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NOTES ON THE FLORA DIVERSITY OF ASAH CAMPSITE, TIOMAN ISLAND, PAHANG, PENINSULAR MALAYSIA

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ABSTRACT

Asah Waterfall which is situated in Tioman Island, Pahang, Peninsular Malaysia, is one of the interesting area to be explored especially in the interest of flora diversity. The Programme of Genetic Resource Conservation Management, Centre of Genebank and Seeds MARDI was involved in assessing the flora composition, collecting plant genetic resources as well providing preliminary plant checklist for this area in April 2016. From this survey, a total of 127 species, in details of 100 genera from 67 families were identified. Two species of Zingiberaceae from two genera, *Etlingera* and *Boesenbergia,* were inventorized and collected for germplasm collection. There were 14 species of rare and wild edible fruit species that are important for the food security and food sources for the wild animal community recorded.

Keywords: Asah camp, Tioman Island, flora, Malaysia.

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INTRODUCTION

Tioman Island is one of the major island in Malaysia that attract local and international tourists to paya visit to this island. The island vegetation mainly consists of coastal stretch vegetation that comes together with the combination of lowland forest and hill dipterocarp forest and mangrove habitat (Latiff *et al*. 1999). Comprehensive flora survey in Tioman Island was conducted previously by Stone (1977). However, further evaluation and plant collections need to be conducted periodically especially in those area that are still remain in their natural habitat. The main aim of this study is to provide plant checklist and general field collection in Asah Campsite. This will provide baseline data on the flora of specific area of Tioman Island (Asah Campsite) that can serve as a useful tool for protecting this site and monitor changes pattern to the flora in the future.

MATERIALS AND METHODS

The field surveys were conducted in three provided trails (named Trail A, B and C), that consists of fertile and sterile flora specimens for herbarium record and collection. Plant listing and identification were referred to Corner (1988), Stone (1977) and Soepadmo and Wong (1995) and Turner (1995). Other that plant morphology, the floristic note and plant habitat type were also recorded for future references. Plant leaves for anatomy dissection were kept in alcohol: acetic acid solution (1:3) at Plant Anatomy Laboratory, MARDI Serdang while the permanent herbarium specimens for future references were lodged at MDI Herbarium.

RESULTS AND DISCUSSION

A total of 127 plant species were identified and collected from Asah Trail, Tioman Island, and showed plant density of estimated 317 trees per trails. Plant communities in these trails were dominated by medium to high sized tree and shrub as well as mosses, with a total of 256 trees within the diameter class of 5.0 - 14.9 cm. Taxonomic composition illustrated a total of 127 species and 100 genera from 67 families (Table 1). Annonaceae is the majority family observed, represented by 10 species from eight genera, followed by Euphorbiaceae and Moraceae with both families represented by seven and six species, respectively. There were also 33 families present in this area that was represented by a single species each – Amaryllidaceae, Anisophylleaceae, Arecaceae, Bignoniaceae,

Combretaceae, Commelinaceae, Connaraceae, Convolvulaceae, Costaceae, Cyperaceae, Dilleniaceae, Dioscoreaceae, Flacourtiaceae, Goodeniaceae, Hypoxidaceae, Ixonanthaceae, Lycopodiaceae, Lythraceae, Malvaceae, Marantodaceae, Melastomataceae, Meliaceae, Musaceae, Oxalidaceae, Pandanaceae, Selaginellaceae, Simaroubaceae, Smilacaceae, Taccaceae, Tiliaceae, Torricelliaceae, Ulmaceae and Violaceae. Finally, 14 species of wild fruit species that could be useful as food sources for the animal communities were recorded in this area, consisting of *Mangifera indica, M. odorata, Garcinia hombroniana, G. nervosa, G. penangiana, Flacourtia roukam, Barringtonia macrostachya, B. scortechnii, Archidendron jiringa, Artocarpus elasticus, A. scortechnii, Baccaurea parvifolia, Pometia pinnata* and *Scaphium macropodum*. Two species of Zingiberaceae from two genera – *Alpinia* and *Boesenbergia* were also collected from damp and shady area nearby Asah waterfall.

CONCLUSION

The availability of wild and rare fruit tree species in Asah Campsite, Tioman Island is low compared to another site in this island. Since our main aim were to survey, documented and collecting seeds for conservation purposes, the correct timing of the expedition is very critical. Although some rare and wild fruit species were found in the trail, none of the species was flowering and fruiting, except for *Mangifera indica* and *Pometia pinnata f. pinnata*, therefore no seeds were collected for our rare fruit genebank conservation program.

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Table 1 List of dicotyledones observed at Asah Camp, Tioman Island, Pahang

No.	Family	Species
1	Amaryllidaceae	*Crinum* sp.
2	Anacardiaceae	*Buchanania arborescens*
		Buchanania sp.
		Gluta renghas
		Mangifera indica
		Mangifera odorata
3	Anisophylleaceae	*Anisophyllea* sp.
4	Annonaceae	*Polyalthia schlerophylla*
		Polyalthia sumatrana
		Polyalthia sp.
		Alstonia angustifolia
		Alstonia angustiloba
		Alstonia scholaris
		Alstonia sp.
		Dyera costulata
5	Araceae	*Aglaonema* sp.
		Epipremnum giganteum
		Scindapsus sp.
6	Araliaceae	*Arthrophyllum diversifolium*
7	Arecaceae	*Korthalsia* sp.
8	Asclepiadaceae	*Hoya diversifolia*
		Hoya sp.
9	Aspleniaceae	*Asplenium nidus*
10	Bignoniaceae	*Pajenella* sp.
11	Bombacaceae	*Durio zibethinus*
12	Clusiaceae	*Garcinia hombroniana*
		Garcinia nervosa
		Garcinia penangiana
13	Combretaceae	*Terminalia catappa*
14	Commelinaceae	*Amischotolype* sp.
15	Compositae	*Vernonia arborea*
		Vernonia sp.
		Wolstania latifolia
16	Connaraceae	*Cnestis palala*
17	Convolvulaceae	*Ipomea littoralis*

No.	Family	Species
18	Costaceae	*Costus* sp.
19	Cyperaceae	*Mapania* sp.
20	Dilleniaceae	*Tetracera* sp.
21	Dioscoreaceae	*Dioscorea* sp.
22	Dipterocarpaceae	*Dipterocarpus confertus*
23	Euphorbiaceae	*Antidesma mantanum*
		Antidesma pahangensis
		Claoxylon sp.
		Endospermum sp.
		Macaranga diepenhorstii
		Macaranga gigantea
		Macaranga hosei
		Macaranga subcuneatus
		Mallotus dentatus
24	Flacourtiaceae	*Flacourtia rukam*
25	Goodeniaceae	*Scaevola sericea*
26	Guttiferae	*Callophyllum* sp.
27	Hypoxidaceae	*Molineria latifolia*
28	Ixonanthaceae	*Ixonanthes reticulata*
29	Lamiaceae	*Premna* sp.
		Vitex vestita
30	Lecythidaceae	*Barringtonia macrostachya*
		Barringtonia scortechnii
31	Leguminosae	*Archidendron jiringa*
		Bauhinia bidentata
		Bauhinia sp.
		Callerya sp.
		Desmodium umbellatum
		Pongamia sp.
		Senna alata
32	Lycopodiaceae	*Lycopodium* sp.
33	Lythraceae	*Lagerstroemia sp.*
34	Malvaceae	*Hibiscus tiliaceus*
35	Maranthaceae	*Donax grandis*
		Donax sp.
36	Marantodaceae	*Marantodes pumillum*

No.	Family	Species
37	Melastomaceae	*Clidemia hirta*
38	Meliaceae	*Dysoxylon* sp.
39	Moraceae	*Artocarpus elasticus*
		Artocarpus scortechnii
		Ficus fistulosa
		Ficus grassularoides
		Ficus hispida
		Ficus sp.
40	Musaceae	*Musa acuminata* ssp. *acuminata*
41	Myristicaceae	*Horsfieldia* sp.
		Knema sp.
42	Myrsinaceae	*Ardisia colorata*
		Ardisia korthalsia
		Maesa ramentacea
43	Myrtaceae	*Rhodamnia* sp.
		Syzygium grandis
		Syzygium sp.
44	Nephrolepidaceae	*Nephrolepis biserrata*
45	Ophioglossaceae	*Helmintostachys zeylanicum*
46	Orchidaceae	*Timonius wallichianus*
		Vanilla sp.
47	Oxalidaceae	*Oxalis* sp.
48	Palmae	*Caryota mitis*
		Cocos nucifera
49	Pandanaceae	*Pandanus* sp.
50	Phyllanthaceae	*Aporosa benthamniana*
		Baccaurea parvifolia
51	Piperaceae	*Piper porphyrophyllum*
52	Polygalaceae	*Xanthophyllum obscurum*
		Xanthophyllum sp.

No.	Family	Species
53	Rubiaceae	*Aidia densiflora*
		Ixora javanica var. *javanica*
		Ixora congesta
		Lasianthus sp.
		Psychotria malayana
54	Rutaceae	*Glycosmis decipiens*
		Luvanga sp.
		Melicope sp.
55	Sapindaceae	*Guioa pleuropteris*
		Pometia pinnata f. *pinnata*
56	Sapotaceae	*Palaquium* sp.
57	Selaginellaceae	*Selaginella* sp.
58	Simaroubaceae	*Eurycoma longifolia*
59	Smilacaceae	*Smilax* sp.
60	Sterculiaceae	*Scaphium macropodum*
		Scaphium sp.
61	Taccaceae	*Tacca integrifolia*
62	Tiliaceae	*Microcos* sp.
63	Torricelliaceae	*Aralidium pinnatifidum*
64	Ulmaceae	*Trema tomentosa*
65	Violaceae	*Rinorea bengalensis*
66	Vitaceae	*Ampelocissus* sp.
		Cissus sp.
		Tetrastigma sp.
67	Zingiberaceae	*Alpinia* sp.
		Boesenbergia plectrata