A FLORA OF THE MONOCOTS OF THE UNIVERSITY OF THE PHILIPPINES MANILA CAMPUS

by

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This is to certify that this undergraduate thesis, entitled "A Flora of the Monocots of the U.P. Manila Campus" and submitted by Meliza Pamintuan to fulfill part of the requirements for the degree of Bachelor of Science in Biology was submitted on February 24, 1988.

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ABSTRACT

This is about the taxonomic survey of monocot plants in all the U.P. Manila colleges. Monocots were collected , identified, dried, and mounted in a white bristol board for the purpose of constructing a herbarium. With regards to the specimens which were impractical to mount, photographs of the same were instead taken. Based on the survey conducted , it has been found that there are fifty-four (54) different species of monocots in existence within the boundaries of the U.P.Manila campus.

INTRODUCTION:

This thesis, entitled " A FLORA OF THE MONOCOT PLANTS OF THE U.P. MANILA CAMPUS " ,aims to make students more aware of their environment and to help them better appreciate the beauty and wonders of mother nature.

A flora, according to E.D. Merrill, "is a work containing descriptions of the different kinds of plants growing in a country, properly arranged according to their relationships or assumed relationships." A flora is so created to allow students or individuals who are inclined to or interested in the study of plants to properly determine the names of the various kinds of

plants growing within the limits of the area or place wherein the study is conducted.

This thesis is actually a survey of the monocot plants existing in the U.P. Manila Campus.But more than a survey, it is also a taxonomic classification, a key to the different monocot families existing in the U.P. Manila campus, so this work can serve as a guide or reference for future students of Botany. It will attempt to make a credible classification/description of monocots based on the author's own observations with the valuable assistance and advices from acknowledged authorities,such as those experts at the National Museum, and my own adviser, Mrs. Rosario Rivera- Rubite. This thesis will also try to correct the work of Merrill, " Flora of Manila", if the need arises, regarding the description and possibly,nomenclature of monocot plants. Also, along with the classification, the exact location of each monocot will be specifically stated.

In connection with this thesis, a herbarium will be constructed. A herbarium is a collection of dried plants preserved for the purposes of study and comparison.

As suggested in the title, the area of study is limited to the U.P. Manila campus. This would include

the following colleges : Arts and Sciences, Dentistry Nursing and Pharmacy, School of Allied Medical Profession (SAMP) along Padre Faura St., Medicine, and Public Health inside the PGH Compound.

REVIEW OF LITERATURE

A monocot is any plant of the Class Monocotyledonae, the smaller of the two great groups of flowering plants,or angiosperm; the other one being Class Dicotyledonae. Plants which are under this class include lilies, orchids, palms and grasses, sedges, and rushes. Monocots are distinguished by the presence of only one seed, hence the name monocotyledon (mono- one), as against the dicotyledon which has two (di) cotyledons.

Monocots typically have trimerous flower plants (sepals, petals, stamens,carpels),or based on numerical plan multiple of three, although there are exceptions. The leaves in most monocots are parallel-veined, either from the base or from a stout central midrib. The vascular elements - xylem and phloem in the stem are commonly arranged in scattered bundles, and the stem do not possess a continous cambium layer or region of new growth. Therefore, monocots do not increase in stem thickness, do not produce annual growth rings and do

not possess woody stems. Tree forms are rare among monocots, most of which are herbs. Fibrous roots predominate, and stem branching are uncommon.

The following account regarding the taxonomic classification of monocot plants are based on the textbook "Flora of Manila" by Elmer D. Merrill, and also on the lecture notes on Botany 109 of Mrs. Rosario R. Rubite.

I. SUBCLASS CALCIFERAE

1. One series of perianths
2. Outer calyx and inner corolla
3. No adnation
4. Clear structures
5. No common perianth tube
6. Rhyzomates
7. Annual
8. Some are aquatic

A. ORDER ALISMALES

1. Scapose marsh or aquatic herbs
2. Inflorescence panicle or raceme, bracteate
3. Flowers perfect or unisexual, hypogynous regular, trimerous
4. Calyx of three (3) green sepals, corolla of three (3) white or sometimes lavender petals,

which fall early

5. Number of stamens equal or greater than six(6)
6. Carpels (pistils) usually numerous, forming a head or whorl of achenes in fruit

1. Family Alismaceae
   - superior ovary with one carpel, one ovule
   - presence of laticifers

   Examples: Alisma- water plantain
   Sagittaria - arrowhead
   Echinodorus - Burhead

B. ORDER JUNCAGINALES

1. Marsh herbs from rhizomes with long,narrow,basal leaves
2. Inflorescense, spike-like, scapose, abracteate
3. Flowers small, greenish, usually perfect, hypogynous, regular
4. Perianth of six (6) concave segments
5. Stamens of three (3) or six (6), anthers nearly sessile
6. Carpels three (3) or six (6), weakly united, each containing one or two ovules

1. Family Juncaginaceae

   - same characteristics as in order

     Example : Triglochin - Arrow Grass

C. ORDER NAJADALES

1. Submerged or partly submerged aquatic herbs
2. Stems slender and leafy
3. Flowers unisexual and bisexual, in spikes or axillary clusters
4. True perianth none, or in Potamogeton as four green parts, probably sepals but are variously interpreted as bracts or dilated connections of stamens
5. Stamens one to four
6. Carpels one or more, usually one seeded fruits --- achenes

   1. Family Najadaceae

      - Annual
      - Leaves numerous, small, linear, toothed, sheathing at the base, in pairs sessile
      - Flowers small, axillary, monoeceous, rarely dioecious, entirely subdued in water

- Male flowers naked or included, female flower naked, rarely included. Both in small spathe .
- Perianth none, ovary one-celled, one -ovuled
- Unigeneric

  Example = Najas - Naiad

2. Family Potamogetonaceae
   - Perennials
   - Leaves usually distichous, opposite or alternate, submerged or floating, entire, linear to ovate, base sheathing
   - Flowers very small, perfect, in fascicles or spikes
   - Perianth none, or of four segments
   - Stamens one to four
   - Pistil one to four, ovary superior, of one to four carpels, each one-ovuled

     Example - Potamogeton - Pond Weed

D. ORDER BUTOMALES

1. Perennial aquatic herbs (fresh or salt water)
2. Leaves in basal tuft, or cauline, alternate or whorled

3. Flowers perfect or unisexual, hypogynous or perigynous
4. Perianth mostly biseriate, outer segments green and inner ones petaloid
5. Stamens three(3) or more
6. Carpels free and flowers hypogenous, or carpels united and flowers epigynous, each carpel many-ovuled, the ovules scattered over the interior surface of the carpel

1. Family Butomaceae
   - Flowers are showy
   - Hypogynous
   - Six(6) carpels separated from each other

   Example : Butomus - flowering rush

2. Family Hydrocharitaceae
   - Simple undivided leaves
   - Flowers monoecious or dioecious, enclosed in an entire or two-leaved spathe; inconspicuous
   - Ovary epigynous
   - One carpel

   Example - Hydrilla
   Vallisneria
   Ottelia

Halophila

Thalasia

E. ORDER COMMELINALES

1. Terrestrial herbs
2. Stems jointed
3. Leaves sheathing, alternate
4. Flowers hypogynous, perfect, regular to somewhat irregular, trimerous in axillary cymes
5. Sepals green
6. Petals often blue, delicate in texture
7. Stamens six and all fertile, or sometimes two to three are fertile while the rest are sterile or lacking, filaments often hairy and brightly colored
8. Pistil with three limited carpels, single style, capitate stigma, or sometimes ovary two-celled by abortion of one carpel
9. Fruit usually few seeded, loculicidal capsule

1. Family Commelinaceae
   - Leaves entire, alternate, more or less succulent, parallel-veined, sheathing by the base
   - Trimerous
   - Inflorescence fascicle,cymose,or paniculate,

axillary or terminal

- Flowers perfect,irregular or nearly regular
- Hypogynous ovary, three-celled

Example: Commelina

Aneilema

Cyanotis

Zebrina

Tradescantia

2. Family Pontederiaceae

- Sub-aquatic or marsh herbs
- Leaves erect, parallel or subparallel veins, sheathing opposite
- Flowers perfect in spikes or racemes, irregular
- Bracts sheathing
- Perianth unequally six-partite, blue, marcescent
- Stamens one to six, inserted at the base of the perianth lobes
- Anthers erect or versatile, one longer than the others
- Superior, free ovary,three-celled ovules many

Examples: Monochoria hastata-lilies

Water hyacinth

F. ORDER BROMELIALES

1. Xerophytic plants mostly epiphytic.
2. Leaves densely clustered, linear,stiff , basally colored and usually spiny toothed
3. Inflorescence terminal, spike-like, often with colored bracts
4. Perianth of free or united segments,green sepals and corolline petals,and usually with appendages within, forming a corona
5. Stamens six, usually inserted in perianths, anthers versatile
6. Pistil one, ovary superior or inferior, three-celled,
7. Perfect and regular flowers
8. Trimerous
9. Fruits of numerous, fleshy, united berries or a tri-valved capsule

1. Family Bromeliaceae
   - Characteristics same as order

     Example: Ananas sativa- Pina

G. ORDER ZINGIBERALES

1. Herbs of moist places with rhizomes and tuberous roots

2. Pseudo-stems often formed by over-lapping leaf sheets
3. Flowers epigynous
4. Perianths bi-seriate, corolla regular or irregular, often inconspicuous
5. Stamens five to six, or reduced to one and with or without staminodes, the staminodes sometimes very conspicuous and petalloid

1. Family Zingeberaceae
   - Slender or coarse often aromatic herbs from fleshy rootstocks the stems simple
   - Leaves simple, radical or cauline, distichous, sometimes spirally arranged
   - Presence of sheaths and ligules
   - Flowers small to large, irregular, perfect, solitary, spicate, racemose, or panicled
   - Bracts and bracteoles often present
   - Calyx tubular or spatule-like
   - Corolla tube long or short, the limb tri-partite
   - One perfect stamen,the rest are petalloid staminodes
   - Inferior ovary, one to three celled, many ovules

Examples: Globba

Hedychrum coronarum

Kaempferia

Curouma

Zingeber officinale

Kolowratia

2. Family Musaceae

- Stems erect, tree-like with leaves all at the top
- Leaves very large,oblong, distichous
- Bracts and leaves spirally arranged
- Flowers irregular
- Five to six stamens if present; generally absent and fall early
- Inferior ovary, tri-celled, ovules one or more in each cell
- Fruit fleshy and paccate or dehiscent capsule

Examples: Musa paradisiaca

Musa textiles

3. Family Strelitziaceae

- Inferior ovary
- Stamens five to six
- Three separate sepals

- Three irregular petals

Examples: Strelitzia reginae

Heliconia

Ravenala

II. SUBCLASS COROLLIFERAE

1. One series of perianth
2. Everything is petaloid, are perianth; hair-like or bristle-like
3. With common perianth type
4. Bulbs and corms
5. Essentially terrestrial

A. ORDER LILIALES

1. Inflorescence raceme
2. Ovary superior,tri-celled, ovules two or many
3. Herbs with fibrous roots or from rootstocks, bulbs or corms
4. Sometimes shrubby and tree-like or climbing and armed with prickles or spines
5. Flowers perfect or sometimes unisexual
6. Perianth thin or petalloid, sixmerous, in two series, imbricate in bud
7. Stamens six, the filaments free or connate anthers versatile

8. Fruit capsule or berry

1. Family Liliaceae

- Same characteristics as order

Examples: Smilax

Asparagus

Lilium

Sanseviera

Cordyline

Yucca

B. ORDER AMARYLLIDALES

1. Slender or coarse herbs from bulbs, tuberous, or corm-like rootstocks
2. Perianth superior; ovary inferior; tricelled,many ovules, two seriate
3. Stamens six, anthers versatile
4. Presence of hypanthium and petaloid corona

1. Family Amaryllidaceae

- Characteristics same as order

Examples: Agave

Allium cepa

Narcissus

Polianthes

Zepayratthes

Crinum

Pancratium

Hymenocallis

Eurycles

Eucharis

2. Family Dioscoriaceae

- Usually twining vines, smooth or armed,from fleshy rootstocks
- Leaves simple or digitately three to seven foliate; netted venation
- Flower small,in spikes,racemes or panicles, unisexual;six-lobed perianth
- Ovary inferior; three-winged, tri-celled, ovules two in each cell

  Example: Dioscora batatas

C. ORDER PANDANALES

1. Family Pandanaceae

- Erect dioecious shrubs or trees, or vines climbing by aerial roots
- Leaves three-ranked, spirally arranged midribs usually spinously toothed
- Inflorescence axillary or terminal, clothed with leafy spathes or bracts

- Flowers small,crowded on a catkin-like spadix; perianth none
- Male flowers with many stamens;female flowers with one-celled ovary, ovules one or many

Example: Pandanus

D. ORDER IRIDALES

1. Perennial herbs from fleshy rootstocks

1. Family Iridaceae

- Leaves narrow, often distichous and equitant
- Perianth superior, petalloid, the segment six,two-seriate, imbricate
- Stamens three, epigynous or adnate for outer segments
- Ovary three-celled; style simple; stigmas three, ovules many, two seriate

Examples: Belamcanda

Eleutherine

Iris

Gladiolus

E. ORDER ARECALES

1. Erect shrubs or trees, slender or very large, sometimes climbing, naked or spiny

2. Stems unbranched, cylindric;woody
3. Leaves alternate at the ends of stems,palmate, pinnate,or bipinnate, the petioles sheathing
4. Inflorescence spadix, enveloped by a bract called spathe
5. Trimerous flowers
6. Ovary superior;one to three celled; ovules one or two in each cell

1. Family Arecaceae
   - Same characteristics as in order

     Example: Normanbya-Bunga de china

     Corypha- Buri

     Cocos nucifera - coconut

     Calamus- Rattan

     Areca - Betel nut

     Phoenix- Dates

2. Family Lemnaceae
   - Small herb, green, scale-like plants rootless or with capillary roots
   - Plant reduced to a thallus
   - Floating on a stagnant fresh water
   - Rarely flowering,propagated by budding or by bulbis
   - Flowers monoecious,one to three from the margins on upper surface

- Stamens one or two
- Ovary one celled, one to seven ovuled

Example: Lemna paliciocostata-Duckweed

Spirodela polyrhiza - Lia

F. ORDER TYPHALES

1. Perennial erect marsh herbs
2. Leaves simple, alternate, erect, linear entire, sheath the base of stem
3. Flowers unisexual; inflorescence spikes; male flowers superposed above female ones
4. Perianth of capillary hairs or none in the male flowers
5. Stamens one or more; ovary very small, superior, narrowed into a capillary style

1. Family Typhaceae
   - characteristics same as in order
   - unigeneric

   Example; Typha- Cattail

G. ORDER ARALES

1. Perianth absent

1. Family Araceae
   - Perennial plants from rhizomes or fleshy corms

- Alternate, radical leaves, netted venation, suprutescent or woody vines
- Spadix inflorescence,enveloped by spathes
- Flowers unisexual or bisexual, sessile if imperfect,males above, females below
- Anthers two to four celled
- Ovary superior; sessile one to three celled; ovules one or more

Examples; Caladium bicolor-Corazon de Maria
Colocasia esculuntum- Gabi
Acorus cazamus-Lubigan

2. Family Cannaceae
- Erect coarse herbs
- Leaves large, oblong,acute or acuminate, parallel veined
- Flowers irregular, perfect, bright and showy inflorescence terminal racemes, bracteate
- Sepals three, small oblong
- Corolla-tube cylindric, segments three, equal staminal-tube connate
- One-celled anthers usually attached to margins or staminodes
- Ovary inferior

Examples:Canna placcida-Bandera Espanola

Canna indica-Ticas -ticas

3. Family Marantaceae

- Stemless or with erect,simple or branched stems
- Leaves usually large, pinnately veined from midrib usually distichous, petioled, the petioles sheathing the stem below
- Flowers very irregular, perfect, often in pairs,in dense bracteate spikes or in open, more or less panicled inflorescence
- Sepals three,free; corolla tube short or elongated, usually slender, three lobed, the exterior lobe often enlarge more or less concave or hooded
- One petalloid stamen, bearing one-celled anthers, staminodes present
- Ovary inferior,one to three-celled; one ovule in each cell; curved style
- Presence of ligules

Examples; Maranta arundinacea- Arrow root

H.ORDER ORCHIDALES

1.Terrestial or epiphytic herbs

2.Usually succulent with thickened tuberous roots or fleshy herbs with thickened bases (pseudo bulbs)

3. Green, more rarely white and colorless or brownish saprophytes

4. Flowers very irregular, perfect rarely monoecious

5. Perianth of six free or variously combined parts, in two series, outer three sepals, which may be green petalloid, three inner petals, one is a large central petal called lip or labellum, two lateral structures may form wing-like or keel-like structure as in papilionaceous

6. Stamens and style are united in two columns called gynostegium, opposite the lip

7. Anther one, rarely two, on the front, or back of the gynostegium

8. Ovary inferior, one carpel, numerous ovules on three parietal placentae

9. Fruit one celled, three-ovuled capsule containing enumerable minute seeds

10. One beak-like structure called rostellum, enlarge stigma is found on top of the gynostegium

1. Family Orchidaceae

- characteristics same as order

Example: Habernaria congesta

Geodorum mitans

Cattleya

III. SUBCLASS GLUMIFLORAE

1. Perianths are reduced to scaly
2. Presence of rhizomes
3. Rarely producing bulbs

A. ORDER JUNCALES

1. Flowers small, chaffy, liliaceous, not associated with scale-like bracts (scales, lemmas, or glumes)
2. Perianth of six chaffy and similar segments
3. Fruit a three-ovuled capsule containing three to many seeds
4. Grass- like
5. Stamens three to six

1. Family Juncaceae
   - Flowers regular and trimerous
   - Ovary superior

   Example: Juncus - Rush

B. ORDER POALES

1. Flowers small,naked or with a scale-like bracts
2. Fruits an achene or a grain (caryopsis) indehiscent and one seeded
3. Leaves alternate and mostly linear (sheath and blade)

4. Stamens six, three or fewer

5. Pistil one, ovary superior, one celled

1. Family Poaceae

- Slender or coarse, annual or perennial plant various habit or in one tribe
- Stems jointed, terets or compressed ; internodes usually hollow, sometime solid
- Leaves simple, usually long and narrow, entire parallel-veined the sheathing portion distinct from the blade, split down on one side
- Inflorescence various, of few to many spikelets in panicles, racemes spikes or heads, the spikelets composed two to many, two- ranked ones normally empty sometime wanting one or more of the upper glumes containing a flower enclose by the bract -like palea
- Flowers perfect or staminate, sometimes monoeceous or dioeceous
- Stamens one to six, usually three
- Ovary one celled, one ovuled
- Fruit a seed-like grain (caryopsis)

Example; Oryza sativa- Rice

Zea mays - Corn

Saccharum officinarum- Sugar cane

Saccharum spontaneum - Talahib

2. Family Cyperaceae

- Grass-like plants
- Three-ranked leaves and solid, cylindric or three angled
- Stems, sheaths closed sometimes leafless
- Flowers perfect or unisexual,small in the axils of the scale(glumes)of the spikes or spikelets,either solitary or in groups
- Perianths none or hypogynous bristles or scales
- Stamens one to three
- Ovary one celled; style short or slender and elongated, two or three cleft

Examples: Kyllinga

Cyperus malaccensis- Balangot

In addition to the above mentioned families, which are taken from the lecture notes on Botany 109, Merrill's "Flora of Manila" has included three(3)more families .

These are:

3. Family Xyridaceae

- Tufted or scattered, rigid or wiry;erect herbs

- The leaves are radical, grass-like,linear or subulate
- Simple scape, naked, elongated, bearing a single head
- Flowers sessile; perfect, each subtended by a dark-brown imbricating, concave rigid bract
- Trimerous
- Clawed petals
- Stamens inserted at the bases of the petals, included presence of staminodes
- Ovary superior, imperfectly three-celled; placentae three, many ovuled;style trifid

Example: Xyris panciflora

4. Family Eriacaulaceae
   - Herbs growing in wet places
   - Narrow leaves crowded in a rosette at the base
   - Flowers small,crowded in dense,bracteate, globose to ovoid, usually long-peduncled heads, dimerous or trimerous, male and female flower in the same head
   - Stamen six
   - Ovary three rarely two celled; stigmas three or two

Example: Eriocaulon alafum

Eriocaulon merillii

5. Family Taccaceae

- Herbaceous plants from tuberous or creeping root stocks
- Leaves radical , lobed or laciniate
- Perianth six lobed , superior
- Stamens six, at the base or the lobes, the filaments short,dilated or appendaged on each side, above dilated into an inflexed head; anthers sessile within the hood
- Ovary one-celled; style short; stigma petalloid
- Fruit fleshy, indehiscent

Example; Tacca pinnatifida -Yabyaban

Tacca palmata - Payong-payongan

METHODOLOGY

The main concern of this thesis is the construction of a herbarium. The preparation of a herbarium will involve field work, laboratory work, and identification of specimen.

Field work will consist of collecting and drying

plant specimens around the U.P.Manila Campus. In collecting plant specimens, the following materials are needed:

1. stocks of old newspapers for drying
2. bamboo presses
3. knife
4. cotton cord
5. pruning shears
6. sacks or plastic bags

The plants to be collected should , as much as possible, have complete parts, i.e., it should include roots, stems, leaves, flowers and fruits. But if this is not possible, as in woody monocots, twigs with leaves, flowers or fruits of about thirty (30) centimeters would be sufficient. In cases of long grasses and sedges,the whole plant should still be mounted, and this could be done by bending the plants in either V- or N-shape to meet the 30 cm.limit. In cases of bulky specimens, they should be trimmed down to contain only the essential parts ,i.e., the leaves, flowers, and fruits. Each of the collected specimens will have duplicates and will be accompanied by informations or data sheet which include the following;

1. Name of the collector, field number
2. Locality- place where the plant is taken

3. Local(common) name and in what dialect

4. Habitat and altitude

5. Descriptions about the plant:

    a. Form-tree, shrub, bush, vine, herb

    b. Diameter and height for big trees

    c. Flower- kind, color, odor

    d. Fruit- type, taste,odor, color

    e. Other characteristics

6. Special notes- introduced, cultivated, etc.

7. Economic uses-food,fiber,oil,timber,ritual,etc.

8. Date collected- month,day and year

In collecting the plants, the specimens collected and properly numbered will be placed inside the sack or bag. In a notebook, necessary informations or data listed above will be recorded for each specimen number. Then, after collection is finished, each of the specimens will be neatly arranged in newspaper folders placed one on top of the other with sufficient blotters in between. The bunch of folders containing the specimen will be laid in between bamboo presses and tied tightly in all the four corners with a durable cotton cord.

There are two methods of drying the specimen. One is drying under the sun known as natural drying, and drying under artificial heat or artificial drying. For this thesis, artificial drying wil be employed, since under this method, specimens can dry up in about a day

or two, as compared to natural drying which will take about a week before drying up completely.

The laboratory work consists of processing specimens. This is done as folows:

1. Poisoning the thoroughly dried specimen with the following mixtures: one (1) liter of denatured alcohol, 12-15 grams of mercuric chloride (corrosive sublimate), and 10-12 cc. of carbolic acid (phenol).

2. Labelling every specimen, including duplicates.

3. Mounting the specimen on the mounting sheet using gum arabic paste or any colorless glue, applied on the lower surface of the specimen. Loose ends and other detached parts must be strapped.

4. Accessioning botanical specimens.

5. Filing of specimens in the herbarium cases. The filing sytem to be used for this system will be a combination of alphabetic arrangement and phylogenetic arrangements. Families will be arranged according to their relationship or assumed relationships, and the genera and species wil be arranged alphabetically.

In the identification of monocot plants, the main reference will be Elmer D. Merrill's "Flora of Manila". But in case where description will not tally with the actual observations of the plant, the assistance of Mrs. Rosario Rivera-Rubite will also be solicited, as well as that of the experts at the National Museum.

RESULTS

After several months of collection and survey, it was found out that there are 54 different species of monocots within the confines of the whole U.P. Manila campus. Out of the 54 species, 11 belong to the family Poaceae (formerly Graminae), 10 are of the family Araceae, 10 from family Liliaceae, 9 from family Arecaceae, 3 from family Amaryllidaceae, 3 from Cyperaceae, 3 from Commelinaceae, 2 from Pandanaceae, 1 each from families Marantaceae, Musaceae and Strelitziaceae.

Listed below are the different monocots of the U.P. Manila campus arranged alphabetically according to their scientific names.

Actinophloeus macarthurii (Wendl) Becc. (MacArthur Palm; Family Arecaceae)

Suckering feather palm with several slender grayish trunks to 25 ft. high; pinnate leaves in a sparse crown, pinnate leaflets numerous, glossy green and rather soft, broader at the tip, the apex jagged and fingered as if bitten off; fruit bright red. (Graf, 1974 and Steiner, 1960)

This palm tree can be found in the College of Medicine, College of Pharmacy, College of Nursing and College of Arts and Sciences.

Agave americana L. (Maguey, Century Plant; Family Amaryllidaceae).

Stems short and stout. Large rossette of fleshy, linear-lanceolate, thick leaves, narrowed toward both ends, apex with a sharp, thorny point, margins with sharp spine-like teeth. Inflorescence erect, up to 6 meters in height, stout branched. Flowers greenish, the perianth 4 to 5 cm. long; filaments exceeding the segments. The plant dies after bearing flowers. (Merrill, 1912 and Steiner, 1960).

This is found in the College of Medicine.

Agave americana " Marginata" L. (Maguey; Family Amaryllidaceae).

Large, rosette with broad, laxly recurved, glaucous gray leaves with showy, broad, yellow margins. (Graf, 1974). This maguey is located at the College of Dentistry.

Aglaonema oblongifolium (Roxb.) Kunth. var. A.Curtissi Hort.(Damping banal; Family Araceae)

Stem 2-3 ft. tall, internodes short leaf stalk, 6-8 inches long, sheathed most of the way, blades long and fairly narrow, dark green, with ash gray markings along the veins, paler underneath. Tips pointed cuspidate, veins ascending in a very acute angle. (Steiner, 1960).

This monocot can be found in the College of Medicine, College of Public Health, College of Pharmacy, College of Nursing, and College of Arts and Sciences.

Aloe vera L. (Sabila; Family Liliaceae)

Succulent with fleshy, dagger-shaped green rounded leaves in a rosette skin not hard as in agave, with white blotches, margin with weak soft, pale prickes. Flowers rare, yellow. (Graf, 1974 and Steiner, 1960).

This potted plant can be found in the College of Arts and Sciences, College of Pharmacy and College of Nursing.

Caladium bicolor (Ait.) vent rar rubicundum (Corazon de Maria; Family Araceae)

Leaves heart-shaped, ovate to oblong-ovate, peltate peltate, 10-40 cm. long, apex acuminate, base deeeply cordate, the basal lube somewhat spreading, usually rounded, of great variation in color. The upper surface green with the entire center red and pink. Spathe stout, about 10 cm. long, the limb white, boat shaped, the tube green, often tinged with purple. (Merrill, 1912 and Steiner, 1960).

This colorful monocot can be seen at the College of Medicine, College of Public Health, College of Pharmacy and College of Nursing.

Caryota plumosa (Fish-tail palm; Family Arecaceae)

A fish -tail palm, have a dominant trunk with few smaller sucker; the leathery fronds with fan-shaped segments fresh green and almost glossy. (Graf, 1974).

This palm can be found in the College of Medicine.

Colocasia esculentum (L.) Schoff. (Gabi, Taro; Family Araceae)

Leaves two or three, long-petioled, ovate, 20 to 50 cm. long, glaucous, entire, acute or shortly and sharply acuminate, with a broad, triangular,basal sinus extending one-third or half-way to the insertion of the petiole, the basal lobes broad, rounded;petiole, green or purplish,0.2 to 1 m. long. Peduncles usually solitary. (Merrill, 1912)

Gabi can be found at the College of Medicine and College of Arts and Sciences.

Commelina benghalensis L. (Alicbangon; Family Commelinaceae)

A prostrate or ascending, branched, usually pubescent plant,the stems rooting at the nodes,leaves elliptic ovate,obtuse or acute base narrowed into a petiole, 4 to 7 cm. long. Spathes 1-3 together, green, funnel-shaped, compressed, about 1.5 cm. long and wide. Flowers blue, long pedicelled in anthesis, fascicled,

several in each spathe,the petals 3-4 mm. long.Capsules 4 to 5 mm. long. (Merrill, 1912)

Alicbangon is located at the College of Dentistry.

Cordyline fruticosa-(L.) A. Chev.,syn C.terminalis Kunth (Baston de San Jose; Family Liliaceae)

An erect, unbranching shrub with recurved, strap-shaped leaves, variously tinged with orange, red or purple situated near the apex of the stern, acuminate, base narrowed,the nerves very numerous,slender,diverging from the midribs, leaf stem long,narrow. Flowers lavender or pinkish, inflorescence panicle, terminal. (Merrill,1912 and Steiner, 1960)

This is located at the College of Public Health, School of Allied Medical Professions, College of Arts and Sciences.

Cynodon dactylon(L.)Pers.(Bermuda grass;Family Poaceae)

Stems prostrate,usually widely creeping, branched and rooting at the nodes,sending up erect,short,flowering branches usually less than 20 cm. high. Leaves 1.5 to 3 cm. long. Spikes 3 or 4, 2 to 5 cm. long, spreading, green or purplish. Spikelets imbricate, about 1.5 mm. long. (Merrill,1912)

This grass is seen at the College of Dentistry and the College of Medicine.

Cyperus haspan L. (Family Cyperaceae)

A tufted, glabrous, rather flaccid plant 10 to 40 cm. high. Leaves often as long as the stem, sometimes shorter, or nearly wanting, 3 to 5 mm. wide. Inflorescence umbellate, simple or compound., of few or many crowded or spreading rays, each with few to many spikelets, dense or lax. Spikelets brown, 3 to 10 mm. long, 8 to 25 flowers, the glumes about 1.2 mm. long, imbricate, obtuse. Nutlets 3 angled, about 0.4 mm. long. (Merrill, 1912)

This can be found at the College of Dentistry.

Cyperus rotundus L. Mutha (Family Cyperaceae)

A slender, glabrous perennial 10 to 40 cm. high, the rhizomes wiry, bearing black, hard,ovoid tubers about 1 cm. in diameter. Stems usually solitary, 3 angled above, leaves 5 to 15 cms. long or sometimes as long as the stems, 3 mm, wide or less. Umbel simple or compund, 2 to 6 cm. long, the rays long or short,the spikes dense or rather lax, of from 3 to 8 spikelets that are brown, slender, 10 to 25 mm. long, 10 to 25-flowered, the glumes 2.5 to 3 mm. long. (Merrill, 1912)

This can be found at the Colleges of Medicine; Dentistry ; and Arts and Sciences.

Cyrtostachys lakka Becc. (Red-sheathed Palm, Maharaja Palm; Family Arecaceae)

Grows in clumps, characterized by a bright red leaf sheath and midrib. Leaves broad, 3.5-4.5 ft. long, leaflets nearly 18" long, 1.5" wide, obliquely bifid at the tip, pale underneath. (Steiner, 1960)

This can be found at the College of Dentistry.

Dactylocterium aegyptium (L.) Willd. (Family Poaceae)

A rather coarse grass 15 to 60 cm. high, the basal parts decumbent, usually more or less creeping and rooting, the flowering stems erect or ascending. Leaves 5 to 8 cm. long, 2 to 6 mm. wide, the sheaths loose, imbricate. Spikes 3 or 4 rarely only 2, digitate, stout, often purplish, 1 to 5 cm. long, 5 to 7 mm. thick, the rachis excurrent at the tip, mucronate. Spikelets numerous, densely crowded, spreading, about 3 mm. long, 3- or 4- flowered, the first glume ovate, acute, the second obliquely awned, the flowering glumes also cuspidate-awned, the cusps recurved. (Merrill, 1912)

This is found at the Colleges of Dentistry; and Arts and Sciences.

Dieffenbachia picta (Lodd.) Schott. (Dumbcane; Family Araceae)

The most commonly cultivated Dieffenbachia, leaves oblong, white with green spots. (Steiner, 1960)

Dumbcane is found at the Colleges of Medicine; Public Health; Pharmacy; Nursing; Arts and Sciences, and SAMP.

Dieffenbachia picta (Lodd.) Schott . var. Rudolph Roerhs (Dumbcane; Family Araceae)

Midrib dark green, blades greenish cream colored or almost white, margin a thin green band. Leaves oblong. (Steiner, 1960)

This is seen at the Colleges of Arts and Sciences; Pharmacy; Nursing, and SAMP .

Digitaria microbachne (Presl) Henr., (Family Poaceae)

Rachis of racemes without scattered long hairs; racemes (2-)8- 16, often more than 10 cm. long, scattered along up to 10 cm. long main axis , lower racemes often in whorls, spreading, appressed-erect when mature; rhachis with wide midrib and narrow wings; spikelets 2-4 mm., narrowly lanceolate; false fruit narrow, acute, pale yellowish. Leaf sheaths with tubercle-based hairs or glabrous; blades glabrous or thinly hairy, up to 20 cm. by up to 10mm. Culms stout, ascending, procumbent at base and rooting at lower nodes, with hairy cataphylls at base. (Backer and Brink, 1968)

This can be seen at the College of Dentistry.

Dracaena fragrans (L.) Ker. Gawl. (Fragrant Dracaena; Family Liliaceae)

Perennial herb from erect, single stem, leaves green and cream stripped. Leaves sessile without leafstalk. Flowers in round heads, whitish, on branching stalks, pendent, very fragrant. (Steiner, 1960)

This can be found at the Colleges of Medicine; Pharmacy; Nursing; Arts and Sciences, and SAMP .

Dracaena fragrans (L.) Ker. Gawl. var. Lindenii Hort (Fragrant Dracaena; Family Liliaceae)

Perennial herb from erect, single stem; leaves green, strap-shaped, with a broad, creamy band in the middle of the leaves. Leaves sessile, without leafstalk. Flowers in round heads, whitish, on branching stalks, pendent, very fragrant. (Steiner, 1960)

This can be found at the Colleges of Medicine; Nursing; Pharmacy; Arts and Sciences.

Dracaena sanderiana Sander (Family Liliaceae)

Small herb 1-3 feet with white-striped leaves in regular intervals, no leafstalks formed. (Steiner, 1960)

This exists at the Colleges of Public Health; Nursing Pharmacy; Arts and Sciences, and SAMP .

Dracaena surculosa punctata (Spotted Dracaena;Family Liliaceae)

Branching plant with whip-like, wiry stems distantly bearing pairs or whorls of long elliptic, olive- green, leathery leaves with indistinct yellow green spots. (Graf, 1974)

This can be seen at the Colleges of Arts and Sciences; Nursing; Pharmacy; Medicine ,and SAMP .

Eleusine indica (L.) Gaertn. (Family Poaceae)

A rather stout, tufted, annual, erect, glabrous grass 10 cm. to 1 m. high. Leaves 10 to 30 cm. long, sometimes involute when dry, 3 to 7 mm. wide, distichous, rather flaccid, the sheaths flattened. Spikes 3 to 6 all in a terminal whorl, or one or two lower down, 2.5 to 10 cm. long 3 to 5 mm. thick. Spikelets very numerous, crowded, 3- to 5- flowered, 3 to 4 mm. long, the first glume 1-nerved, small, the second 3-nerved, the third and succeeding ones ovate, acute. (Merrill,1912)

This is located at the College of Dentistry.

Eragrostis tenella (L.) R. and S. (E. Plumosa Link) (Family Poaceae)

A slender, densely tufted, glabrous annual. Leaves

linear, acuminate. Panicles oblong, rather open. The branches solitary, spreading or ascending, slender. Spikelets pale, long pedicelled, about 2 mm. long, the flowering glumes 4 to 6, less than 1 mm. long.(Merrill, 1912)

This can be seen at the Colleges of Medicine ; and Dentistry.

Eurycles amboinenses (L.) Lindl. (Brisbane Lily,Tambal; Family Amaryllidaceae)

Leafblades large,rounded, base heart-shaped, almost orbicular. Flowers in dense umbels 20-30 flowers, tube very narrow, six free petal lobes, about 1" across, white or blue. Leaves with prominent curving veins and inter-locking veinlets. The tips appear circular, except for a short period. (Steiner, 1960)

This can be seen at the Colleges of Medicine; Nursing; and Pharmacy .

Hadrodemas (Tripogandra) warscewicziana (Family Commelinaceae)

Very thick, fleshy rosette resembling Dracaena ; the clasping leaves recurved, broad, long pointed, pale green; ciliate at the edge; clusters of smal pale purple flowers on long stalk. (Graf, 1974)

This is located at the College of Arts and Sciences.

Heliconia lathispatha Benth. (Golden Lobsterclaw; Family Strelitziaceae)

Plants 7-8 feet tall, flower stalks usually taller than the leaves or as tall as the foliage. Bracts narrow , elongated, widely spaced, lowest one usually extended into small green leafy blade, bracts not in one plane. Inflorescence erect, orange, narrow lanceoleate, not in one plane. Spikes as long as the leaves or taller. (Steiner, 1960)

This is located at the College of Medicine, near the Medical Library .

Kyllinga monocephala Rattb. (Family Cyperaceae)

A more or less tufted glabrous plant from creeping rootstocks. Stems 10 to 40 cm. high. Leaves up to 15 cm. in lenght or longer. 3 to 4 mm. wide, the bracts similar. Heads ovoid, simple, white, 8 to 13 mm. long. Spikelets very numerous, 3 to 3.5 mm. long, the flowering glume distinctly winged along the keel. Nut up to 1.5 mm. long. (Merrill, 1912)

This is seen at the Colleges of Medicine; Nursing; Dentistry; Pharmacy; Arts and Sciences.

Leersia sp. (Family Poaceae)

Tall, slender with flat leaves and rather small panicles, spikelets 1- flowered, oblong, laterally compressed, awnless, the empty glumes wanting. Flowering

palea as long as the glume. Stamens 6 or fewer. (Merrill, 1912)

This is located at the Colleges of Medicine; Dentistry; and Arts and Sciences.

Licuala grandisWendl. (Common Licuala;Family Arecaceae)

Short-stemmed palm, leaves semi-orbicular, closely plaited, margin cleft into bifid lobes about 1' long, straight,not recurved. Similar to Livistonia,but its leaf-base wedged shaped. Spathe not tubular. (Steiner,1960)

This is located at the Colleges of Medicine; and Public Health.

Livistonia rotundifolia Mart. (Anahao; Family Arecaceae)

A tall palm reaching a height of 15 to 20 m., the trunk straight, smooth,marked with annular scars. Leaves crowded at the apex, their peticles long and armed on the sides with sharp hard teeth. Leaf blades orbucular, plaited, base cordate, about 1 m. in diameter, cleft into numerous 2.5 to 4 cm. wide segments; those in the middle about 20 cm. long, toward the sides longer, all cleft at the apex into 2, lanceolate, acuminate, 3 to 5 cm. long lobes. (Merrill, 1912)

This can be seen at the Colleges of Medicine; Pharmacy; and Nursing.

Maranta arundinacea L.var. variegata Hort. (Ornamental Arrowroot; Family Marantaceae)

An erect, glabrous, dichotomusly branched, perennial herb 0.4 to 1 m. high, from fleshy, fusiform rootstocks. Leaves ovate-oblong, thin petioled, acuminate, base rounded, 10 to 20 cm. long, green with white portions on blades. Inflorescence terminal, lax, divaricate, few flowered, white about 1' long. (Merrill, 1912 and Steiner, 1960)

This ornamental plant is found at the Colleges of Pharmacy; and Nursing.

Musa paradisiaca L. (Banana; Family Musaceae)

Rootstock stout, stoliniferous, the stem stout, erect, 1.5 to 3.5 m. high. Leaves up to 2 m. in lenght. Spike recurved, stout, much shorter than the leaves, the bracts large, dull purplish, deciduous. Flowers about 7 cm. long, the calyx about twice as long as the much inflated corolla. Fruit exceedingly variable, 10 to 20 cm. long, cylindric or angled, the pericarp thick or rather thin, seedless or with numerous seeds. (Merrill, 1912)

This can be seen at the Colleges of Medicine; and Arts and Sciences.

Pandanus sp. (Family Pandanaceae)

Erect dioecious shrubs or trees, usually with prop-roots, or vines climbing by aerial roots, the leaves 3-ranked, spirally arranged, narrow, elongated, acuminate, the margins and midribs usually spinously toothed. Inflorescence axillary or terminal, simple or branched, clothed with leafy spathes or bracts. Flowers small, crowded on a catkin-like spadix. (Merrill, 1912)

This specie of pandan is found in pots at the Colleges of Medicine; Public Health; and Arts and Sciences.

Pandanus tectorius Sol. (Pandan or Screw Pine; Family Pandanaceae)

An erect branched shrub or small tree 3 to 5 m. high, the trunk bearing few to many prop-roots. Leaves spirally crowded toward the ends of the branches, glaucous , linear-lanceolate, slenderly long-acuminate, up to 1.5 m. long, 3 to 5 cm. wide, coriaceous, the margin armed with sharp teeth that point toward the apex of the leaf. (Steiner, 1960)

This can be found at the College of Medicine.

Paspalum sp (Family Poaceae)

Annual or perennial, erect, ascending or spreading grasses. Spikelets 1- flowered plano-corvex,

in spike-like branches of a simple panicle or raceme, the spikes digitately or racemously arranged. Glumes, three. (Merrill, 1912)

This type of grass is seen at the College of Dentistry.

Pennisetum purpureum Schumach. (Buntot-pusa; Family Poaceae)

Anther-tips penicillate; usually only longest bristle (sometimes a few) feathering at the base; longest bristle 15-25 mm., others 8-12 mm.; culms often copiously branched; cultivated and run wild. Panicle erect, 12-25 cm.; units sessile, with 1-4 spikelets; bristles yellow or yellowish brown, with or without purple tip; spikelets light-green or yellowish-green, glabrous, 1-2 shortly pedicelled(female), others longer pedicelled and usually smaller(male); leaf sheaths, glabrous or upwards with long, white, roughish, tubercle-based hairs; ligule short, ciliate; blades flat and rather rigid, linear with broad base and acute tip, glabrous or hairy above, somewhat glaucous. Strongly tufted grass, sometimes stoboniferous or with creeping rhizome. (Backer and Brink, 1968)

This is located at the College of Dentistry.

Philodendron hastatum Hort. (Family Araceae)

Slow climber with stout petioles and lush,

leathery, glossy dark green, hastate leaves oblique oblanceolate and irregularly wavy; georgeous inflorescence with tubular, pale green spathe, red inside. (Graf, 1974 and Steiner, 1912)

This is located at the College of Medicine.

Philodendron lehmannii (Family Araceae)

Creeper with woody stem, thick leaves, oblong-elliptic, cheerful green, pale beneath; long petioles flat on top. (Graf, 1974)

This monocot is seen at the College of Arts and Sciences.

Philodendron oxycardium Schoff. syn. P.cordatum Hort., P.scandens (Heart-leaved Philodendron; Family Araceae)

Climber with dark-green, glossy, heart-shaped leaves, very common, blades not very large, coriaceous; cataphyll reddish-brown. (Steiner, 1912)

This philodendron is found at the College of Arts and Sciences.

Philodendron selloum (Family Araceae)

Self-header, tree-like or scandent on tree. The lush, dark green, pendent, 2 ft. leaves are bipinnate with short lobe at the tip; juvenile leaves are merely lobed; spathe greenish-white. (Graf, 1974)

This specie of philodendron is located at the Colleges of Medicine,and Public Health.

Saccharum spontaneum L. subsp. Indicum Hack. (Talahib; Family Poaceae)

A coarse, erect, perennial, usually more or less tufted or gregarious grass 1 to 3.5 m. high, from stout underground rootstocks. Leaves harsh, linear, slenderly acuminate, 0.5 to 1 m. long, 6 to 15 mm. wide. Panicle white, erect, 15 to 30 cm. long, the branches slender, spreading, whorled, fragile, the joints clothed with long, soft, white hairs. Spikelets about 3.5 mm. long, very much shorter than the copiuos long white hairs at the base. (Merrill, 1912)

Talahib can be found at the Colleges of Arts and Sciences, and Medicine.

Sansevieria trifasciata var. Laurentii(Willd) N.E.Br. (Variegated spearplant, Buntot-tigre; Family Liliaceae)

Leaves flat,spear-like,dark green mottled with gray, glabrous, fleshy, leathery leaves variegated with yellow bands, base somewhat narrowed. Scape erect up to 80 cm. high. (Merrill, 1912)

This is located at the College of Arts and Sciences.

Scindapsus aureus (Lindl) Engl. (Yellow water plant; Family Araceae)

A stout vine climbing on trees by means of roots, reaching a height of 10 m. or more, often with long pendulous branches. Petioles 25 to 40 cm. long, geniculate at the apex, base sheathing. Leaves thinly coriaceous, smooth and shining, pale-green, variously blotched with pale-yellow or nearly white spots on the upper surface, entire, or in mature species more or less incised, those on the pendulous branches frequently very much reduced in size. Flowers and fruits unkown. (Merrill, 1912)

Water plant can be seen at the College of Arts and Sciences, and SAMP.

Sporobolus diander (Retz.) Beauv. (Family Poaceae)

Spikelets 1.5 -1.75 mm., stamens 2; panicles erect, 7-35 cm., open or contracted. Stigmas rather large, white; red-brown. Culms slender, compressed, solid, glabrous, older ones hard, higher internodes long, sheaths shortly ciliate along upper margin, otherwise glabrous; ligule very short, truncate; blades linear, not attenuate at base, acute, margins a little scabrid at the base with a few thin hairs, otherwise glabrous, bright green or glaucous above, 8-13 cm. by 2-

5 mm.. Culms erect, with leaves for greater part crowded at base. Tufted grass. (Backer and Brink, 1968)

This grass is found at the College of Dentistry.

Veitchia merrillii Becc. (formerly Adonidia and Normanbya) (Bunga de Jolo; Christmas Palm and Manila Palm; Family Arecaceae)

Attractive, erect palm up to 20 ft. high, with rather slender, prominently ringed single trunk; the 6 ft. fronds above a glossy green crown-shaft in handsome rigidly arching crown; bright green sword-shaped, leathery, broad leaflets many and closely placed, feathered almost to the base of the petiole; lustrous, attractive red fruit in pendulous clusters below the crown. (Graf, 1974)

Bunga de Jolo can be found at the Colleges of Medicine; Public Health; Nursing; Pharmacy ,and SAMP.

Yucca gloriosa (Spanish Dagger; Family Liliaceae)

Up to 8 ft. high, with short, thick trunk topped by dense rosette of sword-shaped, flaat, glaucous gray-green, rough leaves 2 in. wide, with reddish margins and spiny point; white bell-like flowers striped purple outside. (Graf, 1974)

This is found at the College of Arts and Sciences.

the absence of flowers. Flowers, to a student of plant taxonomy, is an important tool in the identification of plant species. Flowers of different plants show great variations in size, shape, color and other structures that would readily differentiate one plant specie to another. This problem has been clearly demonstrated in the case of grass in a well-tended garden, such as those beside the Medical Library in the College of Medicine, where they are trimmed every now and then ,not allowing it to grow beyond control and bear inflorescences. Since most grass have more or less the same physical structure, the flowers or inflorescences could have led us to properly identify the species.

The mounting of specimen served as another problem. The massive size of the leaves of some Philodendron, Agave, and some palm trees contributed to the difficulty in mounting. Since the leaves are very large, they cannot fit the standard size of the herbarium sheet. And if cut into pieces, they might not represent the true nature of the leaves, and might be mistaken for something else.

To solve this problem, instead of drying and mounting the tall trees and monocots possessing large, massive leaves in the herbarium sheets, photographs of the monocots were taken. This is more advantageous,

since with pictures, one can readily and clearly see the general characteristics of the plants, such as actual growth structure of the plants, arrangement and color of the leaves and flowers. In the herbarium, one will have to rely on his imagination in order to get the real image of a particular plant. Most of the mounted specimens consist only of the leaves, flowers, and sometimes fruit. After drying, these structures lose their natural color, and therefore are no longer recognizable at one glance. The remaining information about their growth structure is supplied in the herbarium label, which the reader would still have to visualize through the given descriptions.

During the thesis work, the following informations are worth mentioning. Most of the monocot plants can be easily identified even without the flowers and fruits by the characteristic structures, i.e., shape, size and color of the leaves. The leaves of the Caryota cannot be mistaken for another because of its being wedge-shape, like fish-tail. The leaves of Corazon de Maria is very specific, it being heart-shaped with a characteristic pinkish or pale-greenish color in the middle of the blade. Other monocots, especially some of the palm trees, can be identified through the diameter of their trunks. The MacArthur's palm cannot be mistaken

for other palm trees such as Bunga de Jolo, because of its characteristic thin trunk.

This survey of monocot plants revealed that so many monocot plants have been introduced already since the time Merrill first published his "Flora of Manila". Proof of this is the failure of Merrill to document the exixtence of such monocots as Dracaena, Philodendron, Actinophloeus in his book.

The study also showed that even at present, many monocots have been recently introduced that even the expert taxonomist at the National Museum have failed to identify them due to lack of documentation, which is precisely the very reason why some of the plants in the text are listed merely as _____sp., such as Pandanus sp.

The study also proved that some of the nomenclatures listed in the Merrill's "Flora of Manila" are already obsolete. Evidence that can be cited are the following: In "Flora of Manila", the grass family was listed as Graminaceae, whereas it is now officially recognized as Poaceae. In the same book, the nomenclature of Bunga de Jolo was documented as Normanbya merrilli. Today, this genus of scientific name has undergone two changes, the first was Adoneida, and now it is officially known as Veitcha merrilli. Merrill also listed Bangka-bangkaan as Rhoeo discolor, but now the official nomenclature is Rhoeo spathacea . So what I

would like to point out here is that it is not advisable for the teachers and students of plant taxonomy to solely rely on Merrill's "Flora of Manila" as reference.

CONCLUSION

The monocot of the whole U.P. Manila campus has a total number of 11 families, 44 genera and 54 species. The greateset number of monocot population belong to the Family Poaceae., and the least belong to the Families Musaceea; Marantaceae; and Strelitziaceae.

RECOMMENDATION

As an offshoot of this thesis, I would like suggest to those who are interested, to extend this taxonomic study and include the left side of the PGH compound. Or one can cover the area within the vicinity of the U.P. Manila campus, which can include the Supreme Court, Ministry of Foreign Affairs, Ministry of Justice, Robinson's and Food Plaza, cosidering the prevalence of monocots in these areas which cannot be found in the U.P. Manila campus, such as the spiderlily which can be found in the Ministry of Foreign Affairs.

Another recommendation is to make a taxonomic survey of the gymnosperms, such as the ferns.

List of Figures

Family Amaryllidaceae

Agave americana

(Fig. 1)

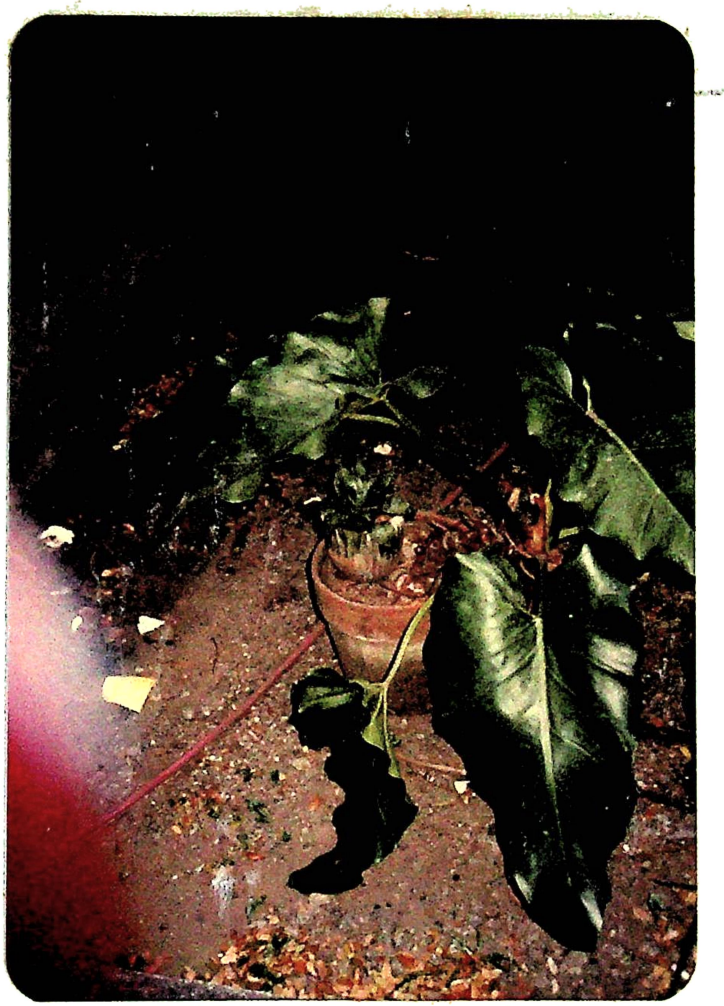
Eurycles amboinensis

(Fig. 2)

Family Areceae

Dieffenbachia picta

(Fig. 3)



Philodendron hastatum

(Fig. 4)

Philodendron selloum

(Fig. 5)

a. Philodendron sp.

b. Dieffenbachia picta

c. Diffenbachia picta var. Rud. Roerhs

(Fig. 6)

Actinophloeus macarthurii

(Fig. 7)

Chrysalidocarpus lutescens

(Fig. 8)

Cocos mucifera

'Dwarf Golden Malay'

(Fig. 9)

Cyrtostachis lakka

(Fig. 10)

Licuala grandis

(Fig. 11)

Livistonia rotundifolia

(Fig. 12)

Rhapis excelsa

(Fig. 13)

Veitchia merrillii
(Christmas Palm)

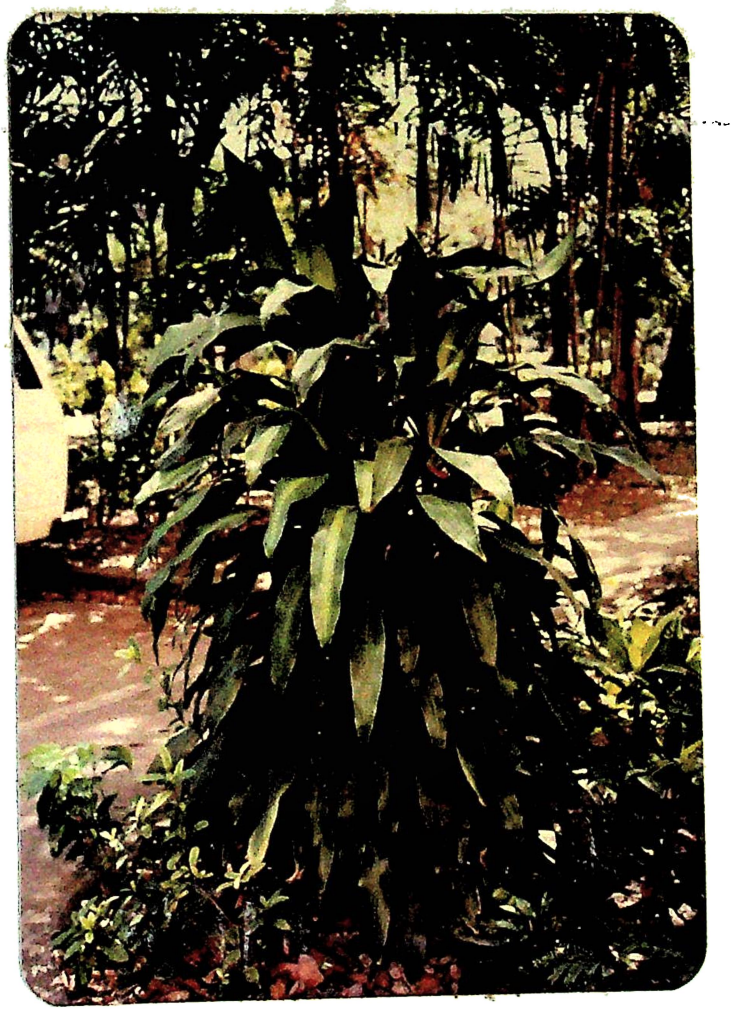
(Fig. 14)

Veitcha merrillii

(Manila Palm)

Cordyline fruticosa

(Fig. 16)



Dracaena fragrans var. Lindenii Hort

(Fig. 17)

Yucca sp

(Fig. 18)

Musa paradisiaca

(Fig. 19)

Pandanus sp.

(Fig. 20)

Pandanus tectorius

(Fig. 21)

Family Strelitziaceae

Heliconia lathispata

(Fig.22)

B I B L I O G R A P H Y

Backer, C.A. and Bakhuizer van den Brink, R.C. Jr., Flora of Java. vol. III, The Netherlands: Wolters- Noordhoff, N.V.-Gronigan, 1968

Graf, Alfred Byrd. Exotica. series 3, 7th ed., New Jersey: Roehrs Company Inc., February, 1974.

Mendoza, Demetrio R., "Preparation of Herbarium Specimens", Philippine Herbarium Manual. Manila: Museum Publication, 1967

Merrill, Elmer D., Flora of Manila, Manila: Bureau Printing, 1912. (reprint 1984, Bookmark, Inc.)

Steiner, Mona LIsa, Ph. D., Philippine Ornamental Plants, 2nd ed. Manila: Carmelo and Bauermmann, Inc. 1960

Villee, Claude A., Biology, 6th ed., Philadelphia and London: W.B. Saunders Company, 1972

Funk and Wagnalls Comprehensive Standard International Dictionary, Bicentennial ed., Chicago: J. G. Ferguson Publishing Company, 1973.

Funk and Wagnalls New Encyclopedia, vol. 16, New York: Funk and Wagnalls, Inc., 1976, p. 405

Rubite, Rosario R., Lecture Notes on Botany 109

APPENDIX A

Index to Botanical Terms

achene- A small, dry, indehiscent pericarp containing one seed.

adnation- United or growing together.

anther- The pollen-bearing part of the stamen.

anthesis- The time or process of expansion in a flower.

awn- A bristle-like appendage of certain grasses.

berry- A simple fruit with seeds in a juicy pulp.

bifid- doubly cleft; forked.

bract- A modified leaf in flower cluster or subtending a flower.

bracteoles- A diminutive bract.

budding- A mode of asexual reproduction.

bulb- A leaf bud comprised of a cluster of thickened, scale-like leaves, growing usually underground and sending forth roots from the lower face.

bulbil- An aerial or deciduous, fleshy leaf bud, capable of developing a new individual.

calyx- A group of sepals.

capitate- Head-shape.

capsule- A dry, dehiscent seed vessel made up of more than one carpel.

carpel- A small pistil.

cataphyll- A rudimentary or scale-like leaf which forms the covering of a bud.

cauline- Pertaining to, or growing in a stem.

coriaceous- Of rough, leathery texture.

corms- A bulb-like, solid, fleshy enlargement, usually of the underground stem in plants.

corolla- The petals of the flower collectively.

corona- A crown-like process at the top of the tube of the corolla.

culm- The jointed, usually hallow, stem or straw of grasses.

cusp- A sharp, stiff point.

deciduous- Falling off or shed at maturity or at specific seasons.

decumbent- Prostrate ; growing along the ground.

dehiscent- To burst open.

denticulate- Finely dentate or toothed.

epigynous- Upon the ovary.

epiphytic- A plant growing non parasitically upon another.

excurrent- Running out.

fascicle- A cluster or bundle which proceed from a common point.

flaccid- Lacking firmness or elasticity.

fronds- A leaf-like expansion in which the functions of stem and leaf are not fully differentiated.

geniculate- Bent abruptly.

glabrous- Having a smooth surface.

glaucous- Covered with a bluish- white bloom.

glume- A chaff-like scale on the lowest bracts of a grass spikelet.

hastate- Triangular or halberd-shaped, with the base diverging on each side into an acute lobe.

herb- A seed plant devoid of woody tissue.

hypogynous- Inserted under the pistil.

imbricate- Overlapping with the extremeties or the margin.

inferior- Below some other organ.

inflorescence- Collective name for flowers.

involute- Having the edges rolled inward.

keel- The two anterior petals of a papilionaceous corolla.

laticifer- Latex.

ligule- An appendage at the junction of the petiole and blade in grasses.

midrib- The primary vein, or rib of a leaf, usually running from apex to base.

mmucronate- Having a short, straight point.

nut- A hard, indehiscent, one-seeded pericarp resulting from a compound ovary.

ovary- The portion of the pistil or gynoecium in which the ovules are contained.

panicle- A loose compound flower cluster, produced by irregular branching .

pedicel- The stalk supporting a single flower.

peduncle- The general stalk or support of an inflorescence.

peltate- Attached to the stalk or near the center of the lower surface.

pendent- Hanging loosely.

perianth- The combined calyx and corolla of a flower when so alike as to be indistinguishable.

perigynous- The petals and stamens born to calyx.

petiole- The stalk of a leaf.

pinnate- Having a shape or arrangement of a feather.

procumbent- Lying on the ground.

prostrate- Trailing along the ground.

pubescent- Covered with fine, soft, short hairs.

raceme- A centripetal or indeterminate flower cluster in which the flowers are arranged singly or distinct, nearly equal pedicels at intervals or an elongated common axis.

rachis- The axis of an innflorescence.

rays- One of the pedicels or flower stalks of an umbel.

rhizome- A procumbent or subterranean rootlike stem producing roots from its lower surface.

rootstock- A rhizome.

rostellum- A small, beak-like structure developed from the stigma of an orchid.

scabrid- Somewhat rough.

scape- A long, naked peduncle rising from a depressed stem.

sepal- Outer envelop of flowers.

sessile- Attached by its base, without a stalk.

sheathing- A case enclosing a part or organ.

shrub- A woody perennial plannt of low stature, characterized by persistent stems and branches springing fron the base.

spadix- A spike or head of flowers with a fleshy axis, usually enclosed within a spathe.

spathe- A large bract or pair of bracts sheathing a flower cluster.

spike- A flower cluster in which there are numerous flowers arranged closely on an elongated common axis.

stamen- The pollen-bearing floral organ of a flower consisting of two parts, filament or support, and the anther.

staminode- An abortive or sterile stamen.

sucker- A shoot or branch originating in a subterranean portion of the stem.

superior- All floral envelopes are inserted below it.

thallus- A plant body without true root, stem or leaf.

truncate- Appearing as though cut or broken squarely off.

tuber- A short, thickened portion of an underground stem.

tubercle- A minute swelling on the roots of leguminous plants.

tuft- A collection or bunch of small, flexible parts.

umbel- An indeterminate inflorescence in which a number of nearly equal pedicels radiate from a small area at the top of a very short axis, giving an umbrella-like appearance.

variegated- Having diverse colors.

xerophytic- Plant adapted to dry conditions of air and soil.

APPENDIX B

SAMPLE OF HERBARIUM LABEL

Flora of UP Manila

Distributed from the UP College of Arts and Sciences Herbarium

Padre Faura, Manila

Family _____ UPCASH No. _____
Scientific Name _____
Local Name _____
Collector _____
Date of Collection _____
Place of Collection _____
Habitat _____
Habitat Description _____

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Chiang Kai-Shek College	1979 - 83