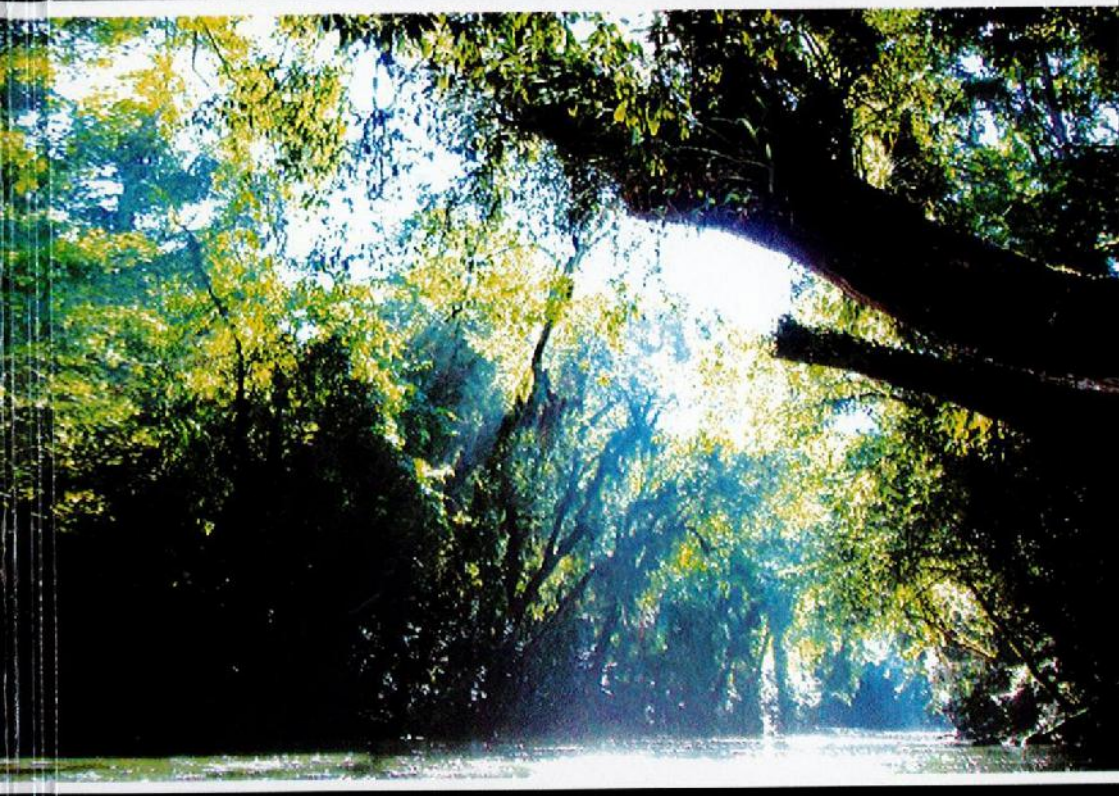
Heart of Borneo Series 6

Checklist Of Plants of Lanjak Entimau Wildlife Santuary



FOREST DEPARTMENT SARAWAK

HEART OF BORNEO SERIES 6:
CHECKLIST OF PLANTS OF LANJAK ENTIMAU WILDLIFE SANCTUARY

Forest Department Sarawak

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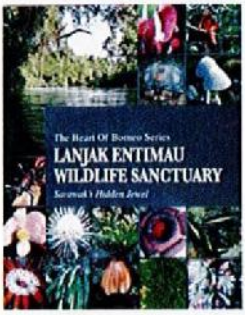
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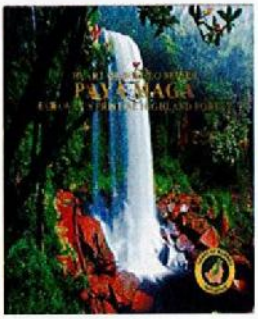
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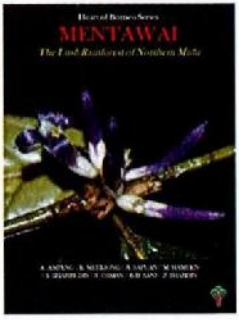
INAUGURAL

The Heart of Borneo (HoB) Initiative is a voluntary transboundary cooperation between Brunei, Indonesia and Malaysia. The Declaration was signed on February 12, 2007. The project aims to protect the biological, ecological, cultural richness and as well as for conservation of rainforest of Borneo. In Sarawak, the HoB covers 2.689 million ha over a contiguous block along Sarawak's boundaries with Kalimantan, Sabah and Brunei. The HoB is fully in line with existing policies by both state and federal government. The HoB focusing on three key elements; people welfare, biodiversity conservation and protection of environment based on five pillars, (1) Sustainable Forest Management, (2) Ecotourism Based on Culture, Adventure and Nature, (3) Conservation of Biological Diversity, (4) Sustainable Landuse and Agriculture (5) Community-Based/Rural Poverty Eradication Programme.

This plants checklist book is our six serial from the Heart of Borneo Series in conjunction with the scientific expedition conducted in Lanjak Entimau Wildlife Sanctuary in 2008 and data from the past research conducted in the areas.









INTRODUCTION

Lanjak Entimau Wildlife Sanctuary (LEWS) was constituted as a wildlife sanctuary on 2nd February 1983 specifically for the protection of orangutan and hornbills. The role is fully realised as it becomes a vital part of the Transboundary Biodiversity Conservation Area with Betung Kerihun National Park, Kalimantan, Indonesia in 1994. It is situated in the southwestern part of Sarawak in the watershed of Lupar and Rejang Rivers within the Second, Third, Six and Seventh Divisions. LEWS is the largest Totally Protected Area in Sarawak with the coverage areas of 168,758 ha (1983) and a proposal has been made to increase the size to 191, 568 ha. It is one of the richest sites for flora in Borneo with an equally distinct selection of animals. The HoB Scientific Expedition in 2008 for example, have discovered nine new species of plants [5 gingers, 2 begonias, 1 each for *Mapania* and *Rhizanthes* (possibly new)] and includes many new records of fauna such as 27 species of butterflies, eight species of bats and 4 species of tree shrews.

This series, however only covers the list of plants (includes bryophytes and fungi) that recorded and reported from the LEWS areas based on the data from the ITTO Scientific Expedition (1997), the HoB Scientific Expedition 2008 and various scientific publications.

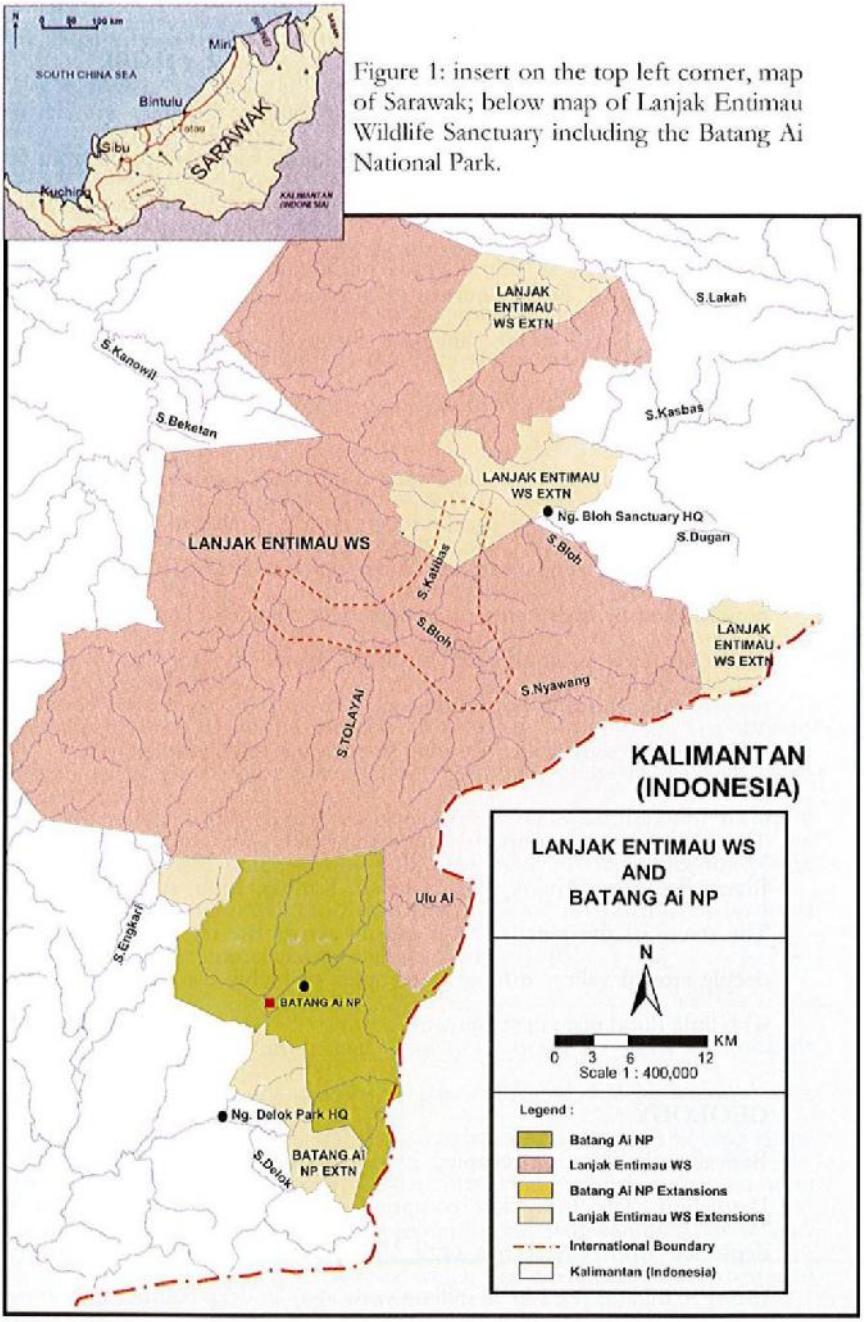


Figure 1: insert on the top left corner, map of Sarawak; below map of Lanjak Entimau Wildlife Sanctuary including the Batang Ai National Park.

TOPOGRAPHY

The topography of LEWS is rugged throughout the area, with its most strongly dissevered terrain located in the south. Elevation range from 60 m above sea level in the flood plains of the north to a maximum of 1285 m at the summit of Bukit Lanjak in the sanctuary southwestern quadrant. Bukit Lanjak (1,285 m), Bukit Entimau (975 m) and Bukit Spali (975 m) are the three major peaks in the sanctuary. Steep slopes with narrow V-shaped valleys prevail.

In areas where impervious sandstone is dominant especially in the southern part of the study area, it usually forms typical parallel to sub-parallel strike ridges running in almost east-west direction crosscuts by fault lines which are now marked by lineaments or straight river channels. The northern part of the study area is dominated by shale, hence the topography is rather unsystematic showing no trend at all. The area is also heaved because the shale is more easily eroded forming smooth and rolling topography.

The LEWS is an important water-catchments area and is drained by the Rivers Ensirieng, Mujok, Poi, Ngemah, Katibas, Bloh, Apoh and Kanowi. The rivers of the sanctuary cut mostly across the regional strike crossing deeply eroded valleys through a complex of highly dissevered steep ridged with little flood plain development.

GEOLOGY

Basically, the area is occupied by the sedimentary rocks of the Belaga Formation. The formation comprises shale and sandstone which were deposited from Cretaceous until Upper Eocene time (Wolfenden, 1959) (from 90 million years to 38 million years ago) in deep marine environments.

The Belaga Formation is divided into five members namely Layar, Kapit, Pelagus, Metah and Bawang members. Lithologically the formation consists of steeply dipping strata of very thin to very thickly bedded, fine to medium-grained sandstone interbedded with the argillaceous rock.

The Belaga Formation is one of the Rajang Group sedimentary deposits that have been uplifted during the subduction of the Mesozoic oceanic lithosphere beneath West Sarawak continental basement. The Rajang Group includes the Lupar, Belaga, Kelalan and Mulu Formation. The convergence resulted in the closure of Rajang Sea and formed the Rajang Group as accretionary wedge complex. The accretion occurred during the Early Paleocene, Middle Eocene, Upper Eocene and Upper Oligocene (Tongkul, 1996; Madon, 1999).

THE CHECKLIST

The checklist is based on material housed in the Forest Department Herbarium in Kuching and Herbarium Universiti Malaysia Sarawak. Also included a list of plants that extracted from technical reports, technical papers, books, field notes or any published materials regarding the plants from Lanjak Entimau Wildlife Sanctuary (LEWS) and Batang Ai National Park (BANP). The nomenclature follows Turner (1995).

The checklist includes all species known to occur in LEWS, exotic or introduced plant for any purposes, e.g. cultivated for agricultural use, ornamental and for medicine and also includes common weeds as long as the plants are found and recorded in the Sanctuary that includes settlement areas within the areas. A few species are referred to only with numbers, or as 'sp.'. These are apparently distinct species which are currently unidentified and may, in some instances represent undescribed species.

Species entry format

The entry in this checklist for each species can be summarized as followed:

Code number; **species name**; synonym; habit; habitat; uses; notes

Code number – each taxon is referred to by code (e.g. 5.5.73) of three numbers separated by stops. The first number refers to the family, the second for the genus and the third for the species. When a species is represented by more than one infraspecific taxon then each is separately referred to by suffixed letters beginning from a.

Species name – The species name is given in bold type at the start of each entry.

Synonym/basionym – the synonym/basionym of the species is given in the box bracket, italicised but not bold type.

Habit – the general habit of the species is given, often tree, shrub, herb, climbing, epiphytic and etc.

Habitat – the general habitat of the species is given, often being reduced to lowland MDF or hill, or Kerangas or secondary forest. The natural condition of where the plant recorded (occasionally) and the soil types are also included.

Uses – Any uses of the plants that reported is given, including general use, medicinal and others.

Notes – extra notes on the species is given (e.g. new species, a new record, field identification etc.).

Abbreviation used in the list

alt.	=	altitude
Bid.	=	Bidayuh
Ib.	=	Iban
Kay.	=	Kayan

Ked.	=	Kedayan
Kel.	=	Kelabit
Ken.	=	Kenyah
LB.	=	Lun Bawang
LEWS	=	Lanjak Entimau Wildlife Sanctuary
m.	=	meter
Mal.	=	Malay
MDF	=	mixed dipterocarp forest
Mel.	=	Melanau
MSF	=	mixed swamp forest
Pen.	=	Penan
PSF	=	peat swamp forest
Pun.	=	Punan

RESULTS

From *The Heart of Borneo Series: Checklist of Plants of Lanjak Entimau Wildlife Sanctuary*, the number of taxa recorded from Lanjak Entimau Wildlife Sanctuary and its vicinities areas was representing as follow:-

224 families

130 flowering plants (trees and non-trees)
2 gymnosperm family
18 ferns families
2 fern-allies families
22 bryophytes families
50 fungi families

A total of 2664 plant species represented by 582 genera of flowering plants (including trees and non-trees), 134 genera of ferns and fern-allies, 128 genera of bryophytes and 106 genera of macrofungi.

The best-represented plant families are (10 most specious):

Orchidaceae – 57 genera with 149 species [including 20 *Bulbophyllum* spp., 13 *Coelogyne* spp., 12 *Eria* spp., 9 *Dendrobium* spp. and 8 *Appendicula* spp.]

Rubiaceae – 33 genera with 129 species [including 16 *Ixora* spp., 14 *Urophyllum* spp., 13 *Lasianthus* spp., 11 *Psychotria* spp. and 8 *Pleiocarpidia* spp.]

Dipterocarpaceae – 7 genera with 99 species [including 55 *Shorea* spp., 13 *Hopea* spp., 13 *Vatica* spp. and 11 *Dipterocarpus* spp.]

Arecaceae – 17 genera with 99 species

Annonaceae – 27 genera with 82 species [including 17 *Polyalthia* spp.]

Zingiberaceae – 15 genera with 77 species

Myrtaceae – 4 genera with 75 species [including 72 *Syzygium* spp.]

Lauraceae – 12 genera with 72 species [including 25 *Litsea* spp.]

Meliaceae – 7 genera with 62 species [including 36 *Aglaia* spp.]

Myristicaceae – 5 genera with 59 species [including 25 *Knema* spp.]

The most specious genera are (16 most specious):

Syzygium – 72 species

Shorea – 55 species

Aglaia – 36 species

Diospyros – 32 species

Ficus – 28 species

Elaeocarpcus – 26 species

Knema, Litsea – 25 species

Calamus – 24 species

Cyrtandra, Pinanga, Baccaurea – 22 species

Aporusa – 20 species

Bulbophyllum – 20 species

Calophyllum – 19 species

Polyalthia – 17 species

Ethnobotanical

The ethnobotanical uses recorded included medicinal plants the used by the humans, as food (included fruits, vegetables and spices), constructions and handicrafts, veterinary uses (mostly to treat worms and diseases in dogs, chickens and pigs), used for wrapping and as well as for ornamental.

Note: *Air masak* is a tonic drink for preventing sickness and maintaining health. Different communities had different ingredients of the plant they have used to prepare the concentration of *Air masak*. For example, the Kedayan community used a mixture of 48 varieties of plants together added with *jintan hitam* (fennel seed) and shallot. The mixtures then boiled in water to make a drink (Chai, 2000). For the Melanau community, the mixtures of plants sometimes fermented in *arak putih* (white beer) that also can be used as body massage oil beside as health tonic. However, the similarity of plants that been used was depending on their believed and knowledge gained from their folks.

1. ARAUCARIACEAE

1.1.1 ***Agathis borneensis*** Warb. Bindang, Damar minyak, Buloh (Ib.); canopy/emergent, midstorey/subcanopy; hill MDF, lower mossy forest; slope, ridge; alluvial clay soils, sandy clay soils.

2. GNETACEAE

2.1.1 ***Gnetum cuspidatum*** Blume. Akar dundun (Ib.); climber, liana, stragling shrub; lowland MDF, hill MDF, secondary forest, emperan; slope, ridge; sandy soils, clay rich soils.

2.1.2 ***Gnetum diminutum*** Markgr. Akar dundun (Ib.); liana, climber; submontane forest; occasional near the stream; alluvial clay soils.

2.1.3a ***Gnetum gnemon*** L. Melinjau; Belinjau; Daun sambong (Ib.); midstorey/ subcanopy, tree, treelet; lowland MDF, degraded MDF, Kerangas, secondary forest; flat ground, gentle slope; alluvial soils. **Uses**: young shoot cooked as vegetable.

2.1.3b ***Gnetum gnemon*** L. var. ***brunonianum*** (Griff.) Markgr.; Akar dundun (Ib.); lowland MDF, emperan; sandy soils.

2.1.4 ***Gnetum klosii*** Merr. Akar kikat; Akar dundan (Ib.); climber, liana; lowland MDF, hill MDF, sometimes riverine; gentle slope, valley bottom.

2.1.5 ***Gnetum latifolium*** Blume. Akar dundun (Ib.); montane forest; alt up to 1400 m; alluvial clay soils.

2.1.6a ***Gnetum leptostachyum*** Blume. Akar dundun (Ib.); lowland MDF, emperan, occasional near stream; sandy soils.

2.1.6b ***Gnetum leptostachyum*** Blume. var. ***robustum*** Markgr. Akar dundun (Ib.); lowland MDF, emperan, riparian; sandy soils, clay rich soils.

2.1.7 ***Gnetum raya*** Markgraf. Akar tegang (Ib.); climber, liana, stragling shrub; lowland MDF, hill MDF, emperan; slope, ridge.

2.1.8 ***Gnetum*** sp.3 Liana, climber; lowland MDF, gentle slope, valley bottom; alluvial soils.

3. ACTINIDIACEAE

3.1.1 ***Saurauia acuminata*** Merr. Mata ikan; small tree or treelet; riparian forest, river-bank; sandy soils.

3.1.2 ***Saurauia amoena*** Stapf. Mata ikan; small tree or treelet; montane forest, raiparian forest, river-bank; sandy soils.

3.1.3 ***Saurauia ferox*** Korth. Mata ikan; small tree or treelet; widely distributed in MDF mainly riparian, submontane forest; alt up to 1200 m; sandy alluvial soils.

3.1.4 ***Saurauia glabra*** Merr. Mata ikan; midstorey/subcanopy, small tree or treelet; occasional in MDF and Kerangas forest; alluvial clay soils.

3.1.5 ***Saurauia heterophylla*** Merr. Mata ikan; midstorey/subcanopy, small tree or treelet; lowland MDF, old secondary forest.

3.1.6 ***Saurauia myrmecoidea*** Merr. Mata ikan; small tree or treelet; occasional in MDF mainly riparian; fertile clay soils.

3.1.7 ***Saurauia nudiflora*** C. DC. Mata ikan; midstorey/subcanopy; lowland MDF, riparian forest; sandy soils.

3.1.8 ***Saurauia cf. planchonii*** Hook.f. Mata ikan; small tree or treelet; lowland MDF, secondary forest; alluvial clay soils.

3.1.9 ***Saurauia reinwardtiana*** Blume. Mata ikan; small tree or treelet; occasional in MDF and secondary forest.

3.1.10 ***Saurauia subcordata*** Korth. Mata ikan, Igol-igol (Ib.); midstorey /subcanopy, understorey, treelet; lowland MDF, hill MDF; gentle slope, steep slope; alluvial soils, clay rich soils.

4. ALANGIACEAE

4.1.1 ***Alangium havilandii*** Bloemb. Jadam paya; hill MDF; slope, ridge; sandy clay soils.

4.1.2a ***Alangium javanicum*** (Blume) Wangerin var. ***javanicum.*** Midong (Ib.); canopy/emergent tree, treelet; lowland MDF; gentle slope, steep slope; yellow sand clay soils.

4.1.2b ***Alangium javanicum*** (Blume) Wangerin var. ***ebenaceum*** (C.B. Clarke) Harms. Midong (Ib.); old secondary forest, lowland MDF, hill MDF; gentle slope, ridge; alluvial clay soils, clay rich soils.

4.1.2c ***Alangium javanicum*** (Blume) Wangerin var. ***meyeri*** (Merr.) Berhaman. Midong (Ib.); lowland MDF; gentle slope, ridge; clay rich soils.

4.1.3 ***Alangium longiflorum*** Merr. Jadam, Midong (Ib.), Kayo kavek (Kay.); canopy/emergent, midstorey/subcanopy, treelet; lowland MDF, hill MDF; gentle slope, ridge; sandy soils.

4.1.4 ***Alangium nobile*** (C.B. Clarke) Harms ex King. Midong (Ib.); old secondary forest; gentle slope, sandy clay soils.

5. ANACARDIACEAE

5.1.1 ***Androtium astylum*** Stapf. Rengas padang; summit ridge forest; slope, ridge; alluvial clay soils.

5.2.1 ***Buchanania arborescens*** (Blume) Blume. [basionym: *Coniogeton arborescens* Blume; syn: *Buchanania lucida* Blume]. Terentang chit (Ib.) Otak udang (Mal.); medium size tree to 20 m tall; widely distributed on a variety of soils; secondary forest and riverine.

5.2.2 ***Buchania insignis*** Blume. Otak udang; midstorey/subcanopy; lowland MDF, old secondary forest; slope; alluvial soils.

5.2.3 ***Buchanania sessilifolia*** Blume. Rengas; Otak udang (Mal.); midstorey/subcanopy; lowland MDF, old secondary forest, river-bank; alluvial soils, clay rich soils.

5.3.1 ***Campnospermum auriculatum*** (Blume) Hook.f. Terentang bertelinga; midstorey/ subcanopy tree, lowland MDF, old secondary forest, degraded secondary forest; sandy soils.

5.3.2 ***Campnosperma squamatum*** Ridl. Terentang tikus; midstorey/ subcnaopy; lowland MDF; slope; alluvial clay soils.

5.4.1 ***Dracontomelon dao*** (Blanco) Merr. & Rolfe. Sengkuang; canopy/ emergent, midstorey/subcanopy; lowland MDF, old secondary forest; slope; clay rich soils.

5.5.1 ***Drimycarpus luridus*** (Hook.f.) Ding Hou. Rengas; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, summit ridge forest; slope, ridge; alluvial soils, clay soils.

5.6.1 ***Gluta aptera*** (King) Ding Hou. Rengas sudu; canopy/emergent, midstorey/subcanopy; old secondary forest, lowland MDF, hill MDF, summit ridge forest, submontane forest, montane forest; slope, ridge; wide range of soils. **Note**: poisonous latex can cause itchness and dead.

5.6.2 ***Gluta beccarii*** (Engl.) Ding Hou. [basionym: *Melanorrhoea beccarii* Engl.] Rengas; canopy/emergent, midstorey/subcanopy; lowland MDF, river-bank; gentle slope, ridge; alluvial soils, sandy clay soils. **Note**: same as 4.6.1

5.6.3 ***Gluta macrocarpa*** (Engl.) Ding Hou. Rengas paya; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, summit ridge forest, submontane forest; slope, ridge; alluvial clay soils, sandy clay soils.

5.6.4 ***Gluta rugulosa*** Ding Hou. Rengas; midstorey/subcanopy; lowland MDF, emperan, riparian; clay-rich soils.

5.6.5 ***Gluta speciosa*** (Ridl.) Ding Hou. Rengas bulu; occasional in MDF; damp clay soils.

5.6.6 ***Gluta velutina*** Blume. Rengas; canopy/emergent, midstorey/ subcanopy; old secondary forest; alluvial soils, sandy soils. **Note**: poisonous latex.

5.6.7 ***Gluta wallichii*** (Hook.f.) Ding Hou. [syn: *Melanorrhoea wallichii* Hook.f.] Rengas; canopy/emergent, midstorey/subcanopy;

lowland MDF, river-bank; gentle slope, ridge; alluvial soils, clay rich soils. **Note:** poisonous latex.

5.7.1 ***Mangifera caesia*** Jack. Binjai; Buak binyok (Mel.); cultivated. **Uses**: fruit edible.

5.7.2 ***Mangifera griffithii*** Hook.f. Asam raba; buak nyabong bului (Mel.); lowland MDF; clay-rich soils; sometimes cultivated. **Uses**: fruit edible.

5.7.3 ***Mangifera havilandii*** Ridl. Raba (Ib.); buak nyabong (Mel.); canopy/emergent; lowland MDF, hill MDF, river-bank; flat ground, gentle slope; alluvial soils, clay rich soils; sometimes cultivated in the orchard. **Uses:** fruit edible.

5.7.4 ***Mangifera indica*** L. Empelam (Ib.); cultivated near the settlement. **Uses:** fruit edible.

5.7.5 ***Mangifera khoonmengiana*** Kosterm. Raba; midstorey/ subcanopy; lowland MDF, hill MDF, river-bank; alluvial soils, sand clay soils. Sometimes cultivated. **Uses**: fruit edible.

5.7.6 ***Mangifera odorata*** Griff. Kwini; cultivated near the settlement. **Uses**: fruit edible.

5.7.7 ***Mangifera pajang*** Kosterm. Embang (Ib.); buak pangin (Mel.); cultivated in the orchard. **Used**: fruit edible.

5.7.8 ***Mangifera parvifolia*** Boerl. & Koord. Asam raba; midstorey/ subcanopy; lowland MDF, riparian forest; clay-rich soils. Uses: fruit edible.

5.7.9 ***Mangifera pentandra*** Hook.f. Asam raba; midstorey/subcanopy; lowland MDF, emperan; sandy clay soils; sometimes cultivated. **Uses**: fruit edible.

5.7.10 ***Mangifera torquenda*** Kosterm. Kemantan, Lemantan; midstorey/subcanopy; lowland MDF, riparian forest; sandy clay soils; sometimes cultivated. **Uses**: fruit edible.

5.8.1 ***Melanochyla beccariana*** Oliv. [syn.: *Melanochyla ferruginea* Merr.] Rengas paya; midstorey/subcanopy hill MDF, summit ridge forest; damp clay soils.

5.8.2 ***Melanochyla caesia*** (Blume) Ding Hou. Rengas; midstorey/ subcanopy; lowland MDF, hill MDF, summit ridge forest; wide range of soils.

5.8.3 ***Melanochyla elmeri*** Merr. Rengas hitam; midstorey/subcanopy; old secondary forest, lowland MDF; wide range of soils.

5.8.4 ***Melanochyla fulvinervis*** (Blume) Ding Hou. Rengas; small tree; lowland MDF, summit ridges forest; alluvial clay soils.

5.8.5 ***Melanochyla semecarpoides*** Ding Hou. Rengas (Mal.); canopy/emergent, midstorey/subcanopy; lowland DF, hill MDF, frequent on river-banks; sandy clay soils. **Note**: poisonous latex.

5.9.1 ***Parishia insignis*** Hook.f. [syn.: *Parishia borneensis* Ridl.]; Upi bung; Upi batu; canopy/emergent; old secondary forest; sandy clay soils.

5.9.2 ***Parishia maingayi*** Hook.f. [syn.: *Parishia polycarpa* Ridl.; *Parishia elmeri* Merr.] Upi paya; canopy/emergent; hill MDF, Kerangas forest; on igneous-derived soils. **Note**: frequent recorded in MSF on shallow coastal peat.

5.10.1 ***Pentaspadon motley*** Hook.f. Plajau; Emplanjau (Ib.); frequent on river-banks and riverine alluvial, subject to periodic flooding. **Uses**: fruit edible; bark and leaves are sometimes burnt to keep malevolent spirits away.

5.11.1 ***Semecarpus bunburyanus*** Gibbs. Rengas; canopy/emergent; old secondary forest; alluvial soils, sandy soils.

5.11.2 ***Semecarpus cuneiformis*** Blanco. [syn.: *Semecarpus ferrugineus* Merr.] Rengas; midstorey/subcanopy; old secondary forest; sandy clay soils.

5.11.3 ***Semecarpus glaucus*** Engl. [syn.: *Cassuvium glaucum* Kuntz.] Rengas; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF; gentle slope, ridge; alluvial soils, sandy clay soils.

5.11.4 ***Semecarpus heteropohylla*** Blume. Rengas (Mal.); canopy/ emergent; occasionally in MDF or sometimes in secondary forest.

5.11.5 ***Semecarpus minutipetalus*** Kochummen. Rengas; midstorey/ subcanopy; lowland MDF; alluvial clay soils.

5.11.6 ***Semecarpus sandakanus*** Kochummen. Rengas; midstorey/ subcanopy; lowland MDF, hill MDF, riparian; gentle slope; alluvial clay soils.

5.12.1 ***Spondias cytherea*** Sonn. Kedondong; cultivated near the settlement. **Uses**: fruit edible.

5.13.1 ***Spondias philippinensis*** (Elmer) Airy Shaw & Forman [syn.: *Solenocarpus philippinensis* (Elmer) Kosterm]. Rengas; midstorey /subcanopy; lowland MDF, hill MDF; gentle slope; alluvial clay soils.

5.14.1 ***Swintonia acuta*** Engl. Pitoh ayer; canopy/emergent, midstorey/ subcanopy; occasional in MDF on alluvial soils and riverine.

5.14.2 ***Swintonia foxworthyi*** Elmer. Pitoh (Ib.); canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF; flat ground, gentle slope; sandy soils, clay rich soils.

5.14.3 ***Swintonia glauca*** Engl. Pitoh paya; Pilong (Mel.); canopy/ emergent, midstorey/subcanopy; Kerangas forest; alluvial clay soils. **Note**: also recorded in MSF.

5.14.4 ***Swintonia schwenkii*** (Teysm. & Binn.) Teysm. & Binn. ex Hook.f. Pitoh; canopy/emergent; occasional in MDF; sandy clay soils.

6. ANISOPHYLLEACEAE

6.1.1 ***Anisophyllea beccariana*** Boerl. Mertama; understorey, treelet; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; sandy soils, clay rich soils. **Uses**: medicinal.

6.1.2 ***Anisophyllea corneri*** Ding Hou. Mertama; understorey, treelet; old secondary forest; sandy soils.

6.1.3 ***Anisophyllea disticha*** (Jack) Baill. Mertama ribu (Mal.); Petagar ambun-ambun (Ked.); shrub or small pagoda tree to 7 m tall;

lowland to montane forest; common throughout. **Uses**: medicinal, used in *air masak*.

6.1.4 ***Anisophyllea ferruginea*** Ding Hou. Mertama; understorey, small tree or treelet, shrub; old secondary forest, lowland MDF; sandy clay soils.

7. ANNONACEAE

7.1.1 ***Alphonsea johorensis*** J. Sinclair. Semukau (Ib.); Selukai; midstorey /subcanopy; lowland MDF, hill MDF; gentle slope; clay-rich soils. **Note**: also recorded from limestone areas in Bau.

7.2.1 ***Anaxagorea borneensis*** (Becc.) J. Sinclair. Pendok (Ib.); small tree or treelet; old secondary forest, lowland MDF, hill MDF; gentle slope; alluvial clay soils.

7.3.1 ***Annona muricata*** L. Durian belanda; cultivated in the orchard, near the settlement. **Uses**: fruit edible; young fruits are eaten after boiling in water for hypertension.

7.4.1 ***Artabotrys cf. roseus*** Boerl. Akar mersawa (Ib.); lowland MDF; gentle slope; alluvial clay soils.

7.4.2 ***Artabotrys suaveolens*** (Blume) Blume Akar mersawa (Ib.); climber; degraded MDF, Kerangas; gentle slope; terrace; ridges; periodically flooded; alluvial deposits clay soils. **Uses**: bark burnt and rubbed on affected caused by *Uvaria* sp.

7.5.1 ***Cyathocalyx biovulatus*** Boerl. Selemo paya; Empendok (Ib.); midstorey/subcanopy; old secondary forest, lowland MDF, Kerangas forest; clay rich soils, alluvial clay soils. **Note**: also recorded in MSF in Maludam NP.

7.5.2 ***Cyathocalyx carinatus*** (Ridl.) J. Sinclair. Pendok; midstorey/ subcanopy, small tree; old secondary forest, lowland MDF, hill MDF; sandy clay soils.

7.5.3 ***Cyathocalyx havilandii*** Boerl. Selemo (Mel.); Pendok (Ib.); lowland MDF, old secondary forest; clay-rich soil.

7.5.4 ***Cyathocalyx magnificus*** (Diels.) J. Sinclair. Pendok asi (Ib.); occasional in lowland MDF.

7.5.5 ***Cyathocalyx pruniferus*** (Manigay ex Hook.f. & Thoms.) J. Sinclair. Pendok (Ib.); midstorey/subcanopy, treelet; lowland MDF, hill MDF; slope, ridge; sandy soils, clay rich soils.

7.5.6 ***Cyathocalyx ridleyi*** J. Sinclair. Pendok jugam (Ib.); midstorey/ subcanopy, small tree; lowland MDF; alluvial clay soils.

7.6.1 ***Dasymachalon clussiflorum*** Merr. Semukau; midstorey/ subcanopy, small tree; lowland MDF; alluvial soils.

7.7.1 ***Desmos dasymaschala*** (Blume) Saff. Semukau; small tree, treelet; lowaland MDF; sandy clay soils.

7.7.2 ***Desmos dumosa*** (Roxb.) Saff. Semukau; small tree, treelet; lowland MDF, hill MDF; sandy clay soils.

7.8.1 ***Disepalum anomalum*** Hook.f. Karai manok; Selukai lada; small tree, treelet; lowland MDF, Kerangas forest, summit ridge forest; slope, ridge; sandy clay soils, alluvial clay soils.

7.8.2 ***Disepalum cf. pulchrum*** (King) J. Sinclair. Hujan panas; small tree, treelet; summit ridge forest; alluvial soils.

7.9.1 ***Enicosanthum coriaceum*** (Ridl.) Airy Shaw; Karai; Selukai; midstorey/subcanopy; old secondary forest, lowland MDF, hill MDF; clay-rich soils. **Note**: occasional on limestone forest.

7.9.2 ***Enicosanthum grandiflorum*** (Becc.) Airy Shaw. Karai; small tree, treelet; old secondary forest; sandy clay soils.

7.9.3 ***Enicosanthum paradoxum*** Becc. Karai; small tree, treelet; lowland MDF; on igneous-derived soils.

7.10.1 ***Fisssistigma kingii*** (Boerl.) Burkill. Akar malam; Liana, climber; degraded MDF, riparian forest, old secondary forest; alluvial clay soils.

7.10.2 ***Fissistigma latifolium*** Merr. Akar rarak (Ib.); liana, climber; hill MDF, summit hill forest; slope, ridge; alluvial clay soils.

7.10.3 ***Fissistigma rigidum*** Ridl. Akar rarak (Ib.); lowland MDF, Kerangas forest; gentle slope; alluvial clay soils.

7.10.4 ***Fissistigma rugosum*** J. Sinclair. Akar rarak (Ib.); liana, climber; riparian forest; sandy clay soils.

7.11.1 ***Friedodielsia affinis*** (Hook.f. et Thoms.) Steenis. Akar rarak (Ib.); climber; alluvial forest.

7.11.2 ***Friesodielsia biglandulosa*** (Blume) Steenis. Akar rarak (Ib); woody climber; lowland MDF. **Used**: as an antidote for taking poisonous fungi.

7.11.3 ***Friesodielsia borneensis*** (Miq.) J. Sinclair. Akar malam, Akar rarak (Ib.); climber; lowland MDF.

7.11.4 ***Friesodielsia glauca*** (Blume) J. Sinclair. Akar rarak (Ib.); liana, climber; old secondary forest, lowland MDF.

7.12.1 ***Goniothalamus longistipes*** Mat Salleh; Semukau; Lukai kampong; small tree or treelet; lowland MDF; alluvial clay soils. **Used**: for fever and malaria.

7.12.2 ***Goniothalamus macrophyllus*** (Bl.) Hk.f. et Th. Selukai (Ib.); shrub to 5 m tall; common in lowland forest.

7.12.3 ***Goniothalamus malayanus*** Hook. f. et Th. Selukai (Ib.); Hujan panas paya; tree to 18 m tall; lowland MDF and kerangas forest.

7.12.4 ***Goniothalamus parallelovenius*** Ridl. Semukau; small tree, treelet; Alluvial forest.

7.12.5 ***Goniothalamus ridley*** King. Semukau; small tree or treelet; lowland MDF, montane forest; on igneous-derived soils.

7.12.6 ***Goniothalamus roseus*** Stapf. Tutud; Selukai (Ib.); small shrub; lowland MDF, hill MDF. **Used**: bark is dried and burnt as a mosquito repellent and to scare off evil spirits.

7.12.7 ***Goniothalamus rufus*** Miq.; Semukau; small tree or treelet; lowland MDF; on igneous-derived soils.

7.12.8 ***Goniothalamus sinclairianus*** Mat Salleh Selukai (Ib.); small tree or treelet; lowland MDF, hill MDF, emperan; gentle slope, valley bottom, priodically flooded; clay rich soils.

7.12.9 ***Goniothalamus tapis*** Miq. Lakom (Ked.); Selukai (Ib.); treelet; lowland MDF, hill MDF, occasional near stream; gentle slope, ridge, valley bottom; alluvial clay soils, damp clay soils. **Uses**: medicinal, used in *air masak* and to prevent cancer.

7.12.10 ***Goniothalamus uvaroides*** King. Selukai (Ib.); small tree; old secondary forest. **Used**: bark used as a mosquito repellent and to scare off jungle spirits.

7.12.11 ***Goniothalamus velutinus*** Airy-Shaw. Lim panas (Mal.);occasional in MDF, ridge or gentle slope. **Uses**: have medicinal properties and used for spiritual. **Note**: This species is the true *Kayu hujan panas* stick. **Uses**: same as 6.12.2

7.13.1 ***Marsypopetalum pallidum*** (Blume) Kurz. Semukau; small tree; old secondary forest, lowland MDF; sandy clay soils.

7.14.1 ***Mezzettia leptopoda*** (Hook.f. & Thoms.) Oliv. Kepayang babi; Barun; Merbatu (Ib.); Pisang (Mel.); canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, summit ridge forest, Alluvial forest; wide range of soils. **Note**: frequently recorded in MSF.

7.14.2 ***Mezzettia macrocarpa*** Heijden & Kesler. Kepayang babi; midstorey/subcanopy; lowland MDF; sandy clay soils.

7.14.3 ***Mezzettia parvifolia*** Becc. Kepayang babi; midstorey/subcanopy; lowland MDF, submontane forest; alluvial clay soils.

7.15.1 ***Mitrephora glabra*** Scheff. Semukau (Ib.); midstorey /subcanopy, treelet; lowland MDF, hill MDF, frequent in river-bank; gentle slope, steep slope; alluvial soils, clay rich soils. **Used**: for sore eyes.

7.16.1 ***Monocarpia eunneura*** Miq. Karai; small tree, treelet; lowland MDF; clay soils.

7.16.2 ***Monocarpia marginalis*** (Scheff.) J. Sinclair. Karai; small tree; hill MDF; clay soils.

7.17.1 ***Neouvaria acuminatissima*** (Miq.) Airy Shaw. Karai; midstorey/ subcanopy; old secondary forest, lowland MDF; clay soils.

7.17.2 ***Neouvaria cf. foetida*** (Maingay ex Hook.f.) Airy Shaw. Karai; midstorey/subcanopy; lowland MDF; sandy clay soils.

7.18.1 ***Orophea myriantha*** Merr. Akar rarak (Ib.); small woody climber; lowland MDF. **Used**: to prevent a drinker from getting drunk and to treat insect bite.

7.19.1 ***Polyalthia borneensis*** Merr. Semukau (Ib.); Semanggun (Mel.); small tree; lowland MDF; alluvial clay soils.

7.19.2 ***Polyalthia canangioides*** (Zoll.) Boerl. Semukau (Ib.); small tree; old secondary forest, lowland MDF; sandy clay soils.

7.19.3a ***Polyalthia cauliflora*** Hook.f. & Thoms. Semukau (Ib.); midstorey/ subcanopy, treelet; lowland MDF, hill MDF; gentle slope, ridge; sandy soils, clay rich soils. **Uses**: bark burned to cast away evil spirit and mosquitos. The Penan people used the bark to relief headache.

7.19.3b ***Polyalthia cauliflora*** Hook.f. & Thoms. var. ***beccarii.*** Semukau; small tree; frequent in lowland MDF on clay soils.

7.19.4 ***Polyalthia clavigera*** King. Semukau; midstorey/subcanopy; old secondary forest; sandy clay soils.

7.19.5 ***Polyalthia flagellaris*** (Becc.) Airy Shaw. Semukau; small tree; lowland MDF, secondary forest, summit ridge forest; alt up to 900 m; wide range of soils. **Used**: for sore eyes.

7.19.6 ***Polyalthia cf. glabra*** Scheff. Semukau; small tree; lowland MDF; gentle slope; alluvial clay soils.

7.19.7 ***Polyalthia glauca*** (Hassk.) Boerl. Dilleh; Dilasai; midstorey/ subcanopy; old secondary forest, lowland MDF, hill MDF; gentle slope; wide range of soils.

7.19.8 ***Polyalthia cf. hookeriana*** King. Semukau; small tree; lowland MDF; on fertile igneous-derived soils.

7.19.9 ***Polyalthia hypoleuca*** Hook.f. & Thoms. Selaut; small tree; Alluvial forest, old secondary forest, lowland MDF, hill MDF, summit ridge forest; wide range of soils.

7.19.10 ***Polyalthia cf. lapadantha*** Diels. Semukau; small tree; riparian forest; sandy clay soils.

7.19.11 ***Polyalthia lateriflora*** (Blume) King. Semukau; small tree; lowland MDF; clay-rich soils.

7.19.12 ***Polyalthia motleyana*** (Hook.f.) Airy Shaw. Semanggun (Mel.); midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; slope, ridge; sandy clay, clay rich soils. **Uses**: same as 5.8.1

7.19.13 ***Polyalthia rumphii*** (Blume) Merr. Karai; midstorey/subcanopy; lowland MDF, sandy clay soils.

7.19.14 ***Polyalthia sumatrana*** (Miq.) Kurz. Dilah saie (Ib.); tree to 25 m tall; lowland and hill forest or riverine.

7.19.15 ***Polyalthia tenuipes*** (Merr.) Merr. Karai; tree up 18 m tall; lowland MDF on clay and alluvial soil.

7.19.16 ***Polyalthia tomentosa*** Maingay. Semukau; small tree; old secondary forest; alluvial clay soils.

7.19.17 ***Polyalthia xanthopetala*** Merr. Semukau; midstorey/subcanopy; lowland MDF; caly-rich soils.

7.20.1 ***Popowia odoardii*** Diels. Karai; Mempisang; Semukau; tree up to 20 m tall; lowland MDF.

7.20.2 ***Popowia pisocarpa*** (Blume) Endl. Semukau; small tree; Alluvial forest, old secondary forest, hill MDF; alluvial clay soils, on igenous-derived soils.

7.20.3 ***Popowia tomentosa*** Maingay. Semukau; small tree; hill MDF; alluvial clay soils.

7.21.1 ***Pseuduvaria cf. reticulata*** (Blume) Merr. Semukau; small tree; old secondary forest; on igneous-derived soils.

7.22.1 ***Pyramidanthe*** sp.1. Climber; degraded MDF.

7.23.1 ***Sageraea lanceolata*** Miq. Semukau; small tree or treelet; lowland MDF; clay-rich soils.

7.24.1 ***Triulvaria cf. Macrophylla*** (Blume) Miq. Semukau; Karai (Ib.); small tree; lowland MDF, hill MDF; on clay soils. **Used:** for sore eyes.

7.24.2 ***Triulvaria nervosa*** (Hook.f. & Thoms.) J. Sinclair. Semukau; small tree or treelet; lowland MDF; on igneous-derived soils.

7.25.1 ***Uvaria cauliflora*** Ridl. Serabah; midstorey/subcanopy; lowland MDF; gentle slope; clay-rich soils.

7.25.2 ***Uvaria monticola*** Miq. Serabah; midstorey/subcanopy tree; lowland MDF, hill MDF; gentle slope, steep slope; alluvial soils, clay rich soils.

7.26.1 ***Woodiella sympetala*** Merr. Semukau (Ib.); small tree; hill MDF; on igneous-derived soils.

7.27.1 ***Xylopia caudata*** Hook.f & Thoms. Ako; Suloh; small tree, old secondary forest, lowland MDF, hill MDF; alluvial clay soils.

7.27.2 ***Xylopia ferruginea*** Hook f. et Th. Sekajang tujang (Ib.); Jangkang bukit; emergent tree; emperan of riparian; secondary forest; yellow sandy clay soils; alt 300 m.

7.27.3 ***Xylopia lanceolata*** Ridl. Sengkajang (Ib.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, emperan, old secondary forest; sandy soils, clay rich soils.

7.27.4 ***Xylopia malayana*** Hook.f. & Thoms. Ako; midstorey/subcanopy; hill MDF, submontane forest; alluvial soils.

7.27.5 ***Xylopia stenopetala*** Oliv. Ako; midstorey/subcanopy; montane forest; on igneous-derived soils.

8. APOCYNACEAE

8.1.1 ***Allamanda cathartica*** L. Bunga loceng; cultivated near the settlement for ornamental.

8.2.1 ***Alstonia angustiloba*** Miq. Pelai, Pulai (Ib.); occasional in MDF at low altitude; degraded secondary forest.

8.2.2 ***Alstonia scholaris*** R. Br. Pelai lilin; canopy/emergent, midstorey/ subcanopy; lowland MDF, old secondary forest; on fertile clay soils, alluvial soils. **Used**: to treat shingles.

8.3.1 ***Alyxia pilosa*** Miq. Climber; riparian forest; sandy clay soils.

8.4.1 ***Baharuia gracilis*** D.J. Middleton. Akar raong (Ib.); Akar buli; climber; lowland MDF, hill MDF, gentle slope.

8.5.1 ***Chilocarpus beccarianus*** Pierre. Akar buli; climber; lowland MDF, hill MDF, old secondary forest; slope, ridge.

8.5.2 ***Chilocarpus obtusifolius*** Merr. Akar rarak (Ib.); climber; old secondary forest; sandy clay soils.

8.5.3 ***Chilocarpus rostratus*** Markgr. Akar buli; climber, stragling shrub; lowland MDF, hill MDF; slope, ridge.

8.5.4 ***Chilocarpus torulosus*** (Boerl.) Markgr. Akar kubal (Ib.); climber; summit ridge forest; alluvial clay soils.

8.6.1 ***Dyera costulata*** Hook.f. Jelutong bukit; canopy/emergent; lowland MDF; gentle slope; clay-rich soils.

8.7.1 ***Kibatalia borneensis*** (Stapf.) Merr. Pelai uchong; Kapis; small tree; lowland MDF; alluvial soils.

8.7.2 ***Kibatalia maingayi*** (Hook.f.) R.D. Wood. Pelai; midstorey/ subcanopy; lowland MDF; clay soils, sandy clay soils.

8.8.1 ***Leuconotis anceps*** Jack. Akar serapit; liana; climber; lowland MDF; gentle slope or steep slopes; alt 80 – 150 m.

8.8.2 ***Leuconotis eugenifolia*** DC. Akar serapit; climber; lowland MDF; Kerangas; sencondary forest; terrace; periodically flooded; alluvial deposits sandy soils.

8.9.1 ***Melodinus lancifolius*** Ridl. Akar gelumang (Ib.); climber, scrambling shrub; lowland MDF, hill MDF; slope, ridge.

8.10.1 ***Parameria polyneura*** Hook.f. Akar buli; climber; lowland MDF, hill MDF; secondary forest; slope, ridge/

8.11.1 ***Plumeria obtusa*** L. Bunga kemboja; cultivated near the settlement for ornamental.

8.12.1 ***Rouvolfia*** sp.indet. midstorey/subcanopy; old secondary forest; on igneous-derived soils.

8.13.1 ***Tabernaemontana macrocarpa*** Jack. Pelir kambing (Mal.); buak yut (Mel.); Buah kelipah patong (Ib.); tree to 15 m tall, lowland MDF on damp soil or river-bank. **Used**: to treat leprosy.

8.14.1 ***Urnularia beccariana*** (Pierre) Stapf. Akar; climber; hill MDF.

8.15.1 ***Willughbeia angustifolia*** (Miq.) Markgr. Akar kubal (Ib.); climber; hill MDF; clay-rich soils. **Uses**: fruit edible.

8.15.2 ***Willughbeia coriacea*** Wall. Akar kubal (Ib.); climber; lowland MDF, secondary forest, Kerangas forest. **Uses**: fruit edible.

8.15.3 ***Willughbeia flavescens*** Dyer ex Hook f. Akar buli (Ib.); Akar kubal; climber, MDF and also secondary forest. **Uses**: fruit edible.

8.15.4 ***Willughbeia sarawacensis*** (Pierre) K. Schum. Akar kubal susu (Ib.); climber; lowland MDF, secondary forest; degraded secondary forest; clay rich soils. **Uses**: fruit edible; latex used to treat shingles and other skin diseases.

8.15.5 ***Willughbeia*** sp.1. Akar kubal (Ib.); buak sepit (Mel.); climber; MDF and secondary forest

8.15.6 ***Willughbeia*** sp.2. Buah kubal (Ib.); climber; MDF and secondary forest.

9. AQUIFOLIACEAE

9.1.1 ***Ilex cissoidea*** Loes. Kerdam; Nya'as (Ked.); midstorey/ subcanopy; lowland MDF, hill MDF, old secondary forest; emperan, riparian; flat ground, gentle slope, ridge; alluvial soils, clay rich soils. **Uses:** medicinal, used in *air masak* and for aphrodisiac and to regain energy.

9.1.2 ***Ilex clemensiae*** Heine. Kerdam; midstorey/subcanopy; old secondary forest, riparian; gentle slope; sandy soils, clay rich soils.

9.1.3 ***Ilex cymosa*** Blume. Kerdam; midstorey/subcanopy; lowland MDF, hill MDF, degraded MDF, secondary forest; flat ground, gentle slope; sandy soils, clay rich soils. **Note**: this species also can be found in peat areas near to coastal.

9.1.4 ***Ilex havilandii*** Loes. Kerdam; midstorey/subcanopy; old secondary forest, riparian, river-bank; gentle slope; sandy soils, clay rich soils.

9.1.5 ***Ilex hypoglauca*** (Miq.) Loes. Kerdam mengkulat; midstorey/ subcanopy; summit ridge forest; on igneous-derived soils.

9.1.6 ***Ilex macrophylla*** Wall. [synonym: *Ilex venulosa* var. *vernulosa* Loes.] Kerdam; MDF on igneous-derived soils at alt 150 – 300 m.

9.1.7 ***Ilex cf. sapfiana*** Loes. Kerdam; small tree; lowland MDF, Riparian forest; sandy clay soils.

10. ARALIACEAE

10.1.1 ***Arthrophyllum ovatum*** Ridl. Tumbuh kelapa; small tree or shrub, sometimes epiphytic; riparian, lower mossy forest; alt 750 m.

10.1.2 ***Arthrophyllum*** sp. Tumbuh kelapa; small tree or shrub, rheophytic, riparian; sandy soils.

10.2.1 ***Osmoxylon borneense*** Seem. Herb; Alluvial forest, riparian forest.

10.3.1 ***Schefflera avenis*** (Miq.) R. Vig. Tumboh kelapa; epiphytic on tree branches; summit ridge forest.

10.3.2 ***Schefflera conjugata*** Frodin. Kuku bajang (Ib.); epiphytic on tree trunk; riparian forest.

10.3.3 ***Schefflera denticulata*** Frodin. Kuku bajang (Ib.); epiphytic; river-bank; lower mossy forest.

10.3.4 ***Schefflera elliptica*** (Miq.) Harms. Raba cit (Ib.); epiphytic; lowland MDF, emperan.

10.3.5 ***Schefflera havilandii*** Merr. Tumboh kelapa; small tree or treelet; occasional in emperan, river-bank; sandy soils.

10.3.6 ***Schefflera kuchingensis*** Merr. Akar empasa (Ib); epiphytic on tree trunk; river-bank.

10.3.7 ***Schefflera lasiocalyx*** Ridl. Kuku bajan (Ib.); epiphytic; riparian forest, summit ridge forest.

10.3.8 ***Schefflera mjobergii*** Merr. Kuku bajang (Ib.); terrestrial treelet, climber, epiphytic, lithophytic; lowland MDF, Kerangas forest, river-bank; lower mossy forest; alt up to 1200 m; clay rich soils.

10.3.9 ***Schefflera multiarcuata*** Frodin. Tumboh kelapa; epiphytic on tree trunk; riparian forest, river-bank.

10.3.10 ***Schefflera petiolosa*** (Miq.) Harms. Kuku bajan (Ib.); epiphytic on tree trunk; riparian forest, Alluvial forest.

10.3.11 ***Schefflera tetrandra*** Merr. Petagar harimau (ked.); herb, epiphytic on tree trunk and branches. Uses: medicinal, used in *air masak.*

10.3.12 ***Schefflera truncata*** Frodin. Tumboh kelapa; epiphytic on tree trunk; riparian forest.

11. ARISTOLOCHIACEAE

11.1.1 ***Thottea macrophylla*** Becc. Empedu beruang; treelet, shrub; lowland MDF, hill MDF, riverine; flat fround, gentle slope, valley bottom; clay rich soils.

11.1.2 ***Thottea rhizantha*** Becc. Empadau; Suntik babi (Ib.); Empedu buruang (Ib.); treelet, shrub; lowland MDF, hill MDF, riverine; gentle slope, valley bottom. **Used**: for fever and as a tonic for women after delivery.

11.1.3 ***Thottea cf. robusta*** Steen. Empedu beruang; treelet, shrub; lowland MDF, hill MDF, hill slope, valley bottom; sandy clay soils.

12. BURSERACEAE

12.1.1 ***Canarium apertum*** H.J. Lam. Seladah; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; alluvial soils, clay rich soils.

12.1.2 ***Canarium caudatum*** King. Merambang (Ib.); midstorey/ subcanopy; lowland MDF, old secondary forest; alluvial clay soils. Uses: fruit edible.

12.1.3 ***Canarium denticulatum*** Blume. Seladah; midstorey /subcanopy; old secondary forest; gentle slope; sandy clay soils. **Uses**: fruit edible.

12.1.4 ***Canarium divergens*** Engl. Seladah; canopy/emergent, midstorey/ subcanopy; lowland MDF, summit ridge forest; alluvial soils.

12.1.5 ***Canarium fusco-calycinum*** Stapf.ex Ridl. Seladah; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; sandy soils, clay rich soils.

12.1.6 ***Canarium littorale*** Blume [synonym: *Canarium purpurascens* Benn.; *Canarium rufum* Benn.; *Canarium secundum* Benn.] Seladah; canopy/emergent, midstorey/ subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; clay rich soils.

12.1.7 ***Canarium megalanthum*** Merr. Dabei; midstorey/subcanopy; hill MDF; slope; alluvial clay soils.

12.1.8 ***Canarium merrillii*** H.J. Lam. Seladah; canopy/emergent; old secondary forest; sandy soils, clay rich soils.

12.1.9a ***Canarium odontophyllum*** Miq. forma ***odontophyllum.*** Dabei; Buak dabai (Mel.); cultivated in the orchard. **Uses**: fruit edible.

12.1.10a ***Canarium pilosum*** A.W. Benn. ssp. ***pilosum.*** [synonym: *Canarium grandiflorum* Benn.] Seladah; canopy/ emergent; old secondary forest; sandy soils, clay rich soils.

12.1.11 ***Canarium cf. sarawakanum*** Kochummen. Buah sala; midstorey/ subcanopy; lowland MDF; gentle slope; sandy clay soils.

12.2.1 ***Dacryodes costata*** (Benn.) H.J. Lam. Seladah; midstorey/subcanopy; lowland MDF, gentle slope; alluvial clay soils.

12.2.2 ***Dacryodes incurvata*** (Engl.) H.J. Lam. Seladah; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; gentle slope, ridge; alluvial soils, clay rich soils.

12.2.3 ***Dacryodes laxa*** (Benn.) H.J. Lam. Seladah; midstorey/subcanopy; lowland MDF; ridge; sandy clay soils.

12.2.4 ***Dacryodes longifolia*** (King) H.J. Lam. Seladah; canopy/emergent, midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest, river-bank; sandy soils, clay rich soils.

12.2.5 ***Dacryodes nervosa*** (H.J. Lam) Leenh. Seladah; canopy/emergent; old secondary forest; sandy soils.

12.2.6 ***Dacryodes cf. pubarula*** (A.W. Benn.) H.J. Lam. Seladah; canopy/emergent; old secondary forest; alluvial soils, clay rich soils.

12.2.7 ***Dacryodes rostrata*** (Blume) H.J. Lam. [basionym: *Canarium kadondon* Benn] Seladah; Kemayau; frequent in MDF on a wide

range of soils, old secondary forest. **Note**: Three forms of the species are recognised in Sarawak. **Uses**: fruit edible.

12.2.8 ***Dacryodes rubiginosa*** (Benn.) H.J. Lam. Seladah; midstorey/subcanopy; hill MDF, summit ridge forest, lowland M DF; slope, ridge; clay rich soils, alluvial clay soils.

12.2.9a ***Dacryodes rugosa*** (Blume) H.J. Lam. [basionym: *Santiria fasciculate* Benn.] Seladah. Midstorey/ subcanopy, treelet; lowland MDF, hill MDF, river-bank; gentle slope, ridge; alluvial soils, clay rich soils.

12.2.9b ***Dacryodes rugosa*** (Blume) H.J. Lam. var. ***virgata*** (Blume) H.J. Lam. Seladah; canopy/emergent; summit ridge forest; alt up 1200 m; alluvial clay soils.

12.3.1a ***Santiria apiculata*** A.W. Benn. Seladah; canopy/emergent, midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; clay rich soils, sandy soils.

12.3.1b ***Santiria apiculata*** A.W. Benn. var. ***apiculata.*** [synonym: *Santiria minutiflora* Ridl.] Seladah; canopy/ emergent, treelet; old secondary forest; clay soils, clay rich soils.

12.3.2 ***Santiria conferta*** A.W. Benn. [synonym: *Santiria wrayi* King] Seladah; canopy/emergent, midstorey/subcanopy, treelet; lowland MDF, hill MDF, river-bank; gentle slope, ridge; alluvial soils, clay rich soils.

12.3.3 ***Santiria grandiflora*** Kalkam. Seladah; canopy/emergent; old secondary forest; alluvial soils, clay rich soils.

12.3.4 ***Santiria griffithii*** (Hook.f) Engl. Seladah; canopy/emergent, midstorey/subcanopy; old secondary forest, lowland MDF, hill MDF; slope, ridge; clay rich soils.

12.3.5 ***Santiria cf. impressinervis*** Kochummen. Seladah; canopy/ emergent; montane forest; alluvial soils.

12.3.6 ***Santiria laevigata*** Blume. Seladah; canopy/emergent, midstorey/ subcanopy, lowland MDF. **Note:** forma *laevigata* recorded in MSF.

12.3.7 ***Santiria megaphylla*** Kalkam. Seladah; canopy/emergent, midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; alluvial soils, clay rich soils.

12.3.8 ***Santiria oblongifolia*** Blume. Seladah; old secondary forest, lowland MDF; sandy clay soils.

12.3.9 ***Santiria rubiginosa*** Blume var. *rubiginosa* [basionym: *Icicaster planchonii* Ridl.] Seladah daun kecil; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, Kerangas forest, old secondary forest, river-bank; alluvial soils, clay rich soils, peat soils.

12.3.10 ***Santiria tomentosa*** Blume. Seladah bulu; loland MDF, hill MDF, summit ridge forest, montane forest; alluvial soils, clay rich soils.

12.4.1 ***Scutinanthe brunnea*** Thwaites. Seladah; midstorey/subcanopy; lowland MDF, old secondary forest; gentle slope; sandy clay soils.

13. CAPPARIDACEAE

13.1.1 ***Capparis buwaldae*** Jacobs. Small tree or treelet; lowland MDF, riparian; sandy clay soils.

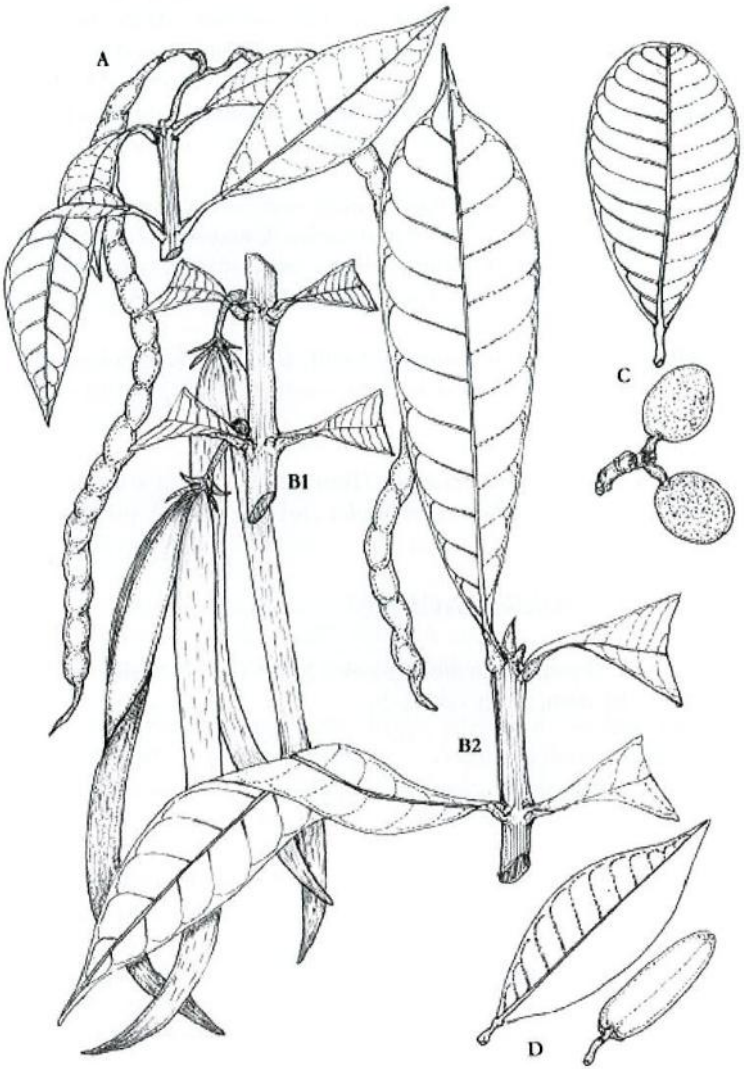


Figure 2: Apocynaceae. **A**: *Chilocarpus torulosus*; **B1, B2**: *Kibatalia borneensis*; **C**: *Chilocarpus obtusifolia*; **D**: *Chilocarpus beccarianus*

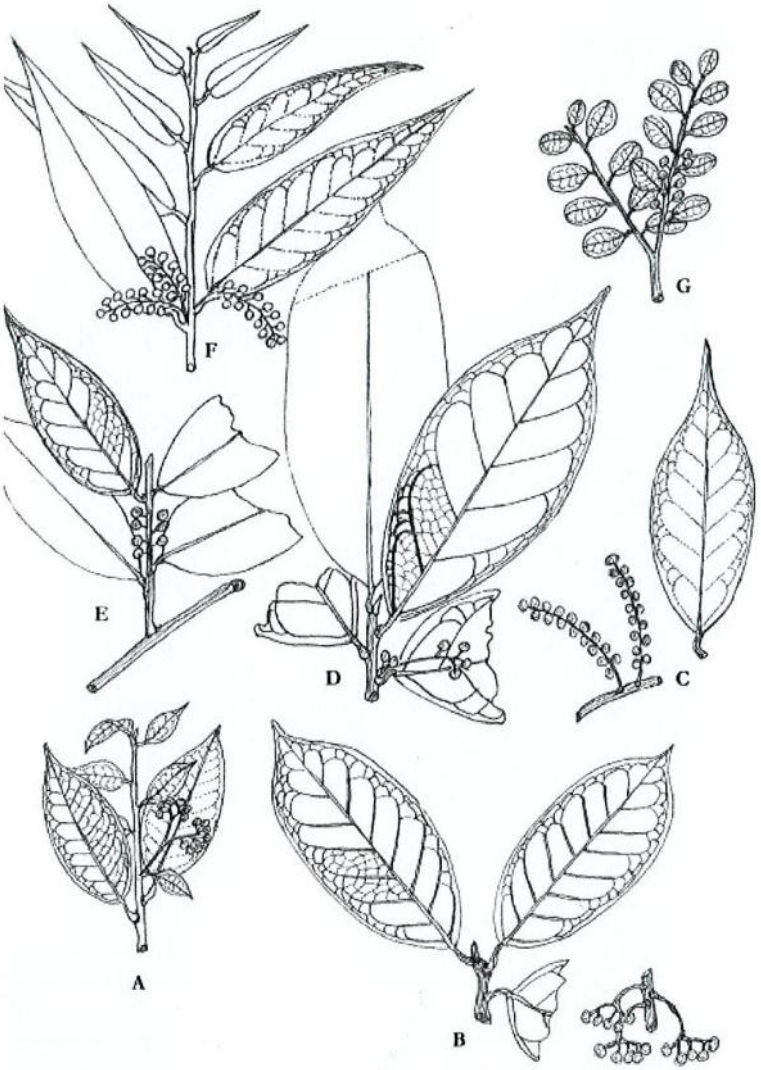


Figure 3: Aquifoliaceae. **A**: *Ilex cymosa*; **B**: *Ilex hypoglauca*; **C**: *Ilex stapfiana*; **D**: *Ilex macrophylla*; E: *Ilex clemensiae*; F: *Ilex cissoidea*; G: *Ilex havilandii*

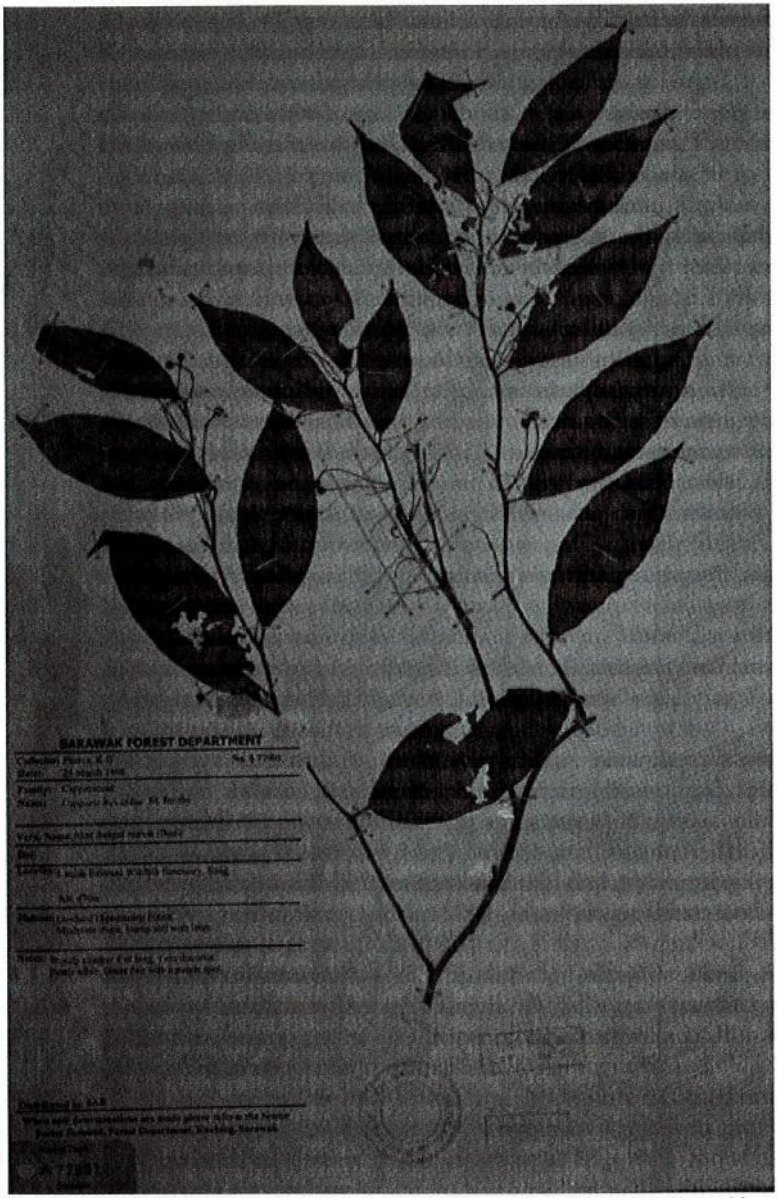


Figure 4: Capparidaceae. Herbarium specimen of *Capparis buwaldae* M. Jacobs collected from the Lanjak Entimau Wildlife Sanctuary [*Pearce, K.G. S.77901* – SAR].

14. CELASTRACEAE

14.1.1 ***Bhesa paniculata*** Arn. Simun; Serunai (Mal.); widespread in MDF; on a variety of soil types.

14.2.1 ***Celastrus monospermoides*** Loes. Akar perupok; climber; summit ridge forest; alluvial clay soils.

14.3.1 ***Euonymus cf. cochinchinensis*** Pierre. Bajan; submontane forest; alluvial soils.

14.3.2 ***Euonymus glandulosum*** (Merr.) Ding Hou. Bajan daun licin; midstorey/subcanopy; lowland MDF; slope; sandy clay soils.

14.4.1 ***Kokoona littoralis*** Lawson. Bajan; Mata ulat; midstorey/ subcanopy; lowland MDF; sandy clay soils.

14.4.2 ***Kokoona reflexa*** (Lawson) Ding Hou. Bajan; Mata ulat; midstorey/ subcanopy; lowland MDF, hill MDF, summit ridge forest, montane forest; wide range of soils.

14.5.1 ***Lophopetalum beccarianum*** Pierre. Perupok; Kayu ang (Kay.); midstorey/subcanopy; frequent in lowland MDF; leached sandy clay soils and clay rich soils of igneous-derivation.

14.5.2 ***Lophopetalum glabrum*** Ding Hou. Perupok; small tree or treelet; lowland MDF, hill MDF, summit ridge forest; fertile clay soils.

14.5.3 ***Lophopetalum multinervium*** Ridl. Perupok paya; midstorey/ subcanopy; lowland MDF; alluvial soils. **Note**: also recorded in MSF.

14.5.4 ***Lophopetalum pallidum*** Lawson. Keroi; Kerueh; midstorey/ subcanopy; hill MDF; leached sandy clay soils.

14.5.5 ***Lophopetalum rigidum*** Ridl. Perupok padang; Bajan perupok; midstorey/subcanopy; old secondary forest, lowland MDF, hill MDF, summit ridge forest, submontane forest, Kerangs forest; wide range of soils.

14.6.1 ***Microtropis cf. bivalvis*** (Jack) Wall. [synonym: *Microtropis filiformis* King; *Microtropis penducularis* Ridl.] Small tree; MDF on igneous-derived soils.

14.6.2 ***Microtropis kinabaluensis*** Merr. & Freeman. Perupok; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest, peat forest; gentle slope, ridge; alluvial soils, peat soils, sandy soils, clay rich soils.

14.6.3 ***Microtropis sarawakensis*** Kochummen. Perupok; small tree or treelet; lowland MDF; alluvial clay soils.

14.7.1a ***Perrottetia alpestris*** (Blume) Loes. Rukam; Merkumbang; small tree or treelet; riparian, submontane, montane forest; alluvial clay soils.

14.7.1b ***Perrottetia alpestris*** (Blume) Loes. ssp. *philippinensis* (Vidal) Ding Hou. Rukam; Merkumbang; small tree or treelet; riparian forest; sandy clay soils.

15. CHRYSOBALANACEAE

15.1.1 ***Atuna excelsa*** (Jack) Koestrm. Merbatu; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, montane forest; alt up to 1000 m; alluvial clay soils.

15.2.1 ***Kostermanthus heteropetalus*** (Scort. ex King) Prance. Merbatu; canopy/emergent; lowland MDF, Kerangas forest; on igneous-derived soils.

15.3.1 ***Parastemon spicatum*** Ridl. Ngilas padang; midstoey/subcanopy; old secondary forest, lowland MDF, hill MDF; sandy clay soils, alluvial clay soils.

15.3.2 ***Parastemon urophyllum*** (A. DC.) A. DC. Ngilas paya; Mengilas; canopy/emergent; hill MDF; gentle slope; clay-rich soils.

15.4.1 ***Parinari canarioides*** Kosterm. Merbatu; canopy/emergent; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; alt up to 900 m; slope, ridge; clay rich soils, alluvial clay soils.

15.4.2 ***Parinari glaberrima*** (Hassk.) Hassk. [syn: *Atuna racemosa* Raf.] Merbatu; midstorey/subcanopy; lowland MDF, hill MDF; slope, ridge; sandy soils, clay rich soils.

15.4.3 ***Parinari polyneura*** Miq. Merbatu; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest; gentle slope, ridge; sandy clay soils, alluvial clay.

15.4.4 ***Parinari villamilli*** Merr. Merbatu; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; alt to 800 m; gentle slope, ridge; clay rich soils, sandy clay soils.

16. CLETHRACEAE

16.1.1 ***Clethra longispicata*** J.J. Sm. Kayu anor; small tree or treelet; submontane forest; alluvial clay soils.

17. CLUSIACEAE

17.1.1 ***Calophyllum andersonii*** P.F. Stevens. Bintangor; Bertaoh (Mel.); canopy/emergent, midstorey/subcanopy; lowland MDF; slope; sandy soils, clay rich soils.

17.1.2 ***Calophyllum banyengii*** P.F. Stevens Chenaga (Ib.) Bintangor (Mal.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; gentle slope, aluviall soils.

17.1.3 ***Calophyllum blancoi*** Planch & Triana. Bintangor; old secondary forest, lowland MDF; gentle slope; sandy clay soils.

17.1.4 ***Calophyllum canum*** Hook.f. Bintangor; canopy/emergent; old secondary forest; sandy clay soils.

17.1.5 ***Calophyllum castanum*** P.F. Stevens Bintangor (Mal.); canopy/ emergent, midstorey/subcanopy; lowland MDF, gentle slope; clay rich soils.

17.1.6 ***Calophyllum depressinervosum*** Hend. Et Wyatt-Sm. Chenaga (Ib.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas, clay rich soils.

17.1.7 ***Calophyllum dioscurii*** P.F. Stevens. Bintangor; summit ridge forest; alluvial soils.

17.1.8 ***Calophyllum gracilipes*** Merr. Bintangor; Betaóh (Mel.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; alluvial soils, clay rich soils.

17.1.9 ***Calophyllum incrassatum*** Hend. & Wyatt.-Sm. Bintangor; midstorey/subcanopy, small tree or treelet; submontane forest, montane forest; alluvial soils.

17.1.10 ***Calophyllum molle*** King. Bintangor; lowland MDF, hill MDF, summit ridge forest; slope, ridge; alluvial clay soils, sandy clay soils.

17.1.11 ***Calophyllum nodosum*** Vesq. Bintangor; old secondary forest, hill MDF, summit ridge forest, submontane forest, montane forest; slope, ridge; wide range of soils.

17.1.12 ***Calophyllum pulcherrimum*** Wall. ex Planch et Trian. Bintangor; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils.

17.1.13 ***Calophyllum recurvatum*** P.F. Stevens. Bintangor; Beta'oh (Pen.; Mel.); canopy/emergent, midstorey/subcanopy; old secondary forest; slope, ridge; igenous derived soils, clay rich soils.

17.1.14 ***Calophyllum rubiginosum*** Hend. & Wyatt.-Sm. Bintangor; canopy/ emergent; old secondary forest; sandy clay soils.

17.1.15 ***Calophyllum soulattri*** Burm. Bintangor madu (Mal.); Bangkit (Ib.); canopy/ emergent, midstorey/subcanopy, tree up to 35 m tall; lowland MDF, hill MDF, old secondary forest, frequent on river-bank; clay rich soils. **Uses**: for fungal infection of the skin; fruit edible.

17.1.16 ***Calophyllum tetragonum*** Merr. Bintangor; midstorey /subcanopy, small tree or treelet; montane forest; alluvial soils.

17.1.17a ***Calophyllum teysmanii*** Miq. var. ***inophylloide*** (King) P.F. Stevens Chenaga angkong (Ib.); canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, old secondary forest; alluvial soils, clay rich soils.

17.1.18a ***Calophyllum wallichianum*** Planch. et Trian. var. ***incrassatum*** (Hend. & Ws.) P.F. Stevens. Bintangor; canopy/emergent, midstorey/subcanopy; occasional in lowland MDF on sandy soils and on low ridges.

17.1.19 ***Calophyllum woodii*** P.F. Stevens. Bintangor; midstorey/ subcanopy; lowland MDF; slope; alluvial soils.

17.2.1 ***Garcinia bancana*** Miq. Sikop bengkang (Bid.); midstorey/ subcanopy; lowland MDF, hill MDF. **Uses**: fruit edible.

17.2.2 ***Garcinia beccarii*** Pierre. Kandis; midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; flat ground, gentle slope, ridge; alluvial soils, clay rich soils.

17.2.3 ***Garcinia blumei*** Pierre. Kandis; midstorey/subcanopy; lowland MDF, hill MDF; slope; sandy clay soils.

17.2.4 ***Garcinia caudiculata*** Ridl. Kandis; midstorey/subcanopy; lowland MDF, hill MDF; sandy clay soils. **Uses**: fruit edible.

17.2.5 ***Garcinia dulcis*** Kurz. Bunau (Ib.); canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest; alluvial soils, clay rich soils.

17.2.6 ***Garcinia dryobalanoides*** Pierre. Kandis; midstorey/subcanopy; old secondary forest; slope; clay rich soils.

17.2.7 ***Garcinia forbesi*** King Kandis (Mal.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, riverine, flat ground, gentle slope, steep slope; clay rich soils, alluvial soils. **Uses**: fruit edible.

17.2.8 ***Garcinia gaudichaudii*** Planch et. Trian. Kandis (Mal.); midstorey/ subcanopy; locally occasional in Kerangas.

17.2.9 ***Garcinia mangostana*** L. Manggis; buak mageh (Mel.); cultivated in the orchard and near the settlement. **Uses**: fruit edible.

17.2.10 ***Garcinia miqueli*** Pierre. Kandis assam; cultivated in the orchard. **Uses**: fruit used as food flavour.

17.2.11 ***Garcinia motleyana*** Pierre. Kandis; midstorey/subcanopy; old secondary forest; gentle slope; sandy soils, clay rich soils.

17.2.12 ***Garcinia nervosa*** Miq. Kandis; midstorey/subcanopy; lowland MDF, lower mossy foresr, emperan, river-bank; alt up to 900 m; clay rich soils.

17.2.13 ***Garcinia rostrata*** (Hassk.) Miq. [basionym: *Discostigma rostratum* Hassk.; isonym: *Garcinia rostrata* (Hassk.) Hook.f.] Kandis (Mal.); midstorey/ subcanopy; Kerangas forest, secondary kerangas forest.

17.2.14 ***Garcinia vidua*** Ridl. Kandis daun bulat; canopy/emergent, midstorey/subcanopy, tree up to 30 m tall; lowland MDF, hill MDF kerangas forest; clay rich soils.

17.3.1 ***Kayea congestiflora*** P.F. Stevens. Mergasing; midstorey/ subcanopy; lowland MDF, hill MDF, slope; sandy soils, clay rich soils.

17.4.1 ***Mammea acuminata*** (Kosterm.) Kosterm. Mergasing; midstorey/ subcanopy; lowland MDF; slope; alluvial soils.

17.5.1 ***Mesua cf. beccariana*** (Ridl.) Kosterm. Mergasing; midstorey/ subcanopy; lowland MDF; slope; clay rich soils.

17.5.2 ***Mesua borneensis*** P.F. Stevens. Mergasing; midstorey/subcanopy, treelet; lowland MDF, hill MDF, Kerangas forest, emperan; flat ground, gentle slope; clay rich soils.

17.5.3 ***Mesua calophylloides*** (Ridl.) Kosterm. [basionym: *Kayea calophylloides* Ridl.] Mergasing; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, Kerangas forest, old secondary forest; slope; clay rich soils.

17.5.4 ***Mesua collinum*** P.F. Stevens. Mergasing; lowland MDF, submontane forest; gentle slope, ridge; alluvial clay soils, clay rich soils.

17.5.5 ***Mesua elmeri*** (Merr.) Kosterm. Mergasing; midstorey/subcanopy, small tree to treelet; summit ridge forest, submontane forest; alluvial clay soils.

17.5.6 ***Mesua macrantha*** (Baill.) Kosterm. Mergasing; small tree or treelet; summit ridge forest; alluvial soils.

17.5.7 ***Mesua myrtifolia*** (Baill.) Koestrm. [basionym: *Kayea myrtifolia* Baill.] Mergasing; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, emperan; slope; clay rich soils.

17.5.8 ***Mesua oblongifolia*** (Ridl.) Kosterm. Mergasing; hill MDF; gentle slope; sandy clay soils.

17.5.9 ***Mesua scalarinervosa*** P.F. Stevens. Mergasing; midstorey/ subcanopy; lowland MDF, gentle slope; clay rich soils, sandy clay soils.

18. COMBRETACEAE

18.1.1 ***Terminalia foetidissima*** Griff. Kedandi; midstorey/subcanopy; old secondary forest, submontane forest.

18.1.2 ***Terminalia subspathulata*** King. Kedandi; midstorey/subcanopy; old secondary forest; sandy clay soils.

19. CONNARACEAE

19.1.1 ***Agelaea borneensis*** (Hook.f.) Merr. [basionym: *Hemiandrina borneensis* Hook.f.; synonym: *Agelaea vestita* Hook.f.] Akar rarak (Ib.); treelet, shrub; scrambling shrub; lowland MDF, riverine. **Uses**: spiritual, used on babies who cry non-stop (*sakit sawan*).

19.1.2 ***Agelaea insignis*** (Schellenb.) Leenh. Akar malam (Ib.); climber, scrambling shrub; old secondary forest; gentle slope; clay rich soils, sandy soils.

19.1.3 ***Ageleae macrophylla*** (Zoll.) Leenh. Akar malam; climber; lowland MDF.

19.2.1 ***Connarus villosus*** Jack. Akar malam; old secondary forest.

19.2.2 ***Connarus*** sp.1 indet. Akar malam; lowland MDF, hill MDF, old secondary forest; clay-rich soils.

19.3.1 ***Rourea mimosoides*** (Vahl.) Planch. [synonym: *Rourea concolor* Blume; *Rourea similis* Blume] Akar malam (Ib.); climber, scrambling shrub; old secondary forest; slope, ridge; clay rich soils, igneous-derived soils. **Uses**: to relieve general body pain.

19.3.2 ***Rourea minor*** (Gaertn.) Leenh. Akar malam; climber; lowland MDF, hill MDF.

20. CORNACEAE

20.1.1 ***Mastixia eugenoides*** Matthew. Mitan ubah; lowland MDF, hill MDF, submontane forest; slope, ridge; sandy clay soils, alluvial clay soils.

20.1.2 ***Mastixia rostrata*** Blume. Mitan ubah kecil; old secondary forest, lowland MDF, hill MDF; gentle slope; sandy clay soils.

20.1.3a ***Mastixia trichotoma*** Blume. Itan beruang; lowland MDF, hill MDF, submontane forest; slope, ridge; alluvial clay soils.

20.1.3b ***Mastixia trichotoma*** Blume var. ***rhynchocarpa***. Mitan; small tree or treelet; summit ridge forest; alluvial soils.

21. CRYPTERONIACEAE

21.1.1 ***Crypteronia glabriflora*** Pereira & K.M. Wong. Ubah semut; canopy/emergent, midstorey/subcanopy; lowland MDF, hill

MDF, old secondary forest; slope, ridge; alluvial soils, clay rich soils.

21.1.2 ***Crypteronia griffithii*** Cl. Ubah semut; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, slope; sandy soils, clay rich soils.

21.1.3 ***Crypteronia macrophylla*** Beusekom. Ubah semut; canopy /emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; alluvial soils, sandy soils.

21.1.4 ***Crypteronia paniculata*** Blume var. ***affinis*** (Planch.) Beus.-Osinga. [synonym: *Crypteronia paniculata* Blume] Ubah semut; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; alluvial soils, clay rich soils.

22. CTENOLOPHONACEAE

22.1.1 ***Ctenolophon parvifolius*** Oliv. Litoh; lowland MDF, summit ridge forest; slope, ridge; alluvial soils, clay rich soils.

23. DILLENIACEAE

23.1.1 ***Dillenia beccariana*** Mart. Beringin (Ib.); midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; flat ground, slope; clay rich soils, alluvial clay soils.

23.1.2 ***Dillenia excelsa*** (Jack) Gilg. [basionym: *Wormia oblonga* Wall. ex Hook.f. & Thomson; *Wormia tomentella* Mart.] Simpor; tree up to 30 m tall; occasional in MDF, mainly on clay soils. **Uses**: to stop diarrhoea.

23.1.3 ***Dillenia grandiflora*** Wall. Simpor; midstorey/subcanopy; old secondary forest; sandyu clay soils.

23.1.4 ***Dillenia indica*** L. Simpor; midstorey/subcanopy; lowland MDF; gentle slope; alluvial clay soils.

23.1.5 ***Dillenia pulchella*** (Jack) Gilg. [basionym: *Wormia pulchella* Jack] Simpor paya; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, river-bank; alluvial soils, clay rich soils.

23.1.6 ***Dillenia reticulata*** King. Simpor; midstorey/subcanopy; old secondary forest; lowland MDF, summit ridge forest; alluvial clay soils.

23.1.7 ***Dillenia suffructicosa*** (Griff.) Martelli. [basionym: *Wormia subsessilis* Miq.; *Wormia suffruticosa* Griff.] Simpor; Buan (Ib.); usually on secondary forest; open spaced. **Uses**: leaves use for wrapping food; young shoot eaten raw as *ulam*; wood used for construction; medicinal, to neutralise the poison caused by accidentally swallowing poisonous butterflies, to treat epilepsy.

23.2.1 ***Tetracera akara*** (Burm.f.) Merr. [synonym: *Tetracera sylvestris* Ridl.] Akar memplas; climber; lowland MDF, hill MDF, secondary forest; flat ground, gentle slope; clay soils. **Uses:** leaves used to replacing sand paper in handicraft and construction.

23.2.2 ***Tetracera arborescens*** Jack. Akar mempelas (Ib.); semi-woody climber; occasional in lowland MDF, near stream. **Uses**: to relieve persistent cough.

23.2.3a ***Tetracera fagifolia*** Blume var. ***borneense*** (Miq.) Hoogl. [synonym: *Tetracera sumatrana* Miq.] Akar memplas; climber, scrambling shrub; lowland MDF. **Uses**: same as 15.2.1

23.2.4 ***Tetracera korthalsii*** Miq. Empalas perempuan (Ked.); Mempelas (Ib.); cilmber; Alluvial forest. Uses: medicinal, used in *air masak,* for cough and for blood in stool.

23.2.4 ***Tetracera macrophylla*** Wall. ex Hook.f. Akar mempelas (Ib.); semi-woody climber; lowland MDF. **Uses**: to stop vomitting and diarrhoea.

23.2.5 ***Tetracera scandens*** (L.) Merr. [basionym: *Delima sarmentosa* L.] Akar memplas; climber, scrambling shrub; lowland MDF, hill MDF, secondary forest. **Uses**: same as 15.2.1

24. DIPTEROCARPACEAE

24.1.1 ***Anisoptera costata*** Korth. Mersawa; canopy/emergent, tree up to 40 m tall; lowland MDF, hill MDF and riverine; alluvial soils, clay rich soils.

24.1.2 ***Anisoptera grossivenia*** Slooten. Mersawa kunyit; Merakunyit; Benchaloi; canopy/emergent; hill MDF; sandy soils.

24.1.3 ***Anisoptera laevis*** Ridl. Meri (Ib.); Mersawa durian; canopy/ emergent, tree up to 45 m tall; occasional on clay soils; lowland MDF.

24.1.4 ***Anisoptera marginata*** Korth. Mersawa paya; Pelapak; canopy/ emergent; hill MDF; terraces; soils with good drainage.

24.2.1 ***Cotylelobium melanoxylon*** (Hook.f.) Pirre. Resak hitam; canopy/ emergent; hill MDF; sandy soils.

24.3.1 ***Dipterocarpus acutangulus*** Vesque. Keruing beludu; canopy/ emergent; lowland MDF, hill MDF; gentle slope, ridge; clay soils.

24.3.2 ***Dipterocarpus applanatus*** V.Sl. Resak kerubong (Ib.); Keruing arong; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, gentle slope; clay rich soils.

24.3.3 ***Dipterocarpus apterus*** Foxw. Keruing ran (Ib.); keruing letik; canopy/emergent, midstorey/subcanopy, frequently on sandy alluvial soils; MDF and riverine. **Uses**: fruit edible.

24.3.4 ***Dipterocarpus caudiferus*** Merr. Resak ensurai (Ib.); keruing puteh; canopy/emergent, midstorey/subcanopy; frequently on igneous-derived soils; MDF.

24.3.5 ***Dipterocarpus conformis*** Slooten. Keruing beludu kuning; canopy/emergent; lowland MDF, hill MDF, soils with good drainage.

24.3.6 ***Dipterocarpus costulatus*** V. Sl. Resak empurau (Ib.); Keruing kipas; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils.

24.3.7 ***Dipterocarpus crinitus*** Dyer. Resak mempelas (Ib.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest; alluvial soils, clay rich soils.

24.3.8 ***Dipterocarpus kunstleri*** King. Keruing; canopy/emergent; lowland MDF, hill MDF; slope, ridge; clay rich soils.

24.3.9 ***Dipterocarpus nudus*** Vesque. Keruing licin; canopy/emergent; lowland MDF, hill MDF; ridge; alluvial soils.

24.3.10 ***Dipterocarpus oblongifolius*** Blume. Ensurai (Ib.); Keruing neram (Mal.); tree up to 30 m tall, abundant on river-bank. **Note**: totally protected plant under Forest Ordinance. **Uses**: fruit edible.

24.3.11 ***Dipterocarpus palembanicus*** V. Sl. Keruing ternek (Ib.); canopy/ emergent, tree up to 40 m tall; occasional in MDF, hill MDF; alluvial soils, clay rich soils.

24.4.1 ***Dryobalanops beccarii*** Dyer. Kapur bukit; Keladan (Ib.); canopy/ emergent; lowland MDF, hill MDF; alluvial soils, clay rich soils.

24.5.1 ***Hopea beccariana*** Burck. Luis (Ib.); Chengal pasir; Selangan hijau; canopy/emergent, midstorey/subcanopy; occasional in MDF on leached sandy soils.

24.5.2 ***Hopea bracteata*** Burck. Luis padi; midstorey/subcanopy; lowland MDF, hill MDF, summit ridge forest; on igneous-derived soils.

24.5.3 ***Hopea bullatifolia*** P.S. Ashton. Luis melechur; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; slope, ridge; clay rich soils.

24.5.4 ***Hopea dryobalanoides*** Miq. Luis (Ib.); Mata kucing hitam; Luis mata kucing hitam; midstorey/subcanopy; frequently in MDF and also Kerangas forest.

24.5.5 ***Hopea dyeri*** Heim. Luis palit; midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest, summit ridge forest.

24.5.6 ***Hopea griffithii*** Kurz. Luis jantan; Luis nyawar; midstorey/subcanopy; locally occasional in MDF; sandy clay soils.

24.5.7 ***Hopea griffithii*** Kurz. Luis jantan; canopy/emergent; lowland MDF, hill MDF, Kerangas, emperan; gentle slope, ridge; sandy soils, clay rich soils.

24.5.8 ***Hopea kerangasensis*** Ashton. Luis kerangas; canopy/emergent; hill MDF, Kerangas forest; summit ridge forest; clay-rich soils, poorly drainage podsolic soils.

24.5.9 ***Hopea latifolia*** Symington. Luis daun bulat; midstorey/subcanopy; lowland MDF, Kerangas forest; gentle slope; sandy clay soils.

24.5.10 ***Hopea pachycarpa*** (Heim.) Symington. Luis; Merkoyong; Selangan perupok; canopy/emergent; lowland MDF, hill MDF; hill sides; clay alluvials, damp clay.

24.5.11 ***Hopea pterygota*** Ashton. Luis; small tree; lowland MDF, Kerangas forest; sandy soils.

24.5.12 ***Hopea semicuneata*** Symington. Sama rupa cengal; canopy/emergent; hill MDF, summit ridge forest; on clay-rich soils.

24.5.13 ***Hopea wyattsmithii*** Wood ex Ashton; Luis (Ib.); Luis puteh; canopy/emergent; lowland MDF, hill MDF; alluvial soils, clay rich soils.

24.6.1 ***Parashorea macrophylla*** W.-Sm. ex Ashton. Peran; Bilat (Ib.); midstorey/subcanopy; frequently in MDF on damp clay soils and alluvial and river-bank.

24.7.1 ***Shorea acuta*** Ashton. Meranti kawang tikus; Engkabang tikus; canopy/emergent; locally occasional in MDF; alluvial soils.

24.7.2 ***Shorea agamii*** Ashton. Raruk bungai (Ib.); Meranti puteh timbul; canopy/emergent; lowland MDF on clay-rich soils.

24.7.3 ***Shorea amplexicaulis*** Ashton. Meranti kawang pinang licin; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; clay rich soils.

24.7.4 ***Shorea angustifolia*** Ashton. Selangan batu; canopy/emergent; lowland MDF, hill MDF; slope; sandy soils.

24.7.5 ***Shorea asahi*** Ashton. Selangan batu; canopy/emergent; lowland MDF, hill MDF; gentle slope, ridge; alluvial soils, sandy soils, clay rich soils.

24.7.6 ***Shorea atrinervosa*** Sym. Tekam (Ib.); Selangan batu hitam; canopy/ emergent, tree up to 40 m tall; lowland MDF clay rich soils.

24.7.7 ***Shorea beccariana*** Burck. Lelangai bintang (Ib.); Meranti langgai; Engkabang langgai; frequent in MDF; on ridges; on clay soils.

24.7.8 ***Shorea borneensis*** Burck. Meranti; canopy/emergent; hill MDF; slope; alluvial clay soils.

24.7.9 ***Shorea brunnescens*** Ashton. Tekam (Ib.); Selangan batu tinteng; tree up to 50 m tall; MDF on leached sandy soils; on ridges.

24.7.10 ***Shorea collaris*** V. Sl. Merkunyit (Ib.); Lun kelabu; canopy/ emergent, midstorey/subcanopy, tree to more 50 m tall; frequent in MDF on clay-rich soils.

24.7.11 ***Shorea compressa*** Burck. Meranti; canopy/emergent; montane forest; on igneous-derived soils.

24.7.12 ***Shorea curtisii*** Dyer. Luis nimoh (Ib.); Seraya; canopy /emergent, midstorey/subcanopy; occasional in MDF on deep soils.

24.7.13 ***Shorea dasyphylla*** Foxw. Perawan luop (Ib.); Meranti batu; canopy/emergent; lowland MDF, hill MDF; sandy soils.

24.7.14 ***Shorea domatiosa*** Ashton. Selangan batu lobang idong; canopy/ emergent; lowland MDF, hill MDF; slope, ridge; sandy soils, clay rich soils.

24.7.15 ***Shorea elliptica*** Burck. Meranti lang; canopy/emergent; occasional in MDF; montane forest; on sandy clay soils.

24.7.16 ***Shorea exelliptica*** Meijer. Tekam (Ib.); Selangan batu tembaga; canopy/emergent; lowland MDF, valley and ridges.

24.7.17 ***Shorea faguetiana*** Heim. Lun siput; canopy/emergent; lowland MDF, hill MDF, summit ridge forest; on clay-rich soils. **Uses:** fruit edible.

24.7.18 ***Shorea falcifera*** Dyer ex Brandis. Selangan batu; canopy/emergent; lowland MDF, hill MDF; gentle slope; clay rich soils.

24.7.19a ***Shorea falciferoides*** Fowx. var. ***glaucescens*** (Meijer) Ashton. Tekam enchapah (Ib.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils, clay rich soils.

24.7.20 ***Shorea fallax*** Meijer. Engkabang layar; Engkabang pinang; canopy/emergent; hill MDF, summit ridge forest; on well-drained clay soils.

24.7.21 ***Shorea ferruginea*** Dyer ex Brandis. Perawan (Ib.); Meranti menalit; Engkabang keli; in MDF on well-drained clay-soils.

24.7.22 ***Shorea flava*** Meijer. Tekam padi (Mal.); Selangan batu kuning; in MDF on yellow sandy soils; river-bank.

24.7.23 ***Shorea gibbosa*** Brandis. Lun gajah; canopy/emergent; hill MDF, summit ridge forest; on mainly fertile soils.

24.7.24 ***Shorea havilandii*** Brandis. Tekam padi (Ib.); Selangan batu pinang; in MDF on poorly drained leached soils.

24.7.25 ***Shorea hopeifolia*** (Heim.) Sym. Melapi (Ib.); Lun siput jantan; in MDF on mainly fertile soils.

24.7.26 ***Shorea iliasii*** Ashton. Lun siput daun besar; canopy/emergent; hill MDF, summit ridge forest; alluvial clay soils.

24.7.27 ***Shorea johorensis*** Fowx. Plapok (Ib.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; gentle slope; alluvial soils, clay rich soils.

24.7.28 ***Shorea laevis*** Ridl. Mikai tandok (Ib.); Kumus; canopy/emergent, midstorey/subcanopy; in lowland MDF, hill MDF on ridges with clay soils.

24.7.29 ***Shorea leprosula*** Miq. Raru' bungai (Ib.); Meranti tembaga; Abang sanduk (Bid. Pad.); Abang sibirik (Bid. Bau); frequent in MDF on clay soils; in regenerated forest.

24.7.30 ***Shorea longiflora*** (Brandis) Symington. Lun paya; Kerangas forest, submontane forest; alluvial soils.

24.7.31 ***Shorea lunduensis*** Ashton. Tekam enchapah (Ib.); canopy/ emergent, in lowland MDF, hill MDF on igneous-derived soils.

24.7.32 ***Shorea macrobalanos*** Ashton. Engkabang melapi (Ib.); Selakau; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; on clay-rich soils.

24.7.33 ***Shorea macrophylla*** (De Vr.) Ashton. Engkabang jantung (Mal.); Kawang jantong; on clay alluvial and gentle slopes; hillsides. **Notes**: sometimes cultivated for nut and timber. **Uses**: for fevere and chill.

24.7.34 ***Shorea macroptera*** Dyer. Kayu ambun (Ib.); Meranti melantai; Engkabang melantai; in MDF on clay soils.

24.7.35 ***Shorea maxwelliana*** King. Kumus hitam; canopy/emergent; lowland MDF, hill MDF, summit ridge forest; on clay ridge and spur.

24.7.36 ***Shorea mecistopteryx*** Ridl. Lelangai krundai (Ib.); Engkabang burung; Meranti kawang burung; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; on gentle slopes; hillsides; alluvial soils, clay rich soils.

24.7.37 ***Shorea monticola*** Ashton. Meranti gunung; canopy/emergent; submontane forest, montane forest.

24.7.38 ***Shorea multiflora*** (Burck.) Sym. Melapi (Ib.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest; alluvial soils, sandy soils, clay rich soils.

24.7.39 ***Shorea myrionerva*** Wood ex Ashton. Perawan sepit (Ib.); Meranti sepit udang; riparian or on clay alluvial or in MDF on lower slopes; gentle slopes; hillsides.

24.7.40 ***Shorea obovoidea*** V. Sl. Melapi (Ib.); canopy/emergent, midstorey /subcanopy; lowland MDF, hill MDF; clay rich soils.

24.7.41 ***Shorea obscura*** Meijer. Perawan lempuang (Ib.); Selangan batu padi; frequent in MDF and submontane; narrow ridges with shallow soil; alt to 800 m. **Uses**: for treating jaundice in babies.

24.7.42 ***Shorea ochracea*** Sym. Raru' bungai (Ib.); canopy/emergent, midstorey/subcanopy; frequent in MDF, hill MDF; flat ground, gentle slope; alluvial soils, clay rich soils.

24.7.43 ***Shorea ovalis*** (Korth.) Blume. Perawan, Meranti lua (Ib.); Meranti luang; canopy/emergent; in MDF, hill MDF; flat ground, gentle slope; on clay soils, alluvial soils.

24.7.44 ***Shorea ovata*** Dyer ex Brandis. Meranti pitis; Kung (Bid.); canopy/ emergent; frequent in MDF, Kerangas forest; on shallow sandy soils.

24.7.45 ***Shorea palembanica*** Miq. Engkabang asu; lowland MDF, hill MDF; clay alluvial soils.

24.7.46 ***Shorea parvifolia*** Dyer. Perawan lop (Ib.) Meranti sarang punai (Mal.); frequent in MDF on a wide range of soils; regenerated forest.

24.7.47 ***Shorea parvistipulata*** Heim. Merampo (Ib.); canopy/emergent; in MDF on mainly igneous-derived soils.

24.7.48 ***Shorea pilosa*** Ashton; Meranti bulu; Kawang bulu; canopy/ emergent; lowland MDF, hill MDF; on clay-rich soils.

24.7.49 ***Shorea pinanga*** Scheff. Meranti langgai bukit; Engkabang langgai bukit; canopy/emergent; frequent in MDF; on ridge; clay-rich soils.

24.7.50 ***Shorea quadrinervis*** V. Sl. Meranti sudu (Mal.); canopy/emergent, occasional in MDF and hill MDF; alluvial soils, clay rich soils.

24.7.51 ***Shorea rubra*** Ashton. Perawan mansau (Ib.); Meranti merah kesumba; canopy/emergent, midstorey/subcanopy; in MDF on clay-rich soils.

24.7.52 ***Shorea sagittata*** Ashton. Perawan lilin (Ib.) Meranti daun mata lembing (Mal.); Meranti luang bukit; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, alluvial soils, sandy clay soils.

24.7.53 ***Shorea scaberrima*** Burck. Meranti paya bersisik (Mal.); canopy/ emergent; lowland MDF, hill MDF; gentle slope, ridges; alluvial soils, clay rich soils.

24.7.54 ***Shorea scabrida*** Sym. Perawan entupak (Ib.); Meranti lop; canopy/ emergent, midstorey/subcanopy; in MDF. **Note**: this species occasional in MSF and Alan Forest.

24.7.55 ***Shorea smithiana*** Symington. Meranti rambai; Engkabang rambai; occasional in MDF, summit ridge forest; on igneous-derived soils.

24.8.1 ***Vatica borneensis*** Burck. Resak kemudi; canopy/emergent; hill MDF; gentle slope; sandy clay soils.

24.8.2 ***Vatica brevipes*** P.S. Ashton. Resak; canopy/emergent; lowland MDF, hill MDF, Kerangas forest; slope; sandy soils, clay rich soils.

24.8.3 ***Vatica dulitensis*** Sym. Resak padi (Mal.); Resak tiong; midstorey/ subcanopy; occasional in submontane forest from 600 – 1200 m alt; sandy clay soils, clay rich soils.

24.8.4 ***Vatica granulata*** V. Sl. Resak (Mal.); Resak ranting bersisek; canopy/emergent, midstorey/subcanopy; sub-montane forest to 700 m alt; alluvial soils, sandy clay soils.

24.8.5 ***Vatica havilandii*** Brandis. Resak degong; midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils.

24.8.6 ***Vatica micrantha*** (V. Sl.) Kostrm. Resak bungai (Ib.); Resak hijau; canopy/emergent; occasional in MDF, hill MDF; flat ground, gentle slope; alluvial soils, clay rich soils.

24.8.7 ***Vatica nitens*** King. Resak (Mal.); Resak daun panjang; midstorey/subcanopy; widespread in lowland MDF on clay-rich soil.

24.8.8 ***Vatica oblongifolia*** Hook f. Resak (Mal.); Resak membangan; midstorey/subcanopy; locally occasional in MDF.

24.8.9 ***Vatica odorata*** (Griff.) Sym. Resak (Mal.); Resak runting kesat; midstorey/subcanopy; sub-montane forest to 700 m alt; alluvial soils, sandy clay soils.

24.8.10 ***Vatica parvifolia*** Ashton. Resak kerangas padi; midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest; sandy soils.

24.8.11 ***Vatica sarawakensis*** Heim. Resak (Mal.); Resak daun besar; midstorey/subcanopy; lowland MDF, hill MDF, river-bank; clay-rich soil.

24.8.12 ***Vatica umbonata*** (Hook f.) Burck. Resak (Mal.); Resak ayer; canopy/emergent, midstorey/subcanopy; locally frequent on clay river-bank and sub-montane forest; alluvial soils, sand clay soils.

24.8.13 ***Vatica vinosa*** Ashton. Resak tangkai ungu (Mal.); midstorey/subcanopy; lowland MDF, hill MDF; clay-rich soils, alluvial soils.

25. EBENACEAE

25.1.1 ***Diospyros andamanica*** (Kurz.) Bakh. [basionym: *Maba racemosa* Ridl.; *Macreightia andamanica* Kurz.] Entina (Ib.) Kayu malam (Mal.); midstorey/ subcanopy; lowland MDF, hill MDF, riparian; flat ground, gentle slope, ridge; alluvial soils, clay rich soils.

25.1.2 ***Diospyros beccarii*** Hiern. Kayu malam; midstorey/subcanopy; lowland MDF, hill MDF; slope, ridge; sandy soils, clay rich soils.

25.1.3 ***Diospyros borneensis*** Hiern. Kayu malam; midstorey/subcanopy; lowland MDF, hill MDF; gentle slope; sandy soils, clay rich soils.

25.1.4 ***Diospyros cf. brachiata*** King & Gamble. Kayu malam; small tree; montane forest; slope, ridge; on igneous-derived soils.

25.1.5 ***Diospyros buxifolia*** (Blume) Hiern. Kayu malam; small tree; submontane forest; ridge; on igneous-derived soils.

25.1.6 ***Diospyros cauliflora*** Blume. Kayu malam; midstorey /subcanopy; old secondary forest, lowland MDF; slope; fertile clay soils.

25.1.7 ***Diospyros clementum*** Bakh. Kayu malam; small tree; submontane forest; ridge; alluvial clay soils.

25.1.8 ***Diospyros confertiflora*** (Hiern.) Bakh. [basionym: *Maba perakensis* King & Gamble] Kayu malam; Mempinang; Kayu lusang (Ken.); canopy/emergent, midstorey/subcanopy; old secondary forest; slope, ridge; alluvial soils, clay rich soils.

25.1.9 ***Diospyros confusa*** Bakh. Kayu malam; riparian forest; sandy soils.

25.1.10 ***Diospyros consanguinea*** Merr. Kayu malam balik; midstorey/ subcanopy; lowland MDF, hill MDF; alluvial clay soils.

25.1.11 ***Diospyros curranii*** Bakh. Kayu malam entam; midstorey/ subcanopy; hill MDF; gentle slope; clay-rich soils.

25.1.12 ***Diospyros diepenhorstii*** (Miq.) Bakh. Kayu malam; midstorey/ subcanopy; hill MDF, summit ridge forest; clay-rich soils, alluvial clay soils.

25.1.13 ***Diospyros ferox*** Bakh. Kayu malam; Alluvial forest, old secondary forest; sandy clay soils.

25.1.14 ***Diospyros frutescens*** Blume. Kayu malam; small tree; Alluvial forest, old secondary forest, lowland MDF, hill MDF, summit ridge forest; wide range of soils.

25.1.15 ***Diospyros fusiformis*** Kosterm. Kayu malam; hill MDF, summit ridge forest.

25.1.16 ***Diospyros graciliflora*** Hiern. Kayu malam; midstorey /subcanopy, frequent in MDF on igneous-derived soils.

25.1.17 ***Diospyros laevigata*** Blume. Kayu malam; small tree; submontane forest.

25.1.18 ***Diospyros maingayi*** (Hiern.) Bakh. Mempinang daun besar; canopy/emergent, midstorey/subcanopy; lowland MDF, Kerangas forest; sandy clay soils.

25.1.19 ***Diospyros mindanensis*** Merr. *emend* Bakh. Kayu malam; midstorey/subcanopy; summit ridge forest, submontane forest; on sandy soils and podzolic soils. **Uses**: medicinal, for skin diseases.

25.1.20 ***Diospyros neurosepala*** Bakh. Kayu malam; midstorey /subcanopy; old secondary forest, lowland MDF; yellow sandy clay soils.

25.1.21 ***Diospyros nidus-avis*** Kosterm. Kayu malam; Alluvial forest.

25.1.22 ***Diospyros paraconfusa*** Ng. Kayu malam; midstorey/ subcanopy; old secondary forest.

25.1.23 ***Diospyros pendula*** Hassk. Kayu malam; small tree; Alluvial forest, lowland MDF, Kerangas forest; wide range of soils.

25.1.24 ***Diospyros pilosanthra*** Blume; Kayu malam; Alluvial forest, old secondary forest, hill MDF, lowland MDF, summit ridge forest; on wide range of soils.

25.1.25a ***Diospyros piscicarpa*** Ridl. Kayu malam; Tubu (Ib.); small tree; Alluvial forest, old secondary forest, lowland MDF, hill MDF, summit ridge forest, submontane forest; wide range of soils; sometimes cultivated. **Uses**: fruit used as a fish poison.

25.1.25b ***Diospyros piscicarpa*** Ridl. var. ***kinabaluensis***. Kayu malam; small tree; summit ridge forest; on igneous-derived soils.

25.1.26 ***Diospyros punctinculosa*** Bakh. Kayu malam; midstorey/ subcanopy; lowland MDF, hill MDF; sandy clay soils. **Uses**: medicinal, for yellow fever.

25.1.27 ***Diospyros ridleyi*** Bakh. Kayu malam; midstorey/subcanopy; lowland MDF, hill MDF, summit ridge forest; on igneous-derived soils.

25.1.28 ***Diospyros rigida*** Hiern. Kayu malam; small tree; Alluvial forest, lowland MDF, Kerangas forest; sandy soils.

25.1.29 ***Diospyros siamang*** Bakh. Kayu malam; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest, peat forest; various types of soils.

25.1.30 ***Diospyros cf. subrhomboidea*** Bakh. Kayu malam; small tree; summit ridges forest; on igneous-derived soils.

25.1.31 ***Diospyros tuberculata*** Bakh. Kayu malam; canopy/emergent; riparian forest, lowland MDF; on igneous-derived soils.

25.1.32 ***Diospyros wallichii*** King et Gamble. Kayu malam; midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF, hill MDF, summit ridge forest, montane forest; wide range of soils.

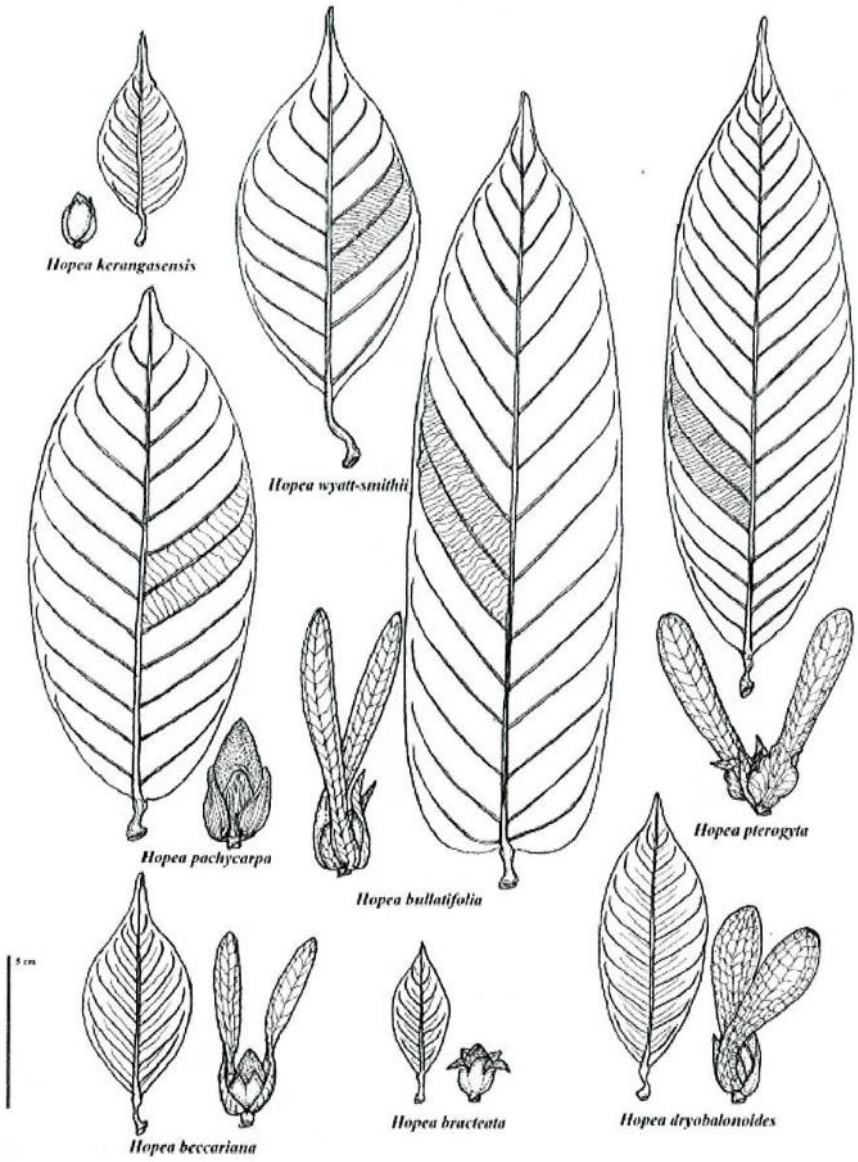


Figure 5: Dipterocarpaceae – genus *Hopea*

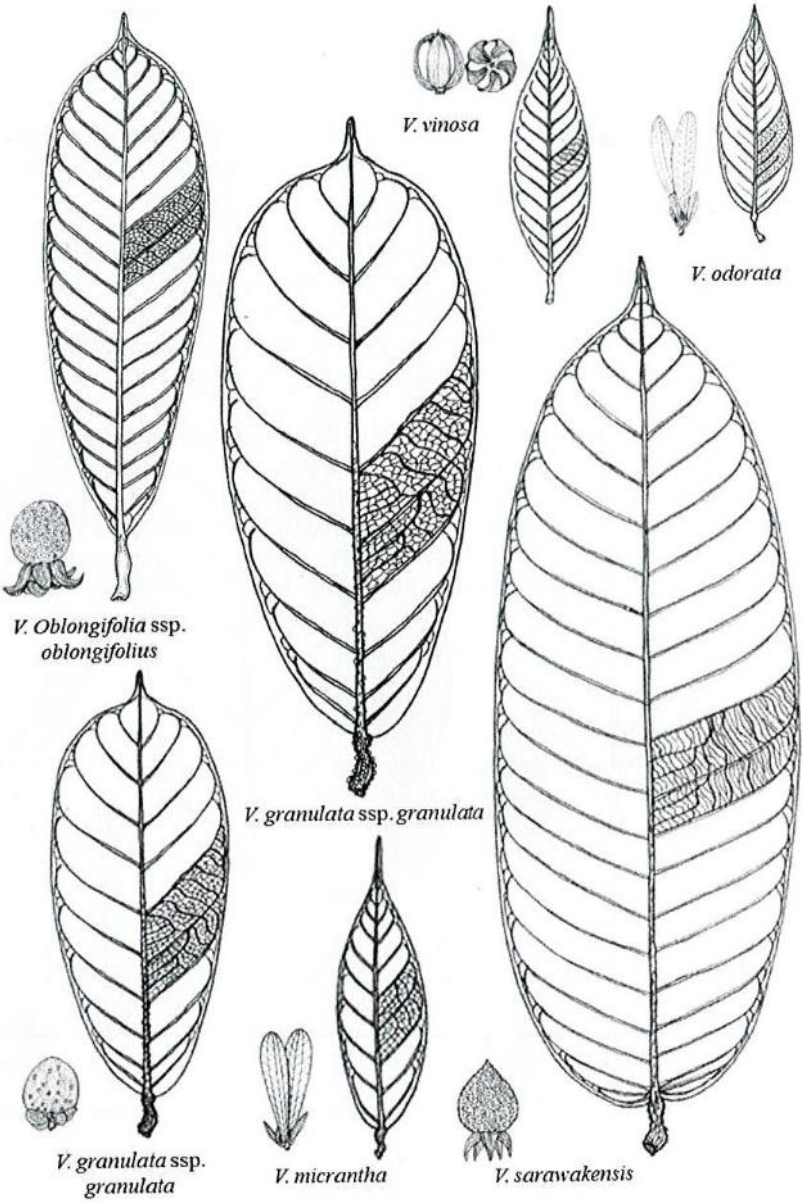


Figure 6: Dipterocarpaceae – genus *Vatica*

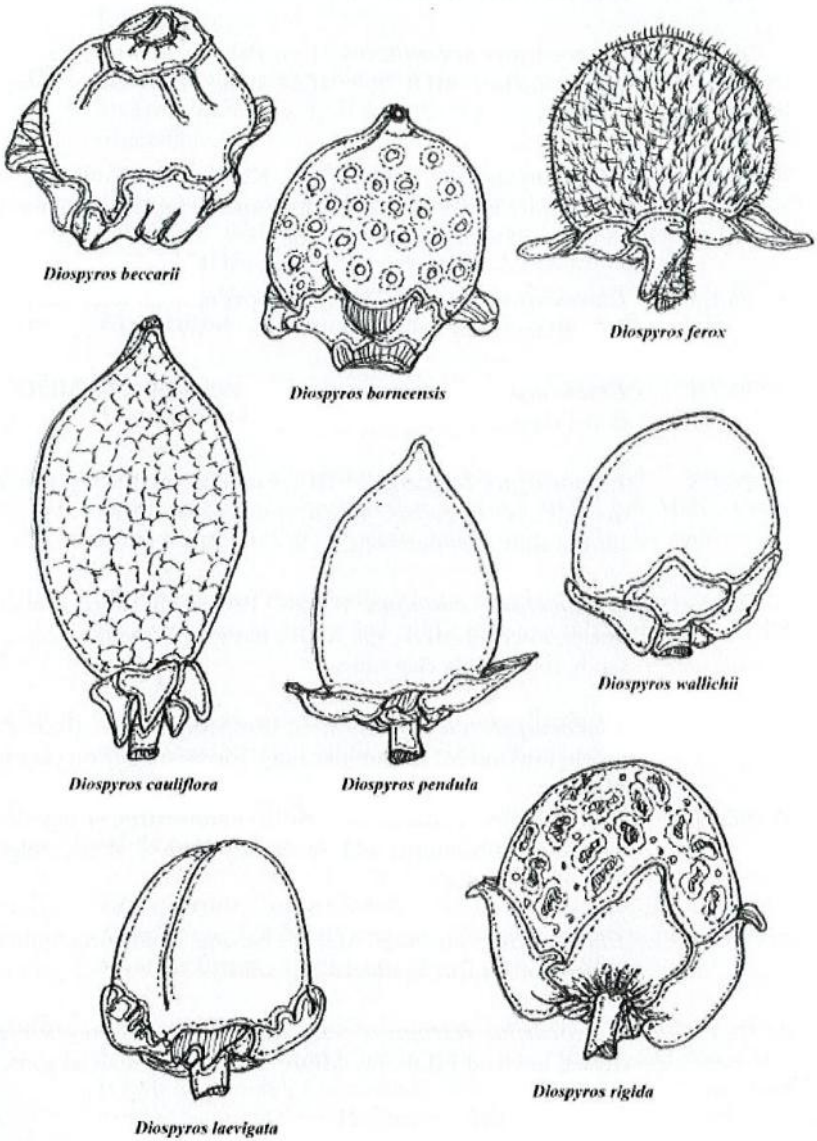


Figure 7: Ebenaceae – genus *Diospyros*

26. ELAEOCARPACEAE

26.1.1 ***Elaeocarpus acrantherus*** Merr. Pabum; midstorey/subcanopy, treelet; lowland MDF, hill MDF; slope, ridge; sandy soils, sandy clay soils.

26.1.2 ***Elaeocarpus cf. angustipes*** Knuth. Empedu; midstorey/subcanopy; lowland MDF, submontane forest, montane forest; alt up to 2000 m; alluvial clay soils.

26.1.3 ***Elaeocarpus baramii*** Weibel. Empedu; small tree; summit ridge forest; sandy clay soils.

26.1.4 ***Elaeocarpus barbulatus*** Knuth. Empedu; hill MDF; gentle slope; clay-rich soils.

26.1.5 ***Elaeocarpus beccarii*** A. DC. Empedu; midstorey/subcanopy, treelet; old secondary forest; river-bank; gentle slope, ridge; alluvial soils, clay rich soils.

26.1.6 ***Elaeocarpus cannipes*** Knuth. Perdu; midstorey/subcanopy, treelet; lowland MDF, hill MDF; flat ground, gentle slope, ridge; sandy soils, sandy clay soils.

26.1.7 ***Elaeocarpus clementis*** Merr. Empedu; Perdu (Ib.); Alluvial forest, lowland MDF, summit ridge forest; mainly on clay soils.

26.1.8 ***Elaeocarpus conoideus*** Korth. Perdu (Ib.); Empedu (Ib.); midstorey/subcanopy; old secondary forest; slope, ridge; clay soils, clay rich soils.

26.1.9 ***Elaeocarpus cupreus*** Merr. Empedu; midstorey/subcanopy; old secondary forest; alluvial clay soils.

26.1.10 ***Elaeocarpus ferruginea*** Rich. Empedu; midstorey/subcanopy, treelet; lowland MDF, hill MDF; slope, ridge; alluvial soils, sandy clay soils.

26.1.11 ***Elaeocarpus ferrugineus*** (Jack) Steudel. Jelentik (Ib.); small tree; old secondary forest, lowland MDF, submontane forest.

26.1.12 ***Elaeocarpus floribundus*** Blume. Empedu; midstorey /subcanopy; old secondary forest, lowland MDF, hill MDF,

submontane forest, montane forest; on wide range of soils. **Uses**: fruit edible.

26.1.13 ***Elaeocarpus glaber*** Blume. Pabom (Ib.); medium to small tree; lowland MDF, hill MDF; gentle slope, ridge; alluvial soils. **Uses**: fruit edible.

26.1.14 ***Elaeocarpus griffithii*** (Wight) A. Gray. [synonym: *Elaeocarpus paniculatus* Wall.] Empedu; midstorey/ subcanopy, treelet; lowland MDF; slope; sandy clay soils. **Uses**: fruit edible.

26.1.15 ***Elaeocarpus gustraiifolius*** Knuth. Empedu; lowland MDF

26.1.16 ***Elaeocarpus hochreutineri*** Weibel. Empedu; small tree; montane forest; igneous-derived soils.

26.1.17 ***Eleaocarpus marginatus*** Stapf. ex Weibel. Sengkurat; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, river-bank; flat ground, gentle slope; sandy soils, sandy clay soils.

26.1.18 ***Elaeocarpus mastersii*** King. Sengkurat tangkai panjang; midstorey/ subcanopy; hill MDF, old secondary forest; mineral soils.

26.1.19 ***Elaeocarpus multinervosus*** Knuth. Perdu (Ib.); midstorey/ subcanopy; lowland MDF, hill MDF; alluvial soils.

26.1.20 ***Elaeocarpus muluensis*** Weibel. Empedu; small tree or treelet; submontane forest.

26.1.21 ***Elaeocarpus murudensis*** Merr. Perdu (Ib.); midstorey /subcanopy; hill MDF, summit ridge forest, submontane forest; montane forest; on igneous-derived soils.

26.1.22 ***Elaeocarpus nitidus*** Jack. Perdu; Pabom (Ib.); canopy/emergent, midstorey/ subcanopy, treelet; old secondary forest; flat ground, slope; sandy soils, sandy clay soils. **Note**: four varities recorded from Peninsular Malaysia. **Uses**: fruit edible.

26.1.23 ***Elaeocarpus obtusus*** Blume. Empedu; canopy/emergent, midstorey/subcanopy; hill MDF, river-bank; damp soils.

26.1.24 ***Elaeocarpus palembanicus*** (Miq.) Corner. Empedu; lowland MDF, secondary forest; sandy soils.

26.1.25 ***Elaeocarpus penduculatus*** Wall. ex Mast. Empedu (Ib.); Perdu; canopy/emergent, midstorey/subcanopy, treelet; old secondary forest; slope; sandy soils, sandy clay soils.

26.1.26 ***Elaeocarpus pseudopaniculatus*** Corner. Empedu; midstorey/subcanopy; montane forest, lowland MDF; fertile clay soils.

26.1.27 ***Elaeocarpus sphaeroblastus*** Ridl. Tamang (Ib.); medium to small tree; lowland MDF, emperan; sandy clay soils. **Uses**: fruit edible.

26.1.28 ***Elaeocarpus stipularis*** Blume. Empedu (Ib.); canopy /emergent, midstorey/subcanopy, treelet; old secondary forest; slope; sandy soils, sandy clay soils. **Uses**: fruit edible.

26.1.29 ***Elaeocarpus submonceras*** Miq. Empedu; small tree; lowland MDF, hill MDF; alluvial soils.

27. ERICACEAE

27.1.1 ***Rhododendron crassifolium*** Stapf. [syn: *Rhododendron crassinervium* Ridl.; *Rhododendron brevitubum* J.J. Sm.; *Rhododendron murudense* Merr.] Tassak (Ib.); epiphytic; lower mossy forest, river-banks.

27.1.2 ***Rhododendron durionifolium*** Becc. Tassak; epiphytic; shrub; riparian forest, submontane forest, montane forest.

27.1.3a ***Rhododendron javanicum*** (Blume) Bennett ssp. ***brookeanum*** (Low ex Lindl.) Argent & Phillips. [syn: *Rhododendron brookeanum* Low ex Lindl.] Tassak (Ib.); epiphytic shrub; lowland MDF, river-banks.

27.1.4 ***Rhododendron longiflorum*** Low ex Lindl. Tassak; treelet or shrub; montane forest.

27.1.5 ***Rhododendron niewenhuisii*** J.J. Sm. Tassak; treelet or shrub; epiphytic; riparian forest.

27.1.6 ***Rhododendron orbiculatum*** Ridl. Tassak (Ib.); epiphytic; lower mossy forest, river-bank.

27.1.7 ***Rhododendron pneumonanthum*** Sleumer. Tassak; epiphytic, small tree or treelet; montane forest

27.1.8a ***Rhododendron quadrasianum*** Vidal var. ***borneense*** J.J. Sm. Tassak (Ib.); small tree, treelet or shrub, epiphytic; montane forest.

27.1.9 ***Rhododendron stapfianum*** Hemsl. Tassak (Ib.); treelet or shrub, epiphytic; montane forest.

27.2.1 ***Vaccinium bancanum*** Miq. Penumpang; epiphyte; occasional, frequent in Kerangas forest, submontane forest, montane forest; sandy soils.

27.2.2 ***Vaccinium cf. bigibum*** J.J. Sm. Penumpang; epiphytic, scrambling shrub; montane forest

27.2.3 ***Vaccinium cercidifolium*** J.J. Sm. Penumpang, epiphytic; montane forest

27.2.4 ***Vaccinium clementis*** Merr. Ubah ribu (Ib.) climber, hill MDF; gentle slope; alt 700 m.

27.2.5 ***Vaccinium flagellatifolium*** Copel. Penumpang; epiphytic; riparian forest, river-bank.

27.2.6 ***Vaccinium laurifolium*** (Blume) Miq. Penumpang; epiphytic; summit ridge forest.

27.2.7 ***Vaccinium leptanthum*** Miq. Epiphytic, scrambling shrub; lowland MDF, hill MDF, Kerangas forest, river-banks.

27.2.8 ***Vaccinium simulans*** Sleumer. Penumpang; epiphytic; submontane forest.

27.2.9 ***Vaccinium stenanthum*** Sleumer. Penumpang; epiphytic; submontane forest

27.2.10 ***Vaccinium cf. sulcatum*** Ridl. Penumpang; epiphytic, scrambling shrub; montane forest.



Plate 1: **A**: *Rhododendron crassifolium*; **B**: *Rhododendron orbiculatum*; **C**: *Rhododendron nieuwenhuisii*; **D**: *Rhododendron longifolium* var. *longifolium*; **E**: *Rhododendron javanisum*

28. ERYTHROXYLACEAE

28.1.1 ***Erythroxylum cuneatum*** Kurz. [syn: *Erythroxylum burnamicum* Griff.; *Erythroxylum densinerve* O.E. Schulz; *Erythroxylum platyphyllum* Merr.] Manding; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest, secondary forest; gentle slope, ridge; alluvial soils, sandy soils, clay rich soils. Alt. 400 m.

29. ESCALLONIACEAE

29.1.1 ***Polyosma integrifolia*** Blume. Luli; small tree; summit ridge forest, montane forest.

29.1.2 ***Polyosma mutabilis*** Blume. Luli; small tree; riparian forest, river-bank; sandy soils.

30. EUPHORBIACEAE

30.1.1a ***Agrostistachys longifolia*** (Wight) Benth. var. ***leptostachya*** (Pax & K. Hoffm.) Whitmore. Malau pucuk; understorey, treelet; lowland MDF, hill MDF, Kerangas forest, old secondary forest; slope, ridge; sandy clay soils, clay rich soils. **Uses**: medicinal, to stop aching tooth with a cavity.

30.1.1b ***Agrostistachys longifolia*** (Wight) benth. var. ***longifolia*** [synonym: *Agrostistachys borneensis* Becc.; *Agrostistachys sessilifolia* (Kurz.) Pax & K. Hoffm.] Malau pucuk; understorey, treelet; lowland MDF, hill MDF, Kerangas forest, old secondary forest; flat ground, slope; sandy soils, sandy clay soils.

30.2.1 ***Blumeodendron kurzii*** (Hook.f.) J.J. Sm. [basionym: *Mallotus kurzii* Hook.f.] Lemak manok; Entawah (Ib.); Buyun (Bid.); lowland MDF, emperan; gentle slope; sandy soils, alluvial clay soils. **Note**: also recorded in MSF.

30.2.2 ***Blumeodendron tokbrai*** (Blume) Kurz. [basionym: *Elateriospermum tokbrai* Blume; *Mallotus tokbrai* Muell.-Arg.] Merbulan; Empungan; Entungan (Ib.); Teku (Mel.); lowland

MDF, emperan; slope, periodically flooded; wide range of soils. **Note**: common in MSF.

30.3.1 ***Breynia coronata*** Hook.f. Manyam; Changkok manis; treelet; lowland MDF, clay rich soils.

30.3.2 ***Breynia racemosa*** (Blume) Muell.-Arg. Changkok manis; treelet or shrub; secondary forest, open space; frequently on sandy soils.

30.4.1 ***Cephalomappa beccariana*** Baill. Arau; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; flat ground, gentle slope; sandy soils, peat soils, clay rich soils.

30.6.1 ***Croton argyratus*** Blume. Entupak (Ib.); in MDF on a wide range of soils; secondary forest and disturbed forest.

30.6.2 ***Croton calcicola*** Ridl. Entupak (Ib.); lowland MDF, secondary forest, disturbed forest; wide range of soil types.

30.6.3 ***Croton ensifolius*** Merr. Penampal labi (Ib.); small shrub in secondary forest. **Uses**: leaves for minor cut.

30.6.4 ***Croton oblongus*** Burm.f. Entupak (Ib.); in MDF and secondary forest, mainly on clay soils.

30.7.1 ***Euphorbia hirta*** L. [basionym: *Chamaesyce hirta* (L.) Millsp.] Gelang susu; common weed of waste ground; naturalized from tropical America. **Uses**: medicinal, latex used for itchness.

30.8.1 ***Glochidion littorale*** Benth. Manyam (Ib.); small tree or shrub; fringe of river-bank.

30.8.2 ***Glochidion lutescens*** Blume. Tidur-tidur (Ked.); Menyam (Ib.); small tree; secondary forest. **Uses**: for swollen muscles.

30.8.3 ***Glochidion sericeum*** Hook.f. Manyam (Ib.); small tree or treelet; lowland MDF, emperan, river-bank; clay rich soils, sandy clay soils.

30.9.1 ***Hevea brasilensis*** Muell.-Arg. Getah; Kayu pulut (Mel.); culitivated as commercial crop. **Uses**: latex for commercial and wood for furniture.

30.10.1 ***Koilodepas laevigatum*** Airy Shaw. Puti; midstorey/subcanopy, treelet; lowland MDF, hill MDF, secondary forest, Kerangas forest; gentle slope, ridge; various types of soils.

30.11.1 ***Macaranga aetheadenia*** Airy Shaw. Purang; Benuah (Ib.); Alluvial forest.

30.11.2 ***Macaranga beccariana*** Merr. Purang (Ib.); midstorey /subcanopy; secondary forest, old secondary forest; slope; sandy soils, clay rich soils.

30.11.3 ***Macaranga brevipetiolata*** Airy Shaw. Enserai (Ib.); Entapuloh (Ib.); Alluvial forest, old secondary forest, lowland MDF.

30.11.4 ***Macaranga caladiifolia*** Becc. Purang semut (Ib.); midstorey/ subcanopy; lowland MDF, Kerangas forest, river-bank; gentle slope; clay rich soils.

30.11.5 ***Macaranga gigantea*** Muell.-Arg. [synonym: *Macaranga megalophylla* (Muell.-Arg.) Muell.-Arg.; *Macaranga incisa* Gage] Merkubong (Ib.) Benuah gajah; lowland MDF, secondary forest, old secondary forest, Kerangas; gentle slope, flat ground; clay rich soils, alluvial clay soils. **Note**: also recorded in MSF. **Uses**: for ulcer and fungal infection of the mouth.

30.11.6 ***Macaranga hosei*** King ex Hook.f. Purang taji; midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest, occasional in secondary forest; clay soils, sandy clay soils.

30.11.7 ***Macaranga hypoleuca*** (Reichb.f. & Zoll.) Muell.-Arg. Purang; Benauh (Ib.); Alluvial forest.

30.11.8a ***Macaranga kingii*** Hook f. var. ***platyphylla*** Airy-Shaw. Benuang (Ib.); midstorey/subcanopy; secondary forest, old secondary forest; clay soils.

30.11.9 ***Macaranga lowii*** King ex Hook.f. Purang; Benuah (Ib.); lowland MDF, hill MDF.

30.11.10 ***Macaranga maingayi*** Hook.f. Purang; Benauh (Ib.); Alluvial forest.

30.11.11 ***Macaranga pearsonii*** Merr. Purang (Ib.); canopy/emergent; secondary forest; sandy soils, clay rich soils.

30.11.12 ***Macaranga petanostyla*** Airy Shaw. Benuah (Ib.); Peng'ut (Mel.); midstorey/subcanopy; lowland MDF, occasional in secondary forest; sandy clay soils.

30.11.13 ***Macaranga recurvata*** Gage. Purang (Ib.); midstorey /subcanopy; lowland MDF, frequently in secondary forest, river-bank; clay soils.

30.11.14 ***Macaranga repando-dentata*** Airy Shaw. Benuah (Ib.); tree to 15 m tall, MDF and mainly on soils of igneous origin.

30.11.15 ***Macaranga triloba*** (Blume) Muell.-Arg. Benuah cincin merah (Ib.); tree up to 20 m tall; frequently on a variety of soils; MDF in open space and secondary forest.

30.11.16 ***Macaranga winkleri*** Pax et Hoffm. Benuah (Ib.); tree up to 18 m tall; common on igneous-derived soils and rare in MDF.

30.12.1 ***Mallotus brevipetiolatus*** Gage. Ensarai; midstorey/subcanopy, treelet; lowland MDF, hill MDF, secondary forest; flat ground, gentle slope; alluvial soils, clay rich soils.

30.12.2 ***Mallotus eucaustus*** Airy Shaw. Ensarai; midstorey/subcanopy, treelet; lowland MDF, secondary forest; sandy soils.

30.12.3 ***Mallotus griffithianus*** Hook.f. Ensarai; midstorey/subcanopy, treelet, lowland MDF, hill MDF, Kerangas forest, old secondary forest; flat ground, gentle slope, ridge; various types of soils.

30.12.4 ***Mallotus korthalsii*** Muell.-Arg. Enserai (Ib.); medium tree up to 10 m tall; on clay soils, MDF.

30.12.5 ***Mallotus leucodermis*** Hook.f. [basionym: *Coccoceras muticum* Mull.-Arg. var. *pedicellatum* Hook.f.] Balek angin; midstorey /subcanopy, treelet; frequent in secondary forest, old secondary forest, degraded lowland MDF, clay soils.

30.12.6 ***Mallotus penangensis*** Muell.-Arg. Ensarai; midstorey /subcanopy, treelet; lowland MDF, secondary forest; sandy soils, alluvial clay soils.

30.13.1 ***Neoscortechinia forbesii*** (Hook.f.) Pax ex S. Moore. Bulang; Katupong (Ib.); midstorey/subcanopy; lowland MDF, hill MDF, secondary forest, emperan; slope; wide range of soils.

30.13.2 ***Neoscortechinia philippinensis*** (Merr.) Welzen [basionym: *Alcinaeanthus philippinensis* Merr.; syn: *Neoscortechinia parvifolia* (Merr.) Merr.; *Neoscortechinia coriacea* Merr.] Bantas; midstorey /subcanopy; treelet; lowland MDF, hill MDF; alluvial soils, clay rich soils.

30.13.3a ***Neoscortechinia sumatrensis*** S. Moore var. ***sumatrensis.*** Midstorey/ subcanopy tree; lowland MDF; gentle slope; yellow sandy loam.

30.14.1 ***Pimelodendron griffithianum*** (Muell.-Arg.) Benth. Kelampai sitak (Ib.); Perah ikan; Melawak (Pun.); midstorey/subcanopy; lowland MDF, Kerangas forest; slope; wide range of soils. **Note**: this species also recorded in MSF.

30.15.1 ***Ptychopyxis grandis*** Airy Shaw. Bantas (Ib.); Bedulang (Ib.); Karak (Bid.); small tree or treelet; lowland MDF, hill MDF; gentle slope; clay soils. **Uses**: fruit edible.

30.16.1 ***Trigonopleura malayana*** Hook f. [basionym: *Peniculifera penangensis* Ridl.] Kayu sedi (Ib.); canopy/ emergent tree, midstorey/subcanopy tree; hill MDF; ridge. **Uses**: medicinal, for fever, to treat minor cuts and to make poison for blowpipe darts.

31. FABACEAE

31.1.1 ***Adenanthera borneensis*** Brace ex King. Saga; canopy /emergent. Midstorey/subcanopy; lowland MDF; slope, clay rich soils. **Uses**: same as 24.1.1

31.1.2 ***Adenanthera kostermansii*** Nielsen. Saga; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; sandy soils, clay rich soils. **Uses**: seeds used for handicraft.

31.2.1a ***Archidendron clypearia*** (Jack) Nielsen. [basionym: *Pithecellobium clypearia* (Jack) Benth.] Kenarang; canopy/ emergent, midstorey/

subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest; slope, ridge; various types of soils.

31.2.1b ***Archidendron clypearia*** (Jack) Nielsen var. ***casai.*** [basionym: *Pithecellobium clypearia* (Jack) Benth. var. *casai*] Kenarang (Ib.); small tree or treelet; secondary forest, hill MDF, lower mossy forest; alt up to 1200 m; clay soils.

31.2.2 ***Archidendron ellipticum*** (Blume) Nielsen. [basionym: *Pitchellobium ellipticum* (Blume) Hassk.] Bangah; Sangkaong; midstorey/ subcanopy; occasional in riparian forest and riverine forest, also in secondary forest.

31.2.3 ***Archidendron jiringa*** (Jack) Nielsen. [basionym: *Pithecellobium jiringa* (Jack) Prain] Jering hutan; Babai jering (Ib.); midstorey/ subcanopy; lowland MDF; flat ground, gentle slope; clay rich soils, alluvial clay soils. Uses: fruit edible.

31.3.1 ***Bauhinia burbidgei*** Stapf. Akar tapak kuda; climber, liana; lowland MDF.

31.3.2 ***Bauhinia endertii*** K. Larsen & S.S. Larsen. Tapak kuda; climber, liana; lowland MDF, hill MDF, Kerangas forest; slope, ridge; clay rich soils.

31.3.3 ***Bauhinia excelsa*** (Blume ex Miq.) Prain. Akar tapak kuda; climber, liana; old secondary forest.

31.3.4 ***Bauhinia kockiana*** Korth. Akar tapak kuda; climber, liana; old secondary forest.

31.3.5 ***Bauhinia purpurea*** L. Akar tapa kuda; Dahup-dahup (Ked.); shrub, or sometimes climber; summit ridge forest, submontane forest, montane forest. **Uses**: to treat watery stool and stomach pains.

31.3.6a ***Bauhinia simibifida*** Roxb. Akar tangkop-bedaup (Ib.); climber, lowland MDF; occasional in open place at edge of forest. **Uses**: for treating hypertension.

31.3.6b ***Bauhinia simibifida*** Roxb. var. ***simibifida.*** Wa ayap (LB); Daun puki-temuai (Ib.); woody climber; riparian forest. **Uses**: medicinal, for diarrhoea caused by food poisoning.

31.4.1 ***Callerya nieuwenhuisii*** (J.J. Smith) Schot. [syn: *Whitfordiodendron nieuwenhuisii* Dunn.] Akar belum (Ib.); liana, climber; lowland MDF; gentle slope, steep slope, periodically flooded; alluvial deposits soils. **Uses**: fruit edible, boiled and eaten.

31.5.1 ***Crudia tenuipes*** Merr. Small tree, treelet or shrub; Alluvial forest, lowland MDF.

31.5.2 ***Crudia cf. reticulata*** Merr. Small tree, treelet or shrub; Alluvial forest; sandy clay soils.

31.5.3 ***Crudia*** sp. Maguwau; climber, liana; old secondary forest.

31.6.1 ***Dalbergia havilandii*** Prain. Akar; climber, lowland MDF, hill MDF, clay-rich soils.

31.6.2 ***Dalbergia parvifolia*** Roxb. Randau menggris (Ib.); climber; lowland MDF. **Uses**: to relieve gastric pain.

31.6.3 ***Dalbergia pseudosissoo*** Miq. Akar; climber; lowland MDF, hill MDF; alluvial clay soils.

31.7.1 ***Derris elliptica*** Benth. Akar tuba; climber; lowland MDF, riparian forest; occasional on the forest edge.

31.7.2 ***Derris malaccensis*** (Benth.) Planch. Tubai akar (Ib.); secondary forest; sometimes cultivated near settlement. **Uses**: roots used for stupefying fish and for treatment of boil.

31.8.1 ***Dialium cochinchinense*** Pierre. Keranji; midstorey/subcanopy; Alluvial forest.

31.8.2a ***Dialium indum*** L. var. ***bursa*** Keranji; Alluvial forest, old secondary forest, lowland MDF, summit ridge forest. **Uses**: fruit edible.

31.8.2b ***Dialium indum*** L. var. ***indum.*** Keranji, Enkeranji (Ib.); tree, scrambling tree, midstorey/subcanopy tree; lowland MDF, hill MDF, ridge; clay soils; sometimes cultivated. **Uses**: fruit edible.

31.8.3a ***Dialium kunstleri*** Prain var. ***kunstleri.*** Keranji emplawa (Ib.); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, clay rich soils. **Uses**: fruit edible.

31.8.4 ***Dialium larinum*** Baker. Keranji paya; canopy/emergent, midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF, hill MDF; on wide range of soils. Note: also recorded in MSF. **Uses**: fruit edible.

31.8.5 ***Dialium maingayi*** Baker. Keranji; Enkeranji; midstorey/subcanopy; submontane forest. **Uses**: fruit edible.

31.8.6 ***Dialium patens*** Baker. Keranji; Enkranji (Ib.); canopy/emergent; lowland MDF, hill MDF. **Uses**: fruit edible.

31.8.7 ***Dialium platysepalum*** Baker. Keranji; old secondary forest, submontane forest. **Uses**: fruit edible.

31.8.8 ***Dialium*** sp. Keranji; Alluvial forest, lowland MDF, hill MDF, summit ridge forest.

31.9.1 ***Entada borneensis*** Ridl. Akar beluru (Ib.); climber, liana; lowland MDF, hill MDF; clay rich soils.

31.10.1 ***Fordia angustifolia*** Merr. Biansu bukit (Ib.); midstorey/subcanopy tree; lowland MDF, hill MDF; gentle slope, steep slope; alluvial soils, clay rich soils.

31.10.2 ***Fordia borneensis*** Ridl. Biansu (Ib.); midstorey/subcanopy, treelet, lowland MDF, hill MDF, old secondary forest; slope, ridge; periodically flooded; sandy soils, clay rich soils.

31.10.3 ***Fordia coriacea*** Dunn. Biansu (Ib.); Santawi (Ked.); midstorey/subcanopy tree, treelet; lowland MDF; gentle slope. **Uses**: medicinal, used in *air masak.*

31.10.4 ***Fordia gibbsiae*** Dunn. et Baker Biansu (Ib.); midstorey/subcanopy, treelet; lowland MDF, hill MDF, gentle slope; clay rich soils. **Uses**: to stop vomiting and diarrhoea.

31.10.5 ***Fordia splendidissima*** (Blume ex Miq.) J.R.M. Buijsen. Biansu (Ib.); midstorey/subcanopy, treelet; lowland MDF, hill MDF; slope; clay rich soils.

31.11.1 ***Koompasia excelsa*** (Becc.) Taub. Tapang; canopy/emergent tree; lowland MDF, old secondary forest; sandy loam soils.

31.11.2 ***Koompasia malaccensis*** Maingay ex Benth. Menggris; canopy/emergent; lowland MDF, hill MDF, Kerangas forest, old secondary forest; flat ground, gentle slope, ridge; alluvial soils, clay rich soils.

31.12.1 ***Kunstleria calminata*** Kornet. Akar; climber; lowland MDF.

31.13.1 ***Mimosa diplotricha*** C. Wright [syn: *Mimosa invisa* Mart.] Semalu; Malu-malu; open space, degraded secondary forest; areas been cleared for shifting cultivated; infertile soils.

31.13.2 ***Mimosa pudica*** L. Semalu; Pokok puteri malu; open space, areas been cleared for shifting cultivated; infertile soils.

31.14.1 ***Mucuna biplicata*** Tesym. & Binn. Akar beruru; climber; riparian forest, secondary forest.

31.15.1 ***Parkia javanica*** (Lam) Merr. Kedaung (Mal.); midstorey/subcanopy; lowland MDF, summit ridge forest. **Note**: rarely in wild, occasionally cultivated; fruit edible.

31.15.2 ***Parkia speciosa*** Hassk. Petai; Petah (Mel.); canopy/emergent, midstorey/subcanopy tree; lowland MDF; sometimes cultivated in the orchard near the settlement. **Uses:** fruit edible; medicinal, for treatment of high blood pressure and diabetes.

31.16.1 ***Phanera semibifida*** Roxb. Akar; climber; Alluvial forest.

31.17.1 ***Saraca declinata*** (Jack) Miq. Babai (Ib.); midstorey/subcanopy tree, treelet; hill MDF, river-bank; flat ground, steep slope, ridge, periodically flooded; alluvial deposits soils. **Uses:** medicinal, for treating diarrhoea; fruit edible.

31.17.2 ***Saraca hullettii*** Prain. Babai; midstorey/subcanopy; occasional on river-bank, old secondary forest, lowland MDF; sandy clay soils.

31.18.1 ***Sena alata*** (L.) Roxb. [syn: *Cassia alata* L.]. Gelenggang besar (Ib.); Daun tarum (Mel.); treelet, shrub; secondary forest; damp

and wet place, periodically flooded. **Uses**: medicinal, leaves used to cure ringworm.

31.19.1 ***Sindora beccariana*** Backer ex de Wit. Sepetir; Tampar hantu; canopy/emergent; Alluvial forest, hill MDF; on sandy clay soils.

31.19.2 ***Sindora coriacea*** (Baker) Prain. Sepetir; canopy/emergent; lowland MDF, hill MDF; sandy clay soils.

31.19.3 ***Sindora leiocarpa*** de Wit. Tampar hantu paya; canopy /emergent tree; Kerangas; terrace; sandy soil. **Note**: also recorded in MSF.

31.20.1 ***Spatholobus auricomus*** J.W.A. Riddler-Numan. Akar kemadu (Ib.); climber; lowland MDF, hill MDF, old secondary forest, emperan; igenous-derived soils, sandy clay soils.

31.20.2 ***Spatholobus ferrugineus*** (Zoll. & Mor.) Benth. Akar kemedu balok (Ib.); climber; lowland MDF, secondary forest, degraded secondary forest; yellow clay soils. **Uses**: to treat mouth ulcer and to stop diarrhoea.

31.20.3 ***Spatholobus macropterus*** Miq. Akar kemadu (Ib.); Kelabit buaya jantan (Ked.); climber; lowland MDF, secondary forest, old secondary forest; gentle slope; clay rich soils, alluvial clay soils. Uses: for blood in stool.

31.20.4 ***Spatholobus oblongifolius*** Merr. Akar kemadu (Ib.); climber; stragling shrub; lowland MDF, secondary forest; alluvial clay soils. **Uses**: for treatment of persistent fever.

31.20.5 ***Spatholobus strigillifera*** Ridl. Akar kemadu (Ib.); climber, stragling shrub; lowland MDF, secondary forest; gentle slope; clay rich soils, alluvial clay soils.

32. FAGACEAE

32.1.1 ***Castanopsis foxworthyi*** Schottky. Berangan; midstorey/ subcanopy; lowland MDF, hill MDF; slope, ridge; alluvial soils, sandy soils, clay rich soils.

32.1.2 ***Castanopsis clemensii*** Soepadmo. Berangan biris; midstorey/ subcanopy; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; sandy soils; clay rich soils. **Uses**: fruit edible.

32.1.3 ***Castanopsis costata*** A. DC. Berangan; canopy/emergent, midstorey/subcanopy; lower mossy forest, lower montane forest; alt 800 m; alluvial soils. **Uses**: fruit edible.

32.1.4 ***Castanopsis hypophoenicea*** (Seem.) Soepadmo. [basionym: *Quercus hypophoenicea* Seem.] Berangan; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, old secondary forest; slope, ridge; alluvial soils, sandy clay soils.

32.1.5 ***Castanopsis javanica*** A. DC. Berangan biris; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest; lower mossy forest; alt up to 900 m; gentle slope, ridge; wide range of soils.

32.1.6 ***Castanopsis motleyana*** King. Berangan; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest, Kerangas forest, gentle slope, ridge; various types of soils. **Uses**: fruit edible.

32.1.7 ***Castanopsis oviformis*** Soepadmo. Berangan pipit; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; alluvial soils. **Uses**: fruit edible.

32.1.8 ***Castanopsis psilophylla*** Soepadmo. Berangan; canopy /emergent, midstorey/subcanopy; lowland MDF, hill MDF, lower mossy forest; alt up to 1000 m; slope, ridge; wide range of soils. **Uses**: fruit edible.

32.2.1 ***Lithocarpus bennettii*** (Miq.) Rehd. [basionym: *Quercus bennettii* Miq.] Empili; midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; slope, ridge; alluvial soils, sandy soils.

32.2.2 ***Lithocarpus cantleyanus*** (King ex Hook.f.) Rehd. [basionym: *Quercus cantleyanus* King ex Hook.f.] Empili; midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; slope; alluvial soils, sandy clay soils.

32.2.3 ***Lithocarpus conocarpus*** (Ouden) Rehd. Empili (Ib.); canopy/emergent tree, midstorey/subcanopy tree; lowland MDF;

flat ground, gentle slope, periodically flooded; alluvial deposits soils.

32.2.4 ***Lithocarpus coopertus*** (Blanco) Rehd. Empili; midstorey/ subcanopy; lowland MDF, hill MDF, old secondary forest; flat ground, gentle slope; sandy soils, clay rich soils.

32.2.5 ***Lithocarpus ferrugineus*** Soepadmo. Empili; canopy/emergent; hill MDF, lower mossy forest; alt 1200 m; soils with good drainage.

32.2.6 ***Lithocarpus hallieri*** (Seem.) A. Camus. [basionym: *Quercus hallieri* Seem.] Empili; Empenit (Ib.); midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest, lower mossy forest; various types of soils.

32.2.7 ***Lithocarpus jacobsii*** Soepadmo. Empili; midstorey/subcanopy; lowalnd MDF, hill MDF; slope, ridge; sandy clay soils, alluvial clay soils.

32.2.8 ***Lithocarpus kunstleri*** (King et Hook.f.) A. Camus. [basionym: *Quercus kunstleri* King et Hook.f] Empili; Empenit (Ib.); lowland MDF, hill MDF, old secondary forest, Kerangas forest; slope, ridge; sandy clay soils, clay rich soils.

32.2.9 ***Lithocarpus meijeri*** Soepadmo. Empili; canopy/emergent; hill MDF, lower mossy forest; alt up to 1000 m; clay rich soils, alluvial clay soils.

32.2.10 ***Lithocarpus nieuwenhuisii*** (Seem.) A. Camus. [basionym: *Quercus nieuwenhuisii* Seem.] Empili; midstorey/subcanopy; hill MDF, lower mossy forest, Kerangas forest; slope, ridge; alt 600 – 800 m; sandy soils, clay rich soils.

32.2.11 ***Lithocarpus porcatus*** Soepadmo. Empili; midstorey /subcanopy; lower mossy forest; alt up to 1100 m; alluvial clay soils.

32.2.12 ***Lithocarpus pusillus*** Soepadmo. Empenit daun halus; midstorey/ subcanopy; lowland MDF, hill MDF, lower mossy forest; wide range of soils. Note: this species also recorded in MSF and Alan forest.

32.2.13 ***Lithocarpus reflexus*** King. Empili; midstorey/subcanopy; lowland MDF, hill MDF, lower mossy forest; alt up to 950 m; alluvial clay soils, clay rich soils.

32.2.14 ***Lithocarpus ruminatus*** Soepadmo. Empili (Ib.); midstorey/ subcanopy tree; secondary forest; gentle slope; alluvial soils, clay rich soils.

32.2.15 ***Lithocarpus sundaicus*** Rehd. Empili; midstorey/ subcanopy; lowland MDF, hill MDF, emperan; slope, ridge; alluvial soils, sandy clay soils.

32.2.16 ***Lithocarpus urceolaris*** (Jack) Merr. [basionym: *Quercus urceolaris* Jack] Empili; Empenit (Ib.); midstorey/subcanopy; lowland MDF, Kerangas forest,old secondary forest; sandy soils, clay rich soils.

32.3.1 ***Quercus argentata*** Korth. Empili; midstorey/subcanopy; lower mossy forest, Kerangas forest; slope, ridge; alt. 700 m; sandy soils, clay rich soils.

32.3.2 ***Quercus subsericea*** A. Camus. Empili; midstorey/subcanopy, lower mossy forest, hill MDF, Kerangas forest; gentle slope, ridge; alt 500 – 800 m; sandy clay soils.

33. FLACOURTIACEAE

33.1.1 ***Flacourtia rukam*** Zoll. & Mor. Rukam (Ib.); midstorey /subcanopy tree, treelet; lowland MDF, ridge; clay soils; sometimes cultivated in the orchard. **Uses**: fruit edible; medicinal, used in *air masak* and for relief headache and gastritis.

33.2.1 ***Hydnocarpus anomalus*** (Merr.) Sleum. [basionym: *Taraktogenos anomalum* Merr.] Senumpul; canopy/emergent, midstorey/ subcanopy; occasional in MDF; clay rich soils.

33.2.2 ***Hydnocarpus beccariana*** Sleum. Senumpul; Kayu beleat (Pun.); midstorey/ subcanopy; lowland MDF, hill MDF; slope, ridge; sandy podsolic soils.

33.2.3 ***Hydnocarpus kunstleri*** (King) Warb. [basionym: *Teraktogenos kunstleri* King; *Teraktogenos scortechinii* King] Senumpul; midstorey/subcanopy, treelet; lowland MDF, hill MDF, slope, ridge; sandy soils, clay rich soils.

33.2.4 ***Hydnocarpus pinguis*** Sleum. Senumpul; midstorey/subcanopy, treelet; lowland MDF, river-bank; slope; sandy clay soils.

33.2.5 ***Hydnocarpus subfalcata*** Merr. Senumpul (Ib.); midstorey/subcanopy tree; lowland MDF, hill MDF; gentle slope; alluvial soils, clay rich soils.

33.2.6 ***Hydnocarpus sumatrana*** (Miq.) Koord. [basionym: *Bergsmia sumatrana* Miq.] Senumpul; canopy/emergent, midstorey/subcanopy; lowland MDF; slope, ridge; clay rich soils, soils with good drainage.

33.2.7 ***Hydnocarpus tenuipetala*** Sleum. Senumpul; canopy/emergent, midstorey/subcanopy; lowland mDF, hill MDF, ridge, slope; clay rich soils, alluvial clay soils.

33.2.8 ***Hydnocarpus woodii*** Merr. Senumpul; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; slope, ridge; fertile loam soils, igneous origin soils.

33.3.1 ***Pangium edule*** Reinw. ex Blume. Kepayang; midstorey/subcanopy; river-bank, emperan; sometimes cultivated in the orchard. **Uses:** medicinal, skin infection and kill worms on wounds of chickens and house pets. **Note**: seeds are edible only after sufficient cooking and washing to remove the cyanide.

33.4.1 ***Ryporusa hullettii*** King. Senumpul (Ib.); canopy/emergent tree, midstorey/subcanopy tree; lowland MDF, gentle slope; sandy soils, clay rich soils.

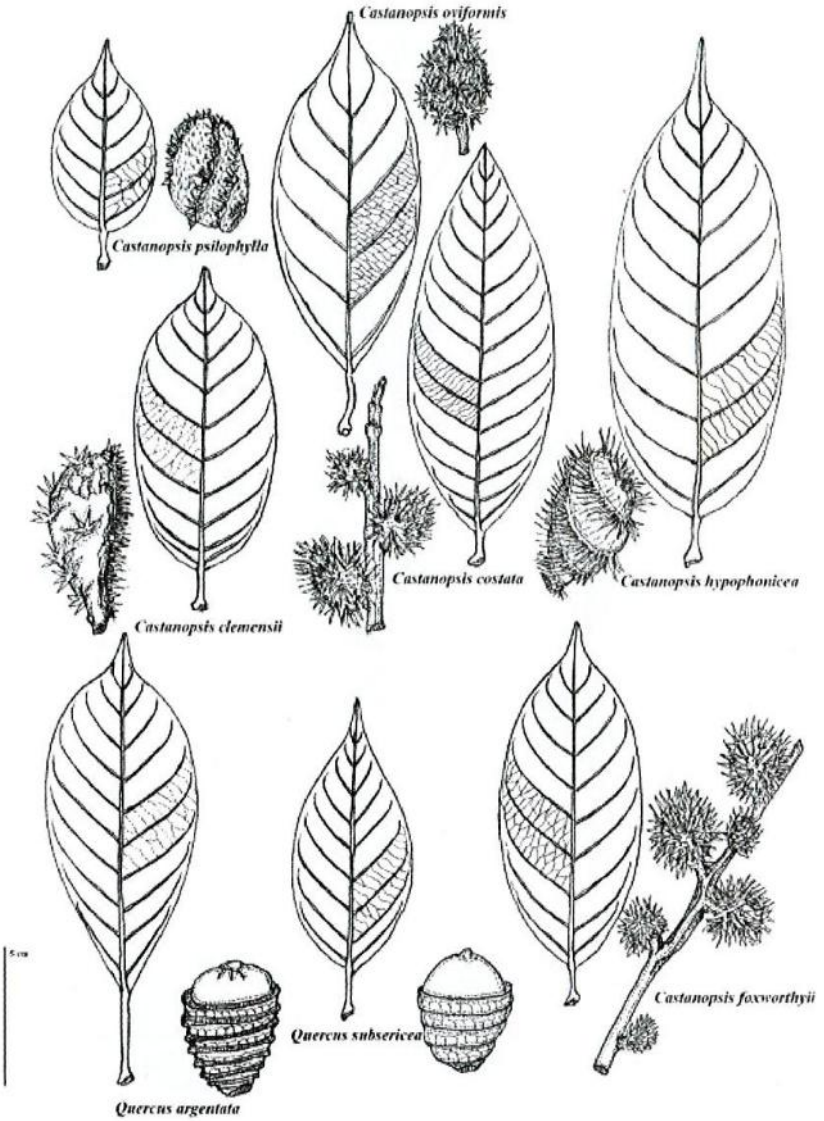


Figure 8: Fagaceae – genus *Castanopsis* and *Quercus*

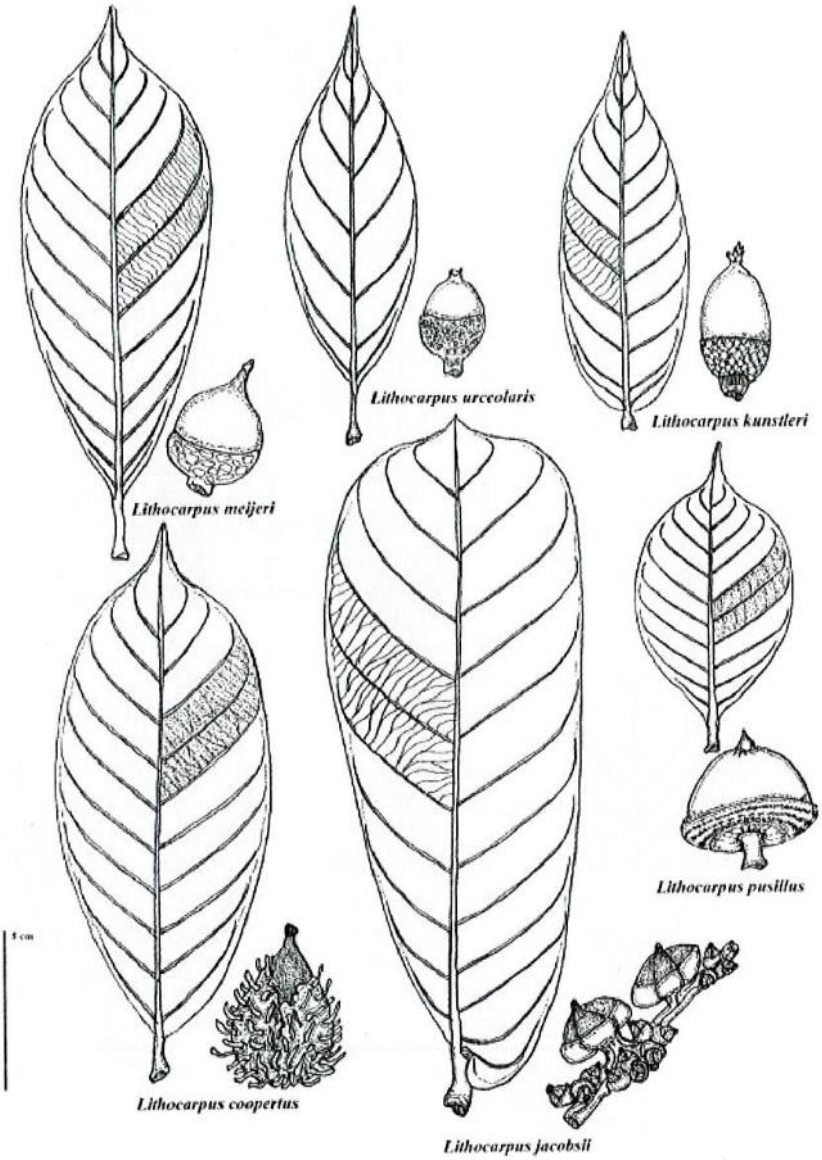


Figure 9: Fagaceae – genus *Lithocarpus*

34. GENTIANACEAE

34.1.1 ***Fagraea crassipes*** Benth. Tembusu; Sukong ranyai (Ib.); Puak bulan (ked.); understorey tree, treelet; secondary forest, old secondary forest, degraded lowland MDF; alluvial soils, sandy clay soils. **Uses**: for ulcer or fungal infection in babies mouths.

34.1.2 ***Fagraea elliptica*** Roxb. [basionym: *Cyrtophyllum speciosum* Blume var. *montanum* Ridl.] Tembusu; midstorey/subcanopy, treelet; Kerangas forest, MDF; clay soils.

34.1.3 ***Fagraea fragrans*** Roxb. Tembusu; Tiga'an (Bid.); Merang (Kay.); Tebuso (Mel.); canopy/emergent, midstorey/subcanopy; occasional in secondary forest, old secondary forest. **Uses**: frequently cultivated as an ornamental tree.

34.1.4 ***Fagraea gigantea*** Ridl. [basionym: *Cyrtophyllum giganteum* (Ridl.) Ridl.; synonym: *Fagraea fagrans auct. non* Roxb.] Tembusu; small tree or treelet; lowland MDF, secondary forest, Kerangas forest; gentle slope, ridge; sandy clay soils, clay rich soils.

34.1.5 ***Fagraea racemosa*** Jack ex Wall. [synonym: *Fagraea maingayi* C.B. Clarke; *Fagraea pauciflora* Ridl.; *Fagraea ligustrina* Blume] Tembusu; midstorey/subcanopy, understorey, treelet; lowland MDF, degraded lowland MDF, secondary forest, open space; alluvial soils, sandy clay soils.

34.1.6 ***Fagraea stenophylla*** Becc. Tembusu; understorey tree, treelet; secondary forest, degraded lowland MDF, clay soils.

35. HYPERICACEAE

35.1.1 ***Cratoxylum arborescens*** (Vahl.) Blume. [basionym: *Hypericum arborescens* Vahl.–Clusiaceae] Geronggang (Mal.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, frequent in Kerangas forest; sandy clay soils. **Uses**: wood for construction.

35.1.2 ***Cratoxylum cochinchinense*** (Lour.) Blume; Geronggang; lowland MDF, hill MDF, common in secondary forest; flat ground, slope; alluvial soils.

35.1.3 ***Cratoxylum formosum*** (Jack) Dyer. Geronggang; Entemu (Ib.); Alluvial forest, lowland MDF, hill MDF; clay soils, degraded soils.

35.1.4 ***Cratoxylum glaucum*** Korth. Geronggang padang; Kirap (Bid.); submontane forest, Kerangas forest; on soils with impeded drainage. **Uses**: medicinal, latex used to treat skin diseases.

35.1.5 ***Cratoxylum sumatranum*** (Jack) Blume ssp. ***sumatranum.*** Geronggang; canopy/emergent; old secondary forest, hill MDF, secondary MDF; clay soils, more frequent on alluvial clay soils.

36. ICACINACEAE

36.1.1 ***Gomphandra cumingiana*** (Miers) F-Vill. Kerak nasi; midstorey/ subcanopy; old secondary forest, lowland MDF.

36.1.2 ***Gomphandra minus*** Sleumer. Kerak nasi; midstorey /subcanopy; lowland MDF.

36.2.1 ***Gonocaryum calleryanum*** (Baill.) Becc. [basionym: *Phlebocalymna Calleryana* Baill.] Nyalin anderson; midstorey/ subcanopy; hill MDF.

36.2.2 ***Gonocaryum minus*** Sleumer. Nyalin anderson; midstorey/ subcanopy; lowland MDF; sandy clay soils.

36.3.1 ***Iodes velutina*** King. Akar; climber; hill MDF.

36.4.1 ***Miquelia caudata*** King. Akar pisang musang (Ib.); climber; lowland MDF, hill MDF; occasional near stream.

36.5.1 ***Phytocrene racemosa*** Sleumer. Akar; climber; hill MDF.

36.6.1 ***Platea latifolia*** Blume. Jejangkang; small tree or treelet; lowland MDF, hill MDF, submontane forest; alluvial clay soils.

36.7.1 ***Stemonurus grandifolius*** Becc. Semburok; midstorey /subcanopy; Alluvial forest, lowland MDF, Kerangas forest; sandy soils.

36.7.2 ***Stemonurus scorpioides*** Becc. Semburuk daun besar; midstorey/ subcanopy; Kerangas forest, submontane forest.

36.7.3 ***Stemonurus umbellatus*** Becc. Semburok; midstorey /subcanopy, treelet; lowland MDF, hill MDF, old secondary forest, river-bank; flat ground, slope; sandy soils, clay rich soils.

37. IXONANTHACEAE

37.1.1 ***Ixonanthes reticulata*** Jack. Inggi burung; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest; flat ground, gentle slope, ridge; alluvial soils, sandy soils, clay rich soils.

38. JUGLANDACEAE

38.1.1 ***Engelhardtia serrata*** Blume. [synonym: *Engelhardtia nudiflora* Hook.f.; *Engelhardtia parviflora* C. DC.] Sangsanglang; old secondary forest, summit ridge forest, montane forest.

39. LAURACEAE

39.1.1 ***Actinodaphne borneensis*** Meissn. Medang payong; small tree; summit ridge forest, montane forest. **Note**: also occurred on limestone.

39.1.2 ***Actinodaphne glabra*** Blume. Medang payong; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, Kerangas forest, river-banks; clay rich soils.

39.1.3 ***Actinodaphne glomerata*** Nees. Medang payong; midstorey/ subcanopy; riparian forest, river-bank; on igneous-derived soils.

39.1.4 ***Actinodaphne myriantha*** Merr. Medang payong paya; midstorey/ subcanopy; riparian forest, Alluvial forest, lowland MDF, hill MDF; on igneous-derived soils. **Note**: also recorded in MSF.

39.2.1 ***Alseodaphne albifrons*** Kosterm. Medang; midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest, Kerangas forest, emperan; gentle slope, ridge; sandy soils, clay rich soils.

39.2.2 ***Alseodaphne coriacea*** Kosterm. Medang lui; Lui (Mel.); midstorey/subcanopy; lowland MDF; clay rich soils. **Note**: confined to PSF, occasional in MSF.

39.2.3 ***Alseodaphne insignis*** Gamble. Medang lui kasar; midstorey/ subcanopy; hill MDF; alluvial clay soils. **Note**: also recorded in MSF.

39.3.1 ***Beilschmiedia glabra*** Kosterm. Medang; midstorey/subcanopy; lowland MDF, submontane forest.

39.3.2 ***Beilschmiedia glauciphylla*** Kosterm. Medang; small tree or treelet; lowland MDF, Kerangas forest; slope and terrace; clay rich soils

39.3.3 ***Beilschmiedia maingayi*** Hook.f. Medang; small tree or treelet; lowland MDF, hill MDF, lower mossy forest; alt up to 1250 m; clay soils, alluvial clay soils.

39.3.4 ***Beilschmiedia pilosa*** Kosterm. Medang; small tree; hill MDF, summit ridge forest; on igneous-derived soils.

39.3.1 ***Cinnamomum crassinervium*** Miq. Medang teja; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; slope, alluvial soils, sandy clay soils.

39.3.2 ***Cinnamomum iners*** Reinw. ex Blume. Medang tija; midstorey/ subcanopy; old secondary forest, lowland MDF, hill MDF; clay-rich soils. **Uses**: cultivated as an ornamental plant.

39.3.3 ***Cinnamomum microcarpum*** Kosterm. Medang tija; Medang lawang (ked.); midstorey/ subcanopy; lowland MDF, hill MDF; sandy clay soils. **Uses**: medicinal, used in *air masak* and to get rid of wind in stomach (flatulence).

39.3.4 ***Cinnamomum parthernoxylon*** Meissn. Medang teja; midstorey/ subcanopy, tree; lowland MDF, hill MDF, Kerangas forest; gentle slope, steep slope; sandy clay soils, clay rich soils.

39.3.5 ***Cinnamomum tahijanum*** Kosterm. Lawang (Ib.); tree; subcanopy tree or treelet; in MDF on clay rich soils.

39.4.1 ***Cryptocarya cagayanensis*** Merr. Medang; midstorey /subcanopy; submontane forest, montane forest; alluvial soils.

39.4.2 ***Cryptocarya crassinervia*** Miq. Medang; midstorey/subcanopy; Alluvial forest, lowland MDF, hill MDF, summit ridge forest; on igneous-derived soils, clay-rich soils.

39.4.3 ***Cryptocarya enervis*** Hook.f. Medang lichen; midstorey/ subcanopy; summit ridge forest. Note: also recorded in MSF and PSF.

39.4.4 ***Cryptocarya erectinervia*** Kosterm. Medang; small tree; lowland MDF, summit ridge forest.

39.4.5 ***Cryptocarya ferrea*** Blume. Medang; small tree; submontane forest; on igneous-derived soils.

39.4.6 ***Cryptocarya griffithiana*** Hook.f. Medang; midstorey /subcanopy, small tree; lowland MDF; alluvial clay soils.

39.4.7 ***Cryptocarya impressa*** Miq. Medang; small tree; summit ridge forest; alluvial soils.

39.4.8 ***Cryptocarya kurzii*** Hook.f. Medang; small tree; summit ridge forest; alluvial soils.

39.4.9 ***Cryptocarya laevigata*** Blume. Medang; small tree or treelet; hill MDF; slope; igneous-derived soils.

39.4.10 ***Cryptocarya nigra*** Kosterm. Medang; midstorey/subcanopy; MDF, Kerangas forest, montane forest.

39.4.11 ***Cryptocarya obliqua*** Blume. Medang; midstorey/subcanopy; submontane forest.

39.4.12 ***Cryptocarya scortechinii*** Gamble. Medang; midstorey /subcanopy; Alluvial forest, summit ridge forest. **Note**: also recorded in MSF.

39.4.13 ***Cryptocarya tawaensis*** Merr. Medang; midstorey/subcanopy; Alluvial forest, hill MDF; on clay soils.

39.5.1 ***Dehaasia brachybotrys*** (Merr.) Kosterm. [basionym: *Beilschmiedia brachybotrys* Merr.] Medang; midstorey/ subcanopy; lowland MDF, hill MDF, emperan; slope, ridge; alluvial clay soils, clay rich soils.

39.5.2 ***Dehaasia firma*** Blume. Medang; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, lower montane forest; alt up to 1200 m; wide range of soils.

39.5.3 ***Dehaasia incrassata*** (Jack) Kosterm. [synonym: *Dehaasia microcarpa* Blume] Medang chabi; midstorey/ subcanopy; lowland MDF; slope; clay soils. **Note**: occasional in MSF.

39.5.4 ***Dehaasia turfosa*** Kosterm. Medang; midstorey/subcanopy; lowland MDF, hill MDF; slope; clay soils, alluvial clay soils.

39.5.5 ***Dehaasia*** sp. Medang; tree; subcanopy tree or treelet; in MDF, Kerangas and riparian forest.

39.6.1 ***Endiandra clavigera*** Thunb. Medang; Bejubai; midstorey/ subcanopy; lowland MDF, hill MDF, summit ridge forest; on clay soils.

39.6.2 ***Endiandra coriacea*** Merr. Bejubai; midstorey/subcanopy; old secondary forest, lowland MDF, hill MDF, summit ridge forest, montane forest; on igneous-derived soils.

39.6.3 ***Endiandra kingiana*** Gamble. Bejubai; midstorey/subcanopy; lowland MDF; clay-rich soils.

39.6.4 ***Endiandra macrophylla*** (Blume) Boerl. [basionym: *Dictyodaphne macrophylla* Blume] Medang bejubai; midstorey/ subcanopy; lowland MDF, hill MDF, old secondary forest; clay soils.

39.6.5 ***Endiandra rubescens*** (Blume) Miq. Medang; Bejubai; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF; slope; clay soils.

39.6.6 ***Endiandra scrobiculata*** Kosterm. Bejubai; midstorey /subcanopy; old secondary forest, lowland MDF; sandy clay soils.

39.7.1 ***Eusideroxylon zwargeri*** Teijsm. & Binn. Belian; Belian batu; Engeriting (Ib.); Balangian (Ken.); Ta'as (Bid; Mel); canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, river-bank; flat ground, gentle slope; alluvial soils. **Uses:** for construction.

39.8.1 ***Lindera caesia*** Reinw. ex Villar. Medang; small tree or treelet; submontane forest, montane forest.

39.8.2 ***Lindera pipericarpa*** Boerl. Medang; Medang serai (Ib.); Kayu wangi; small tree or treelet; lowland MDF, old secondary forest; alluvial clay soils, clay rich soils. **Uses**: medicinal, to treat kidney problem and roots are used for flavouring food.

39.8.3 ***Lindera subumbellifera*** (Blume) Kosterm. [basionym: *Laurus subumbelliflora* Blume] Medang; small tree or treelet; Alluvial forest, summit ridge forest.

39.9.1 ***Litsea accedens*** (Blume) Boerl. [basionym: *Cylicodaphne accedens* Blume] Medang balong; Tiburus (Bid.); small tree; hill MDF, Kerangas forest; sandy soils.

39.9.2 ***Litsea cauliflora*** Stapf. Canopy/emergent, midstorey /subcanopy; Alluvial forest, lowland MDF; clay-rich soils.

39.9.3 ***Litsea caulocarpa*** Merr. Medang; tree, subcanopy tree; in MDF on mainly clay soils.

39.9.4 ***Litsea crassifolia*** (Blume) Boerl. [basionym: *Tetranthera crassifolia* Blume] Medang padang; canopy/ emergent, midstorey/subcanopy; Kerangas forest; alluvial clay soils. **Note**: common in MSF.

39.9.5 ***Litsea cylindrocarpa*** Gamble. Medang; midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest, emperan; slope; sandy soils, peat soils; alluvial soils.

39.9.6 ***Litsea elliptibacca*** Merr. Medang; midstorey/subcanopy; lowland MDF; on wide range of soils. **Note**: also recorded in MSF.

39.9.7 ***Litsea ferruginea*** (Blume) Blume. [synonym: *Litsea griffithii* Gamble] Medang; small tree; lowland MDF, hill MDF; slope, ridge; clay soils.

39.9.8 ***Litsea ficoidea*** Kosterm. Medang; small tree; old secondary forest, lowland MDF.

39.9.9 ***Litsea firma*** (Blume) Hook.f. [basionym: *Tetranthera firma* Blume] Medang; midstorey/subcanopy; frequent in MDF, old secondary forest, summit ridge forest, montane forest; on wide range of soils.

39.9.10 ***Litsea fulva*** Vill. Medang; small tree; old secondary forest, lowland MDF, hill MDF; alluvial clay soils.

39.9.11 ***Litsea garciae*** Vidal. Engkala (Ib.); Buak tebulus (Mel.); cultivated in the orchard or near the settlement. **Uses**: edible fruit.

39.9.12 ***Litsea grandis*** Hook.f. Medang; midstorey/subcanopy; Alluvial forest; alluvial clay soils.

39.9.13 ***Litsea insignis*** (Blume) Boerl. [basionym: *Tetranthera insignis* Blume] Medang; midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; alluvial clay soils.

39.9.14 ***Litsea lanceolata*** (Blume) Kosterm. [synonym: *Litsea sarawacensis* Gamble] Medang; small tree or treelet; lowland MDF; clay rich soils.

39.9.15 ***Litsea lancifolia*** Vill. Medang; small tree; lowland MDF, submontane forest; on igneous-derived soils.

39.9.16 ***Litsea machilifolia*** (Miq.) Gamble. Medang; tree or subcanopy tree; in MDF on clay soils.

39.9.17 ***Litsea magnifica*** (Miq.) Gamble. [basionym: *Lepidadenia magnifica* Miq.] Medang; midstorey/subcanopy; lowland MDF; clay-rich soils.

39.9.18 ***Litsea megacarpa*** Gamble. Lawang (Ib.); tree; in MDF on sandy soils.

39.9.19a ***Litsea ochracea*** (Blume) Boerl.var. ***ochracea.*** Subcanopy tree or treelet; hill MDF; gentle slope, ridge.

39.9.20 ***Litsea oppositifolia*** (Blume) Vill. Medang; midstorey /subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest; slope, ridge; alluvial soils, sandy soils, clay rich soils, peat soils.

39.9.21 ***Litsea paludosa*** Kosterm. Medang bulu; Medang balong; canopy/ emergent, midstorey/subcanopy; hill MDF, secondary forest. **Note**: also recorded in MSF. **Uses**: for speedy recovery in mother after childbirth.

39.9.22 ***Litsea rubicunda*** Kosterm. Engkala burung (Ib.); tree, subcanopy tree; in MDF, ridges or riparian.

39.9.23 ***Litsea sarawacensis*** Gamble. Medang; small tree; old secondary forest; clay-rich soils.

39.9.24 ***Litsea subumbelliflora*** (Blume) Ng. [basionym: *Laurus subumbelliflora* Blume] Medang; midstorey/subcanopy; lowland MDF, hill MDF; gentle slope; clay rich soils.

39.9.25 ***Litsea trunciflora*** Gamble. Medang; midstorey/subcanopy to small tree; lowland MDF; slope; clay rich soils.

39.10.1 ***Nothaphoebe heterophylla*** Merr. Medang linggak; midstorey/ subcanopy; lowland MDF, hill MDF; on clay soils.

39.11.1 ***Phoebe opaca*** Blume. Medang kuning; old secondary forest, lowland MDF; on a variety of soils. **Note**: also recorded in MSF.

39.12.1 ***Potoxylon melagangai*** Kosterm. Melagangai; Belian; Belian melagangai; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, river-bank; flat ground, gentle slope, steep slope; clay rich soils, alluvial soils. **Uses**: wood for construction.

40. LECYTHIDACEAE

40.1.1 ***Barringtonia augusta*** Kurz. Langkang (Ib.); midstorey/ subcanopy, treelet; lowland MDF, hill MDF, occasional in river-bank; alluvial soils, sandy clay soils.

40.1.2 ***Barringtonia belagaensis*** Chant. Putat; Robone; midstorey/ subcanopy, small tree; riparian forest, river-bank; sandy clay soils.

40.1.3 ***Barringtonia curranii*** Merr. Putat; midstrorey/subcanopy; hill MDF, lower mossy forest; alt up to 1200 m; alluvial clay soils.

40.1.4 ***Barringtonia lanceolata*** (Ridl.) Payens. [basionym: *Careya lanceolata* Rild.] Putat; Canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, lower mossy forest; alt up to 1200 m; gentle slope, ridge; clay soils.

40.1.5 ***Barringtonia macrostachya*** (Jack) Kurz. [basionym: *Careya macrostachya* Jack] Putat; midstorey/ subcanopy; Alluvial forest, old secondary forest, lowland MDF; clay-rich soils, alluvial clay soils.

40.1.6 ***Barringtonia reticulata*** (Blume) Miq. [synonym: *Barringtonia sumatrana* Miq.] Putat paya; small tree or treelet; Kerangas forest; peat soils, sandy clay soils. **Note**: this species also recorded in MSF, occasional in river-bank.

40.1.7 ***Barringtonia revoluta*** Merr. Midstorey/subcanopy, small tree; Alluvial forest, summit ridge forest, submontane forest; on alluvial base soils.

40.1.8 ***Barringtonia sarcostachys*** (Blume) Miq. Putat; midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest; wide range of soils.

40.1.9 ***Barringtonia scortechinii*** King. Putat; midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF; sandy clay soils, alluvial clay soils.

41. LOGANIACEAE

41.2.1 ***Strychnos minor*** Dennst. Akar kayas (Ib.); climber; old secondary forest.

41.2.2 ***Strychnos ovata*** Aik. Akar kayas (Ib.); climber; hill MDF.

41.2.3 ***Strychnos*** sp. indet. Akar kayas (Ib.); climber; Alluvial forest, lowland MDF.

42. MAGNOLIACEAE

42.1.1 ***Aromadendron elegans*** Blume. Medang limo; midstorey/ subcanopy; Kerangas forest, lowland MDF, summit ridge forest, submontane forest; alluvial soils.

42.2.1 ***Magnolia ashtonii*** Dandy ex Noot. Medang; small tree; lowland MDF, alluvial soils.

42.2.2 ***Magnolia candolii*** (Blume) H. Keng. [synonym: *Magnolia liliifera* (L.) Baill. var. *liliifera*] Talauma; Medang limo; midstorey/subcanopy, small tree; old secondary forest, lowland MDF, hill MDF; on igneous-derived soils.

42.2.3 ***Magnolia carsonii*** Noot. Talauma; midstorey/subcanopy, small tree; lowland MDF; sandy clay soils.

42.2.4 ***Magnolia uvariifolia*** Dandy ex Noot. Talauma; midstorey/ subcanopy, small tree; lowland MDF; sandy clay soils.

42.2.5 ***Magnolia villosa*** (Miq.) H. Keng. Talauma; midstorey /subcanopy; old secondary forest; clay-rich soils.

42.3.1 ***Talauma gigantifolia*** Miq. Talauma; midstorey/subcanopy; old secondary forest, lowland MDF, submontane forest; clay-rich soils.

42.3.2 ***Talauma obovata*** Korth. Talauma; small tree or treelet; lowland MDF, hill MDF; alluvial clay soils.

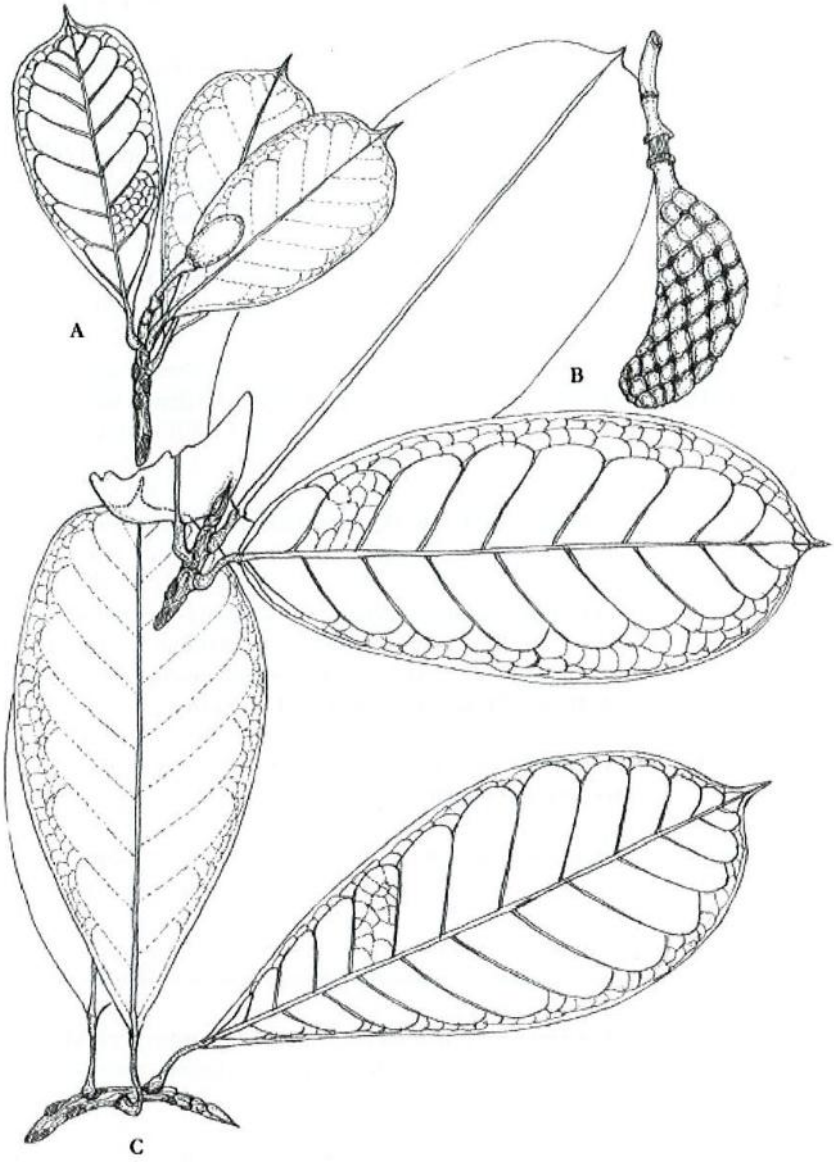


Figure 10: Magnoliaceae. **A**: *Magnolia carsonii*; **B**: *Magnolia candolii*; **C**: *Magnolia ashtonii*.



Figure 11: Magnoliaceae. *Talauma gigantifolia*

43. MALVACEAE

43.1.1 ***Brownlowia havilandii*** Stapf. Baru; small to medium tree; in MDF on clay soils.

43.1.2 ***Brownlowia ovalis*** Kosterm. Baru; midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; flat ground, slope, ridge; sandy soils, clay rich soils.

43.2.1 ***Coelostegia borneensis*** Becc. Durian antu; lowland MDF on leached sands and alluvial soil.

43.2.2 ***Coelostegia griffithii*** Benth. Bengang; Durian antu (Ib.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF; slope, ridge; sandy soils, clay rich soils.

43.3.1 ***Durio acutifolius*** (Mast.) Kosterm. Durian; canopy/emergent; occasional in lowland MDF; gentle slope; clay-rich soils.

43.3.2 ***Durio affinis*** Becc. Durian; midstorey/subcanopy; occasional in MDF; clay-rich soils,

43.3.3 ***Durio excelsus*** (Korth.) Bakh. Durian; canopy/emergent; lowland MDF; clay-rich soils.

43.3.4 ***Durio grandiflorus*** (Mast.) Kosterm. Durian; canopy/emergent; occasional in lowland MDF; gentle slope; clay-rich soils.

43.3.5 ***Durio graveolens*** Becc. Durian burung; Durian kuning; canopy/ emergent, midstorey/subcanopy; lowland MDF; clay and sandy clay soils. Sometimes cultivated. Uses: fruit edible.

43.3.6 ***Durio griffithii*** (Mast.) Bakh. [basionym: *Boschia griffithii* Mast.] Durian burung; lowland MDF, hill MDF; gentle slope; alluvial soils, clay rich soils.

43.3.7 ***Durio kutejensis*** (Hassk.) Becc. Durian isu, Rian isu (Ib.); cultivated in the orchard. **Uses**: fruit edible.

43.3.8 ***Durio lanceolatus*** Mast. Rian hutan; canopy/emergent, midstorey/subcanopy; old secondary forest; clay rich soils.

43.3.9 ***Durio malaccensis*** Planch. ex Mast. Durian; midstorey/ subcanopy; lowland MDF; hill slope; clay-rich soils.

43.3.10 ***Durio oblongus*** Mast. Nyekak (Ib.); Dian pipek (Mel.); lowland MDF, hill MDF; flat ground, gentle slope; clay rich soils. Sometimes cultivated in the orchard. **Uses**: fruit edible.

43.3.11 ***Durio oxleyanus*** Griff. Durian beludu; canopy/emergent; lowland MDF; clay-rich soils.

43.3.12 ***Durio testudinarum*** Becc. Durian kura-kura; Rian kura (Ib.); midstorey/subcanopy; lowland MDF, degraded MDF; slope, ridge; clay-rich soils.

43.3.13 ***Durio zibethinus*** Murray. Durian; cultivated in the orchard. **Uses**: edible fruit.

43.4.1 ***Hibiscus rosa-sinensis*** L. Bunga raya; cultivated near settlement. **Uses**: ornamental plant.

43.5.1 ***Microcos gracilis*** Stapf. ex Ridl.[basionym: *Grewia gracilis* (Stapf. ex Ridl.) Ashton]. Bunsi (Ib.); small tree; in MDF, gentle slope; alluvial soils.

43.5.2 ***Microcos antidesmifolia*** (King) Burret. [basionym: *Grewia antidesmaefolia* King] Baru; midstores/subcanopy; lowland MDF, hill MDF; gentle slope; alluvial clay soils, clay rich soils.

43.5.3 ***Microcos ossea*** (Stapf. ex Burret) Burret. [basionym: *Grewia oseea* Stapf. ex Burret.] Bunsi (Ib.); scrambling tree, midstorey/ subcanopy tree, treelet, suffrutescent herb, subshrub; hill MDF; flat ground, ridge, impeded drainage, periodically flooded; alluvial soils.

43.6.1 ***Neesia glabra*** Becc. Bengang; Sebangkih (Ib.); canopy/emergent, lowland MDF; flat ground, gentle slope; sandy clay soils.

43.6.2 ***Neesia malayana*** Bakh. Bengang; canopy/emergent; lowland MDF, hill MDF; slope, ridge; sandy clay soils, clay-rich soils.

43.6.3 ***Neesia piluliflora*** Becc. Bengang daun besar; canopy/emergent; lowland MDF; clay-rich soils.

43.6.4 ***Neesia synandra*** Mast. Bengang daun kecil; canopy/emergent; lowland MDF, hill MDF; slope, ridge; sandy clay soils, clay-rich soils.

43.7.1 ***Pentace borneensis*** Pierre. Baru; midstorey/subcanopy; lowland MDF; gentle slope; clay soils.

43.7.2 ***Pentace erectinervia*** Kosterm. Canopy/emergent tree; gentle slope; yellow sandy soils; alt 60 – 200 m.

43.7.3 ***Pentace laxiflora*** Merr. Baru; midstorey/subcanopy; lowland MDF, hill MDF; gentle slope; clay rich soils, alluvial clay soils.

43.8.1 ***Scaphium macropodum*** (Miq.) Beumee ex Heyne. Kembang semangkok; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; wide range of soils.

43.8.2 ***Scaphium parvifolium*** Ridl. [syn: *Scaphium parviflorum* Kosterm.]. Kepayang babi; Kembang semangkuk; midstorey/subcanopy tree; gentle slope; yellow clay soils. **Uses**: medicinal.

43.9.1 ***Sida acuta*** Burm.f. Shrub; secondary forest, open spaced; sandy soils. **Uses**: medicinal, to reduce high fever.

43.10.1 ***Sterculia rubiginoasa*** Vent. [syn: *Sterculia jackiana* Wall.] Ayam antu sebayan (Ib.); midstorey/subcanopy tree, treelet; lowland MDF, steep slope. **Note**: three varities recognized.

43.10.2 ***Sterculia stipulata*** Korth. Biris punggung (Ked.); midstorey/subcanopy; riparian, river-bank. **Uses**: medicinal, used in *air masak* and for backache.

43.11.1 ***Urena lobata*** L. ssp. ***lobata*** var. ***lobata***. [synonym: *Urena lobata* L. var. *lobata*] shrub; open places, waste ground; weed.

44. MELASTOMATACEAE

44.1.1 ***Anerincleistus acuminatissimus*** (Ridl.) Nayar. Kemunting umang (Ib.); herb; summit ridge forest.

44.1.2 ***Anerincleistus bracteatus*** C. Hansen. Kemunting; herb; hill MDF; on damp clay soils.

44.1.3 ***Anerincleistus dajakorum*** (Schwartz) C. Hansen. Kemunting; herb; riparian forest, lowland MDF, hill MDF; alluvial clay soils.

44.1.4 ***Anerincleistus grandiflorus*** Ridl. Uduk-uduk (Ked.); small herb; Alluvial forest. **Uses:** medicinal, used in *air masak*.

44.1.5 ***Anerincleistus hirsutus*** Korth. Kemunting umang (Ib.); small herb; Alluvial forest.

44.1.6 ***Anerincleistus macrophyllus*** Bakh.f. Kemunting; small herb; riparian forest.

44.1.7 ***Anerincleistus phyllagathoides*** (Stapf.) J.F. Maxwell. Kemunting umang (Ib.); herb; riparian forest.

44.1.8 ***Anerincleistus quintuplinervis*** (Cogn.) J.F. Maxwell. Kemunting umang (Ib.); small herb; summit ridge forest.

44.1.9a ***Anerincleistus setulosus*** Schwz. Kemunting; herb; lowland MDF.

44.1.9b ***Anerincleistus setulosus*** Schwz. var. ***setulosus.*** Herb; lowland MDF, hill MDF; on damp soils.

44.1.9c ***Anerincleistus setulosus*** Schwz. var. ***suffruiticosus*** (Schwz.) Mawx. Herb on ground, lowland MDF.

44.1.9d ***Anerincleistus setulosus*** Schwz. var. ***pallidifolius.*** Kemunting; herb; riparian forest, river-bank; on sandy soils.

44.2.1 ***Astronia smilacifolia*** Triana. Small tree; summit ridge forest, submontane forest, montane forest; on igneous-derived soils.

44.3.1 ***Axinandra coriacea*** Baill. Kemunting umang; midstorey/ subcanopy; occasional in MDF and Kerangas forest, submontane forest; on wide range of soils.

44.4.1 ***Bellucia axinanthera*** Traina [synonym: *Bellucia pentamera* Naudin] Jambu tengkalak; midstorey/subcanopy; riparian forest; sandy soils.

44.5.1 ***Blastus cogniauxii*** Stapf. Small tree or treelet; summit ridge forest, montane forest; on igneous-derived soils.

44.6.1 ***Brittenia subacaulis*** Cogn. Succulent herb; occasional in MDF; clay-rich soils. **Note**: monotypic genus endemic to Sarawak.

44.7.1 ***Catanthera quintuplinervis*** (Cogn.) M.P. Nayar. Climber; montane forest.

44.8.1 ***Cledermia hirta*** (L.) D. Don. Senduduk bulu; weedy shrub; forest margin, secondary forest; shady places; naturalized from tropical America.

44.9.1 ***Creochiton monticola*** (Ridl.) Veldk. Climber; montane forest, submontane forest.

44.10.1 ***Cynandrium guttatum*** Stapf. Herb; lowland MDF, hill MDF; alluvial clay soils.

44.11.1 ***Dissochaeta cf. annulata*** Hook.f. ex Triana. Ubat gelugus (LB); Akar kemunting (Ib.); climber; old secondary forest. **Uses**: to prevent parasitic worms in the womb.

44.11.2 ***Dissochaeta hirsuta*** Hook.f. Ubat gelugus (Ib.); climber; riparian forest, river-bank.

44.11.3 ***Dissochaeta hirsutoides*** Furtado. Kemunting umayang (Ib.); climber; lowland MDF.

44.11.4 ***Dissochaeta macrophylla*** Clausing. Kemunting umang (Ib.); climber; montane forest.

44.11.5a ***Dissochaeta rostrata*** Korth. var. ***densiflora*** (Ridl.) J.F. Maxwell. Akar kemunting (Ib.); climber; riparian forest.

44.11.6 ***Dissochaeta rubiginosa*** Stapf. ex descript. Randau kemunting (Ib.); climber; lowland MDF. **Uses**: fruit edible.

44.11.7 ***Dissochaeta stipularis*** (Blume) Baker ex Bakh.f. Akar kemunting (Ib.); climber; lowland MDF, hill MDF; alluvial clay soils.

44.11.8 ***Dissochaeta viminalis*** (Jack) Clausing. Kemunting umang (Ib.); climber; montane forest.

44.12.1 ***Driessenia attenuata*** C. Hansen. Melebab (Ib.); treelet or shrub; submontane forest.

44.12.2 ***Driessenia dispar*** (Cogn.) C. Hansen. Kemunting umang (Ib.); herb; lowland MDF. **Uses**: medicinal, to treat fungal infection of the foot.

44.12.3 ***Driessenia glanduligera*** Stapf. Kemunting umang (Ib.); shrub, treelet; lowland MDF, hill MDF, Kerangas forest.

44.12.4 ***Driessenia microthrix*** Stapf. var. ***pteroclade*** C. Hanse. Melebab (Ib.); treelet of shrub; riparian forest, sandy soils.

44.12.5 ***Driessenia sessiliflora*** C. Hansen. Kemunting pelanduk; treelet or shrub; hill MDF, riparian forest; sandy clay soils.

44.13.1 ***Kibessia azeura*** (Blume) A. DC. Pulu; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, old secondary forest, secondary forest; flat ground, gentle slope, ridge; wide range of soils.

44.13.2 ***Kibessia verrucosa*** Merr. Puloh; small tree; occasional in MDF, old secondary forest, summit ridge forest; mainly on clay soils.

44.14.1 ***Lindenia laurina*** Zoll. & Moritzi. Lidah katak; small tree, treelet or shrub; lowland MDF, secondary forest; sandy soils.

44.15.1 ***Medinilla allantocalyx*** Reg. Riang bajit (Ib.); epiphytic on tree trunk; montane forest.

44.15.2 ***Medinilla alternifolia*** Blume. Akar kemunting (Ib.); epiphytic on tree trunk; riparian forest, lowland MDF.

44.15.3 ***Medinilla capillipes*** Reg. Riang bajit (Ib.); epiphytic; Alluvial forest, riparian forest.

44.15.4 ***Medinilla corallina*** Cogn. Akar kemunting (Ib.); epiphytic on branches; riparian forest.

44.15.5 ***Medinilla crassifolia*** (Reinw. Ex Blume) Blume [synonym: *Medinilla hasseltii* Blume] Epipnytic, treelet, shrub, herb, climber; Kerangas, lowland MDF, secondary forest; gentle slope, terrace, ridge, periodically flooded.

44.15.6 ***Medinilla latericia*** Reg. Akar kemunting (Ib.); epiphytic; lowland MDF, hill MDF.

44.15.7 ***Medinilla quardrialata*** Regalado. Epiphytic shrub, scrambling shrub; lowland MDF, riverine.

44.15.8 ***Medinilla sessilifolia*** Reg. Epiphytic shrub; montane forest.

44.15.9 ***Medinilla subauriculata*** Reg. Akar kemunting (Ib.); epiphytic on tree trunk; montane forest.

44.16.1 ***Melastoma decemfidum*** Roxb. Kemunting; small tree or treelet; occasional in submontane forest and Kerangas forest.

44.16.2 ***Melastoma malabathricum*** L. [synonym: *Melastoma normale* Don; *Melastoma polyanthum* Blume; *Melastoma scabrum* Ridl.] Kemunting; Senduduk; Terbusak (Mel); shrub; abundant in old secondary forest. **Uses**: medicinal, used for leucorrhoea, treating toothache and thrust and for post-natal treatment.

44.16.3 ***Melastoma sanguineum*** Sims. Kemunting; shrub or treelet; old secondary forest.

44.16.4 ***Melastoma*** sp.indet. Kemunting; Senduduk; hill MDF, Kerangas forest; gentle slope; alluvial clay soils, sandy clay soils.

44.17.1 ***Neodriessenia hirta*** (Ridl.) M.P. Nayar. Small tree or treelet, shrub; occasional in MDF; sandy clay soils.

44.18.1 ***Ochthocharis borneensis*** Blume. Herb; lowland MDF, hill MDF; alluvial clay soils.

44.19.1 ***Oxyspora auriculata*** (Ridl.) J.F. Maxwell. Kayu rangki; treelet; riparian forest, MDF; sandy clay soils.

44.19.2 ***Oxyspora beccarii*** (Cogn.) J.F. Maxwell. Kemunting; treelet, shrub; lowland MDF, hill MDF; slope; clay rich soils.

44.19.3 ***Oxyspora cordata*** (Stapf.) J.F. Maxwell. Kemunting; treelet, shrub; summit ridge forest, hill MDF; alluvial clay soils.

44.20.1 ***Pachycentria microsperma*** Becc. Udu beliat (LB); woody epiphytic; Kerangas forest, submontane forest. **Uses**: for twisted ankles and wrists.

44.20.2 ***Pachycentria pulverulenta*** (Blume) Clausing. Udu belait (LB); woody epiphytic; montane forest.

44.21.1 ***Phyllagathis guttata*** (Stapf.) Cellin. [basionym: *Cyanandrium guttatum* Stapf.] small herb on forest floor; lowland MDF, hill MDF, Kerangas forest, emperan, river-bank, lower mossy forest; alt up to 1200 m; clay rich soils.

44.22.1a ***Pternandra azurea*** (Blume) Burk. Puloh; medium to small tree; old secondary forest, submontane forest.

44.22.1b ***Pternandra azurea*** (Blume) Burk. var. ***azurea***. Puloh; medium to small tree; lowland MDF.

44.22.2 ***Pternandra coerulescens*** Jack. [synonym: *Pternandra capitekkata* Jack; *Pternandra jackiana* Ridl.] Pulu; midstorey/subcanopy or small tree; Kerangas forest, MDF and lower mossy forest; alt up to 900 m; wide range of soils.

44.22.3 ***Pternandra crassicalyx*** Maxw. Pulu; Sial menaul (Ib.); midstorey/ subcanopy tree, treelet, shrub; lowland MDF, degraded hill MDF, secondary forest; gentle slope, steep slope, sharp ridge; alluvial deposits soils.

44.22.4 ***Pternandra galeata*** Ridl. Puloh; small tree; Alluvial forest.

44.22.5 ***Pternandra gracilis*** (Cogn.) Nayar. Puloh (Ib.); epiphytic, midstorey/ subcanopy tree, treelet, shrub; lowland MDF; gentle slope, steep slope.

44.22.6 ***Pternandra hirtella*** (Cogn.) Nayar. Treelet; lowland MDF; ridge; clay rich soils; alt 350 m.

44.22.7a ***Pternandra multiflora*** Cogn. Puloh (Ib.); small tree; occasional in MDF, secondary forest; clay-rich soils.

44.22.7b ***Pternandra multiflora*** Cogn. var. ***azurea***. Puloh; medium to small tree; lowland MDF.

44.22.8 ***Ptenandra rostrata*** (Cogn.) Nayar. Pulo; Pulo bukit (Ib.); Sial menaul (Mal.); midstorey/subcanopy tree, treelet, scrambling herb; lowland MDF; gentle slope, steep slope, ridge.

44.23.1 ***Scorpiothyrsus*** sp. Herb; submontane forest.

44.24.1 ***Sonerila beccariana*** Cogn. Small herb on forest floor; hill MDF, montane forest; on clay soils.

44.24.2 ***Sonerila heterophylla*** Jack. Small herb on forest floor; montane forest, lowland MDF, hill MDF; on damp clay soils.

44.24.3 ***Sonerila heterostemon*** Naudin. Small terrestrial herb, lithophytic; lowland MDF, hill MDF, emperan; slope, ridge; clay rich soils.

44.24.4 ***Sonerila nana*** Ridl. Small herb on forest floor; montane forest; alluvial clay soils.

44.24.5 ***Sonerila nervulosa*** Ridl. Herb; lowland MDF, riparian forest; on damp clay soils.

44.24.6 ***Sonerila rudis*** Stapf. Small herb on forest floor; old secondary forest; damp soils.

44.24.7 ***Sonerila*** sp.indet. Small terrestrial herb; lithophytic; Kerangas forest; ridge; sandy clay soils.

45. MELIACEAE

45.1.1 ***Aglaia angustifolia*** Miq. Segera; small tree or treelet; recorded in MDF and riparian forest.

45.1.2 ***Aglaia argentea*** Blume. Segera; midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils.

45.1.3 ***Aglaia beccariana*** (C. DC.) Harms. [basionym: *Hearnia beccariana* C. DC.] Segera (Ib.); small tree or treelet; in lowland MDF on clay rich soils.

45.1.4 ***Aglaia bernardoi*** Merr. Segera; small tree; old secondary forest; on alluvial base soils. **Note**: occasional and confined to limestone.

45.1.5 ***Aglaia brachybotrys*** Merr. Segera; small tree, old secondary forest, lowland MDF, hill MDF; sandy clay soils, alluvial soils.

45.1.6 ***Aglaia chaudocensis*** Pierre. Segera; small tree; Kerangas forest, hill MDF.

45.1.7 ***Aglaia cordata*** Hiern. Segera; small tree; frequent in MDF, old secondary forest; on wide range of soils.

45.1.8 ***Aglaia crassinervia*** Kurz. et Hiern. Segera; small tree; lowland MDF; gentle slope; clay-rich soils.

45.1.9 ***Aglaia cucullata*** (Roxb.) Pellgrin. [basionym: *Amoora cucullata* Roxb.] Segera laut; midstorey/subcanopy; lowland MDF, hill MDF; alluvial clay soils.

45.1.10 ***Aglaia densiflorum*** (Blume) Miq. Segera; small tree or treelet; riparian forest, river-bank; sandy soils.

45.1.11 ***Aglaia domestica*** (Jack) Pellgrin. [basionym: *Lansium domesticum* Jack] Segera; Langsat; midstorey/ subcanopy, small tree; lowland MDF, river-bank; clay-rich soils, sandy clay soils. **Note**: widely cultivated; fruit edible.

45.1.12 ***Aglaia elliptica*** Blume. Segera; midstorey/subcanopy; rheophytic; on shallow sandy soils.

45.1.13 ***Aglaia forbesii*** King. [synonym: *Aglaia humilis* King] Segera; midstorey/subcanopy to small tree; lowland MDF, hill MDF; slope; clay soils.

45.1.14 ***Aglaia foveolata*** Pannell. Segera; small tree; old secondary forest; sandy clay soils.

45.1.15 ***Aglaia gamopetala*** Merr. Segera; small tree; old secondary forest; alluvial clay soils. Note: occasional on limestone forest.

45.1.16 ***Aglaia hiernii*** King. [synonym: *Aglaia curtisii* King] Segera; small tree or treelet; lowland MDF, hill MDF; gentle slope; sandy clay soils.

45.1.17 ***Aglaia ignea*** Val. ex Heyne. Segera; midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils.

45.1.18 ***Aglaia korthalsii*** Miq. Segera; small tree or treelet; occasional in MDF; on igneous-derived soils.

45.1.19 ***Aglaia laevigata*** Harms. Segera ucong cit (Ib.); small tree; hill MDF.

45.1.20 ***Aglaia lancifolia*** Harms. Segera; Bunyah (Ib.); small to medium tree; frequent riparian species on clay river-bank.

45.1.21 ***Aglaia lawii*** (Wight) Sald. ex Ram. [basionym: *Nimmoia lawii* Wight] Segera; small tree or treelet; old secondary forest; sandy clay soils.

45.1.22 ***Aglaia leptantha*** Miq. Segera; midstorey/subcanopy, small tree; occasional in MDF.

45.1.23 ***Aglaia leucophylla*** King. Segera; small tree; lowland MDF.

45.1.24 ***Aglaia megistocarpa*** Merr. Segera; small tree or treelet; hill MDF; slope; igneous-derived soils.

45.1.25 ***Aglaia microspora*** Merr. Segera; midstorey/subcanopy; lowland MDF, hill MDF; alluvial clay soils.

45.1.26 ***Aglaia monozyga*** Harms. Segera; small tree or treelet; Alluvial forest; mainly on clay soils.

45.1.27 ***Aglaia multinervis*** Pannell. Segera; small tree or treelet; lowland MDF, hill MDF.

45.1.28 ***Aglaia odoratissima*** Blume. Segera (Ib.); occasional on slopes of lowland MDF.

45.1.29 ***Aglaia oligophylla*** Miq. Kelampu; midstorey/subcanopy, small tree; lowland MDF, hill MDF.

45.1.30 ***Aglaia rufinervis*** Blume. Buah bunyau (Ib.); midstorey/subcanopy, small tree; hill MDF.

45.1.31 ***Aglaia silvestris*** M. Roemer. Segera; small tree; lowland MDF.

45.1.32 ***Aglaia squamulosa*** King. Bunyau bukit; midstorey/subcanopy, small tree or treelet; submontane forest, montane forest.

45.1.33 ***Aglaia tomentosa*** Teijsm. & Binn. Segera; small tree; lowland MDF.

45.1.34 ***Aglaia trichostemon*** C. DC. Segera; midstorey/subcanopy; old secondary forest; sandy clay soils.

45.1.35 ***Aglaia trimera*** Ridl. Segera; small tree; lowland MDF, mainly on clay soils.

45.1.36 ***Aglaia triplex*** Ridl. Segera; midstorey/subcanopy; lowland MDF, hill MDF; clay-rich soils.

45.2.1 ***Amoora rubiginosa*** Hiern. Jelungan sasak (Ib.); midstorey/ subcanopy; lowland MDF, submontane forest, Kerangas forest. **Note**: also recorded in MSF.

45.3.1 ***Chisocheton ceramicus*** (Miq.) C. DC. Segera; midstorey/ subcanopy; hill MDF, montane forest.

45.3.2 ***Chisocheton divergens*** Blume. Segera; midstorey/subcanopy, small tree; lowland MDF; alluvial soils.

45.3.3 ***Chisocheton illustris*** Ridl. Segera; midstorey/subcanopy, small tree; old secondary forest, lowland MDF.

45.3.4 ***Chisocheton macranthus*** (Merr.) Airy Shaw. [basionym: *Clemensia macrantha* Merr.] Segera; midstorey/ subcanopy; old secondary forest.

45.3.5 ***Chisocheton patens*** Blume. Segera; mistorey/subcanopy, small tree; summit ridge forest.

45.3.6a ***Chisocheton pentandrus*** (Blanco) Merr. ssp. ***paucijugus*** (Miq.) Mabb. [synonym: *Chisocheton spicatus* Hiern.] Segera (Ib.); midstorey/subcanopy tree; lowland MDF.

45.3.7 ***Chisocheton polyandrus*** Merr. Segera; small tree; riparian forest, old secondary forest, lowland MDF; in wide range of soils.

45.3.8 ***Chisocheton ruber*** Ridl. Segera; small tree; Alluvial forest, lowland MDF. Note: also recorded on limestone forest.

45.4.1 ***Chukrassia tabularis*** Juss. Segera; canopy/emergent; old secondary forest; often associated with igneous-derived soils. **Note**: confined to limestone habitat.

45.5.1 ***Dysoxylum alliaceum*** Blume. Segera; midstorey/subcanopy; occasional in MDF, old secondary forest; on mainly fertile clay soils.

45.5.2 ***Dysoxylum brachybotrys*** Miq. Bengang; midstorey/subcanopy; lowland MDF, hill MDF, riparian forest, river-bank.

45.5.3 ***Dysoxylum cauliforum*** Hiern. Segera; midstorey/subcanopy; lowland MDF, hill MDF, submontane forest, summit ridge forest; on wide range of soils. **Note**: also recorded on limestone.

45.5.4 ***Dysoxylum cyrtobotryum*** Miq. Segera; midstorey/subcanopy, small tree; montane forest.

45.5.5 ***Dysoxylum densiflorum*** (Blume) Miq. Segera; small tree; riparian forest, river-bank; sandy soils.

45.5.6 ***Dysoxylum excelsum*** Blume. Segera; midstorey/subcanopy, small tree; lowland MDF, hill MDF.

45.5.7 ***Dysoxylum mollissimum*** Mabb. Segera; small tree; submontane forest.

45.5.8 ***Dysoxylum rugolosum*** King. Segera; small tree; lowland MDF.

45.6.1 ***Sandoricum borneense*** Miq. Kelampu; canopy/emergent; occasional in MDF, Kerangas forest, secondary forest; on wide range of soils. **Uses**: fruit edible.

45.6.2 ***Sandoricum dasyneuron*** Baill. Kelampu beludu; small tree; old secondary forest, hill MDF.

45.6.3 ***Sandoricum koetjape*** (Burm.f.) Merr. Kelampu; subcanopy/ midstorey; old secondary forest, lowland MDF, hill MDF.

45.7.1 ***Walsura chrysogyne*** (Miq.) Bakh. Segera; midstorey /subcanopy; summit ridge forest.

45.7.2 ***Walsura dehiscens*** T. Cl. Segera; midstorey/subcanopy; old secondary forest.

45.7.3 ***Walsura grandifolia*** Ridl. Segera ucong; midstorey/subcanopy; hill MDF, submontane forest; on igneous-derived soils.

45.7.4 ***Walsura pinnata*** Hassk. Segera; midstorey/subcanopy; old secondary forest, lowland MDF; clay-rich soils.

45.7.5 ***Walsura villamii*** Merr. Segera; midstorey/subcanopy; lowland MDF; gentle slope; alluvial clay soils.

46. MEMECYLACEAE

46.1.1 ***Memecylon amplexicaule*** Roxb. Nipis kulit; in lowland MDF and Kerangas forest.

46.1.2 ***Memecylon argenteum*** Bremer. Nipis kulit; lowland MDF; on alluvial clay soils.

46.1.3 ***Memecylon borneense*** Merr. Nipis kulit; old secondary forest, lowland MDF, hill MDF, summit ridge forest, submontane forest, montane forest; on wide range of soils.

46.1.4 ***Memecylon campanulatum*** C.B. Clarke. Nipis kulit; midstorey/ subcanopy; lowland MDF, hill MDF, secondary forest; gentle slope; clay rich soils, alluvial clay soils.

46.1.5 ***Memecylon coeruleum*** Jack. Nipis kulit; lowland MDF; on alluvial clay soils.

46.1.6 ***Memecylon durum*** Cogn. ex DC. Nipis kulit; lowland MDF; on clay soils.

46.1.7 ***Memecylon fruticosum*** King. Nipis kulit; old secondary forest, lowland MDF; on igneous-derived soils.

46.1.8 ***Memecylon gracilis*** (Cogn.) Nayar. Nipis kulit; midstorey/ subcanopy; lowland MDF, hill MDF; flat ground, gentle slope; alluvial soils, clay rich soils.

46.1.9 ***Memecylon lancifolium*** Ridl. Nipis kulit; lowland MDF; on alluvial clay soils.

46.1.10 ***Memecylon longifolium*** Cogn. Nipis kulit; midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils, clay rich soils. **Uses**: medicinal, used in *air masak*.

46.1.11 ***Memecylon megacarpum*** Furtado. Nipis kulit; lowland MDF, hill MDF; alluvial soils.

46.1.12 ***Memecylon paniculata*** Jack. Nipis kulit; occasional in MDF on a wide range of soil types.

46.1.13 ***Memecylon pergamentaceum*** Cogn. Nipis kulit; old secondary forest, lowland MDF, hill MDF; on wide range of soils.

46.1.14 ***Memecylon scolopacinum*** Ridl. Nipis kulit; hill MDF, lowland MDF; on clay-rich soils.

47. MORACEAE

47.1.1 ***Antiaris toxicaria*** (Pers.) Lesch. Ipoh (Ib.); midstorey /subcanopy, medium tree; lowland MDF; alluvial soils. **Uses**: for blowpipe poison.

47.2.1 ***Artocarpus anisophyllus*** Miq. Bintawak; Entawa (Ib.) occasional in MDF, flat ground or gentle slopes. **Uses**: fruit edible.

47.2.2 ***Artocarpus dadah*** Miq. Dadah; Merubi (Ib.); canopy/emergent, midstorey/subcanopy; occasional in MDF; slope; alluvial clay soils, clay rich soils. Sometimes cultivated. **Uses**: fruit edible.

47.2.3 ***Artocarpus elasticus*** Reinw. ex Blume. Timbaan lampong (Ked.); midstorey/subcanopy; old secondary forest, secondary forest; alluvial clay soils. **Uses**: medicinal, used in *air masak* and as tonic drink.

47.2.4 ***Artocarpus heterophyllus*** Lam. [syn: *Artocarpus integrifolia* auct.; *Artocarpus jaca* Lam.] Nangka; cultivated in the orchard near the settlement. **Uses**: fruit edible.

47.2.5 ***Artocarpus integer*** (Thunb.) Merr. [syn: *Artocarpus champedan* (Lour.) Stokes; *Artocarpus polyphene* Pers. nom.illeg.] Cempedak; Temedak (Ib.); Buak baduk (Mel.); cultivated in the orchard. **Uses**: fruit edible.

47.2.6 ***Artocarpus kemando*** Miq. Pudau (Ib.); midstorey/subcanopy; lowland MDF, sometimes cultivated in the orchard. **Uses**: fruit edible; medicinal, for stomachache.

47.2.7 ***Artocarpus lanceifolius*** Roxb. Buak besam (Mel.); canopy/ emergent, midstorey/subcanopy; lowland MDF, flat ground, gentle slope; clay rich soils; sometimes cultivated. **Uses**: fruit edible.

47.2.8a ***Artocarpus melinoxylus*** Gagnep. Kerapot (Ib.); midstorey/ subcanopy; lowland MDF.

47.2.8b. ***Artocarpus melinoxylus*** Gagnep. ssp. ***brevipenduculatus*** Jar. Kerapot (Ib.); lowland MDF.

47.2.9a ***Artocarpus nitidus*** Trec. Selangking; Sinojoh (Bid.); midstorey/ subcanopy; lowland MDF, hill MDF; gentle slope, ridge; wide range of soils. **Note**: three subspecies have reported from Sarawak.

47.2.9b ***Artocarpus nitidus*** Trec. var. ***humilis.*** Selangking; midstorey/ subcanopy; old secondary forest.

47.2.10 ***Artocarpus odoratissimus*** Blanco. Terap; Tekalong (Ib.); Pingan (Ib.); occasional and widely distributed in MDF; old secondary forest. **Uses**: fruit edible; medicinal, used for vomiting blood.

47.2.11 ***Artocarpus rigidus*** Blume. Pala munsuh (Mal.); Pudau paya (Ib.); midstorey/subcanopy; lowland MDF; flat ground, gentle slope; sandy clay soils. Sometimes cultivated. **Uses**: fruit edible. **Note**: this species also recorded in MSF.

47.2.12 ***Artocarpus sericarpus*** Jarret. Terap; Pala tupai (Ib.); old secondary forest, lowland MDF, hill MDF, submontane forest; on wide range of soils. **Uses**: fruit edible.

47.2.13 ***Artocarpus tamaran*** Becc. Terap. Alluvial forest, old secondary forest; alluvial soils. **Uses**: fruit edible.

47.3.1 ***Ficus androchaeta*** Corner. Ara; Kara (Ib.); small tree or treelet; lowland MDF.

47.3.2a ***Ficus aurata*** (Miq.) Miq. Tempan; small tree or treelet; secondary forest, open space; MDF, Kerangas forest, lower mossy forest; wide range of soils.

47.3.2b ***Ficus aurata*** (Miq.) Miq. var. ***auriculifera*** (Merr.) Corner. Punoh (Kel.); lowland MDF.

47.3.3 ***Ficus borneensis*** Kochum. Ara; treelet, shrub; secondary forest, edge of river; alluvial soils.

47.3.4 ***Ficus bruneiensis*** Corner. Lamak-lamak (Ked.); Tempan (Ib.); epiphytic fig; secondary forest. **Uses**: medicinal, used in *air masak* and as an aphrodisiac and to regain energy.

47.3.5 ***Ficus brunneo-aurata*** Corner. Tempan; midstorey/subcanopy to small tree; secondary forest; clay rich soils.

47.3.6 ***Ficus callicarpa*** Corner. Gemalong (Ib.); medium tree, small tree or treelet; lowland MDF. **Uses**: as an antidote for poisonous caterpillar stings and centipede bites.

47.3.7 ***Ficus cereicarpa*** Corner. Engkeruruh (Ib.); small tree or treelet; Alluvial forest.

47.3.8 ***Ficus chartacea*** (Wall. ex Kurz.) King. Tempan (Ib.); midstorey/ subcanopy, small tree or treelet; lowland MDF.

47.3.9 ***Ficus consociata*** Blume. Kara (Ib.); epiphytic; riparian forest, river-bank.

47.3.10a ***Ficus deltoidea*** Jack var. ***angustifolia*** (Miq.) Corner. Mas cotek; epiphytic shrub; lowland MDF, frequent on tree branches at the river-banks. **Used**: medicinal, as a tonic for men.

47.3.10b ***Ficus deltoidea*** Jack var. ***arenaria*** Corner. Tangkai beritu (Ib.); epiphytic; submontane forest. **Uses**: medicinal.

47.3.10c ***Ficus deltoidea*** Jack var. ***borneensis*** Corner. Mas cotek; Tangkai beritu (Ib.); epiphytic shrub; lowland MDF, hill MDF, Kerangas forest, lower mossy forest, frequent on tree branches at river-bank. **Uses:** medicinal, as tonic for men and women.

47.3.10d ***Ficus deltoidea*** Jack var. ***deltoidea***. Mas cotek; Tangkai beritu (Ib.); epiphytic shrub; lowland MDF, hill MDF, Kerangas forest, river-banks. **Uses**: medicinal.

47.3.10e ***Ficus deltoidea*** Jack var. ***intermedia*** Corner. Mas cotek; Tangkai beritu (Ib.); epiphytic; montane forest. Uses: medicinal.

47.3.10f ***Ficus deltoidea*** Jack var. ***motleyana*** Miq. Mas cotek; Tangkai beritu (Ib.); epiphytic; riparian forest, river-bank. **Uses**: medicinal.

47.3.11 ***Ficus fistulosa*** Reinw. ex Blume. Ara; small tree or treelet; Alluvial forest.

47.3.12 ***Ficus geocharis*** Corner. Entimau (Ib.); small tree with geocarpic figs; degraded MDF; old secondary forest; usually near stream, on clay soils. **Uses**: fruit edible. **Note**: listed as protected plant under the Sarawak Forestry Ordinance.

47.3.13 ***Ficus globosa*** Blume. Tangkai beritu (Ib.); epiphytic; riparian forest, river-bank..

47.3.14 ***Ficus grandiflora*** Corner. Tangkai kara beritu (Ib.); small tree or treelet, scrambling shrub; lowland MDF, Kerangas forest, secondary forest; lower mossy forest; emeperan; wide range of soils.

47.3.15 ***Ficus grossularioides*** Burm.f. Lengkah (Ib.); medium tree, small tree or treelet; lowland MDF, secondary forest. **Uses**: as an antidote for centipede bite and the young leaves are cooked and eaten as a vegetable.

47.3.16 ***Ficus hemsleyana*** King. Tangkai beritu (Ib.); epiphytic, stragling fig; riparian forest, river-bank.

47.3.17 ***Ficus obpyramidata*** King. Pangku anak (Ked.); Engkeruroh (Ib.); midstorey/subcanopy, small tree or treelet; riparian forest. **Uses**: to treat infertility in women. **Note**: important riparian tree species - fruits are eaten by fish.

47.3.18a ***Ficus oleifolia*** King var. ***valida*** Corner. Kara (Ib.); small tree or treelet; montane forest.

47.3.19 ***Ficus pisocarpa*** Blume. Tangkai beritu (Ib.); stragling fig, epiphytic; riparian forest, river-bank.

47.3.20 ***Ficus punctata*** Thunb. Akar pulau (Ib.); epiphytic, stragling fig; lowland MDF. **Uses**: spiritual, to tame women who are fierce and hot-tempered.

47.3.21 ***Ficus rubromidotis*** Corner. Kara (Ib.); small tree or treelet; riparian forest.

47.3.22 ***Ficus schwarzii*** Koord. Kara (Ib.); small tree or treelet; sometimes lithophytic; riparian forest, montane forest.

47.3.23 ***Ficus sundaica*** Blume. Kara (Ib.); small tree or treelet; riparian forest.

47.3.24 ***Ficus treubii*** King. Kara (Ib.); small tree or treelet; lowland MDF, alluvial clay soils.

47.3.25 ***Ficus tricocarpa*** Blume. Akar ara; climber, epiphytic, stragling shrub, treelet; lowland MDF, old secondary forest, secondary forest, Kerangas forest.

47.3.26a ***Ficus uncinata*** (King) Becc. Entimau (Ib.); medium to small tree; old secondary forest, secondary forest. **Uses**: for treatment of centipede bite.

47.3.26b ***Ficus uncinata*** (King) Becc. var. ***pilosior*** Corner. Tempan (Ib.); medium to small tree or treelet; riparian forest.

47.3.27a ***Ficus uniglandulosa*** Wall. ex Miq. var. ***parvifolia*** Miq. Shrub or small tree; sometimes epiphytic.

47.3.28 ***Ficus variegata*** Blume. Kara (Ib.); small tree or treelet; riparian forest, river-bank; sandy clay soils.

47.4.1 ***Parartocarpus venenosus*** (Zoll. & Moritzi.) Becc. Minggi; midstorey/subcanopy; Alluvial forest, lowland MDF, submontane forest; alluvial base soils. **Note**: also recorded in MSF.

47.5.1 ***Prainea frutescens*** Becc. Selangking; Selangking batu; midstorey/ subcanopy; lowland MDF, Kerangas forest.

48. MYRISTICACEAE

48.1.1 ***Endocomia macrocoma*** (Miq.) W.J. de Wilde. Kumpang; midstorey/ subcanopy; Alluvial forest, lowland MDF.

48.2.1 ***Gymnacranthera contracta*** Warb. Kumpang; midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; alt 900 m; variety of soils.

48.2.2a ***Gymnacranthera farquhariana*** (Hook.f. & Thoms.) Warb. Kumpang; midstorey/subcanopy; old secondary forest, lowland MDF, summit ridge forest.

48.2.2b ***Gymnacranthera farquhariana*** (Hook.f. & Thoms.) Warb. var. ***eugeniifolia*** (A. DC.) R.T.A Shouten. Kumpang puteh; midstorey/ subcanopy; Alluvial forest, old secondary forest, lowland MDF, hill MDF, montane forest; on wide range of soils.

48.2.3a ***Gymnacranthera forbesii*** (King) Warb. Kumpang putih; midstorey/subcanopy; lowland MDF, hill MDF; slope; clay rich soils.

48.2.3b ***Gymnacranthera forbesii*** (King) Warb. var. ***grassinervis*** (Warb.) Sincl. Kumpang; midstorey/subcanopy; lowland MDF; gentle slope; clay rich soils.

48.3.1 ***Horsfieldia androphora*** W.J. de Wilde. Kumpang; midstorey/ subcanopy; Alluvial forest, old secondary forest, lowland MDF.

48.3.2 ***Horsfieldia borneensis*** W.J. de Wilde. Kumpang; midstorey/ subcanopy; lowland MDF, summit ridge forest.

48.3.3a ***Horsfieldia brachiata*** (King) Warb. Kumpang; midstorey/subcanopy; Kerangas forest; peat soils, sandy clay soils.

48.3.3b ***Horsfieldia brachiata*** (King) Warb. var. ***sumatrana*** Kumpang; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; slope, ridge; sandy soils.

48.3.4 ***Horsfieldia endertii*** W.J. de Wilde. Kumpang; midstorey/subcanopy; lowland MDF, summit ridge forest.

48.3.5 ***Horsfieldia fragillima*** Airy Shaw. Kumpang; midstorey/subcanopy; localized in MDF; on clay-rich soils, sometimes on alluvial soils.

48.3.6 ***Horsefieldia grandis*** (Hook.f.) Warb. Kumpang; midstorey/subcanopy; rarely in MDF, occasional in secondary forest; slope; clay soils.

48.3.7 ***Horsfieldia irya*** (Gaertn.) Warb. Kumpang; small tree; hill MDF, frequent in riverine; sandy clay soils.

48.3.8 ***Horsfieldia kerangasicola*** J. Sincl. Kumpang; midstorey/subcanopy; lowland MDF, summit ridge forest.

48.3.9 ***Horsfieldia montana*** Airy Shaw. Kumpang; small tree; montane forest, submontane forest; on igneous-derived soils.

48.3.10 ***Horsfieldia polyspherula*** (Hook.f. emend. King) J. Sincl. Kumapang; small tree; lowland MDF, summit ridge forest.

48.4.1 ***Knema ashtonii*** J. Sincl. Kumpang semah, Penarahan; midstorey/subcanopy; old secondary forest, occasionally widespread in lowland MDF; on clay soils, alluvial soils.

48.4.2 ***Knema borneensis*** Warb. Kumpang; midstorey/subcanopy; lowland MDF; alluvial soils.

48.4.3a ***Knema cinerea*** (Poir) Warb. var. ***alpina*** J. Sincl. [basionym: *Myristica cinerea* Poir] Kumpang; midstorey/subcanopy; lower mossy forest; alt 900 m.

48.4.3b ***Knema cinerea*** (Poir) Warb. var. ***pentinervia*** (Sincl.) Sincl. Kumpang; midstorey/subcanopy to small tree; lowland MDF; slope; clay rich soils.

48.4.3c ***Knema cinerea*** (Poir) Warb. var. ***sumatrana.*** Kumpang; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; alt up to 900 m.; gentle slope; fertile soils.

48.4.4a ***Knema curtisii*** (King) Warb. Kumpang; small tree; lowland MDF, hill MDF.

48.4.4b ***Knema curtisii*** (King) Warb. var. ***curtisii*** J. Sincl. Kumpang; small tree; old secondary forest, lowland MDF.

48.4.5 ***Knema elmeri*** Merr. Kumpang; midstorey/subcanopy or small tree; lowland MDF; clay soils, alluvial clay soils, soils with good drainage.

48.4.6 ***Knema furfuracea*** (Hook.f. et Thoms.) Warb. Kumpang; midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF, hill MDF, summit ridge forest; on a variety of soils.

48.4.7 ***Knema galeata*** J. Sincl. Kumpang; small tree; old secondary forest, Kerangas forest; on sandy soils.

48.4.8a ***Knema glauca*** (Blume) Peterman. Kumpang putih; midstorey/subcanopy; lowland MDF, hill MDF, alluvial soils.

48.4.8b ***Knema glauca*** (Blume) Peterman var. ***riparia*** W.J. de Wilde. Kumpang; midstorey/subcanopy; lowland MDF.

48.4.9 ***Knema glaucescens*** Jack. Kumpang; lowland MDF.

48.4.10 ***Knema korthalsii*** Warb. Kumpang; midstorey/subcanopy, lowland MDF, hill MDF; alluvial soils, clay rich soils.

48.4.11 ***Knema kostermansiana*** W.J. de Wilde. Kumpang; recorded in MDF.

48.4.12a ***Knema kunstleri*** (King) Warb. Kumpang; small tree; old secondary forest, lowland MDF, hill MDF, summit ridge forest.

48.4.12b ***Knema kunstleri*** (King) Warb. ssp. ***alpinia*** (J. Sincl.) W.J. de Wilde. Kumpang; small tree; lowland MDF.

48.4.13a ***Knema latericia*** Elmer. Kumpang; small tree; old secondary forest, lowland MDF.

48.4.13b ***Knema latericia*** Elmer ssp. ***albiflora*** (J. Sincl.) W.J. de Wilde. Kumpang; small tree; lowland MDF, hill MDF.

48.4.14 ***Knema latifolia*** Warb. Kumpang; medium tree to 15 m tall; occasional in MDF on mainly clay soils.

48.4.15 ***Knema lunduensis*** (J. Sincl.) W.J. de Wilde. [synonym: *Knema latericia* Elmer var. *lunduensis* J. Sincl.] Kumpang; small tree; old secondary forest.

48.4.16 ***Knema luteola*** W.J. de Wilde. Kumpang; midstorey/subcanopy; old secondary forest.

48.4.17 ***Knema malayana*** Warb. Kumpang; midstorey/subcanopy tree, lowland MDF, hill MDF, Kerangas forest; flat ground, gentle slope; alluvial soils, clay rich soils.

48.4.18 ***Knema membranifolia*** H. Winkler. Kumpang; midstorey/ subcanopy; old secondary forest, lowland MDF, submontane forest; alt up to 1020 m.

48.4.19 ***Knema mogeana*** W.J. de Wilde. Kumpang; small tree; lowland MDF, hill MDF.

48.4.20 ***Knema muscosa*** J. Sincl. Kumpang enseluai (Ib.); small tree; summit ridge forest.

48.4.21 ***Knema pallens*** W.J. de Wilde. Kumpang; small tree; lowland MDF, hill MDF.

48.4.22 ***Knema pectinata*** Warb. Kumpang; small tree; summit ridge forest, lowland MDF; on slope mainly clay soils.

48.4.23 ***Knema percoriacea*** J. Sincl. Kumpang; small tree; lowland MDF, hill MDF.

48.4.24 ***Knema pulchra*** (Miq.) Warb. midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF, hill MDF, summit ridge forest, submontane forest, montane forest; on wide range of soils.

48.4.25 ***Knema stenophylla*** (Warb.) J. Sincl. Kumpang seluai; small tree; Alluvial forest, lowland MDF, hill MDF.

48.5.1 ***Myristica borneensis*** Warb. Kumpang; midstorey/subcanopy; lowland MDF; alluvial soils.

48.5.2 ***Myristica cinnamomea*** King. Kumpang kion; midstorey/ subcanopy; old secondary forest, lowland MDF, hill MDF, summit ridge forest; on mainly ridge with clay soils.

48.5.3 ***Myristica crassa*** King. Kumpang; small tree; Alluvial forest, old secondary forest, submontane forest.

48.5.4 ***Myristica elliptica*** Wall. ex Hook.f. et Thoms. Kumpang; midstorey/subcanopy; hill MDF, occasional in riparian; on clay soils.

48.5.5 ***Myristica iners*** Blume. Kumpang; midstorey/subcanopy; old secondary forest, lowland MDF, hill MDF, summit ridge forest; on variety of soils.

48.5.6 ***Myristica lowiana*** King. Kumpang penarahan; midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest; flat ground, gentle slope, steep slope; alluvial soils, sandy clay soils.

48.5.7 ***Myristica malaccensis*** Hook.f. Kumpang; midstorey /subcanopy; old secondary forest, lowland MDF, hill MDF.

48.5.8 ***Myristica maxima*** Warb. Kumpang; midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF; on clay-rich soils.

48.5.9 ***Myristica papyracea*** J. Sincl. Kumpang; canopy/emergent; lowland MDF.

48.5.10 ***Myristica smythiesii*** J. Sincl. Kumpang; small tree; lowland MDF, hill MDF; gentle slope; alluvial clay soils.

48.5.11 ***Myristica villosa*** Warb. Kumpang; midstorey/subcanopy; Alluvial forest, lowland MDF, hill MDF, montane forest, Kerangas forest; on wide range of soils.

49. MYRSINACEAE

49.1.1 ***Ardisia beccariana*** Mez. Merjemah; small tree or treelet; lowland MDF, hill MDF; slope; clay rich soils.

49.1.2 ***Ardisia borneensis*** Scheff. Merjemah; small tree or treelet; lowland MDF, Kerangas forest; slope, ridge; peat soils, clay rich soils.

49.1.3 ***Ardisia bungoensis*** Furtado; Merjemah; small tree or treelet; submontane forest, montane forest, summit ridge forest.

49.1.4 ***Ardisia colorata*** Roxb. Merjemah; small tree or treelet; lowland MDF, Kerangas forest, lower mossy forest; alt 800 m; slope; clay rich soils.

49.1.5 ***Ardisia copelandii*** Mez. Undestorey, treelet, shrub; lowland MDF, hill MDF, alluvial soils, clay rich soils. **Uses**: spiritual, the Iban people believe that this plant can protect one from harm by one's enemy.

49.1.6 ***Ardisia labisiaefolia*** King & Gamble. Merjemah; small tree, treelet; lowland MDF, hill MDF; clay-rich soils.

49.1.7 ***Ardisia lanceolata*** Roxb. Merjemah; small tree; lowland MDF; slope; clay rich soils.

49.1.8 ***Ardisia lancifolia*** Merr. Merjemah; small tree or treelet; Kerangas forest, lower mossy forest; alt up to 1200 m., slope; clay rich soils, alluvial clay soils.

49.1.9 ***Ardisia lepidotula*** Merr. Merjemah; small tree or treelet; lowland MDF, hill MDF, old secondary forest; gentle slope, valley bottom, periodically flooded; clay rich soils.

49.1.10 ***Ardisia lurida*** Blume. Merjemah; small tree; summit ridge forest; on igneous-derived soils.

49.1.11 ***Ardisia lustrata*** B.C. Stone. Merjemah; small tree; hill MDF, submontane forest.

49.1.12 ***Ardisia livida*** Mez. Merjemah; understorey, treelet, shrub; lowland MDF, hill MDF; alluvial soils, clay rich soils.

49.1.13 ***Ardisia macrocalyx*** Scheff. Merjemah; small tree, treelet; riparian forest, river-bank; sandy soils.

49.1.14 ***Ardisia marginata*** Blume. Merjemah; treelet or shrub; Kerangas forest, lower mossy forest; gentle slope; clay soils, alluvial clay soils. **Note**: occasional on summits of limestone.

49.1.15 ***Ardisia moultonii*** Merr. Merjemah; small tree, treelet; old secondary forest; alluvial clay soils.

49.1.16 ***Ardisia obovatifolia*** Merr. Merjemah; treelet or shrub; submontane forest, riparian forest; on igneous-derived soils.

49.1.17 ***Ardisia oxphylla*** Wall. Merjemah; small tree, treelet or shrub; submontane forest, riparian forest; on igneous-derived soils.

49.1.18 ***Ardisia patula*** Ridl. Merjemah; small tree, treelet of shrub; hill MDF; gentle slope; clay-rich soils.

49.1.19 ***Ardisia polyactis*** Mez. Merjemah paya; small tree, treelet; lowland MDF, hill MDF. **Note**: frequently in MSF.

49.1.20 ***Ardisia racemibunda*** B.C. Stone. Merjemah; small tree, treelet; old secondary forest; sandy clay soils.

49.1.21 ***Ardisia reclinata*** Scheff. Merjemah; small tree, treelet; summit ridge forest.

49.1.22 ***Ardisia sanguinolenta*** Blume. Merjemah; small tree, treelet; Alluvial forest.

49.1.23 ***Ardisia singularis*** B.C. Stone. Merjemah; small tree; Alluvial forest on sandy clay soils.

49.1.24 ***Ardisia synneura*** Scheff. Merjemah; small tree; occasional in MDF, Kerangas forest, submontane forest.

49.2.1 ***Embelia coriacea*** Wall. ex DC. Akar kencham (Ib.); climber, liana; lowland MDF, occasional near stream.

49.2.2 ***Embelia dasythyrsa*** Miq. Akar kencham (Ib.); climber, liana; montane forest.

49.2.3 ***Embelia myriantha*** Mez. Akar kencham (Ib.); climber, liana; riparian forest, river-bank.

49.2.4 ***Embelia cf. ribes*** Burm.f. Akar kencham (Ib.); climber, liana, scrambling shrub; lowland MDF, secondary forest, open space, edge of forest; sandy clay soils, clay rich soils.

49.3.1 ***Maesa pahangiana*** King & Gamble. Akar kencham (Ib.); liana, climber; occasional in MDF; sandy clay soils.

49.4.1 ***Rapanea*** sp.indet. Merjemah; treelet or shrub; riparian forest; sandy soils.

50. MYRTACEAE

50.1.1 ***Psidium guajava*** L. Jambu batu; Jambu labas (Ib.); Buak berabas (Mel.); cultivated near the settlement. **Uses**: medicinal, young shoot to stop diarrhea, for cut and wounds; fruit edible.

50.2.1 ***Syzygium acuminatissimum*** (Kurz.) DC. [basionym: *Eugenia acuminatissima* Kurz.] Ubah; midstorey/subcanopy; lowland MDF.

50.2.2 ***Syzygium adenophyllum*** (Merr. & L.M. Perry) Merr. & L.M. Perry [basionym: *Eugenia adenophylla* Merr. & L.M. Perry] Ubah puteh; old secondary forest, lowland MDF, hill MDF, summit ridge forest.

50.2.3 ***Syzygium alcinae*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia alcinae* Merr.] Ubah; midstorey/subcanopy; lowland MDF, old secondary forest, riparian; gentle slope; alluvial clay soils, clay rich soils.

50.2.4 ***Syzygium ampullarium*** (Stapf.) Merr. & L.M. Perry [basionym: *Eugenia ampullaria* Stapf.] Ubah; midstorey/subcanopy; Kerangas forest, lower mossy forest; alt up to 1200 m.; alluvial clay soils.

50.2.5 ***Syzygium anisosepalum*** (Duthie) I.M. Turner [basionym: *Eugenia anisosepala* Duthie] Ubah; midstorey/subcanopy; lowland MDF, old secondary forest, riparian; slope; alluvial clay soils, clay rich soils.

50.2.6 ***Syzygium arcuatinervium*** (Merr.) Craven & Biffin. [basionym: *Eugenia arcuatinervia* Merr.] Ubah lusu; midstorey/subcanopy; lowland MDF, Kerangas forest; slope; alluvial clay soils. **Note**: this species also recorded in MSF.

50.2.7 ***Syzygium argyrocalyx*** (Warb.) Merr. & L.M. Perry [basionym: *Eugenia argyrocalyx* Warb.] Ubah; lowland MDF.

50.2.8 ***Syzygium astromoides*** (C.B. Rob.) Merr. [basionym: *Eugenia astromoides* C.B. Rob] Ubah; old secondary forest, lowland MDF.

50.2.9 ***Syzygium attenuatum*** (Miq.) Merr. & L.M. Perry [basionym: *Eugenia attenuata* (Miq.) Koord. & Valeton] Ubah; old secondary forest, hill MDF, summit ridge forest, submontane forest, montane forest; on wide range of soils.

50.2.10 ***Syzygium bankensis*** (Hassk.) Merr. & L.M. Perry. Ubah ribu (Ib.); midstorey/subcanopy; lowland MDF, hill MDF, alt up to 500 m. **Uses**: for vomiting blood.

50.2.11 ***Syzygium baramense*** (Merr) Merr. & L.M. Perry [basionym: *Eugenia baramensis* Merr.] Ubah; Alluvial forest, old secondary forest, summit ridge forest.

50.2.12 ***Syzygium barringtoniodes*** (Ridl.) Masam [basionym: *Eugenia barringtonoides* Ridl.] Ubah; midstorey/subcanopy; lowland mDF, hill MDF, old secondary forest; gentle slope; clay soils.

50.2.13 ***Syzygium beccarii*** (Ridl.) Merr. & L.M. Perry [basionym: *Eugenia beccarii* Ridl.] Ubah; summit ridge forest.

50.2.14 ***Syzygium brachypodum*** (Merr. & L.M. Perry) Merr.& L.M. Perry [basionym: *Eugenia brachypoda* Merr. & L.M. Perry] Ubah; small tree or treelet; lowland MDF; gentle slope; clay soils.

50.2.15 ***Syzygium brachyrachis*** (Merr. & L.M. Perry) Merr. & L.M. Perry [basionym: *Eugenia brachyrachis* Merr. & L.M. Perry] Ubah; lowland MDF, summit ridge forest.

50.2.16 ***Syzygium burkillianum*** (King) I.M Turner [basionym: *Eugenia burkilliana* King] Ubah; lowland MDF.

50.2.17 ***Syzygium castaneum*** (Merr.) Merr & L.M Perry [basionym: *Eugenia castanea* Merr.] Ubah puteh; hill MDF, summit ridge forest.

50.2.18 ***Syzygium caudatilimbum*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia caudatilimba* Merr.] Ubah; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest; terrace, steep slope; clay rich soils, alluvial clay soils.

50.2.19 ***Syzygium cephalophorum*** (Ridl.) Merr. & L.M. Perry [basionym: *Eugenia cephalophora* Ridl.] Ubah bungkang; small tree; lowland MDF, Kerangas forest; flat ground; clay rich soils.

50.2.20 ***Syzygium cerasiforme*** (Blume) Merr. & L.M. Perry [basionym: *Eugenia cerasiformis* (Blume) DC.] Ubah; hill MDF, summit ridge forest.

50.2.21 ***Syzygium cerinum*** (Hend.) I.M Turner [basionym: *Eugenia cerina* Hend.] Ubah cengkeh; old secondary forest, hill MDF, submontane forest.

50.2.22 ***Syzygium chloranthum*** (Duthie) Merr. & L.M. Perry [basionym: *Eugenia chlorantha* Duthie] Ubah; midstorey/subcanopy; lowland MDF, Kerangas forest; wide range of soils.

50.2.23 ***Syzygium christmanii*** (Merr. & L.M. Perry) Merr. & L.M. Perry [basionym: *Eugenia christmanii* Merr. & L.M. Perry] Ubah jambu; old secondary forest, summit ridge forest, submontane forest.

50.2.24 ***Syzygium chrysanthum*** (Merr. & L.M. Perr) Merr. & L.M. Perry [basionym: *Eugenia chrysantha* Merr. & L.M. Perry] Ubah; Alluvial forest, old secondary forest, lowland MDF, submontane forest, montane forest; on wide range of soils.

50.2.25 ***Syzygium claviflorum*** (Roxb.) Wall. ex Steud. [basionym: *Eugenia claviflora* Roxb.] Ubah; old secondary forest, lowland MDF, hill MDF, summit ridge forest.

50.2.26 ***Syzygium corymbiferum*** (Koord. et Valeton) [basionym: *Eugenia corymbifera* Koord. et Valeton] Ubah daun besar; old secondary forest, lowland MDF, hill MDF, summit ridge forest, submontane forest, montane forest; on wide range of soils.

50.2.27 ***Syzygium cuneiforme*** Merr. & L.M. Perry. Ubah; midstorey/subcanopy; lowland MDF, hill MDF; mainly on fertile clay soils.

50.2.28 ***Syzygium curtisii*** (King) Merr. & L.M. Perry [basionym: *Eugenia curtisii* King] Ubah; old secondary forest, summit ridge forest.

50.2.29 ***Syzygium elliptilimbum*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia elliptilimba* Merr.] Ubah; canopy/emergent, midstorey/subcanopy; lowland MDF; slope; clay soils, alluvial clays soils.

50.2.30 ***Syzygium fastigiata*** (Blume) Merr. & L.M. Perry [basionym: *Calyptranthe fastigiata* Blume; *Eugenia fastigiata* (Blume) Koord. & Valeton] Ubah; midstorey/subcanopy; lower mossy forest, hill MDF; clay soils.

50.2.31 ***Syzygium gaultherioides*** (Ridl.) Merr & L.M. Perry [basionym: *Eugenia gaultherioides* Ridl.] Ubah; montane forest.

50.2.32 ***Syzygium glanduligerum*** (Ridl.) Merr & L.M. Perry [basionym: *Eugenia glanduligera* Ridl.] Ubah; Alluvial forest, hill MDF, summit ridge forest.

50.2.33 ***Syzygium grande*** (Wight) Walp. [basionym: *Eugenia grandis* Wight] Ubah jambu; Jambu; cultivated in the orchard. **Uses**: fruit edible.

50.2.34 ***Syzygium griffithii*** (Duthie) Merr. & L.M. Perry [basionym: *Eugenia griffithii* Duthie] Ubah; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; alt up to 500 m.; clay soils, alluvial clay soils. **Note**: also recorded in limestone forest.

50.2.35 ***Syzygium havilandii*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia havilandii* Merr.] Ubah kelabu; midstorey/subcanopy; lowland MDF; peat soils, clay soils. **Note**: common in MSF.

50.2.36 ***Syzygium hemsleyanum*** (King) Chantar & J. Phan. [basionym: *Eugenia hemsleyana* King] Ubah; midstorey/subcanopy; lowland MDF, hill MDF; gentle slope; clay soils, alluvial clay soils.

50.2.37 ***Syzygium heterocladum*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia heteroclada* Merr.] Ubah; summit ridge forest, montane forest.

50.2.38 ***Syzygium hirtum*** (Korth.) Merr. & L.M. Perry [basionym: *Eugenia hirta* Korth] Ubah; montane forest.

50.2.39 ***Syzygium hoseanum*** (King) Merr. & L.M. Perry [basionym: *Eugenia hoseana* King] Ubah; canopy/emergent, midstorey/subcanopy; lowland MDF; clay soils.

50.2.40 ***Syzygium jasminifolium*** (Ridl.) Chantar. & J. Parn. [basionym: *Eugenia jasminifolia* Ridl.] Ubah; summit ridge forest.

50.2.41 ***Syzygium kuchingense*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia kuchingensis* Merr.] Ubah; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; alt up to 1000 m.; sandy soils. **Note**: also recorded in limestone forest.

50.2.42 ***Syzygium kunstleri*** (King) Bahadur & R.C. Gaur [basionym: *Eugenia kunstleri* King] Ubah; midstorey/subcanopy; lowland MDF, hill MDF; slope; clay soils, clay rich soils. **Note**: also recorded in limestone forest.

50.2.43 ***Syzygium leptostemom*** (Korth) Merr. & L.M. Perry [basionym: *Eugenia leptostemom* (korth) Miq.] Ubah; summit ridge forest.

50.2.44 ***Syzygium leucoxylum*** Korth.[= *Eugenia leucoxylon* (Korth.) Miq.] Ubah; summit ridge forest.

50.2.45 ***Syzygium lineatum*** (DC.) Merr. & L.M. Perry [basionym: *Myrtus lineata* DC; *Eugenia lineata* (DC.) Duthie] Ubah daun kecil; midstorey/subcanopy; wide range of habitat and soils.

50.2.46 ***Syzygium litseifolium*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia litseifolia* Merr.] Ubah; summit ridge forest.

50.2.47 ***Syzygium macromyrtus*** (Koord. & Valeton) Merr. & L.M. Perry [basionym: *Eugenia macromyrtus* Koord. & Valeton] Ubah;

midstorey/subcanopy; lowland MDF, hill MDF, hill slope; clay rich soils.

50.2.48 ***Syzygium medium*** (Korth.) Merr. & L.M. Perry. [basionym: *Jambosa media* Korth.] Rheophyte; lowland MDF, usually by river-bank.

50.2.49 ***Syzygium megalophyllum*** (Merr. & L.M. Perry) Merr. & L.M. Perry [basionym: *Eugenia megalophylla* Merr. & L.M. Perry] Ubah; lowland MDF.

50.2.50 ***Syzygium mulleri*** Miq. [= *Eugenia mulleri* Miq.] Ubah; summit ridge forest.

50.2.51 ***Syzygium multibracteolatum*** (Merr.) Merr. & L.M. Perry[basionym: *Eugenia multibracteolata* Merr.] Ubah; montane forest.

50.2.52 ***Syzygium myrtillus*** (Stapf.) Merr. & L.M. Perry [basionym: *Eugenia myrtillus* Stapf.] Ubah; old secondary forest.

50.2.53 ***Syzygium ochneocarpum*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia ochneocarpa* Merr.] Ubah parit; canopy/emergent, midstorey/ subcanopy; lowland MDF, Kerangas forest; slope; clay rich soils, alluvial clay soils. **Note**: occasional in MSF.

50.2.54 ***Syzygium ovatifolium*** Merr. & L.M. Perry [basionym: *Eugenia ovatifolia* Merr. & L.M. Perry] Ubah; summit ridge forest, submontane forest.

50.2.55 ***Syzygium pachysepalum*** Merr. & L.M. Perry [basionym: *Eugenia pachysepala* Merr. & L.M. Perry] Ubah; hill MDF, summit ridge forest.

50.2.56 ***Syzygium pahangense*** (Ridl.) I.M. Turner [basionym: *Eugenia pahangensis* Ridl.] Ubah; montane forest.

50.2.57 ***Syzygium palawanense*** (C.B. Rob.) Merr. & L.M. Perry [basionym: *Eugenia palawanensis* C.B. Rob.] Ubah; lowland MDF, hill MDF, submontane forest.

50.2.58 ***Syzygium palembanicum*** Miq. [= *Eugenia lepidocarpa* (Miq.) Merr.] Ubah samak paya; lowland MDF, hill MDF.

50.2.59 ***Syzygium paradoxum*** (Merr.) Masam [basionym: *Eugenia paradoxa* Merr.] Ubah; hill MDF.

50.2.60 ***Syzygium polyanthum*** (Wight) Masam. [isonym: *Syzygium polyanthum* (Wight) Walp.; basionym: *Eugenia polyantha* Wight] Ubah; Bungkang (Ib.); canopy/emergent tree; degraded lowland MDF, secondary forest; sandy clay soils, clay rich soils. **Uses**: leaves used as flavouring agents.

50.2.61 ***Syzygium prasiniflorum*** (Ridl.) Merr. & L.M. Perry [basionym: *Eugenia prasiniflora* Ridl.] Ubah; hill MDF, summit ridge forest.

50.2.62 ***Syzygium pseudoformosum*** (King). Merr. & L.M. Perry [basionym: *Eugenia pseudoformosa* King] Ubah; riparian forest, lowland MDF.

50.2.63 ***Syzygium pseudomolle*** (M.R. Hend.) I.M. Turner [basionym: *Eugenia pseudomollis* M.R. Hend.] Ubah; riparian forest.

50.2.64 ***Syzygium punctilimbum*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia punctilimba* Merr.] Ubah; midstorey/subcanopy; hill MDF, Kerangas forest, lower mossy forest; alt up to 1200 m.; clay soils, alluvial clay soils. **Note**: also recorded on summits of limestone.

50.2.65 ***Syzygium rejangense*** Merr. & L.M. Perry. Jambu ai (Ib.); midstorey/ subcanopy tree, tree, treelet; flat ground, periodically flooded; sandy clay soils.

50.2.66 ***Syzygium remotifolium*** (Ridl.). Merr. & L.M. Perry [basionym: *Eugenia remotifolia* Ridl.] Ubah; old secondary forest, lowland MDF.

50.2.67 ***Syzygium rhynchophyllum*** (Merr.) Merr. & L.M. Perry [basionym: *Eugenia rhynchophylla* Merr.] Ubah; hill MDF.

50.2.68 ***Syzygium rostratum*** DC. [= *Eugenia rostrata* DC.] Ubah; hill MDF.

50.2.69 ***Syzygium rugosum*** Korth. [= *Eugenia rugosa* (Korth.) Merr.] Ubah; summit ridge forest.

50.2.70 ***Syzygium tawahense*** Korth. Uba ambat (Ked.); Ubah samak (Ib.); midstorey/subcanopy; lowland MDF. **Uses**: for blood in stool and for diarrhoea.

50.2.71 ***Syzygium tenuicaudatum*** Merr. & L.M. Perry [=*Eugenia tenuicaudata* Merr. & L.M. Perry] Ubah; lowland MDF.

50.2.72 ***Syzygium valdevenosum*** (Duthie) [basionym: *Eugenia valdevenosum* Duthie] Ubah; montane forest.

50.3.1 ***Tristania beccarii*** Ridl. Selunsur merah; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF, Kerangas forest; emperan, river-bank; slope, ridge; sandy soils, sandy clay soils, alluvial soils.

50.3.2 ***Tristania whitiana*** Griff. Selunsur puteh; Selunsor beranak (Ked.); canopy/emergent tree, midstorey/subcanopy tree; Kerangas; gentle slope, vertical; kerangas soils, yellow sandy soils. **Uses**: to ease labour pain.

50.4.1 ***Whiteodendron moultonianum*** (W.W. Sm.) v. Steen. [basionym: *Tristania moultoniana* W.W. Sm.] Kawi; frequent in MDF on sandy soils and Kerangas; riparaian.

51 NYCTAGINACEAE

51.1.1 ***Pisonia umbellifera*** (J.R. & G. Frost.) V. Seemen. Treelet or shrub; old secondary forest; on igneous-derived soils.

52. OCHNACEAE

52.1.1 ***Brackenridgea palustris*** Bartell. Ubah midin paya; small tree; Kerangas forest, submontane forest, lowland MDF.

52.2.1 ***Gomphia serrata*** (Gaertn.) Kanis. Cenaga lampong bergigi; small tree; occasional in MDF, Kerangas forest, submontane forest.

52.3.1 ***Indovethia calophylla*** Boerl. Cenaga lampong; treelet or shrub; lowland MDF, hill MDF.

52.4.1 ***Neckia serrata*** Korth. Chenanga lampong (Ib.); herb; lowland MDF, hill MDF, montane forest.

52.5.1 ***Schuurmansiella angustifolia*** (Hook.f.) Hallier. Cenaga lampong; treelet of shrub; very localized in Kerangas forest; sandy soils.

53. OLACACEAE

53.1.1 ***Ochanostachys amentacea*** Mast. Petaling; Sentikal (Ib.); midstorey/ subcanopy tree; lowland MDF, hill MDF; gentle slope.

53.2.1 ***Scorodocarpus borneensis*** Becc. Bawang hutan; Kulim; Kesidu (Ib.); emergent/canopy, midstorey/subcanopy tree; lowland MDF, hill MDF; gentle slope; sandy soils. **Uses**: wood for construction.

53.3.1 ***Strombosia ceylanica*** Gardn. Siga'ap (Ked.); Belian landak (Ib.); midstorey/subcanopy; Alluvial forest. **Uses**: medicinal, used in *air masak* and for rheumatism and swollen joints.

54. OLEACEAE

54.1.1 ***Chionanthus lucens*** R. Kiew. Mok (Ib.); midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest, emperan; slope, vally bottom; wide range of soils.

54.1.2 ***Chionanthus polygamus*** (Roxb.) Kiew. [basionym: *Samara polygama* Roxb.] Mok (Ib.); midstorey/subcanopy, understorey, treelet; lowland MDF, Kerangas forest; sandy peat soils, sandy clay.

54.2.1 ***Olea brachiata*** Merr. Mok; midstorey/subcanopy, small tree, treelet; lowland MDF, old secondary forest, emperan; slope, ridge; clay rich soils, sandy soils.

55. OXALIDACEAE

55.1.1 ***Averrhoa bilimbi*** L. Belimbing tunjuk; cultivated in the orchard near the settlement. **Uses**: fruit edible.

55.1.2 ***Averrhoa carambola*** L. Belimbing; cultivated near the settlement. **Uses**: fruit edible.

55.2.1 ***Dapania racemosa*** Korth. Climber; lowland MDF, hill MDF, old secondary forest; alluvial clay soils.

55.3.1 ***Sarcotheca glauca*** (Hook.f.) Hall.f.. Tulang payong; midstorey/ subcanopy tree, treelet; lowland MDF, secondary forest, Kerangas; flat ground, gentle slope; clay soils. **Uses**: fruit edible.

55.3.2 ***Sarcotheca macrophylla*** Blume. Piang daun besar; Bakang (Bid.); midstorey/ subcanopy, small tree; Alluvial forest.

56. PANDACEAE

56.1.1 ***Galearia fulva*** (Tul.) Miq. Limau hantu; small tree or shrub; lowland MDF, hill MDF; alluvial soils.

57. PHYLLANTHACEAE

57.1.1 ***Antidesma cauliflorum*** W.W. Sm. Bernai; small tree or treelet; lowland MDF; alluvial clay soils.

57.1.2 ***Antidesma cordatum*** Airy Shaw. Bernai; midstorey/subcanopy, treelet; lowland MDF, hill MDF, Kerangas forest, old secondary forest, river-bank; slope, ridge; sandy soils, clay rich soils.

57.1.3 ***Antidesma coriaceum*** Tul. Tema'as; Rayan burung (Ked.); small tree; hill MDF, summit ridge forest, submontane forest, Kerangas forest; on wide range of soils.

57.1.4 ***Antidesma cuspidatum*** Muell.-Arg. var. ***borneense*** Airy Shaw. Berenai (Ib.); midstorey/subcanopy, understorey, treelet; lowland MDF, hill MDF, river-bank; gentle slope, ridge; alluvial soils, clay rich soils.

57.1.5 ***Antidesma hosei*** Pax et K. Hoffm. Bernai; Lapad litak (LB); small tree; lowland MDF, hill MDF, summit ridge forest. Submontane forest, montane forest; on wide range of soils. **Uses**: medicinal, to stop pain.

57.1.6 ***Antidesma leucopodum*** Miq. [synonym: *Antidesma hirtellum* Ridl.] Berenai (Ib.); midstorey/subcanopy; old secondary forest; slope; clay soils, sandy clay soils.

57.1.7a ***Antidesma neurocarpum*** Miq. var. ***hosei***. [synonym: *Antidesma alatum* Hook.f.] Berenai (Ib.); small tree to 10 m tall; widely distributed in MDF and sub-montane forest up to 700 m alt.

57.1.8a ***Antidesma tomentosum*** Blume var. ***tomentosum***. [synonym: *Antidesma longipes* Hook.f.; *Antidesma persimile* Kurz.; *Antidesma perakense* Pax & K. Hoffm.] Buah jerawei; small tree or treelet; on wide range of soil types up; MDF and sub-montane forest to 1200 m alt.

57.1.9 ***Antidesma venenosum*** J.J. Sm. Berenai (Ib.); midstorey/ subcanopy, treelet; lowland MDF, hill MDF; gentle slope on clay-rich soils.

57.2.1 ***Aporusa antennifera*** (Airy Shaw) Airy Shaw. Kayu masam; midstorey/subcanopy; old secondary forest; gentle slope, ridge; alluvial clay soils, clay rich soils.

57.2.2 ***Aporusa arborea*** (Blume) Muell.-Arg. Kayu masam; Alluvial forest, lowland MDF, summit ridge forest; alluvial clay soils, on igneous-derived soils.

57.2.3 ***Aporusa aurea*** Hook.f. Jangau (Ib.); small tree; old secondary forest, lowland MDF; sandy soils.

57.2.4 ***Aporusa benthamiana*** Hook.f. Kayu masam; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, river-bank; gentle slope, ridge; alluvial soils, sandy soils, clay rich soils.

57.2.5 ***Aporusa bracteosa*** Pax et K. Hoffm. Kayu masam; small tree or treelet; old secondary forest, lowland MDF, summit ridge forest, submontane forest.

57.2.6 ***Aporusa bullatissima*** Airy Shaw. Kayu masam; Janggau (Ib.); small tree or treelet; lowland MDF, hill MDF, river-banks; alluvial soils, sandy clay soils. **Uses**: fruit edible.

57.2.7 ***Aporusa caloneura*** Airy Shaw. Kayu masam; midstorey/ subcanopy; lowland MDF, submontane forest; alt up to 1050 m.

57.2.8 ***Aporusa chalarocarpa*** Airy Shaw. Kayu masam; small tree; lowland MDF, hill MDF.

57.2.9 ***Aporusa confusa*** Gage. Janggau (Ib.); midstorey/subcanopy, tree, to 15 m tall, treelet; lowland MDF and hill MDF, gentle slope; alluvial soils, sandy clay soils. **Uses**: fruit edible.

57.2.10 ***Aporusa elmeri*** Merr. Kayu masam; small tree or treelet; lowland MDF, emperan, river-bank; sandy clay soils.

57.2.11 ***Aporusa falcifera*** Hook.f. Kayu masam; midstorey/subcanopy, treelet; lowland MDF, hill MDF, river-bank; gentle slope, ridge; sandy soils, clay rich soils.

57.2.12 ***Aporusa frutescens*** Blume. Kayu masam; midstorey/subcanopy, treelet; lowland MDF, hill MDF, river-bank; slope, ridge; sandy soils, clay rich soils.

57.2.13 ***Aporusa grandularis*** Airy-Shaw. Kayu masam; midstorey/ subcanopy, understorey, tree up to 12 m tall, treelet; lowland MDF, hill MDF, river-banks; alluvial soils, sandy clay soils. **Uses**: fruit edible.

57.2.14 ***Aporusa lagenocarpa*** Airy Shaw. Kayu masam; treelet to 10 m tall; in MDF and submontane forest; alt from 120 – 600 m.

57.2.15 ***Aporusa lucida*** (Miq.) Airy Shaw. Kayu masam; midstorey/ subcanopy, treelet; lowland MDF, slope; sandy soils.

57.2.16 ***Aporusa lunata*** (Miq.) Kurz. Midstorey/subcanopy, treelet; lowland MDF, hill MDF, riparian; gentle slope on clay rich soils.

57.2.17 ***Aporusa nitida*** Merr. Kayu masam; in MDF on igneous-derived and clay soils.

57.2.18 ***Aporusa prainiana*** King ex Gage. Kayu masam; understorey, treelet; lowland MDF, hill MDF, riparian; gentle slope on clay soils.

57.2.19 ***Aporusa sarawakensis*** Schott. Kayu masam; small tree; old secondary forest; sandy soils.

57.2.20 ***Aporusa sphaeridophora*** Merr. Kayu masam; small tree; old secondary forest, lowland MDF.

57.3.1 ***Baccaurea angulata*** Merr. Buah ucong; cultivated in the orchard near settlement. **Uses**: fruit edible.

57.3.2 ***Baccaurea brevipes*** Hook.f. Batok pranuk; Rambai tikus; Buak bulup (Mel.); culitivated in the orchard near settlement. **Uses**: fruit edible.

57.3.3 ***Baccaurea costulata*** Muell.-Arg. Telo kejira (Ib.); medium to small tree; lowland MDF; alluvial clay soils. **Uses**: fruit edible.

57.3.4 ***Baccaurea edulis*** Merr. Penyal nyumboh (Ib.); lowland MDF, hill MDF; on igneous-derived soils. **Uses**: fruit edible.

57.3.5 ***Baccaurea hookeri*** Gage. Jelantik (Ib.); lowland MDF, hill MDF, old secondary forest. **Uses**: fruit edible.

57.3.6 ***Baccaurea lanceolata*** (Blume) Muell.-Arg. Lempaong (Ib.); medium-size tree; lowland MDF, submontane forest; alt up to 420 m. **Uses**: spiritual, the fruits can protect a person from being charmed by the enemy.

57.3.7 ***Baccaurea latifolia*** King ex Hook.f. Pekang (Ib.); midstorey/ subcanopy; lowland MDF, old secondary forest. **Uses**: fruit edible.

57.3.8 ***Baccaurea macrocarpa*** (Miq.) Muell.-Arg. Tampoi; canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest, river-bank; flat ground, gentle slope, ridge; various types of soils. Sometimes cultivated. **Uses**: fruit edible.

57.3.9 ***Baccaurea macrophylla*** (Muell.-Arg.) Muell.-Arg. Kayu masam; lowland MDF.

57.3.10 ***Baccaurea maingayi*** Hook.f. Tampoi; midstorey/subcanopy; Alluvial forest, old secondary forest.

57.3.11 ***Baccaurea membranacea*** Pax & K. Hoffm. Engkuni (Ib.); midstorey/ subcanopy, understorey, treelet; lowland MDF, riparian; flat ground, gentle slope; clay rich soils.

57.3.12 ***Baccaurea minor*** Hook.f. Sintak nyabor (Ib.); Engkuni (Ib.); midstorey/subcanopy; lowland MDF, hill MDF, summit ridge forest, submontane forest.

57.3.13 ***Baccaurea motleyana*** (Muell.-Arg.) Muell.-Arg. Tampoi; Rambai; Puak (Ib.); cultivated. **Uses**: fruit edible.

57.3.14 ***Baccaurea oxycarpa*** (Gage) Muell.-Arg. Engkuni (Ib.); lowland MDF.

57.3.15 ***Baccaurea parviflora*** (Muell.-Arg.) Muell.-Arg. Engkuni (Ib.); midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF; clay soils, sandy clay soils, sometimes on igneous origin soils.

57.3.16 ***Baccaurea polyneura*** Hook.f. Jelentik (Ib.); medium to small tree; lowland MDF, emperan, old secondary forest. **Uses**: fruit edible.

57.3.17 ***Baccaurea pyriformis*** Gage. Pakeng; midstorey/subcanopy; old secondary forest, summit ridge forest; on sandy clay soils.

57.3.18 ***Baccaurea racemosa*** Muell.-Arg. [synonym: *Baccaurea wallichii* Hook.f.] Engkuni (Ib.); midstorey/ subcanopy; lowland MDF, hill MDF; slope; sandy soils.

57.3.19 ***Baccaurea sarawakensis*** Pax & Hoffm. Tampoi; lowland MDF, hill MDF.

57.3.20 ***Baccaurea stipulata*** J.J. Sm. Tampoi; small tree; riparian forest; on igneous-derived soils.

57.3.21 ***Baccaurea sumatrana*** (Miq.) Muell.-Arg. [synonym: *Baccaurea kingie* Gage] Tampoi; Puak (Ib.); midstorey/subcanopy, treelet; occasional in lowland MDF on a wide range of soils; riparian.

Sometimes cultivated in the orchard near settlement. **Uses**: fruit edible.

57.3.22 ***Baccaurea trigonocarpa*** Merr. Tampoi; small tree; Alluvial forest, old secondary forest; riparian forest.

57.4.1 ***Cleistanthus nitidus*** Hook.f. Pala beriak (Ib.); small tree or treelet; lowland MDF, riparian; gentle slope; igneous-derived soils, clay rich soils.

57.5.1 ***Phyllanthus amarus*** Schumach. & Thonn. [synonym: *Phyllanthus niruri* auct.non L.] Dukong anak; weed of dry ground; naturalized from tropical America. **Uses**: medicinal.

57.5.2 ***Phyllanthus elegans*** Wall. ex Mull.-Arg. Dukong anak; small shrub; lithophytic; stream bank.

57.5.3 ***Phyllanthus urinaria*** L. Rumput blis (Ib.); Kayu sedi (Ib.); medium-sized tree; lowland MDF, hill MDF. **Uses**: for treating jaundice (*sakit kuning*) in babies and to treat minor cuts.

57.5.4 ***Phyllanthus*** sp.indet. Dukong anak; small shrub; lithophytic on the rock surface; river-bank.

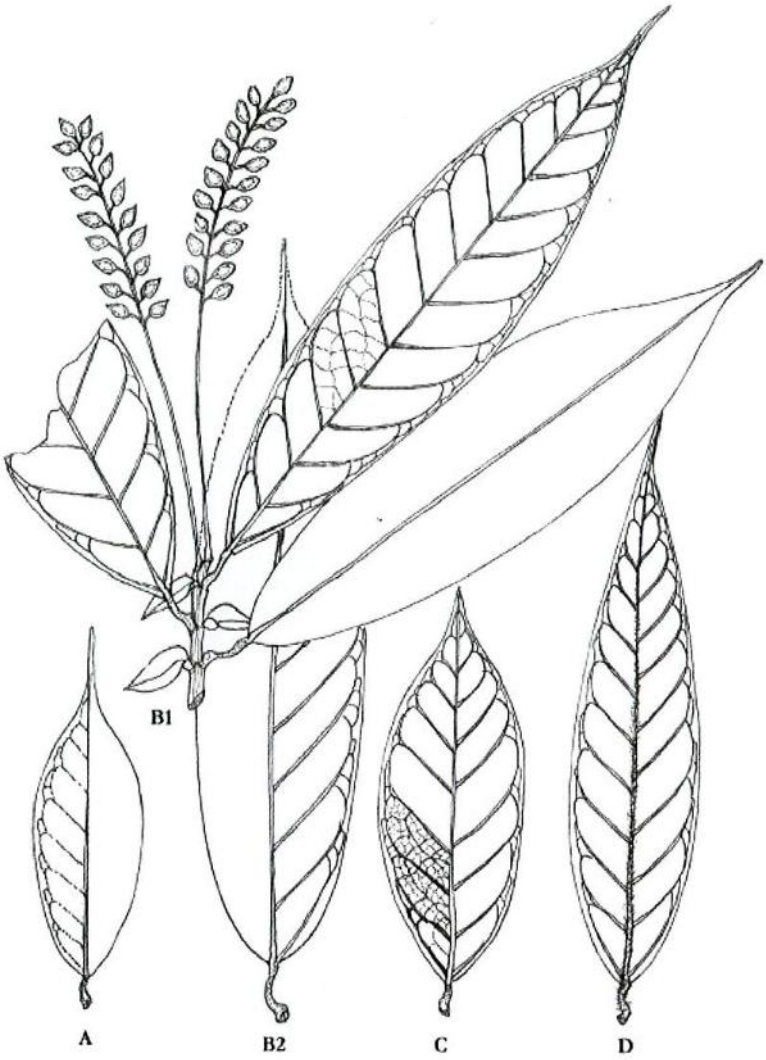


Figure 12: Phyllanthaceae. **A**: *Antidesma neurocarpum*; **B1, B2**: *Antidesma stipularis*; **C**: *Antidesma hosei*; D: *Antidesma tomentosum*

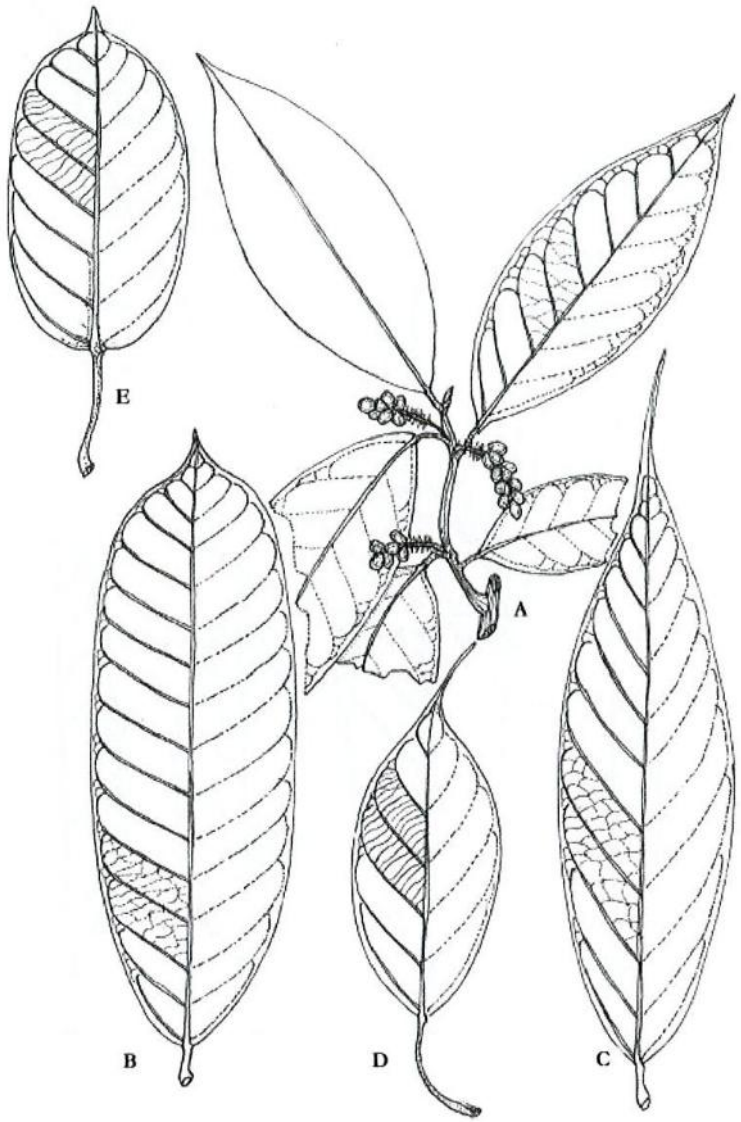


Figure 13: Phyllanthaceae. **A**: *Antidesma coriaceum*; **B**: *Antidesma cuspidatum*; **C**: *Antidesma leucopodum*; D: *Baccaurea minor*; E: *Baccaurea pyriformis*

58. PITTOSPORACEAE

58.1.1 ***Pittosporum resiniferum*** Hemsl. Bedung; small tree; lowland MDF, Kerangas forest, secondary forest; shallow rocky soils, on igneous-derived soils.

59. POLYGALACEAE

59.1.1 ***Polygala venernosa*** Juss. ex Poir. Small tree, treelet or shrub; on mainly damp clay soils.

59.2.1 ***Xanthophyllum amoenum*** Chodat. Treelet; lowland MDF; flat ground, periodically flooded.

59.2.2 ***Xanthophyllum discolor*** Chodat. Treelet, lowland MDF, hill MDF; gentle slope.

59.2.3 ***Xanthophyllum ecarinatum*** Chod. Nyalin; Kayu labu (Ked.); midstorey/subcanopy, small tree or treelet; lowland MDF, hill MDF, old secondary forest, emperan; flat ground, slope, ridge; clay soils, sandy clay soils. Uses: medicinal, used in *air masak*.

59.2.4 ***Xanthophyllum ellipticum*** Korth. ex Miq. Nyalin tikus; in lowland MDF.

59.2.5 ***Xanthophyllum flavescens*** Roxb. Nyalin; tree to 18 m tall; in lowland MDF on clay rich soils.

59.2.6 ***Xanthophyllum havilandii*** Chodat. Nyalin; tree to 30 m tall; occasional in MDF on clay rich soils.

59.2.7 ***Xanthophyllum macrophyllum*** Baker. Kayu labu (Ked.); small tree or treelet; semi-kerangas forest. **Uses**: medicinal, used in *air masak*.

59.2.8 ***Xanthophyllum velutinum*** Chodat. Midstorey/subcanopy tree, treelet; degraded Kerangas, degraded lowland MDF, secondary forest; valley bottom, gentle slope, near to stream; sandstone.

60. PRIMULACEAE

60.1.1 ***Labisia humilis*** Lindl. Kacip fatimah; Daun sangkoh (Ib.); small shrub on forest floor, alluvial soils, clay rich soils. **Uses:** medicinal, used for women after giving birth.

60.1.2a ***Labisia pumila*** (Blume) Hook.f. Kacip Fatimah; Daun sangkoh (Ib.); small shrub on forest floor; wide range of soil types. **Uses:** medicinal, used for women after giving birth.

60.1.2b ***Labisia pumila*** (Blume) Hook.f. var. ***lanceolata.*** Kacip Fatimah (Mal.); herb; lowland MDF.

61. PROTEACEAE

61.1.1 ***Helicia petiolaris*** Benn. Palis; treelet, shrub; lowland MDF, hill MDF, old secondary forest; slope, ridge; alluvial soils, clay rich soils.

61.1.2 ***Helicia mahmudii*** P. Chai. Palis (Ib.); treelet, shrub; lowland MDF, hill MDF.

62. RHAMNACEAE

62.1.1 ***Ziziphus borneensis*** Merr. Kukulang (Ib., Mal.); midstorey/ subcanopy tree, treelet, liana, scrambling shrub; degraded Kerangas, lowland MDF; gentle slope, ridge. **Uses**: fruit edible.

62.1.2 ***Ziziphus cupularis*** Suesseng & Overkott. Akar duri menaul (Ib.); liana; lowland MDF; periodically flooded; alluvial deposits soils.

62.1.3 ***Zizyphus grewioides*** (Warb.) Perry. Merjawai (Ib.); liana, climber, scrambling shrub; lowland MDF, riverine.

62.1.4 ***Zizyphus havilandii*** Ridl. Akar kuku menaul (Ib.); Suinit kayu (Ked.); climber, liana; lowland MDF, sometimes riverine. **Uses:** for blood in stool and to stop diarrhoea.

63. RHIZOPHORACEAE

63.1.1 ***Carallia brachiata*** (Lour.) Merr. Rabong; midstorey/subcanopy, small tree or treelet; old secondary forest, lowland MDF; clay-rich soils.

63.2.1 ***Gynostroches axillaris*** Blume. Rabong; midstorey/subcanopy, small tree; Alluvial forest, old secondary forest, lowland MDF, summit ridge forest, montane forest; on wide range of soils.

64. ROSACEAE

64.1.1 ***Parastemon spicatum*** Ridl. Ngilas padang; Kerangas forest; flat ground, gentle slope; alluvial soils, sandy soils.

64.2.1a ***Prunus arborea*** (Blume) Kalkm. var. ***densa*** (King) Kalmk. Enteli (Ib.); lowland MDF, hill MDF, secondary forest; clay rich soils,

64.3.1 ***Rubus glomeratus*** Blume. Langgamit (Ked.); Emperingat (Ib.); thorny scrambler shrub; secondary forest. **Uses**: for blood in stool and to stop diarrhoea.

64.3.2 ***Rubus moluccana*** L. Akar emperingat (Ib.); climber; secondary forest, degraded secondary forest.

65. RUBIACEAE

65.1.1 ***Acranthera didymocarpus*** (Ridl.) K.M. Wong. Akar rubi (Ib.); climber,liana; lowland MDF, hill MDF, old secondary forest; gentle slope, ridge; clay rich soils.

65.1.2 ***Acranthera frutescens*** Val. ex Winkl. Akar rubi (Ib.); woody herb; lowland MDF, hill MDF.

65.1.3 ***Acranthera multiflora*** Valeton. Semi-woody herb; occasional in MDF.

65.2.1 ***Aidia borneensis*** Ridsdale. Betang; small tree; riparian forest; along river-bank; sandy soils.

65.3.1 ***Anthocephalus borranginum*** Blume ex DC. Selimpoh; midstorey/subcanopy; lowland MDF.

65.3.2 ***Anthochepalus cadamba*** (Roxb.) Miq. Selimpoh; Kelampayan; midstorey/subcanopy; Alluvial forest, old secondary forest, lowland MDF, summit ridge forest; along river-bank; on deep well-drained soils.

65.4.1 ***Argostemma borangineum*** Blume; Daun belebeng (Mel.); rheophytic; riparian forest.

65.4.2 ***Argostemma brachyantherum*** Stapf. Herb on forest floor; lowland MDF; gentle slope, valley bottom, periodically flooded.

65.4.3 ***Argostemma bryophyllum*** Schum. Herb; submontane forest; ridge; on igneous-derived soils.

65.4.4 ***Argostemma gracile*** Stapf. Small herb on forest floor; sometimes rheophytic; riparian forest; sandy soils.

65.4.5 ***Argostemma hameliifolium*** Wernham. Herb; montane forest; alt up to 1500 m.

65.4.6 ***Argostemma havilandii*** Ridl. Herb on forest floor; Alluvial forest.

65.4.7 ***Argostemma psychotrioides*** Ridl. Herb; montane forest; ridge or slope; on igneous-derived soils.

65.5.1 ***Canthium confertum*** Korth. Janang; Tulang ular; midstorey/subcanopy; Alluvial forest, lowland MDF, summit ridge forest; on a wide range of soils.

65.5.2 ***Canthium didymum*** Gaertn. Janang; Tulang ular; midstorey/subcanopy; old secondary forest, summit ridge forest, montane forest. **Note**: also recorded in MSF.

65.5.3 ***Canthium umbelligerum*** Miq. Tulang ular; midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest; slope, valley bottom; peat soils, sandy clay soils.

65.6.1 ***Cephaelis psychotrioides*** Valeton. Herb on forest floor; lowland MDF; alluvial clay soils.

65.6.2 ***Cephaelis stipulacea*** Blume. Herb on forest floor; submontane forest, lowland MDF, hill MDF; alluvial soils.

65.7.1 ***Chasalia curviflora*** Thwaites. Herb; hill MDF; gentle slope, ridge; clay-rich soils.

65.8.1 ***Diplospora beccariana*** King & Gamble. Kopi hutan; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; slope,ridge; clay rich soils.

65.8.2 ***Diplospora malaccensis*** Hook.f. Kopi hutan; small tree or treelet; summit ridge forest.

65.8.3 ***Diplospora singularis*** Korth. Kopi hutan; small tree or treelet; hill MDF; clay-rich soils.

65.9.1 ***Gaertnera vaginans*** (DC.) Merr. Malau paya; midstorey/ subcanopy, small tree or treelet; occasional in MDF.

65.10.1 ***Gardenia pterocalyx*** Val. Malau pucuk; small tree or treelet; lowland MDF, hill MDF; alluvial soils.

65.11.1 ***Greenea xanthophytoides*** Val. Small tree or treelet; lowland MDF, hill MDF; clay-rich soils.

65.12.1 ***Ixora bavica*** Brem. Gergansai; small tree or treelet, shrub; lowland MDF, hill MDF; gentle slope; alluvial clay soils.

65.12.2 ***Ixora blumei*** Zoll. ex Merr. Gergansai (Ib.); midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest; slope, sandy soils, clay rich soils.

65.12.3 ***Ixora capitellata*** Bremek. Gergansai (Ib.); small tree or treelet; lowland MDF, old secondary forest, emperan; slope, ridge; sandy soils, clay rich soils.

65.12.4 ***Ixora fallax*** Bremek. Gergansai; small tree or treelet, shrub; lowland MDF, hill MDF; alluvial soils.

65.12.5 ***Ixora fugiens*** Bremek. Gergansai; small tree or treelet; submontane forest, montane forest.

65.12.6 ***Ixora glomeruliflora*** Bremek. Bunga siantan hutan (Mal.); small to medium tree; occasional in MDF on mainly sandy soils.

65.12.7 ***Ixora griffithii*** Hook.f. Gergansai; small tree or treelet; occasional in MDF; on mainly fertile clay soils, alluvial soils. **Note**: also recorded on limestone forest.

65.12.8 ***Ixora ityaphylla*** Bremek. Lulai (Ib.); midstorey/subcanopy, treelet, shrub; lowland MDF, hill MDF, Kerangas forest, river-bank; alluvial soils, clay rich soils.

65.12.9 ***Ixora lebangharae*** Bremek. Gergansai; small tree or treelet; old secondary forest; sandy clay soils.

65.12.10 ***Ixora longifolia*** Sm. Gergansai; small tree or treelet; lowland MDF, hill MDF; alluvial soils.

65.12.11 ***Ixora miquelii*** Bremek. Gergansai; small tree or treelet; Alluvial forest, Kerangas forest.

65.12.12 ***Ixora mirabilis*** Bremek. Gergansai; small tree or treelet; lowland MDF and hill MDF.

65.12.13 ***Ixora patula*** Bremek. Gergansai; treelet or shrub; riparian forest; sandy clay soils.

65.12.14 ***Ixora polycephala*** Bremek. Gergansai; small tree or treelet; rare in MDF, riparian forest; on sandy soils.

65.12.15 ***Ixora pyrantha*** Bremek. Gergansai; Jarum hutan; treelet or shrub; Alluvial forest, old secondary forest, lowland MDF, hill MDF; on a wide range of soils.

65.12.16 ***Ixora woodii*** Bremek. Gergansai (Ib.); midstorey/subcanopy, treelet, shrub; lowland MDF, hill MDF, river-banks; gentle slope; alluvial soils, clay rich soils.

65.13.1 ***Jackia ornata*** Wall. Selumar; Nyabau (Mel.); midstorey/subcanopy; Alluvial forest. **Note**: occasional in coastal MSF.

65.14.1 ***Lasianthus borneensis*** Merr. Sabar bubu; small tree, treelet; lowland MDF, hill MDF; alluvial clay soils.

65.14.2 ***Lasianthus chryseus*** Ridl. Sabar bubu; treelet; Alluvial forest, old secondary forest, lowland MDF.

65.14.3 ***Lasianthus clementis*** Merr. Sabar bubu (Ib.) Bubur (Bid.); treelet, shrub; lowland MDF, old secondary forest, soils of igneous origin.

65.14.4 ***Lasianthus constrictus*** Wight. Sabar bubu; treelet or shrub; Alluvial forest, old secondary forest, submontane forest; alt up to 1025 m.

65.14.5 ***Lasianthus densifolius*** Miq. Sabar bubu; small tree or treelet; lowland MDF; gentle slope; clay-rich soils.

65.14.6 ***Lasianthus griffithii*** Wight. Sabar bubu; small tree or treelet; old secondary forest.

65.14.7 ***Lasianthus inaequalis*** Blume. Sabar bubu; small tree or treelet; old secondary forest, lowland MDF, hill MDF; on igneous origin soils.

65.14.8 ***Lasianthus maingayi*** Hook.f. Sabar bubu; small tree or treelet; lowland MDF; slope; clay soils.

65.14.9 ***Lasianthus pilosus*** Wight. Sabar bubu; small tree or treelet; rare in MDF, Kerangas forest; on a wide range of soils.

65.14.10 ***Lasianthus polycarpus*** Miq. Sabar bubu; small tree or treelet; old secondary forest, lowland MDF, hill MDF.

65.14.11 ***Lasianthus rhinozcerotis*** Blume. Sabar bubu; small tree or treelet; occasional in MDF.

65.14.12 ***Lasianthus scabridus*** King & Gamble. Sabar bubu; treelet; hill MDF; occasional and widespread in MDF and Kerangas forest.

65.14.13 ***Lasianthus stipularis*** Blume. Sabar bubu; treelet; rare in MDF, Alluvial forest.

65.15.1 ***Lucinaea labuanensis*** Ridl. Akar penumpang; epiphytic, climber; lowland MDF.

65.15.2 ***Lucinaea membranacea*** King. Akar penumpang; epiphytic, climber; riparian forest, hill MDF.

65.15.3 ***Lucinaea parvifolia*** King. Climber; occasional in montane forest.

65.15.4 ***Lucinaea ridley*** King. Climber; montane forest.

65.16.1 ***Mussaenda frondosa*** L. Small tree; old secondary forest; clay-rich soils.

65.17.1 ***Myrionneuron cyaneum*** Hallier f. Midstorey/subcanopy, small tree; occasional in MDF.

65.18.1 ***Myrmeconauclea strigosa*** (Korth.) Merr. Mumban; midstorey/subcanopy; Alluvial forest, riparian forest; sandy clay soils. **Uses**: effective for treatment of wounds.

65.19.1 ***Nauclea subdita*** (Korth.) Merr. Empitap (Ib.); Atap batuh (Bid.); Kayi balon (Kay.); midstorey/subcanopy; occasional in MDF; mainly on steep slope.

65.20.1 ***Neonauclea angustifolia*** (Havil.) Merr. Mumban (Ib.); small tree or shrub; or lithophyte on rock surfaces along river margin.

65.20.2 ***Neonauclea artocarpoides*** Ridsdale. Empitap (Ib.); small tree; old secondary forest; alluvial clay soils.

65.20.3 ***Neonauclea borneensis*** Ridsdale. Empitap; midstorey/subcanopy, small tree; lowland MDF, hill MDF, old secondary forest.

65.20.4 ***Neonauclea calcarea*** Ridsdale. Kedamba; midstorey/subcanopy, small tree; Alluvial forest, old secondary forest.

65.20.5 ***Neonauclea excelsa*** (Blume) Merr. Empitap tapah; Lelabi; midstorey/subcanopy, small tree; occasional in MDF.

65.20.6 ***Neonauclea penducularis*** Walp. Ex G. Don. Kedamba; Empitap (Ib.); midstorey/subcanopy; old secondary forest, lowland MDF, summit ridge forest.

65.21.1 ***Ophiorrhiza communis*** Ridl. Small herb on forest floor; lowland MDF, riparian forest; damp soils, occasional near stream.

65.21.2 ***Ophiorrhiza fibrilasu*** Ridl. Small herb on forest floor; lowland MDF, hill MDF, submontane forest; on damp clay soils.

65.21.3 ***Ophiorrhiza jibrillosa*** Ridl. Herb on forest floor; submontane forest; montane forest.

65.22.1 ***Pavetta axillaris*** Bremek. Kopi hutan; treelet to medium tree; lowland MDF; on mainly sandy soils.

65.22.2 ***Pavetta indica*** L. Kopi hutan; treelet; Alluvial forest; old secondary forest; on igneous-derived soils.

65.22.3 ***Pavetta petiolaris*** Craib ex Bremek. Kopi hutan; treelet; Alluvial forest, submontane forest; alt up yo 1200 m.

65.22.4 ***Pavetta sarawacensis*** Bremek. Kopi hutan; small tree or treelet; Alluvial forest, lowland MDF; on on alluvial base soils.

65.23.1 ***Pleiocarpidia borneensis*** (Miq.) Bremek. Sabar bubu; small tree or treelet; old secondary forest, lowland MDF, submontane forest, montane forest.

65.23.2 ***Pleiocarpidia capituligera*** Ridl. Sabar bubu (Ib.); small to medium tree; in MDF and secondary forest on clay soils.

65.23.3 ***Pleiocarpidia cephalotes*** (Ridl.) Bremek. Sabar bubu; midstorey/ subcanopy; small tree or treelet; lowland MDF, hill MDF; clay-rich soils.

65.23.4 ***Pleiocarpidia chlamydantha*** Bremek. Sabar bubu; small tree or treelet; old secondary forest, lowland MDF; gentle slope; sandy clay soils.

65.23.5 ***Pleiocarpidia coffeoides*** Bremek. Sabar bubu; small tree or treelet; lowland MDF, hill MDF; alluvial soils.

65.23.6 ***Pleiocarpidia enneandra*** (Wight) K. Schum. Sabar bubu; midstorey/subcanopy, small tree or treelet; submontane forest, Kerangas forest.

65.23.7 ***Pleiocarpidia opaca*** Bremek. Sabar bubu; small tree or treelet; hill MDF, summit ridge forest.

65.23.8 ***Pleiocarpidia paniculata*** (Ridl.) Poir. Sabar bubu; small tree or treelet; riparian forest, river-bank; sandy soils.

65.24.1 ***Porterandia anisophylla*** (Jack ex Roxb.) Ridl. Mengkudu hutan (Mal.); midstorey/subcanopy, understorey, treelet; lowland MDF, hill MDF, river-bank; clay rich soils.

65.25.1 ***Praravinia borneensis*** (Merr.) Bremek. Sabar bubu; midstorey/subcanopy, small tree; Alluvial forest, old secondary forest.

65.25.2 ***Praravinia havilandii*** (Ridl.) Bremek. Sabar bubu; small tree; Alluvial forest.

65.25.3 ***Praravinia verruculosa*** Bremek. Sabar bubu; midstorey/subcanopy; old secondary forest.

65.26.1 ***Psychotria agamae*** Merr. Engkerbai; midstorey/subcanopy, small tree; lowland MDF, hill MDF; clay soils.

65.26.2 ***Psychotria densiflora*** Stapf. Engkerbai; midstorey/subcanopy, small tree; occasional in MDF.

65.26.3 ***Psychotria elmeri*** Merr. Engkerbai (Ib.) treelet, shrub; lowland MDF, hill MDF, river-banks; flat ground, gentle slope; alluvial soils, clay rich soils. **Uses**: medicinal, for treating diarrhoea and blood in stool.

65.26.4 ***Psychotria gyrulosa*** Stapf. Engkerbai; small tree or treelet; occasional in MDF on sandy clay soils.

65.26.5 ***Psychotria laxifolia*** Blume. Engkerbai (Ib.); small tree or treelet; lowland MDF, hill MDF, emperan; gentle slope, valley bottom; peat soils, sandy soils, clay rich soils.

65.26.6 ***Psychotria montana*** Blume. Engkerbai; small tree or treelet; lowland M DF, hill MDF; alluvial clay soils.

65.26.7 ***Psychotria ovoidea*** Wall. Engkerbai; small tree or treelet; occasional in MDF.

65.26.8 ***Psychotria robusta*** Blume. Engkerbai; small tree or treelet; Alluvial forest; alluvial-base soils.

65.26.9 ***Psychotria sarmentosa*** Blume. Engkerbai; small tree or treelet; montane forest; alt up to 1025 m; on igneous-derived soils.

65.26.10 ***Psychotria viridiflora*** Reinw. ex Blume. Engkerbai; small tree or treelet; occasional in MDF on sandy clay soils. **Uses**: for cut and wounds and as black dye.

65.26.11 ***Psychotria woodii*** Merr. Engkerabai (Ib.); treelet, shrub; lowland MDF, hill MDF; gentle slope; clay rich soils.

65.27.1 ***Randia corymbosa*** Blume. Engkudu hutan; small tree or treelet; lowland MDF; clay-rich soils.

65.27.2 ***Randia kuchingensis*** W.W. Sm. Engkudu hutan; small tree or treelet; lowland MDF, hill MDF; alluvial clay soils.

65.27.3 ***Randia scortechinii*** King & Gamble; midstorey/subcanopy, treelet; lowland MDF, hill MDF, old secondary forest, Kerangas forest, emperan, peat soils; flat ground, gentle slope, periodically flooded; various types soils.

65.28.1 ***Rennellia elliptica*** Korth. Treelet, shrub; riparian forest; on alluvial clay soils.

65.29.1 ***Saprosma arboreum*** Blume. Mertai; small tree or treelet; occasional in MDF, old secondary forest.

65.30.1 ***Stichianthus minutiflorus*** Valeton. Merabenai; small tree or treelet; lowland MDF.

65.31.1 ***Tarenna cumingiana*** (Vidal) Elmer. Nyarum hutan; midstorey/ subcanopy; lowland MDF, secondary forest, riverine forest.

65.31.2 ***Tarenna fragrans*** (Blume) Koord. et Val. Sabar bubu; Nyarum hutan; midstorey/subcanopy, treelet; lowland MDF, valley bottom; peat soils, sandy clay soils.

65.31.3 ***Tarenna oblanceolata*** Ridl. Nyarum hutan; Treelet; lowland MDF, summit ridge forest; slope, ridge; clay-rich soils.

65.31.4 ***Tarenna wallichii*** Ridl. Nyarum hutan; small tree, treelet; summit ridge forest.

65.32.1 ***Timonius borneensis*** Valeton. Rentap; midstorey/subcanopy; Alluvial forest, old secondary forest, submontane forest; on igneous-derived soils.

65.32.2 ***Timonius compressicaulis*** (Miq.) Boerl. Rentap; small tree; montane forest; mainly on steep slope.

65.32.3 ***Timonius flavescens*** (Jack) Baker. Rentap; Merampak; Legai; small tree; submontane forest, montane forest, Kerangas forest, secondary forest; on shallow peat base soils. **Note**: also recorded in MSF.

65.32.4 ***Timonius lasianthoides*** Valeton. Rentap; Mulong udok (Ib.); small tree, treelet; old secondary forest; MDF. Note: also recorded on limestone forest. **Uses**: for cut and wounds

65.32.1 ***Uncaria cordata*** (Lour) Merr. ssp. ***sundaica*** Roxb. Akar kelait; old secondary forest; alluvial soils.

65.32.2 ***Uncaria gambier*** Roxb. Akar kelauh (Ib.); climber, liana, scrambling shrub; secondary forest, old secondary forest, degraded lowland MDF. **Uses**: medicinal, used for diarrea

65.32.3 ***Uncaria glabrata*** DC. Akar kelauh (Ib.); climber, liana, scrambling shrub; secondary forest, degraded lowland MDF. **Uses**: medicinal, used as a tonic for men.

65.33.1 ***Urophyllum arboreum*** (Reinw.) Korth. Sabar bubu; small tree or treelet; hill MDF; gentle slope, clay-rich soils.

65.33.2 ***Urophyllum borneense*** Miq. Sabar bubu; small tree or treelet; hill MDF.

65.33.3 ***Urophyllum cf. congestiflorum*** Ridl. Sabar bubu; treelet; occasional and widespread in MDF, Kerangas forest.

65.33.4 ***Urophyllum glabrum*** Wall. Sabar bubu; treelet or shrub; old secondary forest.

65.33.5 ***Urophyllum griffithianum*** Hook.f. Sabar bubu; small tree, treelet or shrub; old secondary forest, lowland MDF.

65.33.6 ***Urophyllum hirsutum*** Hook.f. Mengkudu hutan; treelet; Kerangas forest, lowland MDF, hill MDF; slope; peat soils, sandy soils.

65.33.7 ***Urophyllum longidens*** Stapf. Sabar bubu; small tree, treelet or shrub; hill MDF; gentle slope; clay-rich soils.

65.33.8 ***Urophyllum lowei*** Ridl. Sabar bubu; small tree or treelet; Alluvial forest; rare in MDF.

65.33.9 ***Urophyllum melanocarpum*** Ridl. Sabar bubu; small tree or treelet; hill MDF; slope; sandy clay soils.

65.33.10 ***Urophyllum nigricans*** Wernh. Sabar bubu; treelet, shrub; lowland MDF, old secondary forest, fertile clay soils.

65.33.11 ***Urophyllum salicifolium*** Stapf. Sabar bubu; treelet; submontane forest.

65.33.12 ***Urophyllum sessiliflorum*** Ridl. Sabar bubu; small tree, treelet or shrub; lowland MDF, hill MDF; alluvial soils.

65.33.13 ***Urophyllum trifurcum*** Pears. ex King. Sabar bubu; small tree, treelet or shrub; lowland MDF, hill MDF, submontane forest; alt up to 1020 m.

65.33.14 ***Urophyllum vulpinum*** Bremek. Sabar bubu; treelet; lowland MDF, hill MDF.

65.34.1 ***Xanthophytum alopecurum*** Axelius. Sabar bubu; treelet, shrub; old secondary forest.

65.34.2 ***Xanthophytum borneense*** (Valeton) Axelius. Sabar bubu; treelet or shrub; old secondary forest.

65.34.3 ***Xanthophytum fruticulosum*** Reinw. ex Blume. Sabar bubu; treelet or shrub; Alluvial forest.

65.34.4 ***Xanthophytum glabrum*** Axelius. Sabar bubu; treelet or shrub; Alluvial forest; clay-rich soils.

65.34.5 ***Xanthophytum cf. olivaceum*** Merr. Sabar bubu; treelet or shrub; lowland MDF, hill MDF; alluvial soils.

65.34.6 ***Xanthophytum cf. semiorbiculare*** (Bakh.f.) Axelius. Sabar bubu; treelet or shrub; lowland MDF, hill MDF; alluvial clay soils.

66. RUTACEAE

66.1.1 ***Acronychia penduculata*** (L.) Miq. Rawang; small tree; hill MDF, submontane forest.

66.2.1 ***Citrus aurantifolia*** (Christm.) Swingle [basionym: *Limonia aurantifolia* Christm.] Limau nipis; cultivated. **Uses**: fruit used for juice.

66.2.2 ***Citrus hystrix*** DC. Limau kasturi; cultivated. **Uses**: same as 50.1.1

66.3.1 ***Clausena excavata*** Burm.f. Limau hutan; small tree; hill MDF.

66.4.1 ***Glycosmis chlorosperma*** Spreng. Segera mersing; small tree; old secondary forest, submontane forest; on mainly fertile soils.

66.5.1 ***Luvunga sarmentosa*** (Blume) Kurz. Jari manok; treelet of shrub; summit ridge forest.

66.6.1 ***Melicope latifolia*** (DC.) T.G. Hartley [basionym: *Euodia latifolia* DC] Jampang; Serang (Ib.); small tree; old secondary forest. **Uses:** young shoot eaten as *ulam.*

66.6.2 ***Melicope lunu-ankenda*** (Gaertn.) T.G. Hartley [basionym: *Euodia lunu-akenda* (Gaertn.) Merr.] Jampang (Ib.); midstorey/ subcanopy tree, treelet; secondary forest, degraded lowland MDF. **Uses**: sam as 58.6.1

66.7.1 ***Murraya koenigii*** (L.) Spreng. Daun kari; cultivated near the settlement. **Uses**: leaves for spices.

66.8.1 ***Pleiospermium latialatum*** Swingle. Limau hutan; midstorey/subcanopy, treelet; lowland MDF, hill MDF; alluvial soils, clay rich soils.

66.9.1 ***Tectractomia tetrandrum*** (Roxb.) Merr. Serang; Rawang mata; small tree; submontane forest, montane forest.

67. SABIACEAE

67.1.1 ***Meliosma pinnata*** (Roxb.) Walp. Bulu manok (Ib.); small tree; lowland MDF, old secondary forest, submontane forest; on wide range of soils.

67.1.2 ***Meliosma rufo-pilosa*** M.R. Hend. Bulu manok (Ib.); Bitanok (Bid.); midstorey/subcanopy; lowland MDF, hill MDF, old secondary forest, summit ridge forest; alluvial soils, igneous-derived soils.

67.1.3 ***Meliosma sarawakensis*** Ridl. Bulu manok (Ib.); Kayu yap (Ken.); small tree; old secondary forest; clay-rich soils.

67.1.4 ***Meliosma sumatrana*** (Jack) Walp. Bulu manok (Ib.); Kayu hiap (Kay.); midstorey/subcanopy; occasional in MDF, old secondary forest; clay-rich soils.

68. SAPINDACEAE

68.1.1a ***Dimocarpus longan*** Lour. var. ***malesiana*** Leenh. Longan; occasional in MDF on mainly fertile clay soils or riparian. Sometimes cultivated. **Uses**: fruit edible.

68.2.1 ***Lepisanthes amoena*** (Hassk.) Leenh. Gegamba; Enkelili (Ib.); Langir siam (Ked.); occasional in MDF on clay-rich soils. Sometimes cultivated. **Uses**: fruit edible. **Uses**: to drive away malevolent spirits.

68.2.2 ***Lepisanthes fruticosa*** (Ridlk.) Leenh. Engkelili hutan; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, emperan; clay rich soils. Sometimes cultivated. **Uses**: fruit edible.

68.3.1a ***Nephelium cuspidatum*** Blume Gelunot (Ib.); midstorey/ subcanopy, lowland MDF, hill MDF, secondary forest; flat ground, gentle slope; sandy clay soils; clay rich soils. Sometimes cultivated in the orchard. **Uses**: fruit edible.

68.3.1b ***Nephelium cuspidatum*** Blume var. ***multinervia*** Leenh. Kedabang; culitivated in the orchard near settlement. **Note**: fruit edible.

68.3.1c ***Nephelium cuspidatum*** Blume var. ***ophiodes*** Leenh. subvar. ***beccarianum*** Kedabang (Ib.); cultivated in the orchard near settlement. **Note**: fruit edible.

68.3.1d ***Nephelium cuspidatum*** Blume var. ***eriopetalum*** (Miq.) Leenh. Kedabang; cultivated. **Uses**: fruit edible.

68.3.2a ***Nephelium lappaceum*** L. Rambutan (Mal.); cultivated in the orchard near the settlement. **Uses**: fruit edible.

68.3.2b ***Nephelium lappaceum*** L. var. ***lappaceum*** Leenh. Kedabang (Ib.); cultivated in the orchard near settlement. Note: fruit edible.

68.3.2c ***Nephelium lappaceum*** L. var. ***pallens*** Leenh. Kedabang (Ib.); cultivated in the orchard. **Note**: fruit edible.

68.3.3 ***Nephelium maingayi*** Heirn. Mujau (Ib.); Buak butit (Mel.); occasional in MDF and MSF. Sometimes cultivated in the orchard near the settlement. **Uses**: fruit edible.

68.3.4 ***Nephelium mutabile*** Blume. Mak (Ib.) Buak ma'ak (Mel.); cultivated in the orchard. **Uses**: for treating septic wound.

68.3.5 ***Nephelium ramboutan-ake*** (Labill) Leenh. Pudun (Ib.); cultivated in the orchard near settlement. **Uses**: fruit edible.

68.3.6 ***Nephelium uncinatum*** Radlk. Melanjan (Ib.); Rambutan hutan; in MDF.

68.4.1 ***Pometia pinnata*** Forster. Kasai bukit; midstorey/subcanopy tree; flat ground, periodically flooded, riverine; alt 20 – 150 m. **Uses:** fruit edible.

68.5.1 ***Xerospermum laevigatum*** Blume. Tundun biawak; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, old secondary forest, peat forest; flat ground, slope; sandy soils, clay rich soils. **Uses**: fruit edible.

68.5.2 ***Xerospermum noronhianum*** Blume. [syn: *Xerospermum echinulatum* Radlk.] Ilat (Ib.); Tundun biawak; midstorey/subcanopy tree, treelet; lowland MDF, flat ground. **Uses**: fruit edible.

69. SAPOTACEAE

69.1.1 ***Palaquium calophyllum*** (T. et B.) Pierre. Nyatoh; occasional in MDF on a wide range of soils types.

69.1.2 ***Palaquium dasyphyllum*** (De Vries) Pierre ex Dubard. [basionym: *Isonandra dasyphylla* De Vries] Nyatoh; canopy/emergent, midstorey/ subcanopy; lowland MDF, hill MDF; flat ground, hill slope; sandy soils, clay rich soils.

69.1.3 ***Palaquium elegans*** Griff. & H.J. Lam, Nyatoh; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; slope; sandy clay soils.

69.1.4 ***Palaquium gutta*** (Hook f.) Baill. Nyatoh rian (Ib.); widespread in MDF and Kerangas. **Note:** formerly cultivated for latex.

69.1.5 ***Palaquium leiocarpum*** Boerl. Nyatoh plaga (Ib.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF, river-bank; alluvial soils, sandy clay soils.

69.1.6 ***Palaquium majas*** H.J. Lam Nyatoh lambor (Ib.); canopy/ emergent, midstorey/subcanopy; lowland MDF, hill MDF; alluvial soils.

69.1.7 ***Palaquium ridleyi*** King et Gamble. Nyatoh plaga (Ib.); Nyatoh terong; in Kerangas forest.

69.1.8 ***Palaquium sericeum*** H.J. Lam. Nyatoh; midstorey/subcanopy tree; in lowland MDF on mainly fertile clay soils, degraded MDF.

69.1.9 ***Palaquium stenophyllum*** H.J. Lam. Nyatoh; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF; Kerangas forest; wide range of soil types.

69.1.10 ***Palaquium stipulare*** Pierre ex Dubard. Nyatoh daun besar; midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest; slope, ridge; alluvial soils, clay rich soils.

69.2.1 ***Payena acuminata*** (Blume) Pierre. Nyatoh durian; canopy/emergent, midstorey/subcanopy; lowland MDF, hill MDF, Kerangas forest; alluvial soils, sandy clay soils.

70. SCROPHULARIACEAE

70.1.1 ***Brookea tomentosa*** Benth. Merjemu (Ib.); treelet, shrub; lowland MDF, secondary forest, degraded secondary forest. **Uses**: to prevent sore eyes.

70.2.1 ***Scoparia dulcis*** L. Rumput tahi babi (Ib.); herb; occasional in waste soils. **Uses**: medicinal, for itchy skin and skin diseases.

70.3.1 ***Torenia polyonoides*** Benth. Rumput pupok (Ib.); herb; occasional in secondary forest. **Uses**: medicinal, for treatment of goitre.

71. SCYPHOSTEGIACEAE

71.1.1 ***Scyphostegia borneensis*** Stapf. Small tree or shrub; riparian forest, river-bank; sandy clay soils.

72. SIMAROUBACEAE

72.1.1 ***Allantospermum borneensis*** Forman. Tulang; midstorey/subcanopy, small tree; lowland MDF; clay-rich soils.

72.2.1 ***Eurycoma longifolia*** Jack. Tongkat ali; small to medium tree or shrub; occasional in MDF on clay-rich soils and also in Kerangas forest. **Uses**: medicinal, used in *air masak* and for high blood pressure, diabetes and week liver.

72.3.1 ***Quassia borneensis*** Noot. Medang pahit; midstorey /subcanopy; Kerangas forest; alluvial soils. **Uses**: medicinal.

73. SONNERATIACEAE

73.1.1 ***Duabanga moluccana*** Blume. Sawih; Kayu ah (Ken.); canopy/ emergent; old secondary forest; sandy clay soils.

74. STYRACEAE

74.1.1 ***Bruinsmia styracoides*** Boerl. & Koord. Midstorey/subcanopy; riparian forest, submontane forest; sandy clay soils.

75. SYMPLOCACEAE

75.1.1 ***Symplocos adenophylla*** Wall. ex Don. Jirah (Ib.); treelet or shrub; in MDF and hill MDF.

75.1.2 ***Symplocos crassipes*** Clarke. Jirak; small tree or treelet; occasional in MDF, submontane forest, hill MDF; on igneous-derived soils.

75.1.3 ***Symplocos fasciculata*** (Wall.) Zoll. Jirak; midstorey/subcanopy; lowland MDF, hill MDF, summit ridge forest; fertile clay soils.

75.1.4a ***Symplocos laeteviridis*** Stapf. var. ***kinabaluensis***. Jirah; small tree or treelet; occasional in submontane and montane forest.

75.1.4b ***Symplocos laeteviridis*** Stapf. var. ***laeteviridis***. Jirak; small tree or treelet; lowland MDF, hill MDF; alluvial clay soils.

75.1.5 ***Symplocos leochaii*** Chai. Jirak; small tree or treelet; lowland MDF, hill MDF, old secondary forest; on wide range of soils.

76. TETRAMERISTACEAE

76.1.1 ***Tetramerista glabra*** Miq. Entuyut; Kayu hujan; Punah; canopy/emergent, midstorey/subcanopy; Alluvial forest, Kerangas forest; alluvial clay soils, sandy clay soils. **Note**: also recorded in MSF.

77. THEACEAE

77.1.1 ***Adinandra acuminata*** Korth. Legai; Semapak (Mal.); Simupak (Bid.); midstorey/subcanopy; lowland MDF, hill MDF, lower mossy forest; alt up to 900 m; clay rich soils.

77.1.2 ***Adinandra clemensiae*** Kobuski. Legai; midstorey/subcanopy; hill MDF, lower mossy forest; alt up to 1200 m; alluvial clay soils, clay rich soils.

77.1.3 ***Adinandra cordifolia*** Ridl. Legai; midstorey/subcanopy; hill MDF, lower mossy forest; alt up to 1200 m; clay soils.

77.1.4 ***Adinandra dumosa*** Jack. Legai (Ib.); Semapak; in secondary forest and disturbed forest.

77.2.1 ***Ploiarium alternifolium*** (Vahl.) Melch. Somah; Serumah; in Kerangas and secondary forest on damp degraded soils.

77.3.1 ***Ternstroemia citrina*** Ridl. Nyatoh empili (Ib.); treelet; degraded Kerangas, gentle slope, well drained; sandy loam.

77.3.2 ***Ternstroemia magnifica*** Stapf. ex Ridl. Legai; midstorey/subcanopy, treelet; lowland MDF, hill MDF, Kerangas forest; slope, ridge; sandy loam, well drainage soils.

77.3.3 ***Ternstroemia penangiana*** Choisy. Legai; midstorey /subcanopy, treelet; lowland MDF, hill MDF, degraded Kerangas forest, old secondary forest; slope, clay rich soils.

78. THYMELAEACEAE

78.1.1 ***Amyx pluricornis*** (Radlk.) Domke.; Understorey, treelet, shrub; lowland MDF, hill MDF, lower montane forest; alt 400 – 800 m; alluvial soils, clay rich soils.

78.2.1 ***Aquilaria beccariana*** Tiegh. Engkaras (Ib.); Gaharu; midstorey/ subcanopy tree, treelet, shrub; Kerangas, lowland MDF; flat ground, usually near river-bank; sandy soils. **Uses**: for agarwood.

78.3.1 ***Gonystylus bancanus*** (Miq.) Kurz. Ramin; Melawis (Ib.); canopy/ emergent tree, lowland MDF, flat ground, impeded drainage.

79. TRIGONIACEAE

79.1.1 ***Trigoniastrum hypoleocum*** Miq. [syn: *Isopterys penangiana* Wall ex Benn. Jejangka (Ib.); Nyalin bintik; canopy/emergent up to 47 m tall; lowland MDF, hill MDF, Kerangas forest; sandy soils. **Uses**: the wood durable and hard, normally used to make boat.

80. ULMACEAE

80.1.1 ***Gironniera nervosa*** Planch. Medang kasap (Mal.); Entabuluh (Ib.); canopy/emergent tree, midstorey/subcanopy tree; degraded MDF; valley bottom, gentle slope, periodically flooded; alluvial soils.

80.1.2 ***Gironniera parvifolia*** Planch. Medang kasap; midstorey/ subcanopy, treelet; lowland MDF, hill MDF, secondary forest, emperan; sandy clay soils.

80.1.3 ***Gironniera subaequalis*** Planch. Medang kasap; midstorey/ subcanopy, treelet; lowland MDF; slope; clay rich soils.

80.2.1 ***Trema cannabina*** Lour. Treelet, shrub; lowland MDF, secondary forest, degraded secondary forest, roadside; gentle slope.

80.2.2 ***Trema orientalis*** (L.) Blume. Secondary forest, degraded secondary forest; sandy soils.

81. URTICACEAE

81.1.1 ***Dendrocnide stimulans*** (L.f.) Chew. Repai (Ib.); treelet, degraded MDF; gentle slope, ridge, periodically flooded; alluvial deposits soils. **Note**: can cause itchness.

81.2.1 ***Elatostema integrifolium*** (D. Don) Wedd. Terrestrial herb; lower mossy forest; alt up to 1200 m; alluvial clay soils.

81.2.2 ***Elatostema cf. penibukanensis*** L.S. Gibbs. Epiphytic herb; lower mossy forest; alt up to 1250 m; sandy clay soils.

81.3.1 ***Pilea*** sp. indet. Small terrestrial herb; Kerangas forest, riparian, lower mossy forest; alt up to 900 m; clay rich soils, alluvial clay soils.

82. VERBENACEAE

82.1.1 ***Callicarpa havilandii*** (King & Gamble) H.J. Lam. Sabar besi (Ib.); small tree or treelet; Alluvial forest, old secondary forest.

82.1.2 ***Callicarpa involucrata*** Merr. Bilau (Ib.); small tree; lowland MDF, riparian forest; damp fertile soils.

82.1.3 ***Callicarpa longifolia*** H.J. Lam. Sabar besi (Ib.) midstorey/ subcanopy; old secondary forest; riparian forest.

82.1.4 ***Callicarpa pentandra*** Roxb. Sabar besi (Ib.); small tree; secondary forest, riparian forest; sandy soils.

82.1.5 ***Callicarpa saccata*** Steenis. Sabar besi (Ib.); small tree; lowland MDF, secondary forest, riparian forest; damp soils near stream.

82.2.1 ***Clerodendrum adenophysum*** Hallier. Perpanggil (Ib.); Kelampahit (Ib.); small tree or treelet; lowland MDF, Alluvial forest. **Uses**: medicinal, for itchy skin, to remove leech from inside the nose and for muscle pain.

82.2.2 ***Clerodendrum sarawakanum*** H.J. Lam. Peti' babi (Ib.); treelet or shrub; lowland MDF, hill MDF, submontane forest.

82.2.3 ***Clerodendrum villosum*** Blume. Kepait babi (Ib.); small shrub; riparian forest. **Uses**: for skin infection and itchy skin and to treat sprains and bruises.

82.3.1 ***Lantana camara*** L. Bunga tahi ayam; suffrutescent herb /subshrub; secondary forest, open spaced. **Note**: pantropic weed.

82.4.1 ***Teijsmanniodendron sarawakanum*** (H. Pearson) Kosterm. Entabuluh; Mertuboh (Ib.); midstorey/subcanopy tree, degraded emperan; ridge, periodically flooded; alluvial deposits soils.

82.5.1 ***Vitex pinnata*** L. [syn: *Vitex pubescens* Vahl.]. Leban (Ib.); Terbawan (Mel.); midstorey/subcanopy tree, treelet; secondary forest, degraded secondary forest, lowland MDF; flat ground, terrace; sandy/ clay soils. Uses: wood to make oars and firewood.

83. VIOLACEAE

83.1.1 ***Rinorea anguifera*** (Lour.) Kuntze. Siku enseluai (Ib.); small tree; old secondary forest, lowland MDF; clay soils.

83.1.2 ***Rinorea horneri*** (Korth.) Kuntze. Midstorey/subcanopy tree, treelet; lowland MDF, secondary forest; ridge.

83.1.3 ***Rinorea illiaspaiei*** Jacobs. Siku enseluai (Ib.); small tree; lowland MDF, old secondary forest; sandy clay soils.

84. WINTERACEAE

84.1.1 ***Drimys piperita*** Hook.f. Brasang; small tree or shrub; submontane forest; on igneous-derived soils.

85. ACANTHACEAE

85.1.1 ***Cosmianthemum magnifolium*** Bremek. Understorey herb; lowland MDF, old secondary forest; flat ground, gentle slope; damp soils, clay rich soils.

85.1.2 ***Cosmianthemum obtusifolium*** Brem. Pemulai sumpah (Ib.); understorey herb; lowland MDF, old secondary forest; gentle slope; clay rich soils.

85.2.1 ***Dyschoriste oligosperma*** Bremek. Herb on forest floor; riparian forest; sandy soils.

85.3.1 ***Hygrophila pusilla*** Blume. Herb; lowland MDF; alluvial clay soils.

85.4.1 ***Justicia gendarussa*** Burm.f. Kayu pakit (Ib.); understorey, shrub; lowland MDF, damp soils. Sometimes cultivated. **Uses:** medicinal.

85.5.1 ***Pseuderanthemum caudifolium*** Ridl. Herb; lowland MDF, hill MDF; clay-rich soils.

85.6.1 ***Staurogyne havilandii*** C.B. Clarke ex Bremek. Herb; riparian forest, old secondary forest.

85.6.2 ***Staurogyne jaheri*** Bremek. Melebab; herb; lowland MDF, hill MDF; sandy clay soils.

85.6.3 ***Staurogyne*** sp.1 indet. Melebab; herb; hill MDF; sandy clay soils.

85.6.4 ***Staurogyne*** sp.2 indet. Melebab; herb; hill MDF; gentle slope, sandy clay soils.

85.7.1 ***Thunbergia affinis*** S. Moore. Bunga loceng; cultivated in the settlement as ornamental plant.

86. AMARYLLIDACEAE

86.1.1 ***Crinum asiaticum*** Blanco. Bakong; terrestrial herb; riparian, river-bank; damp soils, peat soils. **Uses**: planted near settlement as ornamental plant and used for ritual ceremonies.

87. APIACEAE

87.1.1 ***Centella asiatica*** (L.) Urban. Pegaga; secondary forest, open spaced, lowland MDF, flat ground, damp place, periodically flooded. **Uses**: medicinal, for stomach ache.

88. ARACEAE

88.1.1 ***Aglaonema nitidum*** (Jack) Kunth [syn: *Agloanema oblongifolium* (Roxb.) Kunth]. Endotrophic terrestrial; alluvial forest, degraded alluvial forest and lowland MDF, valley bottom and gentle slope.

88.1.2 ***Agloanema simplex*** (Blume) Blume. Herb; alluvial forest; lowland MDF; valley bottom; near small stream.

88.2.1 ***Alocasia beccarii*** Engl. Keladi kampong; herb; occasional in MDF. **Used**: as an antidote for centipede bites.

88.2.2 ***Alocasia infernalis*** P.C. Boyce, A. Hay & C.C. Lee. Small herb on forest floor; lowland MDF, riverine; flat ground, valley bottom; damp and wet place; clay rich soils. **Note**: unique leaves colour, dark purple or brownish purple.

88.2.3 ***Alocasia longiloba*** Miq. Keladi rusa; herb on the forest floor; lowland MDF, hill MDF, secondary forest; flat groun, valley bottom; clay rich soils.

88.2.4 ***Alocasia macrorrhizos*** (L.) G. Don.Ubei betawi (Mel.); cultivated in the orchard near settlement. **Uses**: tuber edible.

88.2.5 ***Alocasia regia*** N.E. Br. Keladi; Keladi birah (Ked.); herb; Alluvial forest, old secondary forest. **Uses**: medicinal, for swollen body, joints and sprains; also for ornamental.

88.2.6 ***Alocasia robusta*** M. Hotta. Bukóu (Mel.); Keladi birah (Ib.); terrestrial herb; secondary forest, open space; flat ground; damp soils, sandy clay soils.

88.2.7 ***Alocasia scabriscula*** N.E. Br. Keladi; herb; lowland MDF, frequent in swamp area; clay rich soils.

88.3.1 ***Amorphophallus costatus*** Hett. Mayak (Ib.); one-leaf herb; degraded lowland MDF; alluvial soils, clay-rich soil. **Note**: new record for Sarawak.

88.3.2 ***Amorphophallus infundibuliformis*** Hett., A. Dearden & A. Vogel. Maya (Ib.); terrestrial herb, understorey; lowland MDF, hill MDF; gentle slope; clay rich soils, sandy clay soils.

88.4.1 ***Amydrium medium*** (Zoll. & Moritzi) Nicolson. Herb; lowland MDF, hill MDF; clay soils.

88.5.1 ***Anadendrum microstachyum*** (Miq.) Backer & Alderw. Herb; lowland MDF, hill MDF.

88.6.1 ***Aridarum borneense*** (M.Hotta) Bogner & A. Hay [basionym: *Heteroaridarum borneense* M. Hotta]. Rheophytic, lithophytic; lowland MDF, Kerangas forest, lower mossy forest.

88.6.2 ***Aridarum nicolsonii*** Bogner. Rheophytic, lithophytic; lowland MDF, Kerangas forest, lower mossy forest.

88.6.3 ***Aridarum purseglovei*** (Furtado) M. Hotta. Sungko ungkut (Ib.); herb; riparian forest.

88.7.1 ***Arisaema filiforme*** (Reinw.) Blume. Lidah jin tanah (Mal.); herb; lithophytes on the rock pockets; hill MDF; alt 350 m.

88.8.1 ***Buchepalandra motleyana*** Schott. [syn: *Microcasia oblanceolata* M. Hotta]. Lithophyte, rheophyte; acaulescent, herb; lowland MDF, hill MDF; flat ground, valley bottom, seasonal watercourse, periodically flooded.

88.9.1 ***Colocasia esculenta*** (L.) Schott. Keladi babi; Keladi cina; in damp and wet places, open space and sometimes planted near to settlement.

88.10.1 ***Cryptocoryne auriculata*** Engl. Kiambang batu; Kelatai (Ib.); Teropong ajer (Banjar); aquatic herb, submerged under water or sometimes on the river edge; lowland MDF, Kerangas forest; sandy clay soils.

88.11.1 ***Cyrtosperma merkusii*** Schott. Terrestrial herb; secondary forest, open space, occasional on the river fringe; damp soils, sandy clay soils.

88.12.1 ***Homalomena sonsobrina*** (Schott.) Engl. Entemu mayas (Ib.); Keladi; herb; riparian forest.

88.12.2 ***Homalomena griffithii*** (Schott.) Hook.f. Kemuyang (Ib.); terrestrial herb; lowland MDF, old secondary forest, degraded MDF forest; slope, valley bottom; clay rich soils.

88.12.3 ***Homalomena hostifolia*** Engl. Kemuyang (Ib.); lithophytes, rheophyte, herb; lowland MDF, hill MDF; gentle slope, ridge, impeded drainage; clay soils.

88.12.4 ***Homalomena humilis*** (Jack) Hook.f. Keladi; rheophytic; small herb; Alluvial forest, old secondary forest; riparian forest, river-bank; damp soils, sandy clay soils.

88.12.5 ***Homalomena propinqua*** Schott. Keladi jerenang; herb; Alluvial forest, occasional near stream; sandy clay soils. **Used**: to treat septic wounds, to treat vomiting of blood and blood in stool.

88.12.6 ***Homalomena punctulata*** Engl. Keladi; Buko (Mel.); herb; lowland MDF, hill MDF.

88.12.7 ***Homalomena sagittifolia*** Jungh. ex Schott. Kemuyang; terrestrial herb; lowland MDF, old secondary forest, riparian; slope, valley bottom, clay rich soils. **Used**: for cuts and wounds and to kill head lice.

88.13.1 ***Lasia spinulosa*** (L.) Thwaites. Keladi keris (Mal.); Bunger (Mel.); Bong (Ib.); terrestrial herb; flat ground, periodically flooded; river-bank. **Uses**: leaves, young shoot cooked as vegetable.

88.14.1 ***Phymatarum borneensis*** M. Hotta. Keladi; herb; riparian forest, river-bank; sandy soils.

88.15.1 ***Pipthospatha elongata*** (Engl.) N.E. Br. Sungu-ungkut (Ib.); rheophytic; on rock surface of river-bank.

88.15.2 ***Pipthospatha grabrowskii*** Engl. Sungku-ungkut; rheophytic, occasional on rock surface of river-bank, riparian.

88.16.1 ***Podolasia stipitata*** N.E. Br. Herb; Alluvial forest.

88.17.1 ***Pothos beccarianus*** Engl. Climber; hill MDF, steep slope.

88.17.2 ***Photos hosei*** Rendle. Climber; Kerangas, lowland MDF; ridge; alt 80 – 350 m.

88.17.3 ***Photos insignis*** Engl. Climber; lowland MDF, impeded drainage; alt 30 – 180 m.

88.18.1 ***Rhapidophora beccarii*** Engl. Epiphytic; herb; lowland MDF, hill MDF, riparian forest.

88.18.2 ***Rhapidophora minor*** Hook.f. Epiphyte, climber; lowland MDF; gentle slope, sandy soils.

88.18.3 ***Rhapidophora tenuis*** Engl. Epiphytic, climber; lowland MDF, hill MDF, Kerangas forest, old secondary forest, emperan, river-bank; slope, ridge.

88.19.1 ***Schismatoglottis calyptrata*** (Roxb.) Zoll & Moritz. Small herb in forest floor; lowland MDF, riparian; gentle slope, steep slope; alluvial soils, clay rich soils.

88.19.2 ***Schismatoglottis fasciata*** (Ridl.) Engl. Keladi; herb; riparian forest, river-bank; sandy soils.

88.19.3 ***Schismatoglottis venusta*** A. Hay. Small herb in forets floor; lithophyte; lowland MDF, hill MDF, riparian; gentle slope, steep slope, alluvial soils, clay rich soils.

88.20.1 ***Scindapsus coriaceus*** Engl. Kemuyang; herb; climber, epiphytic; lowland MDF, hill MDF, riparian forest.

88.20.2 ***Scindapsus longistipitatus*** Merr. Herb, epiphytic, climber; lowland MDF, hill MDF, emperan, river-bank.

88.20.3 ***Scindapsus pictus*** Hassk. Herb; epiphytic, climber, stragling herb; lowland MDF, hill MDF, emperan and river-bank.

88.20.4 ***Scindapsus rupestris*** Ridl. Herb, climber, epiphytic; occasional in MDF.

88.20.5 ***Scindapsus treubii*** Engl. Herb; epiphytic, climber, stragling herb; lowland MDF, hill MDF, emperan and river-bank.

89. ARECACEAE

89.1.1 ***Areca chaiana*** J. Dransf. Pinang; palm; riparian forest; lowland MDF, hill MDF; alluvial clay soils.

89.1.2 ***Areca furcata*** Becc. Pinang; palm; Alluvial forest, lowland MDF.

89.1.3 ***Areca insignis*** var. ***mooreï*** (J. Dransf.) J. Dransf. Pinang; palm; lowland MDF, hill MDF.

89.1.4 ***Areca jugahpunya*** J. Dransf. Pinang jugah; palm; lowland MDF, hill MDF, gentle slope.

89.1.5 ***Areca minuta*** Scheff. Pinang (Mal.); understorey palm; solitary or in clump; lowland MDF, riparian; flat ground, gentle slope; clay rich soils, clay soils.

89.1.6 ***Areca subacaulis*** J. Dransf. Tudong pelandok (Ib.); understorey palm; solitary or in clump; lowland MDF, hill MDF, riparian; flat ground, gentle slope; sandy clay soils, clay rich soils.

89.1.7 ***Areca triandra*** Roxb. Pinang mureng (Ib.); understorey palm, solitary or in clump; lowland MDF, hill MDF, riparian; flat ground, gentle slope; sandy clay soils, clay rich soils.

89.2.1 ***Arenga brevipes*** Becc. Aping (Ib.); midstorey/subcanopy, understorey, palm; lowland MDF, hill MDF, riparian; flat ground, gentle slope; alluvial soils, clay rich soils.

89.3.1 ***Calamus acanthochlamys*** J. Dransf. Wi tulang; Rottan; rattan; climber; summit ridge forest.

88.15.1 ***Pipthospatha elongata*** (Engl.) N.E. Br. Sungu-ungkut (Ib.); rheophytic; on rock surface of river-bank.

88.15.2 ***Pipthospatha grabrowskii*** Engl. Sungku-ungkut; rheophytic, occasional on rock surface of river-bank, riparian.

88.16.1 ***Podolasia stipitata*** N.E. Br. Herb; Alluvial forest.

88.17.1 ***Pothos beccarianus*** Engl. Climber; hill MDF, steep slope.

88.17.2 ***Photos hosei*** Rendle. Climber; Kerangas, lowland MDF; ridge; alt 80 – 350 m.

88.17.3 ***Photos insignis*** Engl. Climber; lowland MDF, impeded drainage; alt 30 – 180 m.

88.18.1 ***Rhapidophora beccarii*** Engl. Epiphytic; herb; lowland MDF, hill MDF, riparian forest.

88.18.2 ***Rhapidophora minor*** Hook.f. Epiphyte, climber; lowland MDF; gentle slope, sandy soils.

88.18.3 ***Rhapidophora tenuis*** Engl. Epiphytic, climber; lowland MDF, hill MDF, Kerangas forest, old secondary forest, emperan, river-bank; slope, ridge.

88.19.1 ***Schismatoglottis calyptrata*** (Roxb.) Zoll & Moritz. Small herb in forest floor; lowland MDF, riparian; gentle slope, steep slope; alluvial soils, clay rich soils.

88.19.2 ***Schismatoglottis fasciata*** (Ridl.) Engl. Keladi; herb; riparian forest, river-bank; sandy soils.

88.19.3 ***Schismatoglottis venusta*** A. Hay. Small herb in forets floor; lithophyte; lowland MDF, hill MDF, riparian; gentle slope, steep slope, alluvial soils, clay rich soils.

88.20.1 ***Scindapsus coriaceus*** Engl. Kemuyang; herb; climber, epiphytic; lowland MDF, hill MDF, riparian forest.

88.20.2 ***Scindapsus longistipitatus*** Merr. Herb, epiphytic, climber; lowland MDF, hill MDF, emperan, river-bank.

88.20.3 ***Scindapsus pictus*** Hassk. Herb; epiphytic, climber, stragling herb; lowland MDF, hill MDF, emperan and river-bank.

88.20.4 ***Scindapsus rupestris*** Ridl. Herb, climber, epiphytic; occasional in MDF.

88.20.5 ***Scindapsus treubii*** Engl. Herb; epiphytic, climber, stragling herb; lowland MDF, hill MDF, emperan and river-bank.

89. ARECACEAE

89.1.1 ***Areca chaiana*** J. Dransf. Pinang; palm; riparian forest; lowland MDF, hill MDF; alluvial clay soils.

89.1.2 ***Areca furcata*** Becc. Pinang; palm; Alluvial forest, lowland MDF.

89.1.3 ***Areca insignis*** var. ***mooreï*** (J. Dransf.) J. Dransf. Pinang; palm; lowland MDF, hill MDF.

89.1.4 ***Areca jugahpunya*** J. Dransf. Pinang jugah; palm; lowland MDF, hill MDF, gentle slope.

89.1.5 ***Areca minuta*** Scheff. Pinang (Mal.); understorey palm; solitary or in clump; lowland MDF, riparian; flat ground, gentle slope; clay rich soils, clay soils.

89.1.6 ***Areca subacaulis*** J. Dransf. Tudong pelandok (Ib.); understorey palm; solitary or in clump; lowland MDF, hill MDF, riparian; flat ground, gentle slope; sandy clay soils, clay rich soils.

89.1.7 ***Areca triandra*** Roxb. Pinang mureng (Ib.); understorey palm, solitary or in clump; lowland MDF, hill MDF, riparian; flat ground, gentle slope; sandy clay soils, clay rich soils.

89.2.1 ***Arenga brevipes*** Becc. Aping (Ib.); midstorey/subcanopy, understorey, palm; lowland MDF, hill MDF, riparian; flat ground, gentle slope; alluvial soils, clay rich soils.

89.3.1 ***Calamus acanthochlamys*** J. Dransf. Wi tulang; Rottan; rattan; climber; summit ridge forest.

89.3.2 ***Calamus blumei*** Becc. Wi kijang; rattan; climber; lowland MDF, hill MDF.

89.3.3 ***Calamus collarifera*** Becc. Wi dudok (Ib.); climber; lowland MDF, hill MDF; gentle slope, steep slope, ridge. Uses: handicraft material and used for tying.

89.3.4 ***Calamus conirostris*** Becc. Rotan; lowland MDF.

89.3.5 ***Calamus convallium*** J. Dransf. Wi sero; Old secondary forest, lowland MDF, hill MDF; gentle slope, ridge; alluvial soils.

89.3.6 ***Calamus corrugatus*** Becc. Wi janggut; rattan; climber; occasional in MDF.

89.3.7 ***Calamus divaricatus*** Becc. Wi patong; rattan, climber; montane forest.

89.3.8 ***Calamus erioacanthus*** Becc. Wi buluh; rattan, climber; lowland MDF.

89.3.9 ***Calamus flabellatus*** Becc. Wi bayau; Wi takong (Ib.); climber; lowland MDF; gentle slopes, ridges. **Uses**: handicraft material.

89.3.10 ***Calamus javensis*** Bl. Wi batu; Wi peladas (Ib.); liana, climber; lowland MDF, hill MDF; gentle slopes, steep slope, ridge. **Uses**: handicraft material

89.3.11 ***Calamus laevigatus*** var. ***mucronatus*** (Becc.) J. Dransf. Wi sugi; rattan; riparian forest.

89.3.12 ***Calamus leloi*** J. Dransf. Rotan; climber; old secondary forest; slope, ridge; alluvial soils.

89.3.13 ***Calamus lobbianus*** Becc. Wi bukop (Ib.); liana, climber; lowland MDF; gentle slope, ridge. Uses: handicraft materials.

89.3.14 ***Calamus mattanensis*** Becc. Wi temawai; palm; old secondary forest.

89.3.15 ***Calamus myriacanthus*** Becc. Wi pelankar; rattan; climber; lowland MDF, hill MDF; alluvial clay soils.

89.3.16 ***Calamus ornatus*** Blume. Wi jelayan (Ib.); liana, climber; lowland MDF. **Uses**: fruit edible or made into sambal.

89.3.17 ***Calamus oxleyanus*** Tesym. & Binn. Rotan; climber; lowland MDF, hill MDF.

89.3.18 ***Calamus paspalanthus*** Becc. Wi tingkaw; Wi singkau (Ib.); liana, climber; lowland MDF; steep slopes.

89.3.19 ***Calamus pilosellus*** Becc. Rotan; rattan, climber; MDF.

89.3.20 ***Calamus pogonacanthus*** Becc. Wi tut; rattan, climber; Alluvial forest, old secondary forest.

89.3.21 ***Calamus pseudoulur*** Becc. Wi lemba (Ib.); climber, liana; lowland MDF, hill MDF, gentle slope, steep slope, ridge.

89.3.22 ***Calamus sabalensis*** J. Dransf. Rotan; climber; lowland MDF, hill MDF.

89.3.23 ***Calamus sarawakensis*** Becc. Wi bukop (Ib.); Uwai bulu (Mel.); liana, climber; lowland MDF, flat ground. **Uses:** used for tying.

89.3.24 ***Calamus tenompokensis*** Furtado. Rotan, climber; lowland MDF, hill MDF; slope, ridge; clay soils.

89.4.1 ***Caryota mitis*** Lour. Mudor (Ib.); midstorey/subcanopy palm; lowland mDF, hill MDF, Kerangas forest, old secondary forest, secondary forest; hill slope, ridge, emperan; wide range of soils. **Uses**: source for starch.

89.5.1 ***Ceratolobus discolour*** Becc. Wi kijang, rattan, climber; lowland MDF.

89.6.1 ***Daemonorops acamptostachys*** Becc. Wi dudok (Ib.); liana, climber, stragling palm; lowland MDF, hill MDF, Kerangas forest; flat ground, gentle slope, ridge; alluvial soils, clay rich soils.

89.6.2 ***Daemonorops atra*** J. Dransf. Wi labu; rattan, climber; hill MDF; gentle slope, ridge; clay-rich soils.

89.6.3 ***Daemonorops collarifera*** Becc. Rotan; climber; lowland MDF, hill MDF.

89.6.4 ***Daemonorops cristata*** Becc. Wi empunak; climber; montane forest.

89.6.5 ***Daemonorops didymophylla*** Becc. Wi jeranag; Wi darum (Ib.); liana, climber; lowland MDF.

89.6.6 ***Daemonorops fissa*** Blume. Rotan, climber; lowland MDF, hill MDF, slope, ridge; clay-rich soils.

89.6.7 ***Daemonorops formicaria*** Becc. Wi labu; climber; MDF.

89.6.8 ***Daemonorops hystrix*** var. ***exulans*** Becc. Rotan; climber; lowland MDF, hill MDF.

89.6.9 ***Daemonorops ingens*** J. Dransf. Wi kepler; climber; MDF.

89.6.10 ***Daemonorops korthalsii*** Blume. Wi karut; climber; riparian forest, river-bank; sandy soils.

89.6.11 ***Daemonorops longistipes*** Burret. Wi duduk; climber; MDF.

89.6.12 ***Daemonorops microstachys*** Becc. Wi dudok (Ib.); liana, acaulescent; lowland MDF, hill MDF; steep slopes, ridges, impeded drainage, periodically flooded.

89.6.13 ***Daemonorops periacantha*** Miq. Wi empunak; rattan, climber; lowland MDF, hill MDF; slope, ridge; alluvial clay soils.

89.6.14 ***Daemonorops ruptilis*** Becc. Wi dudok; rattan, climber; old secondary forest, lowland MDF, hill MDF.

89.6.15 ***Daemonorops sabut*** Becc. Wi lepoh (Ib.); liana, climber; secondary forest; steep slopes.

89.7.1 ***Eugeissonia insignis*** Becc. Pantu; palm; old secondary forest; occasional near stream, hill slope. **Uses:** source for local starch.

89.8.1 ***Iguanura chaiana*** R. Kiew. Pinang; palm; riparian forest.

89.8.2 ***Iguanura curvata*** R. Kiew. Pinang tudung pelanduk; understorey palm; lowland MDF, hill MDF, old secondary forest; slope, ridge; clay rich soils, alluvial clay soils.

89.8.3 ***Iguanura elegans*** Becc. Pinang; palm; lowland MDF, hill MDF; gentle slope, ridge; sandy clay soils.

89.8.4 ***Iguanura cf. melinauensis*** Kiew. Understorey palm; lowland MDF, hill MDF, Kerangas forest, riparian; alluvial soils, sandy clay soils.

89.8.5 ***Iguanura wallichiana*** (Wall. Ex Mart.) Hook.f. Pinang, palm; lowland MDF, hill MDF.

89.9.1 ***Korthalsia cheb*** Becc. Rotan, climber; hill MDF.

89.9.2 ***Korthalsia echinometra*** Becc. Wi wisro; climber; open waste land.

89.9.3 ***Korthalsia flagellaris*** Miq. Wi danan; rattan, climber; summit ridge forest.

89.9.4 ***Korthalsia furcata*** Becc. Wi chit (Ib.); climber, liana; lowland MDF, hill MDF, gentle slope, steep slope, ridge; alluvial soils, clay rich soils.

89.9.5 ***Korthalsia hispida*** Becc. Wi asas; rattan, climber; lowland MDF, hill MDF, slope, ridge; sandy clay soils.

89.9.6 ***Korthalsia rigida*** Blume. Wi dahan; rattan, climber; lowland MDF.

89.9.7 ***Korthalsia rostrata*** Blume. Wi chit; Wi semut (Ib.); liana, climber; lowland MDF, Hill MDF; gentle slopes, ridge.

89.9.8 ***Korthalsia rostratioides*** Mogea. Rotan; climber; lowland MDF, hill MDF.

89.10.1 ***Licuala bififolia*** Mogea. Palas; fan palm; riparian forest, emperan; alluvial clay soils.

89.10.2 ***Licuala borneensis*** Becc. Pelat (Ib.); understorey palm, solitary or in clump; lowland MDF, hill MDF; flat ground, gentle slope, ridge; alluvial soils, sandy clay soils. **Uses**: leaves used for handicraft, making mat and roofing and also for wraping food.

89.10.3 ***Licuala petiolata*** Becc. Pelat (Ib.); understorey palm, frequently solitary; lowland MDF, hill MDF, Kerangas forest, riparian; flat ground, gentle slope, ridge; alluvial soils, clay rich soils. **Uses:** same as 56.8.1, pith and young shoot cooked as vegetable.

89.10.4 ***Licuala petiolulata*** Becc. Palas; Daun iseng (Mel.); palm, solitary or rarely in clump; lowland MDF, hill MDF, Kerangas forest; flat ground, gentle slope; sandy clay soils.

89.11.1 ***Nenga*** sp. Pinang; palm; lowland MDF, hill MDF, Kerangas forest; gentle slope, valley bottom, occasional near stream; damp clay soils.

89.12.1 ***Oncosperma horridum*** Scheff. Nibong (Mal.); midstorey/ subcanopy palm; degraded lowland MDF; steep slope. **Uses:** trunk used for construction, shoot as vegetable.

89.13.1 ***Pinanga cf. albescens*** Becc. ex H. Winkler. Pinang hutan; understorey palm; lowland MDF, hill MDF, Kerangas forest, riparian; gentle slope, ridges; alluvial soils, clay rich soils. **Uses:** for blood in stool.

89.13.2 ***Pinanga angustisecta*** Becc. Pinang muring (Ib.); understorey palm; lowland MDF, hill MDF, gentle slope, ridge; alluvial soils, sandy clay soils.

89.13.3 ***Pinanga aristata*** Becc. Pinang pelandok; palm; lowland MDF, hill MDF.

89.13.4 ***Pinanga bifidovariegata*** Mogea. Pinang; palm; riparian forest, summit ridge forest.

89.13.5 ***Pinanga brevipes*** Becc. Pinang mureng; palm; old secondary forest; gentle slope, ridge; alluvial clay soils.

89.13.6 ***Pinanga crassipes*** Becc ex Winkler. Pinang laka (Ked.); palm; Alluvial forest. **Uses:** for blood in stool.

89.13.7 ***Pinanga lepidota*** Rendle. Pinang mureng; Petagar pisa-pisa (Ked.); palm; lowland MDF, hill MDF, submontane forest. **Uses:** medicinal, used in *air masak* and for headache and migraine.

89.13.8 ***Pinanga limosa*** Ridl. Pinang mureng; palm; lowland MDF, hill MDF, old secondary forest; alluvial clay soils.

89.13.9 ***Pinanga cf. mooreana*** J. Dransf. Pinang ayat (Ib.); midstorey / subcanopy palm, shrub, herb in understorey; lowland MDF, degraded lowland MDF; flat ground, gentle slope, ridge, periodically flooded.

89.13.10a ***Pinanga patula*** Blume. Pinang mureng; palm; riparian forest, lowland MDF, hill MDF.

89.13.10b ***Pinanga patula*** Blume var. ***borneensis*** Becc. Pinang; palm; riparian forest, lowland MDF, hill MDF.

89.13.11 ***Pinanga pilosa*** (Burret) J. Dransf. Pinang; palm; riparian forest.

89.13.12 ***Pinanga ridleyana*** Becc ex Furtado. Lowland MDF; flat ground, periodically flooded; alluvial deposits soils.

89.13.13 ***Pinanga salicifolia*** Blume. Pinang; palm; lowland MDF.

89.13.14 ***Pinanga sessilifola*** Furtado. Pinang; palm; riparian forest; lowland MDF, hill MDF.

89.13. 15a ***Pinanga tenella*** (H. Wendl.) Scheff. var. ***tenuissima.*** Rheophyte; alluvial forest; lowland MDF, degraded lowland MDF, Hill MDF; periodically flooded; alluvial deposits soils.

89.13.16 ***Pinanga tomentella*** Becc. Pinang; palm; lowland MDF.

89.13.17 ***Pinanga trichoneura*** Becc. Pinang; palm; montane forest.

89.13.18 ***Pinanga cf. variegata*** Becc. Understorey palm; lowland MDF, hill MDF, riparian; gentle slope; alluvial soils, clay rich soils.

89.13.19 ***Pinanga*** sp.3. Lowland MDF, near to fresh water; with bullate leaves.

89.13.20 ***Pinanga*** sp.5. Understorey palm; lowland MDF, hill MDF, Kerangas forest, river-bank; flat ground, gentle slope; sandy clay soils.

89.13.21 ***Pinanga*** sp.8. Understorey palm; degraded lowland MDF, river-bank; sandy clay soils.

89.14.1 ***Plectocomia mulleri*** Bl. Wi tibu (Ib.); degraded hill MDF; steep slope.

89.15.1 ***Plectocomiopsis geminiflorus*** (Griff.) Becc. Wi laleh (Ib.); in degraded MDF; ridge; alt 250 – 500 m. **Uses**: shoot as vegetable.

89.15.2 ***Plectocomiopsis mira*** J. Dransf. Wi matar (Ib.); degraded lowland MDF; ridge; alt 80 – 500 m.

89.16.1 ***Pogonotium ursinum*** (Becc.) J. Dransf. Wi bulu (Ib.); liana; alluvial forest; lowland MDF, hill MDF; gentle slope, steep slope, ridge.

89.17.1a ***Salacca affinis*** Griff. Ridan (Ib.); lowland M DF; steep slope, impeded drainage; alt 50 – 250 m. **Uses**: leaves used to make *atap* (for shelter) and fruits edible.

89.17.1b ***Salacca affinis*** Griff. var. ***borneensis*** (Becc.) Mogea. Salak; palm; Alluvial forest.

89.17.2 ***Salacca dransfieldiana*** Mogea. Salak; palm; lowland MDF, hill MDF; slope, ridge; alluvial clay soils.

89.17.3 ***Salacca vermicularis*** Becc. Kepela; Lemaiong (Ib.); acaulescent; alluvial forest, lowland MDF; flat ground, steep slope, impeded drainage, periodically flooded. **Uses**: fruit edible, rachis for fishing poles.



PLATE 2: Arecaeae. A: *Pinanga variegata*; B: immature fruits of *Pinanga variegata*; C: *Pinanga arundinacea*; D: fruits of *Pinanga arundinacea*; E: *Pinanga mooreana*; F: fruits of *Pinanga mooreana*; G: *Pinanga tenella* var. *tenuissima*.



PLATE 3: Araceae. Left (from top to bottom) *Alocasia infernalis; Alocasia scabriscula, unidentified aroid, Buchepalandra motleyana; Alocasia robusta; Piptospatha grabrowskii.*



PLATE 4. Araceae. Top (left): *Arisaema filiforme*; top (right): *Amorphophallus costatus*; bottom: *Cryptocoryne auriculata.*

90. ASCLEPIADACEAE

90.1.1 ***Dischidia albida*** Griff. Climber; riparian forest.

90.1.2 ***Dischidia bengalensis*** Colebr. Tipang kura (Ib.); climber; lowland MDF, hill MDF. **Used**: to treat body pain and inflammation of the liver.

90.1.3 ***Dischidia major*** (Vahl.)Merr. Climber; Kerangas; alt 90 – 150 m.

90.1.4 ***Dischidia tubulifera*** King & Gamble. Climber; occasional in MDF.

90.2.1 ***Hoya coronaria*** Blume. Akar gelumang (Ib.); Hoya; epiphytic, climber; lowland MDF, hill MDF, occasional on emperan or river-bank.

90.2.2 ***Hoya multiflora*** Blume. Epiphytic or climber; degraded lowland MDF; gentle slopes; alt 110 m alt.

90.2.3 ***Hoya*** sp.1 indet. Climber; riparian forest.

** *Current classification: both Dischidia and Hoya are placed under the Apocynaceae family*

91. ASTERACEAE

91.1.1 ***Adenostemma lavenia*** (L.) O.K. Sempulut babi (Ib.); small herb in young shifting cultivation land. **Uses**: to treat breast cancer and fever.

91.2.1 ***Ageratum conyzoides*** L. Mambung (Ib.); herb, open spaced; secondary forest or degraded soils. **Uses**: medicinal, leaves crushed and used for eye drops.

91.3.1 ***Blumea balsamifera*** DC. Sembong; terrestrial herb; secondary forest, open space; sandy soils, clay rich soils. **Uses**: leaves uses as mixture for bathing of women after giving birth.

91.4.1 ***Chromolaena odorata*** (L.) R.M. King & H. Rob. [syn: *Eupatorium odoratum* L.]. Rumput kapal terbang; suffrutescent herb

or shrub; open spaced, damp and wet places; occasional on river-bank. **Uses**: medicinal.

91.5.1 ***Cosmos caudatum*** Kunth. Cantik manis; herb; cultivated. **Uses**: ornamental and food; young shoot eaten raw as ulam.

91.6.1 ***Elephantopus scaber*** L. Tutup bumi; Tapak leman (Mal.); small terrestrial herb; open space, damp soils. **Uses**: medicinal, for dysentery.

91.7.1 ***Emilia sonchifolia*** (L.) DC. [basionym: *Cacalia sonchifolia* L.] Terrestrial herb; secondary forest, open space, occasional in the area after shifting cultivation activities; clay soils, clay rich soils. **Uses**: medicinal.

91.8.1 ***Erechtites hieraciifolia*** (L.) DC. Herb; secondary forest, abundant in the area of shifting cultivation. Used: leaves edible, cooked as vegetable.

91.9.1 ***Melanthera biflora*** (L.) Wild. [syn: *Wedelia biflora* (L.) DC.]. Herb on forest floor, creeping; open space, damp and wet places; sandy clay soils; pantropics weed.

91.10.1 ***Mikania micrantha*** Kunth. Herbaceous climber; secondary forest, degraded secondary forest, open spaced.

92. BAMBUSACEAE

92.1.1 ***Bambusa vulgaris*** Schard. Buluh kuning; cultivated. **Uses**: ornamental, ritual ceremonies.

92.2.1 ***Dendrocalamus asper*** Backer ex K. Heyne. Buluh betung; Tubu manis (Ib.); bamboo; secondary forestr, old secondary forest, degraded secondary forest; slope, ridge; sandy clay soils, clay rich soils.

92.3.1 ***Dinochloa*** sp.indet. Buluh memanjat; climber; hill MDF, Kerangas forest, lower mossy forest; alt up to 1200 m; slope, ridge, open space; sandy soils, alluvial clay soils.

92.4.1 ***Schizostachyum brachycladum*** (Kurz.) Kurz. Buluh lemang; degraded secondary forest, old secondary forest; occasional near

river-bank or stream; sandy soils, alluvial clay soils. **Uses**: stem used for making *lemang* (roosted rice) and for crafting

92.4.2 ***Schizostachyum hantu*** S. Dransfield. Buloh mas; Ai buloh (Ib.); Lachau (Ib.); bamboo near longhouse. **Uses**: for curing whooping cough especially in babies.

93. BEGONIACEAE

93.1.1 ***Begonia asperula*** L. Riang; lowland MDF, hill MDF, emperan; flat ground, gentle slope; alluvial clay soils, clay soils.

93.1.2 ***Begonia calcarea*** Ridl. Riang; lowland MDF, riverine; damp and wet places; flat ground, valley bottom, sandy clay soils. **Note**: new location recorded for Sarawak.

93.1.3 ***Begonia dampakensis*** Meekiong sp.nov. Tengelai (Pen.); Riang (Ib.); herb; creeping on the rock surface; hill MDF, Kerangas forest, emperan, river-bank; clay rich soils. **Note**: description and illustration – see Appendix 1.

93.1.4 ***Begonia kurakura*** Tawan, Ipor & Meekiong. Riang kura (Ib.); terrestrial herb, sometimes lithophytes; lowland MDF, gentle slope, valley bottom, clay rich soils. **Note**: newly described species from Lanjak Entimau Wildlife Sanctuary.

93.1.5 ***Begonia longiseta*** Irmsch. Riang bulu (Ib.); terrestrial herb; hill MDF, emperan; hill slope, ridge, clay rich soils.

93.1.6 ***Begonia pleioclada*** Sands. Riang; herb, lowland MDF; damp and wet places; valley bottom, gentle slope, steep slope, sandy rich soils.

93.1.7 ***Begonia promethea*** Ridl. [syn: *Begonia beccarii* Warb.] Riang; Tengelai (Pen.); terrestrial herb; lowland MDF, hill MDF, gentle slope; clay rich soils.

93.1.8 ***Begonia pubescens*** Ridl. Riang; terrestrial herb; lowland MDF, hill MDF, riparian; gentle slope; rich clay soils.

93.1.9 ***Begonia pyrrha*** Ridl. Riang; herb; lowland MDF, riverine; flat ground, gentle slope, valley bottom; sandy rich soils.

93.1.10 ***Begonia sarawakensis*** Ridl. Riang; terrestrial herb; lowland MDF, Kerangas forest, lower mossy forest; alt up to 1000 m; sandy soils, clay rich soils.

93.1.11 ***Begonia xiphophylla*** Irmsch. Riang; herb; lowland MDF, hill MDF; gentle slope, valley bottom; clay-rich soils.

93.1.12 ***Begonia*** sp.A indet. Riang; terrestrial herb; lowland MDF, occasional in emparan vegetation; sandy clay soils. **Note**: large reddish floral bract [*aff. Begonia rhodochaeta* S. Julia & Kiew].

93.1.13 ***Begonia*** sp.B indet. Riang; terrestrial herb; lithophytic; Kerangas forest.

94. BURMANIACEAE

94.1.1 ***Burmania championii*** Thawaites. Kulat; saprophyte; lowland MDF, open space.

94.1.2 ***Burmania longifolia*** Becc. Epiphytic herb; lowland MDF, Kerangas forest, mossy montane forest.

95. CAMPANULACEAE

95.1.1 ***Pentaphragma acuminatum*** Airy Shaw. Herb; lowland MDF, hill MDF; alluvial soils.

95.1.2 ***Pentaphragma albiflorum*** H.H.W. Pearson. Herb; occasional in MDF.

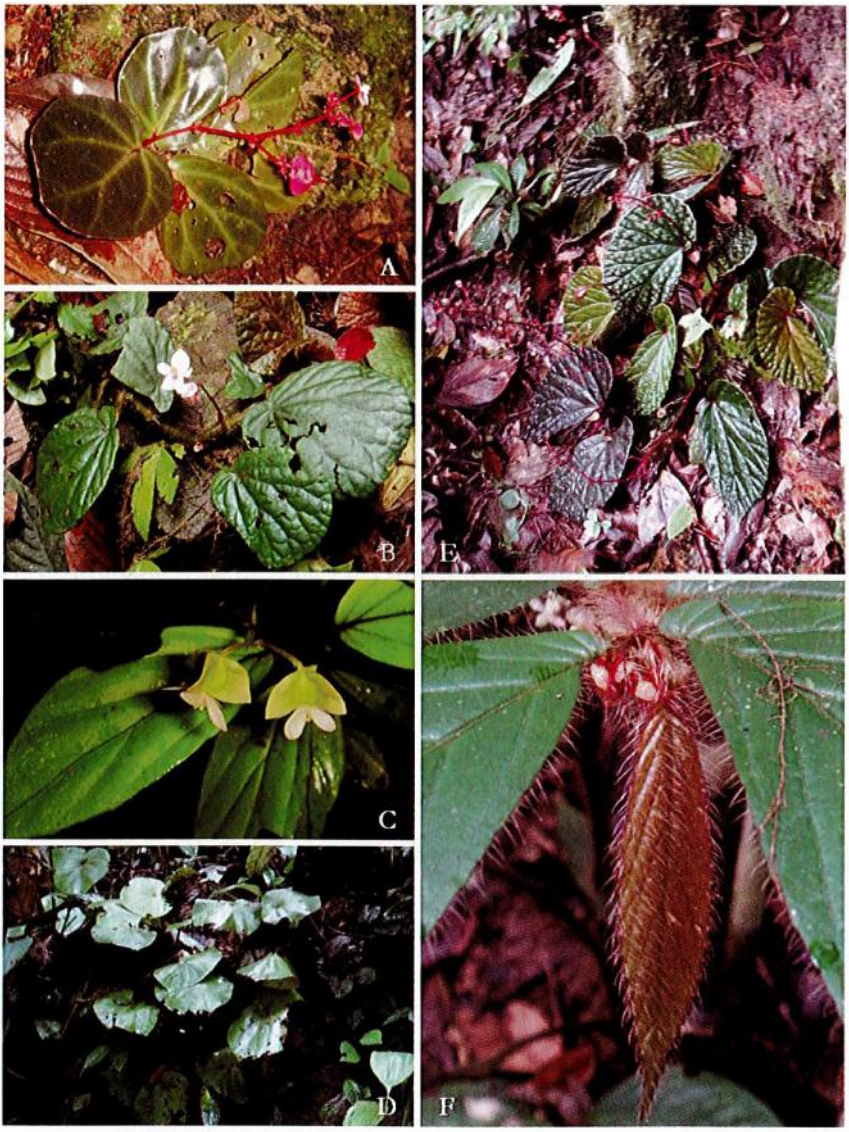


PLATE 5. Begoniaceae. **A**: *Begonia kurakura*; **B**: *Begonia pyrrha*; **C**: *Begonia pleioclada*; **D**: *Begonia calcarea*; **E**: *Begonia promethea*; **F**: *Begonia longiseta*

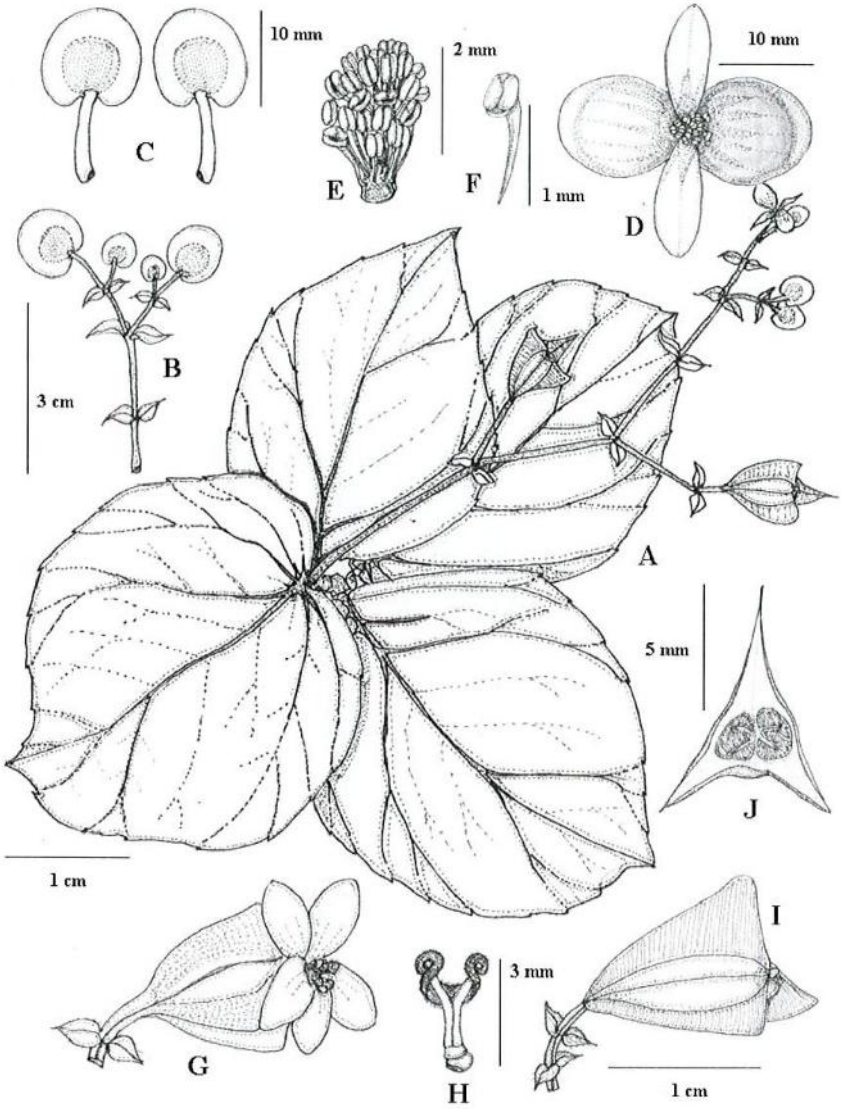


Figure 14: *Begonia kurakura* Tawan, Ipor & Meekiong. **A**: whole plant; **B & C**: unopened male flowers; **D**: opened male flowers; **E**: cluster of stamens; **F**: stamens; **G**: female flower; **H**: style and stigmas; **I**: fruit; **J**: cross-section of the fruit

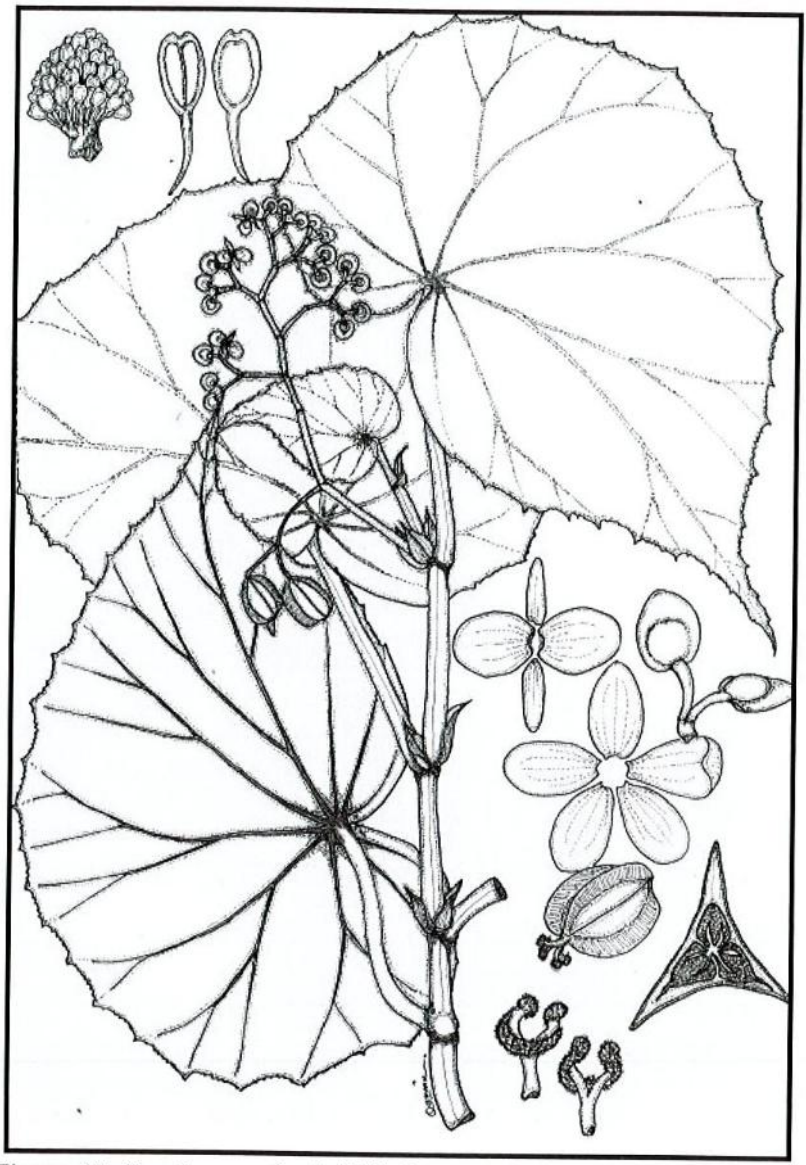


Figure 15: *Begonia sarawakensis* Ridl. **A**: part of plant; **B**: unopened male flowers; **C**: male flowers (stamens removed); **D**: cluster of stamens; **E**: stamens; **F**: female flower (ovary removed); **G**: ovary (sepals removed); **H**: style and stigmas; **I**: cross-section of fruit.

96. CECROPIACEAE

96.1.1 ***Poikilosperma cordiofolium*** (Barg-Petr.) Merr. Entaban (Ib.); epiphytic shrub, climber; lowland MDF, frequently on edge of forest, hill MDF, secondary forest.

96.1.2 ***Poikilosperma microstachys*** (Barg-Petr.) Merr. Entaban (Ib.); epiphytic, shrub, climber, stragling shrub; lowland MDF, hill forest, Kerangas forest, secondary forest.

96.1.3 ***Poikilospermum scabrinervium*** (Barg – Petr.) Merr. Entaban (Ib.); epiphytic, climber, stragling shrub; lowland MDF, hill MDF, secondary forest.

96.1.4 ***Poikilospermum subtrinervium*** (Miq.) Chew. Entaban (Ib.); epiphytic, climber, stragling shrub; lowland MDF, hill MDF, secondary forest, riparian.

97. CHLORANTHACEAE

97.1.1 ***Chloranthus erectus*** (Buch.-Ham.) Verd. Herb; riparian forest, river-bank; sandy soils.

98. COMMELINACEAE

98.1.1 ***Amischotolype griffithii*** (C.B. Clarke) I.M. Turner. Terrestrial herb; lowland MDF, emperan, occasional near steam; damp place, periodically flooded; sandy soils, clay rich soils.

98.2.1 ***Commelina diffusa*** Burm.f. Bakelar (Mel.); creeping, tufted herb; damp and wet place; damp soils; origin from Pacific Islands.

98.3.1 ***Forrestia glaberrima*** Hook..f. Herb; Alluvial forest; damp clay soils.

98.3.2 ***Forrestia marginata*** Hassk. Herb; Alluvial soils, occasional near stream; damp sandy clay soils.

99. CONVOLVULACEAE

99.1.1 ***Ipomea aquatica*** Forssk. [synonym: *Ipomea reptans* Poir.] Kangkong; climber, creeper, scrambling herb; secondary forest, damp and wet places; sometimes cultivated. Uses: eaten raw as *ulam* and cooked as vegetable.

99.1.2 ***Ipomea gracilis*** R.Br. Akar kemibit (Ib.); creeper. **Used**: young leaves cooked as vegetable.

99.1.3 ***Ipomea indica*** (Burm.f.) Merr [synonym: *Ipomea congesta* R.Br.] Ubei sekilak (Mel.); cultivated; clay rich soils. **Uses**: tuber edible.

99.2.1 ***Merremia borneensis*** Merr. Akar melabok (Ib.); climber, creeper, scrambling shrub; frequent in secondary forest, also on the edge of forest.

99.2.2 ***Merremia pulchra*** Ooststr. Climber, creeper, scrambling herb; secondary forest, open space, edge of forest; alluvial soils, clay rich soils.

100. COSTACEAE

100.1.1 ***Hellenia borneensis*** (A.D. Poulsen) Govaerts, Setawar hutan; herb; lowland MDF, damp and wet places; gentle slope, steep slope. Note: a newly described species from Nanga Balleh, Kapit, also rcorded in the LEWS.

100.1.2a ***Hellenia globosa*** (Blume) S.R. Dutta var. ***globosa,*** Setawar hutan; lowland MDF, hill MDF, occasional in the edge of stream; slope, ridge; sandy soils, sandy clay soils.

100.1.2b ***Hellenia globosa*** (Blume) S.R. Dutta var. ***velutina*** (Ridl.) Holtt. Setawar hutan; lowland MDF, hill MDF, emperan; hill slope, ridge; valley bottom; sandy soils, clay soils.

100.1.2c ***Hellenia globosa*** (Blume) S.R. Dutta **var.A nov**. Setawar hutan; lowland MDF, hill MDF; steep slope, ridge, valley bottom, periodically flooded; sandy soils, clay rich soils.

100.1.3 ***Hellenia speciosa*** (J. Koenig) Govaerts, Setawar hutan; frequent in open space, secondary forest, edge of forest; clay rich soils, alluvial soils. **Uses**: medicinal.

100.2.1 ***Paracostus paradoxus*** (K.Schum.) C.D. Specht, Terrestrial herb, lowland MDF, frequent in damp places near the river or stream; flat ground, gentle slope; clay rich soils.

101. CUCURBITACEAE

101.1.1 ***Alsomitra macrocarpa*** (Blume) M.J. Roemer. Akar emperkak (Ib.); Randau emperkak (Ib.); light demanding climber; lowland MDF. **Used**: to kill worms in wounds of pigs and chickens and to heal wounds.

101.2.1 ***Trichosanthes tricuspidata*** Lour. [synonym: *Trichosanthes palmata* Roxb.] Akar emperekak (Ib.); climber, old secondary forest, secondary forest; clay rich soils. **Note**: few species of *T. tricuspidata-bracteata* complex are treated here.

101.2.2 ***Trichosanthes*** sp. Climber, secondary forest, degraded lowland MDF, gentle slope. Note: matured fruit reddish.

102. CYPERACEAE

102.1.1 ***Carex perakensis*** Clarke var. ***borneensis*** (Clarke) Noot. Sedge; montane forest.

102.2.1 ***Cyperus compressus*** L. Secondary forest, belukar, open spaced; sandy soils; pantropical weed.

102.2.2 ***Cyperus halpan*** L. Open space, impeded drainage, damp area; sandy soils, infertile soils; pantropical weed.

102.2.3 ***Cyperus javanicus*** Houtt. Open space, impeded drainage; sandy soils; pantropical weed.



PLATE 6. Costaceae. **A**: *Hellenia globosa* var. *globosa*; **B**: *Hellenia globosa* var. *velutina*; **C**: *Hellenia globosa* var. A. nov.; **D**: *Paracostus paradoxus*; **E**: *Hellenia borneensis*; **F**: *Hellenia speciosus*

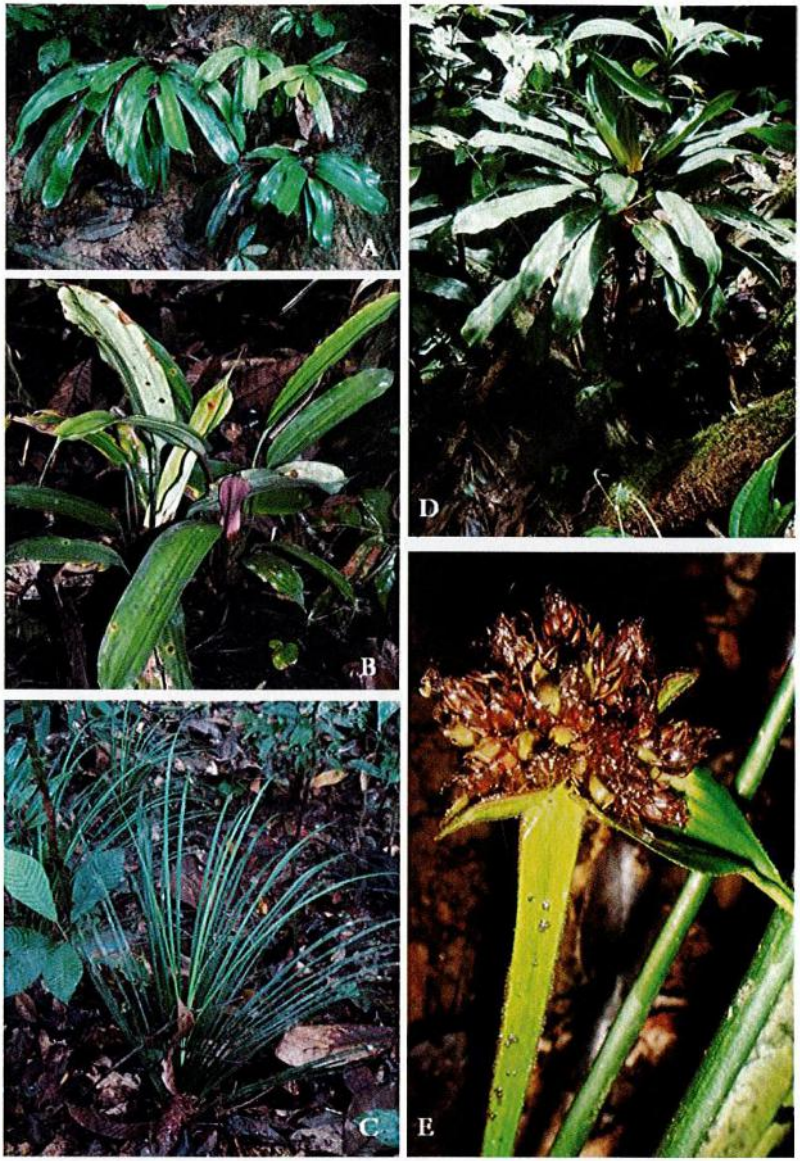


PLATE 7. Cyperaceae. **A**: *Mapania richardsii*; **B**: *Mapania cuspidata* var. *cuspidata*; **C**: *Mapania wallichii*; **D**: *Mapania meditensis*; **E**: *Mapania latifolia*



PLATE 8. Cyperaceae – *Mapania saputaniana.* **A**: habit and habitat; **B**: lower part of the plant, reddish maroon leaf sheaths and cataphyll; **C**: inflorescence

102.2.4 ***Cyperus rotundus*** L. Sedge; open space, secondary forest; bare rock and boulders; pantropical weed, common in cultivation areas.

102.2.5 ***Cyperus tenuiculmis*** Boeck. Open space; damp soils; pantropical weed.

102.3.1 ***Fimbristylis cymosa*** R.Br. Open space, rarely in secondary forest; infertile soils; pantropical weed.

102.3.2 ***Fimbristylis dichotoma*** (L.) Vahl. Open space, damp soils, infertile soils; pantropical weed

102.3.3 ***Fimbristylis globulosa*** (Retz.) Kunth. Open space, area after cleared; infertile soils; pantropical weed.

102.4.1 ***Hypolytrum nemorum*** (Vahl.) Spreng. Engkarong (Ib.); lowland MDF, frequently on river-banks, damp and wet place with muddy soils; sandy clay soils.

102.5.1 ***Mapania borneensis*** Merr. Mengkuang; by the riverside, sandy soils, **Notes**: Similar to *M. richardsii* but can be distinguished by having an abruptly narrowed leaf apex and having single spike in inflorescence. Young emerging leaves light yellowish.

102.5.2a ***Mapania cuspidata*** (Miq.) Uittien var. ***cuspidata.*** Pandan tikus (Mal.); Serapat; herb; on flat ground; gentle slopes; riparian; periodically flooded. **Notes**: Moderately robust, rhizomatous herb and easily recognized by having a distinct pseudopetiole. The variety *cuspidata* can be differentiated with variety *petiolata* by leaf-blade oblong or elliptic–oblong, up to 8 times longer than wide and sheath broadly ovate.

102.5.2b ***Mapania cuspidata*** (Miq.) Uittien var. ***petiolata.*** Pandan tikus (Mal.); Serapat; herb; gentle slopes, riparian; periodically flooded.

102.5.3 ***Mapania enodis*** (Miq.) C.B. Clarke. Pandan; Mengkuang; herb; in MDF, gentle slopes. **Notes**: Robust, rhizomatous herb. Leaves basal, up to 110 cm long, leaf-blade narrowly linear, apex very gradually narrowed. Inflorescence terminal, composed of 1 spike but sometimes up to 5 spikes

102.5.4 ***Mapania latifolia*** Uittien. Pandan tikus (Mal.) Serapat; Sesempit; herb; in MDF; flat ground; periodically flooded. **Notes**: Similar to *M. cuspidata* and *M. meditensis* by having a distinct pseudopetiole but can be differentiated by stoloniferous, trigonous to subtriquetrous.

102.5.5 ***Mapania longiflora*** C.B. Clarke. Pandan; Mengkuang (Mal.); herb; in MDF on gentle slopes; ridges. **Notes**: This species easily differentiated from other species by having elongated spike, large green involucral bracts, membranous spicoid and floral bracts. Leaves basal, up to 150 cm long, leaf-blade linear, thickly coriaceous with gradually narrowed apex, base gradually narrowed into sheaths, secondary nerves distinct, more or less flat in cross section.

102.5.6 ***Mapania meditensis*** D.A. Simpson. Pandan tikus (Mal.); herb; damp and wet places; usually near stream; flat ground; periodically flooded. **Notes**: The spikes being sessile with much longer spicoid and usually totally hidden within the subtending leaf sheaths.

102.5.7 ***Mapania obscuriflora*** D.A. Simpson. Herb; near to small stream; sandy soils. **Notes**: Inflorescence terminal, mostly sessile, partially obscured by leaf sheaths, composed a single spike. New record for Sarawak.

102.5.8a ***Mapania palustris*** (Hassk. ex Steud.) F.-Vill var. ***palustris.*** Mengkuang (Mal.); herb; damp and wet places; usually along river bank, flat ground; periodically flooded.

102.5.9 ***Mapania richardsii*** Uittien. Pandan tikus (Mal.) herb; in MDF on hill slopes or rock pockets by the riverside.

102.5.10 ***Mapania cf. sessilis*** Merr. Herb; in MDF, hill slopes. Note: new record for Sarawak.

102.5.11 ***Mapania sapuaniana*** Shabdin, Pandan tikus (Mal.); herb on forest floor or lithophytes on rock pockets; damp and wet places; rideges or slopes near stream.

102.5.12a ***Mapania sumatrana*** (Miq.) Benth. subs. ***pandanophylla*** (F. Muell.) D.A. Simpson. Herb; in MDF, gentle slopes, flat ground.

102.5.13 ***Mapania wallichii*** C.B. Clarke. Herb; in MDF on clay soils; gentle slopes; flat ground.

102.6.1 ***Paramapania radians*** (C.B. Clarke) Uittien. Rumput pandan (Mal.); Sai gunung (Ked.); herb; hill slopes or rock pockets by the riverside. **Uses**: as hair dye and to prevent baldness.

102.7.1 ***Scleria purpurascens*** Steud. Sedge; Rumput lembing (Mal.); lowland MDF, common on damp place in forest edge; or falt ground, periodicall flooded. **Uses**: to kill parasitic worms in dogs.

102.7.2 ***Scleria sumatrensis*** Retz. Rumput lembing (Mal.); sedge; common on damp and wet places; or flat ground periodically flooded; more common in secondary forest.

103. DIOSCOREACEAE

103.1.1 ***Dioscorea alata*** L. Ubi randau (Ib.); climber; old secondary forest. **Used**: tuber cooked as vegetable.

103.1.2 ***Dioscorea havilandii*** Prain & Burkill. Ubi jaga (Mal.); climber; montane forest.

103.1.3 ***Dioscorea*** sp.indet. Ubi jaga; Ubi gerawat (Mel.); climber; old secondary forest, degraded secondary forest; falt ground, gentle slope; wide range of soils.

104. DRACAENACEAE

104.1.1 ***Dracaena angustifolia*** Roxb. Sabang; treelet or shrub, scrambling shrub, suffrutescent herb; kerangas, lowland MDF; steep slope, ridge; alt. 100 – 250 m.

104.1.2 ***Dracaena congesta*** Ridl. Sabang; shrub; lowland MDF, old secondary forest; gentle slope, periodically flooded; sandy soils, alluvial clay soils.

104.1.3 ***Dracaena gracilis*** Wall. Sabang; Sabong kura; herb; lowland MDF, hill MDF, submontane forest, Kerangas forest, old

secondary forest; on wide range of soils. **Uses**: young leaves cooked as vegetable.

104.1.4 ***Draceana*** sp. Shrub; lowland MDF; gentle slope; alluvial soils.

105. FLAGELLARIACEAE

105.1.1 ***Flagellaria indica*** L. Rotan buntak (Ib.); Rotan tikus; liana, climber; flat ground; alluvial deposits; sandy soil; river-bank; used for tying.

106. GESNERIACEAE

106.1.1 ***Aeschynanthus albidus*** (Blume) Steud. Lipstick monyet; climber; riparian forest, river-bank; occasional in emperan.

106.1.2 ***Aeschynanthus gibbsiae*** S. Moore. Akar; climber; riparian forest.

106.1.3 ***Aeschynanthus parvifolius*** R. Br. Akar tangkung kenalang; herb; epiphytic, climber; lowland MDF, hill MDF, Kerangas forest, occasional in emperan and river-bank; slope, ridge.

106.1.4 ***Aeschynanthus trichocalyx*** Kraenzl. Lipstick monyet; climber; lowland MDF, hill MDF; occasional in emperan.

106.1.5 ***Aeschynanthus vinaceus*** P. Woods. Akar; climber; lowland MDF.

106.2.1 ***Agalmyla johannis-winkleri*** (Kraenzl.) B.L. Burtt. Epiphytic, climber, lowland MDF, Kerangas; ridge; alt 150 – 700 m.

106.3.1 ***Cyrtandra antuana*** B.L. Burtt. Melebab; terrestrial herb; lowland MDF, hill MDF, Kerangas, riparian; slope, ridge, vally bottom; clay rich soils.

106.3.2 ***Cyrtandra athrocarpa*** B.L. Burtt. Melebab; herb; riparian forest; sandy clay soils.

106.3.3 ***Cyrtandra axillaris*** C.B. Clarke. Melebab; herb; lowland MDF, hill MDF; alluvial soils.

106.3.4 ***Cyrtandra bracheia*** B.L. Burtt. Melebab; terrestrial herb, lithopytic; lowland MDF, Kerangas forest, emperan; slope, ridge; sandy soils, clay rich soils.

106.3.5 ***Cyrtandra bullatifolia*** B.L. Burtt. Melebab; herb; old secondary forest; clay-rich soils.

106.3.6 ***Cyrtandra cuprea*** B.L. Burtt. Merbusit (Ib.); herb; lowland MDF, hill MDF, riverine; gentle slope, steep slope; clay rich soils.

106.3.7 ***Cyrtandra hoseana*** B.L. Burtt. Melebab; herb; old secondary forest; clay-rich soils.

106.3.8 ***Cyrtandra lacerata*** B.L. Burtt. Melebab; herb; lowland MDF, hill MDF; alluvial clay soils.

106.3.9 ***Cyrtandra latens*** C.B. Clarke. Melebab; herb; riparian forest; sandy soils.

106.3.10 ***Cyrtandra microcarpa*** C.B. Clarke. Melabab (Ib.); herb; lowland MDF, hill MDF, riparian; gentle slope, ridge, valley bottom; clay rich soils, alluvial clay soils.

106.3.11 ***Cyrtandra miminuta*** C.B. Clarke. Melebab; herb; occasional in MDF; alluvial soils.

106.3.12 ***Cyrtandra mirabilis*** C.B. Clarke. Melebab; herb, sometimes rheophytic; riparian forest; sandy clay soils.

106.3.13 ***Cyrtandra papyracea*** B.L. Burtt. Melebab hitam; herb; riparian forest; sandy clay soils.

106.3.14 ***Cyrtandra penduliflora*** Kraenzl. Seungkut-ungkut (Ib.); Melebab tangkai panjang; terrestrial herb; lowland MDF, hill MDF, river-bank; flat ground, gentle slope, valley bottom; clay rich soils. **Uses:** whole plant used as aid for arbotion and menstrual irregularity.

106.3.15 ***Cyrtandra radicifolia*** C.B. Clarke. Melebab; herb; lowland MDF, hill MDF.

106.3.16 ***Cyrtandra russa*** C.B. Clarke. Melebab; herb on forest floor; occasional in MDF.

106.3.17 ***Cyrtandra sarawakensis*** C.B. Clarke. Melebab; terrestrial herb, lithophytic; lowland MDF, hill MDF, Kerangas forest, old secondary forest; slope, ridge, valley bottom; sandy clay soils, clay rich soils.

106.3.18 ***Cyrtandra subgrandis*** B.L. Burtt. Melebab; herb; Alluvial forest.

106.3.19 ***Cyrtandra subsphaerocarpa*** Bl. Burtt. Melebab; herb; lowland MDF, hill MDF; alluvial clay soils.

106.3.20 ***Cyrtandra trisepala*** C.B. Clarke. Melebab; herb; riparian forest, river-bank; damp sandy soils.

106.3.21 ***Cyrtandra vaginata*** B.L. Burtt, Melebab; herb, sometimes rheophytic; riparian forest.

106.3.22 ***Cyrtandra vulpina*** (Kraenzl.) B.L. Burtt. Melebab; herb; MDF.

106.4.1 ***Didymocarpus beccarii*** C.B. Clarke.. Melebab; terrestrial herb, lithophyte; lowland MDF, hill MDF, Kerangas forest, lower mossy forest; sandy clay soils.

106.4.2 ***Didymocarpus crinitus*** Jack. Melebab; terrestrial herb, lithophyte; hill MDF, Kerangas forest, lower mossy forest; alt up to 1000 m; sandy soils.

106.4.3 ***Didymocarpus gracilipes*** C.B. Clarke. Melebab; herb; MDF.

106.4.4 ***Didymocarpus murutorum*** B.L. Burtt. Melebab; herb; old secondary forest; sandy clay soils.

106.4.5 ***Didymocarpus platypus*** C.B. Clarke. Melebab; terrestrial herb, lithophytic; hill MDF, Kerangas forest; lower mossy forest; alt up to 1500 m; slope, ridge; sandy soils, clay rich soils.

106.4.6 ***Didymocarpus scabrinervis*** C.B. Clarke. Melebab; terrestrial herb, lithophytic; Kerangas forest, lower mossy forest; alt up to 1250 m; sandy soils, clay rich soils.

106.5.1 ***Loxocarpus longipetiolatus*** B.L. Burtt. Melebab; herb; submontane forest, montane forest.

106.5.2 ***Loxocarpus*** sp. Melebab; herb; lowland MDF, hill MDF, submontane forest

107. HANGUANACEAE

107.1.1 ***Hanguana malayana*** (Jack) Merr. Bakong (Ib.); herb; lowland MDF, frequent along the damp on the river-bank, falt ground, valley bottom; sandy clay soils.

108. HYPOXIDACEAE

108.1.1 ***Curculigo racemosa*** Ridl. Lemba; open space, secondary forest, areas been cleared for shifting cultivation; sandy soils, alluvial soils.

108.1.2 ***Curculigo villosa*** Wall. Lemba babi (Ib.); Lemba bai (Ked.); herb; hill MDF; gentle slope; alluvial clay soils. **Uses**: to treat diarrhoea or loose stool.

108.2.1 ***Molineria latifolia*** (Dryand.) Herb. ex Kurz. [syn: *Curculigo latifolia* Dryand.] Lemba (Ib.); lowland MDF, hill MDF, secondary forest, open space; flat ground, gentle slope, ridge; alluvial soils, clay rich soils. **Uses**: fruit edible.

109. LAMIACEAE

109.1.1 ***Hyptis brevipes*** Poit. Rumput butang; herb; occasional in damp waste ground; naturalized from Mexico.

109.1.2 ***Hyptis capitata*** Jacq. Rumput butang; herb; occasional in waste ground, open space, secondary forest; naturalized from tropical America.

109.2.1 ***Leonurus sibiricus*** L. Kacang ma; culticated or sometimes in waste places; naturalized from temperate Asia. Uses: as ingredient for cooking.

109.3.1 ***Ocimum basilicum*** L. aromatic herb; cultivated near the settlement; waste ground. **Uses**: as ingredient for cooking.

109.4.1 ***Orthosiphon aristatus*** (Blume) Miq. [synonym: *Orthosiphon stamineus* Benth.] Misai kucing; widely cultivated near the settlement. **Uses**: medicinal and ornamental plant.

109.5.1 ***Pogostemon heyneanus*** Benth. Aromatic erect herb; occasional in forest clearings. Uses: medicinal.

110. LILIACEAE

110.1.1 ***Dianella ensata*** (Thunb.) R.J. Henderson. Mulong itik; Manang; Senkenyang; grass-liked herb; secondary forest, open space; sandy soils, sandy clay soils; peat soils. **Uses**: medicinal.

111. LINACEAE

111.1.1 ***Indorouchera griffithiana*** (Planch.) Hallier f. [basionym: *Roucheria griffithiana* Planch.] Creeping woody climber; lowland MDF, hill MDF, Kerangas forest, riparian forest; slope, ridge; alluvial clay, clay rich soils.

112. LORANTHACEAE

107.1.1 ***Amylotheca duthieana*** Danser. Dedalu; Kayu ala (Ib.); Lukut (Mel.); epiphytic, lithophytic; lowland MDF, hill MDF, emperan, occasional in Kerangas forest.

112.2.1 ***Dendrophthoe curvata*** (Blume) Miq. Dedalu; epiphytic on the tree trunk and branches; lowland MDF, hill MDF, Kerangas forest, secondary forest, lower mossy forest; alt up to 1000 m.

112.2.2 ***Dendrophthoe falcata*** Blume. Kayu alah; epiphyte; hill MDF, lowland MDF.

112.3.1 ***Elytranthe albida*** (Blume) Blume. Kayu alah; epiphytic; hill MDF, lowland MDF.

112.4.1 ***Helixanthera cylindrica*** (Jack) Danser. Kayu alah; epiphytic; montane forest.

112.5.1 ***Lepeostegeres filamentous*** Danser. Kayu alah; epiphytic; hill MDF, lowland MDF.

112.6.1 ***Lepidaria kingii*** (King) Danser. Kayu alah; epiphytic; lowland MDF, hill MDF.

112.7.1 ***Loranthus centiflorus*** Stapf. Kayu alah; epiphytic; summit ridge forest.

112.8.1 ***Macrosolen beccarii*** Tiegh ex Becc. Dedalu; Kayu ala (Ib.); parasitic epiphyte on branches or tree trunk; lowland MDF, hill MDF, Kerangas forest.

112.8.2 ***Macrosolen cochinchinensis*** (Lour.) Tiegh. Kayu alah; epiphytic; montane forest.

112.8.3 ***Macrosolen tubiflorus*** (Ridl.) Danser. Kayu alah; epiphytic; submontane forest, montane forest.

112.9.1 ***Scurrula ferruginea*** (Jack) Danser. Kayu alah; epiphytic; hill MDF.

112.10.1 ***Trithecanthera sparsa*** Barlow. Kayu alah; epiphytic; lowland MDF, hill MDF.

112.11.1 ***Viscum articulatum*** Burm.f. Epiphytic; montane forest.

113. LOWIACEAE

113.1.1 ***Orchidantha*** sp. Herb; in MDF, secondary forest and Kerangas; flat ground or gentle slopes.

114. MARANTACEAE

114.1.1 ***Donax canniformis*** (G. Frost) K. Schum. Bemban bukit; shrub or suffrutescent herb; degraded soil, damp and wet places; flat ground; periodically flooded. Uses: to make mats, tikar, nyiru etc.

114.2.1 ***Phacelophrynium maximum*** (Blume) K. Schum. Ririk (Ib.); Bemban lamantak (Ked.); herb; riparian forest, emperan, river-bank; gentle slope, ridge, valley bottom; alluvial clay soils. **Uses**: medicinal, used in *air masak* and for skin diseases.

114.3.1 ***Phrynium capitatum*** Willd. Ririk (Ib.); Daun luit (Mel.); Daun lirik buaja (Ked.); shrub; lowland MDF, secondary forest, frequently on river-banks or damp and wet place; flat ground, valley bottom; clay rich soils. **Uses**: leaves used from wrapping food and medicinal, used in *air masak*.

114.3.2 ***Phrynium hirtum*** Ridl. Ririk (Ib.); herb; lowland MDF, hill MDF; gentle slope; valley bottom; flat ground, periodically flooded.

114.3.3 ***Phrynium placentarum*** (Lour.) Merr. Ririk (Ib.); lowland MDF, secondary forest; frequently on river-bank or danp and wet place; flat ground, valley bottom. **Uses**: leaves used for wrapping food.

114.4.1 ***Schumannianthus dichotomous*** (Roxb.) Gagnep. Degraded lowland MDF; flat ground; periodically flooded, near running fresh water; clay soil; altitude 300 m.

114.5.1 ***Stachyphrynium borneense*** Ridl. Lirik (Ib.); degraded secondary forest; terrace; ridge; periodically flooded. Uses: Leaves use for wrapping food.

114.5.2 ***Stachyphrynium jagorianum*** (K. Koch) K. Schum. Daun luit (Mel.); degraded lowland MDF. Note: *S. Jagorianum* is known from Thailand, Peninsular Malaysia and Borneo.

114.5.3 ***Stachyphrynium*** sp.3. Degraded lowland MD; gentle slope; flat ground. **Note**: Inflorescence with short peduncle, greenish bracts and small white flowers.

114.6.1 **Marantaceae** indet. Lower mossy forest, Kerangas forest, emperan, river-banks; flat ground, periodically flooded; alluvial soils, clay rich soils. **Notes**: possibly new taxa.

115. MENISPERMACEAE

115.1.1 ***Arcangelisia flava*** (L.) Merr. [synonym: *Arcangelisia loureiri* (Pierre) Diels.] Akar badi (Ib.); climber; old secondary forest, secondary forest; igneous-derived soils, clay rich soils.

115.2.1 ***Fibraurea tinctoria*** Lour. [synonym: *Fibraurea chloroleuca* Miers.] Peler musang; Rendau merakunyit (Ib); climber; secondary forest; flat ground, gentle slope, periodically flooded; alluvial soils. **Uses**: edible fruit, medicinal, treatment for eyes made from vine.

115.3.1 ***Pycnarthena borneensis*** Diels. Daun tubu (Ib.); climber; old secondary forest, secondary forest; slope, ridge.

115.4.1 ***Tinomiscium*** sp. indet. Akar badi (Ib.); climber; secondary forest, old secondary forest, rarely in MDF; gentle slope; alluvial clay soils, clay rich soils. **Uses**: medicinal, for swollen and hardened stomach and body caused by bad spirits.

115.5.1 ***Tinospora crispa*** (L.) Hook.f. & Thoms. Akar bakawali; liana; cultivated near the settlement. **Uses**: medicinal.

116. MUSACEAE

116.1.1a ***Musa acuminata*** Colla var. ***microcarpa*** (Becc.) Nasution. Lengkik (Ib.) Pisang kera; pisang hutan; Degraded secondary forest and open spaced. **Uses**: young pseudostem are eaten raw as ulam or cooked as vegetable.

116.1.2a ***Musa borneensis*** Becc. var. ***borneensis.*** Engkadan (Ib.); Pisang gergasi; degraded secondary forest or on the edge of primary forest. **Uses**: the flower buds are eaten as vegetable. **Note**: endemic to Borneo.

116.1.2b ***Musa borneensis*** Becc. var. ***flavida*** (M. Hotta) Hakkinen & Meekiong. Engkadan (Ib.); Pisang gergasi; occasional on the edge of primary forest or rarely seen in degraded secondary forest. **Note**: endemic to Borneo.

116.1.3 ***Musa hirta*** Becc. Pisang gentu (Ib.); degraded lowland MDF, secondary forest or open spaced. **Note**: endemic to central part of Sarawak.

116.1.4 ***Musa lawitensis*** R.E Nasution & Supardiyono. [syn: *Musa suratii* Argent] Pisang kera; Pisang tunjuk; lower montane forest, lower mossy forest; hill slope, steep slope; clay rich soils. **Note**: ginger-liked banana; endemic to Borneo.

117. NEPENTHACEAE

117.1.1 ***Nepenthes ampullaria*** Jack. Periuk kera; Pok yuk (Ib.); entuyut (Mel.); herb; climber; in flat ground, wet and damp places; in MDF, Kerangas and secondary forest. **Uses**: the pitcher used for make *ketupat* or *nasi empit*.

117.1.2 ***Nepenthes gracilis*** Korth. Periuk kera (Mal.); climber; Kerangas, degraded Kerangas, secondary forest; white sand, sandy soils. **Uses**: the stem used for tying.

117.1.3 ***Nepenthes mirabilis*** (Lour.) Druce. Periuk kera (Mal.); climber; common in secondary forest and open spaced.

117.1.4 ***Nepenthes rafflesiana*** Jack. Periuk kera; Pok yuk (Ib.); tuyud (Mel.); climber; stragling herb; Kerangas forest, secondary forest; lower mossy forest; alt 700 m; sandy peat soils, infertile soils.

117.1.5 ***Nepenthes tentaculata*** Hook.f. Pok yuk (Ib.); Buak tuyud (Mel.); climber; montane forest.

117.1.6 ***Nepenthes veitchii*** Hook.f. Periuk kera; climber; stragling on the tree trunk; submontane forest, Kerangas forest.

118. NYMPHAEACEAE

118.1.1 ***Barclaya motleyi*** Hook.f. Timun amun (Mel.); aquatic herb, usually submerged under the water. **Uses**: edible, medicinal – root used to treat stomach ache.

119. ORCHIDACEAE

119.1.1 ***Acriopsis lilifolia*** (J. Koenig) Ormerod. Ukit (Ib.); epiphytic, sometimes terrestrial in bare soil; lowland MDF.

119.2.1 ***Agrostophyllum bicuspidatum*** J.J. Sm. Ukit (Ib.); epiphytic; herb; sometimes on ground; lowland MDF.

119.2.2 ***Agrostophyllum cyathiforme*** J.J. Sm. Epiphyte, hill MDF.

119.2.3 ***Agrostophyllum laterale*** J.J. Sm. [basionym: *Poaephyllum hansenii* J.J. Wood]. Epiphytic, Kerangas forest, riverine.

119.2.4 ***Agrostophyllum longifolium*** (Blume) Rchb.f. [syn: *Appendicula longifolia* Blume]. Ukit (Ib.); epiphytic, lowland MDF.

119.2.5 ***Agrostophyllum majus*** Hook.f. Epiphytic, lowland MDF, riverine.

119.2.6 ***Agrostophyllum stipulatum*** (Griff.) Schltr. Ukit (Ib.); epiphytic; in lowland MDF; alt 100 m.

119.3.1 ***Apostasia nuda*** R.Br. [syn: *Apostasia brunonis* Griff.; *Apostasia lobbii* Rchb.f.]. Ukit tanah (Ib.); terrestrial herb; lowland MDF.

119.3.2 ***Apostasia wallichii*** R.Br. [syn: *Apostasia gracilis* Rolfe; *Apostasia alba* Rolfe]. Ukit tanah (Ib.); terrestrial herb, lowland MDF, riverine.

119.4.1 ***Appendicula anceps*** Blume. [syn: *Appendicula complanata* Ridl.]. Epiphytic, lowland MDF.

119.4.2 ***Appendicula cristata*** Blume. [syn: *Appendicula divaricata* Ames & C. Schweinf.]. Epiphytic or terrestrial herb; lowland MDF.

119.4.3 ***Appendicula floribunda*** (Schltr.) Schltr. [basionym: *Podochilus floribundus* Schltr.] Epiphytic, lowland MDF, hill MDF.

119.4.4 ***Appendicula foliosa*** Ames & C. Schweinf. Epiphytic or terrestrial herb, lowland MDF.

119.4.5 ***Appendicula recondita*** J.J. Sm. Epiphytic, lowland MDF.

119.4.6 ***Appendicula*** sp.6 indet. Epiphytic; lowland MDF.

119.4.7 ***Appendicula*** sp.7 indet. Epiphytic, lowland MDF, riverine.

119.4.8 ***Appendicula*** sp.8 indet. Epiphytic, lowland MDF.

119.5.1 ***Arachnis flosaeris*** (L.) Rchb.f. [basionym: *Epidendrum flosaeris* L.; syn: *Arachnis flosaeris* (L.) Rchb.f. var. *gracilis* Holtt.] Epiphytic, lowland MDF.

119.6.1 ***Arundina graminifolia*** (D. Don) Hochr. [syn: *Arundina bambusifolia* (Roxb.) Lindl.; *Arundian speciosa* Blume; *Arundina philippi* Rchb.f.] Ukit tanah (Ib.); lowland MDF, secondary forest; open spaced. Used: flower cooked and eaten as vegetable.

119.7.1 ***Bromhedia brevifolia*** Ridl. Epiphytic, hill MDF.

119.7.2 ***Bromheadia finlaysoniana*** (Lindl.) Miq. [basionym: *Grammatophyllum finlaysonianum* Lindl.]. Ukit tanah (Ib.); terrestrial herb; lowland MDF.

119.8.1 ***Bulbophyllum apodum*** Hook.f. [syn: *Bulbophyllum saccatum* Kraenzl.]. Epiphytic, lowland MDF, hill MDF.

119.8.2 ***Bulbophyllum beccarii*** Rchb.f. Ukit busuk (Ib.); large epiphytic; lowland MDF, riverine.

119.8.3 ***Bulbophyllum binnendijkii*** J.J. Sm. Orkid; epiphytic on tree trunk and branches; riparian forest, river-bank.

119.8.4 ***Bulbophyllum brevicolumna*** J.J. Verm. Epiphytic, hill MDF, Kerangas forest.

119.8.5 ***Bulbophyllum coniferum*** Ridl. [syn: *Bulbophyllum reflexum* Ames & C. Schweinf.] Epiphytic, hill MDF.

119.8.6 ***Bulbophyllum disjunctum*** Ames & C. Schweinf. Orkid; epiphytic on branches; submontane forest.

119.8.7 ***Bulbophyllum elongatum*** (Blume) Hassk. Orkid; epiphytic on tree trunk; montane forest.

119.8.8 ***Bulbophyllum gracillimum*** (Rolfe) Rolfe. Epiphytic, lowland MDF, hill MDF, Kerangas forest.

119.8.9 ***Bulbophyllum grudense*** J.J. Sm. Epiphytic, lowland MDF

119.8.10 ***Bulbophyllum lasianthum*** Lindl. Epiphytic; lowland MDF.

119.8.11 ***Bulbophyllum lissoglossum*** J.J. Verm. Epiphytic; mossy hill forest; alt 900 m.

119.8.12 ***Bulbophyllum macrochilum*** Rolfe. [syn: *Bulbophyllum mirandum* Kraenzl.; *Bulbophyllum intervallatum* J.J. Sm.; *Bulbophyllum stella* Ridl.]. Epiphytic, lowland MDF.

119.8.13 ***Bulbophyllum sopoetanense*** Schltr. [syn: *Bulbophyllum conspectum* J.J. Sm.; *Bulbophyllum balapiuense* sensu J.J. Wood]. Epiphytic, lowland MDF, Kerangas forest, riverine.

119.8.14 ***Bulbophyllum striatellum*** Ridl. Epiphytic, lowland MDF, lowland Kerangas forest.

119.8.15 ***Bulbophyllum uniflorum*** (Blume) Hassk. [syn: *Bulbophyllum galbinum* Ridl; *Bulbophyllum variabile* Ridl.; *Bulbophyllum hewittii* Ridl; *Bulbophyllum aeolium* Ames; *Bulbophyllum sociale* Rolfe] Terrestrial, lithophytes or epiphytic, lowland MDF, secondary forest, riverine.

119.8.16 ***Bulbophyllum*** sp.nov.1 [*Bulbophyllum katibasensis* sp.nov.indet] Epiphytic, lowland MDF, riverine. **Note**: new species discovered in Lanjank Entimau Wildlife Sanctuary.

119.8.17 ***Bulbophyllum*** sp.nov.2 [*Bulbophyllum rafflesianum* sp.nov.indet]. Epiphytic, lowland MDF, riverine. **Note**: new species discovered in Lanjank Entimau Wildlife Sanctuary.

119.8.18 ***Bulbophyllum*** sp.1 indet. Epiphytic, lowland MDF.

119.8.19 ***Bulbophyllum*** sp.2 indet. Epiphytic, lowland MDF, riverine.

119.8.20 ***Bulbophyllum*** sp.3 indet. Epiphytic, lowland MDF.

119.9.1 ***Calanthe sylvatica*** (Thours) Lindl. [syn: *Calanthe masuca* (D. Don) Lindl.; *Calanthe ermaginata* (Blume) Lindl.] Terrestrial herb, hill MDF.

119.9.2 ***Calanthe vestita*** Lindl. [syn: *Calanthe vestita* Lindl. var. *igneo-oculata* Hort. Ex Rchb.f.; *Calanthe vestita* Lindl. var. *oculata-gigantea* Rchb.f.; *Calanthe vestita* Lindl. var. *fournieri* Rolfe] Terrestrial herb, lithophte or epiphytic; hill MDF.

119.9.3 ***Calanthe*** sp. indet. Terrestrial; lowland MDF, hill MDF.

119.10.1 ***Ceratostylis*** sp.indet. Epiphytic, hill MDF.

119.11.1 ***Chelonistele amplissima*** (Ames & C. Schweinf.) Carr. Orkid; epiphytic on tree trunk; hill MDF.

119.11.2 ***Chelonistele dentifera*** de Vogel. Epiphytic, lowland MDF, hill MDF; alt 200 m.

119.11.3 ***Chelonistele lurida*** (Lind. & Cogn.) Pfitzer. Orkid; epiphytic on tree trunk, sometimes lithophytic on rock surface; hill MDF.

119.11.4 ***Chelonistele sulphurea*** (Blume) Pfitzer var. *sulphurea.* [syn: *Chelonistele kutaiensis* (J.J. Sm.) Carr; *Chelonistele cuneata* (J.J. Sm.) Carr; *Chelonistele pinniloba* (J.J. Sm.) Carr] Epiphytic, lowland MDF, Kerangas forest; alt 200 m.

119.11.5 ***Chelonistele unguiculata*** Carr. [basionym: *Coelogyne unguiculata* (Carr) Masam.] Epiphytic, Kerangas forest; alt 700 m.

119.12.1 ***Cleisostoma discolor*** Lindl. [basionym: *Sarcanthus termissus* Rchb.f.; *Sarcanthus discolor* (Lindl.) J.J. Sm.]. Epiphytic, lowland MDF.

119.13.1 ***Coelogyne asperata*** Lindl. Orkid; epiphytic; Alluvial forest.

119.13.2 ***Coelogyne carnea*** Reichb.f. Orkid; epiphytic on branches; Alluvial forest.

119.13.3 ***Coelogyne craticulaelabris*** Carr. Pendulous epiphytic; lower mossy forest; alt 1000 m.

119.13.4 ***Coelogyne echinolabium*** de Vogel. Epiphytic, lowland MDF, secondary forest, riverine; alt 800 m.

119.13.5 ***Coelogyne endertii*** J.J. Sm. Epiphytic, hill MDF; alt 900 m.

119.13.6 ***Coelogyne foerstermannii*** Rchb.f. Epiphytic, lowland MDF, Kerangas forest; alt 300 m.

119.13.7a ***Coelogyne incrassata*** (Blume) var. ***incrassata***. Lindl. [basionym: *Chelonanthera incrassata* Blume]. Epiphytic, lowland MDF.

119.13.8 ***Coelogyne meyeriana*** Rchb.f. Orkid; epiphytic; riparian forest, river-bank.

119.13.9 ***Coelogyne naja*** J.J. Sm. Epiphytic, hill MDF, Kerangas forest; alt 800 m.

119.13.10 ***Coelogyne pandurata*** Lindl. [syn: *Coelogyne peltastes* Rchb.f. var. *unguiculata* J.J. Sm.] Epiphytic, lowland MDF, Kerangas forest.

119.13.11 ***Coelogyne swaniana*** Rolfe. [syn: *Coelogyne quadrangularis* Ridl.]. Epiphytic, lowland MDF, riverine.

119.13.12 ***Coelogyne tenompokensis*** Carr. Epiphytic, lowland MDF, sometimes in Kerangas forest; alt 1200 m.

119.13.13 ***Coelogyne*** sp.indet. Epiphytic, lowland MDF, riverine.

119.14.1 ***Corymborkis veratrifolia*** (Reinw.) Blume. [basionym: *Hysteria veratrifolia* Reinw.]. Terrestrial herb; lowland MDF.

119.15.1 ***Cymbidium finlaysonianum*** Lindl. Ukit jamban (Ib.); epiphytic or terrestrial herb; lowland MDF, degraded lowland MDF, secondary forest, degraded secondary forest, riverine.

119.15.2 ***Cymbidium lancifolium*** Hook.f. Terrestrial herb; lowland MDF; alt 200 m.

119.16.1 ***Cystorchis*** sp.indet. Saprophyte, terrestrial; lowland MDF.

119.17.1 ***Dendrobium blumei*** Lindl. [syn: *Dendrobium tuberiferum* Hook.f.] Epiphytic, lowland MDF.

119.17.2 ***Dendrobium concinnum*** Miq. [syn: *Dendrobium atropurpureum* auct.non (Blume) Miq.; *Dendrobium carnosum* (Blume) Rchb.f.] Epiphytic, lowland MDF, secondary forest.

119.17.3 ***Dendrobium crumenatum*** Sw. [syn: *Dendrobium crumenatum* Sw. var. *parviflorum* Ames & C. Schweinf.] Ukit (Ib.); epiphytic, lowland MDF, secondary forest.

119.17.4 ***Dendrobium hosei*** Ridl. [syn: *Dendrobium multicostatum* J.J. Sm.]. Epiphytic, lowland MDF, riverine.

119.17.5 ***Dendrobium panduriferum*** Hook.f. Epiphytic, lowland MDF, hill MDF, riverine.

119.17.6 ***Dendrobium patentilobum*** Ames & C. Schweinf. Epiphytic, lowland MDF; alt 200 m.

119.17.7 ***Dendrobium planibulbe*** Lindl. Epiphytic, lowland MDF, riverine. **Note**: new record for Sarawak.

119.17.8 ***Dendrobium secundum*** (Blume) Lindl. [basionym: *Pedilonum secundum* Blume] Epiphytic, lowland MDF.

119.17.9 ***Dendrobium*** sp.indet. Epiphytic, lowland MDF, riverine.

119.18.1 ***Dendrochilum flos-susannae*** J.J. Wood. Epiphyte, lowland MDF; alt 200 m. **Note**: type specimen from Lanjak Entimau Wildlife Sanctuary, upper Ensirieng River.

119.18.2 ***Dendrochilum joclemensii*** Ames. Epiphytic, lowland MDF, hill MDF, riverine. **Note**: new record for Sarawak.

119.18.3a ***Dendrochilum kingii*** (Hook.f.) J.J. Sm. var. ***tenuichilum*** J.J. Wood. Epiphytic, lowland MDF; alt 200 m.

119.18.4 ***Dendrochilum rufum*** (Rolfe) J.J. Sm. [basionym: *Platyclinis rufa* Rolfe; *Acoridium rufum* (Rolfe) Rolfe] Epiphytic, lowland MDF, alt 200 m.

119.18.5 ***Dendrochilum*** sp.indet. Epiphytic, lowland MDF.

119.19.1 ***Dimorphorchis lowii*** (Lindl.) Rolfe var. *lowii*. [basionym: *Vanda lowii* Lindl; *Renanthera lowii* (Lindl.) Rchb.f.; *Arachnis lowii* (Lindl.) Rchb.f]. Epiphytic, lowland MDF.

119.20.1 ***Diplocaulobium brevicolle*** (J.J. Sm.) Kraenzl. [basionym: *Dendrobium brevicolle* J.J. Sm.] Epiphytic, lowland MDF, Kerangas forest; alt 300 m.

119.21.1 ***Dipodium pictum*** (Lindl.) Rchb.f. [basionym: *Wailesia picta* Lindl.] Epiphytic, climber; lowland MDF, secondary forest, Kerangas.

119.22.1 ***Entomophobia kinabaluensis*** (Ames) de Vogel. [basionym: *Pholidota kinabaluensis* Ames]. Epiphytic or lithophytes; hill MDF, Kerangas.

119.23.1 ***Epigenium geminatum*** (Blume) Summerh. Orkid; epiphytic; montane forest.

119.24.1 ***Eria atrovinosa*** Carr. Epiphytic, lowland MDF, hill MDF, riverine. **Note**: new record for Sarawak.

119.24.2 ***Eria brooksii*** Ridl. Tawar-tawar (Ked.); epiphytic; lowland MDF. **Uses**: for relieving headache and migraine.

119.24.3 ***Eria aff. hyacinthoides*** (Blume) Lindl. Epiphytic, hill MDF; alt 400 m.

119.24.4 ***Eria iridifolia*** Hook.f. Epiphytic; lowland MDF, hill MDF, riverine. **Note**: new record for Sarawak.

119.24.5 ***Eria major*** Ridl. ex Stapf. [syn: *Eria scortechinii* Stapf.; *Eria villosissima* Rolfe] Epiphytic, hill MDF; alt 900 m.

119.24.6 ***Eria multiflora*** Lindl. Orkid; epiphytic; lowland MDF, hill MDF.

119.24.7 ***Eria oblitterata*** (Blume) Rchb.f. [syn: *Eria kingie* Hook.f.; *Eria major* sensu Ridl.; *Eria ridleyi* Rolfe]. Epiphytic or terrestrial herb; lowland MDF, Kerangas.

119.24.8 ***Eria pulchella*** Lindl. [basionym: *Tylostylis pulchella* (Blume) Ridl.] Epiphytic or lithophytes; lowland MDF; alt 400 m.

119.24.9 ***Eria robusta*** (Blume) Lindl. [syn: *Eria aeridostachya* Rchb.f; *Eria lorifolia* Ridl.; *Eria brunea* Ridl.; *Eria purpureocentrum* J.J. Sm.; *Eria linearifolia* Ridl]. Epiphytic or terrestrial; lowland MDF, hill MDF, Kerangas, riverine.

119.24.10 ***Eria saccifera*** Hook.f. [syn: *Eria brookesii* Ridl.]. Epiphytic; lowland MDF, Kerangas; riverine.

119.24.11 ***Eria tenuiflora*** Ridl. Orkid; epiphytic; MDF.

119.24.12 ***Eria xanthocheila*** Ridl. Epiphytic, lowland MDF.

119.25.1 ***Eulophia graminea*** Lindl. [syn: *Eulophia inconspicua* Griff.] Leafless terrestrial herb; lowland MDF.

119.26.1 ***Flickingeria appendiculata*** (Blume) A.D. Hawkes. Epiphytic, lowland MDF, riverine.

119.26.2 ***Flickingeria convexa*** (Blume) A.D. Hawkes. Epiphytic, lowland MDF, riverine. **Note:** new record for Sarawak.

119.26.3 ***Flickingeria fimbriata*** (Blume) A.D. Hawkes. [basionym: *Desmotrichum fimbriatum* Blume; *Dendrobium flabellum* Rchb.f.; *Dendrobium kunstleri* Hook.f.] Epiphytic or terrestrial, lowland MDF.

119.27.1 ***Gastrodia javanica*** (Blume) Lindl. Orkid; epiphytic; lowland MDF

119.28.1 ***Goodyera*** sp.indet. Orkid; terrestrial orkid; Alluvial forest.

119.29.1 ***Grammatophyllum speciosum*** Blume. Large epiphytic; lowland MDF, Kerangas, riverine.

119.30.1 ***Grosourdya appendiculata*** (Blume) Rchb.f. [basionym: *Dendrocolla appendiculata* Blume; *Sarcochilus hirtulus* Hook.f.] Epiphytic, lowland MDF.

119.31.1 ***Habenaria*** sp.1. Orkid; terrestrial orkid; Alluvial forest.

119.32.1 ***Kuhlhasseltia javanica*** J.J. Sm. [syn: *Kuhlhasseltia kinabaluensis* Ames & C. Schweinf.] Terrestrial herb, Kerangas forest.

119.33.1 ***Lecanorchis malaccensis*** Ridl. Saprophytic, lowland MDF.

119.34.1 ***Liparis bicuspidata*** J.J. Sm. Epiphytic, hill MDF; alt 800 m.

119.34.2 ***Liparis compressa*** (Blume) Lindl. Orkid; epiphytic; submontane forest.

119.34.3 ***Liparis gibbosa*** Finet. Orkid; epiphytic; submontane forest.

119.34.4 ***Liparis grandiflora*** Ridl. Orkid; epiphytic on tree trunk; lowland MDF, hill MDF.

119.34.5 ***Liparis lacerata*** Ridl. Orkid; epiphytic on tree branches; old secondary forest.

119.34.6 ***Liparis*** sp.6 Orkid; epiphytic on tree trunk; riparian forest.

119.35.1 ***Malaxis punctata*** J.J. Wood. Terrestrial herb, Kerangas forest.

119.36.1 ***Nephelaphyllum pulchrum*** Blume. [syn: *Nephelaphyllum latilabre* Ridl.; *Nephelaphyllum borneense* Schltr.] Terrestrial herb, lowland MDF, flat ground, valley bottom.

119.37.1 ***Neuwiedia borneensis*** de Vogel. Ukit tanah (Ib.); terrestrial herb, lowland MDF, hill MDF; flat ground, valley bottom; clay rich soils.

119.37.2 ***Neuwiedia veratrifolia*** Blume. [syn: *Neuwiedia calanthoides* Ridl.; *Neuwiedia lindleyi* Rolfe] Ukit tanah (Ib.); terrestrial herb, lowland MDF, hill MDF, riverine.

119.38.1 ***Oberonia lunata*** (Blume) Lindl. Epiphytic, lowland MDF.

119.38.2 ***Oberonia*** sp.2 Epiphytic; secondary forest.

119.39.1 ***Pennilabium struthio*** Carr. Epiphytic, lowland MDF, riverine.

119.40.1 ***Phalaenopsis*** sp. Moth orchid; orkid kupu-kupu; epiphytic on tree trunk; riparian forest.

119.41.1 ***Pholidota gibbosa*** (Blume) de Vriese. [syn: *Pholidota clypeata* Lindl.] Epiphytic, hill MDF, Kerangas; ridge.

119.41.2 ***Pholidota*** sp. Orkid; epiphytic; lowland MDF.

119.42.1 ***Phreatia*** sp. indet. Epiphytic or lithophytic; lowland MDF.

119.43.1 ***Plocoglottis acuminata*** Blume. Ukit tanah (Ib.); terrestrial herb; lowland MDF; flat ground, sandy clay soils.

119.43.2 ***Plocoglottis javanica*** Blume. Orkid; terrestrial; lowland MDF, riparian forest, emperan; clay-rich soils.

119.44.1 ***Podochilus marsupialis*** Schuit. Epiphytic, hill MDF; alt 800 m.

119.44.2 ***Podochilus scuiroides*** Rchb.f. Epiphytic or lithophytes; lowland MDF, hill MDF.

119.44.3 ***Podochilus tenuis*** (Blume) Lindl. [basionym: *Apista tenuis* Blume]. Lithophyte, lowland MDF, riverine.

119.45.1 ***Pomatocalpa kunstleri*** (Hook.f.) J.J. Sm. [basionym: *Cleisostoma kunstleri* Hook.f.; *Saccolabium pubescens* Ridl.]. Epiphtyic or lithophytes; lowland MDF, riverine.

119.46.1 ***Robiquetia spatulata*** (Blume) J.J. Sm. [basionym: *Cleisostoma spatulatum* Blume; *Cleisostoma spicatum* Lindl.]. Epiphytic; lowland MDF, riverine.

119.47.1 ***Sarcochilus*** sp.1. Orkid; epiphytic; old secondary forest.

119.48.1 ***Spathoglottis plicata*** Blume. [syn: *Spathoglottis spicata* Lindl.]. Ukit tanah (Ib.); terrestrial herb; lowland MDF, secondary forest, open spaced; sandy rich soils.

119.49.1 ***Spiranthes sinensis*** (Pers.) Ames. [syn: *Spiranthes lancea* auct.nom. (Thunb.) Backer, Bakh.f. & v. Steenis] Terrestrial herb, riverine, on infertile soils.

119.50.1 ***Taeniophyllum cf. affine*** Schltr. Small monopodial epiphytic, leafless; lowland MDF, riverine.

119.51.1 ***Tania pauciflora*** (Breda) J.J. Sm. [syn: *Tania latilingua* Hook.f.; *Tania plicata* (Blume) Lindl.] Terrestrial herb, lowland MDF, hill MDF, riverine.

119.52.1 ***Thelasis micrantha*** (Brongn.) J.J. Sm. [basionym: *Oxyanthera micrantha* Brongn.] Epiphytic or terrestrial herb; lowland MDF, hill MDF.

119.52.2 ***Thelasis*** sp.indet. Epiphytic, lower mossy forest; alt 1000 m.

119.53.1 ***Thrixspermum acuminatissimum*** (Blume) Rchb.f. [syn: *Thrixspermum notabile* (Hook.f.) Ridl.] Epiphytic, lowland MDF, rubber plantation.

119.53.2 ***Thrixspermum*** sp.2 indet. Epiphytic, lowland MDF.

119.53.3 ***Thrixspermum*** sp.3 indet. Epiphytic, lowland MDF, riverine.

119.54.1 ***Trichoglottis retusa*** Blume. Epiphytic, lowland MDF.

119.54.2 ***Trichoglottis vandiflora*** J.J. Sm. Epiphytic, Kerangas forest.

119.54.3 ***Trichoglottis*** sp.3 indet. Epiphytic, lowland MDF.

119.55.1 ***Trichotosia sarawakensis*** Carr. [basionym: *Eria sarawakensis* (Carr) Masam.] Epiphytic, hill MDF.

119.55.2 ***Trichotosia vestita*** (Lindl.) Kraenzl. [basionym: *Eria vestita* Lindl.] Epiphytic, lowland MDF, hill MDF.

119.56.1 ***Vanda*** sp. indet. Epiphytic or lithophytes, lowland MDF.

119.57.1 ***Vanilla havilandii*** Rolfe. Ukit vanilla (Ib.); climber, lowland MDF, old secondary forest, hill MDF.



PLATE 9. Orchidaceae. Left (top) *Apostasia nuda*; left (bottom) flower of *Bulbophyllum beccarii*; right (from top to bottom) *Spathoglottis spicata*; *Dendrobium anosmum*; *Corymborkis veratrifolia*



PLATE 10. Orchidaceae. A: *Grammatophyllum speciosum*; B: *Dendrobium hosei*; C: *Tania pauciflora*; D: *Lecanorchis malaccensis*

120. PANDANACEAE

120.1.1 ***Freycinetia angustifolia*** Blume. Pandan; climber, epiphytic; lowland MDF, hill MDF, old secondary forest, emperan; slope, ridge.

120.1.2 ***Freycinetia biloba*** B.C. Stone. Pandan; climber, epiphytic; old secondary forest.

120.1.3 ***Freycinetia corneri*** B.C. Stone. Climber; well-drained; MDF at 80 – 100 alt.

120.1.4 ***Freycinetia winkleriana*** Martelli. Epiphytic or climber; lowland MDF; gentle slope.

120.2.1 ***Pandanus brevifolius*** Mart. Pandan; terrestrial herb, lithophytic; lowland MDF, hill MDF, Kerangas forest; slope, ridge, valley bottom, periodically flooded; sandy soils, alluvial clay soils.

120.2.2 ***Pandanus brunigii*** H. St. John ex B.C. Stone. Pandan; terrestrial herb, lithophytic, epiphytic; lowland MDF, hill MDF, lower mossy forest; alt up to 1050 m; slope, ridge; alluvial soils, clay rich soils.

120.2.3 ***Pandanus pectinatus*** Martelli. Pandan; terrestrial herb, lithophytic; lowland MDF, emperan; slope, ridge, valley bottom, periodically flooded; sandy clay soils, alluvial soils.

120.2.4 ***Pandanus pumilis*** H. St. John. Climber; lowland MDF, ridge or near fresh water.

121. PASSIFLORACEAE

121.1.1 ***Adenia macrophylla*** (Blume) Koord. var. ***macrophylla***. Climber; Alluvial forest.

121.2.1 ***Passiflora foetida*** L. Letup-letup (Mal.); Leletup; common on open spaced or on the edge of secondary forest. Used: fruits are eaten.

122. PIPERACEAE

122.1.1 ***Piper arborescens*** Roxb. Akar lada; climber; lowland MDF, hill MDF, secondary forest, Kerangas forest, degraded secondary forest; gentle slope, ridge; sandy soils, alluvial clay soils.

122.1.2 ***Piper betle*** L. Sirih; Daun sepak (Mel.); cultivated. **Uses**: often chewed in combination with betel nut (*Areca catechu*) as a stimulator.

122.1.3 ***Piper caninum*** Blume. Kechudai (Ib.); climber; lowland MDF, old secondary forest, gentle slope; clay rich soils.

122.1.4 ***Piper jacquemontianum*** Kunth. Abap (Ib.); climber; lowland MDF, gentle slope.

122.1.5 ***Piper muricatum*** Blume. Lada hutan; climber; lowland MDF.

122.1.6 ***Piper nigrum*** L. Lada hitam; cultivated. **Uses**: fruit for commercial purpose.

122.1.7 ***Piper ramifolium*** C. DC. Lada hutan; climber; lowland MDF, secondary forest; clay rich soils.

122.1.8 ***Piper velutibracteum*** DC. Jangau (Ib.); Lada hutan; climber; lowland MDF, hill MDF, montane forest.

122.1.9 ***Piper vestitum*** DC. Suffructescent herb/herb; degraded lowland MDF; gentle slope; periodically flooded. **Uses**: medicinal, leaves used as antidote for poisonous.

123. POACEAE

123.1.1 ***Centhotheca lappacea*** (L,) Desv. Rumput kemuncup teduh; grass, clump; frequently in open spaced, secondary forest; weed.

123.2.1 ***Digitaria ciliaris*** (Retz.) Koeler. Rumput jejari bulu; creeping grass or in clump; secondary forest, open space; weed in the cultivation areas.

123.2.2 ***Digitaria longiflora*** (Retz.) Pers. Rumput jejari; grass; open spaced, secondary forest; weed

123.3.1 ***Eleusine indica*** (L.) Gaertn. Rumput sambau; grass; secondary forest, open space; weed.

123.4.1 ***Imperata cylindrica*** (L.) P. Beauv. Lalang; Sarsin (Mel.); creeping grass or in clump; secondary forest, open space, frequently in areas after slashed and burned; infertile soils. **Uses**: medicinal, root used for stomachache.

123.5.1 ***Ischaemum barbatum*** Retz. Rumput tembaga; creeping grass; secondary forest, open spaced; weed.

123.5.2 ***Ischaemum magnum*** Rendle. Rumput tembaga kasar; creeping grass or in clump; secondary forest, open space; weed.

123.5.3 ***Ischaemum muticum*** L. Rumput tembaga jantan; creeping grass; secondary forest, open space; weed.

123.6.1 ***Panicum brevifolium*** L. Rumput sarang semut; creeping grass; open spaced, secondary forest; weed.

123.7.1 ***Paspalum conjugatum*** Berg. Rumput lembu; creeping grass or clump; open space, infertile soils; weed.

123.8.1 ***Saccharum officinarum*** L. Tebu; cultivated near the settlement. **Uses**: stem edible.

123.9.1 ***Sacciolepis indica*** (L.) Chase. Rumput ubur-ubur; grass in clump; open spaced, secondary forest; weed.

123.10.1 ***Setaria geniculata*** (Lamk.) P. Beauv. Rumput ekor musang; grass in clump; open spaced, secondary forest; weed.

123.11.1 ***Sphaerocaryum malaccense*** (Trin.) Pilger. Rumput manic; grass, in clump; open spaced, secondary forest; weed.



PLATE 11. Rafflesiaceae. Top (left): unopened flower bud of *Rizanthes cf. lowii*.; top (right): *Rizanthes cf. lowii*.; bottom: *Rafflesia arnoldii*

124. RAFFLESIACEAE

124.1.1 ***Rafflesia arnoldii*** R. Br. Bunga pakma, Bunga bangkai; parasitic; lowland MDF, near to stream.

124.2.1 ***Rizanthes cf. lowii*** (Becc.) Harms. Jambulipa; parasitic; lowland MDF, flat ground; river-bank.

125. SMILACACEAE

125.1.1 ***Smilax barbata*** A. DC. Ubi jaga (Mal.); climber; lowland MDF, secondary forest, ridge. **Uses:** medicinal.

125.1.2 ***Smilax borneensis*** A. DC. Merudang (Ib.); Sepit udang; Ubi jaga; climber in secondary forest or on the edge of primary forest. **Uses:** young shoot consumed as vegetable and the tuber also eaten as source of starch.

125.1.3 ***Smilax hypoleuca*** Benth. Akar kemudang; climber; lowland MDF, hill MDF. **Uses:** tuber edible.

125.1.4 ***Smilax laevis*** Wall. Akar kemudang; Petagar ali (Ked.); climber; Alluvial forest. **Uses:** medicinal, used in *air masak.*

125.1.5 ***Smilax leucophylla*** Blume. Akar kemudang; climber; lowland MDF, hill MDF, old secondary forest.

125.1.6 ***Smilax megacarpa*** A. DC. Ubi jaga (Mal.); climber; lowland MDF, hill MDF, secondary forest, degraded secondary forest; gentle slope, ridge; sandy soils, clay rich soils. **Uses:** tuber edible and also used for medicinal; young shoot consumed as vegetable.

125.1.7 ***Smilax odoratissima*** Blume. Akar merudang; Petagar gajah; climber; riparian forest, lowland MDF, hill MDF; gentle slope, ridge; damp clay soils. **Uses:** tuber used for medicinal, used in *air masak.*

126. SOLANACEAE

126.1.1 ***Physalis angulata*** L. Ketupak letup; Leletup. Herb, degraded secondary forest; open spaced on damp places.

126.2.1 ***Solanum mammosum*** L. Terong tujang (Ib.); cultivated in longhouse compound. **Uses**: medicinal, for treating sore eyes in children; fruit edible.

126.2.2 ***Solanum torvum*** Swartz. Terong cit (Ib.); Terong pipit; shrub, herb; degraded secondary forest. **Uses**: fruits as vegetable.

127. TACCACEAE

127.1.1 ***Tacca borneensis*** Ridl. Janggut murai; Janggut baung; terrestrial herb; lowland MDF, hill MDF; flat ground, gentle slope; alluvial soils, clay rich soils.

127.1.2 ***Tacca chantieri*** Andre. Beting; terrestrial herb; lowland MDF, hill MDF, old secondary forest; flat ground, gentle slope; clay rich soils. **Uses**: ornamental plant.

127.1.3 ***Tacca*** sp.indet. Janggut murai; Janggut baung; terrestrial herb; lowland MDF; slope, valley bottom; clay rich soils.

*** Current classification, the genus Tacca is placed in Dioscoreaceae family*

128. THISMIACEAE

128.1.1 ***Thismia*** sp. Parasitic plant on the forest floor; occasional found on the thick litter or damp and wet places under shades canopy.

129. VITACEAE

129.1.1 ***Ampelocissus cinnamomea*** (Wall.) Planch. Akar munin (Ib.); Kerimpak pinggai (Ib.); climber, lowland MDF.

129.1.2 ***Ampelocissus imperialis*** (Miq.) Planch. Daun kelimpak pinggai (Ib.); climber; lowland MDF, hill MDF. **Uses**: medicinal, for cough and diarrhoea.

129.1.3 ***Ampelocissus winkleri*** Lauter. Akar buntak (Ib.); Akar engkaranak (Ib.); climber; lowland MDF, open spaced or secondary forest..

129.2.1 ***Cayratia trifolia*** (L.) Domin. Lakum (Mel.); climber; secondary forest, degraded secondary forest, degraded lowland MDF; flat ground, periodically flooded. **Uses**: medicinal.

129.3.1 ***Cissus angustata*** Ridl. Akar buntak (Ib.); climber, lowland MDF, hill MDF, sometimes riverine.

129.3.2 ***Cissus ripens*** Lam. Akar engkaranak (Ib.); climber; lowland MDF, hill MDF, old secondary forest; emperan, river-bank; slope, ridge; sandy soils.

129.3.3 ***Cissus rostrata*** Korth. ex Planch. Akar engkaranak (Ib.); climber; lowland MDF, secondary forest, emperan, river-bank; sandy soils.

129.4.1 ***Leea aculeata*** Blume ex Spreng. Bengang kemali (Ib.); small tree or treelet; old secondary forest; alluvial clay soils.

129.4.2 ***Leea indica*** (Burm.f.) Merr. [synonym: *Leea gigantea* Griff.; *Leea sambucina* Willd.; *Leea sundaica* Miq.; *Leea javanica auct. non* Blume] Kemali (Ib.); small tree or shrub; occasional on river-bank or flat ground. **Uses**: fruits usually been used for colouring the handcraft materials.

129.5.1 ***Pterisanthes brevipedicellata*** Latiff. Akar engkaranak (Ib.); climber; montane forest.

129.5.2 ***Pterisanthes cissoids*** Blume. Akar engkaranak (Ib.); climber; lowland MDF, hill MDF.

129.5.3 ***Pterisanthes grandis*** Ridl. Akar engkaranak (Ib.); climber; lowland MDF, hill MDF; alluvial soils.

129.6.1 ***Tetrastigma diepenhostii*** (Miq.) Latiff. Akar patong (Ib.); climber, liana; lowland MDF, hill MDF; flat ground, gentle slope, valley bottom, clay rich soils.

129.6.2 ***Tetrastigma penduculare*** (Wall.) Planch. Akar ruran (Ib.); climber, liana; lowland MDF, hill MDF, gentle slope.

130. ZINGIBERACEAE

130.1.1 ***Alpinia amentacea*** R.M. Sm. Lelamas bukit (Ib.); terrestrial herb; by the riverside. **Note**: flowers small, catkin like, fruits globose, yellowish green.

130.1.2 ***Alpinia beamanii*** R.M. Sm. Terrestrial herb. **Note**: fruits greenish yellow; lowland MDF.

130.1.3a ***Alpinia glabra*** Ridl. var. ***glabra***. Lowland MDF or sometimes at river-bank. **Note**: terrestrial herb or lithophytic; leaves not corrugated, flower reddish.

130.1.3b ***Alpinia glabra*** Ridl. var. ***reticulata*** R.M. Sm. Lithophyte, by the riverside. **Note**: leaves very corrugated, fruit globose, greenish yellow.

130.1.4 ***Alpinia hansenii*** R.M. Sm. Lithophyte on rock surface, hill MDF at altitude c. 700 m.

130.1.5 ***Alpinia nieuwenhuizii*** Valeton. Lelemas ai (Ib.); river-bank. **Note**: large leaves with prominent paniculate inflorescence.

130.1.6 ***Alpinia epiphytica*** Meekiong, Ipor & Tawan. Epiphyte, river-bank or lowland MDF; leaves oblong-lanceolate, flower reddish, labellum creamy with maroon stripes. **Note**: A newly described species, only species in the genus recorded with epiphyte habit in SE Asia.

130.2.1 ***Amomum anomalum*** R.M. Sm. Lowland MDF, shade condition or river-bank. **Note**: fruit ellipoid, reddish brown.

130.2.2 ***Amomum coriaceum*** R.M. Sm. Lowland MDF at altitude c. 110 m. **Note**: floral bracts greenish.

130.2.3 ***Amomum dimorphum*** M.F. Newman. Near to the stream. **Note**: fruits light green.

130.2.4 ***Amomum epiphyticum*** R.M. Sm. Epiphyte on tree trunk, riverine, MDF. **Note**: fronds hanging down from branches of trees with distinct crimson coloured inflorescence bracts.

130.2.5 ***Amomum laxisquamosum*** K. Schum. Tepus (Mal.); logged over forest, near to the logging road. **Note**: inflorescence reddish orange, flower yellowish.

130.2.6 ***Amomum hansenii*** R.M. Sm. Lelemas bukit (Ib.); lithophyte on the rock surface. **Note**: Labellum orange, transparent with reddish stripes.

130.2.7 ***Amomum*** sp.1 indet. Lowland MDF, hill ridge. **Note**: fruits rounded, hairy, greenish brown.

130.2.8 ***Amomum*** sp.2 indet. Lowland MDF, gentle slope. **Note**: flowers orange; fruits oval, greenish brown.

130.2.9 ***Amomum*** sp.3 indet. Riverine. **Note**: Dark green, glabrous linear leaves.

130.3.1 ***Boesenbergia burttiana*** R.M. Sm.. Herb, lowland MDF, by the riverside. **Note**: flower white with yellow band on the throat of labellum.

130.3.2 ***Boesenbergia cf. grandis*** R.M. Sm. Herb; lowland MDF; gentle slope, riverside. **Note**: underneath leaves greenish red, flower white with yellow band.

130.3.3 ***Boesenbergia grandifolia*** (Valeton) Merr. Herb, lowland MDF; on the hill ridge by the riverside. **Note**: flower whitish with yellow band on the labellum. New record for Sarawak.

130.3.4 ***Boesenbergia latongensis*** Meekiong, Ipor & Ibrahim. Herb; Kerangas forest near to small stream. **Note**: leaves greenish with light yellow along the midrib, flower orange. Newly described species from Lanjak Entimau Wildlife Sanctuary.

130.3.5 ***Boesenbergia oligosperma*** (K. Schum.) R.M. Sm. Herb; lowland MDF; flat ground, gentle slope, brown clay soils. **Note**: flower orange or yellow.

130.3.6 ***Boesenbergia stenophylla*** R.M. Sm. Jerangau merah; herb, lowland MDF, flat ground, gentle slope. **Note**: flower white. **Uses**: medicinal.

130.3.7 ***Boesenbergia variegata*** R.M. Sm. Herb, lithophyte; lowland MDF, Kerangas.

130.3.8 ***Boesenbergia*** sp.1 indet. Herb, lowland MDF; lithophyte on the rock cliff. **Note**: labellum creamy white, yellowish on the throat.

130.3.9 ***Boesenbergia*** sp.2 indet. Herb, lowland MDF; riverine. **Note**: labellum whitish with yellowish patch on the throat.

130.3.10 ***Boesenbergia*** sp.3 indet. Small herb on forest floor; lowland MDF. **Note**: small flowers, labellum yellow.

130.3.11 ***Boesenbergia*** sp. 4 indet. Herb, lowland MDF. **Note**: huge plant, 110 cm. high; large leaves, tufted habit. Young plants with purplish leaves. Flowers small, labellum yellow.

130.4.1 ***Burbidgea pauciflora*** Valeton. Epiphytic herb, lowland MDF. **Note**: flower orange.

130.4.2 ***Burbidgea schizocheila*** Hackett. Epiphytic herb; lowland MDF, riparian. **Note:** flower orange, bracts reddish orange.

130.4.3 ***Burbidgea stenantha*** Ridl. Epiphyte herb, lowland MDF, riparian **Note**: inflorescence terminal, flower orange.

130.5.1 ***Elettaria surculosa*** (K. Schum) B.L. Burtt & R.M. Sm. Herb, lowland MDF, riverine. **Note**: flower white with greenish yellow band on the throat of labellum.

130.5.2 ***Elettaria*** sp.1 indet. Herb, lowland MDF, riverine. **Note**: flower white with greenish band on the throat of labellum.

130.6.1 ***Elettariopsis kerbyi*** R.M. Sm. Herb; lowland MDF on the hill ridge. **Note**: flower creamy with reddish stripes in the middle of labellum.

130.7.1 ***Etlingera aurantia*** A.D. Poulsen. Herb; lowland MDF, riparian, flat ground. **Note**: flower orange.

130.7.2 ***Etlingera baramensis*** S. Sakai & Nagam. Herb; lowland MDF, riparian, flat ground.

130.7.3 ***Etlingera brevilabrum*** (Valeton) R.M. Herb; lowland MDF, flat ground, gentle slope. **Note**: flower pinkish.

130.7.4 ***Etlingera* cf. *corrugata*** A.D. Poulsen & Mood. Herb, lowland MDF, flat ground, gentle slope, valley bottom; riverine. **Note**: leaves corrugated, fruits greenish brown, overflower.

130.7.5 ***Etlingera elatior*** (Jack) R.M. Sm. Kantan; Kenchala (Ib.); herb; cultivated in the orchard and near settlement. **Uses**: flower for spices.

130.7.6 ***Etlingera foetens*** (Blume) R.M. Sm. Tepus udok (Ib.); herb; lowland MDF, secondary forest; riverine. **Note**: flower reddish.

130.7.7 ***Etlingera inundata*** S. Sakai & Nagam. Herb, lowland MDF, on the hill slope, valley bottom. **Note**: flower pinkish.

130.7.8 ***Etlingera kenyalang*** A.D. Poulsen & H. Chr. Tepus kenyalang (Ib.); herb; lowland MDF, secondary forest, flat ground, gentle slope. **Uses**: flowers used in the ritual ceremonies.

130.7.9 ***Etlingera* cf. *muriformis***. A.D. Herb; lowland MDF, riverine. **Note**: Leafy shoot tall, labellum red.

130.7.10 ***Etlingera pyramidosphaera*** (K. Schum) R.M. Kenchala gonjeng (Ib.); herb; logged over forest, degraded MDF on the hill ridge. **Note**: young leaves purplish underneath. Involucral bracts rose pink. Infructescence beaked.

130.7.11 ***Etlingera* cf. *rubromarginata*** A.D. Poulsen & Mood. Herb; lowland MDF. **Note**: flower pinkish.

130.8.1 ***Geocharis rubra*** Ridl.. Herb; lowland MDF, riparian; valley bottom, flat ground, gentle slope; clay rich soils. **Note**: flower reddish, labellum orange with reddish stripes.

130.9.1 ***Globba atrosanguinea*** Teijsm. & Binn. Small herb on forest floor; lowland MDF, degraded lowland MDF, secondary forest, riverine. **Note**: inflrescence terminal, bract reddish, flower orange. **Uses**: medicinal and used for ritual ceremonies.

130.9.2 ***Globba brachyanthera*** K. Schum.Herb, lowland MDF, riverine, flat ground, gentle slope, valley bottom.

130.9.3 ***Globba francisci*** Ridl. Herb, lowland MDF, riverine; flat ground, gentle slope, valley bottom; sandy soils. **Note**: flower yellowish.

130.9.4 ***Globba pendula*** Roxb. Herb, lowland MDF. **Note**: flowers orangish yellow.

130.9.5 ***Globba* cf. *propinqua*** Ridl. Herb; lowland MDF; gentle slope, valley bottom. **Note**: young leaves purplish underneath, flowering bracts greenish yellow.

130.9.6 ***Globba pumila*** Ridl. Herb ; lowland MDF, riverine. **Note** : inflorescence terminal, flower white.

130.9.7 ***Globba tricolor*** Ridl. Herb, lowland MDF; riverine; flat ground, gentle slope. **Note**: inflorescence terminal, flower whitish.

130.9.8 ***Globba*** sp.1 indet. Herb; lowland MDF. Note: inflorescence terminal, pinkish, flower pinkish.

130.10.1 ***Haplochorema magnum*** R.M. Sm. Small herb on the forest floor, lowland MDF, Kerangas; riparian. **Note**: leaves dark green, purplish underneath, flower white.

130.10.2 ***Haplochorema pauciflorum*** R.M. Sm. Small herb; lowland MDF, Kerangas, riparian; flat ground, gentle slope, valley bottom. **Note**: flower white.

130.11.1 ***Hedychium cf. muluense*** R.M. Sm. Epiphytic on the branches, lowland MDF. Note: fruit greenish.

130.11.2 ***Hedychium*** sp.1 indet. Epiphytic on the tree trunk; lowland MDF, riverine.

130.12.1 ***Hornstedtia conica*** Ridl. Herb, lowland MDF, riparian.

130.12.2 ***Hornstedtia havilandii*** R.M. Sm. Herb, lowland MDF, riverine. **Note**: petals reddish, labellum pinkish, long peduncle. **Uses**: inflorescence used as vegetable.

130.12.3 ***Hornstedtia cf. incana*** R.M. Sm. Herb, lowland MDF; lithophytes on the rock surface. **Note**: flower reddish.

130.12.4 ***Hornstedtia reticulata*** K. Schum. Herb, lowland MDF, degraded MDF, secondary forest, degraded secondary forest; flat ground, gentle slope; sandy clay soils.

130.12.5 ***Hornstedtia tomentosa*** (Blume) Bakh.f., Herb; lowland MDF, on the edge of logging road. **Note**: flower yellowish orange.

130.12.6 ***Hornstedtia*** sp.1 indet. Herb; lowland MDF, secondary forest; flat ground, gentle slope. **Note**: Flower reddish.

130.13.1 ***Plagiostachys albiflora*** Ridl. Herb; lowland MDF; flat ground, gentle slope. **Note**: flower whitish.

130.13.2 ***Plagiostachys altistachya*** Meekiong & C.K. Lim. Herb, lowland MDF, Kerangas, near to small stream, sandy clay soils. **Note**: inflorescence borne nearly to the terminal of the leafy shoot, flower orange with pinkish stripes. New species from Lanjak Entimau Wildlife Sanctuary.

130.13.3 ***Plagiostachys crocydocalyx*** (K. Schum) B.L. Burtt & R.M. Sm. Bajang (Ib.); herb, degraded lowland MDF, secondary forest; flat ground, gentle slope. **Note**: Flower creamy white.

130.13.4 ***Plagiostachys strobilifera*** (Baker) Ridl., Herb; lowland MDF, riverine; flat ground. **Note**: inflorescence reddish.

130.13.5 ***Plagiostachys*** sp.1 indet. Herb, lowland MDF. **Note**: flower white.

130.13.6 ***Plagiostachys*** sp.2 indet. Herb, lowland MDF, on the hill ridge. **Note**: flower creamy white.

130.13.7 ***Plagiostachys*** sp.3 indet. Herb, lowland MDF; riverine. **Note**: infructescence dried up, half way along leafy shoot. Overflower, except for a few small flower buds with pink tips.

130.14.1 ***Scaphochlamys iporii*** Meekiong & Ampeng. Small herb on forest floor; lowland MDF; on the hill ridge. **Note**: one-leaf plant, connected rhizomes, flower white. New species from Lanjak Entimau Wildlife Sanctuary.

130.14.2 ***Scaphochlamys salahuddiniana*** Meekiong, Ipor & Ampeng. Herb; lithophytes; hill MDF; alluvial soils. **Note**: flower lilac

white with deeply bilobed labelum. New species from Lanjak Entimau Wildlife Sanctuary.

130.15.1 ***Zingiber pachysipon*** B.L. Burtt & R.M. Sm. Herb, lowland MDF; gentle slope, flat ground; riverine. **Note**: inflorescence radical, bracts pinkish white. Young inflorescence with purplish red bracts with recurved white apex.

130.15.2 ***Zingiber cf. puberulum*** R.M. Sm. Herb; lowland MDF, flat ground, hill slope. **Note**: inflorescence eaten by animal.

130.15.3 ***Zingiber*** sp.1 indet. Herb; lowland MDF, emperan, hill slope. **Note**: inflorescence greenish.

130.15.4 ***Zingiber*** sp.2 indet. Herb, lowland MDF, hill slope. **Note**: Inflorescence reddish.

130.15.5 ***Zingiber*** sp.3 indet. Herb; lowland MDF, hill slope. Note: leaves ovate, inflorescence just coming out, bracts red.



Plate 12: Zingiberaceae. *Alpinia* spp. from LEWS. Right from top: *A. glabra* var. *corrugata; A. amentecae; A. argentea.* Left from top: *A. epiphytica; A. nieuwenhuizii.*



Plate 13: Zingiberaceae - *Etlingera* spp. from LEWS. Right from top to bottom: *Etlingera kenyalang; Etlingera brevilabrum; Etlingera elatior* var. *elatior* (Kantan). Left from top to bottom: *Etlingera foetens; Etlingera phyramidosphaera; Etlingera coccinea.*

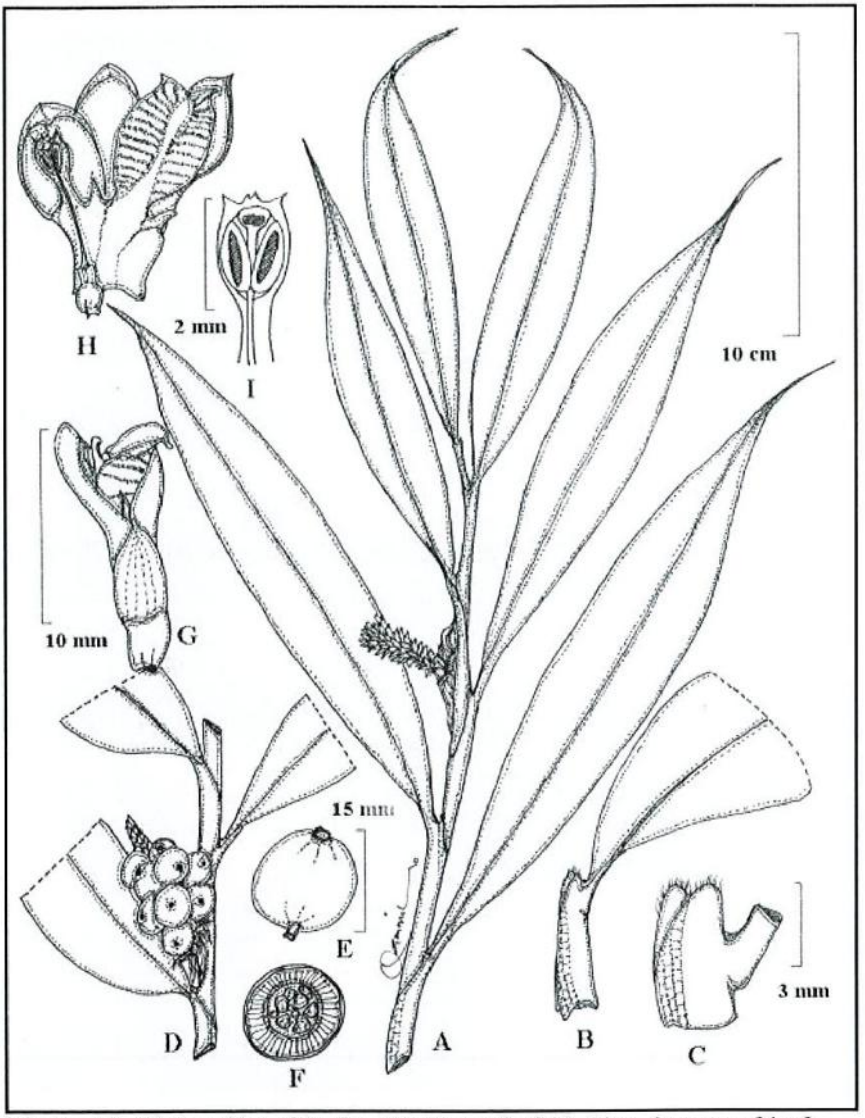


Figure 16: *Plagiostachbys altistachya* Meekiong & C.K. Lim. A: part of leafy plant; B: leaf base; C: ligule; D: infructescence; E: fruit; F: cross-section of fruit; G: flower; H: dissected flower; I: anther and pollinia

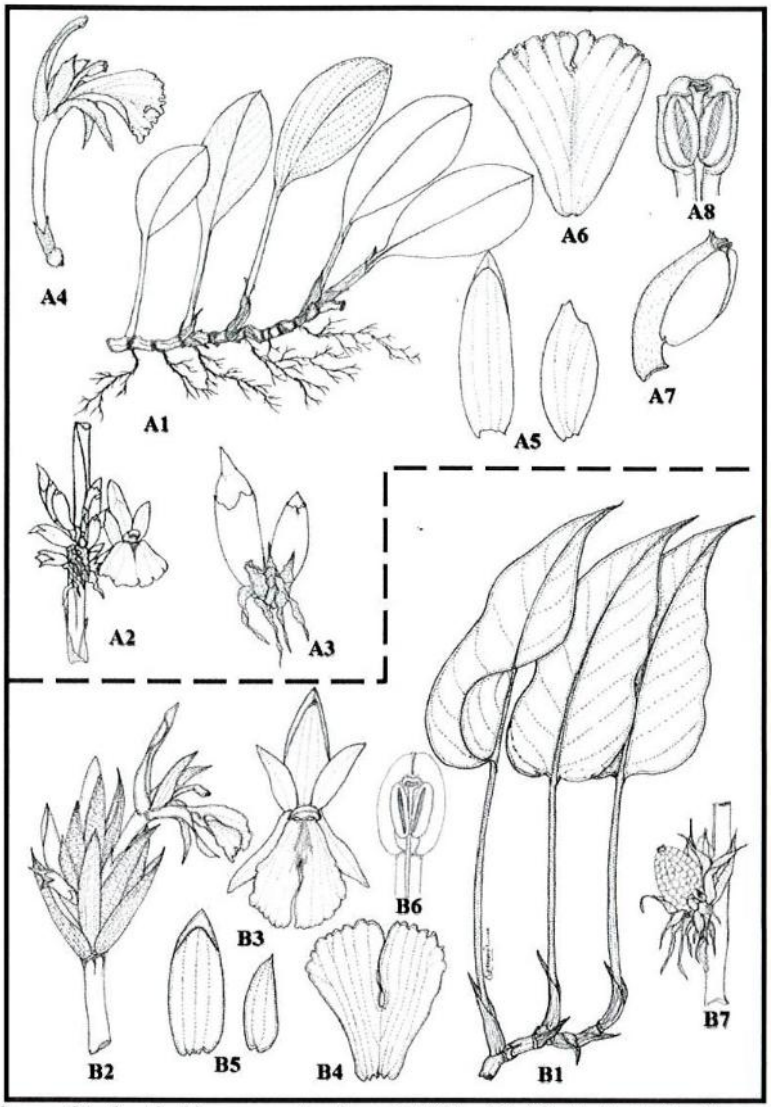


Figure 17: *Scaphochlamys* species from LEWS. A1-A8: *S. iporii* Meekiong & Ampeng [A1: whole plant; A2: inflorescence; A3: flower bud; A4: flower; A5: corolla lobes; A6: labellum; A7-A8: theca] B1-B7: *S. salahuddiniana* Meekiong, Ipor & Ampeng [B1: whole plant; B2: inflorescence; B3: flower; B4: labellum; B5: corolla lobes; B6: theca; B7: fruit].

FERNS, FERN-ALLIES AND BRYOPHYTES

LYCOPHYTES (FERN-ALLIES)

131. LYCOPODIACEAE

131.1.1 ***Huperzia carinata*** (Desv. ex Poir.) Trevis; Epiphyte on tree branches hanging over the river in moderate exposed areas.

131.1.2 ***Huperzia pinifolia*** Trevis.; Epiphyte on tree branches in moderate exposed areas.

131.1.3 ***Huperzia nummulariifolia*** (Blume) T.C. Chambers, Jermy & Crabbe. Lukut serganai (Mel.); epiphyte on tree branches in moderate exposed areas.

131.1.4 ***Huperzia phlegmaria*** (L.) Rothm.; Epiphyte on tree branches in moderate exposed areas.

131.2.1 ***Lycopodiella cernua*** (L.) Pic. Serm. Paku dawai; Tapuk-tapukan (Ked.); terrestrial and in exposed area. **Uses**: medicinal, used in *air masak* and to keep malevolent spirits away.

132. SELAGINELLACEAE

132.1.1 ***Selaginella alopecuroides*** Baker. Paku merak; terrestrial herb; lowland MDF, hill MDF, old secondary forest; flat ground, slope, valley bottom, periodically flooded; clay rich soils, sandy soils.

132.1.2 ***Selaginella involvens*** (Sw.) Spring; epiphytic on tree branches of *Dipterocarpus oblongifolius* in shade, a riparian plant.

132.1.3 ***Selaginella lobii*** Veitch. Paku nyelipan (Ib.); Siti fatimah laki (Ked.); terrestrial herb; lowland MDF, riparian; flat ground, slope; clay soils, clay rich soils. Uses: medicinal, used in *air masak*.

132.1.4 ***Selaginella plana*** (Desv.) Hieron.; terrestrial in moderate exposed areas. Earlier this species is onlyknown from Peninsular Malaysia, hence a new record for Sarawak.

132.1.5 ***Selaginella rugulosa*** Ces. Bunga siti fatimah perempuan (Ked.); fern; Alluvial forest. **Uses**: medicinal, used in *air masak*.

132.1.6 ***Selaginella subserpentina*** V.A.V.R. Paku kera (Ib.); terrestrial herb; lowland MDF, hill MDF, old secondary forest, emperan; slope, ridge; sandy soils, clay rich soils.

132.1.7 ***Selaginella*** sp. indet. Terrestrial in shade. A species yet to be identified.

MONILOPHYTES (FERNS)

133. ASPLENIACEAE

133.1.1 ***Asplenium nidus*** L. Paku langsuir; Paku sarang burung; lukut (Mel.); epipythic herb; wide range of vegetations, from lowland MDF to lower mossy forest. Uses: planted in the pot as ornamental plant.

133.1.2 ***Asplenium nitidum*** Sw. Paku Rajang (Ib.); Lukut manok (Mel.); epiphytic fern on tree trunk; lowland MDF, hill MDF.

133.1.3a ***Asplenium phyllitidis*** D. Don ssp. ***malesicum*** Holttum. Riparian vegetation, epiphyte on tree.

133.1.4 ***Aplenium salignum*** Blume. Petagar (Ked.); epiphytic; riparian forest, river-bank, emperan. **Uses**: medicinal, used in *air masak*.

133.1.5 ***Asplenium scolopendroides*** J. Sm. ex Hook. Petagar perempuan (Ked.); terrestrial fern, sometimes lithophytic; riparian forest, river bank. **Uses**: medicinal, used in *air masak*.

133.1.6 ***Asplenium subaquatile*** Ces.; Paku Rajang (Ib.); epiphyte on trees in shade, riparian.

133.1.7a ***Asplenium tenerum*** G. Forst. **var. *tenerum***; Riparian vegetation, epiphyte on tree; alt c. 131m.

133.1.8 ***Asplenium* sp.**; Riparian vegetation, on river-bank.

134. CYATHEACEAE

134.1.1 ***Alsophila borneensis*** [syn: *Cyathea borneensis* Copel] Paku gajah; geruing (Mel.); terrestrial tree fern; lowland MDF, hill MDF, lower mossy forest; slope, ridge; clay rich soils.

134.1.2 ***Alsophila latebrosa*** [syn. *Cyathea latebrosa* (Wall. Ex Hook.) Copel]. Paku gajah; terrestrial in shaded area, 4 m tall, quite slim-looking.

134.2.1 ***Sphaeropteris mollucana*** (Desv.) R.M. Tryon; [syn. *Cyathea moluccana* R. Br.]; terrestrial in moderate shaded area.

135. DAVALLIACEAE

135.1.1 ***Davallia divaricata*** Blume; Epiphyte on tree branches in moderate shade; elevation c. 131 m.

135.2.1 ***Davallodes borneensis*** (Hook.) Copel.; Epiphyte, hanging on twigs; elevation c. 1250 m.

135.3.1 ***Humata heterophylla*** (Sm.) Desv. Paku; epiphytic; lowland MDF.

135.4.1 ***Scyphularia simplicifolia*** Copel.; epiphyte on tree in moderately shade.

136. DIPTERIDACEAE

136.1.1 ***Dipteris conjugata*** Reinw. Paku payong raja; fern; submontane forest, montane forest; often in open space; alluvial clay soils.

136.1.2 ***Dipteris lobbiana*** (Hook.) T. Moore. Paku; lithophytic on rock surface; riparian forest, river-bank.

136.1.3 ***Dipteris quinquefureata*** (Bak.) H. Christ. Paku; montane forest.

137. DRYOPTERIDACEAE

137.1.1 ***Bolbitis heteroclita*** (C. Presl) Ching; on rotten wood in moderately exposed area.

137.2.1 ***Nephrolepis biserrata*** (Sw.) Schott; terrestrial in exposed area; elevation c. 150 m.

137.2.2 ***Nephrolepis falciformis*** J. Smith [syn. *Nephrolepis falcata* non (Cav.) C. Chr.]; Epiphyte on tree in shade.

137.3.1 ***Polystichopsis aristata*** (Forst.) Holttum. Paku; summit ridge forest.

138. GLEICHENIACEAE

138.1.1 ***Sticherus truncatus*** (Willd.) Nakai; scrambling in the open.

139. GRAMMITIDACEAE

139.1.1 ***Acrosorus friderici-et-pauli*** (H. Christ.) Copel. Epiphyte on stem of tree especially riparian, on vine in moderate sheltered area.

139.2.1 ***Calymmodon ramifer*** Copel.; Epiphyte on stem of tree especially the riparian ones, on vine in moderate sheltered area. There are eight species of this genus in Sarawak, five are probably new and this species is a **new** record to Sarawak Fern Flora.

139.3.1 ***Ctenopterella* sp.** Epiphyte on stem of tree especially riparian, on vine in moderate sheltered area.

139.4.1 ***Prosaptia alata*** (Blume) H.Christ. Epiphyte on tree's bark in moderate shade.

140. HYMENOPHYLLACEAE

140.1.1 ***Cephalomanes javanicum*** (Blume) Bosch; in Riparian vegetation, on rock by river-bank or on rocks by the river in moderate shaded.

140.1.2 ***Cephalomanes singaporeanum*** V.d.B. Paku; lithophytic; riparian forest.

140.1.3 ***Cephalomanes sumatranum*** (V.A.V.R.) Copel. Paku; epiphytic, lithophytic; riparian forest.

140.2.1 ***Crepidomanes christii*** (Copel.) Copel.; on rotten wood by river-bank in shade.

140.2.2 ***Crepidomanes humile*** (G. Forster) Bosch; On tree bark or rotten wood in moderately shaded areas, locally abundant. New record for Sarawak.

140.2.3 ***Crepidomanes minutum*** (Blume) K. Iwatsuki; [syn. *Trichomanes minutum* Blume; *Trichomanes proliferum* Blume]. Riparian vegetation, on rotten wood by river-bank; new record for Sarawak.

140.3.1 ***Hymenophyllum penangianum*** C.G. Matthew & H. Christ; on rotten wood by river-bank in shade.

140.3.2 ***Hymenophyllum productum*** Kuntze. Paku; epiphytic on tree branches; old secondary forest.

140.3.3 ***Hymenophyllum* sp.;** Parris and Latiff (1997) listed only one species of the genus in Sabah, Malaysia, i.e. *H. Peltatum* (Poir.) Desv.

140.4.1 ***Macroglena meifolia*** (J. Sm.) Copel. Paku; epiphytic; submontane forest.

140.5.1 ***Trichomanes bipunctatum*** Poir. Paku; epiphytic; submontane forest.

140.5.2 ***Trichomanes digitatum*** Sw.; [syn. *Crepidomanes digitatum* (Sw.) K. Iwatsuki; *Microtrichomanes digitatum* (Sw.) Copel.] on rotten wood by river-bank in shade.

140.5.3 ***Trichomanes javanicum*** Blume. Petagar langkubok (Ked.); Petagar fatimah (Ked.); terrestrial fern; Alluvial forest. **Uses**: medicinal, used in *air masak*.

140.5.4 ***Trichomanes sublimbatum*** Müll. Berol.; On rock in moderate exposed areas.

141. LINDSAEACEAE

141.1.1 ***Lindsaea borneensis*** Hook. Paku empuan (Ked.); small fern; lowland MDF. **Uses**: medicinal, used in *air masak*.

141.1.2 ***Lindsaea doryphora*** K.U. Kramer. Paku; small fern; lowland MDF.

141.1.3 ***Lindsaea lobata*** Poir. Paku; lowland MDF.

141.1.4a ***Lindsaea lucida*** Blume ssp. ***lucida;*** riparian vegetation, on river-bank.

141.1.5 ***Lindsaea oblanceolata*** V.A.V.R. Paku; montane forest.

141.1.6 ***Lindsaea parallelogramma*** V.A.V.R. Rumput siti fatimah (Ked.); epiphytic fern; riparian forest. **Uses**: for severe headache or migraine.

141.1.7 ***Lindsaea repens*** (Bory) Thwaites. Paku; submontane forest.

141.1.8 ***Lindsaea scandens*** Hook.f. Paku; epiphytic; summit ridge forest.

142. LOXOGRAMMACEAE

142.1.1 ***Loxogramme antrophyoides*** (Baker) C. Chr.; Lowland forest especially riparian, on vine in moderate sheltered. **Note**: A species with dimorphous fronds, the fertile ones linear, c. 1.0 – 2.0 mm wide and longer than sterile fronds.

142.1.2 ***Loxogramme avenia*** (Blume) C. Presl; Lowland forest especially riparian, on vine in moderate sheltered.

142.1.3 ***Loxogramme subecostata*** (Hook.) C. Chr.; Riparian, on rocky bank in moderate shade.

142.1.4 ***Loxogramme* sp. 1** ; Lowland forest especially riparian, on vine in moderate sheltered. **Note**: This species is close to *L. carinata* M. G. Price, if not conspecific with it.

142.1.5 ***Loxogramme* sp. 2**; Epiphyte on tree in shade.

143. MARATTIACEAE

143.1.1a ***Christensenia aesculifolia*** (Blume) Maxon var. ***korthalsii*** (de Vriese) Rolleri; Terrestrial on river-bank in shade

144. MATONIACEAE

144.1.1 ***Matonia foxworthyi*** Copel. Paku; Alluvial forest, riparian forest.

145. OLEANDRACEAE

145.1.1 ***Oleandra pistillaris*** (Sw.) Christ; Riparian vegetation, on river-bank; elevation c. 154m.

146. OPHIOGLOSSACEAE

146.1.1 ***Helminthostachys zeylanica*** L. Paku tunjuk langit; tunjuk-tunjuk; terrestrial fern; lowland MDF, secondary forest; flat ground, slope; valley bottom, clay rich soils, sandy clay. **Uses:** whole plant cooked as vegetable.

147. POLYPODIACEAE

147.1.1 ***Aglaomorpha heraclea*** (Kunze) Copel.; Epiphyte on tree branch in moderated exposed area.

147.1.2 ***Aglaomorpha speciosa*** (Blume) Roos; Lowland forest especially riparian, on vine in moderate sheltered area.

147.2.1 ***Belvisia callifolia*** (H. Christ.) C. Christ. Epiphytic fern; lowland MDF, hill MDF, riparian forest.

147.2.2 ***Belvisia mucronata*** (Fee) Copel.; Riparian vegetation, epiphyte on tree by river-bank; elevation c. 131m.

147.3.1 ***Drynaria sparsisora*** (Desv.) T. Moore; Lukut (Ked.); epiphyte on tree branches in moderate shade. **Uses:** as a contraceptive for women.

147.4.1 ***Goniophlebium percussum*** (Cav.) W.H. Wagner & Grether; Riparian vegetation, on rotten wood.

147.4.2 ***Goniophlebium rajaense*** (C. Christ.) Parris. Epiphytic; riparian forest.

147.5.1 ***Lemmaphyllum accedens*** (Blume) Donk; Riparian, epiphyte on twigs in moderate shade.

147.6.1a ***Leptochilus macrophyllus*** (Blume) Noot. var. ***fluviatilis***, On rock in stream-bed in moderated shade.

147.6.2 ***Leptochilus* sp.** Riparian, on river-bank in moderate shade; elevation c. 154m. This is probably a new record for Sarawak.

147.7.1 ***Microsorum commutatum*** Copel. Epiphyte on tree by river-bank or on rotten wood; elevation c. 131 – 150 m alt.

147.7.2 ***Microsorum membranifolium*** (R. Br.) Ching [syn. *Phymatosorus nigrescens* (Blume) Pic. Serm.; riparian, rupicolous in moderated shade; elevation c. 150 m alt.

147.8.1 ***Paragramma longifolia*** (Blume) T. Moore; Riparian vegetation, epiphyte on tree by river-bank; elevation c. 131 m.

147.9.1 ***Platycerium coronarium*** (J. Koenig) Desv. Paku tanduk rusa; epiphytic on tree trunk and branches; lowland MDF, hill MDF, riparian forest, Kerangas forest.

147.9.2 ***Platycerium ridleyi*** Christ. Paku tanduk rusa; epiphyhtic on tree trunk; lowland MDF, riparian forest.

147.10.1 ***Polypodium pappilosum*** Blume. Paku; epiphytic on tree trunk; riparian forest.

147.11.1 ***Pyrrosia christii*** (Giesenh.) Ching; Epiphyte on tree bark in moderated shade, locally common.

147.11.2 ***Pyrrosia lanceolata*** (L.) Farw.; Epiphyte on tree in shade.

147.11.3 ***Pyrrosia longifolia*** (Burm.f.) C.V. Morton. Paku duit; epiphytic; lowland MDF, hill MDF, secondary forest.

147.11.4 ***Pyrrosia nummulariifolia*** (Sw.) Ching; Epiphyte in moderated shade; elevation c. 104 m.

147.12.1 ***Selliguea heterocarpa*** (Blume) Blume; Epiphyte on tree in shade.

147.12.2 ***Selliguea stenopteris*** (Bak.) Parris. Paku; epiphytic fern; montane forest.

147.13.1 ***Thylacopteris papillosa*** (Blume) Kunze *ex* J.Sm.; lowland forest especially riparian area, on rocks near streams in forests.

148. PTERIDACEAE

148.1.1 ***Antrophyum brookei*** Hook.; epiphyte in moderate exposed areas or tree branches. Earlier this species is only known from Sabah, hence another new record for Sarawak.

148.1.2 ***Antrophyum callifolium*** Blume; epiphyte in moderate exposed areas.

148.2.1 ***Haplopteris elongata*** Sw.; Riparian vegetation, on rotten wood.

148.2.2 ***Haplopteris*** sp.; Riparian vegetation, on rotten wood.

148.2.3 ***Haplopteris*** sp.1; Riparian vegetation, on rotten wood.

148.2.4 ***Haplopteris*** **sp. 2**; Riparian vegetation, on rotten wood.

148.3.1 ***Pteris furcans*** Baker. Riparian vegetation, on rocky soiled habitat near river-bank.

148.3.2 ***Pteris tripartia*** Sw. Paku; terrestrial fern; hill MDF; on sandy clay soils.

148.3.3 ***Pteris*** sp. Riparian vegetation, on rotten wood.

148.4.1 ***Syngramma alismifolia*** (C. Presl) J. Smith. Riparian vegetation, on rocky soiled area near river-bank.

148.4.2 ***Syngramma borneensis*** (Hook.) J. Smith; Riparian vegetation, on rocky soiled area near river-bank.

148.4.3 ***Syngramma cartilagidens*** (Baker) Diels. Riparian vegetation, on rocky soiled area near river-bank.

149. TECTARIACEAE

149.1.1 ***Heterogonium profereoides*** (Christ) Copel., on river bank in moderate shade.

149.2.1 ***Pleocnemia irregularis*** (C. Presl) Holttum; terrestrial on rocky river-bank in moderately exposed area.

149.3.1 ***Tectaria angulata*** (Willd.) C. Christ..; Riparian, epiphyte on twigs in moderate shade.

149.3.2 ***Tectaria crenata*** Cav., terrestrial on trail-side in moderate shade; lowland and mid-hill forest.

149.3.3 ***Tectaria grandidentata*** Holttum. Terrestrial fern; Alluvial forest.

149.3.4 ***Tectaria lobbii*** Holttum; Langgitu batu (Ked.); in riparian vegetation, terrestrial on flooded river-bank in moderate shade. **Uses**: medicinal, used in *air masak* and for treatment of convulsion.

149.3.5 ***Tectaria pleiosora*** (V.A.V.R.) C. Christ. Lemiding hutan (Ked.); terrestrial fern; Alluvial forest. **Uses**: medicinal, used in *air masak* and to treat difficulty in urination.

149.3.6 ***Tectaria singaporeana*** (Hook. & Grev.) Copel.; Terrestrial in moderate shade; elevation c. 104 m.

149.3.7 ***Tectaria* sp. 1.** On rock of small stream in shade. **Note:** This species is probably new to science. **Diagnostic description:** Rhizome: 0.5cm thick, Stipe: 11.5 – 14.6 cm on simple leaves, 35 – 37 cm long on trifoliate leaves; Veins: no free veins on costal aereoles, buds present on basal part of frond; sorus on free veins; indusium: thin and reniform.

149.3.8 ***Tectaria* sp. 2.** Riparian vegetation, on rotten wood; elevation c. 150 m.

150. THELYPTERIDACEAE

150.1.1 ***Christella* sp.** Terrestrial, riparian, near the river in moderate shade. **Note:** Sarawak has four species of *Christella.*

150.2.1 ***Coryphopteris* sp.** Terrestrial fern; submontane forest.

150.3.1 ***Cyclosorus holophyllus*** (Bak.) Copel. Terrestrial fern; lowland MDF, hill MDF; alluvial soils.

150.4.1 ***Mesophlebion oligodictyon*** (Bak.) Holttum. On rock in stream-bed in moderated exposed area; elevation c. 104 m.

150.4.2 ***Mesophlebion* sp.** Terrestrial in shade.

150.5.1 ***Pneumatopteris truncata*** (Poir.) Holttum. Terrestrial fern; Alluvial forest; clay-rich soils.

150.6.1 ***Pronephrium rubicundum*** (V.A.V.R.) Holttum. Terrestrial fern; riparian forest; sandy clay soils.

150.6.2 ***Pronephrium* sp.** On slope rock-bank in shade.

150.7.1 ***Sphaerostephanos larutensis*** (Bedd.) C. Christ. Terrestrial fern; lowland MDF, hill MDF; alluvial clay soils.

150.7.2 ***Sphaerostephanos* sp.1**; Terrestrial, riparian, near the river in moderate shade.

150.7.3 ***Sphaerostephanos* sp. 2;** Terrestrial, riparian, by the river in moderate shade; with mucilage on young crozier.

150.8.1 ***Trigonospora ciliata*** (Benth.) Holttum. Epiphyte on tree branches projecting over the river in moderated exposed; elevation c. 104 m.

151. WOODSIACEAE

151.1.1 ***Diplazium* asperum** Blume; Terrestrial on rocky river-bank in moderately exposed area.

151.1.2 ***Diplazium cordiifolium*** Blume. Paku; terrestrial fern; lowland MDF; near stream.

151.1.3 ***Diplazium crenoserratum*** (Blume) T. Moore. Paku ikan; terrestrial fern; lowland MDF, hill MDF; on damp clay soils.

151.1.4 ***Diplazium esculentum*** (Retz.) Sw. Paku ikan; terrestrial fern; Alluvial forest.

151.1.5 ***Diplazium malaccense*** C. Presl. Paku; terrestrial fern; riparian forest; sandy soils.

151.1.6 ***Diplazium riparium*** Holttum; Riparian vegetation, on river-bank; elevation c. 131 m.

151.1.7 ***Diplazium simplicivenium*** Holttum; Terrestrial, near the river in moderate shade.

151.1.8 ***Diplazium sorzogonense*** (C. Presl.) C. Presl. Paku; terrestrial fern; lowland MDF, hill MDF; alluvial clay soils.

151.1.9 ***Diplazium* sp. 1**; On rock of small stream in shade.

151.1.10 ***Diplazium* sp. 2**; On river bank in moderate shade.

BRYOPHYTA

152. BARTRAMIACEAE

152.1.1 ***Philonotis hastata*** (Duby) Wijk & Margad. On soil and rock, 100-120 m alt.

152.1.2 ***Philonotis thwaitesii*** Mitt. On rock, 100 m alt; this is the second record for Borneo, the species was first reported for Borneo by Ochi (1970) based on a collection from Mount Kurong near Ranau, Sabah.

153. BRYACEAE

153.1.1 ***Bryum clavatum*** (Schimp.) Müll. Hal. On rock, 100 m alt.

153.1.2 ***Bryum coronatum*** Schwägr. On soil, 150 m alt.

154 CALYMPERACEAE

154.1.1 ***Arthrocormus shimperi*** (Dozy & Molk.) Dozy & Molk. On rotten log, tree trunk and stump, 100-150 m alt.

154.2.1 ***Calymperes fasciculatum*** Dozy & Molk. On tree trunk, 100-180 m alt.

154.2.2 ***Calymperes graeffeanum*** Müll. Hal. On tree trunk, 150 m alt.

154.2.3 ***Calymperes lonchophyllum*** Schwägr. On tree trunk, 100-200 m alt.

154.2.4a ***Calymperes lonchophyllum*** subsp. ***beccarii*** (Hampe) M. Menzel. On tree trunk, soil bank and rock, 100 m alt

154.2.5 ***Calymperes porrectum*** Mitt. On rotten wood, tree trunk and rock, 100-200 m alt.

154.2.6 ***Calymperes strictifolium*** (Mitt.) Broth. On tree trunk, 180-200 m alt.

154.2.7 ***Calymperes taitense*** (Sull.) Mitt. On exposed root and rock, 100 m alt.

154.3.1 ***Exostratum asperum*** (Mitt.) L.T.Ellis. On root of *Asplenium nidus*, 120 m alt.

154.3.2 ***Exostratum blumei*** (Nees *ex* Hampe) L.T.Ellis. On buttress and tree trunk, 100-200 m alt.

154.4.1 ***Leucophanes angustifolium*** Renauld & Cardot. On buttress, tree trunk and among root of epiphytic fern, 120-180 m alt.

154.4.2 ***Leucophanes candidum*** (Schwägr.) Lindb. On leaf of treelet, rotten log and tree trunk, 100-200 m alt.

154.4.3 ***Leucophanes glaucum*** (Schwägr.) Lindb. On leaf of shrub, 100 m alt.

154.4.4 ***Leucophanes octoblepharioides*** Brid. On buttress, stump, tree base and trunk, 100-200 m alt.

154.5.1 ***Mitthyridium constrictum*** (Sull.) H.Rob. On dead branch, 120 m alt.

154.5.2 ***Mitthyridium crassum*** (Broth.) H.Rob. On tree trunk, 120 m alt.

154.5.3 ***Mitthyridium fasciculatum*** (Hook. & Grev.) H.Rob. On stem of bamboo, 120 m alt.

154.5.4 ***Mitthyridium flavum*** (Müll. Hal.) H.Rob. On tree trunk, 120 m alt.

154.5.5 ***Mitthyridium jungquilianum*** (Mitt.) H.Rob. On stem of treelet, tree trunk and among root of epiphytic fern, 150 m alt.

154.5.6 ***Mitthyridium undulatum*** (Dozy & Molk.) H.Rob. On twigs of shrub, branch of treelet and tree trunk, 120-230 m alt.

154.5.7 ***Mitthyridium wallisii*** (Müll. Hal.) H.Rob. On dead tree trunk, 120 m alt.

154.6.1 ***Syrrhopodon albo-vaginatus*** Schwägr. On rotten log and wood, 100-120 m alt.

154.6.2 ***Syrrhopodon aristifolius*** Mitt. On tree trunk, 100 m alt.

154.6.3 ***Syrrhopodon ciliatus*** (Hook.) Schwägr. On tree base and trunk, 100-200 m alt..

154.6.4 ***Syrrhopodon confertus*** Sande Lac. On exposed root, buttress, tree base and trunk, 100-230 m alt.

154.6.5 ***Syrrhopodon croceus*** Mitt. On branch and tree trunk, 100-120 m alt.

154.6.6 ***Syrrhopodon involutus*** Schwägr. On roots of epiphytic fern, 120 m alt.

154.6.7 ***Syrrhopodon loreus*** (Sande Lac.) W.D. Reese. On stem of bamboo, liana, buttress, tree base and trunk, 100-200 m alt.

154.6.8 ***Syrrhopodon muelleri*** (Dozy & Molk.) Sande Lac. On stem of treelet, exposed root and tree trunk, 100-150 m alt.

154.6.9 ***Syrrhopodon parasiticus*** (Sw. *ex* Brid.) Paris. On twigs of small tree, 200 m alt.

154.6.10 ***Syrropodon prolifer*** Schwägr. On tree trunk, 100-200 m alt. This is the second record for Sarawak.

154.6.11 ***Syrrhopodon spiculosus*** Hook. On tree trunk, 100-230 m alt.

154.6.12 ***Syrrhopodon trachyphllus*** Mont. On tree trunk, 100 m alt.

154.6.13 ***Syrrhopodon tristichus*** Ness *ex* Schwägr. On exposed root, stem of climber and tree trunk, 100-280 m alt.

155. DALTONIACEAE

155.1.1 ***Daltonia armata*** E.B. Bartram. On stem of bamboo and rotten log, 100 m alt.

155.2.1 ***Distichophyllum angustissimum*** Dixon. On rotten log, 100 m alt

155.2.2 ***Distichophyllum brevicuspis*** M. Fleisch. On branch of treelet, 100m alt. This East Malesian endemic species has been reported only from Java, Peninsular Malaysia and Philippines.

155.2.3 ***Distichophyllum catinifolium*** J. Froehl. On tree trunk, 100 m alt.

155.2.4 ***Distichophyllum cirratum*** Renauld & Cardot. On soil, 120m alt.

155.2.5 ***Distichophyllum schmidtii*** Broth. On rotten log, 100-200 m alt.

155.2.6 ***Distichophyllum subcarinatum*** Nog. & Z. Iwats. On rotten log, 100 m alt.

155.2.7 ***Distichophyllum* cf. *subnigricaule*** Broth. On tree base, 100 m alt.

155.2.8 ***Distichophyllum tortile*** Dozy & Molk. *ex* Bosch & Sande Lac. On boulder, 100m alt.

155.2.9 ***Distichophyllum*** sp. On rotten log, 100m alt.

155.3.1 ***Ephemeropsis tjibodensis*** K.I.Goebel. On leaves of shrub and tree, 100-240 m alt.

156. DIPHYSCIACEAE

156.1.1 ***Diphyscium mucronifolium*** Mitt. in Dozy & Molk. On rock, 120 m alt.

157. FISSIDENTACEAE

1571.1 ***Fissidens ceylonensis*** Dozy & Molk. On exposed root and rock, 100 m alt.

157.1.2 ***Fissidens crassinervis*** Sande Lac. On soil and ant mound, 100-150 m alt.

157.1.3a ***Fissidens crispulus*** Brid. var. ***crispulus.*** On buttress, exposed root, rotten log, shrub and tree trunk, and rock cliff, 100-150 m alt.

157.1.3b ***Fissidens crispulus*** Brid. var. ***robinsonii*** (Broth.) Z. Iwats & Z.H. Li. On rock and rotten wood, 100-120 m alt. This is the second record for Borneo. This widespread species was first reported for Borneo by Tan & Iwatsuki (1989) from Mount Kinabalu at 500-700 m above sea level.

157.1.4 ***Fissidens guangdongensis*** Z. Iwats. & Z.H. Li. On termite mound, 120-150 m alt. This is the second record for Borneo. This minute species has only been collected on ant or termite mounds, was first reported for Borneo by Suleiman & Edwards (2002) from Trus Madi, Sabah.

157.1.5 ***Fissidens javanicus*** Dozy & Molk. On exposed root, stem of shrub and boulder, 100-120 m alt.

157.1.6 ***Fissidens hollianus*** Dozy & Molk. On stem of small tree and shrub, exposed root and trunk of palm, 100-120 m alt.

157.1.7 ***Fissidens nobilis*** Griff. On soil, 120 m alt; this species is common along riverbanks in other states of Borneo but is reported here for the first time for Sarawak.

158. GAROVAGLIACEAE

158.1.1 ***Garovaglia compressa*** Mitt. On fallen log, stem of shrub and treelet, 250 m alt.

158.1.2 ***Garovaglia elegans*** (Dozy & Molk.) Bosch & Sande Lac. On tree branch, 150 m alt.

159. HOOKERIACEAE

159.1.1 *Callicostella papillata* (Mont.) Mitt. On rock and rotten log, 100-200 m alt.

159.1.2 *Callicostella prabaktiana* (Müll. Hal.) Bosch & Sande Lac. On tree base and rotten log, 100-200 m alt.

160 HYPNACEAE

160.1.1 ***Ctenidiadelphus plumularia*** (Müll. Hal.) M. Fleisch. On tree trunk, 100 m alt.

160.1.2 ***Ctenidium*** sp. On tree trunk, 100 m alt.

160.2.1 ***Ectropothecium eleganti-pinnatum*** (Müll. Hal.) A. Jaeger. On twigs, leaf of treelet and rotten log, 100-200 m alt.

160.2.2 ***Ectropothecium falciforme*** (Dozy & Molk.) A. Jaeger. On rotten log, 100-200 m alt.

160.2.3 ***Ectropothecium ichnotocladum*** (Müll. Hal.) A. Jaeger. On rotten log, 100 m alt.

160.2.4 ***Ectropothecium*** sp. On rotten log, 100 m alt.

160.3.1 ***Isopterygium minutirameum*** (Müll. Hal.) A. Jaeger. On tree trunk and stem of bamboo, 100-200 m alt.

160.3.2 ***Isopterygium*** sp. On tree base, 100 m alt.

160.4.1 ***Sclerohypnum littorale*** (Hampe) B.C. Tan. On branch, leaf of shrub and boulder, 100-200 m alt.

160.5.1 ***Vesicularia dubyana*** (Müll. Hal.) Broth. On boulder, 120 m alt.

160.5.2 ***Vesicularia miquelii*** (Sande Lac.) M. Fleisch. On tree base and trunk of dead tree, 100-120 m alt.

160.5.3 ***Vesicularia reticulata*** (Dozy & Molk.) Broth. On tree base, 100 m alt.

161. HYPNODENDRACEAE

161.1.1a ***Hypnodendron subspininervium*** subsp. ***Arborescens*** (Mitt.) Touw; on exposed root, stem of climber, tree branch and trunk, 100-120 m alt

162. HYPOPTERYGIACEAE

162.1.1 ***Hypopterygium vriesei*** Bosch & Sande Lac. On liana, tree base and branch, 100-200 m alt.

163. LEUCOBRYACEAE

163.1.1 ***Leucobryum bowringii*** Mitt. On rock, tree base and trunk, 100-120 m alt.

163.1.2 ***Leucobryum chlorophyllosum*** Müll. Hal. On buttress and stem of shrub, 150-280m alt.

163.1.3 ***Leucobryum sanctum*** **(Brid.)** Hampe. On buttress, exposed root, rotten log, stem of climber and tree stump, 100-120 m alt.

163.2.1 ***Octoblepharum albidum*** Hedw. On wooden boardwalk and among roots of epiphytic fern, 120-140 m alt.

164. METEORIACEAE

164.1.1 ***Aerobyopsis crispifolia*** (Besch.) M. Fleisch. On branch of shrub, 240 m alt.

164.2.1 ***Floribundaria floribunda*** (Dozy & Molk.) M. Fleisch. On leaf of shrub and twig, 100-130 m alt.

165. NECKERACEAE

165.1.1 ***Himantocladium cyclophyllum*** (Müll. Hal.) M. Fleisch. On stem of shrub, tree trunk and boulder, 100-150 m alt.

165.1.2 ***Himantocladium plumula*** (Nees) M. Fleisch. On tree base and trunk, 100 m alt.

165.2.1 ***Homaliodendron exiguum*** (Bosch & Sande Lac.) M. Fleisch. On tree trunk, 120 m alt.

165.3.1 ***Neckeropsis fleischeri*** (Dixon) Touw. On exposed roots by river bank, tree trunk and boulder, 100-200 m alt.

165.3.2 ***Neckeropsis gracilenta*** (Bosch & Sande Lac.) M. Fleisch. On tree branch, 120 m alt.

165.4.1 ***Pinnatella mucronata*** (Bosch & Sande Lac.) M. Fleisch. On tree trunk, 100 m alt.

166. PHYLLODREPANIACEAE

166.1.1 ***Mniomalia semilimbata*** (Mitt.) Müll. Hal. On tree trunk and liana, 100-120 m alt.

167. POLYTRICHACEAE

167.1.1 ***Pogonatum iwatsuki*** Touw. On rock, 100 m alt.

167.1.2 ***Pogonatum piliferum*** (Griff.) Mitt. On rock, 100-120 m alt.

168. POTTIACEAE

168.1.1 ***Hyophila involuta*** (Hook.) A. Jaeger. On exposed rocks in river, 100 m alt.

169. PTEROBRYACEAE

169.1.1 ***Calyptothecium recurvulum*** (Broth.) Broth. On fallen tree, 100 m alt.

170. RHIZOGONIACEAE

170.1.1 ***Pyrrhobryum* cf. *latifolium*** (Bosch & Sande Lac.) Mitt. On tree trunk, 100 m alt.

171. SCHISTOMITRIACEAE

171.1.1 ***Schistomitrium apiculatum*** (Dozy & Molk.) Dozy & Molk. On tree branch, trunk and twig of shrub, 100-120 m alt.

171.1.2 ***Schistomitrium mucronifolium*** (A. Braun) M. Fleisch. On tree trunk, 100 m alt.

172. SEMATOPHYLLACEAE

172.1.1 ***Acanthorhynchium papillatum*** (Harv.) M. Fleisch. On buttress, tree trunk and rotten log, 100-170 m alt.

172.2.1 ***Acroporium adspersum*** (Hampe) Broth. On twigs of shrub, leaves and tree trunk, 100-130 m alt.

172.2.2 ***Acroporium convolutum*** (Bosch & Sande Lac.) M. Fleisch. On climber and rotten log, 100-200 m alt.

172.2.3 ***Acroporium diminutum*** (Brid.) M. Fleisch. On tree trunk, 100 m alt.

172.2.4 ***Acroporium downii*** (Dixon) Broth. On rotten log, 240 m alt.

172.2.5 ***Acroporium johannis-winklei*** Broth. On tree trunk, 100 m alt.

172.2.6 ***Acroporium lamprophyllum*** Mitt. On twigs of shrub and tree trunk, 100-130 m alt.

172.3.1 ***Clastobryophilum bogoricum*** (Bosch & Sande Lac.) M. Fleisch. On tree trunk, 120 m alt.

172.4.1 ***Glossadelphus similans*** (Dixon) E.B. Bartram. On soil, 100 m alt.

172.5.1 ***Papillidiopsis luxurians*** (Dozy & Molk.) W.R. Buck & B.C. Tan. On leaf of treelet, 100 m alt. This species was last collected from Kalimantan in 1924 (Brotherus, 1928)

172.5.2 ***Papillidiopsis ramulina*** (Thwaites & Mitt.) W.R. Buck & B.C. Tan. On rotten log and damp soil covering rock, 100-200 m alt.

172.5.3 ***Papillidiopsis*** sp. On tree trunk, 100m alt.

172.6.1 ***Radulina borbonica*** (Bél) W.R. Buck. On exposed root and tree trunk, 100-120 m alt.

172.7.1 ***Rhaphidostichum bunodicarpum*** (Müll. Hal.) M. Fleisch. On tree base and trunk, 100 m alt.

172.8.1 ***Taxithelium convolutum*** Dixon. On leaf of shrub, 120-130m alt.

172.8.2 ***Taxithelium instratum*** (Brid.) Broth. On rock, buttress, tree trunk and branch, 100-150m alt.

172.8.3 ***Taxithelium isocladum*** (Bosch & Sande Lac.) Renauld & Cardot. On twig and stem of small tree, 100-200 m alt.

172.8.4 ***Taxithelium planum*** (Brid.) Mitt. On buttress, tree trunk and rotten log, 100-200 m alt.

172.9.1 ***Trichosteleum boschii*** (Dozy & Molk.) A. Jaeger. On tree branch and trunk of palm, 100 m alt.

172.9.2 ***Trichosteleum singapurense*** M. Fleisch. On rotten log, 180 m alt.

172.10.1 ***Trismegistia calderensis*** (Süll.) Broth. On buttress and tree base, 100 m alt.

172.10.2 ***Trismegistia lancifolia*** (Harv.) Broth. On rotten log and tree trunk, 100-130 m alt.

172.10.3 ***Trismegistia* cf. *panduriformis*** (Wright) Broth. On exposed root and rotten log, 230 m alt.

172.11.1 ***Wijkia*** sp. On tree trunk, 100 m alt.

173. SYMPHYODONTACEAE

173.1.1 ***Chaetomitrium borneense*** Mitt. On tree trunk, 100 m alt.

173.1.2 ***Chaetomitrium maryatii*** H. Akiy. & M. Suleiman. On rock, rotten wood and tree trunk, 100-150 m alt. This is the second record for this Bornean endemic species (Akiyama & Suleiman, 2001).

173.1.3 ***Chaetomitrium orthorrhynchum*** (Dozy & Molk.) Bosch & Sande Lac. On leaf, branch of treelet, twigs of shrub and stem of climber, 100-180 m alt.

173.2.1 ***Dimorphocladon borneense*** Dixon. On leaf of shrub and treelet, 100-130 m alt.

174. THUIDIACEAE

174.1.1 ***Aequatoriella bifaria*** (Bosch & Sande Lac.) Touw. On rotten wood, 150 m alt.

174.2.1 ***Pelekium velatum*** Mitt. On exposed root, buttress, leaves of palm and stem of climber, 100 m alt.

174.3.1 ***Thuidium cymbifolium*** (Dozy & Molk.) Dozy & Molk. On boulder, 100 m alt.

174.3.2 ***Thuidium plumulosum*** (Dozy & Molk.) Dozy & Molk. On branch of shrub and rotten log, 100-200 m alt.

174.3.3 ***Thuidium pristocalyx*** (Müll. Hal.) A. Jaeger. On rotten log and tree base, 100-200 m alt.



PLATE 14: A: *Acrosorus triangularis*; **B**: *Diplazium riparium*; **C**: *Lemmaphyllum accedens*; **D**: *Prosaptia alata*; **E**: *Microsorum commutatum*



PLATE 15: A: *Tectaria lobbii*; **B**: *Huperzia phlegmaria*; **C**: *Christensenia aesculiformis* var. *korthalsii*



PLATE 16: A: *Calypmperes taitense*; **B**: *Fissidens nobilis*; **C**: *Fissidens guangdongensis*; **D**: *Distichophyllum cirratum*; **E**: *Trismegistia panduriformis*; **F**: *Hynodendron subspininervium*; **G**: *Distichophyllum tortile*

MACRO-FUNGI

PHYLUM: ASCOMYCOTA

ORDER: PEZIZALES

175. PEZIZACEAE

175.1.1 ***Peziza*** spp. [2 spp.] Alluvial forest, lowland MDF, montane forest; on soil and dead branches.

176. SARCOSCYPHACEAE

176.1.1 ***Cookeina sulcipes*** (Berk.) Kuntze. Cup fungi; Kulat cawan; lowland MDF, hill MDF; on dead tree, branches or twigs.

176.1.2 ***Cookeina tricholoma*** (Mont.) Kuntze. Kulat cawan; lowland MDF, hill MDF; on dead branches.

ORDER: XYLARIALES

177. XYLARIACEAE

177.1.1 ***Xylaria polymorpha*** (St. Amans) Grev. Lowland MDF; on dead tree.

177.1.2 ***Xylaria*** sp. Lowland MDF; on rotten wood, branches and dead tree.

PHYLUM: BASIDIOMYCOTA
SUBCLASS : AGARICOMYCETIDAE

ORDER: AGARICALES

178. AGARICACEAE

178.1.1 ***Lepiota*** spp. [2 spp.]. Lowland MDF, hill MDF; on soil.

179. AMANITACEAE

179.1.1 ***Amanita ceciliae*** (Berk. & Broome) Bas. Lowland MDF, hill MDF; on soil.

179.1.2 ***Amanita crocea*** (Quel.) Singer. Lowland MDF; on soil.

179.1.3 ***Amanita vaginata*** (Bull.) Lam. Lowland MDF; on soil.

179.1.4 ***Amanita*** spp. [9 spp.] Lowland MDF, hill MDF; on soil, dead tree and living tree trunk.

180. BOLBITACEAE

180.1.1 ***Agrocybe*** sp. Lowland MDF; on soil.

180.2.1 ***Conocybe*** spp. [4 spp.] Lowland MDF, hill MDF; on soil.

180.3.1 ***Panaeolus*** sp. Lowland MDF; on soil.

181. COPRINACEAE

181.1.1 ***Coprinus*** spp. [2 spp.] Lowland MDF; on soil.

181.2.1 ***Psathyrella*** spp. [2 spp.] Lowland MDF, hill MDF; on soil.

182. CORTINARACEAE

182.1.1 ***Cortinarius*** spp.[2 spp.] Lowland MDF, hill MDF; on soil.

182.2.1 ***Crepidotus*** spp. [7 spp.] Lowland MDF, hill MDF, riparian forest; on dead tree and branches.

182.3.1 ***Galerina*** spp. [2 spp.] Lowland MDF, hill MDF, Kerangas forest; on dead branches or tree and on soil.

183. ENTOLOMATACEAE

183.1.1 ***Entoloma*** spp. [6 spp.] Lowland MDF, hill MDF, old secondary forest; on soil.

184. HYDNANGIACEAE

184.1.1 ***Laccaria*** spp. [4 spp.] Lowalnd MDF, hill MDF; on dead branches, twigs and stem and also sometimes on soil.

185. LYCOPERDACEAE

185.1.1 ***Bovista lycopardon*** Puffball mushroom; lowland MDF, Kerangas forest; on soil.

185.2.1 ***Lycopardon*** spp. [2 spp.] puffball mushroom; old secondary forest; on soil.

186. MARASMIACEAE

186.1.1 ***Campanella*** sp. Alluvial forest; on rotten branches.

186.2.1 ***Marasmiellus*** spp. [2 spp.] Alluvial forest, old secondary forest; on rotten branches.

186.3.1 ***Marasmius*** spp.[12 spp.] Alluvial forest; lowland MDF, old secondary forest; on rotten branches, twigs and dead woods.

186.4.1 ***Oudemansiella*** spp.[2 spp.] Alluvial forest; on dead stem or on soil.

187. MYCENACEAE

187.1.1 ***Filoboletus*** spp.[2 spp.] Raiparian forest, old secondary forest, lowland MDF; on rotten woods.

187.2.1 ***Mycena*** spp.[9 spp.] Riparian forest, Alluvial forest, old secondary forest, lowland MDF, hill MDF; on rotten woods, branches, dead twig, humus and soil.

187.3.1 ***Panellus*** spp.[2 spp.] Riparian forest, lowland MDF; on rotten wood.

188. PLEUROTACEAE

188.1.1 ***Pleurotus djamor*** (Rumph. ex Fr.) Boedjin. Lowland MDF, hill MDF; on dead wood.

188.1.2 ***Pleurotus saju-caju*** (Fr.) Singer. Lowland MDF, Alluvial forest; on dead trunk.

188.1.3 ***Pleurotus ostreatus*** (Fr.) Quel. Alluvial forest; on dead wood.

189. PLUTEACEAE

189.1.1 ***Pluteus*** spp. [2 spp.] Lowland MDF, old secondary forest; on soil.

190. RHODOPHYLLACEAE

190.1.1 ***Rhodophyllus*** sp. Old secondary forest; on soil.

191. SCHIZOPHYLLACEAE

191.1.1 ***Schizophyllum commune*** Fr. Lowland MDF, hill MDF, Kerangas forest, old secondary forest; on dead branches, twigs.

192. STROPHARIACEAE

192.1.1 ***Pholiota*** sp. Lowland MDF; on dead trunk.

192.2.1 ***Stropharia*** sp. Lowland MDF; on soil.

193. TRICHOLOMATACEAE

193.1.1 ***Clitocybe*** sp. Lowland MDF; on soil.

193.2.1 ***Collybia*** spp. [2 spp.] Alluvial forest, lowland MDF, hill MDF; on soil, humus and dead branches.

193.3.1 ***Gerronema*** spp. [2 spp.] Lowland MDF; on dead branches.

193.4.1 ***Hygrocybe conica*** (Scop.) P. Kumm. Lowland MDF; on damp clay soil.

193.4.2 ***Hygrocybe punicea*** (Fr.) P. Kumm. Lowland MDF; on soil.

193.5.1 ***Hygrophorus connica*** (Schaeff.) P. Kumm. Lowland MDF, Kerangas forest; on soil.

193.5.2 ***Hygrophorus punicea*** (Fr.) P. Kumm. Lowland MDF, hill MDF; on damp clay-rich soil.

193.6.1 ***Lactocollybia*** spp. [2 spp.] Lowland MDF, riparian forest; on damp soil or on dead branches and twigs.

193.7.1 ***Omphalina*** spp. [2 spp.] Lowland MDF, old secondary forest; on dead branches and twigs.

193.8.1 ***Termitomyces*** spp. [2 spp.] Lowland MDF, old secondary forest; on soil.

ORDER: RUSSULALES

194. AURISCALPIACEAE

194.1.1 ***Lentinellus cochleatus*** (Fr.) Karst. Alluvial forest, lowland MDF; on rotten trunk and dead branches.

195. BONDARZEWIACEAE

195.1.1 ***Heterobasidion*** sp. Old secondary forest; on dead stump.

196. LACHNOLADIACEAE

196.1.1 ***Scytinnostroma*** sp. Lowland MDF; on soil.

197. RUSSULACEAE

197.1.1 ***Lactarius*** spp. [3 spp.] Riparian forest, Alluvial forest; on humus and soil.

197.2.1 ***Russula cyanoxantha*** (Secr.) Fr. Hill MDF; on soil.

197.2.2 ***Russula virens*** Paulet.

197.2.3 ***Russula*** spp. [6 spp.] Riparian forest, Alluvial forest, old secondary forest, lowland MDF; on soil.

198. STEREACEAE

198.1.1 ***Chondrostereum*** sp. Hill MDF; on dead branches.

198.2.1 ***Stereum sanguinolentum*** Fr. Hill MDF; on dead twig.

198.2.2 ***Stereum*** spp.[6 spp.] Lowland MDF, hill MDF, montane forest; on dead branches, twig and rotten wood.

ORDER: BOLETALES

199. BOLETACEAE

199.1.1 ***Boletus*** spp. [10 spp.] Old secondary forest, lowland MDF, hill MDF; on soil, on humus, on living *Shorea* tree.

199.2.1 ***Strobilomyces*** sp. Lowland MDF, hill MDF; on soil.

200. GOMPHIDIACEAE

200.1.1 ***Gomphidius*** sp. Old secondary forest; on damp soil.

201. PAXILLACEAE

201.1.1 ***Paxillus*** spp.[2 spp.] Alluvial forest, hill MDF; on soil.

201.2.1 ***Phylloporus*** sp. Lowland MDF;on dead braches.

202. SCLERODERMATACEAE

202.1.1 ***Calostoma*** sp. Lowland MDF; on humus and soils.

202.2.1 ***Scleroderma*** spp.[2 spp.] Lowland MDF; on humus, soil and roots of living tree.

203. SUILLACEAE

203.1.1 ***Suillus*** spp.[3 spp.] Hill MDF; on soil.

ORDER: CANTHARELLALES

204. CANTHARELLACEAE

204.1.1 ***Cantharellus*** spp. [5 spp.] Lowland MDF, hill MDF, submontane forest; on soils.

204.2.1 ***Craterellus*** sp. Lowland MDF; on humus

204.3.1 ***Pterygellus armeniacus*** Corner. Lowland MDF; on soil.

204.4.1 ***Trogia*** spp. [2 spp.] Alluvial forest, lowland MDF, submontane forest; on dead branches and woods.

ORDER: HYMENOCHAETALES

205. HYMENOCHAETACEAE

205.1.1 ***Coltricia cinnamomea*** (Fr.) Murril. Lowland M DF; on living roots.

205.1.2 ***Coltricia*** sp. Lowland MDF; on rotten wood.

205.2.1 ***Cyclomyces*** sp. Lowland MDF; on rotten branches.

205.3.1 ***Hymenochaete*** sp. Lowland MDF; on rotten wood.

205.4.1 ***Innonotus*** spp.[8 spp.] Lowland MDF, riparian forest, old secondary forest; on dead wood, branches and stump.

205.5.1 ***Phaeolus*** sp. Lowland MDF, hill MDF; on dead tree.

205.6.1 ***Phellinus*** spp.[8 spp.] Lowland MDF; on living tree; on dead tree trunk.

206. SCHIZOPORACEAE

206.1.1 ***Oxporus*** sp. Lowland MDF; on dead stump.

ORDER: PHALLALES

207. GOMPHACEAE

207.1.1 ***Gomphus*** sp. Lowland MDF, riparian forest; on damp clay soil.

ORDER: POLYPORALES

208. CORTICIACEAE

208.1.1 ***Corticium*** sp. Lowland MDF; on dead branches.

209. FOMITOPSIDACEAE

209.1.1 ***Fomitopsis*** spp. [2 spp.] Lowland MDF, old secondary forest; on dead trunk and branches.

209.2.1 ***Postia*** spp. [2 spp.] Lowland MDF, riparian forest; on dead tree or branches.

210. GANODERMATACEAE

210.1.1 ***Amauroderma subrugosum*** Bres & Pat. Alluvial forest; on dead tree.

210.1.1 ***Amauroderma*** spp.[7 spp.] Alluvial forest, lowland MDF, hill MDF, submontane forest; on soil and living *Vatica* (Resak) tree.

210.2.1 ***Ganoderma applanatum*** (Pers.) Pat. [synonym: *Ganoderma lipsiense*; basionym: *Boletus applanatus; Fomes applanatus; Ganoderme aplani*] lowland MDF; on dead tree and living tree.

210.2.2 ***Ganoderma australe*** (Fr.) Pat. Alluvial forest; on dead stump.

210.2.3 ***Ganoderma neo-japonicum*** Imaz. Alluvial forest; on rotten wood.

210.2.4 ***Ganoderma*** spp.[11 spp.] Alluvial forest, lowland MDF, old secondary forest; on dead wood and trunk, rotten tree and living *Shorea* spp. (Meranti), *Koompasia malaccensis* (Menggris) and *Dryobalanops* (Kapur).

211. GLOEOPHYLLACEAE

211.1.1 ***Gloeophyllum*** spp. [2 spp.] Lowland MDF; on dead branches.

212. HAPALOPILACEAE

212.1.1 ***Ceriporiopsis*** sp. (resupinate) Lowland MDF; on dead branches.

212.2.1 ***Hapalopilus*** sp. (soft, big pores). Lowland MDF, on dead trunk.

213. MERIPILACEAE

213.1.1 ***Antrodia*** sp. Lowland MDF; on living trunk.

213.2.1 ***Rigodoporus microporus*** (Sw.) Overeem. Lowland MDF; on dead trunk and branches.

214. MERULIACEAE

214.1.1 ***Gloeoporus*** sp. Lowland MDF; on dead branches.

214.2.1 ***Meruliopsis*** sp. Old secondary forest; on dead branches.

214.3.1 ***Merulius*** sp. Old secondary forest; on dead stump.

214.4.1 ***Phlebia*** sp. Lowland MDF; on dead branches.

215. PHANEROCHAETACEAE

215.1.1 ***Phanerochaete*** spp. [2 spp.] Lowland MDF; on dead branches.

216. CLAVARIACEAE

216.1.1 ***Clavaria*** spp.[2 spp.] Submontane forest, Alluvial forest, lowland MDF; on soil.

216.2.1 ***Clavulinopsis*** spp.[2 spp.] Lowland MDF; on soil.

216.3.1 ***Pturella*** sp. Riparian forest, lowland MDF; on rotten branches, bark and soil.

216.4.1 ***Ramaria*** spp.[2 spp.] Alluvial forest, lowland MDF, submontane forest; on humus and soil.

217. PODOCYPHACEAE

217.1.1 ***Tomentella*** spp. [2 spp.] Lowland MDF; on soil.

217.2.1 ***Cymatoderma*** spp. [2 spp.] Lowland MDF, hill MDF, old secondary forest; on dead branches.

218. POLYPORACEAE

218.1.1 ***Coriolopsis*** spp. [2 spp.] Lowland MDF, riparian forest; on dead tree, branches and twigs.

218.2.1 ***Datronia*** spp. [2 spp.] Lowland MDF, old secondary forest; on dead trunk, branches and twigs.

218.3.1 ***Hexagonia*** spp.[3 spp.] Riparian forest, Alluvial forest, lowland MDF; on rotten stump and wood.

218.4.1 ***Lentinus conatus*** Berk. Old secondary forest; on dead branches.

218.5.1 ***Lignosus rhinoceros*** (Cooke) Ryvarden. Kulat susu harimau; lowland MDF, hill MDF; on soil. **Uses:** medicinal.

218.6.1 ***Microporus affinis*** (Fr.) Blume & Nees. Lowland MDF, old secondary forest; on dead branches.

218.6.2 ***Microporus spathulatus***. Lowland MDF; on dead twigs.

218.6.3 ***Microporus vernicipes*** (Berk.) Kunt. Lowland MDF, old secondary forest, riparian; on dead branches and twigs.

218.6.4 ***Microporus xanthopus*** (Fr.) Kuntze. Lowland MDF, hill MDF; on dead trunk.

218.6.5 ***Microporus*** spp.[12 spp.] Alluvial forest, lowland MDF; on rotten branches and wood.

218.7.1 ***Nigroporus*** spp. [2 spp.] Lowland MDF, hill MDF, secondary forest; on dead branches and on stem of living climber.

218.8.1 ***Panus*** sp. Lowland MDF; on dead branches.

218.9.1 ***Polyporus hadius*** Berk. Lowland MDF; on dead stump.

218.9.2 ***Polyporus grammocephalus*** Berk. Old secondary forest; on dead trunk.

218.9.3 ***Polyporus squamosus*** (Huds.) Fr. Lowland MDF, hill MDF; on dead tree.

218.9.4 ***Polyporus tenniculus*** (Beauv.) Fr. Lowland MDF; on dead trunk.

218.9.5 ***Polyporus varius*** Fr. Hill MDF; on dead stump.

218.9.6 ***Polyporus*** spp.[10 spp.] Riparian forest, lowland MDF, hill MDF, montane forest; on rotten wood, twigs, dead leaves and living root.

218.10.1 ***Poria*** spp.[3 spp.] Riparian forest, hill MDF; on rotten woods, climber and branches.

218.11.1 ***Trametes scabrosa***. Lowland MDF, hill MDF, old secondary forest; on dead branches and trunk.

218.11.2 ***Trametes*** spp.[12 spp.] Alluvial forest, lowland MDF; on rotten wood and tree trunk.

218.12.1 ***Trichaptum*** spp. [2 spp.] Lowland MDF; on dead branches and twigs.

218.13.1 ***Tyromyces*** sp. Lowland MDF; on dead twigs.

219. STECCHERINACEAE

219.1.1 ***Irpex*** spp. [2 spp.] Old secondary forest, lowland MDF; on dead branches and twigs.

219.2.1 ***Steccherinum*** sp. Lowland MDF; on dead trunk.

ORDER: THELEPHORALES

220. BANKERACEAE

220.1.1 ***Hydnellum*** spp. [2 spp.] Hill MDF; on rotten log.

221. THELEPHORACEAE

221.1.1 ***Thelephora*** spp. [2 spp.] Alluvial forest, old secondary forest, lowland MDF' on dead branch, twigs and rotten woods.

SUB-CLASS: TREMELLOMYCETIDAE

ORDER: AURICULARIALES

222. AURICULARIACEAE

222.1.1 ***Auricularia auricula-judae*** (Fr.) Quel. Kulat bibir; Kulat pek (Mel.); lowland MDF, hill MDF, secondary forest; on dead trunk, branches and twigs. **Uses**: edible, cooked as vegetable.

222.1.2 ***Auricularia polytricha*** (Mont.) Saccardo. Kulat bibir; Kulat pek (Mel.); lowland MDF, secondary forest; on dead trunk and branches. **Uses**: edible, cooked as vegetable.

222.1.3 ***Auricularia*** sp. Kulat bibir; lowland MDF; on dead trunk.

ORDER: DACRYMYCETALES

223. DACRYMYCETACEAE

223.1.1 ***Ditiola*** sp. Kulat; lowland MDF; on dead trunk.

ORDER: TREMELLALES

224. TREMELLACEAE

224.1.1 ***Tremella fusiformis*** Berk. Kulat pek (Mel.); lowland MDF, secondary forest; on dead branches.

224.1.2 ***Tremella*** sp. Lowland MDF, secondary forest; on dead trunk, branches and twigs.



PLATE 17: *Microsorus* spp.

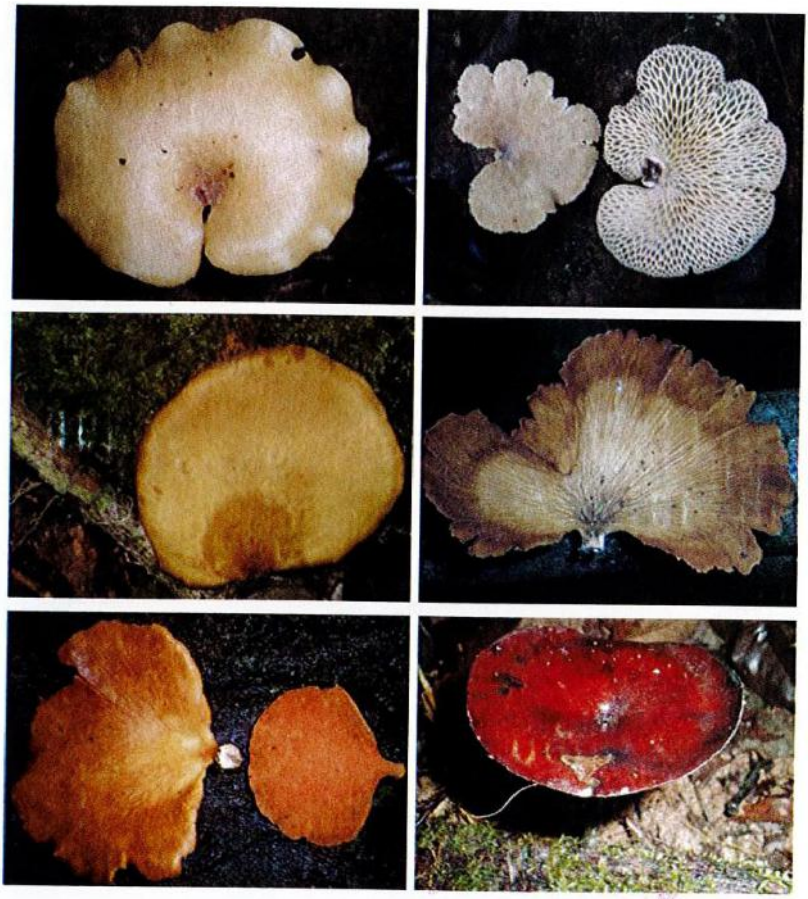


PLATE 18: *Polyporus* spp.

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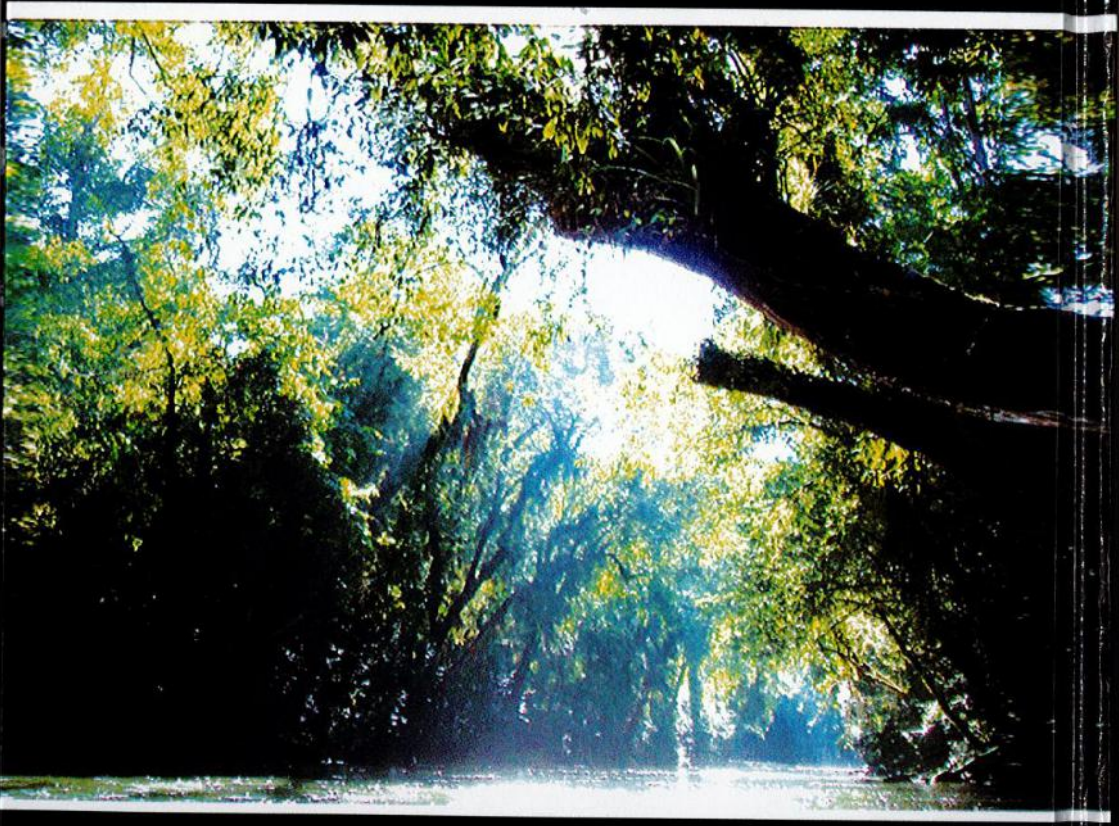
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