

Research Article

The Plant Species Diversity of Lasitae Protected Nature Forest and Nearby Area, District of Barru, South Sulawesi

Rismita Sari^{1*}, Fauziah², Inggit Puji Astuti¹, Ratna Susandarini³, Irwan Makmur⁴

- 1) Research Centre for Plant Conservation and Botanic Garden-Indonesian Institute of Sciences (LIPI), Jln. Ir. H. Juanda 13, Bogor 16003, West Java, Indonesia
- 2) Purwodadi Botanic Garden-Research Centre for Plant Conservation and Botanic Garden (LIPI), Jln. Surabaya-Malang Km 65, Purwodadi-Pasuruan 67163, East Java, Indonesia
- 3) Faculty of Biology, Gadjah Mada University, Bulak Sumur 55821, Yogyakarta, Indonesia
- 4) Forest Management Unit (KPH) Ajatappareng, Forestry Service, South Sulawesi Province, Jln. Sultan Hasanuddin No. 95, Barru District, South Sulawesi, Indonesia

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ABSTRACT

An expedition to Lasitae Protected Forest in District of Barru, South Sulawesi was undertaken to collect living plants for Pucak Botanic Garden, South Sulawesi. The aims were to investigate the diversity of the plants and as a dedication to the Expedition of the Republic of Indonesia Corridor Sulawesi. Using an explorative method, we collected the plants and recorded all data in the field following the tracks assisted by the field guide. A total of 179 collection-numbers have been collected from this dry lowland forest including the data for the local names. Many potential and valuable plants occur in the forest, 13 plants were highlighted in this paper for its conservation status, the potentiality for various purposes or its uniqueness: *Diospyros celebica* Bakh. or streak ebony (Ebenaceae), *Arenga pinnata* (Wurmb.) Merr. (Arecaceae), *Phyllanthus lamprophyllus* Mull.Arg. (Phyllanthaceae), *Cycas rumphii* Miq. (Cycadaceae), *Lagerstroemia speciosa* (L.) Pers. (Lythraceae), *Garvinia celebica* L. (Clusiaceae), *Nervilia aragoana* Gaud. (Orchidaceae), *Phalaenopsis amabilis* (L.) Blume (Orchidaceae), *Ophioglossum reticulatum* L. (Ophioglossaceae), *Tetracera scandens* (L.) Merr. (Dilleniaceae), *Derris trifoliata* Lour., *Phytocrene bracteata* Wall. (Icacinaceae), and *Dioscorea hispida* Dennst. *Buchanania arborescens* (Blume) Blume and *Ardisia elliptica* Thunb. can easily be found and widely spread.

Keywords: plant species diversity, protected forest, rare plants

INTRODUCTION

Indonesia is one of the 17 megadiverse countries in the world that has ca. 37,000 plants species, the third rank after Brazil and Colombia (Paknia, Rajaesh & Koh, 2015). Among the five biggest islands in Indonesia, Sulawesi is well-known for its richness on biodiversity and endemism (Widjaja & Pratama, 2013). In a study in Lore Lindu National Park, Central Sulawesi, it was found that the endemism reaching ca. 15% of trees (Gradstein *et al.*, 2007). Its position between the Wallace line and Weber line supports its high diversity of flora and fauna among other islands in Indonesia.

One of the protected forests in Sulawesi is Lasitae Protected Forest (*Hutan Lindung Lasitae*)

which is located in the District of Barru, South Sulawesi. The District of Barru is situated up north of Makassar city and stretches along the west coast. The Lasitae Protected Forest (PF) is located 10 km from the main city of Barru and covers 49.801 ha km² areas. (Dinas Kehutanan Kabupaten Barru, 2005).

The flora of Lasitae PF has never been investigated previously, therefore the South Sulawesi Province Government recommended this location to our expedition team. This expedition was carried out to support the collection enhancement for Pucak Botanic Garden (BG) which is located in the District of Maros, South Sulawesi. The Pucak BG is under the management of the South Sulawesi Province Government. The Bogor Botanic Garden has been assisting the establishment of the Pucak BG since 2006. The plants collected in this expedition would

*Corresponding author

Email: mita_krb@yahoo.com

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be submitted as the living collection for the Pucak BG. This expedition was also dedicated to the Expedition of the Republic of Indonesia Corridor Sulawesi (*Ekspedisi NKRI Koridor Sulawesi*) which was organized by the Indonesian Army Special Forces group (Kopassus).

Aims

This expedition aimed to identify the plant species diversity of Lasitae PF, to unveil the unique and potential flora of Lasitae PF and targeted to collect 125 collection numbers for the Pucak BG. The number of the target is the average number that usually can be collected based on the annual expedition of Bogor Botanic Garden.

MATERIALS AND METHODS

Material

The material we collected were the plants in Lasitae PF, Padang Loang Community Based Forest (Hutan Rakyat Padang Loang), Coppo Village & Lipukasi Village, District of Barru.

The equipment we used were the standard expedition equipment package supplied by Bogor Botanic Garden contains small (10x15 cm) and medium (25x30 cm) size black plastic bags, multi sizes clear plastic bags, plastic sacks, yellow tags for living collection, paper tags for herbarium specimens, clip plastic bags for 0,5 kg and 0,25 kg, Rootone-F (PT. Rhone-Poulenc Agrocarb, Surabaya, Indonesia), Dithane M-45 (PT. Dow AgroSciences Indonesia, Medan, Indonesia), alcohol 70%, rolled tissue, used newspaper, shade fabric, polybag, ruler 30 cm, plastic rope, rubber bands, sticky tapes, and cardboard boxes for packing.

Tools we used were altimeter, thermo hygrometer, GPS (Garmin), cutters, scissors, secateurs, machetes, two types of digital camera, field books and stationaries.

Method

The expedition was carried out by an explorative method. The location was determined by the local guides Mr. Irwan Makmur and Mr. Suriadi. We provided a list of the plants we targeted but other plants that we considered were necessary to be collected would also be taken. The timetable for the activities from 27 May-3 June 2013 was made to reach the maximum outcome.

We walked along the track from the Copo Village through Padang Loang Community Based Forest until the border of Lasitae PF for about 400 m. All the plants we collected were documented and labeled while temperature and ecological data were noted. The first day we walked along the track where

the villagers used to take their cows to the forest. The last day we walked along the main road that connects the villages.

All the plants collected were sampled for herbarium vouchers and deposited in Bogor Botanic Garden. The herbarium specimens were labeled completed with the name of the species, family, collector's number, the date of collecting and the location. The same label was tagged to the living collection.

RESULTS AND DISCUSSION

Results

A total of 179 collection numbers were successfully collected in this expedition. Each collection number has one or more plants, seeds, or seedlings for the stock if it could not survive in the nursery of Pucak BG. It covered 59 families but only 83 collection numbers have successfully identified (Table 1). The rest were 89 collection numbers have been recognized up to the genus level and 8 collection numbers were only recognized up to family level (Table 2). All plants were collected from four locations as mentioned in the Material section, but the main collection and the most number collections were from Lasitae PF. Some species were collected more than once when we found in different locations as it was considered from different populations that genetic variation might occur.

A few plants were bearing fruits such as *Garcinia celebica* L. (Clusiaceae), *Buchanania arborescens* (Blume) Blume (Anacardiaceae), *Ardisia elliptica* Thunb. (Myrsinaceae), *Acronychia vetandra* (F. Muell.) T.G. Hartley (Rutaceae), *Cycas rumphii* Miq. (Cycadaeae) and *Derris trifoliata* Lour. (Fabaceae). Some other plants were still flowering such as *Dendrobium* sp. (Orchidaceae) and *Tetracera scandens* L. (Dilleniaceae).

The altitude range we explored was from 33-159 m above sea level (asl). The daily temperature during this expedition was between 23-36°C, with relative humidity (RH) ranged between 49-84%. The soil is rocky with pH ranges from 5.7-6.8 and the soil RH 50-100%. The forest type is a typical lowland rain forest.

This forest is the water source for the villagers, supplied by the Padalampe river inside the forest. The river was small with clear water but shallow. The river flows along the rocks giving humidity to the surrounding support the plants with water supplies. There were many plants grew along the riverside. We selected *Dioscorea hispida* Dennst. (Dioscoreaceae), *Tacca palmata* Blume. (Taccaceae), *Tabernaemontana* sp. (Apocynaceae), *Alocasia alba* Schott. (Araceae), *Garcinia xanthochymus* (Roxb), Kurz

(Clusiaceae), *Piper* sp. (Piperaceae), *Daemonorops* sp. (Arecaceae), *Cinnamomum* sp. (Lauraceae) and *Cymbidium finlaysonianum* Lindl. (Orchidaceae), *Pandanus* sp. (Pandanaeae), *Hoya* sp. (Asclepiadaceae) and *Pleomele* sp. (Agavaceae) to be collected.

A bit deeper in the forest, there was the sugar palm, *Arenga pinnata* (Wurmb) Merr. (Arecaceae). People collected *nira* or sweet palm juice from the sugar palm for making palm sugar. There were also streak ebony populations that occur (*Diospyros celebica* Bakh., Ebenaceae) in the forest that was highly protected by the local government as this taxon is a rare endemic tree (World Conservation Monitoring Centre, 1997). There were two populations of streak ebony in this forest, which the bigger population contained 15 mature trees while the other has four mature trees. The seedlings were abundant around the mature trees.

Discussion

The result of this expedition has demonstrated that Padang Loang Community Based Forest and Lasitae PF has a high plant diversity. The 59 families that occur in this forest including the endemic species of streak ebony indicated that this location represents the typical lowland tropical forest of Sulawesi. The plants we collected ranged from ferns to Gymnosperms and Angiosperms have potentiality in different purposes as the previous studies reported. The forest was still dense and mostly in good condition. The total collection numbers we obtained were more than our target and it showed that this forest contains lots of varieties of plants that should be protected from any disturbance.

As this forest is very close from the west coast the weather is hot and the forest tends to be dry with a little source of water. According to the Pemerintah Kabupaten Barru (2013), the soil type in the District of Barru is regosol with medium fertile type. The soil is basically volcanic which is spread all over the district. In the area, we explored the soil is very rocky that makes the soil is relatively hard. In a few sites, the land composed of rocks particularly in Padang Loang Community Based Forest. The rocks in the palm-size were scattered on the ground in a relatively wide area (Figure 1). However, the richness of plant diversity in the forest is remarkably sustained in this type of soil.

Among the plants we collected, there are a few valuable plants based on the economic values, usages or conservation status. We would like to highlight 13 plants in this paper that we considered distinct among other plants. The first one we would like to focus on is *Diospyros celebica* or streak ebony. This plant is one of the most valuable plants in this forest.

The massive harvesting of the wood across Sulawesi for years causing the population has been decreasing (Riswan, 2002; Walujo, 2002). This plant is now categorized as Vulnerable (VU) according to the IUCN Red List (World Conservation Monitoring Centre, 1998). The presence of streak ebony in this conservation area was well protected as indicated by the oldest tree still exists (Figure 2).



Figure 1. Padang Loang Community Based Forest (Photograph: Rismita Sari).

The sugar palm *Arenga pinnata* is well-known as a multipurpose palm (Mogea *et al.*, 1991). This palm distributed widely in SE Asia including Indonesia. The main yield of this palm is the palm sugar that processed from the sweet juice collected from the stalk of the flower. The juice is usually collected daily to avoid fermentation. Other usages are the flesh of the fruits known as *kolang-kaling* and the black fibers resulted from the sheath can be used for many household purposes. To obtain the juice or the fruits traditionally people have to climb the tree as the flower and fruit are on the top of the tree (Figure 3). The people in Lasitae PF leave a bamboo ladder on the tree to make them easier to collect the juice that was accumulated in a tin.

The small plants we collected in Padang Loang Community Based Forest, *Phyllanthus lamprophyllus* Mull.Arg. (Phyllanthaceae) (Figure 4) is one of 13 *Phyllanthus* species that have been found in Sulawesi (Bouman *et al.*, 2019). It grows widely in Padang Loang. This plant occurs in Java, Lesser Sunda Island, New Guinea, the Philippines, Queensland (Australia) and Sulawesi (Govaerts, 2000). The plant has not been used by the local people and easy to find in the Padang Loang. The plant itself might be able to be used as an ornamental plant as it has beautiful leaves arrangement and colour.

A Gymnospermae plant, *Cycas rumphii*, grows well in the Padang Loang Community Based Forest and Lasitae PF (Figure 5). This cycad has been used

as an ornamental plant and a very common plant in the gardens in SE Asia. In fact, the seed has been known is acutely toxic after a case of Chamorro people who used the flour from the fruits in their cuisine has digestions problems (Cox & Sacks, 2002). According to the IUCN Red List, the category of conservation status of *C. rumphii* is Near Threatened (NT) as the population is decreasing in the wild (Hill, 2010).

Lagerstroemia speciosa (L.) Pers. (Lythraceae) was found at Padang Loang Village. The flowering season has passed leaving dry split fruits on the tree (Figure 6). This plant is a common roadside tree in SE Asian countries. The beautiful flower and the shady canopy have made this tree very popular. Besides as an ornamental tree, people in the Philippines use the plant to cure diabetic and kidney problems (Klein *et al.*, 2007). This tree is known contains active chemical compounds that cure some diseases.

There are a few edible fruit plants in the Lasitae PF. At least there are two genera produce fruits, *Garcinia* spp. and *Mangifera* spp. One of the taxa, *G. celebica* L. (Clusiaceae) is known as edible fruits by the locals (Figure 7). The fruits were at a very young stage when we found it, so we were not able to taste the fruits. Compared with the *G. celebica* collection in Bogor Botanic Garden-LIPI, the fruits were smaller. The size of *G. celebica* in the Bogor BG ranges between 3-4 cm in diameter. The *G. celebica* in Lasitae PF was ca. 3 cm in diameter. *Garcinia* has many variations in the wild. The variations range from size, colour, and taste as well.

The orchids in the forest vary from terrestrial to epiphyte while most of them were epiphytes. One of the terrestrial orchids was *Nervilia aragoana* Gaudich. (Orchidaceae) (Figure 8). It was found in the open forest near Lipukasi Village and it is common in the Lasitae forest but a bit rare in other areas in Indonesia. The orchid is unused by the locals, whereas in Taiwan, *N. aragoana* has been used as herbal medicine to heal a few diseases (Kikuchi *et al.*, 1981).

The existence of rare orchid *Phalaenopsis amabilis* (L.) Blume (Orchidaceae) was an indication that Lasitae PF is very rich with plant diversity. The orchid *P. amabilis* is one of the very popular orchids and became rare in the wild after excessive harvesting for its beautiful flower including deforestation, commercial trades, illegal logging, land conversion and domestication of native orchids (Semiarti, 2002). It has been well domesticated and cross-pollinated resulting in various hybrids. We only found one individual plant that had an empty peduncle as an indication that the flowering season is over (Figure 9).

The fern *Ophioglossum reticulatum* L. (Ophioglossaceae) is a small fern that occurs in Lasitae PF (Figure 10). The population was found growing in a relatively open area near Lippukasi Village. This fern is also called the adder's-tongue fern that according to IUCN Red List the conservation status is LC (Least Concern) (Irudayaraj, 2011). The genus of this single leaf fern contains 25-30 species that widely distributed in the temperate and the tropics area. This fern has been known to have antimicrobial compounds (Mukherjee *et al.*, 2017).

A woody climber, *Tetracera scandens* was in full bloom when we found it at the roadside of the main road to the Lasitae PF (Figure 11a). This plant grows widely in India, China, Indonesia, Myanmar, Philippines, Thailand, Malaysia, and Vietnam (Thanh *et al.*, 2015; Mulyah *et al.*, 2017). The trunk can be used as a source of drinkable water if it is unavailable in the forest. The water in the trunk can be accumulated by cutting the trunk and it will pour out from the surface of the cut (Figure 11b). The leaves can be used as a sandpaper to smooth the machete handle as it has coarse surface as shown by our field guide.

Another plant that contains drinkable water is *Derris trifoliata*. This woody climber can be recognized in the wild from the fruits (Figure 12a & b). It is widely spread in the world particularly in the tropics (Roskov *et al.*, 2020). In Lasitae PF, *D. trifoliata* grows near the small river near the Lipukasi Village. The trunk climbs the other trees across the river. Despite *D. trifoliata* contains various chemical substances in the parts of the plant (Wenjie *et al.*, 2009; Mamoon & Azam, 2012) our field guide, Mr. Suriadi showed it is safe to drink the water from the trunk (Figure 12c).

Phytocrene bracteata Wall. (Icacinaeae) is a woody climber that occurs in Lasitae PF. We found the flowers at the early stage (Figure 13). The *P. bracteata* in Sulawesi has been previously reported found in the karst hills valley in the south of Sulawesi (Saiful & Burhan, 2017). The most interesting thing about this plant is the fruits. Despite it is not edible, but the shape is distinct.

Dioscorea hispida is one of the plants that produce carbohydrates and has been used as a food source after treated using some techniques to remove cyanides and other poisonous chemical substances (Kumoro *et al.*, 2011). The starchy yam can be made into chips or other food like biscuits. We found a tuber of *D. hispida* on the location from one plant. The size of the tuber is ca. 15 cm in diameter with 8 cm thick (Figure 14). There was only one population of *D. hispida* along the river. The trunk has rare leaves indicating it is an old plant.

Dioscorea is a climber and usually grows easily. The small population of this plant might be influenced by the climate or soil condition that has less support for the plant to regenerate.

There are many more plants in this forest that can be explored for its potentiality. This lowland forest has shown its diversity and many potential plants grow there. It is recommended to explore further into the other parts of the forest to find more information about the plants in this protective area.



Figure 2. The oldest streak ebony (*Diospyros celebica* Bakb.) in Lasitae PF with Mr. Suriadi (Photograph: Rismita Sari).



Figure 3. *Arenga pinnata* (Wurmb) Merr. (Photograph: Rismita Sari)



Figure 4. *Phyllanthus lamprophyllus* Mull.Arg. (Photograph: Rismita Sari).



Figure 5. *Cycas rumphii* Miq. (Photograph: Rismita Sari).



Figure 6. Dry fruits of *Lagerstroemia speciosa* (L.) Pers. (Photograph: Rismita Sari).



Figure 7. Young fruit of *G. celebica* L. (Photograph: Rismita Sari).



Figure 8. *Nervilia aragoana* Gaudich. (Photograph: Rismita Sari).



Figure 9. *Phalaenopsis amabilis* (L.) Blume (Photograph: Rismita Sari).



Figure 10. *Ophioglossum reticulatum* L. (Photograph: Rismita Sari)



(11a)



(11b)

Figure 11. Flower of *Tetracera scandens* (L.) Gilg & Werderm. (a). The water from the trunk of *T. scandens* (b) (Photographs: Rismita Sari).



(12a)



(12b)



(12c)

Figure 12. Dry fruits of *Derris trifoliata* Lour. (a); Young fruits of *D. trifoliata* (b); Mr. Suriadi is showing how to drink the fresh water from the trunk of *D. trifoliata* (c). (Photographs: Rismita Sari)



Figure 13. The flower buds of *Phytocrene bracteata* Wall. (Photograph: Rismita Sari)



Figure 14. The tuber of *Dioscorea hispida* Dennst. is held by Mr. Suriadi. (Photograph: Rismita Sari)

CONCLUSION

The Lasitae PF and the surrounding area is an important forest as it plays an important role in supporting the locals' life such as supplies water source, food, wild fruits, ornamental plants, and other usages including rare plants. It is very important to keep the forest protected, as it contains many useful plants for various purposes. Moreover, there are many plants in this forest that contains phytochemical substances that might be developed in the future. The sustainability of this forest should be maintained for the advantages of the people around the forest and to benefit people in the future.

Table 1. The species that have been identified.

No.	Species	Family	Local names
1.	<i>Acronychia vetandra</i> (F. Muell.) T.G. Hartley	Rutaceae	matte-matte komba'
2.	<i>Aerides odorata</i> Lour.	Orchidaceae	-
3.	<i>A. odorata</i>	Orchidaceae	-
4.	<i>A. odorata</i>	Orchidaceae	-
5.	<i>A. odorata</i>	Orchidaceae	-
6.	<i>Aglaonema modestum</i> Schott ex Engler	Araceae	-
7.	<i>Alocasia alba</i> Schott.	Araceae	lawira
8.	<i>A. alba</i>	Araceae	-
9.	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson	Araceae	bote
10.	<i>Ardisia elliptica</i> Thunb.	Myrsinaceae	bineppu
11.	<i>Arenga pinnata</i> (Wurmb.) Merr.	Arecaceae	aren
12.	<i>A. pinnata</i>	Arecaceae	-
13.	<i>Brucea javanica</i> (L.) Merr.	Simarubaceae	tampak
14.	<i>Buchanania arborescens</i> Blume	Anacardiaceae	pawale'
15.	<i>Bulbophyllum lepidum</i> (Blume) J.J.Smith	Orchidaceae	-
16.	<i>Cananga odorata</i> (Lam.) Hook.f.&Thomson	Annonaceae	kenanga
17.	<i>C. odorata</i>	Annonaceae	kananga
18.	<i>Cephaelis ipecachuanba</i> (Brot.) A.Rich.	Rubiaceae	-
19.	<i>Clausena indica</i> (Dalzell.) Oliv.	Rutaceae	-
20.	<i>Clerodendrum minahassae</i> Teijsm. & Binn	Boraginaceae	lalik-lalik manuk

Table 1. Contd.

No.	Species	Family	Local names
21.	<i>Crinum asiaticum</i> L.	Amaryllidaceae	peno'-peno'
22.	<i>Cyathea latebrosa</i> (Wall. ex Hook.) Copel.	Cyatheaceae	-
23.	<i>Cyathula prostrata</i> (L.) Blume	Amaranthaceae	pale' anyarang, tapal kuda
24.	<i>Cycas rumphii</i> Miq.	Cycadaceae	pattoku
25.	<i>Cymbidium finlaysonianum</i> Lindl.	Orchidaceae	-
26.	<i>Cynometra ramiflora</i> L.	Fabaceae	lambe-lambe
27.	<i>Dendrobium anosmum</i> Lindl.	Orchidaceae	-
28.	<i>Dendrobium juncifolium</i> Schltr.	Orchidaceae	-
29.	<i>D. juncifolium</i>	Orchidaceae	-
30.	<i>Derris trifoliata</i> Lour.	Fabaceae	lacciran
31.	<i>Dillenia ochreate</i> (Miq.) Teijsm. & Binn. ex Mart.	Dilleniaceae	lakonra
32.	<i>Dioscorea hispida</i> Dennst.	Dioscoreaceae	siapa
33.	<i>Diospyros celebica</i> Bakh.	Ebenaceae	amara
34.	<i>D. celebica</i>	Ebenaceae	amara
35.	<i>Donax caniniformis</i> (G. Forst.) K.Schum	Marantaceae	bampeng bunga
36.	<i>D. caniniformis</i>	Marantaceae	bampeng
37.	<i>Ebretia timoriensis</i> Decne	Boraginaceae	-
38.	<i>Elephantopus spicatus</i> Aubl.	Asteraceae	kasalla'
39.	<i>Garcinia celebica</i> L.	Clusiaceae	tire
40.	<i>G. celebica</i>	Clusiaceae	tire
41.	<i>G. dulcis</i> (Roxb.) Kurz	Clusiaceae	tire
42.	<i>G. xanthochymus</i> Hook.f. ex T.Anderson	Clusiaceae	-
43.	<i>Hoya revoluta</i> Wight.	Asclepiadaceae	doi'-doi'
44.	<i>Hypobathrum multibracteatum</i> Elmer	Rubiaceae	-
45.	<i>Knema celebica</i> (Poir.) Warb. var. <i>cinerea</i>	Myristicaceae	kuerempang
46.	<i>Lagerstroemia speciosa</i> (L.) Pers.	Lythraceae	allouting
47.	<i>Leea asiatica</i> (L.) Ridsdale	Leeaceae	arunganga
48.	<i>L. rubra</i> Blume ex Spreng	Leeaceae	mali-mali
49.	<i>Lepisanthes rubiginosa</i> (Roxb.) Leenh.	Sapindaceae	jampu nono
50.	<i>Luisia taurina</i> J.J.Sm.	Orchidaceae	-
51.	<i>Lygodium circinnatum</i> (Burm.f.) Sw.	Schizaeaceae	cawe
52.	<i>Magnolia candollii</i> (Blume) H. King var. <i>candollii</i>	Annonaceae	sarikajaale
53.	<i>Malaxis blumei</i> Bakh.f.	Orchidaceae	pije'-pije'
54.	<i>Mallotus floribundus</i> (Blume) Mull.Arg.	Malvaceae	waru-waru
55.	<i>Mangifera indica</i> L.	Anacardiaceae	pao cucok
56.	<i>M. indica</i>	Anacardiaceae	pao kurisa'
57.	<i>Mucuna pruriens</i> L.	Papilionaceae	awiyu
58.	<i>Nephrolepis cordifolia</i> (L.) Pr.	Davalliaceae	-
59.	<i>Nervilia aragoana</i> Gaudich.	Orchidaceae	-
60.	<i>N. aragoana</i>	Orchidaceae	-
61.	<i>N. aragoana</i>	Orchidaceae	-
62.	<i>Ophioglossum reticulatum</i> L.	Ophioglossaceae	tungke'-tungke'
63.	<i>Pandanus tectorius</i> Parkinson ex Du Roi	Pandanaceae	-
64.	<i>Phalaenopsis amabilis</i> (L.) Blume	Orchidaceae	-
65.	<i>Phytocrene bracteata</i> Wall.	Icacinaceae	-
66.	<i>Piper amboinense</i> C.DC.	Piperaceae	ganjing tedong
67.	<i>P. caninum</i> Blume	Piperaceae	-
68.	<i>P. flavimarginatum</i> C.DC.	Piperaceae	-
69.	<i>Planchonia valida</i> (Blume) Blume	Lecythidaceae	alakkan
70.	<i>Psychotria celebica</i> L.	Rubiaceae	kopi ale'

Table 1. Contd.

No.	Species	Family	Local names
71.	<i>Pterospermum celebicum</i> Miq.	Sterculiaceae	wajo'
72.	<i>Pyllanthus lamprophyllus</i> Mull.Arg.	Euphorbiaceae	cempa-cempa
73.	<i>Sandoricum koetjape</i> (Burm.f.) Merr.	Meliaceae	-
74.	<i>Sesuvium portulacastrum</i> (L.) L.	Aizoaceae	-
75.	<i>Stemona moluccana</i> (Blume) C.H. Wright	Stemonaceae	-
76.	<i>Sterculia foetida</i> L.	Sterculiaceae	bimpi
77.	<i>Syzygium aqueum</i> (Burm.f.) Alston	Myrtaceae	jampu-jampu salo'
78.	<i>Tabernaemontana celebica</i> Miq.	Apocynaceae	lambuto
79.	<i>Tacca palmata</i> Blume	Taccaceae	-
80.	<i>Tectaria shahidiana</i> Rusea	Aspidiaceae	warang parang
81.	<i>Tetracera scandens</i> (L.) Merr.	Dilleniaceae	apelle'
82.	<i>Thrixspermum mus</i> S. Rao	Orchidaceae	-
83.	<i>Vittaria flexuosa</i> Fee	Aspidiaceae	-

Table 2. The plant families, unidentified species collected and local names.

No	Family	Species & Local names
1.	Acanthaceae	<i>Acanthus</i> sp.
2.	Actinidiaceae	<i>Saurauia</i> sp.
3.	Adiantaceae	<i>Adiantum</i> sp.
4.	Agavaceae	<i>Pleomele</i> sp. (jalojo)
5.	Annonaceae	<i>Desmos</i> sp.1 (loka-loka), <i>Desmos</i> sp.2, <i>Polyalthia</i> sp.1 (kayu awayu), <i>Polyalthia</i> sp.2, <i>Polyalthia</i> sp. 3, <i>Trigonostemon</i> sp. (tabo)
6.	Apocynaceae	<i>Alstonia</i> sp. (tiro tarik), <i>Tabernaemontana</i> sp., <i>Strophanthus</i> sp., Apocynaceae (damak-damak)
7.	Araceae	<i>Alocasia</i> sp.1 (lawira), <i>Alocasia</i> sp.2 (aladi), <i>Alocasia</i> sp.4, <i>Colocasia</i> sp.1, <i>Colocasia</i> sp.2, <i>Phylodendron</i> sp., <i>Pothos</i> sp.1 (banga-banga), <i>Pothos</i> sp.2
8.	Araliaceae	<i>Aralia</i> sp. (pallong-pallong)
9.	Arecaceae	<i>Daemonorops</i> sp.1 (rokan), <i>Daemonorops</i> sp.2 (anak rokan), <i>Licuala</i> sp. (talitta)
10.	Asclepiadaceae	<i>Dischidia</i> sp. (sikeppo), <i>Hoya</i> sp.1 (sikeppo)
11.	Burseraceae	<i>Canarium</i> sp. (lao bawi')
12.	Celastraceae	<i>Maitenus</i> sp.
13.	Clusiaceae	<i>Calophyllum</i> sp. (betao), <i>Cratoxylum</i> sp. (geleng keleng), <i>Garcinia</i> sp.1 (tire), <i>Garcinia</i> sp.2 (pakkeci anak lolo), <i>Garcinia</i> sp.3 (pakkeci anak lolo), <i>Garcinia</i> sp.4 (pakkeci anak lolo)
14.	Ebenaceae	<i>Diospyros</i> sp. (amara coppo)
15.	Euphorbiaceae	Euphorbiaceae (kaluku-kaluku)
16.	Fabaceae	<i>Abrus</i> sp., <i>Desmodium</i> sp., <i>Hymenaea</i> sp. (kayu bayang), <i>Peltophorum</i> sp., <i>Pterocarpus</i> sp.1, (<i>calaipi</i>), <i>Pterocarpus</i> sp.2 (cenrana), Fabaceae1 (warneng), Fabaceae2 (kayu langi)
17.	Flacourtiaceae	<i>Flacourtia</i> sp.
18.	Lauraceae	<i>Cinnamomum</i> sp. (alinie'), <i>Litsea</i> sp.1 (kayu kunyik-kunyik), <i>Litsea</i> sp.2 (rela-rela)
19.	Lecythidaceae	<i>Cydaenanthus</i> sp.
20.	Lythraceae	<i>Lagerstroemia</i> sp.1 (geleng keleng), <i>Lagerstroemia</i> sp.2
21.	Marantaceae	<i>Donax</i> sp.1 (bampeng)
22.	Meliaceae	<i>Dysoxylum</i> sp. (dare'-dare'), <i>Aglaiia</i> sp.
23.	Moraceae	<i>Artocarpus</i> sp.1 (terou), <i>Artocarpus</i> sp.2 (kalompe), <i>Artocarpus</i> sp.3 (ampalang), <i>Ficus</i> sp.
24.	Myristicaceae	<i>Knema</i> sp.1 (kelam pelam, pala hutan), <i>Myristica</i> sp. (kayu buang)
25.	Myrtaceae	<i>Acmena</i> sp., <i>Syzygium</i> sp.1 (jampu-jampu), <i>Syzygium</i> sp.2 (jampu-jampu), <i>Syzygium</i> sp.3, <i>Syzygium</i> sp.4 (mana'-mana'), <i>Syzygium</i> sp.5 (jampu-jampu), <i>Syzygium</i> sp.6 (tajulo)
26.	Orchidaceae	<i>Calanthe</i> sp. (pije'-pije'), <i>Dendrobium</i> sp., <i>Habenaria</i> sp., <i>Trichoglottis</i> sp.
27.	Pandanaceae	<i>Pandanus</i> sp. (banga)
28.	Piperaceae	<i>Piper</i> sp.1 (ganjing), <i>Piper</i> sp.2, <i>Piper</i> sp.3, <i>Piper</i> sp.4
29.	Rhamnaceae	<i>Ziziphus</i> sp. (carrakak panning)
30.	Rubiaceae	<i>Psychotria</i> sp.2, Rubiaceae

Table 2. Contd.

No	Family	Species & Local names
31.	Rutaceae	<i>Citrus</i> sp., <i>Melicope</i> sp.1 (matte-matte hutan), <i>Melicope</i> sp.2 (amara siapa), Rutaceae1 (matte-matte), Rutaceae2 (tana-tana)
32.	Sapindaceae	<i>Euphoria</i> sp. (jampu nono), Sapindaceae1 (lotong-lotong), Sapindaceae2, Sapindaceae3 (kayu ori), Sapindaceae4
33.	Schizaeaceae	<i>Lygodium</i> sp. (cawe)
34.	Smilacaceae	<i>Smilax</i> sp. (bana')
35.	Sterculiaceae	<i>Sterculia</i> sp.1, <i>Sterculia</i> sp.2 (sime'), <i>Sterculia</i> sp.3, <i>Sterculia</i> sp.4 (kuerempang)
36.	Taccaceae	<i>Tacca</i> sp.
37.	Theaceae	Theaceae
38.	Tiliaceae	Tiliaceae (gose-gose)
39.	Verbenaceae	<i>Vitex</i> sp.
40.	Zingiberaceae	<i>Ammomum</i> sp. (kacimpang)

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