

Brasil 372 *120*

Perma Hide®

MEMO BOOK

NO. M46

100 SHEETS

29¢

NEW YORK LOOSE LEAF CORP.



B
2179

2185

~~2188~~ Mesopotamia

2201

2206

2207

2227

2239

2249

2253

id.

San

Schmants

2224

2224

cheo

has

↑
These are
missing
HK

2179 Jan Idhamanthus

2185 2224

~~2188~~ Messyly

2201

2206

2207 - [2224]
2227
2239

2249 Cheo

2253 has

↑
These are
missing
HK

2208 - only 1 label
in pack of

~~2208~~ 3

2224

is in the lab.

Var x ramificae en muchos repit.

O. latifolia Coll. ~~Ed~~ de
Lanitas, Pinar del Rio, 1971

Cryptochloa pinnivoides -

Panamá, Santa Rita -

R. L. Dressler 4037 - June 26, 71

(an epiphytic mycorrhizal
parasitism, at least, from
a terminal node of a
strobilus axis -

March 21. Ubatuba (1)

2181 *Pissia* ^{syphitica} soil # 14 (4 vials)

2182 *Parane lanceolata* (3 vials)
soil 13

March 22 soil 15.

2183 - *Roddia portoi* 5 vials

2184 - *Eremite* 4 vials soil 16

2185 - *Schmutter* - 1 vial

Termoneta ports die microlite,

21, ports die zipinile, 22

minimum 72°F

maximum 78°F (plant

level - (die ant: 68°F, 78

Soil Temp: 78 -

March 23 Ubatuba

Temp. ^(21.22) Maxim. 78°F

min. ~~66~~ 66°F

soil Temp. 77°F at 10 a.m.

Roddia portoi (bl negro) 5 vials

2186 *Roddia* type. "

alt. S. n. m. 90° E. m.

soil sample # 17

note a Higgins 60

Município Aurelino Leal
Fazenda Santa Maria
Francisco Aragão de Lima
12 Km SW de Ubatuba
going to lake to Banco -

2187

Radiolys monophyle
abundantissime
(pale color) fl. + negro
soil sample # 18
alt. s. m. m. - 100 m -
soil temp = 76°F.

FRA, 3:1, Bag. 3 vials

Fazenda Santa Luzia
Proprietário Maria Rosa
Rocha

Município - Aurelino Leal -
4 1/2 km de Bancolectral

Olyza filiformis v. *capillata*

Rod. Lamacau - Lananeira

3-30 Km L de Lamacau

Plantação de cacau

Belém et Apurimac
1389.

28-7-1965

Pimenta leptophylla.

Bib. 2047. (18-1-68)

Sto Luz Cabralia, km 5 canal
de Sto Luz Cabralia.

Pimenta 1706 - Pimenta 4-11-71

Rod. Sto Luz - Camarões,
Canal do Bandeira.

Plantação de cacau e copim
Mato litorâneo.

Ervete.

Bib. 2054 (1968)

Camacan, km 19 rod. Camo-
can para Itaimbé.

Olyra ranarissima

S. bay Bahralie - Reserva
biologica do pau-brasil

T. Santos 1914 - 15-9-71
det.

Det.

Mina x Oliveira, Mata
costeira - Montanhas de
piassara

Pinho 1552 6-8-71

Oliveira, estrada ao Marim
Mata do bururupé, próxima
ao litoral, solo arenoso

19 Aug. 1870 - T. Santos 1020

Rollo 43

ultimo usado

comenzar con

44

Rollo 44: Cerro Jefe - y parte
Santa Rita (Tinto, 2-3 fotos de ser)

Rollo 45: Santa Rita: bajote-
chiquito, bajote. Dondeni, Paname
en flor -

1st *Techmanthus* sp. 2188 (2)
at 250 m. s. m. = solo FAA -

March 24, 1965
2189 ~~2188~~

2nd *Bambusa* sp.

300 m. s. m.

erectus herts 44 m.

rigid leaves.

6 culms x mbs, one principal
joints for shape of the culm
soil sample 19

FAA, roots, e.p. & root

stalks, joints & stage, bgs

Photo: color & b & w

Ba. Municip. de Ilheus, Distrito
Pedra Ancimada, Serra
Temerosa.

check.

Merontechys -

March 25, 1972

2190

Bo, Mung. Mungu, Distrito
Pedra Queimada - Foz de
Pancade Formosa.

Bambo -

Alt. s. n. m. i. 120 m

seeds clinging $\pm$ up to
12-15 m - culms

hollow - sheath
deciduous, with black

reflexed and very soon
falling. many branches

(6)? by node -

soil sample #20

FAA ① no photo, rain
nat.

2 roller color - emerald (3rd em
6 roller Trix emerald (4 at 9) - emerald

#3 recorded in Haduna

2 roller (1, 2) in Rio con Tom -

Total emerald Rio: 8 rollers - WMM

Brazil 1972

Bahia: March 5-

Cleo E. Colterón 199

March 8, 1972

6 miles, Bahia, 12°05'30" N, 46°

14°05'30" W, 100 m

14°05'30" W, 100 m

14°05'30" W, 100 m

14°05'30" W, 100 m

14°05'30" W, 100 m

14°05'30" W, 100 m

14°05'30" W, 100 m

14°05'30" W, 100 m

Feb. 2003 (1968)

Chusquea bambusacea (Raddi) Hack.

Chusquea bambusacea (Raddi) Hack.

Chusquea bambusacea (Raddi) Hack.

Chusquea bambusacea (Raddi) Hack.

Chusquea bambusacea (Raddi) Hack.

Chusquea bambusacea (Raddi) Hack.

Chusquea bambusacea (Raddi) Hack.

lat. $14^{\circ}50'20''$ lat. South
long. $39^{\circ}20'15''$ long. West

Bahia - ~~Homic~~. Ferrados
Fazenda Aberte Grande, 14 Km
from Itabuna. (W)

Diandryos? *oliganta*

2159

March 8, 1972

Brasil, Bahia, Mun. Itabuna

Distrito de Ferrados, Fazenda Aberte Grande,
14 Km W of Itabuna
alt. 100 m.

14.15 hrs, Atm. temp.:

Wet : 78°F

Dry : 83°F

Humidity 78%

soil temp. 77°F .

soil sample n°1 = taken at
0-20 cm, from 3 spots

Flotops: ± 10 from roll # 3

and: from roll n° 4. B & W-

FRA: leaves, inflorescences, shoot
apex, seedlings; some leaves
with the white spots (probably
a disease)

Bouquet: inflores, & flowers

3:1: inflores. + staps.

4 vials

Photo: color, Ekta, roll # 1? begining of the

In secondary forest with
some coral plants.

^{very} small plants in dense
clumps near trail.
(Looks like a little *Calamagrostis*)

It does not look like an
Olyra because the growth habit
is very dense and compact.

♂ & ♀: with plumes and
both sexes, symmetrical normal development
with 3 stamens, exserted.

Mostly all of the infl. in separate
short stout cores by a single
leaf blade.

Leaves with white spot, probably a
disease. Many seedlings were found
(seen) within the clumps.

alt. s. n. max 100 m.

^{teck-}
Diadelphe? sp. nov. 2160

at 3.50 p.m.

Wet bulb Temp: ~~77~~° F 80

Dry bulb Temp: ~~80~~° F 85

% Rel. Humidity: 82% ~~77~~

Soil Temp.: 77° F (at 4.30)

Soil sample: n° 2: taken

from 2 places, at 0-20 cm.

Photog: roll # 4 ^{bl & w.}

with green filter, no tripod (good
light).

~~1 vial: seedlings~~

FAA: 1 frasco soil: leaves, inflores.
with attached leaves

3:1: 1 inflores.

~~2 vials~~ 2

Same area, but in darker
places - small clumps
scattered in darker places,
usually around trees.
Plants much larger than

the first collected but with
the same type of inflorescence.
Few with flowers.

Diandrolips cf. (*Diandrolips*)

March 1972 2161

Diandrolips? *prode*? (small
clim near normal plants.)

no fixed material

Photo: color, Ektachrome roll # 1?

~~several shots, some with *Diand-*
rolips *clim* etc.~~

rel: 14 1/2

the: (mid 15) 14

green (11) 13.1

yellow (mid 13.2) = 13.1

light green (mid 13.2) = 13.1

dark green (mid 13.2) = 13.1

dark green (mid 13.2) = 13.1

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K 2162
Streptochaeta spicata

no fixed material

seen but not collected:
Pharus (large plant),
Radiolysa monophylla.

Dian diolysa sp. (chipente)

March 10, 1972 2163
M. de ^{Mun. Itabuna} ~~Itabuna~~ Ferrás
Fazenda Abete Grande, 14 km W
of Itabuna

Not far from where we collected
Dian diolysa - first time

light: at 12.45 p.m.

without filter: 15, +2 points

red: 14 1/2

blue: (without 15) 14

green (11 ~~15.1~~) ~~12.3~~ 14.1

yellow (without 13, 2) = 13.1

light changing rapidly due to
big clouds.

Soil temperature:

Atmospheric press.: 753

Alt. s. n. m.: 110 m.

Temperat. at 1 p.m.

Wet bulb ~~83~~ 81

Dry bulb 90° F

% Relat. Humidity ~~70~~ 70%

no fixed material.

2164 - *Diad. pule*
2165 *R. polydora*

In dark places, ~~under~~
under taller vegetation
Another species of *Diandolya*
the large one (ebb 2160)
growing nearby - Here this
lost *Diandolya*
was much more abundant
than in the first place.

Reddish polydora

11/11/15 1972

On *Bohio* *Bohio* *Bohio*
Bohio *Bohio* *Bohio*

Bohio *Bohio* *Bohio*
A.A.F.

at the edge of the *Bohio*
to very dark, shady place

Bohio *Bohio* *Bohio*
from like, under large

plants on the banks of
the stream.

It seems that the *Bohio*
has a pinkish or red, amber

in the old ones. Female
is like a small *Bohio*

with a smaller adult with
very few *Bohio*.

Why think and *Bohio*
of *Bohio* *Bohio* *Bohio*

~~Not to 18 and 13 (Faintly marked)~~

2164
Diospyros grade.

~~no fruit material~~
FAA: seedlings.

Roddie? *Polypodium* var.

March 13, 1972

Br. Behie, ^{Mun. Habayeh} ~~Mun. Habayeh~~ Ferreda,
Fazenda Aberto Grande

C. b. lottieri 2165

Alt s. m. m. 80 m.

Abundant ^{along} ~~and~~ small ^{the water} ~~near~~ ^{forest} ~~stream~~ ^{place}.

In very dark, shady place.

It grows in small clumps,
fern-like, under larger
plants or on the banks of
the stream.

It seems that the ♂ inflores.
have finished or to; many
empty, old axes. Female
inflores. still blooming
mostly in smaller culms with
very few leaves.

Very thick and long roots

soil temp. 76-77°F.

light int.: at 3.45pm

without: -- 12

yellow: 2°/+°

green: with -- 12

" : 2°/-°

blue: with -- 12

" : 1°/+°

red: between 1 & 2°/

Temp. ± 83

4 trials 6

FAA: 1) leaves, inflores. &

2) ♂ symphoreses, 3) seedlings

Borg: 1 ♀ spl.

3:1: 1) ♂ spl. x 2) root tips

K, MO, NY, P, LE, B, F, G, W

Cardiodyne 2166
Reddydyne monophylla

Frequent in forest, shady,
humid places.

3 vials

FAA (leaves and flowers) B. & 3:1

K, MO

O. totipolia 2167

March 18, 1972

In, Be. Murof & Ilhéus,
Linha Leste do Rio, Fazenda
Santa Rita, Km 4 Proximo
Leste do Rio - Ilhéus.

"Mata". Open forest in
slopes, rather dry soil.
Large plants up to 5m
tall, no branching, large
leaves, few for vine flowers
of 2' or 3' or less

no photo

FAA, B. 3:1

3 vials

3 vials -

Stainia fl. pho?

2168

In open places, along trail. Plant up to 1.50 m or more.

FAA, Borg. 3:1 no photo

2169

Ischnanthus Enemoralis
(Schrad. ex Schultes) A. S. Hitchc.
Along trail in open places
several inflorescences from
most of the nodes.
Plants growing under
other vegetation

no fixed material or photo

~~*Phoradendron* *fifera* FAA? K.~~
~~no herb. in yet -~~

March 14, 1972 K 2170

Brazil, Bahia, Mun. Ilheus.
6 km ^{South} ~~from~~ *Urucuca* → Ilheus.

Phorad. sp. (good)

~~*fifera* var. *aperta* sp. nov.~~
In secondary forest on the
edges around cocoa planta-
tion. ~~Often~~ Frequent in open,
shady places.

FAA: ① leaves, air-dried spl.
1 base of culm.

Borg: branches of inflorescences.

seeds -

no photof.

Soil sample: n° 6

2171 *Pharus chico*

2172 *O. filiformis* & *flaccida*?

2173 *Pharus latifolius* & *ramiflorus*

— main axis with
"end blüte" —

K, MO, NY, P, LE, B

2171

March 15, 1972

Pharus sp. (obtus)

Bs, Ba, Municipio de Ithaca,
6 Km ^{500m} from Arucas.

In secondary forest with
cocoa plantation.

Growing in open places,
shady. Large group of
plants, forming a clump
of about 3.5m long x
2-3m wide. Plants
growing vigorously in
all stages of flowering
seedlings and small plants
around clumps.

Many plants with
main axis of inflorescence
ending in a "terminal
spikelet"; some very large
and well developed.

A few with more than one spikelet or pair of *sphl* developed, 2-3 or more pairs like the rest of the *paracladia*. All of them or to, fixed in FAA in a separate vial, cut below point of ~~the~~ emerging of uppermost *paracladium*. The main axis becomes thinner after the last *paracladium* ~~both~~ like in the normal case of the ferns but ends with the production of a spikelet or pair? Many seedlings seen around plants.

Photo: in color of the group and some plants.

Black & white: the whole group, individual, close up of inflores. and main axis terminated with *sphl*.

FAA: 3 vials: sec. ³ leaves, roots, *sphl* in 7 stages, shoot apex? ³ termination of main axis with *sphl*.

³ seedlings

Borg: *sphl* in 7 stages, 3:1 young *sphl*.

Seeds: abundant

soil: sample # 5

Temp: ± 10 cm: 77°

soil Temp: 76.5° F.

5 vials.

soil sample # 7

3 vials.

Alvimia

2172

BA, Lagoa Encantada
at 271 Km from the
lake and 25 Km from
Uruguaia - Municip. Ilhéus.

Olyra filiformis ? n^o

K, M, O, NY, P, L, E, B, F, G, W, I, S, C, W, I, S

In primary forest,
growing in open, shady
places. Frequent.
Beautiful, delicate plants
with rather weak culms.

Inflorescence several pan-
cladia. Each panicle
ending in a large white
♀ spikelet, several small ♂
spikelets below.

2173

Dipsa sp. (Liliifolia)
Liliifolia.

large clump along trail.
No flowers but instead
the inflorescence proliferates,
Many branches ending in
small repetitive buds.

photographs:

soil sample 9

March 16

2174

Brenthia monothalamia

(Chico)

Município Itacaré, ~~Distrito~~ After time
Fazenda As Almas - 19 Km
SE of Ubatuba

- soil temp: 75°F

Temp: 2-4 p.m. 72°F

Altitude S. m. m. 100/10 m.

Plt: bl. w. a color & base flesh

EAA: 1 (sec) lvs. inf. apicols, taller,
subterranean.

base: flowers apicols,

5:17 inf. apicols

Soil sample: # 9

3 vials

2175 *Brenthia* just - soil 8

2176 *Brenthia* poly-

Brenthia

In shady place, very humid,
near stream, in small
clumps associated with
Brenthia polyphylla.

Plants of ± 40 cm -

Leaves dark green and base
white below. ~~Many~~ Almost
all plants blooming from
the main culm (apicols)

No basal infl. found.

Very long (up to 50-60 cm)
subterranean stem, thin,
white with short sheath
and sometime red or shade
purple color (vine).

Main culm of the plant
purple vine in lower part
($\pm 1/2$ of culm).

Stamens (base of infl.) 0/10

8 vials ← $\begin{matrix} 2 \text{ FAA} \\ 1 \text{ seedling FAA p.} \\ 3 \text{ 3:1} \\ 2 \text{ Boog} \end{matrix}$

2175 →

Eremite ~~and sp.~~ (grande)

Growing in very humid place, near or at edge of stream, sandy and cool place. Very rigorous plants up to 2 m, between rocks, and ~~under logs, plant~~ ^{under logs, plant} blooming well from both apical culm and at the base. The basal inflores. with ~~short~~ short stems (not so long like the other Eremite). Most of them covered ~~at~~ or almost by fallen leaves. The well developed ones emerging from the leaf cover. Plant with light green leaves, basal infl. thick, large and green.

60, Municipio de Itacaré,
Distrito Agreste Fino, Fapasa
Cao do Alentejo - 19 Km S of
Albaitaba

Alt. S. m. m.: 100-110 m

Photo: 5 x with the, color 2 m.

Soil sample # 8

FAA: 3 vial: one with apical infl
& leaves, 2) basal infl., 3) seedling.
Bogged: 2 vial apical & basal infl.
3:1 ^{3 vial} (1) apical; basal infl. (2)

Seedling: collected in FAA. Found
only large plant with "huge"
seed, some smaller, seedling
with small, normal size
fruit.

— long style with 2 short
stipules, papillose.
More than 1 infl (apical) 2-5
seen in some plants

emerging from the apex
and 1 or 2 nodes below.
besides, each one with
two partial inflorescences.
At maturity upper part
of inflorescence (with ♀)
falling.

No extremely large seed
seen on the plant to explain
the large size, like a
cherry, of the seedling.

Those one collected around
large stump guinea guano
tree. Plant extremely

sensitive to light direct light.
We chopped the small tree to
photograph and about 1/2 a
minute the whole plant, the
leaves "re marche tane" rolling
and looking so bad.

~~Reddish~~ polypodioides 3 vials -
~~Stephanium~~

March 17, 1972 2176

bo, Mun. Itacare, Distr. Agreste
Fria, Foz de A. Alencar, 1.9

Km South E of Ubatuba

Alt: 100 m., near 4' at top of

Photo: color & bl. & white

FRA: (1) leaf, infl., voice

breed (1) infl. ♀

3:1: infl. ♂

Soil sample: #10

Very abundant along edge
of river stream, in very
humid and dark place
between rocks.

Form: small clumps
~~seem~~ like ferns.

In some places associated
with *Breynia* and not (*Ulex*)
blooming very well.

Uppermost ♀ of infl. of ♀ infl.
blooming first.

Piresia macrophylla

March 18, 1972

2177

Bo, Munic. Itacaré, 7 km SW of
Itacaré city.

Piresia ~~simplicis~~? *Olyrea*?

In 1° forest, sark, rather
dry, and with a formi-
nant bamboo.

Ground covered by too dense
layers of ~~old~~ old bamboo
leaves. Not many small
herbaceous plant growing.

Collected ~~by~~ herb. ~~in~~.

~~FAA~~ fixed material, not
photograph or soil -

1 vial

descriptions etc. etc. - next time
working - pressed & dried next day

March 18-19, 1972

Be

2178

Be, Munc. Itacaré, 12 km
SW of Itacaré, Munc. of
Itacaré, Rio Jeribucassu

Piresia sp. (foetida?)

rhizophylla

Light at 12 noon
without filter 13

green f. = 12"

yellow = 13"

blue = 12 - 1/2"

red = 12"

(Sky cloudy but not very
sunny)

Alt 5. n. m. 0

Temp., at plant level:

min. = 72°F.

max = 78°F.

Soil temp = 78 (at noon)

Soil sample = # 11 red color.

4 vials -

FPA: 2 vials, one with ^① leaf,
root, sphl, some in flower.
2) long basal flowering shoot
and some large typical
symplocaene.

Box: 2 sphl. and some
whole in flower.

3:1: 6 whole symplocaene
Photo: 6 x W. end of one
roll and about 15 of 2nd
some in this roll with flower

color; ^{roll 2} some in die 18 but
I think strigata by 19: some
of same roll but correct
setting of fr. lvs.

No time for seedlings -

Growing in bamboo along
river, between rocks,
in very humid and dark
places. Very abundant,

growing in small clumps,
in some places, almost
dominant vegetation.
Associated ~~and~~ with ferns,
many growing under the
protection of larger ferns.
Almost all plant with
flowers or fruits?

Most of them with
apical symphyllous
and basal symph. as
well. Basal symph. are
born in separate shoot
with very reduced leaves
and emerging axillary
"there are not underground
shoot" - leaves partially
by fallen leaves.

Many sinflor. seen
with ~~more~~ the two or
more partial inflor.



Partial infl: seems to be
the same type in both
apical and basal ~~shoots~~.

Each ♀ sphal with one
very small ♂ below.
These are deciduous
very rapidly - hard to
find.

Plants variable in ^{size} shape
and position of the ~~leaf~~
leaves in the leaf compartment.
Many leaves in each leaf comp.
sometimes overlapping
each other having the
apex.

~~Many~~ Plant $\pm$ 20-30 cm
many small others, seen
by there were young plant
beautiful plant of light
bright green color sphal of

♀ & ♂ - red, dark wine color -

This creek is in the
area of the bamboo
forest. No *Olyra* seen
in that forest (several stops
and 4 alt.) only a few
Olyra latifolia of poor
shape. and one plant
isolated. 1

March 18, 1972

2179

Lechnanthus Nepenthyllus Hb.
Bo, Mun. Itacaré - 1/2 Km SW
of Itacaré.

In a clear spot along
trail of bamboo forest
only few plants seen.
No fixed material, no
photo.

March 19, 1972

Lechnanthus Nepenthyllus Hb.
Bamboo

Bo, Mun. Itacaré, 10 Km
SW of Itacaré, in dense
forest.

Climbing bamboo, very
abundant all over the
forest for about 10 Km or
more etc.

Slender culms (up to
10-15 m high, ~~then~~ ^{some} ~~resemble~~
as oaks, trees or other
plants, in some places
forming dense mass
of branches and culms.
Culms of about 1-1.5
cm in diameter -
solid but with some
holes in a circle near the
epidermis .

~~Slender~~ Culm sheath persistent
and very thick and hard
at the base; very difficult
to remove - Blade of these
leaves, deciduous, falling
very early even in young
near culms. Blade narrow-
acute and bent downward.

 several branches
from a node
but one seem to
be dominant, larger
and very thick -

Rhizome not removed -
F.A.A.: leaves, culms,
nodes with buds, some
culm sheath young with
blade, shoot apex of
leaf complement, nodes
with small young branches

Photo: 6 a w, none in
1st roll, rest in 2nd roll.

color: no g' algae on
roll #2 (extrajoints?)

Soil sample # 12

Soil temp. = 78°

Air temp. = (lower level
at 3.45 p.m. 74° F. (But
outside very hot) cloudy

Alt. s. m. m. = 100 m.

March 21, 1972

2181

Ba, Municipio Aurelino Leal,
Fazenda Santa Maria, Rodovia
Ubatuba - Lago do Banco,
12 Km SW of Ubatuba.

Piresia symplocice?

the (infruct) calicis

Temperat. (48 hours)

High - 78°F | 78°F

Low - 72°F | 68°F plant
level

Soil temp. 78°F

light: not meas.

Alt. s. m. m. - 90-100 m.

Plots: 6 x w. soil color

FAA: 2 mal: 1 leaf, 1 phl.

2) symplocice of
broad shoot -

Borg: 1 ♀ phl.

3:1: whole partial inflor.

(total: 4 mal)

soil sample: #14
soil sandy, rather loose
and corded by a thick
cores of organic material,
dark color.

Plant common in
secondary forest of cacao
plantation. Old plants
old, ± 60 years old. with
rather tall cacao plants.
Native tree very big -
Open forest, in a
smooth slope with
rocks.

Growing very well in
scattered clumps around
trees, or rocks, some
also in clean places.

Associated with *Rodinia*
^{SP2}
Vitex & *Pariana lanceolata*.

All plants blooming, many
with apical inflorescence
leaves dark green, sheath
looking inflated and
with long pubescence.
Growing in the shady
places not in opening
or near road. Mostly
in the lower part of
the slope
leaf-complement with
few 2-4 leaves.

March 21, 1972

2182

Bo, Muncie. Avelino Real,
Fazenda Santa Maria, Ro-
donia Ubatuba - 12 km S.W.
of Ubatuba.

Panicum laucolote
alt. S. n. m. - 90-100 m.
temp.

High - 78 - 78° F (2 days)

Low - 72 - 68° F

Soil temp: 78°

Soil sample # 13

Fixed material: 3 vials

FAA - leaves, inflores.

Borg. infl.

3:1 - infl.

Photo: same in color

6 x w, most with trifoliate
(8-15).

Not very abundant,
growing in some
spots of the area
usually near rocks.
Associated with *Pilea*
and *Ruellia porteri* -
beautiful, elegant plant
with very long oval
retae forming a ring
around the

Inflores. thin, all terminal
to the culm, no one
plant seen with basal
infl. Plant about 40 cm

March 22, 1972

2183

Brazil, Bahia, Município de
Aurelino Leal, Rodovia
Ubatuba - Lago do Banco,
12 km S.W. of Ubatuba,
Fazenda Santa Maria.
Raddia (pilone)

(The owner of this fazenda
is Mr. Francisco Aragão de
Lima).

Alt: 90-100 m

Temperature (Atm.) (24 hours record)

High: $78^{\circ}\text{F} / 78^{\circ}$ (at plant level)

Low: $72^{\circ}\text{F} / 66^{\circ}$

Soil temp. $78^{\circ}\text{F} / 77^{\circ}\text{F}$ (next day)

Light: not measured.

Soil sample: # 15

Fixed material: 5 trials.

→

FAA: 3 rub: 2) leaves, ♀ flowers

b) symplocaecus (♂ & ♀)

c) seedlings

Borquet: ♀ aphyll. & florescence

3:1: ♂ florescence.

Photo: bl & w = roll #, aerial

of plants, has (the whole association)

close up of ♂ & ♀ aphyllous

In some places associated with

Rododendron monophyllum.

color: roll?

Secondary forest, old

cacao plantation. Open

type of forest with very

big native trees and

cacao plants planted in

between (but not many).

Cacao plant very robust,

they are trees. It is an

old cacao plantation,
probably more than 60
years old.

The place: forest in a
slope with a very smooth
inclination, with big
rocks. Shady and very
humid place. Very rainy
and also very near the
"Rio Las Lentes". I think
this place is in the valley
of the Rio Las Lentes.

Soil rather loose, sandy
with a thick layer of
organic material.

Plant very abundant,
in some places forming
continuous carpet.

The robust plants grow in
large clumps, rather

stiff culms. Plants very
pubescent.

Many female ~~stems~~
inflorescences from
 $\frac{1}{2}$ the plant and
down. Several partial
inflorescences from each
node.

In many places growing
together with *Piveria*
Parsonsia lanceolata.

Podisylva monophylla.

Many seedlings around
parental clumps (Many
fixed in FAA)

March 22, 1972

2184

Baccharis monophylla

Trail, Bahia Marinilla

Cuchilla Real, Pinar

Whitelo - 10 km. So. Camo

12 km. SW of Whitelo

El Santa Maria

alt. 90-100 m. S. side

Temperature (Humid) 7-8°C, wind

W. 18°F - 78°F

Humid 68°F - 72°F

Soil temp.: 78°

Soil sample: #16

Light: not measured

Fixed in FAA: 4

FAA seedlings: 2

6) 100-150 m. N. side

March 22, 1972

2184

Gremites monstrolensis

Brasil, Bahia, Municipio de
Aurelino Leal, Rodovia
Ubatuba - Laje do Banco,
12 Km SW of Ubatuba,
Faz. Santa Maria

alt: 90-100 m. S.M.

Temperature (Atmosf.) 2-4 days record

high 78°F | 78°F

low 68°F | 72°F

Soil temp: 78°

soil sample: # 16

Height: not measured

Fixed material: 4 vials

F.A.A.: seedlings! 2)

b) leaves, ~~stems~~ inflorescences

Bouquet: subterranean infloresc.
3:1: infl.

Photo: bl & w - roll a
plant with long subterra-
nean shoot dug up
but not ~~more~~ moved
later. ~~shown~~? the same,
plant with subterranean
infloresc. and also basal (or w. s. w.)

This hermite is from the same
locality where I collected it
4 years ago for the first
time.

Plant ~~is~~ not very tall, $\pm$
up to 50-60 cm tall in
dark & humid places of
the slope. Inflorescences from
the base of the plant,
the apex of the culm,

and at the end of
the white subterranean
shoot. This infl. are large
like a cherry, and
grow bent towards the
ground! These shoots
are long (we measured
one 1.20 m) and run
parallel to the ground
some rather deep, ± 10 cm.
All of them with
infloresc. at the end
(hard to dig up without
breaking).

Many seedlings found
from both, normal and
cleistogamous seeds.
Seedlings of large cleistoge-
nous seeds larger than
the ones from normal
seeds.

March 22, 1972

2185

Br. de Mun. de Avelino
Leal, Fazenda Santa Maria,
Rd. Maitete - Cape to
Bomco, 12 km SW of
Maitete

Lehmannia nemoralis
(Schrad. ex Schults) A. S. Hitch.
Frequent in the floss
with Rodolia sp.
and the other Olyra
of the area.

FRA: 1 trial
no soil sample, no photo

K, MO

March 23, 1972

2186

Br. Be. Municipio de Aureliano
real, Rodovia. Ubatuba -
Laje do Branco. Fz. Santa
Maria, 12 km SW of Ubatuba

~~Pardalipne~~
Pardalipne monophylla

alt. 90 m. s. m.

soil sample # 17

soil temp 77°F (at 10 cm)

Temp (atm) x 3 days

high: 78° | 78° | 78°

low: 72° | 68° | 66°

Fixed material: 3 vials

Photo: 6 x w only - roll #

Fixed material 3 vials

3:1:

FAA

Long -

Not very abundant in
Parakeba sp. Grows
a little far from the
road, & in the back of
this area, with some
copper plants. Grown
between a lot of Rodolia
of in rather open
place.

K, MO, NY, P, LE, B, F, G, W, ISC

March 23, 1972

Paradiolus 2187
~~*Paradiolus*~~ *monophyllus*

Dr. Bo. Mun. de Aureliano
Leal: 4.5 km North of
Banco Central: Fazenda
Santa Luzia.
(The owner of this fazenda
is Mrs Maria Rocha)

alt: 100 m s.m.m.

soil sample: # 18

soil temp.: 76°F

Fixed material: 3 vials

FAA: leaves, ♀ aphid.

Borg: ♀ aphid

3:1: ♂ aphid

Photo: b & w: roll #

color: ektachrome

at home with good light.

Very abundant in
humid and tall place
of forest. Almost to max.
vegetation. It grows all
over the place. Taller &
most riparian
plant in the darkest
areas.
It grows in large clumps

March 24, 1972

2188

Ichneutes nemoralis

Br. Bc. Municipio ^{yes} de
Hraguac (or others?), Distrito de
Pedra Branca, Serra
Temerosa

Forest in sharp slope of
hill. Shady place between
rocks -

FRA: leaves (sphl?)
no tail - no photo -

Chusquea (sg: inversa)
(Retbergia)

March 24 1989
Bambos

2189

Br. Bahia, Mun. de Ilheus ^{Si}
Distrito Pedra Queimada,
Serra Temerosa.

Alt:

300 m. s. n. m.

soil sample # 19

Fixed material

FRA: roots, shoot apex, buds,
in + stages - leaves

Photo: b & w - roll #

color: Ektachrome roll #
(most of the photo with
tripode)

Rhizome: collected.

Very abundant on top
of the Serra in wetlands

(Lepidoptera: ?) *Myra*
forest, up to 240m ±
the forest was cut and
there is a cacao plantation
beautiful bamboo,
creeping all over the forest
floor, making it difficult
to walk. Culms
rooting at nodes over
the ground for long
distances and then
climbing and leaning
on a tree and starting
branching.



We measured one bamboo
culm from rhizome to
top branch: 44 meters!
Rather small rhizome
Internodes of culm

Merostachys
not very long.
Culm nodal with persistent
sheath. Sheath blade
long triangular not reflexed
buds! below sheath
they do not break through
the sheath. Probably
they are covered by a ~~thin~~ ^{thin} time
from the nodal region
or so.

Buds developing in ~~opposite~~
opposite direction of the
tip of the blade.



One main bud in the center
with smaller ones on the
sides

In bark they develop in
6 branches per node

Grasshopper culms + erect
or leaning on vegetation
± 10 m or more.

This bamboo grows only
on the top of ~~the~~
the mountain; no one
seen below.

No Oryzias seen in this
serra.

Merostachys?

March 25, 1972

2190

Bamboo

Brasil, Bahia, Município de
^{Ilhéus} ~~Uruçuca~~, Distrito Pedra
Ousimale, Fajenda
Pauco de Formosa

Alt. s. n. m. 120 m

Abundant in forest
Beautiful forest, in places
~~cut~~ they have about cutting
trees, in some places all
trees cut.

Bamboo of 12-15 m tall
leaning against trees and
vegetation. Culm below
culm sheath soon
deciduous with blade
reflexed and very soon

falling.

Many branches per node
(6?)

soil sample # 20

FRA - 1 rial with leaves
& buds in # stages
no photo (rain!)

culm with rather thin
walls, easy to break

2 rolls color sent to Rio (3 in
can are)

6 rolls of Tri-x sent (4 to 9)

3 developed at Itatuna (OK!)

2 rolls (1 & 2) in Rio with Tom

Total sent to Rio: 8 rolls

culm forming ± dense,
large slumps, many
new shoots seen.

The first part of the paper is devoted to the study of the
 asymptotic behavior of the solutions of the system (1) as
 $t \rightarrow \infty$. It is shown that the solutions of the system
 (1) tend to zero as $t \rightarrow \infty$ if and only if the matrix
 A is stable.

will hang off + 20
FAD = 1500 m. or less
a bunch in the slope
no photo (rain!)

with water
water, so as to keep
the water from
drying up. The water
is used for irrigation.

6 cells of *Trin* x *Trin* (4 to 9)
+ 3 *Trin* x *Trin* at *Trin* *Trin* *Trin*
2 cells (1 & 2) in *Trin* with the
total *Trin* in *Trin* 8 cells

Basil's, Marissa's, Liana's
and Gabriel's. Please
E-mail me. My e-mail
address is the 4 pages of
Pete's e-mail.

Diavree !! day - horrible -
March 31, 1972

K, MO, NY, P, LE, B, F

2191

Lobelia nivalis (Trin.) Doell

Bahia, Municipio Santa
Cruz Cabralia, Reserva
Biologica ~~Pão~~ ^{Pão} Brasil
(CEPLAC). 16 km W ~~W~~ of
Porto Seguro.

Beautiful 1st forest,
probably untouched
from the time of
the Portuguese.

In shady place, near
the trail.

FAA - leaves, inflorescences.

Pharus sp.

Small plant with narrow
leaves. Inflorescence
with a terminal
spike (small) ending
the main axis. This is
thin, threadlike as in
other *Pharus* but terminate
in a red spike.
Very few plants, only
one collected, the one
blooming.

no soil sample, no FRA,
no photo (Kienee long)

SSP1, 2192

K, MO, NY, P

2193

Phytolacca spicata

soil sample # 21

soil temp. - 77°F

Air temp at 1.30 p.m.

at plant level: 76°F.

Alt. s. n. m. 100 m

soil sample # 21

Photo: color & B & W:-

for rolls # 10 (black & white) - ~~not~~

In rather open place,
along a trail. In shade.

Inflorescences: 2-3 per
axil in flower, forming
the symplocaenae.

Very few plants
with flowers.

~~The~~ Fixed mat: FRA

(incl: leaves, roots, and
spike)

Merostachys?

2194

Bamboo

Climbing bamboo, culms
weak, round thin, branches
up to 6-7 m. Most plants
lower. 3-4 leaves per
node; in ~~small~~ ^{thick} branches
2 ~~per~~ node.

Culms hollow,
culm sheath falling.
culm leaf blade ~~scabrous~~
bent downward.

Leaf large, Olyra type
with oral setae bilobed, white
rigid: collected
Rather small clumps, not dense
FAA: base, bud, & steep
root. Petiole with setae
soil sample: # 22

temp high = 82°F ? not sure

at 5 p.m. = 72°F

soil temp =

alt. S. n. m. = 100 m. S. n. m.

Photo: b & w 18 foto rolls

11

color: harts 23 rolls also,

n° 3

Abundant in the
forest but not forming
dense clumps or being
dominant vegetation

2251X *Merostachys*?

2241X *Attractantha*

1912X TRS *Colantheleia intricata*

Mer-11

22654: *Merostachys*

2264X: ~~Chusquea~~ Rhoiptelea

2266X: ~~Any~~ this keel.

Hulonemia
(*asymmetrica*)

one
✓ brock

(asymmetrica)

22571: Meristachys

2256x: *Atractantha*  (*auriculata*)

2252X: ^v Merotachys

2209X: ~~Colanthele~~ 3 ~~leaves~~
2210X: ~~Colanthele~~ 1 ~~leaves~~

2210X: *Colanthele*
2250X: *Chucue*

41

2258X: *Chrysomelidae* (sg. inversa)
2100X: *Chrysomelidae* (sg. inversa)

21898 *Chusquea* (Sg. inversa)

2180% *Bolan Thelia* *Athrasanthia*
2260% *Athrasanthia* *Athrasanthia*

2260X: ~~Aulonemia~~ cf. *neritodysommata* ^{Nes.} (grandifolia)

2202X: *Mewtachys*
2199X: "

2199^v Merostachys
2229^v Merostachys

2229x Bambusa x (same as 2234)
2230x

2228 *Bambusa*

2233 X *Atractantha* (*longispiculata*)
2232 X^v *Monotheca*

2232X^v Merwatschys -
2232X^v Be...

2234X Bambusa
2234X^v 1/10 2 40

2236^v *Mentha* ~~✓~~
2240^x *Mentha* ~~✓~~

2240X, *Merostictus* - (baby of 2236)
2194X, *Merostictus* & *Merostictus*

21941 *Merostachys* ? *Merostachys*
21901 *Merostachys* ?

21901 New Mexico?

2251 *Merostachys*?
2241 *Atractantha*

1912 XTRS *Colantheleia intermedia*

Mer. 11

temp. high = 82°F . ? not sure

at 5 p.m. = 72°F .

soil temp =

alt. s. n. m. = 100 m. s. n. m.

Photo: b & w 18 foto rolls

11.

color = herts 23 rolls also

n° 3

Abundant in the
forest but not forming
dense clumps or being
dominant vegetation

X: ♂ spl. reduced, only 2 unsect at
the base of ♀ in lateral inflo.

April 1, 1972

Campobello

2195

Alga? capillata

Ba. Mun. ^{Santa Cruz} ~~Agua de Santa Cruz~~
~~Agua de Santa Cruz~~

Cruz Labralis, 8 km North from
the road to Santa Cruz Labralis

Photo Ba W: rollo 11 & 12

19: al final, mezclados con

foto de O. ramosissima

rollo 12: 1-12

colores: roll 3-24-34

soil sample: # 22

FAA = 2, seedlings, 1) leaves, spl.,
roots

Boys: 1 ♀ spl. 3:1 - 1 flower

Soil temp: 77°

Atm. temp = high = 80°F.

alt. s. n. m. = 80 m.

In primary forest, not
very dense type. Near
open places. Forming
clumps of large plants
up to 2 m. high.

Apical inflores. "paniculate"
of ♀ & ♂ in the lower
part of the branches, from
the nodes below, ♀ inflo.
only. Both, terminal
and lateral, sometimes
with 2 paniculate.

No very young terminal
paniculate stems found.
Plants with more light
near the opening of the
forest blooming well. In the darker
areas no flowers.

Long, plumose stigmas out
of the ♀ spl. from the sides.

2196
Ichnanthus aff. chepanophyllus Ny

Same place that *O. capillate*

FAA = 1 leaf, + flowers
Near the edge of forest
in open places but not
direct light.

→ soil relatively dry (not
muddy), sandy, In the
edges of the forest & road is
"white", grayish sand-
Huge terrestrial bromeliads seen
O. capillate growing well
in many places with *O.*
ramosissima

2197 - *Pirenia leptophylla* -
soil #23

K, MO, NY, P, LE, B, F, G, W, ISC, WIS, SI, SP

April 2, 1972

2197

Pirenia leptophylla

Bo. Mun. Santa Cruz la Vieja.
Rd. to Santa Cruz, 8 km from
the road to Cortés delgado

Photo box, roll (12) from 13 -
to 28+.

end of colony with 3- and (1 or 2)
soil sample # 23

living plant = collected

FAA = 1 v. with leaves & flowers.

" 2 v. with seedlings

1 Bong:

1 3:1

Abundant.

About 100 m farther up from
the site of *O. capillate* (probably
the same place or near where I
found it in 1968). Beautiful
primary forest, open type

with sandy soil.

Delicate plant in discrete clumps. ~~to~~ growing in dark places. Base mostly all inflorescence from the base of the plant in a separate shoot, decumbent partially covered by dry leaves. Only a few plants found with inflorescence at the apex of the main culm.

Few clumps exposed to light on ~~the edge of~~ at the edge of trail very ~~short~~ short, almost dwarf, very light green or yellowish and with few flowers or ~~none~~ none.

Spikelets purple red.

Plants growing in the

sharkest areas are the most vigorous, tall and with many inflorescences. It seems that light inhibit growth and flowering of plant. Also leaves turn yellow.

Abundant ~~at~~ ^{along} an area of ± 200 m from the road, deeper in the forest not found.

April 3, 1972 2198

Olyra sandwicensis

Co. Municip. Santa Cruz da
Reserva Biologica Pôrto Brasil
16 km W of Pôrto Seguro

soil temp. 76

soil sample # 23

FAA = lvs, sphs, folicle

and 1 branch-system

bag = poor sph.

3:1 = no

Photo = color 2-3

b + w = rolls 12 for 28-29

to end. (Alpina just con

O. capillata on roll # 11

Growing near stream and

at edge of forest.

~~Blinding~~ Blinding or leaning

over repetitive, very ramified
looks exactly like *O.*

lateralis from Pôrto Seguro
but a much robust plant
most inflores. port.

Bamboo

April 4, 1972

2199

Ba, Mun. Santa Cruz la Vieja,
8 Km W of Pôrto Seguro.

Chusquea? Merostachys

Photo: color, series $\pm$ 6 or 8?

b & w. = rolls 13: 1-22-
finishes 12-3

soil sample # (24 = 20 cm)
25 = 40 cm.

soil temp = 78°F.

Atm. temp. 78°F at 11 a.m.

Alt. s.m. mar = 70 m

Climbing bamboo, very abundant
dominant plant in the forest
under the canopy, up to
15 or more m. tall.

culms below, up to 3 m
in diameter.

Bulmus sheath deciduous,
edges by a long, white
pubescence. *Bulmus* blade
small, narrow, bent down-
wards, falling very soon.
Bulmus, upper, green,
near the base, intermediate
short.

Many branches for node,
borne from a *node*.

Branches over arching and
hanging over other, septa-
tion, with leafy branches
in a puff from the node.
Forming rather small
clumps scattered through
the forest.

New shoots sometime
very tall, ± 10 m
without branching.

ERA = leaves, base of leaves
with petiole. buds in seed
stage - roots.

Rizome: collected, 2,
one from old, thicker
culms, other from
small, thin culms.

April 5, 1972

2200

Creumite

60. Municip. Porto Seguro - ~~Rio~~
~~Forest~~ Parque Nacional
Monte Pascoal.

Alt. s. n. m. = 260 m.

soil sample # 26

soil temp = 78

temp. at $\pm$ 1 p.m. 82° F

F A A = leaves, roots?, basal inf. (2 types)

borq. - basal infl. & subterr. inf.

3:1 = no.

"seeds" = collected!

seedlings = in herbarium (4-2)

one the seed felt

sandy-mulch soil, stone
at $\pm$ 45-cm depth

Plots: 6 x w - wch 13 - 23 + 28

leaving plant collected
Frequent in forest on
gentle slope of the mountain
growing in $\pm$ sand or
finer clumps scattered
throughout the forest.
Most inflores. in separate
shoots $\pm$ short, ascending.
Also many subterranean
shoots with "distopans"
fruit: large, round, white.
In shady places.
Other plants growing with
Creumite: Phoradendron and
one sterile Olycea, unfor-
tunately not collected.

2201 - *Schmantes* FAA (no flower)
2202 bamboo - soil = 27

April 5, 1972

2201

Schmantes pallens (Sw.) Munro & Benthem
br, Bahia, Municipio Porto
Seguro, Parque Nacional de
Monte Pascoal,
Schmantes

Frequent near creek
in the lower part of the
mountain

No photo, no soil
FAA: leaves.

75°F (diaries day !!)

April 6, 1972

Moro tachys 2202

ba, Mun. Porto Seguro, Parque
Nacional Monte Pascoal.
Bamboo (Chusquea?)

In primary forest, not very
high trees, dominant plant,
climbing and leaning against
other plants, trees, and
many palms. Very few
herbaceous plant growing
in the area.

Alt. s.m. area = 210 m = 75°F
soil temp = # 27
soil sample = # 27

FAA = root, leaves, culm,
buds in 7 stages

rhizome: collected. (2)

culms: hollow, fragile, breaks
very easily, about 1-1.5 cm
diam etc at the base of

old canes.

Form not very large clumps. Branches up to 10 mm high.

Many branches from a node, in thin branches very few, 3, 4 or 6; in old or thicker culms many branches forming a wreath like of thin branches with the leaf complement.

Leaf thin, small - culms nodes smooth but in very thin branches or superior - a ("hija")

Culm sheath deciduous, with blade Δ , reflexed, falling very soon.

Soil & areoles - orillous -

Photo: b & w = 2013 and 13

color = 2013.

K, Mo, NY, P

2203

Pharus y. (grade)

In dark places, in small clumps, airtailed.

Very dark green leaves - broad,

Near the trail, where the bamboo grows -

Alt: 210 m.

Soil temp. = 75°F.

FAA = leaves, wet, petiole, few spikes.

3:1 = few root tips.

& no photo

K, MO, NY, P, LE, B, F, G,

2204

Streptocarpus americanus

Monte Peral - (see photo +
keys for el bambos)
no altitud, heavy rain

Soil sample = 28

no temperat.

FAA = 2 vials: a) leaves, sphl.
b) seedlings

Boq. = 1 rich, sphl.

3:1 = few sphl, probably too old.
fruits = collected, few

In a very humid patch of
the forest. In $\pm$ open places.

In the same area *Erwinia*
(narrow leaves) very abundant
Streptocarpus grows in clumps
Many *Heliconia*, ferns. and
no bamboo. All plants
in flower.

soil = very red color,

No photos yet. (rain!)

Next day: in other area of
the park at 80 m. S.N.M.
photo: color. 3 $\pm$

b.v.w. = ± 6 fin roll 13.

soil sample (2nd local. at 80 m.) #29
collected: a few more specimens
with the same number.

In a secondary forest, humid
and dark.

reed: collected.

~~Dead~~ living plant = collected

~~Johnson~~ 2206 - ~~id~~ #31

April 7, 1972

K 2205

Phorras sp. (narrow and long leaves)

soil sample 30.

In 1st forest, near trail in tank pass.

leaves long lanceolate, narrow. In some plant seems to be a "little spl." at the end of the inflo. as termination. Most of the infl. ± young.

Photo: no (Laim)

FAA: leaf, petiole, spl.

Bois: spl. S:1 = no.

Pargue Nae, Monte Parnal
Patch of forest near the entrance
ce. alt: ± 80 m.

red soil

Det. Michael Hies

2206

~~Johnson~~ ~~2206~~ ²²⁰⁶ ~~id~~ #31

Parque Nae, Monte Parnal

In "cave" along shady trail before the good forest.

Soil sample #31

FAA = leaves, spl.

S:1 = spl.

alt. S. m. m. ± 80 m.

2207 →

April 8, 1972

2208

Erasmia monothalamica
 Bo, Rotorua Itamaraju -
 São Paulinho, 4 km W
 of Itamaraju - Município
 Itamaraju

In ~~a~~ secondary forest
 near trail, under other
 plants. Pl. of 30-70 cm
 high.

Narrow, thin leaves, many
 in the leaf-complement.
 No apical infl. found.

Basal infl. with two
 to 20 leaf blades developed

Photo: b. x w = roll 14. for
 1 to 10.

Color: ± 6 end of roll 4
 soil sample: # 32

sent ~~transp.~~ =

Also found "white ball" ~~at~~ ⁱⁿ inter-
 vian at the end of log
 or more or less short white
 shoots. No apical flowers.
~~ABA~~ 2 seedlings of
 "normal seed" collected
 for herbarium.

FRA = Ital - base, infl
 basal "normal" type and
 white ball.

Borg = small infl (normal)

3:1 = " " normal type
 and white ball.

Living plant: collected

Alt: 5 m m. = 120 m

Ichmanthus 2207

In same place? Along trail in
 shady places.

Ichmanthus nemoralis

Wm

Schwarzer 2207 →

Atthrostachys capitata

~~*Isanthelepis*~~

2209

Same place as 2208

K, MO, NY, P, LEB, F, G

Bamboo

In a very disturbed area
rest of forest.

Only few patches of the
Bamboo in good shape

Alt. s. n. m. = 110 m

Culms - solid; in small
branches with a little
hollow in the center.

Climbing, culms $\pm$ 1-15
cm diameters.

3 branches x node

no spines, culms smooth
sheath persistent but blade
deciduous - blades all,

long & downward.

Plants up to 8 m $\pm$ tall -
red soil

→ 2207

seed sample # 33

FAA = leaves, petiole with
base of leaf; roots, culms
culms in 4 stages

3:1 = root tips -

alt. s. n. m. 120 m

Photo: b & w - roll 14 for 11.

color: Kodachrome from 1 to



Athrostachys capitata
Lolanthelie

April 9, 1972 K, MO, NY, P, LE

~~Pennisetum~~? or bamboo 2210
Riviera de Fora, 4 km S of
Itamaraju - Teixeira de Freitas
Município Itamaraju

Near stream in a very
disturbed area. No
flower, probably a small
bamboo or *P. leucostachya*?

No photo.

F.A.A. = leaves, root, petiole

3:1 = root tips

Soil sample # 34 (red color)

Alt. s. m. area = 25 m

Long oval root

K, MO, NY

2211

Pharm. of (food leaves)
Same place. near stream
shady place.

Small plants of the
common tall, food leaves
Pharm.?

no photo and soil.

F.A.A. = leaf, petiole, root
spl.

Borg = spl.

Main axis of infl. in
a normal fashion

"^{sum of}
descript in florescence"

red soil

check specimens. there is
one with terminal
spl.

K 2212

Phoradendron sp. (narrow leaves)

Few plants sides, higher
root. in a very disturbed
area. ~~See~~

Inflores. axis ending in
a terminal spike

few plants, only in
herbarium. no photo was
fixed.

In the same place we
saw many Baccharis (na-
row, thin leaves, medium +
small size, up to 60 ± 0.50 cm

K 2213

O. micrantha

In a very disturbed,
horrible place, with
Scaevola and other
weeds.

Old plants, thick
culms and very
large leaves. Only
old in fl.

FRA = leaves, base of glode
with petiole

K, MO, NY, P

April 9, 1972 2214

60 km. Itamarajá, ca. 4 km
North of Itamarajá city -
Paradiópolis

Paradiópolis monophylla

In a secondary forest,
near the road - shady
place. (Very disturbed, seems
that have been cut very
near, recently.)

Many plant with old
symplocaes, ± 3 partial
infl. each -

FAA - 2 sp. fl., leaves

Borg = 0 "

3:1 = 0 " and 1 root tip -
no photo -

soil sample: # 35

pubescent! W

10, 1972

chirum sp. 2215

a sp. (chiruite)

in. Itapebí - Fazenda

Sentania ± 15 km North
of Itapebí (at ± 3 km of the side of the
stream (beautiful!) with
rocks.

Soil sample 36

FAA - leaves, roots & 1 infl.

Alt. S.M. var. 90-100 m.

At the edge of stream,
rocky and shady. (stream
with small "cabeceiras". They
collect this kind of small
stream "ribeirão".

Very delicate plant
most of them small,
looking like *Piresia*
Goeldii or small *Paraná*

K, MO, NY, P

April 9, 1972 2214

Bo. Mun. Itamarajá, ca. 4 km
North of Itamarajá city -
Paradiolys

Paradiolys monophylla

In a secondary forest,
near the road - shady
place. (Very disturbed, seems
that have been cut very
near, recently.)

Many plant with old
symplocares, ± 3 partial
infl. each -

FRA - 2 sp. fl., leaves

Borg = 0 "

3:1 = 0 " and 1 root tip -
no photo -

soil sample: # 35

young & pubescent! W

April 10, 1972

Streptocarpus sp. 2215

Raddia sp. (shrub)

Bo. Mun. Itapebí - Fazenda

Bo. Ventania ± 15 km North
of Itapebí (at ± 3 km of the side of the
stream (beautiful!) with
rocks.

Soil sample 36

FRA - leaves, roots & 1 infl.

Alt. S.M. var. 90-100 m +

At the edge of stream,
rocky and shady. (stream
with small "cabeceiras". They
collect this kind of small
stream "ribeirão"

Very delicate plant
most of them small,
looking like *Pieris*
Goeldii or small *Paraná*

2216 - *Roddia bracteata* (soil 37)

2217 " *stipit densa*

2218 - *boix lacunosa hirta*

FAA 1 ♀ inf, leaves, roots

2217 - *Rodd. sp.* - FAA leaves,

18 = *boix* FAA } soil

Lycopodium. Most of the plant stem, but probably for some days ago, no rain in many days.

Few ♀ with seen, spk. very small.

Grows with ferns, at the edge of the water, on the rocks, (seems to be very little soil there).

FAA: leaves, roots & 1 ♀ inf. no bog. no 3:1

~~soil sample~~: Photo: b & w. end (± 10) of roll 14 - no color.

2216
Roddia bracteata?

Same place, not far from the *R. bracteata* site.

In a little higher place, on top of rocky, big rocky masses.

Abundant, forming a cover. (Very dry season, soil dry & hard)

Plants looking bad, "musty". Few with flowers, most of them old.

Leaves thin, glaucous or little pubescent under the blade.

Many plants, rooting at the nodes, like stolons.

Look like the Raddie we
collected in Loresvats on
Tomo.

only no long #311
FAA = leaves, 1 g in fl. root
Photo = no (or 1 at end of root 14)

Soil sample # 37

Very long and thick root
some of them up to 50 cm
long.

In this place, near the Raddie,
we saw one small plant
looking like *Panicum laxum*
ta, small plant with
long oval leaves. Podia on top
in green to fern leaves + Panicle.

Podia el ejemplar y con tanta
Raddie for collection and olive
to also

See Mrs Chase 7959 from
Podia, sterile, with long stolons
but # sp.

stolonifera 2217
Raddie? (Olyce *tenax* etc
sterile).

(Same area, near the
other R. position).

In a small patch,
very dark. Plants
more or less 50 cm high.
Leaves short dark
purple (violet) on the
abaxial surface.

Very thick roots,
Raddie type.

Plant, (some of them)
rooting at the nodes.

FAA = leaves & root.
no Photo, no soil.

Boix laevis K 2218
Same place - at the
edge of the stream
~~with~~ in open place
with other weeds.

FAA = leaves, infl.
Boix = infl. & stipe,
no soil, no photo.

The forest along the stream
along cut, 2 km, with
cacao plants, ~~best~~

April 11, 1972 2219

B. B., Municipio Lanús,
Lagoa Dorada, 30 km W^E of
Camocim, Rd. Lanús -
Lanús.

Diandrya (frank)
In open forest, old ~~2nd~~
secondary forest, not far
from the "lagoa" - ± 200 m.
Abundant, ~~in patches~~
forming small clumps,
rather dense.

Variable in size, usually
the smallest plants in
exposed, open places, trail,
etc. Light green leaves, "entire"
The ~~most~~ plants flowering
in the shade looking
beautiful, tall and
blooming but flowers in
very few plants, probably

because no rain in
many days, soil very dry.
Most of the plants with
white-gray spots, like
fungus infection.

Inflorences, most of
them in short-one-leaf
culms, hidden under
the blade in a *Hebe*-
tyo fashion. But
frequent also inflores.

~~the~~ terminal on the
main culm. Infl. small
severe, compact. & spl.
as the large (like *Dioscorea*
from Ferrieda.)

That forest was cut
here and there to plant
cocoa plant, many years
ago but later abandoned.
Now looks like a

1st forest, and forest weeds
seen; open, low type of
forest, with more or less
thin trees and some
big, very thick trees.

Alt 3. m. msl. = 100 m.

Soil = ~~dry~~ temp = 77°F

Temp at 1 p. m. = 80°F

FAA = less, few inflores.

Boq = few inflores.

Photo: b & w only roll 15 from

1 to 15 - most of them with

tripode ² ~~at~~ 8' x 15' A few

without " on the trail with sun.

Soil sample: 38.

some place, but a little farther

2220

Crinites grande

In a disturbed area
near the edge of the
forest, ^(other parts of the forest) in shady
places under other plants.

Tall, vigorous plant
with large leaf blades
erect on the adaxial
surface. Many parts
with apical inf.
Some with the two,
probably from the two
upper nodes of the culm.
broad inf. of the two types
the normal superficial
and the subterranean
one. Some seedlings
seen and collected in FRA.
large seedlings from subterr.
seeds.

Plant tall, 1.20 - 1.50 m
that with thick culms.

In One apical inf I think
I saw the tip of a thick
raquilla or inflorescence.
upright. It was fixed
in the FRA vial.

FRA: 2 vials: a) leaf inflorescence.

Apical & basal x rubber.

b) seedling

Bouquet: broad inf.

3:1 = apical inf. (total?)

Soil sample 39, sandy
soil.

Photo: b & w. only few of root
15. horte 17

To prepare a sequence for my birds.
Le apus transparente, apul 7
con penicilos, volúmenes en
el fondo, se ven ramitas como
vial apul eternas hiriendo

Dicen que en la zona, en rios
en la montaña, existe una
pequeña extracción, dicen
que está a 20 km de la
fidelidad y bastante lejos.

1st day!

April 16

2221

Ba, Municipio Spain

± 3 Km North of Spain?

Panicum sp

Side road grass. Very
abundant. all over Bahia
Large plants 130 - 160 cm +
collected only few specimens
for herbarium, young.

FAA = in flower - leaves
long = "

2 vials

União

2222

Diandrobysa grande

Bo. Mun. Ibirataia, Foz de
Boa União; 20 km North of
Ipiau.

Photo: b & w roll 15 from
18-31

Color: Kodachrome roll #
506 on flash.

FAA (2nd) 2) leaves, base of leaf
with petiole, one shoot apex
in proscena.

b) seedlings

Bois: infloresc.

3:1 infloresc.

Timing plant collected.

seeds: one cup with
mature ♀.

soil sample # 40

4 vials

Alt. 3 m, max. 175 mm

Soil temp = 76°F

Air temp = high in the day 76°F
at 4.15 pm 72°F

In a 2nd forest, under
cocoa plantation.

Smooth slope, shady
with many Pteridophytes.
Very open type of formation
with tall fruit trees and tall
cocoa trees.

Scattered all over the place
but not forming carpet.

± Variable in size, two growing
in same place, taller. Some
culms with ~~just~~ leaf comple-
ment of many leaves, decreasing
in size from the tip of the
culm downward. Other culms
with larger leaves, fewer in
number.

Most of the inflorescence very short,
some very little culms with
one blade. The infl. is always
hidden under the blade in a
Monocotyle fashion. These fertile
culms sometimes covered by
dry leaves; some of them are
in decumbent position.

 Very few infl. seen at the
top of the main culm,
most of them old, without spkls. ♂
spkls seen to mature first and
fall very soon. Abscission of the
spkls, below the glume, the complete
spkls falls. ♂ spkls with 3 stigmas
and (rare) glumes.

April 17, 1972

K, M, W, Y, P, L, E, B, F, G, W, I, S, C, W, I, S

2223
Obrya (caudata) Poell. rel aff.

soil sample # 41

Be, Mun de Ibirataia,
Rd. Be. 2, a 7 km North
of Ibirataia Fazenda
Santo Antonio.

+ Small nest of forest at the
edge of a "córrego". (It is
a very small stream,
probably accumulative of water
in a low, ~~lower~~ depression.
Near the edge of the forest
in open or more or less open
places. Huge plants in
large clumps forming a
big mass, the plants tall,
robust, up to 2.50 m.
4 m

2224 - Arberia. soil 42

2225 Paspalum strigosum - soil

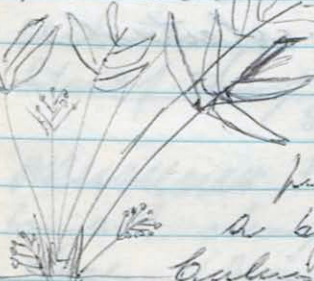
2226 Pipturus soil 43

Culms with a few leaves
at the top like a fan.
Large blades, hard and
rigid. Leaves along culm
with small or reduced
blades. Very few plants
with flowers and those old.
Just a panicle (large)
growing directly from
the base of the culm.
Some without leaves (young)
Variable in height, some
short (20-30 cm) others up
to 1.20 m. Some old
flowering culms with the
inflection of 2° and 3° partial
infl. In one plant the
infl. culm ~~had~~ few
leaves with small blades.
Some infl. a little smaller
and rising short at

the base of the culm, with
a very short axis.

Autostichum pitted?

Most of the plants in
the area dying or in bad
shape, with leaves
covered by fungus or other
disease.



Dark green
leaves, a little
soft, but not
pubescent, (like
a big bamboo leaf)
Culms: hollow.

FAA: leaves, base of sheath
with petiole, a few of infl.,
partially old. 2 vols

Borg: few of infl.

Soil sample: # 41

Alt. 1. m. m. 170 m.

Soil temp. = 75° F.

Photo: b. & w. roll 15 (per) from
31± - to end of Roll 16. from
1 to 15± (some at the end
of the Arlene's photos. with flash.
Also inst taken with flash.
some small smutches (2 & 5)
flash at 8!

color: no

Living plant: collected.

hermosissime!

2224

Arseria? sp. nov.

Same place B6, Municipio
Ibirataia, Rd. B6. 2, at
7 Km North of Ibirataia city.
Fazenda Santa Antonio.

Alt. s. m. m. 175°

soil temp. 75°

Air temp. 78° F high
83° F

~~Abundant~~ Frequent, in
small clumps, all over the
place. (About 200 m from
the entrance or edge of the
forest. In a little higher
place than O. campiana
dark and humid place
growing in a smooth
slope. A few plant near
the edge of the forest.

under *O. campiana*. All
plants blooming!
Small, delicate plant up
to $\pm$ 30 cm. Blades asym-
trical, almost ^{broader} trisepala
at the base, thin, glabrous.
The plant looks like a
little *Antennaria* because of the broad base,
but the position of the
symplocaene is equal to
in *Roddis* *Antennaria*
symplocaene completely hidden
under the lower complement
in the lower node of the
leaf-complement or in the
plant, from several nodes
of the leaf-complement
but not from the
terminal one.
Symplocaene: like a small

fan, with many partial
infr., each one with
long, well developed
prophylla. Each prophylla
very close to each other, ^{oppressed} so
that the hypophyllum is
very short (like in *Antennaria*).
Flowerence: one large,
delicate, white female
sptal; small, white σ
sptal below.
The production of prophylla
dis seems to be very large
and fast. It can be seen
the last prophyll. with still
young sptal and a new one
arising. σ Antenna
with hairs (no ribs)
seen at the base?
In some places growing
associated with *Pirion*.

In the same area we saw
a few clumps (large and
pretty) of Diandrya
In some of the
anthesis time stages
2, long panicle, erect
from the sides, near
the tip of the anthesis.
Seedlings: cotyled, "bamboo"
type with first completely
developed blade horizontal
broad, asymmetrical at
base.

Photo: b & w: roll 16 ft
± 15 to 31. at very ~~low~~
long exposure, (at 2430 - 3
about impossible to take
photo. (sun but some
clouds, not very bright day)
with tripod at 8 and 40
magnification without filter.

Jan 24

4 miles

color: ~~as~~ si can flash ~~photo~~
Kodachrome next day (per)

FAA: 2 vials: a) leaves, base of
blade with petiole, roots,
one short apex. flowers
and of sp. b) seedlings.

Long: of sp. and some
young flowers.

3:11: young + stage flower.

Soil sample: # 42

~~the~~ living plant: collected

In this patch of forest
grow: O. campianus,
Diandrya (not
collected) and Livisia
fasciosa, Arseria sp. var.
One pretty bamboo (the
same we collected in
near Pedro de Almeida, (not
in the same). Also a big,

pretty Echinos. Plains of
and Streptocarpus (very few)
only one with finants (collected)
and of course, O. tetipolia, at
the edge of forest.
Forest with huge Ficus trees
many palms

2225
Rapanea or brodiaea?
secumbens stuff
Bo, Mun. Thirataria, Rd. 62.
2, at 7 km from Thirataria city.

Very sturdy, many
at side road grass
with other weeds.

Robust plants, up to
1.20 ±

F.A.A. = leaves, inf in 7 stages
Bong = inf
3:1 = infl.
no soil, no photo.

3 vials

Johnston = 2227 *Legume*

April 18, 1972 2226
Piscia sp. rhipisophyes

Ba, Municipio Ibiratama, Rd.
Ba 2, at 7 Km North of
Ibiratama City. Fazenda
Santa Antonia.

Small patch of forest
in a smooth slope at the
edge of a "corrego".

Frequent in ~~the~~ ~~the~~
sandy, ~~and~~ shady places,
but rather open of repeti-
tion. (About 200 m from
the edge of the forest.

Growing in more or less
dense clumps. Beautiful,
plants of bright, ~~light~~
green. About 20-30 cm tall
Plants with a deep compound

terminal ~~infl.~~ ~~infl.~~ ~~infl.~~
well 1/4 - 1/2 ~~infl.~~ ~~infl.~~ ~~infl.~~

of several ~~infl.~~ ~~infl.~~ ~~infl.~~ at
the tip of ~~infl.~~ ~~infl.~~ ~~infl.~~
surface of ~~infl.~~ ~~infl.~~ ~~infl.~~
sheath with long ~~infl.~~ ~~infl.~~ ~~infl.~~
infl. mostly ~~infl.~~ ~~infl.~~ ~~infl.~~
several ~~infl.~~ ~~infl.~~ ~~infl.~~ at the tip of
the ~~infl.~~ ~~infl.~~ ~~infl.~~ Not
many ~~infl.~~ ~~infl.~~ ~~infl.~~
red - pink. 9 or 10 ~~infl.~~ ~~infl.~~ ~~infl.~~
hermaphrodite, 3 ~~infl.~~ ~~infl.~~ ~~infl.~~
and a few ~~infl.~~ ~~infl.~~ ~~infl.~~ with a
long style 1 ~~infl.~~ ~~infl.~~ ~~infl.~~

Alt = 170 m sea level
soil to 75 cm
soil - rather coarse, sandy.
Phot = 6 x 6 in
with plant
infl.

growings
Boq - infl, 4 ~~infl.~~ ~~infl.~~ ~~infl.~~

Johnston, - 2227 *peque*

April 18, 1972. 2226
Perezia sp. *rhizophyllus*

Ba, Municipio Skirataia, Rd.
Ba 2, at 7 km North of
Skirataia City. Fajendas
Santo Antonio.

± Small patch of forest
in a smooth slope at the
edge of a "corrego".

Frequent in ~~the~~ ~~in the~~
Santa, ~~all~~ shady places,
but rather open of repeti-
tion. (About 200 m from
the edge of the forest.

Growing in more or less
dense clumps. Beautiful,
plants of bright, ~~light~~
green. About 20-30 cm tall
Plants with a leaf complement

terminal infl = basal infl.
roll 16 - bract developed!

color Kodachrome with flash -
of several ones. Leaves at
the tip, small. Abscised
surface of blade pubescent.
Sheath with long pubescence.
Infl. mostly basal but
several also at the tip of
the main culm. Not
many flowers? Inflores-
ced - pink. 9 ♂ sph
hermaphrodite, 3 stamens
and a pistil with a
long style & 1 stigma.

Alt = 1700 m s.m. sea
soil temp. 75°

soil = rather loose, sandy

Photo = b & w roll 16 film

color = Kodachrome with flash

F.A.A. = 2 vials, a) leaves, infl.

b) seedlings

Boog - infl,

4 vials

2228 *Da luo* with spine 10 cm / ~~44~~
2229 *Il menseo* (150+ m) 45
19 April

April 20

2230 *Picea* 1

alt. ~~180~~ m - 5 m. m. m.

4 nals (seedling)

Soil 46

living plant.

Soil temp. 75.

max temp. 76°F at 2 p.m.

min temp. 70°F at 8:20 a.m.

7 Km North of Gandin, Fajardo

Picea 2231

Soil 47

Rancho de Fajardo Bon

~~Jose~~ Lopez, 7 Km North
of Gandin

4 nals -

alt. 200 m -

seeds - living plant

3:1 = inflor.

living plant - started -

seeds, - no g. spores -

Soil sample - # 43

same place

2227

Lichnanthes viedalii (Trin) Doll

In shady place near *Picea*

large plants at ± 1.20 m.

Wood, large leaves. Only few

old infl. no flowers.

F.A.A. = leaves -

1 mal

(Bambusa)

April 19, 1972, K, MO, NY, P
Spiny Bamboo 2228
DO, Munich-Gandhi, 2 Km
North of Gandhi City, Rd. Br
101, Faj. Santa Antonio.

In forest and at the
edge of forest with cocon
plantation -
Large, huge bamboo, up to
12 or 15 m. culms
overarching over vegetation
culms thick, 4-7.5 cm
diameters, hollow, but
thick wall, green,
smooth waxes, by wax?
(white dust). Spiny.
One main branch or
spine by node, usually
2 spines at both sides
of node or 2-6

smaller, made, around
the main one.

In 2 branches from
the main, thick culm,
usually the lower ones
the branches, are spiny
and then, at the end
form the leaves.

but - sheath, deciduous,
with very small, short
blade of. with ^{very fine} stiff
black hairs, ~~to like paper!~~
(~~Vegetation~~ - ~~to find~~).

New shoot very thick
not seen branching.

Rhizome thick, colored -
leaf-complement in
branches from thick
culm may, in thin
branches minor.

Large, thick blades

2 nals
FRA = leaf, base of blade
with petiole, roots, culm
Photo: 52 w roll 17
color (2000) black and white
bam = young shoot with
Pinheros I

(Next day, at 7 km N of
Jordin, culm in other
forest much more slender
and beautiful (photo) (p. 14)
Soil sample 44
magenta - collected

Monicaulon
~~Bambusa~~ Taboca capitata

2229

Bamboo (narrow, by base)
same locality

In forest, about 15m
over repetitive.

Culm solitary or short
2 m or less for each
other. (Pithy and thick
with 2 thick stone
internodes from one
culm to another -

Culm + 4.5 cm diameter
below, culm sheath
with black hairs (pinheros
penetration on leaf).

Culm blade large N but
downward - all deciduous.
One main branch, 2 or
more smaller from the
sides - leaf blade

long, narrow

soil temp. - 76°

soil sample = 45

F.A.A. = Levee, Suds -

rigor = isolated

Plots = S & W = roll 17

color = Ectochroma

trial

April 20

2230

Bd, Munic. Wenceslao Jimenez

Ramal La Fay. Bon. Lopez, 7

Km North of Gandhi City, Fay.

Oriental -

Pilea sp. ! hipiophylla

Abundant in open forest.

shady, ± dark place. (Open

forest: easy to walk through)

no "tendrils".

Beautiful plants of about

25-40 cm, light, bright

green. All plants showing

from the base of the clump

and from the tip of

the umbelium.

Leaves smooth-pubescent

on the abaxial side. Sheath

pubescent. The lowest leaves

in the leaf-complement

like P. goeldii, but plants

much more robust.
I saw many plants on 2 or
3 inflores. at the end
of the main culm.

Florescence ± small, compact
red or pink, sometimes
green - one ♂ below the
♀ spikel. but the terminal
♀ spikel has the several ♂ below.
Flowers start to open from
the top to ~~bottom~~ the base.
Seen that ♀ opens first
but it's almost simulta-
neous. At anthesis ♀
~~flowers~~ antherium not open,
stigma exserted only from
the sides of the tip.
♂ spikel hermaphrodite
with the gynoecium; long style
and one long, plumose
stigma. This flower

opens completely at anthesis
and the 3 stamens and
stigma out of the ~~flower~~
antherium. Stamens seem
open and very thin
pollen around.

♂ spikel fall rather
early in more or less
mature florescence only
the ♀ remains.
Usually 2 partial
inflores. from middle
with the first 1/2
basal simple. slender
and branched, bristled
ascending, some almost
over by long leaves, but
usually the end of the
shoot with the flowers
coming out through
the leaves.

Soil: sandy (mix) rather loose, some by "small" dry leaves, but not so much as in bamboo forest or big leaf tree forest. Plants easy to pull - (Never seen so many beautiful *Pennis* with so much inflorescence!) Many plants with the terminal symploecae.

Alt 5.180 m. 3. m. m. m.
soil temp. 75°F

Air temp. high 76°F at 2 p.m.
low 70°F at 8 a.m.

Soil sample: #46

Living plant - collected
seeds = few

FAA - 2 nals = 2) leaves, apical shoot, symploecae, & apical

3) seedlings -

4 nals

Bong: flowers - 7 stages

3:1: flower

Photo: b & w = roll 17? and 18

color: Ektachrome (no film)
all with tripod, few without.
roll = #6?

Seedling: Scantland type
first completely developed
blade, broad lanceolate.

In the same area, a little
before the above we saw a
lot of the spring bamboo and
also the thin leaves and color
test 12 day in garden.

2231

Panicum lanceolatum?
Same place area, but
± 300 or 400 farther, and
a little higher.
alt: 200 m. s. m.

Abundant, in forest
near the edge.
Robust plant, tall,
up to 70 cm; some
smaller growing in
a cut area, exposed
to light. All plants
blooming.
Few leaf or root rot
but in some young,
small plant more.
Infl. large, thin, 2 ♀
spike ending the axis but
separated but a coffer,

long internode from
the rest of the infl.
8 yf. small with 3 very
small stamens. An
anther 2 long, very
thin stipes seen but
I also saw seeds! or
very well mature capsules.
Many young plants and
seedling seen around plants.
Hard to find fruits, infl
brakes and fall capsule
by only remain the base
of the axis ending in a row of
cup. ♀
It doesn't look like
P. lanceolatum & *Abutilon*
This one is much more
robust, and infl much
larger.
All infl. terminal

2° 6' S. alt. - 180

3° " alt - 140

1 mal

smooth and glossy,
outside velvety. Blade
± small, triangular,
deciduous. Culm sheath
very thick, like leather,
shedding branches from a
node. All branches thin,
about same thickness.
More branches in those
juvenile thicker, old culms.
Leaf complement not very
large. ~~Hard~~ Delicate
leaves, long, lanceolate,
narrow blades, thin,
and not pubescent.

Pigoune - very big, colored

FAA = 1 leafy culm, leaves, base
of blade, roots. buds + stems

Soil temp = 74°F (cool day)

In many places of the
forest this bamboo grows

associated with other bamboos
(686.2233) of thin, small
leaves which is flowering.

It grows from 170 m -
to 200 m or more. Abundant.

We saw people (women) cutting
the canes of this bamboo
for making roof bones.

They gather for canes, cut
large culms and take
to the ranches.

~~There~~ One new shoot measured
10 m with no branches
yet.

Atractantha (*longispicula*
new sp.)

Bamboo. (flr.) 2233

Same locality but higher
(on steep, incline slope
of a hill.)

alt. s.m. near 200 m

(Rd. No. 2, it is the old
road between Rio - Sabalito.)
It comes out from the road
Road "Br 101" $\pm$ 10 km north
of Granada to the right
(It is in very good shape!)

Abundant in the forest
in some places growing
with other bamboo (Bk.
2232). Tall $\pm$ 10-12 m
climbing, over other, repet-
cumbent solid, rather thin
and flexible, about 1.5
cm in diameter, forming
 $\pm$ small, not dense

clumps, the culm sheath
persistent or slant,
with blade small, Δ , decid-
uous.

One main, thick branch
from a node, and
several others, thin
from the side.

Culm and branches smooth
pubescent.

Leaf complement of sheath
 $\pm$ small, narrow leaves

It seems it starts blooming
not very seen in flower,

spike long, ~~a~~ narrow
cylindrical, as in bud -

to dense aggregation at
the end of leaf comple-
ment or in young branches
almost from the node

The "bracts" (or glumes)

in the lower part of the
sphl with a reduced
blade developed.

Many sphl were empty
(red & there 3 stems)

Soil sample = 49

rhizome = collected

FRA = large (250cc) rich: leaves
buds & stems, sphenocarpus,
sphl.

bag = large (50cc) rich: sphl.
3:1 = " " " "

Photo = 5 x 7, roll 18 from
1 to 15

color & leptochrome roll 16
no seeds - no seedling collected
in a mesh, late and
rain coming.

3 trials

~~Bambusa~~

Moniocaulon

2234

Bambusa (2° in fls)

Same locality but at lower
alt., about foot hill.

alt. 140 m. s.m. m.

Same Bambusa collected

on April 19 at 2 km North
of Gandhi, i.b.b. 2229

At the edge of forest, in
disturbed area.

One main, thick branch
from node several small
thin one from the side,
culm ± isolated, not
forming clumps - leaves
narrow, long lanceolate
floriferous! long, thick
sphl looking like a
raceme from the side

3 vials

of the main sex of the
leaf complement -
some seem to be empty
few were seen in
anthesis, open with
3 stamens, and 3 sta-
mens out.

Sphul of different sizes,
some small, other
large, about 10 cm or
more long, (7 steps.)

Photo: 6 in only - from
16 to 22 ± roll 18

FAA = large vial (250cc) with
Sphul - (not leaves, and white
small apices, very late, no
light and rain coming)

Bong = 50cc vial sphul

3 il = " " "

no soil no ignore -
collected remains only flowering
leaves -

April 22

2.235

Adus/po

2 vials

Very common road side
glass. Growing all along
the road between garden
and Stuberai.

22.37

Merostachys

April 23, 1972

2236

Bamboo (grass)

60, Munimio Hubera,
Km 43 Rd Gaudin - Hubera
at 21km of Hubera

(There are 62 km between Gaudin & Hubera)

Alt. 300 m.s.n.m.

Plots 6 & 18 from 23
to end

color: Chlorophyll roll #6 from
32 to end -

Abundant throughout the forest
("Him" trees forest). Over 15 m tall or more
in clumps. Culms below
ground, strong, inf. & perenn.
internodes very elongated
22 - 37 inches. Culms
+ 2.5 m segments.
Several strong, thick branches

2 vials

± 6 and more from a node
in a root-like bush
around the node.

Culm sheath very thick,
deciduous, with a blade
bent downward, deciduous
also - leaves large, lanceolate
like *Olyra latifolia*, many
in a leaf complement, 1 pair
or more.

Older branches seem to be cut
first and short in width
by the others.

FRA: 2 vials, 1) leafy in the
bush, 2) succ in the leaves, blades
and petiole with base of blade

Soil sample #50

Soil an illuvial, red-yellow
vignous - collected

April 24, 1972

2237

Odyne ramorissima

Ba, Mun. Camamu, Roraima
para Ipirapitanga, 11 Km
SW of Camamu
alt: 80-90 m - s. m. m.

Field sample #51

col. (day?) soil
living plant - not collected

Frequent in a slope ^{near a laguna} and
edge of trail. in disturbed
area along trail also.

Under fallen a other plant
large, old plant with many
branches, tall and in the
large flatness or a little
superior blocks. young
plant (from seedling) with
a large leaf complement
in a Pirene or Diachrya

position. leaves smooth,
pubescent. Plant, young
young erect, short, later
plant climbing.

Plants up to 1 m or a little
more.

In other spot I found one
infl. at anthesis. Male
spike completely open
with a large gynostemium
with 2 stamens, plumose
exserted.

Hard to find young in flower.
it seems that the flowering
period is very short
and specially the 3 April
fall very soon.

Many paracloas seen
in some young flowers
with the prophylla (new young
tissue "bract")

♂ spk. with the long petiole
in the lower branches of
the acacia.
Seedlings: samaras or
minutule, some seem to
develop a leaf complement
of several leaves immediately;
other the upper one
or two first horizontal
well developed stalks.

Photo: b & w. roll 19 from 1
to 10 (there are a few or seedling
or young plantlets)
color: Ektachrome, roll #7
from 1 to 5.

FAA: 3 vials; 2) leaves, spk.
b) seedlings, c) synanthropes (without
flowers).

Borg: spk.
3:1: ♂ spk.

5 vials

This sp. is frequent
along the forest between
Lachmann - Ipirapitanga
as far as 30 km, but
rare, is very abundant.
Usually grows at edge
of forest or near it,
and also in "toucinha" at
road side.

Pirenia macrophylla

April 25, 1972

2238

Pirenia aff. *symplociae*
(*Chloria grandis*)

Do, Kemp. Nilo Pegonha,

Faz. Bons Retiros 14 km

Worth of Itabera (2.5 km

road) to the right, W of main highway -
alt s.m. was 140 m.

soil temp: 74°

Air temp: high 74° at 3.15

low 72° = -

Photos: 6 x w roll 19 from
11 to 25

color Ektachrome roll 7

from 6 to - 19

soil sample # 52

living plant = collected

F.A.A. = 2 vials, 3 seedlings (many)

6 leaves, inflores. base of black

Bong = infl -

3:1 = "

4 vial

Abundant in shady place
of rather open forest (beam-
tiful forest) mix with
with sand. Two small
clumps scattered all
over, from ca. 200 m
from the edge of the forest.
Tall plants up to 60 cm +
but variable in size,
those growing in
recently cut spot
and along trail small.
In sandy place, protected
for other plant *Pirenia*
genua *serotifolia*, robust,
tall.

Golden culms, sheaths
a little inflated but
not hairy (like the
similar *Pirenia* of
Ubatuba) large glaucous

* stiff, glaucous, striated
surface white-gray-fec.

2239 *Techus*

2240 *Chenopodium* (rel. nitidum) pale
colored on lower surface

2239

Techus the *memoratus*

(Same area of Pine 2238)

Abundant in open
places and along trail
(many in fl. yellow)

Plot up to 1.00 ±
FAA

FAA = leaves, sprigs
no root, no plots

1 inch

Menastachys

2240

Baby bamboo

Near the trail in the
Pirine forest.
Small plant in a
clump looking like
Panicum.

But, further into that
trail we saw later
a plant of the bamboo
in full size. It was the
big bamboo we collected
between Jacali - Itubera.
We also saw that
bamboo in the road
for Lamani going
west.

Four herbaceous species
collected

3.1 = pent root tips

Inal

no photo, no soil

extensive

2 Km North of Gandhi, Mem. Gandhi
Fazenda Santa Antonio

Abon 52 foto Gandhi city - 33 road
62 W from 23

From Valencia up to Br 101
Driving now stop, $\pm$ fast. it took
55 minutes.

Lucio c

JUNE CALDERON

Jorge Grossman

Ass. Liberman

Ref 2 Inf.

DU 1-8259

photographs
roll 3, 4

Jorge Grossmann

Ass. Liberman

Ref 2 Inf.

DJ 1-8259

1725 Ist.

Off. of Regional Devel.

Cartographic Sect.

Lawrence Fahey

Tel. DU 1-8477 Premier Bldg. 706 D.

^{photographs}
D. fig - roll 3, 4

D. 2219 - 16

D 2222 16

Pirene infl- 9

" leptophylla

13, 22 (68
8)

" ~~Itasca~~ (2178)

7-8-

" ~~Itasca~~ (2226)
Itasca

17

" 2230 -

18, 19

" ~~frank~~ 2238

21

Evansia drico - 2174

6-7

" ~~grate~~ 2175

6-7

" Abentoto 2184

10-

" M. Pascal 2200

14-

" Itasca 2208

15-

" ~~grate~~ 2220

16-

2 km North of Garduño, Rd Br 101
Fazenda Santa Antonio, Mm. Garduño

Motor 32. to Garduño city - 33 road
to W from 23

From Valença up to Br 101
Driving now stops, ± fast. it took
55 minutes.

Lucio c

JUNE CALDERON

petrophagia