

An Annotated Checklist of the Flowering Plants of Sayap-Kinabalu Park, Sabah

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ABSTRACT

The plants of Sayap-Kinabalu, Sabah are as diverse as those of other areas in Sabah with the Euphorbiaceae, Annonaceae and Rubiaceae being the predominant families, and Goniothalamus, Antidesma, Ixora, Polyalthia and Ficus being the dominant genera species wise. A total of 135 species in 102 genera and 56 families of spermatophytes were collected from this area.

INTRODUCTION

The area surveyed included the vicinity of Base Camp, the trail to Kemantis Waterfalls, Gua Melayu, Sungai Lumutuk Keci], Sungai Lumutuk Besar and Sungai Minodtuhun A total of 135 species in 102 genera and 56 families were collected All the specimens collected were lodged at the Herbaria of Taman-taman Sabah, Gunung Kinabalu, Department of Botany, Universiti Kebangsaan Malaysia, Bangi (UKMB), Faculty of Forestry, Universiti Pertanian Malaysia, Serdang and the Herbarium, Forestry Research Institute (KEP)

In term of family composition, the Annonaceae, Euphorbiaceae, Rubiaceae and Vitaceae were best represented at the generic and species level with 11, 11,9 and 10, respectively. Well represented genera include *Goniothalamus*, *Polyalthia* (Annonaceae), *Antidesma* (Euphorbiaceae), *Ixora* (Rubiaceae), *Tetrastigma* and *Ampelocissus* (Vitaceae).

CHECKLIST OF FLOWERING PLANTS

The following checklist offers a preliminary inventory and notes on the flowering plants collected and observed in the Sayap-Kinabalu area during the expedition.

The taxa are arranged alphabetically, followed by details of collections. The collecting team comprises of staffs of Universiti Kebangsaan Malaysia and Universiti Pertanian Malaysia and they were assisted by some field assistants from Taman Sabah.

ACANTHACEAE

A family of mainly herbs and shrubs. Only one species was collected.

Strobilanthes involucratus B1

Kota Belut District: Sayap Kinabalu, Main trail to Sungai Lumutuk besar; Elev. 855m. A. Latiff & A.Zainuddin, ALM 3871

ACTINIDIACEAE

Only two species of *Saurauia* were collected, one remained unidentified.

Saurauia amoena Stapt

Kota Belut District: Sayap Kinabalu, Gua Melayu Trail; Elev. 915m. A. Latiff & A.Zainuddin, ALM 3902

Saurauia sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1090m A. Latiff & A. Zainuddin, ALM 3870.

Shrub of ca. 3m, flowers gregarious, pink. mainly on stem.

ANNONACEAE

By far this is one of the commonest family observed throughout the collecting trips. Stands of *Polyalthia insignis* with large, clustered flowers near the base of the trunk were observed to be very common especially along the stream and river beds. Members of other four genera were also collected.

Polyalthio cunangioides (Zo 11.) Boert.

Kota Belut District: Sayap-Kinabalu, Waterfall trail Elev 9 15m. A.Latiff & A. Zainuddin, ALM 3906

Polyalthia insignis (Hk.f.) Airy-Shaw

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 890m. A. Latiff & A. Zainuddin, ALM 3817

Very Common

Artabotrys sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1005m

This large liana was only observed.

Cyathostemma sp.

Kota Belut District: Sayap-Kinabalu, Waterfall trail; Elev. 915m. A. Latiff & A. Zainuddin, ALM 3907

Fissistigma latifolium Merr.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 915m. A. Latiff & A. Zainuddin, ALM 3904.

Goniothalamus bracteosus Ban

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. A. Latiff & A. Zainuddin, ALM 3828; Waterfall trail; Elev. 915m. A. Latiff & A. Zainuddin, ALM 3914; Elev 955m A. Latiff & A. Zainuddin, ALM 3916.

Goniothalamus clemensii Ban

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1080m A. Latiff & A. Zainuddin, ALM 3867.

Goniothalamus fasciculatus Bocrl.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev. 950m A. Latiff & A. Zainuddin, ALM 3839.

Goniothalamus velutinus Airy-Shaw

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 900m. This mytic plant of Borneo was only observed.

Popowia sp.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 950m. A. Latiff & A. Zainuddin. ALM 3840

Papowia pisocarpa (Bl.) Endl.

Kota Belut District: Sayap-Kinabalu. Waterfall trail Elev. 915m. A. Latiff & A. Zainuddin, ALM 3913
Common.

ARACEAE

A family of herb, creeper and climber. Over 100 genera. mainly tropical and subtropical, easily distinguished by its thick spadix.

Alocasia cf. regia N.E.Br.

Kota Belut District: Sayap-Kinabalu, Gua Melayu Trail. Elev. 915m
This elegant aroid was only observed

Arisaema wrayi Hemsl.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 1010m. A. Latiff & A. Zainuddin, ALM 3862

ARECACEAE

A family of erect tree or shrubs, sometimes climbing. Over 200 genera, tropical and subtropical. Locally well-known for its climbing rattans.

Calamus sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 950m.
Observed

Korthalsia rigida Bl.

Kota Belut District: Sayap-Kinabalu, Gua Melayu Trail. Elev 915m Observed.

Pinanga sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m.
Observed

Goniothalamus fasciculatus Bocrl.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev. 950m *A. Latiff*
& *A. Zainuddin*, ALM 3839.

Goniothalamus velutinus Airy-Shaw

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 900m.
This mytic plant of Borneo was only observed.

Popowia sp.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 950m. *A. Latiff*
& *A. Zainuddin*. ALM 3840

Papowia pisocarpa (Bl.) Endl.

Kota Belut District: Sayap-Kinabalu. Waterfall trail Elev. 915m. *A. Latiff* & *A. Zainuddin*,
ALM 3913
Common.

BALANOPHORACEAE

A family confined to parasitic herbs on roots of tree; leaves reduced to scales.

Balanophora sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 950m. *A. Latiff*
& *A. Zainuddin*, ALM 3843.

BEGONIACEAE

A family of one genus with 400-500 species distributed in the warmer and wetter parts of the world A very attractive plants for horticulturist

Begonia sp

Kota Belut District: Sayap-Kinabalu. Gua Melayu trail Elev 900m A. *Latiff & A.Zainuddin*. ALM 3900

BOMBACACEAE

Durio sp

Kota Belut District: Sayap-Kinahalu. Main trail to Sungai Lumutuk Besar; Elev I090m. Observed

CAMPANULACEAE

A family mostly herb.

Lobelia affinis Wall

Kota Belut District: Sayap Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 865m A. *Latiff & A Zainuddin* ALM 3816.

CLUSIACEAE

A family consists of large tree.

Garcinia sp

Kota Belut District: Sayap-Kinabalu. Gua Melayu trail Elev 910m. A. *Latiff & A Zainuddin*. ALM 3891; Kota Belut District: Sayap- Kinabalu Waterfall trail; Elev 955m A *Latiff & A.Zainuddin*, ALM 1920: Kota Belut District: Sayap-Kinabalu. Ktmantis trail~ Elev 870m R. *.Jaman & Dolois Sumbin*, RJ 4045

COMMELINACEAE

A family of herbs and shrubs.

EBENACEAE

A family with one genus commonly known as "kayu malam" to the local people

Diospyros sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1005m
A.Latiff & A. Zainuddin, ALM 3844

EUPHORBIACEAE

The family is quite common in the area of which five genera and seven species were collected.

Antidesma leucopodium Miq.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 1010m *A. Iatiff & A. Zainuddin*, ALM 3864; Waterfall trail Elev 915m. *A Latiff & A. Zainuddin*, ALM 3912.

Antidesma persimile Kurz

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. *A. Latiff & A.Zainuddin*, ALM 3824 Gua Melayu trail; Elev. 910m. *A.Latiff & A.Zainuddin*, ALM 3886.

Baccaurea lanceolata Muel-Arg.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 960m. *A.Latiff & A.Zainuddin*, ALM 3859; Gua Melayu trail; Elev. 910m *A.Latiff & A.Zainuddin*, ALM 3887; Waterfall trail; Elev. 915m. *A.Latiff & A.Zainuddin*, ALM 3908 Fruits are edible.
Common

Cheilosa malayana (Hkf.) Corner ex Airy-Shaw

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 880m *A.Latiff & A.Zainuddin*, ALM 3850

Claoxylon longifolium (Bl.) Endl. ex Hassk.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 920m. Observed.

Macaranga triloba (Bl.) M.A.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 900m Observed
Common

Mallotus paniculatus (Lam.) M.A.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 900m. Observed.
Common

Mallotus penangensis M.A.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m A.Latiff & A.Zainuddin, ALM 3834.

Sapium baccatum Roxb

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev, 915m Observed

Suregada multiflora (Juss.) Baill

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 960m A.Latiff & A.Zainuddin, ALM 3857.

FABACEAE

Bauhinia sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 900m Observed

Whitfordiodendron nieuwenhuisii (JJ. Sm.) Dunn.

Kota Belut District: Sayap-Kinabalu. Waterfall trail Elev. 955m. A.Latiff & A.Zainuddin, ALM 3922.

FAGACEAE

The oak family of which fruits of some species of *Castanopsis* are edible.

Lithocarpus confragosus (King ex Hk.f.) A. Camus.

Kota Belut District: Sayap-Kinabatu, Main trail to Sungai Lumutuk Besar; Elev 920m A.Latiff & A.Zainuddin, ALM 3820.

Castanopsis sp.

Kota Belut District: Sayap-Kinatalu. Main trail to Sungai Lumutuk Besar; Elev 880m Observed.

FLACOURTIACEAE

Ryparosa kostermansii Sleum.

Kota Belut District: Sayap-Kinahalu, Main trail to Sungai Lumutuk Besar; Elev. 950m A.Latiff & A.Zainuddin, ALM 3831

The plant differs from the other known species by its larger leaves. Common on Mt Kinahalu

Pangium edule Reinw.

Kota Belud District: Sayap-Kinabalu, Kampung Sayap Observed

Quite common in the vicinity of the village. Kampung Sayap. The ethnobotanical aspects of the fruit as used by the villagers of kampung Sayap is worth investigating

GESNERIACEAE

A family of herbs and climbers.

Agalmyla staminea Bl.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 900m. A. Latiff & A.Zainuddin, ALM 3901.

Cyrtandra pilosa Bl.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. A. Latiff & A.Zainuddin ALM 3826.

Cyrtandra sp. 1

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 900m A. Latiff & A.Zainuddin, ALM 3838

Shrub of ca. 2m, infrutescence axillary, leaves alternate 23cm x 8cm. assymmetric hase with acuminate tip; secondary vein 13; leaves drying brown above lighter below.

Cyrtandra sp. 2

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar. Elev 1005m A. Latiff & A.Zainuddin , ALM 3845

Herbaceous runner on ground, flowers white in 2's or 3's at the base of the stem. Leaves opposite in equal size 12cm x 2.5cm, secondary veins not distinct.

GNETACEAE

Gnetum sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 900m. Observed.

HYPOXIDACEAE

Curculigo latifolia Dryland

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 920m A. Latiff & A.Zainuddin , ALM 3821

Common

LAURACEAE

Four genera with six species were collected and observed.

Actinodaphne sesquipedalis Hook.f.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m.
Observed.

Beilschmiedia glabra Kosterm.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev 900m. *A.Latiff & A.Zainuddin*,
ALM 3875.

Dehaasia caesia B1.

Kota Betut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 880m. .
A.Latiff & A.Zainuddin, ALM 3847.

Dehaasia sp.

Kota Belut District: Sayap-Kinabalu, Waterfall trail. Elev. 960m. . *A.Latiff & A.Zainuddin*,
ALM 3911.

Litsea elliptibacea Merr.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 960m. .
A.Latiff & A.Zainuddin, ALM 3858

Litsea sp.

Kota Belut District: Sayap-Kinabalu, Waterfall trail Elev 915m. . *A.Latiff & A.Zainuddin*, ALM
3905.

LECYTHIDACEAE

Barringtonia sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 920m, Observed.

LILIACEAE

Dianella sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 1080m. .
A.Latiff & A.Zainuddin, ALM 3865; Kota Belut District: Sayap-Kinabalu, Gua Melayu trail;
Elev 910m . *A.Latiff & A.Zainuddin*, ALM 3882.

Peliosanthes sp.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 910m. . *A.Latiff & A.Zainuddin*,
ALM 3888.

LORANTHACEAE

A family of parasitic plants.

Macrosolen formosus Miq.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 950m *A.Latiff*
& *A.Zainuddin*, ALM 3841

MAGNOLIACEAE

Talauma sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 920m.
Observed

More than 12 species are known in Sabah, at least three are known in the Mt Kinabalu area.

MARANTHACEAE

A family confined to herbs and shrubs.

Phyrenium malaccense Ridl.

Kota Belut District: Sayap-Kinabalu. Gua Melayu trail. Elev. 910m. *A.Latiff & A.Zainuddin*,
ALM 3880.

MELASTOMATACEAE

Four genera and four species were collected and observed.

Astronia smilacifolia Triana ex CL.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev. 900m. A.Latiff & A.Zainuddin, ALM 3879

Medinella speciosa B1.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 880m. A.Latiff & A.Zainuddin, ALM 3848.

Melastoma muticum Ridl.

Kota Belut District: Sayap-Kinabalu, main trail to Sungai Lumutuk Besar; Elev. 890m
Observed
Common

Memecylon sp.

Kota Belut District: Sayap-Kinabalu. Gua Mclayu trail. Elev. 915m A.Latiff & A.Zainuddin, ALM 3903.

MENISPERMACEAE

Cyclea laxiflora Miers

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 900m
Observed

MELIACEAE

Aglaia leucophylla King

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 880m. A.Latiff & A.Zainuddin, ALM 3851.

MORACEAE

Only figs were observed and collected.

Ficus benjamina L

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 880m
Observed

Ficus deltoidea Jack

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev. 920m.
Observed

Ficus fistulosa Reinw. ex B1.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 890m. *A.Latiff* & *A.Zainuddin*, ALM 3818; Elev. 1090m *A.Latiff* & *A.Zainuddin*, ALM 3869

Ficus lepicarpa B1.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 910m *A.Latiff* & *A.Zainuddin*, ALM 3894

Ficus rubroscapitata Corner

Kota Belut District: Sayap-Kinabalu. Gua Melayu Trail Elev 910m, *A.Latiff* & *A.Zainuddin*, ALM 3895.

Ficus stolonifera King

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 855m, *A.Latiff* & *A.Zainuddin*, ALM 3813.

MYRSINACEAE

Ardisia macrophylla Reinw

Kota Belut District: Sayap-Kinabalu. Gua Melayu trail Elev. 910m, *A.Latiff* & *A.Zainuddin*, ALM 3892

Ardisia oocarpa Stapf

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m, *A.Latiff* & *A.Zainuddin*, ALM 3830.

Ardisia cf. Ridleyi K. & G.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1010m, *A.Latiff* & *A.Zainuddin*, ALM 3863.

OLACACEAE

Erythralum scandens B1.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. *A.Latiff* & *A.Zainuddin*, ALM 3833.

ORCHIDACEAE

Lecanorchis sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1090m. A.Latiff & A.Zainuddin, ALM 3872.

PANDANACEAE

Pandanus altifron Stone

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 915m. Observed.

PIPERACEAE

Piper stylosum Miq.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail, Elev. 915m. A.Latiff & A.Zainuddin, ALM 3897.

POACEAE

A grass family, confined to herbs.

Eragrostis elongata Jacq.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 900m. A.Latiff & A.Zainuddin, ALM 3854.

Eriochloa annulata Kunth.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutnk Besar; Elev. 900m. A.Latiff & A.Zainuddin, ALM 3853.

Paspalum conjugatum Berg.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 865m. A.Latiff & A.Zainuddin, ALM 3815

RHAMNACEAE

Zizyphus angustifolia Miq

Kota Kinabalu District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 960m. Observed

Zizyphus oeniplia Mill.

Kota Belut district: Sayap-Kinahalu, Main trail to Sungai Lumutuk Besar; Elev 950m. Observed

RHIZOPHORACEAE

Anisophyllea disticha Baill

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 900m. Observed.

Carallia lanceaefolia Roxb.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 910m A.Latiff & A.Zainuddin, ALM 3896

ROSACEAE

Rubus fraxinifolius Poir.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 920m. A.Latiff & A.Zainuddin, ALM 3822.

Common along the exposed tarils.

Rubus moluccanus L.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev. 900m. A.Latiff & A.Zainuddin, ALM 3877.

Very Common.

RUBIACEAE

Argostemma sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. A.Latiff & A.Zainuddin, ALM 3838.

Herb of ca. 50cm, inflorescence pendulous ca. 11cm long, petals white, fruits green. Leaves 26cm x 10cm, secondary vein up to 10 pairs, drying black above dark brown below

Gardenia merrillii Elm.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 910m. A.Latiff & A.Zainuddin, ALM 3881.

Gardenia sp

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar: Elev 950m A.Latiff & A.Zainuddin, ALM 3827

Shrub of ca. 0.5m, leaves with scalariform veins, 18cm x 7cm, fruits in axils, green.

Ixora brevicaudata Brem.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. A.Latiff & A.Zainuddin ALM 3842.

Ixora congesta Roxb.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. *A.Latiff & A.Zainuddin* ALM 3829.

Praravinia sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 1090m. *A.Latiff & A.Zainuddin*, ALM 3868

Psychotria sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 960m. *A.Latiff & A.Zainuddin*, ALM 3860.

Uncaria sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 920m. Observed.

Urophyllum glabrum Wall. sensu Rid I.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar: Elev 950m. *A.Latiff & A.Zainuddin*, ALM 3825.

RUTACEAE

Luvanga sp.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 950m. Observed

SABIACEAE

Meliosma pinnata (Roxb.) Max. ssp. *ridleyi* (King) Beus

Kota Belut District: Sayap-Kinabalu. Waterfall trail. Elev. 955m. *A.Latiff & A.Zainuddin*. ALM 3919.

SAPOTACEAE

Palaquium sp.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 910m *A.Latiff & A.Zainuddin*, ALM 3890

SCROPHULARIACEAE

Cyrtandromea acuminata Benth.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 920m. *A.Latiff* & *A.Zainuddin*, ALM 3823

SMILACACEAE

Smilax cf. kingii Hk.f.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev 910m. *A.Latiff* & *A.Zainuddin*, ALM 3893

SOLANACEAE

Solanum blumei Nees

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutnk Besar; Elev. 855m. *A.Latiff* & *A.Zainuddin*, ALM 3814

Solanum sp.

Kota Belut District: Sayap-Ktnabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m. *A.Latiff* & *A.Zainuddin*, ALM 3832.

SONNERATIACEAE

Duabanga moluccana Bl.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev 915m Observed.
Two species in South east Asia, in Sabah one species.

SYMPLOCACEAE

Symplocos laeviridis Stapf var. *Iaeteviridis*

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 900m. *A.Latiff* & *A.Zainuddin*, ALM 3878.

Symplocos tricoccata Noot.

Kota Belut District: Sayap-Kinabalu, Waterfall trail. Elev. 955m. *A.Latiff* & *A.Zainuddin*, ALM 3921.

THEACEAE

Pyrenaria serrata BI var. *masocarpa* (Korth.) H. Keng

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 1080m A.Latiff & A.Zainuddin, ALM 3866

ULMACEAE

Trema orientalis (L.) B1.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 915m Observed

URTICACEAE

Elatostema sp.

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail. Elev. 915m. Observed

Oreocnide trinervis (Wedd.) Miq.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 960m. A.Latiff & A.Zainuddin, ALM 3856

Poikilospermum suaveolens Merr.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 900m. Observed.

Procris pedunculata (Forst) Wedd

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 950m. A.Latiff & A.Zainuddin, ALM 3836.

VERBENACEAE

Callicarpa maingayi K.& G.

Kota Belut District: Sayap-Kinabalu, Waterfall trail; Elev. 955m. A.Latiff & A.Zainuddin, ALM 3918.

Clerodendrum sp.

Kota Belut District: Sayap-Kinabalu. Waterfall trail. Elev. 955m. A.Latiff & A.Zainuddin. ALM 3915.

VITACEAR

Ampelocissus lowii (Benth.) Planch.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar: Elev 900m. *A.Latiff* & *A.Zainuddin*, ALM 3855.

Endemic to Borneo.

Ampelocissus ochracea (Teysm. & Binn.) Merr

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 950m
Observed.

Common

Cayratia geniculata (Bl.) Gagnep.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 900m.
Observed.

Cissus repens Lamk.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 890m
Observed

Tetrastigma diepenhostii (Miq.) Latiff

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 920m
Observed.

Tetrastigma dubium (Laws.) Planch.

Kota Belut District: Sayap-Kinabalu, Waterfall trail Elev. 900m *A.Latiff* & *A.Zainuddin*, ALM
3924

Tetrastigma lanceolarium (Roxb.) Planch.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev. 890m.
Observed.

Tetrastigma laxum Ridl

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 910m *A.Latiff* & *A.Zainuddin*,
ALM 3883

Tetrastigma megacarpum Latiff

Kota Belut District: Sayap-Kinabalu, Gua Melayu trail Elev 900m. Observed.
Endemic to Borneo.

Tetrastigma papillosum (Bl.) Planch.

Kota Belut District; Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev. 865m
Observed

ZINGIBERACEAE

Etilingera sp.

Kota Belut District: Sayap-Kinabalu. Main trail to Sungai Lumutuk Besar; Elev 1090m *A.Latiff* & *A.Zainuddin*, ALM 3873

Zingiber griffithii Bak.

Kota Belut District: Sayap-Kinabalu, Main trail to Sungai Lumutuk Besar; Elev 960m. *A.Latiff* & *A.Zainuddin*, ALM 3874 Gua Melayu trail; Elev 900m. *A.Latiff* & *A.Zainuddin*, ALM 3899

DISCUSSION

A total of 128 species were collected during the expedition and 39 still remained unidentified. The flora of Borneo in general and that of Sabah in particular is absent, hence reference is made to the checklist or enumeration of Merrill (1921) and Masamune (1942), respectively. Other accounts that were also referred to include that of Tabin Wildlife Reserve, Dent Peninsula by Mat Salleh *et al.* (1989) and that of Liwagu river basin by the Universiti Kebangsaan Malaysia consultants (Anon. 1989).

The family composition varies; there are only seven families with more than five species each (Table 1) and there are more families which has one species only. These include Acanthaceae, Begoniaceae, Clusiaceae, Ebenaceae, Flacourtiaceae, Lecythidaceae, Magnoliaceae, Maranthaceae, Menispermaceae, Meliaceae, Olacaceae, Pandanaceae, Rutaceae, Smilacaceae, and Sapotaceae. It is believed that the above families are represented in the area by more than one species, but the plants are not observed hence collected.

The algae, bryophytes, ferns and the Orchidaceae were given separate account by Mansor Mashhor (Universiti Sains Malaysia), Haji Muhammad (Universiti Malaya), Razali Jaman & A. Latiff (Universiti Kebangsaan Malaysia) and Khelikuzzaman M.Hussin (MARDI), respectively.

It is worth noting here that if collecting duration were extended and if more fertile specimens were encountered, the number of taxa accounted might have been doubled. Furthermore, identification was not made possible for all the collection hence taxa of interest, such as endemic, rare or otherwise threatened species have not surfaced. The possibility of new species present in the area is not ruled out as exemplified by the fern collections (Razali Jaman & Latiff, this volume).

Table 1

The large taxa in term of genera-wise and species-wise in Sayap-Kinabalu area

Family	Number of genera	Number of species
Annonaceae	5	11
Euphorbiaceae	8	11
Gesneriaceae	3	5
Lauraceae	4	6
Moraceae	1	7
Rubiaceae	7	9
Vitaceae	4	10

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