otenthera nicobarensis* Teijsm (Melastomataceae)



*Melastoma affine* D. Don. (Melastomataceae)

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