

AN ACCOUNT AND PRELIMINARY CHECKLIST OF THE ANGIOSPERMS AND GYMNOSPERMS OF CROCKER RANGE, SABAH

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ABSTRACT

The Crocker Range is the backbone of Sabah, consisting of mountain range running from the north of Mt. Kinabalu to south of Tenom. The enumeration provided herein, based on collection during this short expedition, includes over 200 specimen records. The enumeration recognises 199 vascular plant species belonging to 151 genera and 71 families; 40 taxa are incompletely determined. The Rubiaceae and Euphorbiaceae are the two largest families in the flora with 14 and 13 species, respectively. The genera Ficus and Tetrastigma are the two largest with 8 and 7 species, respectively.

INTRODUCTION

The Scientific Expedition to Sabah Crocker Range was organised by Sabah Parks in collaboration with Universiti Malaysia Sarawak with the objective, amongst others, to document the rich and diverse flora of Crocker Range. The expedition began on 15 October 1999 and ended on 24 October 1999. Several collecting trips were organised to the following areas: Mahua Base Camp track to the waterfalls, Gunung Alab, Bunsit, Kimanis-Keningau road, Tikolod and Ulu Senagang.

The vegetation of the area visited ranges from mossy forest of Gunung Alab to greatly disturbed areas along the Kimanis-Keningau road. In the latter, much of the areas consist of secondary forests with clear remnants of burned-over vegetation on both sides of the slope. Most of the forests along the road had been logged and cleared making ways for resettlement. The Tikolod area and the Bunsit, Bingkor area, especially the foothills had also been logged and cleared for agricultural practices by the local communities. Primary forests are accessible only after about a 2-hour walk from the logging tracks. The Senagang area is quite pristine but the slopes are too steep for easy collection. The remaining good forests are on the mountain sides and the central ridges which are not easily accessible during the expedition.

METHODS

The enumeration provided, below is far from being complete but represents all the collections made by the authors during this expedition. In most cases the fertile specimens are collected for easy identification, but when identification poses little problems, sterile specimens were also collected. The orchids, gingers, palms and other exotic plants were not collected as they are collected by other specialists in the expedition, hence not included in the list.

Enumeration

This enumeration includes one gymnosperm, 27 monocotyledons and 171 dicotyledons. The total number of taxa is estimated at 199, representing 71 families and 151 genera, based on 218 specimen records. A total of 40 taxa are incompletely determined or determined with certain vagaries. Two large families are Rubiaceae and Euphorbiaceae, with 14 and 13 species, respectively, and two large genera are *Tetrastigma* and *Ficus* with 8 and 7 species, respectively. Both *Rafflesia pricei* near Mahua Base Camp and *R. keithii* in the Ulu Senagang area were observed in bloom during the expedition.

GYMNOSPERM

1. PODOCARPACEAE
 - 1.1 *Dacrycarpus*
 - 1.1.1 *Dacrycarpus imbricatus* (Blume) de Laub., observed — A.Latiff & A. Zainudin. Gunung Alab. Tree of 7 metres, sterile. Locally common in Sabah

DICOTYLEDONS

2. ACANTHACEAE
 - 2.1 *Filletia*
 - 2.1.1 *Filletia* sp., ALM 5126- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb, flowers white, tubular.
 - 2.2 *Justicia*
 - 2.2.1 *Justicia gendarussa* Burm.f, ALM 5258 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 1 metre. A weed in an abandoned area.
 - 2.3 *Semnostachya*
 - 2.3.1 *Semnostachya* sp., ALM 5274 - A. Latiff & A. Zainudin. Ulu Senagang. Herb of 1 metre.
3. ACTINIDACEAE
 - 3.1 *Saurauia*
 - 3.1.1 *Saurauia* sp. 1, ALM 5127 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Tree of 6 metres, fruits enclose in hairy appendages.
 - 3.1.2 *Saurauia* sp. 2, ALM 5270 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 1.5 metres; inflorescence pendulous.
4. ANNONACEAE
 - 4.1 *Polyalthia*
 - 4.1.1 *Polyalthia aff. insignis* Airy Shaw, ALM 5336 — A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Shrub of 2 metres, flowers orange.
5. APOCYNACEAE
 - 5.1 *Alstonia*
 - 5.1.1 *Alstonia angustifolia* Wall. ex A.DC., ALM 5323 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Tree of 6 metres, latex white, fruits green. Quite widely distributed in Sabah.
 - 5.2 *Parsonia*
 - 5.2.1 *Parsonia alboflavescens* (Dennst.) Mabb., ALM 5338 — A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Climber with white latex
6. ASCLEPIADACEAE
 - 6.1 *Asclepias*
 - 6.1.1 *Asclepias curassavica* Linn., ALM 5326 - A. Latiff & A. Zainudin. Milestone 16 Kimanis —

- Keningau road. Herb, common in wasteland, naturalized from tropical America.
- 6.2 *Dischidia*
- 6.2.1 *Dischidia cochleata* Blume, ALM 5268 — A. Latiff & A. Zainudin. Ulu Senagang. Twinning on bamboo with leaves clasping
7. BALSAMINACEAE
- 7.1 *Impatiens*
- 7.1.1 *Impatiens* sp., ALM 5132- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb, flowers purplish, widely distributed on the rocky outcrops.
8. BEGONIACEAE
- 8.1 *Begonia*
- 8.1.1 *Begonia* sp., ALM 5264 - A. Latiff & A. Zainudin. Ulu Senagang. Herb; flowers violet
9. CECROPIACEAE
- 9.1 *Poikilospermum*
- 9.1.1 *Poikilospermum cordifolium* (Borg-Pet) Men., ALM 5315 -A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Epiphyte on tree; inflorescence purplish.
10. COMPOSITAE
- 10.1 *Ageratum*
- 10.1.1 *Ageratum conyzoides* Linn., ALM 5187 - A. Latiff & A. Zainudin. Gunung Alab. A common weed.
- 10.2 *Blumea*
- 10.2.1 *Blumea* sp., ALM 5321 — A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Herbaceous weed with latex and tubers.
- 10.3 *Elephantopus*
- 10.3.1 *Elephantopus mollis* Kunth, ALM 5136 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb of 0.5 metre, inflorescence greenish.
- 10.4 *Emilia*
- 10.4.1 *Emilia sonchifolia* (Linn.) DC., ALM 5180- A. Latiff & A. Zainudin, Gunung Alab, summit. Herb, flowers purplish.
- 10.5 *Gynura*
- 10.5.1 *Gynura procumbens* (Lour.) Merr., ALM 5307 _ A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Herb.
- 10.6 *Pseudognaphalium*
- 10.6.1 *Pseudognaphalium affine* (D.Don) Anderb., ALM 5186—A. Latiff & A. Zainudin. Gunung Alab. Herb with flowers yellow
- 10.7 *Vernonia*
- 10.7.1 *Vernonia arborea* Buch.- Ham, ALM 5247 - A. Latiff & A. Zainudin. Tikolod. Treelet of 3 metres.
11. CONVOLVULACEAE
- 11.1 *Erycibe*
- 11.1.1 *Erycibe borneensis* (Merr.) Hoogl., ALM 5293 - A. Latiff & A. Zainudin. Ulu Senagang. Treelet of 4 metres
- 11.2 *Merremia*
- 11.2.1 *Merremia umbellata* (Linn.) Hall, f, ALM 5357 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Climber, flowers cream

12. CUNOMACEAE
12.1 *Weinmania*
12.1.1 *Weinmania blumei* Planch., ALM 5324 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Treelet of 4 metres, inflorescence reddish
13. CUCURBITACEAE
13.1 *Gynostemma*
13.1.1 *Gynostemma pentaphyllum* (Thunb.) Makino, Observed — A. Latiff & A. Zainudin. Mahua, track to waterfall. Vine, commonly found in forest fringes
13.2 *Zehneria*
13.2.1 *Zehneria mucronata* (Blume) Miq., ALM 5295 - A. Latiff & A. Zainudin. Ulu Senagang. Climber.
14. EBENACEAE
14.1 *Diospyros*
14.1.1 *Diospyros* sp., ALM 5331 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 7 metres.
15. ERICACEAE
15.1 *Vaccinium*
15.1.1 *Vaccinium retivenium* Sleumer, ALM 5221 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 1 metre.
16. EUPHORBIACEAE
16.1 *Antidesma*
16.1.1 *Antidesma cuspidatum* M. A., ALM 5273 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 2 metres. A species common in Sabah
16.1.2 *Antidesma leucopodum* Miq., ALM 5291 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 3 metres.
16.2 *Baccaurea*
16.2.1 *Baccaurea lanceolata* (Miq.) M. A., ALM 5271 - A. Latiff & A. Zainudin. Ulu Senagang. Tree of 7 metres. Common in Sabah.
16.3 *Bischofia*
16.3.1 *Bischofia javanica* (Blume) J. J.Sm., ALM - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit, riverside. Tree of 10 metres, fruits globose, rusty. Very widely distributed in Sabah.
16.4 *Bridelia*
16.4.1 *Bridelia glauca* Blume, ALM 5334 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 10 metres.
16.4.2 *Bridelia stipularis* (Linn.) Blume, ALM 5353 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Climber
16.5 *Melanolepis*
16.5.1 *Melanolepis multiglandulosa* Airy Shaw, ALM 5328 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 12 metres.
16.6 *Glochidion*
16.6.1 *Glochidion brunneum* Hook.f, ALM 5233 - A. Latiff & A. Zamudin, Tikolod. Shrub of 2 metres.
16.6.2 *Glochidion hypoleucum* (Miq.) Boerl. ALM 5292 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 3 metres.
16.6.3 *Glochidion* sp., ALM 5311 - A. Latiff & A. Zainudin. Mile stone 16 Kimanis — Keningau road, helipad. Tree of 4 metres; fruits pink.

- 16.7 *Homalanthus*
- 16.7.1 *Homalanthus caloneurus* Airy Shaw, ALM 5183 - A. Latiff & A. Zainudin, Gunung Alab. Tree of 4 metres, white latex, inflorescence terminal.
- 16.8 *Macaranga*
- 16.8.1 *Macaranga* sp., ALM 5223 - A. Latiff & A. Zainudin, Gunung Alab. Treelet of 4 metres with inflorescence
- 16.9 *Mallotus*
- 16.9.1 *Mallotus philippensis* (Lam.) M.A., ALM 5327 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of ca. 12 metres
17. FAGACEAE
- 17.1 *Lithocarpus*
- 17.1.1 *Lithocarpus elegans* (Blume) Hatus. ex Soepadmo, ALM 5251 - A. Latiff & A. Zainudin, Tikolod. Tree of 10 metres in fruits. A very common species in Sabah.
- 17.1.2 *Lithocarpus ewyckii* (Korth.) Rehder, ALM 5255 - A. Latiff & A. Zainudin, Tikolod. Tree of 8 metres. A very common species in Sabah.
- 17.1.3 *Lithocarpus* sp. 1, ALM 5287—A. Latiff & A. Zainudin. Ulu Senagang. Tree of 6 metres with inflorescence.
- 17.1.4 *Lithocarpus* sp. 2, ALM 5249 - A. Latiff & A. Zainudin, Tikolod. Tree of 10 metres with flowers.
18. FLACOURTIACEAE
- 18.1 *Casearia*
- 18.1.1 *Casearia velutinosa* Ridl., ALM 5332 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 6 metres.
- 18.2 *Pangium*
- 18.2.1 *Pangium edule* Reinw., observed — A. Latiff & A. Zainudin. Tikolod. Tree of 8 metres, sterile.
19. GESNERIACEAE
- 19.1 *Aeschynanthus*
- 19.1.1 *Aeschynanthus* sp., ALM 5196 - A. Latiff & A. Zainudin, Gunung Alab. Climber, flowers red.
- 19.2 *Cyrtandra*
- 19.2.1 *Cyrtandra burbidger* C. B. Clarke, ALM 5133 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb, flowers calyx cream
20. GUTTIFERAE
- 20.1 *Garcinia*
- 20.1.1 *Garcinia* sp., ALM 5125 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Tree of 6 metres; yellow latex, fruits glo-bose.
21. ICACINACEAE
- 21.1 *Gomphandra*
- 21.1.1 *Gomphandra* sp., ALM 5263 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 2 metres, flowers aggregating, twig ziz-zaging
- 21.1.2 *Gomphandra lysipetala* Stapf, ALM 5290 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 2 metres; fruits reddish
- 21.2 *Stemonurus*
- 21.2.1 *Stemonurus malaccensis* (Mast.) Sleum., ALM 5285 - A. Latiff & A. Zainudin. Ulu Senagang. Tree of 15 metres, bole straight. Widely distributed in Sabah.

22. LABIATAE
- 22.1 *Coleus*
- 22.1.1 *Coleus galeatus* Benth., ALM 5129 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb of 0.2 metre, flowers purplish, commonly observed along the forest trails
23. LAURACEAE
- 23.1 *Lindera*
- 23.1.1 *Lindera pipericarpa* (Meisn.) Boerl., ALM 5166- A. Latiff & A. Zainudin, Gunung Alab, summit. Treelet of 3 metres, fruits green.
24. LEEACEAE
- 24.1 *Leea*
- 24.1.1 *Leea aequata* Linn., ALM 5337 — A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 2 metres, fruits green
- 24.1.2 *Leea indica* (Burm.f) Merr., ALM 5260 - A. Latiff & A. Zainudin. Ulu Senagang. Treelet of 4 metres, fruits globose, depressed. Widely distributed in Sabah.
25. LEGUMINOSAE
- 25.1 *Bauhinia*
- 25.1.1 *Bauhinia ferruginea* Roxb., ALM 5297 - A. Latiff & A. Zainudin. Ulu Senagang. Scrambler; flowers velvety.
- 25.2 *Crotalaria*
- 25.2.1 *Crotalaria pallida* Aiton, ALM 5218 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 0.5 metre, flowers yellow. Common
- 25.3 *Derris*
- 25.3.1 *Derris* sp., ALM 5254— A. Latiff & A. Zainudin, Tikolod. Scrambler.
- 25.4 *Desmodium*
- 25.4.1 *Desmodium triflorum* (Linn.) DC. ALM 5189- A. Latiff & A. Zainudin, Gunung Alab. Herb, flowers purplish.
- 25.5 *Fordia*
- 25.5.1 *Fordia splendidissime* ALM 5266 - A. Latiff & A. Zainudin. Ulu Senagang. Small tree of 4 metres; pod adpressed
- 25.6 *Mimosa*
- 25.6.1 *Mimosa pudica* Linn., observed — A. Latiff & A. Zainudin. Gunung Alab. Creeping herb. Common along the road-sides
- 25.7 *Saraca*
- 25.7.1 *Saraca declinata* (Jack) Miq., ALM 5298 - A. Latiff & A. Zainudin. Ulu Senagang. Tree of 25 metres; flowers reddish. Common in Sabah
- 25.8 *Senna*
- 25.8.1 *Senna alata* (Linn.) Roxb., observed — A. Latiff & A. Zainudin. Tikolod. Shrub of 1.5 metres, flowers yellow. Common in waste grounds.
- 25.8.2 *Senna tora* (Linn.) Roxb., ALM 5351 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit Shrub, flowers yellow. Common in waste grounds.
26. LOBELIACEAE
- 26.1 *Lobelia*
- 26.1.1 *Lobelia borneensis* (Hemsley) Moel., ALM 5173 - A. Latiff & A. Zainudin, Gunung Alab, summit. Scrambler, white latex, 2 petals smaller reflexed, 3 petals larger, purplish line.

27. LOGANIACEAE
27.1 *Fagraea*
27.1.1 *Fagraea* sp., ALM 5256 - A. Latiff & A. Zainudin, Tikolod. Tree of 5 metres, horizontal branching, flowers white
28. MALVACEAE
28.1 *Sida*
28.1.1 *Sida rhombifolia* Linn., ALM 5344 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Low shrub, flowers yellow. Common near the streams
29. MELASTOMATACEAE
29.1 *Anplectrum*
29.1.1 *Anplectrum* sp., ALM 5313 - A. Latiff & A. Zainudin. Mile stone 16 Kimanis — Keningau road, helipad. Scrambler
29.2 *Medinella*
29.2.1 *Medinella speciosa* (Reinw. ex Blume) Blume, ALM 5317 -A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Herb of 1 metre; inflorescence reddish.
29.3 *Melastoma*
29.3.1 *Melastoma* sp. 1, ALM 5177 - A. Latiff & A. Zainudin, Gunung Alab, summit. Shrub of 2 metres, flowers purplish, fruits hairy, large
29.3.2 *Melastoma* sp. 2, ALM 5259 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 1 metre, linear leaves, flowers very purplish.
30. MELIACEAE
30.1 *Aglaia*
30.1.1 *Aglaia philippinensis* , ALM 5272 - A. Latiff & A. Zainudin. Ulu Senagang. Treelet of 4 metres. Quite common in Sabah.
31. MENISPERMACEAE
31.1 *Cyclea*
31.1.1 *Cyclea kinabaluensis* Forman, ALM 5193 - A. Latiff & A. Zainudin, Gunung Alab. Liana, fruits green. Quite common in Sabah.
31.2 *Fibraurea*
31.2.1 *Fibraurea chloroleuca* Miers., ALM 5227 - A. Latiff & A. Zainudin, Tikolod. Climber. Common.
32. MORACEAE
32.1 *Ficus*
32.1.1 *Ficus deltoidea* Jack, ALM 5203 - A. Latiff & A. Zainudin, Gunung Alab. Epiphytic
32.1.2 *Ficus endospermifolia* Corner, ALM 5320 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Tree of 20 metres, white latex. This Bornean endemic is common in Crocker Range area especially Mt. Kinabalu.
32.1.3 *Ficus macilenta* King, ALM 5310 & 5325 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Tree of 5 metres; white latex. This is endemic to Borneo and is uncommon in Sabah.
32.1.4 *Ficus obscura* Blume var. *borneensis* (Miq.) Corner, ALM5131 - A. Latiff & A. Zainudin, Mahua, track to waterfalls, by the stream. Tree of 6 metres; figs orange on branches. Commonly distributed in Sabah.
32.1.5 *Ficus racemosa* Linn., ALM 5358 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of ca. 15 metres. This species is uncommon in Sabah

- 32.16 *Ficus septica* Burm.f ALM 5342 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 8 metres. A common species in Sabah
- 32.1.7 *Ficus sinuata* Thunb., ALM 5308 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Epiphyte/ shrub. A common species in Sabah
- 32.1.8 *Ficus* sp., ALM 5215 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 1.5 metres.
- 33 MYRISTICACEAE
- 33.1 *Knema*
- 33.1.1 *Knema* sp., ALM 5296 - A. Latiff & A. Zainudin. Ulu Senagang. Treelet of 6 metres
34. MYRSINACEAE
- 34.1 *Ardisia*
- 34.1.1 *Ardisia colorata* Roxb., ALM 5267 & 5288 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 2- 3 metres. Widely distributed in Sabah.
- 34.2 *Embelia*
- 34.2.1 *Embelia* sp., ALM 5197 - A. Latiff & A. Zainudin, Gunung Alab. Scrambling
- 34.2.2 *Embelia minutifolia* Stapf, ALM 5192- A. Latiff & A. Zainudin, Gunung Alab. Shrub of 2 metres, fruits pisiform.
- 34.3 *Maesa*
- 34.3.1 *Maesa ramentacea* Wall. ex Roxb., ALM 5302 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Tree of 8 metres. Common.
- 34.3.2 *Maesa procera* Stone, ALM 5217 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 3 metres, flowers white.
35. MYRTACEAE
- 35.1 *Baeckia*
- 35.1.1 *Baeckia frutescens* Linn., ALM 5360— Mahua. Treelet of 3 metres, flowers white. Widely distributed in Sabah, especially on higher grounds.
- 35.2 *Decaspermum*
- 35.2.1 *Decaspermum parviflorum* (Lam) A. J. Scott. var. *parviflorum*, ALM 5252 - A. Latiff & A. Zainudin, Tikolod. Tree of 4 metres, flowers white.
- 35.3 *Syzygium*
- 35.3.1 *Syzygium* sp. 1, ALM 5278 - A. Latiff & A. Zainudin. Ulu Senagang. Treelet of 4 metres.
- 35.3.2 *Syzygium* sp. 2, ALM 5198 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 1.5 metres.
- 35.4 *Tristaniopsis*
- 35.4.1 *Tristaniopsis merguensis* (Griff.) Peter G. Wilson & J. T. Waterh., ALM 5194- A. Latiff & A. Zainudin, Gunung Alab. Tree of 12 metres, fruits green. Common.
36. NEPENTHACEAE
- 36.1 *Nepenthes*
- 36.1.1 *Nepenthes fusca* Danser, ALM 5222 - A. Latiff & A. Zainudin, Gunung Alab. Climber, sterile. Common in mossy forest.
- 36.1.2 *Nepenthes gracilis* Korth., ALM 5205 - A. Latiff & A. Zainudin, Gunung Alab. Climber with inflorescence brownish. Common.
- 36.1.3 *Nepenthes* sp. 1., ALM 5212 - A. Latiff & A. Zainudin, Gunung Alab. Climber, ground pitchers reddish
- 36.1.4 *Nepenthes* sp. 2, ALM 5312- A. Latiff & A. Zainudin. Mile stone 16 Kimanis — Keningau road, helipad. Climber.
- 36.1.5 *Nepenthes* sp. 3, ALM 5209 - A. Latiff & A. Zainudin, Gunung Alab. Climber.

37. OCHNACEAE
37.1 *Campylopermum*
37.1.1 *Campylopermum serratum* (Gaertn.) Bittrich & M.C.E.Amaral, ALM 5340 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 2 metres. Common
38. OLEACEAE
38.1 *Chionanthus*
38.1.1 *Chionanthus ramiflorus* Roxb., ALM 5294 - A. Latiff & A. Zainudin. Ulu Senagang. Tree of ca. 17 metres; fruits ellipsoid.
38.2 *Jasminum*
38.2.1 *Jasminum elongatum* (Bergius) Willd. ALM 5246 & 5350-A. Latiff & A. Zainudin. Tikolod & Bunsit. Climber, flowers white.
39. PANDACEAE
39.1 *Galearia*
39.1.1 *Galearia fulva* (Tul.) Miq., ALM 5239 - A. Latiff & A. Zainudin. Tikolod. Shrub of 2 metres. Widely distributed.
40. PIPERACEAE
40.1 *Piper*
40.1.1 *Piper* sp., ALM 5235 - A. Latiff & A. Zainudin, Tikolod. Claspig on tree trunk.
41. PLANTAGIINACEAE
41.1 *Plantago*
41.1.1 *Plantago major* Linn., ALM 5190- A. Latiff & A. Zainudin, Gunung Alab. Herb. Common.
42. POLYGALACEAE
42.1 *Persicaria*
42.1.1 *Persicaria chinensis* (Linn.) H. Gross, ALM 5179 - A. Latiff & A. Zainudin, Gunung Alab, summit. Shrub, flowers white
42.2 *Polygala*
42.2.1 *Polygala paniculata* Linn., ALM 5167- A. Latiff & A. Zainudin, Gunung Alab, summit. Herb, flowers white. Common
43. RHAMNACEAE
43.1 *Alphitonia*
43.1.1 *Alphitonia excelsa* (Fenzl) Reiss. *ex* Endl., ALM 5241 A. Latiff & A. Zainudin. Tikolod. Treelet of 3 metres, fruits green. A species widely distributed in Sabah.
43.2 *Zizyphus*
43.2.1 *Zizyphus angustifolius* (Miq.) Hatusima *ex* Steenis, ALM 5352- A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 5 metres; spreading.
44. RHIZOPHORACEAE
44.1 *Carallia*
44.1.1 *Carallia* sp., ALM 5333 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 18 metres with flower buds green. Madam and Wong (1995) listed a total of 5 species from Sabah with two yet to be named
45. ROSACEAE
45.1 *Rubus*

- 45.1.1 *Rubus alpestris* Blume, ALM 5195 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 1 metre. Common.
- 45.1.2 *Rubus fraxinifolius* Poiret, ALM 5169- A. Latiff & A. Zainudin, Gunung Alab, summit. Shrub of 2 metres. Widely distributed in Sabah.
- 45.1.3 *Rubus moluccanus* Linn., Observed — A. Latiff & A. Zainudin. Mahua, track to waterfalls. Thorny climber with fruits reddish. Very common in Sabah.
46. RUBIACEAE
- 46.1 *Hedyotis*
- 46.1.1 *Hedyotis pulchella* Stapf., ALM 5175 - A. Latiff & A. Zainudin, Gunung Alab, summit. Shrub of 1 metre.
- 46.2 *Ixora*
- 46.2.1 *Ixora javanica* (Blume) DC., ALM 5284 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 1 metre, flowers red.
- 46.3 *Lasianthus*
- 46.3.1 *Lasianthus kinabaluensis* Stapf, ALM 5262 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 1 metre, flowers white. Common.
- 46.3.2 *Lasianthus maingayi* Hook.f, ALM 5283 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 3 metres.
- 46.3.3 *Lasianthus rhinozerotis* Blume, ALM 5130- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Low shrub of 1 metre, fruits purplish
- 46.4 *Lucinaea*
- 46.4.1 *Lucinaea membranacea* King, ALM 5208- A. Latiff & A. Zainudin. Gunung Alab downwards. Climber
- 46.5 *Morinda*
- 46.5.1 *Morinda citrifolia* Linn., ALM 5354 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 7 metres. Common
- 46.6 *Mussaenda*
- 46.6.1 *Mussaenda* sp., ALM 5303 - A. Latiff & A. Zainudin. Mile stone 16 Kimanis — Keningau road, helipad. Shrub of 2 metres.
- 46.7 *Neolamarckia*
- 46.7.1 *Neolamarckia cadamba* (Roxb.) Bosser, ALM 5322 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Tree of ca. 10 metres with flower buds. Very common along the road-sides
- 46.8 *Pavetta*
- 46.8.1 *Pavetta axillaris* Bremek., ALM 5275 - A. Latiff & A. Zainudin. Ulu Senagang. Treelet of 3 metres; fruits shiny bluish
- 46.9 *Pleiocarpidia*
- 46.9.1 *Pleiocarpidia enneandra* (Wight) Schum., ALM 5348 — A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Shrub.
- 46.10 *Pravavinia*
- 46.10.1 *Pravavinia suberosa* (Merr.) Premek, ALM 5236 - A. Latiff & A. Zainudin, Tikolod. Treelet of 3 metres with flowers on stem
- 46.11 *Psychotria*
- 46.11.1 *Psychotria* sp., ALM 5282 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 2 metres
- 46.12 *Uncaria*
- 46.12.1 *Uncaria cordata* (Lour.) Merr., ALM 5245 - A. Latiff & A. Zainudin. Tikolod. Scrambler with inflorescence. Common.
47. RUTACEAE

- 47.1 *Citrus*
- 47.1.1 *Citrus macroptera* Montrouz., ALM 5269 - A. Latiff & A. Zainudin. Ulu Senagang. Tree of 3 metres, riverside; berries large, globose. Quite widely distributed in Sabah
- 47.2 *Clausena*
- 47.2.1 *Clausena excavata* Burm.f, ALM 5347 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 5 metres. Widespread and common in Sabah
- 47.3 *Luvanga*
- 47.3.1 *Luvanga* sp., observed — A. Latiff & A. Zainudin. Gunung Alab. Climber, sterile
- 47.4 *Melicope*
- 47.4.1 *Melicope incana* T. Hartley, ALM 5248 & 5250 & 5304 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad and Tikolod. Tree of 3 to 8 metres. Widely distributed in Sabah.
- 47.4.2 *Melicope latifolia* (DC.) T. G. Hartley, ALM 5343 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 4 metres. Widely distributed in Sabah.
- 47.5 *Micromelon*
- 47.5.1 *Micromelon minutum* (Forst.f) Wight & Arn., ALM 5349 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 3 metres, fruits green. Widely distributed in Sabah.
- 47.6 *Murraya*
- 47.6.1 *Murraya paniculata* (Linn.) Jack var. *paniculata*, ALM 5330 -A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 5 metres. Quite widely distributed in Sabah.
48. SAPINDACEAE
- 48.1 *Allophylus*
- 48.1.1 *Allophylus cobbe* (Linn.) Raeuschel, ALM 5122- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Climber, inflorescence spicate, terminal. Common in Sabah.
- 48.2 *Guioa*
- 48.2.1 *Guioa bijuga* (Hiern) Radlk., ALM 5257 - A. Latiff & A. Zainudin, Tikolod. Tree of 4 metres. Locally common in Sabah.
- 48.3 *Lepisanthes*
- 48.3.1 *Lepisanthes fruticosa* (Roxb.) Leenh., ALM 5359 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 4 metres. Common in Sabah.
49. SCROPHULARIACEAE
- 49.1 *Torenia*
- 49.1.1 *Torenia atropurpurea* Ridl., ALM 5185 - A. Latiff & A. Zainudin, Gunung Alab. Herb of 10 cm, flowers purplish
- 49.2 *Scoparia*
- 49.1.2 *Scoparia dulcis* Linn., ALM 5170- A. Latiff & A. Zainudin, Gunung Alab, summit. Herb of 20 cm, flowers white. Naturalized from tropical America.
50. SIMAROUBACEAE
- 50.1 *Eurycoma*
- 50.1.1 *Eurycoma longifolia* Jack, ALM 5286 - A. Latiff & A. Zainudin. Ulu Senagang. Shrub of 1 metre, sterile. Common in Sabah.
51. SOLANACEAE
- 51.1 *Solanum*
- 51.1.1 *Solanum nigrum* Linn., ALM 5140- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Shrub of 0.5 metre, flowers white. Common at waste ground and cook as vegetable. Common.

52. SONNERATIACEAE
- 52.1 *Duabunga*
- 52.2.1 *Duabanga mollucana* Blume, ALM 5318 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Tree of 12 metres; flowers succulent. Widely distributed in Sabah
53. STERCULIACEAE
- 53.1 *Kleinhovia*
- 53.1.1 *Kleinhovia hospita* Linn., ALM 5329 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Tree of 10 metre, fruits reddish. Widely distributed especially near the river
- 53.2 *Sterculia*
- 53.2.1 *Sterculia stipulata* Korth., ALM 5261 - A. Latiff & A. Zainudin. Ulu Senagang. Tree of 8 metres, inflorescence reddish.
54. SYMPLOCACEAE
- 54.1 *Symplocos*
- 54.4.1 *Symplocos adenophylla* Wall. ex G. Don, ALM 5199 - A. Latiff & A. Zainudin, Gunung Alab. Treelet of 4 metres
- 54.4.2 *Symplocos confusa* Brand., ALM 5214 - A. Latiff & A. Zainudin, Gunung Alab. Shrub of 1 metre, flowers tubular white, aromatic
55. THEACEAE
- 55.1 *Eurya*
- 55.1.1 *Eurya acuminata* DC., ALM 5314 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Treelet of 3 metres. Common.
- 55.2 *Schima*
- 55.2.1 *Schima wallichii* (DC.) Korth. Ssp. *wallichii* , ALM 5319 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road. Tree of 6 metres; flower buds globose. Quite common on higher ground.
- 55.3 *Ternstroemia*
- 55.3.1 *Ternstroemia coriacea* Sheff., ALM 5174 - A. Latiff & A. Zainudin, Gunung Alab, summit. Tree of 12 metres, bud globose, flower spreading
- 55.3.2 *Ternstroemia lowii* Stapf., ALM 5220 - A. Latiff & A. Zainudin, Gunung Alab, summit. Tree of 12 metres, bud globose, flower spreading.
56. ULMACEAE
- 56.1 *Trema*
- 56.1.1 *Trema orientalis* (Linn.) Blume, ALM 5242 - A. Latiff & A. Zainudin. Tikolod. Shrub of 2 metres. Common
57. UMBELLIFERAE
- 57.1 *Centella*
- 57.1.1 *Centella asiatica* (Linn.) Urb., observed — A. Latiff & A. Zainudin. Gunung Alab. Herb among the grasses. Common
- 57.2 *Eryngium*
- 57.2.1 *Eryngium foetidum* Linn., ALM 5137 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb, aromatic, mint smell. Naturalized from tropical America.
- 57.3 *Sanicula*
- 57.3.1 *Sanicula europea* Linn., ALM 5138 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Common weed.

58. URTICACEAE
- 58.1 *Denrocnide*
- 58.1.1 *Denrocnide elliptica* (Men.) Chew, ALM 5123- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Shrub of 4 metres. Quite commonly distributed.
- 58.2 *Elatostemma*
- 58.2.1 *Elatostemma lineare* Stapf., ALM 5124- A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb of 0.5 metre.
- 58.3 *Leucosyke*
- 58.3.1 *Leucosyke capitellata* Wedd., ALM 5276 - A. Latiff & A. Zainudin. Ulu Senangang; Treelet of 3 metres.
59. VERBENACEAE
- 59.1 *Gmelina*
- 59.1.1 *Gmelina elliptica* J. E. Smith, ALM 5352 — A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Treelet of 5 metres, spreading, flowers yellow, fruits green.
- 59.2 *Stachytarpheta*
- 59.2.1 *Stachytarpheta indica* (Linn.) Vahl, observed — A. Latiff & A. Zainudin. Gunung Alab. Herb of 0.3 metre, with blueish flowers.
60. VITACEAE
- 60.1 *Ampelocissus*
- 60.1.1 *Ampelocissus imperialis* Planch. ALM 5232 - A. Latiff & A. Zainudin, Tikolod. Climber, high up on tree, sterile. Quite common
- 60.1.2 *Ampelocissus ochracea* (Teys. & Binn.) Merrill, ALM 5279 -A. Latiff & A. Zainudin. Ulu Senangang. Liana with inflorescence.
- 60.2 *Cissus*
- 60.2.1 *Cissus repens* Lamk., ALM 5240— A. Latiff & A. Zainudin. Tikolod. Liana, sterile. Common.
- 60.3 *Tetrastigma*
- 60.3.1 *Tetrastigma diepenhostii* (Miq.) Latiff *ined.*, ALM 5265 - A. Latiff & A. Zainudin. Ulu Senangang. Large climber; host of *Rafflesia keithii* ; sterile.
- 60.3.2 *Tetrastigma dubium* (Lawson) Planch., ALM 5228 - A. Latiff & A. Zainudin, Tikolod. Liana with flowers and fruits.
- 60.3.3 *Tetrastigma glabratum* (Blume) Planch., ALM 5172 - A. Latiff & A. Zainudin, Gunung Alab, summit. Liana, sterile, petiole red, lamina incurved.
- 60.3.4 *Tetrastigma hookeri* (Lawson) Planch., ALM 5237 - A. Latiff & A. Zainudin, Tikolod. Climber, sterile
- 60.3.5 *Tetrastigma leucostaphylum* (Dennst.) Alston ex Mabb., ALM 5229 - A. Latiff & A. Zainudin, Tikolod. Liana, sterile.
- 60.3.6 *Tetrastigma megacarpum* Latiff, Observed - A. Latiff & A. Zainudin. Mahua, Rafflesia track. Liana, sterile.
- 60.3.7 *Tetrastigma papillosum* (Blume) Planch., observed — A. Latiff & A. Zainudin. Mahua, Rafflesia track. Liana, papillate stem, sterile
- 60.3.8 *Tetrastigma pedunculare* (Wall. ex Lawson) Planch., ALM 5226 - A. Latiff & A. Zainudin, Tikolod. Liana and scrambling on ground, sterile

MONOCOTYLEDON

61. COMMELINACEAE

61.1 *Commelina*

- 61.1.1 *Commelina* sp., ALM 5139 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb with bluish flowers.

- 61.2 *Polia*
 61.2.1 *Polia secundiflora* (Blume) Backer, ALM 5231 - A. Latiff & A. Zainudin, Tikolod. Herb.
 61.2.2 *Polia thyrifolia* (Blume) Steud., ALM 5135 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb of 1 metre, inflorescence short, terminal.
62. COSTACEAE
 62.1 *Costus*
 62.1.1 *Costus globosus* Blume, observed — A. Latiff & A. Zainudin. Mahua, track to waterfalls. Herb of 1.5 metres, sterile.
 62.1.2 *Costus speciosus* (J. Konig) Sm., observed — A. Latiff & A. Zainudin. Tikolod. Herb of 1.5 metres, sterile. Common.
63. GRAMINEAE
 63.1 *Echinochloa*
 63.1.1 *Echinochloa* sp., ALM 5168 - A. Latiff & A. Zainudin, Gunung Alab, summit. Herb of 0.3 metre.
 63.2 *Eragrostis*
 63.2.1 *Eragrostis* sp., ALM 5181 - A. Latiff & A. Zainudin, Gunung Alab, summit. Herb.
 63.3 *Gahnia*
 63.3.1 *Gahnia tristis* Nees, observed — A. Latiff & A. Zainudin. Gunung Alab. Herb of ca. 1 metre, infrutescence black.
 63.4 *Oplismenus*
 63.4.1 *Oplismenus compositus* (Linn.) P. Beauv., ALM 5230— A. Latiff & A. Zainudin, Tikolod. Herb ca. 20 cm with infrutescence, green.
 63.5 *Panicum*
 63.5.1 *Panicum trigonum* Retz., ALM 5171 - A. Latiff & A. Zainudin, Gunung Alab, summit. Herb.
 63.5.2 *Panicum* sp., ALM 5211 - A. Latiff & A. Zainudin, Gunung Alab. Herb of 1 metre.
 63.6 *Pennisetum*
 63.6.1 *Pennisetum purpureum* Schumach. ALM 5213 - A. Latiff & A. Zainudin, Gunung Alab. Herb of 1 metre, inflorescence brownish.
 63.7 *Pogonatherum*
 63.7.1 *Pogonatherum crinitum* (Thunb. ex Murr.) Kunth, ALM 5219 - A. Latiff & A. Zainudin, Gunung Alab. Herb.
 63.8 *Sacciolepis*
 63.8.1 *Sacciolepis indica* (Linn.) A. Chase, ALM 5306 — A. Latiff & A. Zainudin, Milestone 16 Kimanis — Keningau road. Herb.
 63.9 *Setaria*
 63.9.1 *Setaria geniculata* (Lamk.) P. Beauv., ALM 5301 — A. Latiff & A. Zainudin, Milestone 16 Kimanis — Keningau road. Herb of 2 metres.
 63.10 *Thysanolaena*
 63.10.1 *Thysanolaena maxima* (Roxb.) O. Ktze., ALM 5216-A. Latiff & A. Zainudin, Gunung Alab. Herb of 2 metres.
64. HYPOXIDACEAE
 64.1 *Molineria*
 64.1.1 *Molineria latifolia* (Dryad.) Herb. ex Kurz, ALM 5128 - A. Latiff & A. Zainudin, Mahua, track to waterfalls. Herb, flowers yellow, seeds sweet.
65. LILIACEAE
 65.1 *Dianella*

- 65.1.1 *Dianella ensifolia* (Linn.) DC., ALM 5191 - A. Latiff & A. Zainudin, Gunung Alab. Herb of 1 metre. Common.
- 65.1.2 *Dianella javanica* (Blume) Kunth, ALM 5176— A. Latiff & A. Zainudin, Gunung Alab. Herb.
66. ORCHIDACEAE
- 66.1 *Coelogyne*
- 66.1.1 *Coelogyne foerstermannii* Rech.f, ALM 5204 - A. Latiff & A. Zainudin, Gunung Alab. Epiphytic, flowers yellow
- 66.2 *Dendrochilum*
- 66.2.1 *Dendrochilum* sp., ALM 5200 & 5206 - A. Latiff & A. Zainudin, Gunung Alab. Epiphytic, inflorescence yellow, pendulous
- 66.3 *Eria*
- 66.3.1 *Eria* sp., ALM 5201 & 5202 - A. Latiff & A. Zainudin, Gunung Alab. Epiphytic, flowers come out from lateral axil, white
67. PALMAE
- 67.1 *Pinanga*
- 67.1.1 *Pinanga pilosa* (Burret) J. Dransfield, ALM 5207 - A. Latiff & A. Zainudin, Gunung Alab. Palm of 2 metres, inflorescence reddish
68. PANDANACEAE
- 68.1 *Pandanus*
- 68.1.1 *Pandanus* sp., ALM 5309 - A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Tree- like of 3 metres in fruits
69. SMILACACEAE
- 69.1 *Smilax*
- 69.1.1 *Smilax setosa* Miq., ALM 5316- A. Latiff & A. Zainudin. Milestone 16 Kimanis — Keningau road, helipad. Climber; fruits globose, cream.
70. TACCACEAE
- 70.1 *Tacca*
- 70.1.1 *Tacca palmata* Blume, ALM 5341 - A. Latiff & A. Zainudin. Keningau, Bingkor, Bunsit. Herb with palmate-leaved.
71. ZINGIBERACEAE
- 71.1 *Globba*
- 71.1.1 *Globba* sp., ALM 5234 — A. Latiff & A. Zainudin, Tokolod. Herb

ACKNOWLEDGEMENTS

We would like to express our thanks and appreciation to Sabah Parks, for the invitation to participate in the expedition. In particular to Datuk Lamri Ali, Dr. Jamili Nais and Prof. Ghazally Ismail for the hospitality and encouragement. The study is supported by IRPA Grant 08-02-02-0009 to which we are grateful.

REFERENCES

Jones D. T.

(1995). Rutaceae. In: E. Soepadmo & K.M. Wong (Eds.). Tree Flora of Sabah and Sarawak 1: 35-420.

Kochummen K.M. and R. Go.

(2000). Moraceae. In: E. Soepadmo & L.G. Saw (Eds.). Tree Flora of Sabah and Sarawak 3:181-334.

Madam L. and K. M. Wong.

Rhizophoraceae. In: E. Soepadmo & K.M. Wong (Eds.). Tree Flora of Sabah and Sarawak 1: 321-350.

Othman Bojo.

(1995). Sonneratiaceae. In: E. Soepadmo & K.M. Wong (Eds.). Tree Flora of Sabah and Sarawak 1: 443-444.

Soepadmo E., S. Julia and R. Go.

(2000). Fagaceae. In: E. Soepadmo & L.G. Saw (Eds.). Tree Flora of Sabah and Sarawak 3: 1-117.

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