

## An Enumeration of the Vascular Plants of Mount Tabunan, Cebu Island, Philippines

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**ABSTRACT:** Vascular plants in the north-eastern portion of Mount Tabunan, Cebu Island, The Philippines, were inventoried from ten plots. A total of 288 taxa were recorded, 213 have been identified at least to the family level and belong to 133 genera and 68 families.

**KEY WORDS:** floristic composition, tropical mountains, Cebu watershed, Tabunan forest.

### INTRODUCTION

The Tabunan Forest is the only remaining large patch of natural virgin forest in the Metro Cebu Watershed. (Quimio, 2006). This forest has an area of at least 40 hectares according to the most recent forest cover map available (Quimio, 2006). This information reflects the fact that only about 0.3% of the original forest cover in Cebu island remains (SSC, 1988), which is mostly confined to rocky limestone cliffs. The forest is considered as the last hope for some of Cebu's few remaining unique wildlife treasures. It is one of the last sources of native seeds for reforestation programs in Cebu and the reserve of natural samples of plant generic resources in Metro Cebu Watersheds (Quimio, 2006). It is also the home of most of the threatened and endemic bird species in Cebu. These include the Cebu Flowerpecker (*Dicaeum quadricolor*), Black Shama (*Copsychus cebuensis*), Coppermith Barbet (*Megalaima haemacephala cebuensis*), Elegant Tit (*Parus elegans visayanus*), Streak-breasted Bulbul (*Hypsipetes sijuorensis monticola*)

and Everett's White-eye (*Zosterops everetti everetti*). Despite the fact that it is in a strict-protection zone, there is a continuous threat of exploitation by local residents. The forest exterior, for instance, is being claimed by the agricultural activities of local residents. There is also occasional cutting of trees and harvesting of rattan inside the forest.

It has been the focus of conservation actions in Cebu. In fact, it is selected as one of the seven conservation priority areas (CPAs) in Cebu island identified by the Philippine Biodiversity Conservation Priority-setting Program (PBCPP). It is given an extremely high critical (EHc) priority level (Ong *et al.*, 2002). The fact that it is part of Central Cebu, one of the biodiversity corridors, likewise identified by PBCPP, emphasizes further its significance. Despite this status, there is still no exhaustive inventory of plants. It is therefore urgent to catalogue them.

This paper aims to provide a checklist of vascular plants in the north-eastern portion of Mount Tabunan.

## MATERIALS AND METHODS

### Study Area

Mount Tabunan is located in the central part of Cebu, in barangay Tabunan, Cebu City, Philippines (Figure 1). It is part of the Central Cebu National Park (CCNP), a 11,893-hectare reserve area, and the Kotkot-Lusaran Watershed Forest Reserve.

Mount Tabunan belongs to the Type III climate according to Coronas Classification, *i.e.*, it is relatively dry from November to April and wet during the rest of the year.

The Tabunan Forest sits on a ridge with an elevation ranging from 500 to 880 m asl. The highest peak is located in the southwestern portion. The slopes are generally steep which makes the soil very susceptible to erosion. The area is overlain with limestone boulders. These patches of limestone, however, are shallow. They overlie the more dominant parent materials such as basalt, andesite and diorite which are acidic. Most trees, then, are anchored on acidic soils (Quimio, 2006).

### Establishment of the Sampling Sites and Plant Inventory

Ten 20x20 m quadrats were established in the northeastern portion of Tabunan Forest. Generally, 20 meters is the longest distance that can be accurately surveyed in a dense forest (Dallmeier, 1992).

All woody plants with a stem diameter of at least 3 cm at breast height inside the quadrant were identified. A 2x5 m subplot was laid inside each 20x20 m quadrant for the inventory of herbs, vines and seedlings. The subplots were laid where the ground vegetation was dense. All the herbs and seedlings were identified.

Voucher specimens were collected from both identified and unidentified plants in the field. Each measured plant was given a code name. This code name was also used in tagging the corresponding vouchers identified and confirmed at the Botanical Herbarium (CAHUP) and Forestry Herbarium (LBC), Museum of Natural History, UP Los Baños, Laguna. The unidentified plants were identified by Mr. Leonardo Co of the Jose Vera Santos Herbarium (PUH), Institute of Biology, UP Diliman.

## RESULTS AND DISCUSSION

A total of 288 taxa were recorded from the ten plots. Of these, 27.8% were identified to species level, 74% to genus level, and 80.9% to family level. All taxa that were identified to species level are listed in Table 1. The 213 taxa identified belonged to 133 genera and 68 families.

Angiosperms, accounting for 96.57% of all species, clearly dominated the study area. The pteridophytes represented 2.58% of the species and only 2 gymnosperm species were found, *Gnetum gnemon* var. *gnemon* and *Podocarpus* sp.

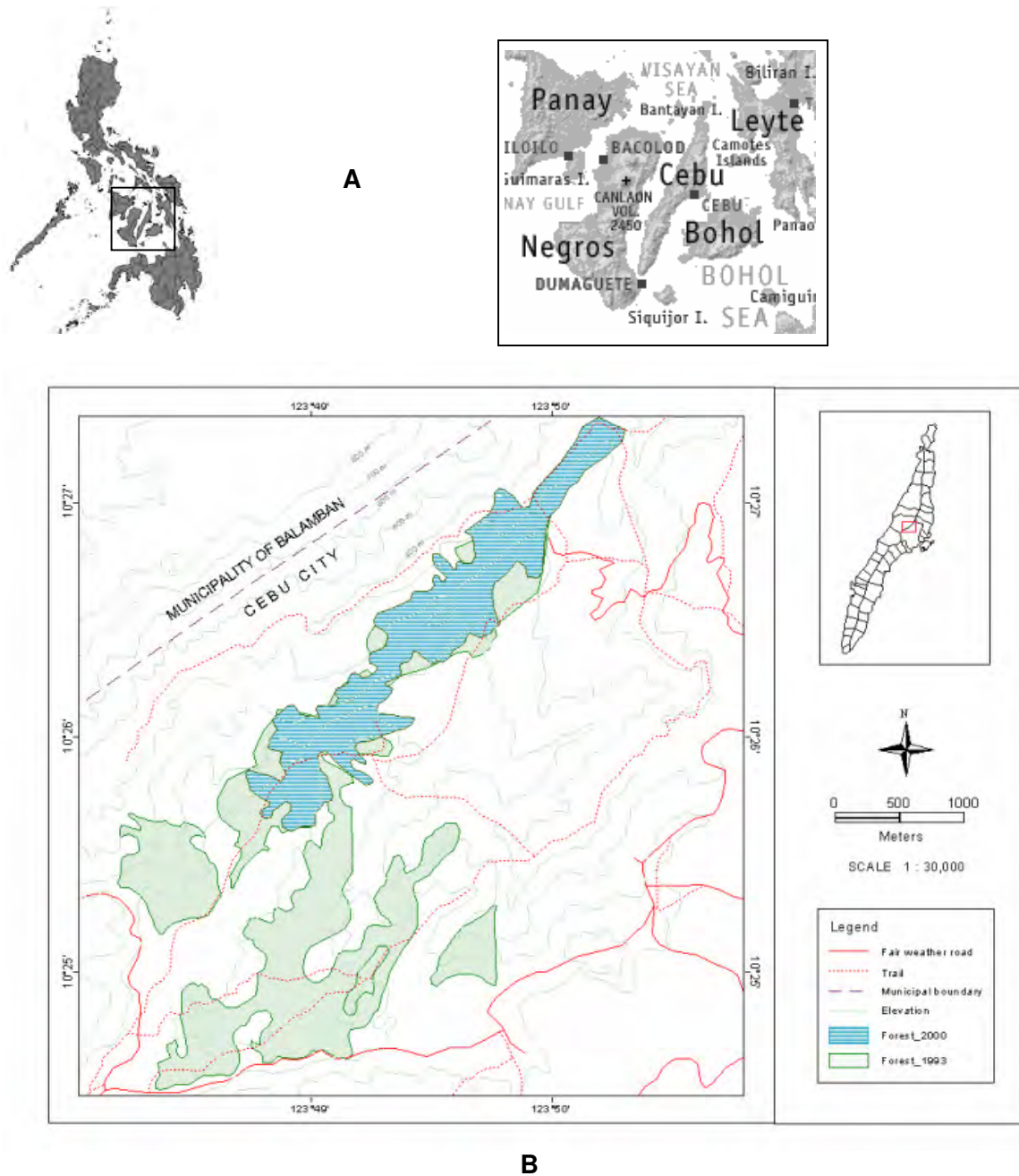
More than half (61.5%) of the recorded taxa were woody species (including seedlings), 34.7% were herbs, and the remaining 3.8% were vines. Most vines were found at higher elevations.

The most represented families were Moraceae (24 species), Meliaceae (22 species), and Araceae (18 species). The most represented genera were *Ficus* (18 species), *Aglaia* (9 species), and *Garcinia* (7 species).

The frequency of taxa was low. More than half (63.2%) of all taxa were recorded from only one of the ten plots.

Very few species showed high frequencies. Two species, *Mallotus cumingii*

and *Procris* sp. were found in all ten plots.



**Figure 1.** The study area. **A.** Location of Cebu Island in the Philippines. **B.** Location of Mount Tabunan in Central Cebu, showing the reduction of forest cover from 1993 (NAMRIA) to 2000 (DENR-Region VII).

**Table 1.** List of identified species of vascular plants found in the north-eastern portion of Mount Tabunan.

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**FAMILY / SPECIES**

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## ACHARIACEAE

*Hydnocarpus heterophylla* Blume *ssp. philippinensis* Sleum.

## ANACARDIACEAE

*Dracontomelon edule* (Blanco) Skeels

*Mangifera altissima* Blanco

## ANNONACEAE

*Goniothalamus elmeri* Merr.

## APOCYNACEAE

*Alstonia macrophylla* Wall. ex DC.

*Alstonia scholaris* (L.) R. Br.

## ARACEAE

*Alocasia heterophylla* Merr.

*Colocasia esculenta* Linn.

*Homalomena philippinensis* Engl.

## ARALIACEAE

*Osmoxylon luzoniensis*

## BURSERACEAE

*Canarium denticulatum* Blume

## CANNABACEAE

*Celtis philippinensis* Blanco

## CONNARACEAE

*Rourea minor* (Gaertn.) Aubl.

## DIPTEROCARPACEAE

*Hopea philippinensis* Dyer

*Parashorea malaanonan* (Blanco) Merr.

*Shorea contorta* Vidal

## EBENACEAE

*Diospyros blancoi* A.DC

## ERYTHROPALACEAE

*Strombosia philippinensis* (Baill.) Rolfe

## EUPHORBIACEAE

*Blumeodendron kurzii* (Hook. f.) J.J. Sm. ex Koord. & Valetton

*Macaranga bicolor* Muell. -Arg.

*Macaranga grandifolia* (Blanco) Merr.

**Table 1.** Continued.

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**FAMILY / SPECIES**

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## EUPHORBIACEAE continued

*Macaranga hispida* (Blume) Muell. -Arg.*Macaranga tanarius* (L.) Muell. -Arg.*Mallotus cumingii* Muell. -Arg*Melanolepis multiglandulosa* (Reinw. Ex. Blume) Rchb. F. & Zoll.

## FLACOURTIACEAE

*Pangium edule* Reinw. ex. Blume

## GNETACEAE

*Gnetum gnemon* L. var. *gnemon*

## GRAMINAE

*Centotheca lappacea* (L.) Desv.

## GUTTIFERAE

*Calophyllum soulattri* Burm. f.

## LAMIACEAE

*Viticipremna philippinensis* (Turcz.) H.J. Lam.

## LAURACEAE

*Litsea quercoides* Elmer*Endiandra coriacea* Merr.*Litsea tomentosa* Blume

## LEGUMINOSAE

*Archidendron clypearia* (Jack) I. C. Nielsen ssp.*Cynometra copelandii* (Elmer) Elmer

## MALVACEAE

*Leptonychia banahaensis* (Elmer) Merr.*Pterocymbium tinctorium* (Blanco) Merr.*Sterculia philippinensis* Merr.*Sterculia rubiginosa* Vent.

## MARANTACEAE

*Donax cannaeformis* (Forster) Schum.

## MELIACEAE

*Aglaia lawii* (Wight) Saldanha & Ramamoorty*Chisocheton patens* Blume*Dysoxylum arborescens* (Blume) Miq.

## MENISPERMACEAE

*Arcangelisia flava* (L) Merr*Pericampylus glaucus* (Lam.) Merr.

**Table 1.** Continued.

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**FAMILY / SPECIES**

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## MORACEAE

- Artocarpus blancoi* (Elm.) Merr.  
*Artocarpus cf. odoratissima* Blanco  
*Ficus ampelas* Burm. f.  
*Ficus cf. odorata* (Blanco) Merr.  
*Ficus linearifolia* Elmer  
*Ficus minahassae* (De Vriese & Teijsm.) Miq.  
*Ficus nota* (Blanco) Merr.  
*Ficus pisifera* Wall.  
*Ficus pseudopalma* Blanco  
*Ficus septica* Burm. f.  
*Ficus variegata* Blume  
*Ficus villosa* Blume

## MUSACEAE

- Musa textilis* L. Née

## MYRISTICACEAE

- Gymnacranthera farquhariana* (Wallich ex Hook. f. & Thomson) Warb. *ssp. paniculata* (A. DC.) R. Schouten  
*Myristica cf. agusanensis* Elmer

## NEPHROLEPIDACEAE

- Nephrolepis cordifolia* (L.) K. Presl

## OPILIACEAE

- Champereia manillana* Blume

## PHYLLANTHACEAE

- Antidesma cf. pleuricum* Tul.  
*Breynia cernua* (Poir.) Muell.-Arg.

## PTERIDACEAE

- Pteris cf. armata*

## RUBIACEAE

- Canthium monstrosum* Vidal

## RUTACEAE

- Lunasia amara* Blanco  
*Melicope triphylla* (Lam.) Merr.

## SAPINDACEAE

- Dimocarpus longan* Lour. *ssp. longan var. malesianus*  
*Elattostachys verrucosa* (Blume) Radlk.  
*Lepisanthes fruticosa* (Roxb.) Leenh.

**Table 1.** Continued.

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<b>FAMILY / SPECIES</b>
<i>Pometia pinnata</i> Forst.
SCHIZAEACEAE
<i>Lygodium circinnatum</i> (Burm.) Swartz
TACCACEAE
<i>Tacca integrifolia</i> Ker Gawler
<i>Tacca palmate</i> Blume
TECTARIACEAE
<i>Tectaria dissecta</i> (Forst.) Lellinger
URTICACEAE
<i>Boehmeria heterophylla</i>
<i>Leucosyke hispidissima</i> (Wedd.) Miq.
<i>Pipturus arborescens</i> (Link) C. B. Rob.
VIOLACEAE
<i>Rinorea bengalensis</i> (Wall.) Kuntze

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## CONCLUSION

There is a need to examine the dynamics of this biodiversity for the future planning of appropriate forest management strategy in sustaining this most valuable resource.

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