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Collection and Field Note Book

No. 22

(Oct. 27, 1947 -- June 10, 1948)

(2886) --- (2872)

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al consulado americano mas cerca  
c/ E. P. Killip  
Smithsonian Institution, Washington, D.C.

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Collection and Field Note Book

No. 22

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Nos. 28869 - 29472



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1947 Peru

Oct. 27 - Rio Yuroyacu runs from Fundo Linchona eastward, winding thru the Cordillera azul in a deep canyon, finally emerging into the Pampa de Sachamanto through the spectacular gorge called El Boqueron de Padreabad, after the priest who, many years ago, traversing this wilderness on foot, recorded the existence of this gorge, saying that this river

... the Rio Ucayali ... lines then, ... marks were ... ed, it being ... only believed ... river joined ... allaga. On the ... of his report, ... highway was built, a party ... years searched ... days before ... the Boqueron, ... which the ... road was then built.

180 m.  
 Miraflores 8° 25' S 72° 25' W  
 25 km. E & E. Puc.  
 10 km. S.E. 8° 25' S 72° 25' W

Post. Canal Petilla. D. Forest

Loc. 9° 20' S 72° 40' W  
 Aqueduct 8° 35' S 74° 30' W  
 DIR. F. R. ROSMERTZ  
 BOTANICO

Puco.

Coronel Portillo D. Loreto

Puco.  $8^{\circ} 20' S$   $71^{\circ} 40' W$ .

Aguaaytia  $8^{\circ} 35' S$   $71^{\circ} 30' W$

DR. F. R. FOSBERG

BOTANICO

Minaplaes  $8^{\circ} 25' S$   $71^{\circ} 25' W$

25 km. S. E. Puco.

10 km. S. E.  $8^{\circ} 25' S$   $71^{\circ} 25' W$

180 m.

Alberto Aitken

---

Ing. Reynaldo Crespo

Dir. Inst. Técnico Químico  
Industrial

Yaguajay



1947 Peru

1

Oct. 27 - Rio Yurocayacu runs from Fundo Sincrono eastward, winding thru the Cordillera azul in a deep canyon, finally emerging into the Pampa de Sacramento through the spectacular gorge called El Boqueron de Padreabad, after the priest who, many years ago, traversing this wilderness on foot, recorded the existence of this gorge, saying that this river entered the Rio Ucayali drainage. Since then, his remarks were ignored, it being commonly believed that the river joined the Huallaga. On the basis of his report, when the highway was being built, a party of surveyors searched for 90 days before locating the Boqueron, through which the road was then built.

✓ (70)  
↓

Oct. 28 - Aquaytia,  
Rio Aquaytia  
Weedy roadside in  
jungle, with <sup>wet</sup> sandy  
cut banks

28869

*Sabicea*  
weedy bank

6

*Clidemia graciliflora* Huber (det. Wurdack (1968))

6

70

~~steep bank~~  
steep bank with thicket

2

71

*Leandra secunda* (Don) Cogn (det. Wurdack (1968))  
steep bank

2

72

*Paspalum conjugatum*  
sterile roadside, common

1

73

*Borreria laevis* (Lam.) Griseb.  
rare, sterile roadside

3

74

*Passiflora*  
common, weedy roadside

3

75

weedy roadside

5

76

*Paspalum*  
common, sterile roadside

5

77

*Cyclopodium cornutum* L.  
abundant locally on vertical  
wet sandy banks

4

78

*Solanum schlechtendalianum* Wolf  
weedy bank Oct. 4. & this

8°35' S

vine, climbing in  
brush; flowers white;  
fruit red-purple.  
shrub, 1 m. tall  
flowers white; fruit  
blue-black.  
ripe fruit black.

stoloniferous

erect; flowers white.

vine; flowers scarlet

vine, flowers bright  
yellow  
small tufts,  
erect, to 1.5 m. tall.

low, branched, weak  
shrub, flowers  
white, berries black  
when ripe.

1947 Peru

Oct. 27 - 20 km. <sup>2 mi.</sup> w. of  
Pucallpa, valley of  
Rio Ucayali  
weedy roadside in  
clearing in wet forest  
on plain.

28879

*Prophyllum nudale*  
uncommon

80

*Crotm*  
very common weed

Oct. 28 - Aquaytia to  
Pucallpa via road.

The country between  
Aquaytia and San Alejandro  
through relatively flat,  
is a dissected alluvial  
plain with deep  
ravines and flat-  
topped ridges. It is  
covered with thick  
wet forest of tall  
trees, typically  
umbrella-shaped,  
but of rather uneven  
height, so that no  
true canopy is formed.  
Palms of one or two kinds,  
are occasional.

The cleared edges,  
along the road, are  
filled with *Cecropia*,  
*Ochroma*, etc. and dense

~~San Alejandro~~  
Loets - Coronel Portillo

8° 31'  
74° 45'

erect, glaucous, ill-  
smelling.  
erect.

weedy brush. *Laden-  
bergia magnifolia*  
may be seen as far  
as San Alejandro,  
as also *Condaminea*  
*corymbosa* and *Cosmi-  
buena grandiflora*.  
The latter two being only  
seen on cut banks and  
only small plants.  
Of *Cosmibuena*, no  
plant was seen large  
enough to flower. It  
would be interesting  
to know where the  
seeds come from.

The soil this far  
contains pebbles,  
and is rather gravelly.  
From San Alejandro  
on, the country flattens  
out much more, and

1947 Peru

becomes less pebbly, where there are cuts, at first layers of consolidated material may be seen. Then all rock disappears.

The forest becomes more and more filled with palms. About 10 birds may be seen in this stretch, including, very rarely, *Desmodinus*.

Mauze, yuca, pineapples, and a few screwy bananas are produced in clearings. Houses are made of split palm trunks, thatched with palm leaves.

As Pucallpa is approached the forest thins out. It has obviously been cleared at one time.

The Rio Ucayali is about 1 km. wide here, very muddy, running between banks about 8 m. tall high.

Lumber, mainly cedar and caoba, is the chief product, though quantities of cube roots are shipped by truck

Lima - Colonel Portillo 7

from here to Lima. Most of it comes here by river boat.

(4)

Oct. 29 - Pucallpa, Rio Ucayali  
weedy roadside

28881

*Stachytarpheta* <sup>dichotoma R. & P.</sup> *australis* Moldenke

det. Moldenke 1947

82

*Solanum lycopersicum* L.  
occasional

83

*Zinnia*  
occasional

84

*Heliotropium indicum* L.  
common

Oct. 30 same

weedy places around settlement

85

*Clitoria*  
occasional, weedy roadside

86

*Cosmos*  
occasional, weedy roadside

87

common weedy roadside

88

*Malachra alceifolia* Jacq. det. Fryxell  
common locally, weedy roadside

89

*Cyperus difformis*  
wet roadside, common

90

*Jussiaea* *repens*  
muddy pond, common

det. Moldenke 1975

erect herb, up to 1 m. tall,  
flowers purple.  
- sprawling herb; flowers  
yellow; fruit subglobose,  
3 cm. across, red when  
ripened.

branched herb, ~~up to~~  
0.8 m. tall, rays  
scarlet above, pink  
beneath.

branched herb; flowers  
lavender.

wine, twining around  
tall weeds and bushes,  
flowers lavender.

erect herb; <sup>ray</sup> flowers  
dull pink.

erect herbs 1-1.5 m.  
tall (others seen 2-2.5 m.);  
flowers bright yellow.  
- heads whitish when  
mature.

erect, basal part of  
stem and roots much  
thickened with white  
spongy aerenchyma  
tissue, petals yellow, 2-3 cm. long,  
all fallen by 3 w. m. (1)

1947 - Peru

- 28891 Mandevilla  
rare in thickets
- 3 92 Cissus  
common in thickets
- 7 93 Palicourea  
rare in thickets
- 8 94 Polymnia  
common in thickets
- 5 95 Lasiacis  
rare in thickets
- 5 96 Heliconia  
common in thickets
- 5 97  
occasional in gardens
- 5 V 98 Talinum patens  
common locally near houses
- 5 99 Digitaria  
common locally in garden
- 28900 Lygodium venustum Sw. det. Delinger, 1975  
common weed in burned  
over field.
- 2 01 Bidens pilosa  
common weed in burned field
- 2 02 Euphorbia hirta  
weed in burned field, local

- vine, somewhat milky; flowers yellow, with red line in throat in center of each lobe, red spot at each sinus.
- vine climbing in bushes, panic flat, red flowers yellowish red.
- shrub 4 m. tall; thyrse and flowers bright purple.
- semi-scandent shrub, flowers yellow, achenes green.
- plant, tangled, 1.5 m. high; spikelets purple.
- herb up to 1 m. tall; bracts red, flowers yellow.
- erect clump
- erect branched herb, 1 m. tall, leaves fleshy, flowers straw-yellow.
- leaves somewhat glaucous.
- all seen, sterile, scandent
- disk yellow, rays none.

28903

occasional in burned field

7 04

*Physalis*

common locally in burned field

8 05

*Pisona lappacea* (L.) Benth. ~~det~~ Moldenke

rare weed in burned field

9 06

*Cyperus*

rare weed in burned field

10 07

*Portulaca oleracea*

occasional weed in burned field

11 08

*Cyperus*

occasional weed in burned field

12 09

*Elymus amabilis* (L.) Gaertn.

occasional weed in burned field

13 10

*Desmodium*

rare weed in burned field

14 11

*Phyllanthus*

occasional weed in burned field

15 12

*Echinochloa*

abundant weed in burned field

16 13

*Eleusine indica*

abundant weed in burned field

17 14

*Eleusine indica*

in water of swampy place

at some distance

18 15

common among trees in swampy place

much-branched herb  
up to 1 m. tall, spreading  
flowers pale yellow.

glabrous spreading

erect, trailing stems  
at tips, glaucous  
yellow, at tips  
of stem are small  
flat-topped or lobed.

erect, branched,  
somewhat glaucous; flowers  
white, corolla 5-lobed, very quickly  
green caducous.

herb 1.5 m. tall; flowers  
orange-yellow

28916 *Cordia* *corymbosa* (L.) G. Don  
common in weedy thickets

17 *Almond* <sup>*tesserae* Diels, det. S. Smith</sup>  
~~*hypoglauca* Mart.~~ 1984  
common tree in thickets

18  
common, climbing in  
thickets

19 *Cordia* *feruginea* (Lam.) H.B.K.  
common in thickets

20  
common in dirty places  
around pig-pens, etc.

Nov. 1 - same

21 *Commelina*  
roadside

22 *Jatropha* *gossypifolia*  
in doorway, doubtless  
planted.

shrub 1-1.5 m. tall,  
flowers whitish; ripe  
fruit red.  
- spreading bushy tree;  
leaves ~~with~~ aromatic  
when broken, glaucous  
beneath; flowers with  
corolla very fleshy,  
greenish yellow.  
- vine, very lactiferous;  
flowers greenish white;  
fruit immature.  
- shrub 1.5 m. tall,  
flowers white

prostrate, with branchlets  
ascending; flowers  
blue with one petal  
smaller and paler.  
shrub 1 m. tall, young  
growth, petioles, under  
sides of leaves, etc. deep  
purple, latex watery,  
abundant; ~~flowers~~  
hairs with green tips;  
flowers red, fruit  
green. "piñon morada"  
young tips said to be  
macerated in water,  
let stand over night in open,  
then taken as purgative.



- 23922 *Stachytarpheta* *dichotoma* R. & P. det. Moldenke 1975  
common along roadside
- 23923 *Hibiscus radiatus* Cav. det. Fryxell  
planted in garden

Nov. 1 - 5 km. w. of Huancayo  
Valley, Rio Huancayo  
along road in second growth  
and in somewhat logged  
out wet forest. <sup>3.20</sup>  
much grown to lianas.

- 24 *Jatropha curcas*  
abundant in fence.
- 25 occasional in undergrowth
- 26 occasional in undergrowth
- 27 *Aegophila elegans*  
in thick undergrowth
- 28 *Solanum*  
in thick undergrowth
- 29 in thicket

erect much branched  
herb 2 m tall. flowers lavender  
- buds up to 1 m tall  
flowers deep purple  
- seeds in center.

1975-12-12

shrub 2 m tall.  
latex watery; flowers  
pale green "pale green"  
latex used for cuts,  
used as a  
purgative.

herb up to 1 m tall.  
leaves in spiral nodes.  
caespitose, roots  
with slight ginger  
odor when broken, canes  
leafy, 2-3 m tall,  
flowering branches  
from bases, bracts  
orange, flowers yellow.

slender shrub 2-3 m  
tall, fruit orange.  
erect, flowers whitish,  
immature fruit deeply  
purple  
liana, red seeds  
used for necklaces

- 28990 *Tibouchina longifolia* (Vahl) Baill. (det. Wurdack (1968))  
occasional along road
- 31 *Miconia nervosa* (Sm.) Triana (det. Wurdack (1968))  
rare in undergrowth
- 32 *Jouga*  
occasional in thickets
- 33 *Labiaca*  
occasional in undergrowth
- 34  
occasional in undergrowth
- 35 *Scleria vaginata* Steud. det. Gerrit Davidse 1992  
occasional in undergrowth
- 36 *Cephaelis tomentosa*  
common in undergrowth
- 37 *Tournefortia maculata* Jacq.  
occasional in undergrowth
- 38 *Solanum*  
rare in undergrowth

- much branched herb, 1.5 m. tall, fruiting very heavily, flowers white.
- shrub, inflorescences and young fruit, old rose, flowers white, leaves deep purple beneath, green above.
- shrub 3 m. tall, mature pods green and fleshy, seeds surrounded by white cottony-fleshy aril that is insipidly sweet and eaten by local people.
- herbaceous vine, tangled in shrubs; flowers white.
- weak shrub 4 m. tall, cymer red, ripe fruit purplish, mostly very immature.
- culms up to 2 m. long, tangled; fruits black.
- shrub up to 2 m. tall, bract, red, smaller bract, yellow, fruit blue.
- vine-like shrub, flowers green, fragrant.
- liana; fruit red.

28939

5

occasional in undergrowth

6 40

*Siparuna lepidantha* Perk. det.  
occasional in <sup>R. Leonard 1982</sup> undergrowth

5 41 *Psychotria*

occasional in undergrowth

Visited Jose M. Schunke,  
Peruvian collector of  
insects and other animals,  
also plants. He is German-  
Indian. His father also  
collected and taught him  
what he knows. He lives  
in a palm thatch house  
just out of Pucallpa,  
but has lived in Iquitos  
and other parts of Peru.  
It originally from Chanchamayo.

This country around  
Pucallpa has been  
largely cleared, or at  
least logged out. The  
soil is sterile. Pineapples  
do well. Bananas poorly.  
There is some sugar cane.  
They burn the land, making  
it ever more sterile.

liana; fruit orange.

slender, shrub  
to 4 m tall, fruits  
green, odor possibly  
of lemon mixed with  
geranium.

shrub 1 m tall,  
buds whitish, ripe  
fruit red (mostly immature)

His wife, an Iquitos  
Negro-Indian - white  
mixture, helps him  
enthusiastically. Both  
collected with avidity,  
but with a thoroughly  
commercial viewpoint.  
I took photos of a horned  
epichef they found at  
Tanda Jimelano in  
Heliconia-Moranta trash.

at 10 a.m. Nov. 1 I felt  
a strong earthquake. The  
ground swayed for  
several minutes quite  
noticeably. No damage  
was done here, as the palm  
houses are not at all  
susceptible to earthquake  
damage.

1947 - Peru

✓ (43)  
↓

Nov. 2 - Pucallpa, flats  
along Rio Ucayali just  
above town  
silt flats and bluffs  
Solanium  
common in thicket.

28942

43 Euphorbia  
common on bare ground

44 Cyperus  
occasional in damp ground

45 Piper  
in dooryard, possibly  
planted but probably  
persisting from forest

46 Solanium  
in thickets along  
slough

47 Capsicum  
not common on low  
river bluff

48 Alternanthera  
common along low river  
bluffs

49 ~~Jussiaea~~ Ludwigia affinis (DC) Hara  
rare on low river bluff

50 Rippia  
rare on low river bluff

51 ~~Abryobrya~~ <sup>Syneca luteola (Jacq.) Benth det. R. L. Steiner 1980</sup>  
common on low river bluff

52 Solanium nigricum  
rare on low river bluff

53 Melothria pendula L.  
occasional on low river bluff

largely dominated  
by a large sterile grass

small tree 4 m. tall;  
leaves both spiny and  
spineless, flowers  
violet, fading to white.  
prostrate, purplish green.

bushy tree 5 m. tall,  
spikes erect.

shrub 3 m. tall,  
flowers white

herb, 1 m. tall, flowers  
white; fruit red  
when ripe.  
prostrate

flowers whitish.

wine, twining over  
everything, flowers yellow.  
flowers white, ripe  
fruit black, glossy.  
vine flowers white, ripe  
fruit dark green.

79954

5 55 *Lesbania sesban*  
common on low river bluff,  
rare, in edge of water,  
probably on dry ground  
in low water.

5 56 *Tournefortia bicolor* Sw.  
common around  
trickle of water.

4 57 *Cissus sicyoides* L. det. R. Liesner  
1979  
common in low thickets

6 58 *Eclipta*  
common in ~~wet~~ damp depression

5 59 *Lippia alba* (Milla) H. E. B. det. Moldenke  
~~wet~~ damp depression

2 60 *Croton*  
rare on grassy flat above river.

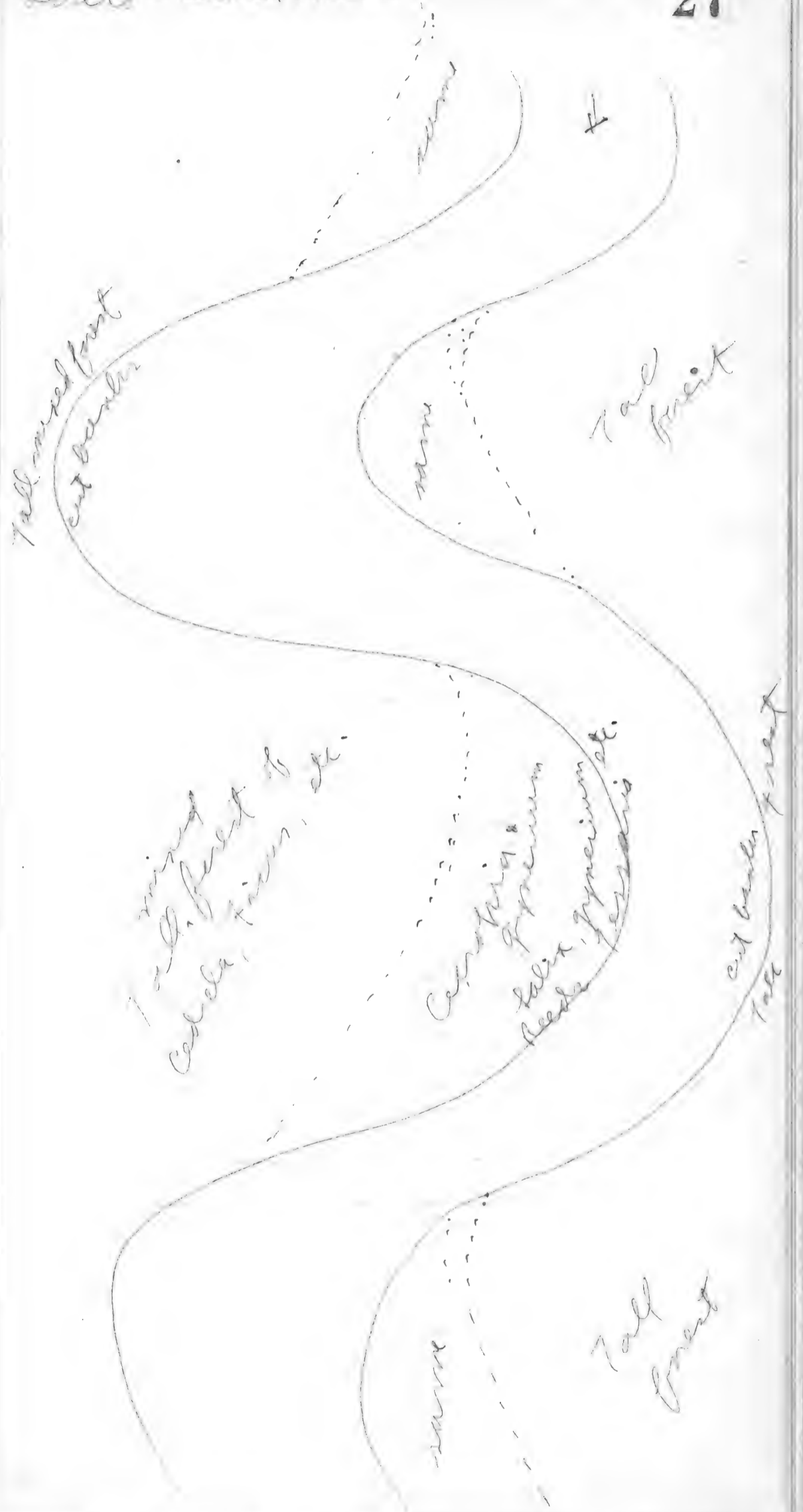
loose clumps  
shrub 3 m tall;  
flowers yellow  
banner marked with  
purple-black.  
low spreading  
bushes, 1 m tall;  
flowers white,  
fragrant.  
vine, flowers  
white, in flat-  
topped panicles.  
much branched herb,  
heads white (smaller  
than common for *S. alba*)  
erect suffrutescent  
herb, flowers lavender.

Nov. 3 - Trip by motor boat about 30 km. up the river Ucayali to Miraflores logging camp

Basically the vegetation of this valley floor is a dense tall jungle of *Ficus*, *Cedrela*, *Calypophyllum* and various other genera, with an undergrowth of *Heliconias* with some shrubs and with many lianas. The canopy is not well developed because of varying heights of trees.

The river meanders through its flood plain, every year rising and flooding all but the highest parts. At this season it is rising and has flooded the beaches, but is not up to even the lowest vegas yet.

The general pattern of vegetation, as seen from the river is: on the outer sides of the curves the river is gradually cutting into the wooded vega, bringing the tall forest to the very edge of the water. Trees are falling in rows and then. On the inner sides of the curves sand



1947 Peru

is apparently being built up by deposition. On this there have not been time to develop a real mixed forest. There is a succession going on that is very obvious.

At the water's edge (present) is a thick but low growth of what appears to be *Tessaria* (pajaro bobo) and a seed-like sterile grass.

This may be as much as 15 m. wide, usually narrower. Then a narrow strip with *Salix chilensis* (diffuse form, small trees only) and *Gynerium sagittatum* - *Salix* only seen small (largest ~~at~~ 5 m. tall), probably from seed washed down from above.

Then a forest of *Cecropia* ("petico") of graded sizes away from beach. This is mixed with *Gynerium* and extends back to where it, rather abruptly, changes to mixed forest.

The *Cecropia* is perhaps only one species, though individuals that may

Lovers - Coronel Portillo

be another were seen rarely. Willows not seen mixed with *Cecropia* except at edge. In places *Ficus* sp. (~~at least~~ large or off) and several other trees begin to appear among the *Cecropia*.

*Palmetto* seen, though said to be common ~~often~~ on abandoned farms.

Some clearing here, devoted to bananas, plantains, yuca, and maize. The *Musa* is apparently not seriously damaged by temporary flooding.

The soil is a dark gray under the dead leaves, rapidly lightening downward. It is a

rather coarse friable silt. Very sticky when roads are opened or where cuts are made down to rivers.

Enormous cedar logs, 1-1.5 m. thick, being taken out.

Aguaje - <sup>really</sup> fruit of a palm, cooked and eaten, sold in straws.

date IV

✓ 46

Nov. 3 - trail bet. Buenos Aires and La Libertad, Pucallpillo, 10 km. s.e. of Pucallpa

Rio Ucayali

thick wet forest of tall trees on flood plain of river

28961

3 02

occasional

63 *Palicourea*  
common locally

64  
rare

65 *Campomanesia lineatifolia* R. & P.  
~~Croton~~ det. McVaugh  
planted near dwelling

8° 26' S.  
74° 31' W.

vine, flowers greenish.  
small tree 5 m. tall,  
bark smooth, at times  
peeling completely when  
freshly peeled, of a smooth  
greenish lead color,  
becoming reddish brown.  
(Other trees seen very  
much larger)

"capirona" wood used  
for construction and for  
charcoal.

weak shrub to 3 m. tall,  
almost vine-like; thyrises  
deep orange, darkening  
to red when in fruit,  
flowers rusty yellow,  
turning dull red. Fruit immatures

vine trailing in little  
on ground, petals rose.

(If vine was followed for  
several m, always leafless  
till lost in undergrowth)

tree 4 m. tall, flowers  
white. "palillo" fruit  
eaten, said to be large  
as an egg, large.



78966 *Hamelia oxilacis* Sw. det. T. ELIAS 1978  
common in undergrowth

Hda.

Nov. 3 - Palomillo, about 25  
km. above Pucallpa, Rio  
Ucayali  
silt bluffs banks above  
river level, at times  
inundated

8° 31' S  
74° 25' W.

67 *Borreria*  
rare

68 *Mecardonia procumbens* (Miller) Small det. R. Liesner  
1980  
common

shrub 2 m tall, flowers  
yellow, campanulate  
with recurved lobes,  
fruit immature.

erect, flowers white.

flowers yellow.

Nov. 3 - Miraflores (logging camp)  
30 km. above Pucallpa (25  
km. ~~to~~ e. of Pucallpa) on  
Rio Ucayali

8° 26' S  
74° 5' W.

Tall wet forest with  
relatively sparse undergrowth  
largely of *Scitamineae*.

69 ~~*Geophila*~~ *Geocordia*  
very common carpeting  
ground in open spaces

prostrate, peduncles  
erect, flowers white.

70  
rare in small openings in  
undergrowth

ascending, leaves deep  
purple beneath.

71 *Acalypha*  
occasional in undergrowth

shrub 2.4 m. tall, diffusely  
branching (leaves on younger  
growth much larger)  
culms erect.

72  
occasional in undergrowth

73973

occasional in undergrowth

74 Psychotria

common in undergrowth

75 Solanum

occasional in undergrowth

76

rare in undergrowth

77 Ficus

common

78 *Semneria sabiceoides* Sch. det. Kirkbride, 1977

occasional in undergrowth

79 Piper

common in undergrowth

80 *Dioscorea*

climbing on base of tree

Nov. 5 - Puerto Loreto (La Florida),  
Rio Ucayali

Weedy terraces of silt 150m. (4)

81 *Elephantopus*

edge of second terrace

82 *Hypstis*

abundant in pasture  
on second terrace 4 m. above water

83 *Ambrosia*

local on first terrace, 2 m. above water

On outside of curves river is  
undercutting jungle.

Gull-like birds with  
long yellow bill apparently  
catching small fish.

7° 54' S,  
74° 52' W.

Loreto - Loreto Patilla  
Ucayali

shrub 2 m. tall

shrub 2-3 m. tall,  
flowers white.

shrub 1 m. tall, flowers  
white, corolla stiff, waxy.  
small tree 4 m. tall,  
fruit green.

tree 15 m. tall, fruits  
green, stripes with leaf  
maroon red. "oje" or "aje"  
weak shrub 2 m. tall,  
flowers white.

low weak shrub 0.5 m. tall

vine, flowers pale green.

2 terraces, the first 1-2 m.  
above water and cracking,  
easily to slide into water.  
Here are broad bars of newly ↓

aromatic herb 1 m. tall,  
flowers lavender.

herbs 1.5 m. tall

deposited silt, covered with  
grass slightly older ones  
with *Ternaria*, then  
*Gynerium*, then *Cecropia*.

leaves of *Pantaleon* are  
root of "renacuillo", taken  
as tea, with cooked rice  
plantain, produce nausea  
and vomiting. Take this  
for 3 days, said to consist  
up stomach tumors and  
cancers.

"Cachampi" *Cachambola*  
root of a grass, taken  
in aguardiente as  
tonic or aphrodisiac.  
Is a vigorous grass  
which grows out  
fracture of a tree.

Toasted breast of  
crocodile, ground  
to powder. For leprosy,  
give thorough bath  
with soap & water, then  
rub this powder on  
whole body. Said to absorb  
something from powder  
that cures the disease.

"Remocaspí" tree from  
which canoe paddles are  
made. Bark very bitter,  
said to cure malaria.

In Putumayo, the tree  
"Citaragui" is known  
by the Indians to be  
the tree from which the  
army ants, "citaragui",  
obtain a substance  
with which they  
cure badly injured  
ants. When almost  
instantaneously. If  
an ant is injured, a  
number of others gather  
around and apply the  
substance. Then all  
separate. The injured  
ant walks away with  
rest. If he is not  
quite cured, the process  
is repeated and it  
is impossible to tell  
which is the injured one.

Castilla 1334

Magdalena Mar  
Peru  
address of David Hoyle  
also Contamana  
and Chiclayo

Wants to send specimens of  
Sarsaparilla, and various  
other plants - clove substitute,  
cavella, etc. and hides  
of alligators, etc.

Nov. 5 - Tivintan, ~~around~~ Rio Ucayali around edges of village on vega of river, about 8 m. above river level

28984

*Chrysophyllum*  
above river

5.

4.

85 *Chrysanthemum*

~~at~~ edges of muddy stream.

5.

86 *Chlorophora tinctoria*

occasional in shallow ravine.

5.

87 *Lyceria*

occasional in edges of thicket.

4.

88 *Hyptis*

occasional in edges of thicket.

4.

89 *Croton*

occasional in edges of thicket.

3.

90 *Spilanthes*

muddy ground, in open

2.

91

parasitic on #28992  
*Neea divaricata* Poepp. & Endl. det. R. Liesner 1983

5.

92

~~tree~~ on bank above river

5.

93 *Solanum*

open ground in village

4

94 *Bunchosia glandulifera* det. Anderson  
thicket

753' S  
74°56' W

tree 5 m. tall, lactiferous, <sup>hairmits. fr. stem</sup> flower greenish white, fruit immature  
semi-prostrate; heads greenish.

large spreading tree with drooping branches, some sprouts spiny.  
loose clumps 1 m. tall

herb 1.5 m. tall, aromatic; flowers lavender.

weak herb, flowers white.  
heads pale greenish.

flowers white, ripe fruit red.

tree 6 m. tall; ripe fruit purple.

shrub 2.5 m. tall, with strong disagreeable odor; flowers green; fruit said to be poisonous.

small tree 5 m. tall, flowers yellow; fruit purple when ripe, fleshy. "ciruela de Chena" eaten.

28995 *Annona*  
growing spontaneously around  
villages

96 *Eryngium foetidum*  
growing spontaneously  
around village

97 *Chenopodium ambrosioides*

98 *Ixora coccinea* L.  
planted near houses

99 *Piper*  
in thickets near village

Nov. 5 - Santa Lucia,  
just above Tivuntan,  
Rio Ucayali

river-bank  
29000 *Celastrus alba*

common weed  
01 *Phacelium luteola* (Jacq.) Benth. det.  
*Phacelium* R. Kiesner 1980  
common weed

small tree, flowers  
greenish yellow, fruit  
yellow, with prominent  
projections, flesh white  
gelatinous in texture,  
delicious - more so than  
any other species of  
*Annona* known to me.  
"anona" (photo)

very disagreeably  
oily aromatic; "calento"  
"ciuta caliente" used  
for flavoring foods.

aromatic herb, growing  
around dwellings.

shrub 1 m. tall,  
flowers bright red.

shrub 3 m. tall,  
spikes erect.

7°55'S  
74°54'W.

bushy herb, flowers  
white  
vine "soya"

Nov. 6 - Contamana, weedy banks and flats in town at edge of river banks, above flood water

29002

*Priva*  
common

03

abundant locally

2.

04

*Pavonia paniculata* Cav. det Fryxell  
~~*Hibiscus*~~

rare at edge of water

4.

05

*Chloris*

common

5.

06

common

7.

07

*Desmodium*

common locally on flats

Nov. 6 - Rio Ucayali, about 15 km. below Contamana silt flat overgrown with *Gynerium* and with some *Cecropia* about 4 m. above water of river. tangled with vines.

1.

08

*Spilanthes*

at edge of water in mud.

2.

09

*Ipomoea Lindenii* det. Auster, 1978

common on banks and reeds above water

7°15' S.  
74°51' W.

flowers lavender

spreading by rhizomes, considered a bad weed "cashaubsha" roots (or rhizomes) said to be taken in a guaridiente as an aphrodisiac.

herb, 1 m. tall, flowers orange-yellow.

erect to 1 m. tall, flowers purplish-greenish.

7°12' S.  
75° W.

~~herb~~ sprawling herb, heads pale greenish. vine, flowers purple, anthers white, straight.

- 29010 *Evolvulus alveoides* (L.) L. det. Austin, common on banks above river
- 11 *Heliconia* ~~vestita~~ *vestita* L. det. occasional
- 12 *Ipomoea* ("peruviana") common on ground and climbing on reeds, both on exposed banks and among canes.
- 13 *Mendonica hirsuta* (Poepp. & Endl.) Nees det. common climbing on canes.
- 14 common, climbing on canes
- 15 one plant seen in fruit climbing on canes

In an open place, seedlings of *Cecropia* were very abundant, up to about 1 m. or a little more tall. The smaller ones had the cavity filled with pith and very small, as they reached a little over 1 m. the cavity became larger and the pith disappeared.

- 1978 vine, flowers white.
- B. herb 2-2.5 m. tall, leaves erect, inflorescence red, pendent, spirally twisted, red, bracts red with yellow margins.
- OP. vine, flowers deep yellow, throat funnel-form, ~~as~~ plicate to base, anthers spiral curved, flowers greenish, ~~with~~ with purple on vbr.
- D. Wasshausen vine, flowers pale greenish.
- vine, fruit green.

at this time a queen and was found gnawing a hole in the upper end of the internodes. In a plant slightly older, a queen was found in each internode hollow. The wings were still present on some, but fell off very easily. In the large trees there is apparently a colony in each branch. In the

time there are none except a few wandering on surface.

Nov. 7 - Arellana, Rio  
Ucayali  
weedy places around  
village 3-6 m. above water

79016 *Cleodendrum fragrans* var. *det. Maldenke*  
local *planiflorum* Schau.

5. 17 *Lantana camara* L.  
local

6. 18 *Piper aduncum*  
local

7. 19 *Malachra ruderalis* Gürke *det. Fryxell*  
common

3. 20 *Cyperus* (or *Cyperus*)  
local in wetter places

2. 21 *Solanum*  
against dwelling  
probably planted.

2. 22 *Jasminum pubescens*  
planted

3. 23 *Panicum laxum* Swartz *det. G. Davidse 1978*  
along wet <sup>grassy</sup> ravine

2. 24 *Cyperus*  
grassy places

5. 25  
along wet <sup>grassy</sup> ravine

5. 26 *Cyperus*  
grassy places

5. 27 *Citrullus* <sup>Cucumis</sup> *anguria* L.  
grassy places

2. 28 *Lida rhombifolia*

6° 54' S  
75° 5' W

two distinct flood plain  
levels here, the higher  
represented by remnants.

*calyx purple, corolla  
white; herbage  
foetid.*

*spreading shrubs 2 m tall, aromatic;  
flowers orange turning  
red; fruit fleshy, lead  
color when ripe.*

*shrub 1.5 m. tall,  
spikes arching.*

*herb up to 1 m. tall;  
flowers butter-yellow  
"malva"*

*stems terete*

*herb, tending to be  
scandent, flowers white*

*low shrubs, flowers  
white, fragrant.*

*prostrate, flowers yellow*

*ascending, roots waxy;  
flowers orange-yellow*



1947 - Peru

29029 *Leonurus sibiricus*  
2 very common

Nov. 7 - Florencia, Rio Ucayali 6°45' S  
growing in village 75° W

30 *Lolidago chilensis* Meyen det. J. Cuatrecasas  
common

31 *Jatropha*  
planted

32 *Sambucus*  
planted

33 *Ocimum*  
spontaneous

34 *Hura crepitans*  
on bank of river

Nov. 7 Gran, Rio Ucayali  
edge of village

35 *Muntingia calabura*  
planted

36 *Cyperus brevifolius*  
common

erect herb, to 1.5 m.  
tall, branched. flowers  
rose pink, lower  
lip maroon.

erect herb, to 0.7 m.  
flowers yellow  
shrub 1.5 m. tall,  
flowers red, latex watery.  
(note compound stipules)  
small tree 4 m. tall;  
flowers white, fruit  
immature. "sauco" flowers  
used medicinally for  
grippe.

aromatic herb, flowers  
lavender. "albaica" used  
to flavor foods.

large spreading tree  
with thorny trunk,  
watery latex, flowers  
dark red. "catapura"  
latex said to be poisonous  
on contact, especially  
to eyes. used as fish poison.  
Fish said to sink when  
killed by this plant.

6°35' S.  
79°8' W.

tree 3 m. tall, 2 dm. thick,  
petals white, fruit immature  
heads green.

x  
29037  
" Nov. 7 - Catalina, Rio Ucayali  
*Aegiphila filipes* Mart. & Schum. det. Moldenke  
sticks used as fence  
around garden that  
took root.

Here bark cloth is  
in use as sleeping  
mats, etc. It is very  
coarse and thick, called  
*janshani*, made from  
plant of same name.  
(Prob. *Chlophora tinctoria*)

x  
Nov. 8 - Lagarto, Rio Ucayali  
around edge of clearing  
in forest.

v. 38 *Aeclepias curassavica*  
common in clearing

v. 39 *Cassia occidentalis*  
common in clearing

v. 40 *Piper*  
~~at~~ edge of clearing

v. 41  
edge of clearing

v. 42  
common in clearing

v. 43 *Blechnum brownii* Juss. f. *puberulum* Leonard  
common in clearing

v. 44 *Piper*  
common in clearing

v. 45 *Cordia ferruginea* (Lam.) H.B.K.  
common in thickets

6°40'S  
75° W.

flowers white.  
ripe fruit red.  
"chinapa sachá" *aidok*  
used medicinally.

5°53'S  
74°35'W.

The forest in this part  
of the river in places appears  
to have been destroyed at some  
time and not to have recovered completely.

erect herb to 0.8 m. corolla  
red, corona orange, fruit erect.

herb 1 m. tall, flowers  
yellow.

shrub 2 m. tall.

tree 5 m. tall, 1 dm. thick.

fruit immature

prostrate

det.  
D. Wasshausen  
1969

spikes erect; flowers

shrub 1.5 m. tall, rather  
unpleasantly aromatic.

"Santa Maria"

scrambling shrub, climbing  
to 4 m. in trees, flowers white.

29046

- 2. parasitic on lemon tree
- 3. 47 *Erechtites hieracifolia* (L.) Raf. det. J. Cuatrecasas  
common in clearing

Nov. 9

San Roque, across from Santa Rosa, Rio Ucayali around dwelling in banana patch in forest along river

- 5. 48 *Ruellia malacosperma* Greenm. det. E. Wasshausen

- 6. 49 *Parthenium*

I

Nov. 9 The part of the river near Isla de Purunagua, above San ~~Roque~~<sup>Antonio</sup> del Cumisoy has forest of slightly different appearance. It looks as though it had been logged out, leaving a few species of trees, and filled with second growth. Vines are more abundant and also a number of kinds of palms.

Salix is still evident but infrequent or common only very locally.

erect. flowers <sup>pale</sup> greenish yellow.

5° 50' S  
74° 25' W

120 m

low bushy herb. flowers clear violet. bushes 1.5 m. tall, flowers white with black anthers, fruiting heads fleshy, black. "huaca" used for poisoning fish.

1947 - Peru

The villagers and casaneros have about the same flora, both weeds and cultivated plants. In addition there are usually a few plants persisting from the original forest

Cult. plants

*Mangifera indica*  
*Carica papaya*  
*Spondias* - sp.  
*Musa sapientum*  
*Musa paradisiacum*  
*Psidium guajava*  
*Zea mays*  
*Matisia peltata*  
*Persea americana*  
*Artocarpus altilis*  
*Lambucur*  
*Annona*  
*Inga*  
*Brassica oleracea*  
*Rhacopilus vulgais*  
~~Sesuvium~~ *Onyza sativa*  
*Capsicum frutescens*  
*Capsicum annuum*  
*Manihot esculenta*

Forest

Weeds

*Cyperus* 3 sp.  
*Desmodium* 2 sp.  
*Ipomoea* 2 sp.  
*Paspalum conjugatum*  
*Phaseolus Vigna* (2900) (7895)  
*Piper* (peltate)  
*Digitaria* + about 4 other grasses  
*Cassia occidentalis*  
*Asclepias curassavica*  
*Spilanthes*  
*Cochlosoma*  
*Priva aspera*  
*Erechtites*  
*Parthenium*  
*Blechnum*  
*Aciumum*  
*Jatropha curcas*  
*Leonurus sibiricus*  
*Ambrosia*  
*Malachra* 2 sp.  
*Sida rhombifolia*  
*Chloris*  
*Eryngium foetidum*  
*Chenopodium ambrosioides*  
*Eclipta alba*  
*Solanum nigrum*  
*Croton*  
*Hyptis*  
*Chrysanthemum*  
*Euphorbia* 3 sp.  
*Physalis*  
*Eleusine indica*  
*Momordica charantia*

Nov. 9 - Sintica, Rio Ucayali 5° 25' S. 74° 15' W.  
Wet flood-plain, around cultivated patches, mostly *Musa*, and along paths. Weed vegetation luxuriant.

- 29050 *Cyperus*  
common along trail
- 51 *Digitaria*  
common along trail
- 52 *Panicum*  
common along trail
- 53  
common in more or less shaded places
- 54  
near houses, probably planted
- 55 *Carpobrotus hypericifolia*  
common along trail
- 56 *Flourensia interrupta*  
common along trail
- 57 *Achyrocline* <sup>*Cyathula*</sup> *achyroanthoides* (HBK.) Moq.  
common along trail
- 58 *Momordica charantia* L.  
common along trail

trees of *Mangifera*, *Spondias*, etc. common. Several dense patches of a seedy variety of breadfruit, ground to large size, with myriads of seedlings beneath. Sugar cane. leaves and bracts whitish beneath.

plant prostrate with erect tips; leaves fleshy; peduncles erect; flowers white 3 parted, symmetric. thick clumps; flowers white.

erect, tips arching; glands white. erect herb, with stinging hairs but not violently so.

branched herb, erect or ascending with decumbent base.

extensive herbaceous vine, odor unpleasant; flowers yellow fruit red, fleshy, elastically dehiscent.

- 29059 *Pilea lappulacea* (L.) Pers. det. Moldenke  
occasional along trail
- 5 60 local along trail in  
wet ground
- 2 61 *Bidens*  
common
- 9 61 *Geocardia*  
common, carpeting ground  
in shade.
- 24 63 *Passiflora*  
common along trail

flowers pale lavender.  
flowers deep yellow.

herb 0.3 m. tall; heads  
greenish yellow.  
stems prostrate,  
leaves and peduncles  
erect; flowers white;  
fruit black, juicy,  
pulp greenish, antho-  
cyanin only just  
under skin and  
immediately around  
stones, these almost  
flat on inner surface.  
Extensive herbaceous  
vine, flowers blue-  
violet, calyx pale  
green veined with red,  
petals pale violet,  
corona blue violet  
banded with white  
in basal half; anthers  
and stigma yellow,  
filaments green,  
~~style~~ styles purplish,  
ovary and gynophore white.

1947 - Peru

Nov. 7 - below Sintonia  
the forest gradually  
becomes more even-aged,  
less decadent-looking,  
but is not quite as  
tall as further up the river,  
and with smaller trees.  
The presence of breadfruit  
trees suggests that this  
is not original forest,  
but primary-type forest  
resulting from recovery  
after clearing a long  
while back.

Nov. 7 - Puinagua (Popeja),  
Rio Ucayali opposite mouth  
of Canal de Puinagua

64 abundant everywhere  
along water, mostly sterile

From here on breadfruit  
is quite common in  
the forest. The large  
size of some of the trees  
shows that the forest has  
been opened up a long  
time ago.

One of the things that  
probably contributes a  
lot to the ragged look  
of some parts of the  
forest is the continual

5° 17' S  
74° 12' W.

Forests - Requena

Willows have again  
become more common,  
but are more localized  
and more abundant  
locally.

comes up to 2 m. tall.  
"gramalote" pith used to  
make artificial flowers.

wood cutting for fuel for  
the river boats.

The soil of these  
flood plains, as shown  
by the cuts, is a rather  
uniform dark brownish  
gray. Although it does  
not show a large humus  
content, neither is there  
the impoverishment of  
humus that is ordi-  
narily expected in such climates.

1947 - Peru

Nov. 10 - Below the junction of Rio Ucayali and Rio Marañon - Rio Amazonas. Recently deposited material seems more sandy here, grayer, with less humus. Forests more ragged. Still plenty of breadfruit.

Nov. 10 - Puritania, Rio Amazonas (R. Loli-moes) High ground, 10 m. above level of river, of a stiff clay, edge of forest. *Lipakuna lipidantha* Per. det. R. Lisner 1982

29065

- 66 just inside edge of forest
- 67 just at edge of forest

Nov. 10 Paraiso, Rio Amazonas (R. Loli-moes) muddy seepy place in clearing just above water's edge.

- 68 *Eclipta*
- 69 *Mecardonia procumbens* (Mill.) Small det. R. Lisner 1980
- 70 *Ludwigia hyssopifolia* (L. Don) Exell det. Ramamoorthy 1984
- 71 *Pesmodium*

Loets - Santa Maria

the river is at least a mile wide, here at its beginning.

Small floating rafts or islands of grass may be seen occasionally.

4° 16' S  
75° 23' W

This high ground runs for some distance along north bank.

slender sapling 4 m. tall, 2 cm. thick, herbage somewhat aromatic.

flowers pinkish-lavender.

- erect herb, rays white
- flowers yellow
- low branched herb. flowers yellow ~~4.5~~ 1.5 mm across
- prostrate, flowers purplish



- 790 72 *Stemodia durantifolia* (L.) Sw.
- 2 73 *Fambristylis*
- 1 74  
rare
- 2 75 *Eclipta*
- 1 76 *Asolla*
- 4 77 *Jussiaea*
- 5 78 *Jussiaea*
- 2 79
- 1 80 *Heliotropium*
- 5 81  
common on bare drying mud

Nov. 12 - Panchana, just  
outside Iquitos to <sup>North</sup> east,  
scrubby second-growth  
woods on sandy soil  
on high ground. 106 m. (m)

- 5 82 *Bredomeyera myrtifolia* det. Wurdach
- 7 83  
occasional
- 5 84  
common
- 3 85 *Passiflora*  
occasional

- erect, flowers purple
- small tufts
- erect, slightly glaucous,  
flowers white
- prostrate
- on drying mud.
- plant. bronze-purple
- flowers yellow.
- flowers orange
- flowers lavender
- prostrate, pale green.

- scrambling shrub 3 m.  
tall, fruit green.
- flowers pale greenish,  
fruit maroon; small tree.
- small tree, fruits  
immature, purple  
above, green below.
- woody liana, leafy  
in upper part, flowering  
near base; calyx deep red,  
corolla and corona scarlet,  
filaments purple, anthers  
green, styles red, stigmas  
green.

1947 - Peru

29086 Cinchona pedunculata  
5 common in woods

16 8-7 Cinchona pedunculata  
common in woods

4 <sup>1</sup>/<sub>2</sub> Nov. 14 - Iquitos  
cultivated in city  
38 in garden

5 39 Ficus  
commonest street tree

4 Nov. 15 - high ground  
just <sup>south</sup> west of Iquitos

sandy sterile soil  
with low second growth  
woods.

5 90 common

5 91 Sarcocolla corallina (Mart.) de Roon  
Vochysia det. H. Bedell 1982  
common

5 92 common

small tree sapling  
3 m. tall, bushy, fruit  
immature. (bark sample)  
tree 7 m. tall, 7 cm. thick;  
leaves dull; fruit immat-  
ure. (bark sample).

irregularly branching  
shrub, 1 m. tall, flowers white,  
odorless.

compact rounded tree,  
6 m. tall, 2 dm. thick,  
with pendent roots  
from branches, lactiferous,  
figs greenish, or pinkish  
when ripe.

70° 50' S  
75° 17' W

straggling shrub  
flowers white, fruiting  
calyx red.

shrub, tending to  
sprawl, corolla yellow,  
calyx and spur red,  
fruit green, said to be  
poisonous.

small tree, 4 m. tall,  
flowers white.

1947 - Peru

29093 *Distictella magnuliiiflora* (HBK) Sandwi. det. A. Gentry 1974  
rare in brush

5 94 *Apodandra toretensis* (Ule) Pax & Hoffm.  
local det. M. J. Huft. 1981

5 95 *Selaginella*  
abundant, densely carpeting  
the ground.

7 96 occasional  
8 97 *Cephaelis tomentosa*  
1 common

Nov. 15 - Itaya, above Iquitos 3°48'S  
roadside banks. 73°17'W

98 *Borreria*  
99 common, weedy

Nov. 16 Iquitos  
dominant plant in  
open pasture  
29100 *Rynchospora*

Nov. 18 Iquitos 3°47'S  
public park 73°16'W

01 *Cleome*  
weed flowers white

5 02 *Polypodium*  
abundant epiphyte on  
Ficus trunk.

03 *Hemigraphis colorata* (Bl.) Hallier det. D. Wasshausen 1969  
cultivated prostrate, leaves deep  
purple, corolla white, caducous  
very readily.

woody vine,  
flowers cream-white.  
shrub 1 m. tall,  
flowers green.  
erect to ascending

small tree, flowers  
white.  
shrub 1 m. tall,  
outer bracts scarlet,  
inner yellow; flowers  
yellow; fruit bright blue.

flowers pale lavender.

densely carpeting

flowers white

1947 - 12 m

4 - Nov. 20 - Transversal, Pabos.

second growth woods on slight elevation, clay soil.

9104 *Passiflora caribaea*

common in openings

05 *Centropogon leptocarpus*  
occasional in bush

06 occasional

07 *Gonzalagunia*  
common in undergrowth

08 *Lebelaginella*  
common in woods

09 *Gonzalagunia*  
in woods in undergrowth

10 Nov. 20 - Quebrada  
just above Pabos  
inundated woods along  
river banks

11 *Paragonia pyramidata* (L. Rich.) Burdet. A. Gentry 1974  
hanging from trees

30 10' 9  
71° 40' W.

shrub 1 m tall, flowers  
orange turning red.

shrub 1 m tall, last time; flowers of rose pink, with white lobes, column white, anthers gray.

vine-like, climbing in bushes, flowers blue-violet; fruit green, fleshy, dehiscent seeds with dark seeds.

slender shrub 1 m tall, flowers and fruit white. vine climbing in small trees and shrubs, sending rhizopodia down to soil, living on by these even after original connection with ground has rotted away.

shrub 1 m tall; flowers and fruit white. appears to be a variation of #29107 with shorter, denser spikes.

large shrub, flowers bright red-purple.

1947 - Peru

Nov 20 - coming by boat  
from Iquitos to Pebas

Observed a phenomenon  
the origin of which is not  
at all clear.

Great stretches of the  
central part of the river,  
where the current is  
strongest, are filled  
with sticks, logs,  
stumps, etc. mostly  
long dead and rotting,  
with quantities of  
reeds, grasses and  
other rubbish, and  
great numbers of dead  
fish of all sizes, many  
very large, mostly  
apparently just-bird, natives  
and some other animals.  
The stench of the river  
was nauseating.

This has been passing  
Pebas for 2 days. It was  
reported above, passing  
Pucallpa and Chitambana,  
and is said to be 10 days  
in extent. It is said that  
contained human bodies  
and many dead animals.  
People were warned especially  
not to drink water from  
the river.

Loeto - Maynas

It is commonly thought  
here that the number of  
dead fish is augmenting  
constantly because the  
living fish, with average  
habits are eating the dead  
one and poisoning themselves.

General speculation con-  
siders the catastrophe  
with the earthquake  
of Nov. 1. Some think  
that a landslide must  
have occurred and  
filled the river with  
trees and perhaps released  
some chemical into the  
water. The fact that  
the sticks are old, rotting  
wood, obvious driftwood  
is against this.

Nov. 27 - Actually the duration  
of the serious part of this  
was about 4-5 days.

Certain theories ascribe the  
origin to damming up of  
quebradas by slides resulting  
from the earthquake, then  
sudden release, drowning  
animals and muddying  
water so as to suffocate  
the fish.

Probably it is really due to  
the sudden and month-early  
rise of the river.

1947 Peru

Nov. 21 - Transvaal, Pabos  
 thick <sup>wet</sup> second-growth  
 woods on slight elevations,  
 formerly cleared for farms.  
 thick underbrush

~~29111~~

29111 Miconia nervosa Triana (det. Wurdack (1968))  
 common along trails

↑  
7~~29111~~

same  
 along cleared trail in wet  
 woods

2

12

Clidemia hirta (L.) D. Don (det. Wurdack (1968))

4

13

Clidemia dentata D. Don (det. Wurdack (1968))

5

14

Borreria  
 common weed

4

same - ~~to~~  
 wet forest badly  
 disturbed and logged  
 out, much undergrowth

15

Isertia  
 common

Loets - Maynas

a hen was observed to  
 catch a 10 inch snake,  
 peck at it a few times,  
 then swallow it slowly,  
 tail first, still alive.

shrub 1.5 m. tall;  
 thyrse red, immature  
 fruit orange, ripe fruit  
 dull purple, fleshy, both  
 in same inflorescence  
 non seemingly intermediate

low shrub;  
 flowers white  
 low shrub; flowers  
 white; fruit dull  
 blue-purple.  
 erect; flowers white.

tree 10 m. tall 12 cm. thick,  
 wood rather hard;  
 flowers vermillion,  
 with yellow hair within,  
 with small projections  
 without below sinuses.

29116

in undergrowth

13 17

4 18 *Cephaelis*  
rare in undergrowth

*Miconia lateriflora* Cong. (det. Wurdack (1968))

19 rare in undergrowth

Nov. 22 - Pebas, Rio Ampiyacu  
"restingas" a high ground  
with ~~very~~ dense wet  
forest, partly second-  
growth, partly primary  
but with cedrela ~~logged~~  
out, trees tall, with  
canopy of vines.

20 *Heliconia schumanniana* Loes. det. <sup>Anderson 1982</sup>  
common locally in second growth

4 21 occasional in second growth

6 22 common

del Kirkbride  
5 1977 23 *Psychotria foeniculoides* subsp. *barce* Hana  
common in second growth

6 24 rare in understory

15 25 *Cinchona magnifolia*  
rare and very local  
in second growth

shrub 1.5 m. tall;  
- fruit immature.  
small tree 7 m. tall,  
lactiferous; flowers  
pale green.

- shrub 1 m. tall;  
flowers and bracts  
white.

- slender shrub about  
1 m. tall; flowers white.

reddish clay soil,

occasional very large  
trees even in second growth.

erect, 1 m. tall, 2 spikes  
erect, bracts orange,  
red distally.

- woody vine, fruit  
crimson.

slender shrub 2 m. tall;  
flowers greenish.

(M.-Arg.)  
Steyerlm  
shrub 1.5 m. tall; involucre  
red, deeply cup-shaped

flowers yellow, fruit blue.  
slender tree 4 m. tall, fruit green.

tree 15 m. tall, 16 cm. thick;  
leaves glossy; flowers  
white, fragrant; fruits  
green, variable in size.

29126 *Cephaelis*  
rare in undergrowth  
in second-growth.

7 27 *Couma*  
now rare, formerly common  
(mostly has been cut out)  
in second growth

3 28 *Costus*  
occasional in second growth

9 det Kirkbride, 1977  
29 *Psychotria poeppigiana* subsp. *lanceolata* (M.-Arg.) Steyererm.  
common in second growth  
in underbrush.

9 30  
occasional in undergrowth  
in second-growth

4 31  
in undergrowth in  
second growth.

4 32  
in second-growth woods

erect, flowers white.

straight tree 12 m.  
tall, branches horizontal,  
only in upper part,  
latex very abundant,  
with pleasant taste,  
white. "leche caspi"

~~tree~~ latex harvested  
for chicle. Tree cut down  
laid on sticks, <sup>rings cut</sup> in bark to drain  
latex.

erect, spiral stems  
1 m. tall, leaves  
conspicuously spiral  
in arrangement;  
bracts and flowers yellow.

shrub 1.5 m. tall;  
involucre red, erect,  
deeply cup-shaped,  
catching water in rain,  
flowers yellow, fruit blue.

erect, un-branched,  
1 m. tall, bark very  
tough, with a burning  
effect on mouth, delayed  
but lasting for hours;  
fruit orange, fleshy.

shrub 2 m. tall;  
pedicels thick, <sup>yellow</sup> ~~white~~  
fruit purple-black.

small tree, fruits  
pale green.



- 29133 *Duroia*  
rare in second growth
- 34  
rare in second growth
- 35 *Cephaelis*  
rare, in primary forest  
in small opening
- 36 *Tococa cf. juruensis* Pilger. det. Wardack  
occasional in primary forest
- 37 *Geocordia*  
occasional on floor of <sup>primary</sup> forest
- 38 *Pithecolobium lactam* (P. & E.) Benth.  
<sup>primary</sup> det. R. Liesner 1982  
rare in woods in understory
- 39  
rare in primary woods
- 40 *Polypodium*  
occasional along trail  
in primary woods.
- 41  
rare on wet banks  
of stream in ravine.
- 42 *Trichena amazonica* (Pilger) Wardack  
rare on wet banks of  
stream in ravine
- 43 *Justicia emata* (L.) Lam. det. D. Wasshausen
- 43a *Pseuderanthemum* det. D. Wasshausen  
rare in wet ravine
- 44  
rare in primary forest
- 45 *Tococa guianensis* Aubl. s.l. det. J. Wardack  
common in undergrowth

- shrub 2 m. tall,  
— flowers greenish white.
- shrub; calyx and  
— corolla bright yellow.
- shrub 1.5 m. tall;  
involucres purple.  
(plant not thriving)
- shrub 2 m. tall, fruits  
immature; bladders  
of leaves inhabited by  
— ants.
- prostrate, scapes  
— erect, ripe fruit scarlet.
- slender small tree  
— 4 m. tall.
- shrub 2 m. tall; fruit  
yellowish.
- leaves deep bronzy-green;  
fruit scarlet.
- <sup>det. Wardack 1978</sup> ~~the~~ plant fleshy, infl.  
reddish, corolla white.
- erect <sup>up to</sup> 1 m. tall; flowers  
— lavender.
- vine; fruit white  
— with rose pink wings.
- shrub 2 m. tall,  
leaves with ants  
inhabiting bladders;  
flowers white.

J. Wardack  
1969

1947 - Peru

- 29146 *Duroia*  
rare in primary forest
- 47  
rare in primary forest
- 48 ~~*Beloperone*~~ *aphelandra neurosa* T. Anders. det. D. Warshausen  
rare in primary forest
- 49  
rare in primary forest
- 50 *Miconia* det. J. Wurdack  
rare in primary forest
- 51  
rare in primary forest
- 52 *Duroia*  
rare in primary forest
- 53  
rare in secondary forest
- 54 *Polypodium*  
abundant on floor of  
second growth wood
- Nov. 23 - same  
second growth wet woods
- 55 *Couma*  
occasional, in wet ravine

- shrub, flowers whitish.
- shrub 1.5 m. tall;  
thyrse purple; fruit green.
- ~~shrub 1.5 m. tall; flowers greenish, stigma white, mass-shaped.~~
- shrub 1 m. tall.
- shrub 1.5 m. tall,  
fruit green.
- small tree with irregular trunk, ants living in enlargements in twigs; flowers white.
- vine, extensive;  
bracts reddish; corolla yellow.
- small tree, very lactiferous;  
fruit green. "leche caipi"  
latex harvested by cutting tree down, laying it across sticks, cutting rings around bark to drain out latex which is caught in leaves, used for chicha.

29156

rare, edge of clearing

57

occasional

58

*Sommera sabiceoides* Sch. det. Kirkbride, 1977

rare in wet ravine at edge of stream.

59

occasional in woods

60

*Wassmannia guianensis*  
occasional in woods

61

*Cephaelis*  
occasional in woods

62

common in woods

63

*Bertiera guianensis*  
occasional in woods

64

*Cephaelis*  
occasional in woods

65

*Peperomia*  
epiphytic on tree trunks

66

rare on side of wet ravine

67

rare on side of wet ravine

68

↑

unbranched shrub  
1 m. tall; fruit green.

shrub 2.5 m. tall,  
fruit green.

shrub 2 m. tall,  
much branched,  
flowers white.

tree 8 m. tall flowers  
white.

slender tree 10 m. tall;  
flowers yellow, enlarged  
calyx lobe scarlet.

shrub, 1 m. tall;  
bracts whitish, flowers  
brevistylous, white.

tree 12 m. tall; flowers  
white, fragrant,  
corolla lobes valvate.

shrub 2.5 m. tall,  
essentially branched;  
thyrses drooping;  
flowers white.

shrub 1 m. tall; bracts  
whitish, flowers  
longistylous, white.  
vine like.

erect shrub 1.5 m.  
tall; fruits white.  
tree 10 m. tall,

4 10/17

same

~~open~~ clearing, dominated by andropogon, being encroached upon by Vismia, soil a fine white sand

29168

Scleria

common

2. 69

Xyris

in wet place

2. 70

Spathiphyllum

abundant near stream

1.

71 Psychotria cf. deflexa DC det. Kirkbride, 1971

rare in brush

3.

72 andropogon

dominant in open ground

4.

73 Liparuna

in brush, common

x

Nov. 23 - Risampuyacu below Pebas

low margins of river, inundated at this season dense brushy woods

6.

74 Psidium densicomum DC. det. McVaugh

dominant at river margin near mouth of river

caespitose

flowers yellow.

spathe and spadix white (spathe green without); in flower, green in fruit.

- rosette shrub, 1 m. long, fruit brilliant orange.

- erect, small tufts

shrub 2 m. tall, with strong citronella odor, fruit dark red marbled with green, dehiscent irregularly when ripe opening out flat terminally.

tangled shrub with smooth bark, fruit immature "guayaba" "guayabilla"

1947 - Peru

29175 *Palicourea*  
common4. *Myrciaria dubia* (HBK) Mc Vaugh det. Mc Vaugh5. 76 *Psidium*  
dominant at river margin  
near mouth of river3. 77  
common in bushy margin  
of river4. 78 *Psidium acutangulum* DC. det. Mc Vaugh  
common in bushy  
margin of river

In the Amazon at this point and in the lower Ampiyacu there are two types of porpoises, a small blue-gray one and a large pinkish one. Manatees are supposed to occur, but more in the lakes.

Here the difference between high and low water may be as much as 10 m.

When I came here, Nov. 20, Rio Ampiyacu was clear and black. Nov. 23 it was muddy with Amazon water that had come from above through a ~~can~~ natural

Loreto - Mayras

shrub, thyrses summit  
lions, flowers yellow,  
fruit blackish (mud)  
tangled shrub  
with smooth bark,  
flowers white.

vine, fruit pendent,  
immature

tangled shrub;  
fruit immature  
"quayabilla"

anal that is only open  
at high water

The system of agriculture here is to clear a patch <sup>burn it</sup>, farm it for 2 years, then abandon it to jungle. The tangled second growth resulting is called "purma".

The soil is a gray to yellowish or reddish clay. In a short way is a stratum of clay mixed with small pebbles, mostly quartz. Occasionally there are patches of white sand. None of the "restinga" or high ground soils have much humus.

77

(25)

Nov. 23 - Puca Urquilla,  
9 km. above Pebas on  
Rio Ampiyacu  
"restingas" a high  
ground, clay soil, with  
tangled second-growth  
forest.

79, 79 Clidemia hirta (L.) D. Don var. *tiliaefolia* (D.C.) Macbride  
(det. Wurdack (1968))  
common in undergrowth

2 80 Sabicea  
occasional in undergrowth

6 81  
common

7 82 Palicourea  
occasional

5 83 Piper  
common in undergrowth

1 84 Isernia  
common

10 85 ~~Geocordia~~ Carintha  
common on forest floor

9 86

3 87 Clidemia hirta (L.) D. Don var. *tiliaefolia* (D.C.) Macbride  
(det. Wurdack (1968))  
common in undergrowth

88 Siparuna *magnifica* Perk. det. R. Liesner  
1982  
common in undergrowth

3° 8' S  
71° 43' W.

low shrub, 1 m. tall;  
flowers white; fruit  
purple, fleshy.

- vine, twining in  
bushes; flowers white;  
- fruit rose purple.

- tree 7 m. tall; fruit  
- green.

- tree 9 m. tall; flowers  
and thyrse  
rose-magenta; fruit  
immature.

tree 10 m. tall.

- prostrate, scapes erect;  
flowers dull white;

- fruits bright scarlet.  
- vine; flowers dull  
purplish with yellow  
staminodes.

- shrub; flower white,  
- fruit bluish.

- semi-scandent shrub,  
unpleasantly aromatic

Nov. 24 - Pebas  
second growth woods  
on "restingas" a high ground,  
clay soil.

29139

2  
4. 90 *Mandevilla*  
in ~~brushy~~ bushy opening  
in bushy opening

4. 91 *Clerodendrum thompsonae*  
persisting around old  
house site.

5. 92 *Tragia*  
in bushy clearing

6. 93 *Ficus*  
in bottom land of small  
stream, dense forest

4. 94 *Jussiaea*  
rare in woods

4. 95 *Passiflora*  
in undergrowth

1- 96 *Jussiaea*

Nov. 25 Transvaal, mouth  
of Rio Ampiyacu, below Pebas,  
on Rio Amazonas

~~at~~ muddy river bank  
96 *Ludwigia hyssopifolia* (L. Don) Exell det.  
*Jussiaea* Ramamoorthy 1984  
rare

7. 97 *Jussiaea*  
common

lactiferous vine  
- ~~to~~ flowers bronzy-yellow  
vine; flowers  
yellow with large  
red center.

- vine; calyx white,  
corolla red.

vine; flowers green.

large banyan-type  
tree, sterile, "lanchama"  
(pron. janchama), bark  
used to make heavy  
bark cloth.

- sterile sapling 3 m. tall.

- liana, flowers  
scarlet.

flowers yellow, about  
5 mm. across, petals  
narrowly ~~oval~~ oval.

flowers yellow, about  
5 mm. across, petals  
narrowly elliptic.

1947 - Peru  
same - clearing on "restinga"

29198

*Borreria*

weed on bank above  
ravine

5.

99

*Henriettella sylvestris* Gleason det. J. W. W. Dack 1969  
common tree in ravine

X

west bank of  
Nov. 25 - Rio Ampiyacu  
below Pebas  
inundated margin  
of river

29200

*Annona muricata*

3.

01

*Crataeva benthamii* Eichl.  
common

5.

02

common

6.

03

occasional

4.

04

*Myrciaria dubia* (HBK) McV. det. McVaugh

7.

05

*Polygonum portoricense* Benth.  
local colony in  
shallow water at  
mouth of lake outlet  
det. R. Gleason 1981

5.

06

*Myrciaria dubia* (HBK) McVaugh det.  
common along margin of river  
on inundated land.

Porpoises are quite common  
along the lower part  
of the river. Called  
"bufeo". Come to surface  
to breathe and show

Loreto - Maynas

flowers white

tree 8 m. tall; fruit green.

small tree, flowers  
greenish, fleshy,  
fruit large, pinkish.

- small tree
- shrub; leaves glossy,  
fruit pendulous.
- shrub, flowers white,  
fruit immature.
- shrub; fruit immature.

- erect, stems swollen,  
flowers whitish.

McVaugh

tangled shrub,  
fruit green, sour, imma-  
ture (purple and edible  
when ripe) "camucamu"

heads very quickly,  
but move more slowly  
than sea furcs.



1947 - Peru

Nov. 26 - Transvaal,  
mouth of Rio Ampiyacu,  
below Pebas, Rio Amazonas  
low bench, just about  
level of Rio Amazonas,  
inundated at really  
high water, wet woods  
with dense underbrush

29207

common at edge of water.

5. 08

edge of river.

3. 09

edge of river

3. 10

*Somnera sabiceoides* Sch. det. Kiehlbride, 1977  
common

4. 11

*Acalypha*  
common

+ -

same - resting on  
high ground, with  
second growth wet  
forest.

12

*Polypodium Wulffia baccata* (L.f.) Ktze. det. J. Cuatrecasas  
common on ravine slope  
in clearing

3. 13

occasional in clearing

6. 14

*Jussiaea*  
~~rare~~ rare in forest

8. 15

*Styrax*  
rare in forest

Loets - ~~Pebas~~ May 1977

~~edge~~ slender small  
tree, 4 m. tall, flowers  
white.

small tree 6 m. tall;  
flowers green.

shrub 2 m. tall;  
fruit green.

shrub 3 m. tall,  
flowers white.

shrub 3 m. tall,  
catkins pendent,  
stigmas rose-red.

tangled herb; flowers  
white.

erect; flowers green.

sterile tree 10 m. tall  
(bark sample)

small tree; buds white

- 1. 79216 *Palicourea subspicata* Huber det. Kirkbride, 1977  
rare in sparse undergrowth in deep shade
- 1. 17  
rare in sparse undergrowth in deep shade
- 2. 18 *Cephaelis*  
rare on steep slope in deep shade
- 1. 19 *Saucegia peruviana* (Nees) Rusby det. D. Wasshausen  
ravine in weedy clearing
- 2. 20 *Sabicea*  
common on weedy slope in clearing
- 3. 21 *Geocordia*  
common in shade
- 4. 22 *Hamelia patens*  
common in woods
- 3. 23 *Manettia*  
weedy clearing, side of ravine.

Although the Inca empire did not come down into the lowlands of Amazonia, *Quercus* woods are common down here -  
sacha = forest or of the forest  
yacu = water

- unbranched shrub 0.8 m. tall; thyrse red, flowers yellow.
- fruit green
- stem brown, greenish above, flower white.
- erect branched herb, bracts red, flowers yellow.
- vine, flowers white, fruit purple.
- prostrate; flowers white; ripe fruit scarlet.
- small slender tree 4 m. tall, flowers orange-red; fruit black, glossy.
- vine, flowers dull reddish; fruit green.

*Pistia stratiotes* is common floating free in the river (large plants, mostly) and in the grass, etc. along the banks (small plants, mostly).

Nov. 28 - Ramon Castilla,  
Rio Amayonas, across  
from Leticia (Colombia)  
second growth wet forest  
on river bench

29224 *Couma*  
common

75 *Lindernia*  
common on silt soil of  
wet grassy clearing

The forests along the  
Peruvian Amazon are  
much like those of  
the Rio Ucayali, with the  
same process of land-  
building and cutting  
away, the same succession  
of gramalote - caña brava  
and willow - setios (Acropora)  
ojo and young mixed  
forest - mature primary  
forest. Here the caña brava  
seems to become less  
abundant downward.  
*Capirona* (*Calycophyllum*)  
also diminishes to the  
point where it is no  
longer common.

Ojo (*Ficus* of several species)  
remains the most com-  
mon tree close to the  
river. A banyan-type  
*Ficus* reaches enormous

4° 13' S  
70° W.

shrub 7 m. tall, very  
lactiferous; flowers white.  
prostrate, flowers  
purple.

size - called *lanchara*,  
- but not too abundant.  
Bark used for bark cloth,  
as also occasionally for  
floating loose masses  
of "gramalote" the common  
reed-like grass of the  
river margin, up to  
some yards across, make  
up most of the "floating  
islands" but apparently  
have no body at all,  
carry no soil, and  
certainly do not serve  
a very important purpose  
in plant migration. Very  
occasionally a patch  
of broad-leaved vege-  
tation floats by - none  
were seen closely  
enough for examination.  
Also, on floating logs and  
tree trunks are occasionally

to be seen seedlings or plants growing in root crotches. Pistia and Eichornia, esp. the former, are abundant, floating in midstream and caught and reproducing in the gravelly margins.

The banks are predominantly low and flat, inundated at high water, with consequent deposit of silt. Here and there, more especially on the north bank, are patches of high ground called "deslingas" largely of a red to yellow or grayish clay, occasionally varying to yellowish or white sand. The forest here is of a different composition from that on the low flats. The soil, after the coating of leaves is kicked away, almost lacks humus. These are usually occupied by settlements, but the land is only cultivated for a couple of years, then abandoned to forest - second growth or "puma" - this is also the system

on the lowlands, but the period is apparently longer. Here the annual inundation adds a fertile silt layer each year, but if the flood comes unusually early, it may catch the rice, etc. unharvested (as in 1947) and destroy most of it.

The system of clearing, farming and abandonment of "chacras" results in widespread destruction of the primary forest. Logging out of Cedrela and Swietenia also has a destructive effect.

After some days of observation, I have reached the conclusion that wherever the forest seems to be of trees of uneven height, without a well-formed canopy, there has been clearing, or at least intensive logging. The giant trees that remain are simply ones that it was too much trouble to cut down. A great part of the jungle along the river is of this nature.

This does not, evidently, go back far from the river margin.

Even here, burrowing is universally practiced after clearing. It would not seem possible, but, after a few dry days, is.

Maize, *Musa*, <sup>manihot</sup> and rice are the principal things planted.

Manatees are rare and almost confined to lakes. Crocodiles are also much more abundant in lakes, especially now, when they have been hunted strenuously for their skins.

Piranhas or pañas are common, but found mostly in lakes.

Another fish, ~~the~~ the "carnero", described by some as a small catfish, but more probably a lamprey or hagfish, also is a hazard to swimmers in the river. It is particularly feared by the women as it is popularly believed that it will enter the vagina and bite inside. There is also a far-fetched story that it will enter the urethra and anus. At any rate, it does bite the flesh externally.

A gull-like bird with a very long yellow bill is common on the water, as is also a tiny one, like a snipe but size of a chickadee.

Dec. 1 - Caisada, <sup>above Teffé.</sup> opposite mouth of Rio Caqueta, Rio Amazonas  
grassy wet pasture surrounded by and invaded by second-growth thickets

79716

in bush in pasture, rare

27 *Couma*  
dominant in certain bushy areas in pasture

28 *Justicia laevilinguis* (Nees) Lindav. det. D. Wasshausen  
rare in moist <sup>or wet</sup> areas in grass

29 dominant locally in pasture

30 rare in bush in pasture

31 *Turnera*  
local in pasture

32 *Fimbristylis*  
dominant in wet clay

33 *Jussiaea*  
common in wet clay

34 *Scleria*  
occasional around edges of clearing

35 *Justicia comata* (L.) Lam. det. D. Wasshausen 1969  
occasional, edges of clearing

36 *Dichromena*  
common in grass

37 *Peperomia*  
occasional in grass

7° 14' S  
64° 50' W

erect shrub 1.5 m. tall, flowers yellowish.

shrub 1-1.5 m. tall, very lactiferous; flowers white, corolla lobes reflexed.

flowers rose-purple.

prostrate to ascending.

erect shrub 2 m. tall, flowers yellow.

flowers yellow.

caespitose, weak.

prostrate with ascending tips; ~~flowers~~ petals white.

claws yellow.

erect, fruit black.

flowers white, lips marked with purple.

heads and involucre white

succulent, erect.

- 29238 *Peperomia*  
common on branches of trees
- 39 *Croton*  
common in pasture
- 40 *Miconia longifolia* (Aubl.) DC. (det. Wurdack (1968))  
common at edge of bushy woods
- 41 *Heliconia*  
abundant in clearing
- 42 *Scoparia dulcis*  
occasional in pasture
- 43  
rare in wet grassy places
- 44 *Dioidia*  
common locally in pasture
- 45 *Hyptis parkeri* Benth.  
common locally in pasture
- 46 *Calopogonium mucunoides* Desv.  
common locally in pasture
- 47 *Hyptis brevipes* Poit.  
occasional in pasture
- 48 *Solanum stramonifolium* Jacq. <sup>det. N. Nee</sup>  
common locally in pasture
- 49 *Dioscorea*  
rare in ~~thicket~~ thicket in pasture
- 50 *Tococa coronata* Benth. det. J. Wurdack 1969  
common in thickets around pasture
- 51 *Psychotria*  
common in thickets around pasture

- Amazonas
- prostrate, succulent.
- bushy tree 5 m. tall, fruit yellow.
- erect
- erect, flowers pale green.
- flowers violet.
- prostrate, flowers white
- fruit ~~white~~ yellow.
- flowers white.
- vine, flowers lavender.
- aromatic; flowers white.
- "
- vine climbing over bushes, flowers green.
- shrub 3 m. tall, with ants in pulbs at base of leaves; ~~flowers~~ buds pink; fruits immature, apparently becoming blue about ripe.
- erect shrub 2 m. tall, flowers white.
- (galls on growths on galls)

1947 Brazil  
above Teffé, mouth of Rio

Dec. 1 - ~~entrance to~~  
Teffé south of Rio Caquetá,  
Rio Amazonas  
flood plain inundated  
at high water, woods  
alternating with patches  
of reeds.

29252  
4 Cissus  
common, climbing in trees  
over water.

1 53 Costus arabicus L. det. P. J. M. Macos 1983.  
occasional in undergrowth

1 54  
5 55 occasional in woods  
Palicourea  
common in undergrowth

5 56 Psidium? ovatifolium Berg. det. Mc Vaughn  
common in woods

Dec 2 - side of Rio, above  
Codajas, Rio Amazonas  
cultivated and weedy  
land around village  
on silt plain that is  
rarely flooded.

9 57  
weed in semi-shaded places

2 58 Crotalaria nitens H.B.K.  
weed in semi-shaded places

2 59 Phaseolus pilosus H.B.K.  
weed in semi-shaded places

3° 19' S  
64° 50' W

wine, panicles red,  
flat topped; fruit immature

herb 1 m tall; flowers  
purple with white limb,  
about 2 m tall.

semi-scandent shrub  
3 m tall; thyrse red  
flowers yellow, fruit immature  
shrub 6 m tall, many  
trunklets from base  
fruit immature.

cacao, mangoes, oranges,  
lemons, papayas, maize,  
yuca, and various  
ornamentals, such as  
cosmos, Portulaca, Coleus,  
Zinnia patrifolia curcas,  
J. gossypifolia, Ocimum.

infl. glaucous

erect branched herb 1 m  
tall; flowers yellow.  
vine; flowers yellow, beak  
coiled.



- 29260 Euphorbia  
1 common on bare ground
- 3 61 Borreria  
3 common in semi-shaded  
weedy places
- 3 62  
1 common in weedy place
- 1 63 *Desmodium canum* (Emel.) Sch. & Thell.  
occasional in semi-shaded  
places
- 2 64 *Commelina*  
common in weedy open places
- 1 65 *Malachra*  
weed in shaded places
- 2 66 *Theobroma cacao*  
cultivated
- 2 67 *Scutellaria agrestis* St. Hilaire  
planted as ornamental
- 1 68 *Pereskia*  
planted as ornamental
- 1 69 *Amaranthus*  
weed in shaded place
- 3 70 *Amaranthus spinosus*  
weed in semi-shaded place
- 3 71 *Panicum*  
weed in semi-shaded place

- prostrate, purplish.  
flowers white
- leaves and inflorescence  
glaucous.  
- leaves glaucous  
beneath; flowers violet.
- ascending from  
prostrate main stems;  
petals blue, one smaller.  
- flowers bright yellow  
- "malva" used medicinally.
- dense rounded tree  
6 m. tall; sepals cream white  
petals cream-yellow  
with purple base, stamens  
deep purple.
- leaves deep purple beneath;  
flowers pale lavender,  
limb blue-violet with  
white patch in center  
of lower lip.
- rounded bush 0.7 m.  
tall; leaves fleshy; flowers pink.
- branched herb 1 m. tall  
panicle <sup>deep</sup> purple.

- 29272 Sesamum  
3 planted
- 1 73 Vigna vexillata (L.) A. Rich.  
weed in thicket
- 1 74 Zinnia  
planted as ornamental
- 1 75 Ocimum  
planted as ornamental
- 2 76  
common weed in semi-shaded places.
- 1 77 Coleus  
planted as ornamental
- 2 78 Cosmos  
weed in open places
- 2 79 Portulaca  
planted in beds as ornamental
- 2 80 Passiflora foetida var. bicolor  
weed in open place
- 1 81 Anacardium occidentale  
planted
- 3 82 Solanum nigrum L.  
weed in open places
- 2 83 Erechtites hieracifolia (L.) Raf. det. J. Cuatrecasas  
weed in open places
- 1 84  
weed in open grassy places
- 1 85 Ocimum  
planted as a condiment
- 86 Heliotropium  
weed

- branched herb 1.5 m. tall,  
flowers pale lavender.
- vine; flowers pale  
lavender, bed twisted.
- herb 1.5 m. tall;  
rays red.
- sterile, very pleasantly  
aromatic (like O. basilicum)
- sterile; leaves maroon  
- marked above.
- herb 1 - 1.5 m. tall, ray-  
flowers purplish-red.  
Herbage aromatic when  
crushed.
- fleshy; flowers crimson,  
closed in morning (7 a.m.)
- vine; flowers white,  
~~corolla~~ corona segments  
with basal third purple.
- rounded tree 4 m. tall;  
flowers bright green  
- taste
- large branched herb,  
flowers white, fruit black.
- heads greenish-yellow.
- flowers deep yellow.
- very aromatic; flowers lavender.
- erect herb; flowers  
lavender.

29237

2

rare weed

2

38

Solanium

common weed

While above Leticia the restingas all seem to be on the north bank of the river, at Leticia they are on both sides. Below Leticia none were seen on the north side, though they occur commonly along the south side, at least to well below the Catara, until near Codajaz, what appear to be very low restingas appear on the north side. These, however, are so low that they may not even be the same thing, though they are not covered by high water.

The succession on built up lands changes somewhat on the Brazilian part of the river. The gramalote strip is still well marked, and stands of *Cecropia* are occasionally seen, but the *caña brava* belt becomes less and less marked. As one goes down the river it

shrub; flowers  
cream yellow.

shrub, m. tall, sparsely  
or not branched; flowers  
white.

almost completely disappears, except for occasional small patches of *Salix*. ~~This~~ *Gynerium* itself becomes more and more rare. None was seen below Codajaz. This change in the succession seems to be correlated with an apparent dominance of the cutting away process over that of building up by deposition of *Sida*. The vegetation on many of the large islands appears quite young, but practically none are to be seen below the mouth of the Rio Caqueta, in either of the first two successional stages. None seen in distance above Codajaz that may have been covered by *caña brava*. The river here is 305 km. broad.

Nights of Dec. 1 & 2 noticed a few phosphorescent animals in river. Strong continuous light.

1947

Ilha do Cariro

Dec. 3 - Cariro south bank of Rio Amazonas just below Negro mouth salt plain high enough to be rarely if ever flooded. ~~It~~ here cleared and in cultivation

*Acalypha*

weed in manihot patch

common weed in door yard and along paths, edges of cultivated ground.

91 *Stemodia parviflora* Aiton  
weed in marsh

Dominant weed here is *Paspalum conjugatum* which is also eaten by cattle.

One of principal fruits is farinha, powdered up dried manihot starch, toasted. Tasted here, mixed with soup, etc.

The region on the east bank of the Rio Negro is very high restinga, perhaps 40 m. with light pink cliffs above the river. The debris at the bottom forms a broad sloping beach, that does not form a mud to dirty the river.

79 739  
4  
5 70

Amazonas

cult. Manihot esculenta  
bassiflora sb.  
Mangifera indica  
Carica papaya  
red mango  
Citrus spp.

weat.

ascending; flowers white.

prostrate, flowers lavender. The change from the muddy tawny waters of the Rio Amazonas to those of the Rio Negro is as striking as it has been described.

The difference is sharp even bits of Rio Negro water imperfectly mixed with those of Rio Amazonas are clearly visible.

The Rio Negro is typical clear brown swamp water, as seen in the river of the New Jersey pine barrens. It gives an astonishing impression of purity, after weeks of the Amazon. Porpoises (small gray) were playing in it near mouth.

1947 - Brazil

Dec. 4 - 7 km. n.e. of  
Manaos  
high sandy restinga  
white sandy with  
open second-growth and  
thicket.

29292  
3

Remigia  
rare in thicket

3 93 Borreria  
common along roadside

4 94 ~~Vismia~~  
~~stage~~ common  
in thicket

4 95 Alchornea ~~cordata~~  
in thicket

5 96 Vismia  
common everywhere

6 97 Fabicea  
occasional in thicket

4 98  
occasional in open second-growth

Manaos

The entire region  
back of Manaus seems  
to be second growth, in  
some places with some  
patches of larger trees persisting

sterile sapling 2 m.  
tall; leaf bases  
with bladders containing  
ants

- erect; flowers white.

small tree, pubescent  
bright rusty, buds  
yellow <sup>orange</sup> ~~white~~

- semi-scandent  
shrub 4 m. tall.

small tree; fruit  
green.

- twining vine; flowers  
white.

shrubs 2-3 m. tall,  
flowers white (2 plants  
represented in coll.)

Dec. 7 - Cafeyal, just n.e. of Belem

Jan V

Tall moist forest, mixed large trees and second growth on relatively high ground

29299 *Cephaelis* in weedy tangle cleared ground

29300 *Hirtella* in weedy tangle cleared ground and forest undergrowth.

01 in undergrowth, rare

2 01 *Cephaelis tomentosa* rare in undergrowth

02a *Coccoloba* on forest floor, occasional in duff.

14 03 *Syzygiopsis oppositifolia* Duches rare tree in forest. (*Pouteria oppositifolia* (Duches) Bas. & G. S.)

6 04 *Palicourea* common in bushy second-growth, rare in undergrowth.

7 05 *Heisteria sessilis* occasional in undergrowth.

06 *Palicourea* rare in undergrowth.

1° 25' S 48° 25' W

shrub, 1 m. tall; bracts purple.

low shrub, flowers rose-purple.

involucre scarlet, smaller bracts yellow. prostrate, leaves dark bronze-green; flowers whitish.

tree 30 m. tall; fruits yellow when ripe, pulp around seed sweet, rind astringent.

shrub 3 m. tall; flowers yellow, thyrse yellow with brownish-purple peduncles.

slender shrub 2 m. tall, flowers whitish.

slender shrub 1.5 m. tall, thyrse red; fruit green.

1947 - Brazil

*Maieta guianensis* Aublet (det. Wurdack (1968))

29307

Tococa?

- 7 common in undergrowth
- 4 08 *Psychotria*  
rare in undergrowth
- 1 09 *Palicourea*  
rare in undergrowth
- 4 10 *Trichomanes*  
forest floor
- 11 *Piper*  
forest floor
- 1 12 *Carludovica*  
climbing on tree trunks
- 8 13 *Rhinorea*  
common in undergrowth
- 14 *Cephaelis*  
rare in undergrowth
- 5 15 *Cephaelis*  
common in undergrowth
- 7 16 *Casearia*  
occasional in undergrowth
- 2 17 *Cephaelis*  
rare in undergrowth
- 1 18 *Leiphaemos*  
rare in duff of forest floor
- 2 19 *Piper*  
occasional in undergrowth
- 1 20 *Piper*  
occasional in undergrowth
- 3 21 *Metaxya rostrata* (Humb. & Bonpl.) Presl  
common in undergrowth
- 1 22  
occasional in undergrowth
- 7 23 *Marattia coccinea*?  
epiphytic on tree-trunk

low shrub; fruit red.

low shrub, fruits green. flowers white.  
- fruit red, thyrse green.

shrub 0.8 m. tall;  
- fruit green.  
- vine; flowers green.

small flat-topped tree  
3.5 m. tall.

shrub 0.7 m. tall;  
- heads and bracts purple.  
- suffrutescent herb;  
- flowers whitish.

shrub 4 m. tall,  
- flowers white with  
- rose-pink centers.

sub-shrub, buds  
- only.  
- yellow

subshrub; fruit green.

subshrub

det. Sellinger, 1978.

fronds erect or ascending  
- from erect rhizome.  
- fronds ascending from  
- erect rhizome.  
- vine-like, flowers red  
- on pendent inflorescences.

- 29374 Piper
- 7 rare in forest
- 17 25 Laetia
- occasional in forest

~~Nov~~ Dec. 3 - Agua Preta  
(Urtinga), 5 mi. n. of  
Belém.

weedy patches and  
desiccating ponds.

- 3 26 Blechnum serrulatum L.C. Rich
- common at edge of desiccating  
pond.
- 3 27 Rhynchospora
- common in mud of pool
- 5 28 Mandevilla
- common on stone wall
- 5 29
- common on stone wall
- 2 30 Marsiphanthes hypnoides
- common in weedy places
- 1 31 Naspathe sagittifolia (Rudg) Schott <sup>det</sup> ~~Rich~~ ~~1961~~
- in muddy pool
- 4 32 Tetraplacus tauberti Mez. det. D. Wasshausen 1961
- abandoned garden
- 2 33
- bare ground
- 2 34 Friesea
- common in desiccating pools
- 1 35 Xyris
- desiccating pool.

shrub 1 m. tall

tree 40 m. tall; fruits  
fleshy, luscious "tucua"  
very sticky with a  
milky sap (rest of  
plant not lactiferous).

det. Sillinger 1978

fronds very erect.

caespitose, erect.

milky vine; flower  
yellow with red throat.  
lactiferous vine;  
flowers white.  
flowers ~~white~~ purple.

spathe bronze green

flowers violet  
with white center.  
prostrate, flowers  
yellowish white.

flowers yellow.





29376

5 common in desiccating pools

4 37 Melampodium  
common in weedy ground

1 38 Panicum  
desiccating pool

1 39 Tonina fluviatilis  
desiccating pool

3 40 → in patch of forest  
in old cacao plantation

6 41 Geocordia herbacea  
common on floor of

Dec. 8 - Cacaosal, Instituto  
Agronomico del Norte,  
Belem

broken forest around  
old cacao plantation  
and old ruins

3 42 Codonanthe ~~calcarata~~ calcarata (Miq.) Hanst.  
epiphytic, growing  
out of ant nest on tree trunk

6 43 Inga ingoides (Rich.) Willd.  
common in forest

1 44 Peperomia  
epiphytic, growing  
out of ant nest on tree  
trunk

Dec. 9 - Instituto Agronomico  
del Norte, Belem  
dry weedy roadside

7 45 Hedryotis  
common on bare ground

flowers yellow.

large tree

branching, fleshy,  
vine-like

tree 8 m. tall.

fleshy vine.

1° 25' 48" W / 5° 17' S

diffuse; flowers pale lavender

1947 Brazil

29346 *Cinchona* (*Remijna amazonica*  
cultivated in bath-house)

I

Dec. 5 - Belterra, Rio Tapajoz  
26 mi. above Santarem  
weed in open ground  
in rubber plantation

47

unbranched or sparsely  
branched shrubs 1-3 m.  
tall, varying in leaf  
size, pubescence, and  
in whether or not valves  
of fruit split at apex,  
sometimes both entire  
and split valves in  
same capsule.  
flowers white.

prostrate, heads greenish.

Dec. 12 - flying from  
 Maracayibo to Bananquilla.  
 The low rocky hills  
 of the Guajira mountains  
 are separated from the  
 northern extremities of  
 the Cerros de Perija by  
 flat lands slightly above  
 sea level.

The valley of Rio Cinaroa  
 between the Cerros de  
 Perija is definitely a  
 syncline, running  
 about n.e.-s.w., not  
 a stream cut valley.  
 Thus it is open at both  
 ends, though the river  
 flows to the Magdalena.  
 Along the n.w. side were  
 a ridge representing  
 the uppermost bed  
 which has broken off  
 into forming an  
 escarpment parallel  
 to the Cerros de Perija but  
 across the valley to meet  
 at the foot of the east  
 end of the Sierra Nevada.  
 This is true at the n.e.  
 end, at least.

The north slope of the  
 Sierra Nevada is  
 densely forested, at  
 middle altitudes, when

not passed, a dense layer  
 of clouds, nested  
 against the flanks  
 of the mountain.

In the big lagoon  
 between the west  
 end ~~is~~ of the Sierra  
 Nevada were two  
 villages built  
 out in the water,  
 on stilts, with no  
 contact whatever  
 with land. In the  
 larger one were well  
 over 100 houses, perhaps  
 more.

Sailing canoes are  
 the means of transportation.

There are extensive  
 mangrove swamps  
 around this lake.

(100)

Dec. 13 - El Pedregal, about 10 km. s. of Mexico City

Dry lava flow, surface bare and cherted, with sparse bushy vegetation

29348

*Selaginella*

forming patches on bare sloping rock

3 49

*Plumbago*

common

3 50

*Porophyllum* (Lam.) Benth.

commonest herb in open places

1 51

*Renecio praecox* (Cav.) DC. det. J. Cuatrecasas

very common

4 52

*Wigandia*

common

23

Dec. 13 - San Andres, 16 km. s. of Mexico City

dry volcanic slope, weedy

2 53

*Galium*

common

4 54

*Loeselia mexicana* (Lam.) Brand.

common

2400 m. est.

Commonest shrubs a fleshy-stemmed *Renecio* *Wigandia* sp. etc. *Schinus molle*, etc.

prostrate

spreading suffrutescent herb, flowers ~~pink~~ blue-lavender, very strong nauseating odor, flowers deep yellow with red markings - more or less developed toward center of ~~ligule~~ <sup>ligule</sup>. stems fleshy, leaves shed from most individuals at this season, fls. heads yellow. shrub 2 m. tall, young portions of stem with stinging hairs, base lower parts glandular (one branch glandular to inflorescence - all sheets from same plant) flowers purple.

2500 m. est.

prostrate, tangled.

det. D. Wasshausen 1969

suffrutescent herb, much branched at base, branched; flowers scarlet, some

what *Wigandia*?

Dec. 13 - hills above San Andres,  
12 km. s. of Mexicaltlan.

dry volcanic slope, weedy  
edges of cultivated ground,  
ravine sides, etc.

29745  
3

Sedum  
occasional rocky place

5

56 Hypericum  
occasional, weedy road cut

1

57 Galium  
occasional, ravine walls  
and road cuts.

6

58 Salvia lavanduloides Kunth  
common

5

59 Eriogonum det. J. Cuatrecasas  
common

1

60 Alchemilla  
occasional

3

61  
occasional

2

62 Selaginella  
common in rocky places

3

63 Prunus serotina  
common along highway

Dec. 14 - Selva oscura, km. 65 on  
highway to Vera Cruz, just over  
high pass  
Pine forest

5

64  
common on earth banks

2:00 pm. 20.

fleshy, stems pinkish  
purplish, roots fascicled,  
fleshy; flowers white  
with pink tips to petals.  
much branched at base, erect.

roots yellow, from  
slender rhizome,  
plant prostrate, tangled  
bushy suffrutescent

aromatic herb, stems erect;  
flowers blue-violet.  
erect; ray, white,  
disk greenish, turning  
reddish.

scape reclining

plant weak; flowers pink.

curving up, with dryness.

much branched tree 6 m.  
tall; flowers white.

prostrate, matted.

29365 *Crataegus*  
common along ravine

Dec. 17 - ~~at~~ Mountains  
west of Apapantilla

wet ridge with second  
growth brushy woods

66 *Gouania*  
common

67 *Piper*  
in undergrowth

68  
common

69  
rare in undergrowth

70 *Phyllanthus*  
weed along trail

71 *Borreria laevis*  
weed along trail, common

72 *Hedyotis*  
common weed along trail

73  
rare weed along trail

74 *Hamelia patens*  
rare in brush

(115) Dec. 17 - (115) *Pachusa* - *Truper* road  
20 km. e. of *Pachusa*, Hidalgo  
slope of rather unweathered fine  
volcanic tuff

75 *Eupatorium*  
common

tree 5 m tall, fruit green.

2000 m. alt.

20° 20' N

97° 55' W

liana, fruit green

shrub 1.5 m tall

spike, red

small tree 5 m tall  
leaves badly galled fruit  
immature.

longate suffrutescent  
herb, 1.5 m tall, flowers red.

flowers white

ascending to erect, flowers  
white.

erect, roots fleshy, flowers  
yellow.

shrub 1 m tall, flowers  
orange-red.

2500 m. alt.

flowers white.

- 29376 Buddleia  
common
  - 77 Dalea  
common
  - 78 Paronychia  
common
  - 79  
common
- Dec. 17 - Heredia, 5 km. w. of  
Tehuacan, about 1700 m  
Pachuca - Turquesa road.  
Pine forest (Pinus # 29381)
- 80 Lagina  
in ravine, near <sup>small</sup> stream
  - 81 Pinus  
common, also planted for  
reforestation nearby.
  - 82 Salvia elegans Vahl  
occasional along small stream
  - 83 Acaena elongata L.  
common along small stream
  - 84 Alchemilla  
common in mud along small stream
  - 85 Drymaria rumicoides  
common in mud of small stream
  - 86 Galium  
rare in mud along small stream

- tree 4 m. tall
- tangled dwarf shrub;  
flowers deep rose-purple.  
prostrate, mat-forming.  
spreading  
flowers lavender
- prostrate, flowers white  
petals entire.
- tree 14 m. tall, 25 cm. thick,  
leaves conspicuously drooping.
- spawling herb; flowers  
scarlet.
- prostrate, flowers  
green.
- prostrate
- prostrate, fruit black, fleshy.



Dec. 18 - 5 km. e. of Huauclhinango, on Pachuca-Tuspan highway  
brushy, weedy road embankments

29387 *Erigeron karwinskianus*  
common on weedy slopes

5 88 *Tibouchina* cf. *rufipilis* (Schl.) Cogn.  
on weedy slope

2 89 *Centropogon*  
brushy slope

2 90 *Euphorbia*  
weedy roadside

3 91 *Geranium*  
weedy slope

2 92 *Galium*  
weedy slope

Dec. 19 - 3royo de Santa Maria, Panamies, Hidalgo, about halfway between Colonia and Actopan, n.w. of Pachuca, Hidalgo  
rocky outcrops, sides of arroyo, with shrubs

3 93 *Selaginella*  
common in rock crevices

1 94  
rare weed along roadside

1 95 *Galinsoga*

6 96 *Drymaria*  
common between rocks

1050 m. alt.

98° W.

20° 10' N.

plant decumbent to ascending; rays white to pinkish, disk greenish. - suffrutescent herb, flowers rose-pink. - sprawling shrub 1.5 m. long. corolla <sup>corolla</sup> red with yellow lobes, ~~staminal~~ filament tube reddish, anthers brownish gray. - plant sprawling, lactiferous; glands white elongate, several stems from root; flowers pink. - vine like, roots yellow; flowers white.

2500 m. alt.

and cacti of various sorts.

prostrate

odor disagreeable, oily; flowers white.

rays white. erect or ascending; <sup>petals</sup> flower white, bifid at apex, subequal with sepals.

97 *Salvia reflexa* Hornem<sup>m</sup> det. Ramamoorthy 1984  
common but mostly dried up

98 rare, between rocks

99 *Artemisia*  
common in rocky ground

29400 *Rhamnus*  
common

01 *Rhus*  
weed along road  
Dec. 19 - Hills just west of  
Tasquillo, above Tula River,  
Panamerican highway, Hidalgo  
rocky cactus-covered hill,  
badly grazed by goats.

20° 35' N  
99° 20' W  
6000'  
11000'

02 *Acalypha*  
rare

03 rock crevices on vertical banks

04 *Selaginella*  
rocky banks and crevices

05 common shrub

06 common

07 *Asclepias linifolia* det. Spellman, 1978  
occasional

08 *Cheilanthes*  
common in rock crevices

09 *Cheilanthes*  
rare in rock crevices

10 *Evolvulus*  
rare on open ground between rocks

11 *Celtis pallida*  
common

flowers pale lavender

erect, very aromatic

wounded bush 1 m.  
tall, fruit brownish red.  
flowers pale yellowish

prostrate

gray; flowers white

rosettes tending to curl  
up with dryness.  
shrub 1.5 m. tall.

spreading, flowers purple.

suffrutescent herb,  
densely caespitose,  
flowers white.

spreading, flowers blue.

shrub 1.5 m. tall; fruit yellow,  
juicy.

29412

*Drymaria*  
rare

~~(Hidalgo)~~  
Dec. 19 - Ximapan, Hidalgo  
in park.

29413

*Taxodium mucronatum*

Dec. 19 - Barranca de los  
Mármoles, mountains  
south of Ximapan  
scrubby coniferous forest on limestone slopes.

7

14 *Cupressus*  
one of dominant trees

15 *Cupressus*  
common on slopes between trees

Dec. 19-20 - mountain slopes  
south of Jacala  
bushy ridges, *Rhus* most common

6

16 *Rhus schiedeana* Schlecht. ♂  
common

5

17 *Berberis*  
occasional in brush

3

18 *Rhus schiedeana* Schlecht. ♂  
common

6

19 *Croton*  
common

6

20 *Dodonaea viscosa*  
common

flowers white

~~745 m. alt.~~  
1800 m. alt.

enormous tree, about 15 m.  
tall, 4 m. through at base,  
branchlets pendulous.

20° 45' N  
99° 25' W.

*Cupressus*  
7300'

small tree 5 m. tall,  
branchlets pendulous,  
erect; flowers rich purple.

900 m. alt.

21° N  
99° 12' W.

shrub 1.5 m. tall; flowers  
white, center yellow, turning  
red.

tall sparsely branched  
shrub 3 m. tall, inner  
bark yellow, fruit green.

shrub 1 m. tall, flowers  
white ♂.

shrub 0.6 m. tall.

tall shrub, 2 m. tall, fruit

- 29421 Rhamnus  
common
- 22 ...  
common
- 23 Vernonia  
very common
- 24 Rhus schiedeana Schlecht. f  
common
- 25 Lobe Hedera  
occasional
- 26 Lobelia  
rare
- 27 Rhus schiedeana Schlecht. f  
common
- 28  
common
- 29 Salvia  
rare in openings
- 30  
common in thickets
- 31 Castilleja  
rare in openings
- 32 Euphorbia  
in burned spot
- 33 Euphorbia  
common in burned spot
- 34 Euphorbia  
common in burned spot

- shrub 1 m. tall, ...  
fruit
- low shrub, flowers  
purple
- flowers purple
- flowers purplish
- low shrub, flowers white,  
fruit immature, fragrance  
unpleasant  
prostrate, rays orange,  
leaves black.
- shrawling herb 1 m.  
long, flowers blue-violet.  
shrub 3 m. tall.
- calyx green, bracts  
scarlet distally
- prostrate
- prostrate
- prostrate





1947 - 11/11/47

Dec. 21 - Rio Naranjo at lower falls of El Salto

Plants in brush at top of canyon wall

29491

in brush at top of canyon wall

3 52

in open

~~53~~ *Ruellia*

edges of

5 53

*Randia*

occasional at cliff top in brush

6 54

*Celtis*

common in tangled forest

~~55~~

Dec. 21 Rio Naranjo at foot of upper falls of El Salto

Travertine ledges and cliffs, and soil formed from limestone, brushy open woods, mainly *Taxodium*

7 55

*Beloperone guttata*

common in moist brush near base of falls

4 56

*Ruellia menthaefolia* Leonard sp. ined. occasional in edges of

San Luis Potosi

600 m. alt.

99° 20' W

22° 40' N

low tangled shrub, flowers cream white turning brown.

vine growing in open rocky top of cliff

rigid shrub, 1 m. tall, fruit pale green.

woody thorny vine, fruit orange-yellow when ripe.

99° 20' W

22° 40' N

600 m. alt.

low slender shrub, bracts rust color, spikes nodding, corolla white with purple marking on lower side

rooting at nodes, flowers purple.

det. D. Wasshausen

- 29457 *Parthenium*  
occasional in ~~brush~~ open
- 58 *Psychotria*  
occasional in brush  
at edges of cliffs.
- 59 *Sippia hypoleia* Briq. det. Maldenke  
occasional in thickets.
- 60 *Nama jamaicense* L. det. H. Robinson '69  
common on wet rocks.
- 61 *Argonia franconis* Liebm. det. L.B. Smith  
common on wet rocks.
- 62 *Galvezia*  
common on cliffs.
- 63 *Borreria*  
occasional along trail.
- 64 *Teucrium cubense* Jacq.  
common on flat semi-open  
ground.
- 65  
rare in brush near  
foot of falls.
- 66 *Hypoxis*  
rare on wet soil near foot
- 67 *Hedyotis*  
rare on wet rocks near  
foot of falls.
- 68 *Polubia*  
occasional in edges of  
brush on flat ground.
- 69  
common in open places  
on flat ground.
- 70 *Rhinostylidodendron*  
rare on travertine near water.

- flowers whitish.
- low shrub, fruit  
red, fleshy when ripe.
- small tree, 4 m. tall,  
aromatic, flowers white.
- prostrate, flowers  
white.
- stem fleshy, flowers  
white.
- scandent shrub;  
flowers scarlet.
- flowers white.
- flowers white.
- erect branched shrub,  
collar white, falling  
readily.
- flowers yellow.
- flower white.
- flowers <sup>blue</sup> violet and white.
- shrub 1.5 m. tall,  
rays yellow.
- creeping, sterile.



29-171 *Taxodium macrocarpum*  
dominant tree along river banks

72 *Urena*  
common trailing

small tree, often  
very large, swollen  
at base, branches  
pendulous.  
fronds erect.



Jan. 10 - trip by U.P. R.R. through Valley of Platte from west of Kearney to North Platte, Ogallala, Julesburg, ~~to~~ Sidney, etc.

The country west of Kearney is flat, bare, and with only a round farms and along watercourses. The low rounded contours of the sandhills lie in the distance to the north.

As North Platte is approached the line of low bluffs south of the Platte is to be seen. The bottom-lands are dominated by cottonwoods and low reddish brush that may be willows or cornus, probably willows.

The general color is a rich tawny yellow in the sun, with patches of old-rice dried and ropogen. Wheat and corn fields are the dominant feature. The complete lack of snow is

surprising at this season. East of Ogallala the divide between the two forks of the Platte is marked by low rounded hills, with occasional outcrops of flat sedimentary beds. Hilly country is common from here west, low rounded hills, marking the ~~top~~ north scarp of the South Platte ravine. This is high prairie pasture, with dried grasses, Andropogon, and abundant clumps of a caespitose, scabrous *Yucca* with a low flower stalk. It is pretty thoroughly grazed and difficult to identify much else, except *halzola*. Even *Populus* becomes scarce west of Julesburg except around villages and farms. The South Platte bottom is largely cultivated.

1948 Feb. - Wyo.

In extreme western Nebraska the railroad runs through a ravine with low bluffs of flat sedimentary beds with a sparse vegetation of small pines.

Eastern Wyoming is rolling grassland with ravines. It seems completely treeless outside the towns. There is still no snow except in treeless places.

Still west of here, but east of Laramie, is a region that is almost a peneplain, low rocky outcrops with expanses of alluvium between them. The alluvium is grassland. The rock knobs are sparse scrubby pine forest. The rock seems to be a coarse red granite or gneiss. The rock and the pines become more abundant as we climb to the westward.



PLANTS OF PERU  
Dept. de Loreto

Locality *Tanaruaal, below*  
PEBAS (Pebas), at mouth of Rio Ampiyacu,  
on Rio Amazonas, Prov. de MAYNAS

Lat. 3°10' S, Long. 71°40' W

Occurrence *Common in large bushy forest  
along river banks, at  
edge of woods on high ground*

Date Nov. 20~~24~~, 1947 Alt. 100 m. (estimated)

Coll. F.R. Fosberg No. 29207

Remarks *Slender small tree, 4m. tall;  
flowers white.*

1947 Cinchona Expedition

PLANTS OF PERU

Dept. de Loreto

Det.

Locality *Transvaal, below*  
PEBAS (Pevas), at mouth of Rio Ampiyacu,  
on Rio Amazonas, Prov. de MAYNAS

Lat. 3°10' S. Long. 71°40' W.

Occurrence *Common at edge of water on low bench just above level of Rio Amazonas, inundated at really high water*  
Wet woods on "restinga" or high ground with dense undergrowth  
along rivers, clay soil or mixed sand and clay

Date Nov. 26-27, 1947 Alt. 100 m. (estimated)

Coll. F.R. Fosberg No. 29207

Remarks *Slender small tree, 4 m. tall; flowers white.*

1947 Cinchona Expedition

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1947 Cinchona Expedition

# PLANTS OF PERU

Dept. de Loreto

Stachytarpheta

Det.

Locality Environs of

PUCALLPA, on Rio Ucayali,  
Prov. de Coronel Portillo

Lat. 8°26'S., Long. 74°36'W.

Occurrence Common along roadsides  
rain-forest region, benches and steep slopes,

~~partly cleared~~

Date Nov. 1, 1947 Alt. 180 m. (estimated)

Coll. F.R. Fosberg No. 28922a

Remarks Erect much branched herb 1 m. tall;  
flowers lavender.

1947 Cinchona Expedition



In city 28922.



