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Collection Number Book #9

Nos. 19844 - 20613

Jan. 26 - July 18, 1943

Colombia

(2 nos. Virginia)

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No. 9

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COLOMBIA

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ite.

white.

white.

leaves

nae

, not

✓ Jan. 26 - Hobo, along Quebrada del
Hobo, valley of Rio Magdalena, Huila
moist bottom land 675 m.
along road

19844 Boneria

45 Boneria

✓ Jan. 26 - Valley of Rio Magdalena,
road from Campoalegre to Hobo, Mun.
de Campoalegre just n. of boundary
of Mun. de Hobo. Huila
weedy roadside, somewhat grazed. 620 m.

46

47 Boneria

48 Boneria

✓ Jan. 27 - Quebrada Cuandinosa,
above Gigante, near confluence
of Quebrada Aguablanca and
q. Chonta, Mun. de Gigante, Huila
Thicket of second growth 1100 m.
woods along trail.

49

Tournefortia

✓ Jan. 27 - ~~Ridge bet~~ near foot
of ridge between Quebrada
Aguablanca and Quebrada Chonta,
above Quebrada Cuandinosa, Mun.
de Gigante, Huila 1100 m.
bare hillside, but with a few
small trees along trail.

50

Dioscorea

erect, fls. white.
weak, ascending, fls. white.

fls. white
erect, fls. white.
ascending or erect, fls. white.

scandent shrub, fls. white.

vine climbing in trees, leaves
glossy, fruiting inflorescences
pendent, fruits tri-lobate, not
quite mature.

19851 *Vismia*

- 6 ✓ Jan. 27 ^{Finca} - Miravalles, on ridge bet. Quebrada Aguablanca and Quebrada Chonta, Mun. de Gigante, Huila 1850 m.
 52 *Callitriche deflexa* var. *subsessilis* Tassett (anal.) abundant, covering muddy ground in yard.

- 2 53 *Melastoma* abundant in thick woods above finca

- 97 ✓ Jan. 28 - Above Finca Miravalles, ridge bet. the Rio Blanco drainage and the Quebrada Cuandivosa drainage, Mun. de Gigante near border of Mun. de Algeciras, Huila thick wet woods.

- 7 54 *Cinchona officinalis* small patch or "mancha" of trees said to have been planted many years ago from sucker sprouts of trees that had been cut down.

55 *Rubus*

small tree 6 m. tall, leaves copper-brown beneath, lates red, flowers brownish-white, fruit immature

det.
HCF.

prostrate forming a close mat, fruits minute, green. "berro" ^{with other plants and} infusion good for liver. infusion made with corn silk and Equisetum for liver

small tree, ~~flowers~~ corolla deep crimson, with cream colored stamens, corolla fades to light magenta, calyx and ovary deep purple-black. "chilca"

Anal. Ballis:
 B+C 1.7%
 Ci 0.8%
 Qui 2.0%
 TC 2.5%

tree 10 m. tall, 10 cm. thick, leaves dark green, glossy above, midrib and petiole reddish, thinly coriaceous, stipules becoming red in age. (bark sample -) "guina tuna" ^{fruit immature}
 small tree 5 m. tall, dry fruits below leafy twigs.

19356

14 57

Ladenbergia undulata
abundant

58

Andropogon
on tree trunks

59

Trichomanes
on deep humus on ground, very
abundant.

12 60

Cinchona officinalis & *pitayensis*
abundant in "manchali" patches,
said to have been planted
many years ago from sucker
sprouts of trees cut down.

3 61

comp.

4 62

Blechnum
common

63

Blechnum

64

Lycopodium obscurum

65

Asplenium
on mossy, decaying fallen tree-trunk
only 4 plants seen, 3 in a clump.

7 66

Asplenium
in humus

67

Polypodium
in humus and on mossy log

68

Trichomanes
climbing on tree trunks, ~~fronds pendent~~, abundant

shrub, fls. white

Anal. Bellis:

not more

than traces
of cinchona
alkaloids.

tree 15 m. tall, fls. white
very fragrant. (bark sample)
other trees much larger.
"ojancho" wood very
hard, much used.

scape pendent, fls. brown,
sepals with cross bands
of yellow, lip yellow.
erect, arching.

Anal. Bellis

G+C	1.8
Li	0.5
Gu	2.5
TC	2.5

tree 12 m. tall, 15 cm. thick,
bushy at top, leaves
rather glossy above,
fruit immature (bark sample)
"guina tuna"

vine, fls. white

rhizome rather short,
in loose humus, fronds
ascending.

sterile plant, apparently
same as #19862, but stiff
much more scaly.

square stemmed, hollow stemmed
shrub, 5 m. tall, buds only.
erect, blade reflexed, spikes
erect. stiff fleshy, blade
somewhat so, roots fleshy.
fronds arching

rhizome ^{base} glaucous green.

fronds pendent

19869

Orchid

on mossy tree trunk, near base

70

Orchid

on thick humus

71

Palicourea

edge of clearing, common.

72

Orchid

on humus and decaying logs

73

Hydrocotyle

bases of old stumps in clearing

74

Palicourea

edge of clearing

75

*Cinchona pubescens*isolated tree on top of hill otherwise cleared and in pasture, at slightly higher alt. than nearby *C. officinalis*.

76

Orchid

thicket in second growth along trail

77

Tournefortia

78

Cinchona pubescens

Jan. 28 - Below Finca Miravalles, on ridge bet. Quebrada Aguablanca and Quebrada Chonta, Mun. de Gigante, Huila

1700 m.

Cinchona pubescens

remnants of forest along ridge

leaves fleshy-coriaceous, fls. greenish to yellowish, fls. white

small tree 5 m. tall, thyrse red-purple, corolla blue outside, lobes green. ^{20 #19874} for fruit.

creeping

small tree 6 m. tall, fruit blue-black when mature see #19871 for fls.

Anal. Bellis:

g.c. 1.0%

Ci 1.2%

Qui tr

TC 2.2%

tree 15 m. tall, 3 dm. thick on more (bark sample D) bark rough, thick. leaf veins red, stipules small, strongly reflexed from the first.

~~tree~~ tangled herb or subfruticent herb about 2 m. tall, fls. orange with yellow lobes, mature fruit said to be 2.5 cm. in diameter, and edible (none seen). scandent shrub, fls. white.

anal. Bellis:

g.c. tr

Ci 0.7%

Qui tr

TC 0.7%

Tree 10 m. tall, 15 cm. thick, leaf veins pinkish beneath, some lvs. red, stipules green, erect. bark rough, corky (bark sample)

✓ Jan. 28 - Quebrada Cuandimosa
drainage, ridge bet. Quebrada
Aguablanca and Quebrada Chonta,
Mun. de Gigante, Huila
woods along ridge 1500 m.
19879 *Monina*

AB 3 80 *Condaminea corymbosa*

✓ Jan. 28 - Quebrada Cuandimosa drainage.
lower part of ridge bet.
Quebrada Aguablanca and
Quebrada Chonta, Mun. de
Gigante, Huila 1100 m.
mostly cleared land,
cultivated or in pasture,
scattered trees along trail
on ridge

12 81 *Ladenbergia magnifolia*

✓ Jan. 30 - top of first high hill on ridge
s. of Quebrada Cascajos,
about 1500 m.

cleared country with some ^{Huila} second growth. 1900 m.

82 *Dichromena*

wet weedy place beside trail

83 *Gonzalagunia*

thickets along fence by trail

vine climbing in trees,
fls. deep violet.
shrub 3 m. tall, fls.
deep purple outside, green
within.

anal. Ballis.
not more
than trace
of cinchonine
alkaloids.

tree 15 m. tall, 2 dm. thick,
fls. white, fragrant.
(bark sample)

small tufts, involucre not white
- heads white
shrub 4 m. tall, arching,
fls. white, fruit fleshy, gray

✓ Jan. 30 - Finca los Cedros on
ridge s. of Quebrada Cascayosa
2 km. s.e. of Garzon

brushy fence row bet.
trail and pasture

Huila
1600 m.

19884

Viburnum

3 85

camp

1 86

Cinchona pubescens Vahl
common along trail, ~~sp.~~

2 87

Rubus

4 88

Cinchona pubescens Vahl
common along trail

AC 4 89

Erneornhiza umbellata

2 90

Cinchona pubescens Vahl
common along trail

✓

Jan. 31 - above Finca los Cedros, on ridge
s. of Quebrada Cascayosa 2 km.
s.e. of Garzon
in second growth in clearing on ridge

Huila
1700 m.

4 91

Rubus

2 92

Blechnum

small tree, 4 m. tall, fruits
dark blue.

vine climbing in bushes,
fls. white.

"ojancho"
"canchoso"

small tree, really a stump
sprout, 4 m. tall, ^{leaves light green beneath,} veins red.

semi-scandent shrub
3 m. tall, ripe fruit black,
rather sweet and edible.

small tree, really a stump
sprout, 5 m. tall, leaves
light green beneath, veins
reddish.

woody vine climbing in
bushes, fls. white

sterile stump sprout
2 m. tall, leaves
red-purple beneath, stipules
erect, obtuse, on large
shoot, bifid. "ojancho" "canchoso"

scandent shrub, fls. white, fruit brown
fertile fronds erect, sterile
arching, young fronds red-purple

- 19893 *Ladenbergia*
edge of clearing, abundant
- 94 *Ladenbergia*
edge of clearing, abundant

✓ Jan. 31 - Finca la Estrella, s. of
Quebrada Cucaracha, one of the
headwaters of Quebrada Damas,
about 12 km. s.e. of Garzon, Huila
Thick forest with clearings 1600 m.
here and there.

- 95 *Drymaria cordata* (L.) Willd.
muddy place along trail in pasture

✓ Jan. 31 - ridge s. of Quebrada
Cucaracha, ~~above~~ one of the headwaters
of Quebrada Damas, about 12 km.
s.e. of Garzon, ridge above Finca
la Estrella, Huila 1600-2000 m.

- 96 *Cyclanthus Caribbeus*
moist forest
- 97 *Wernmannia*
moist forest
- 98 *Bidens*
weed in clearing
- 99 fern
moist woods in deep humus
- 19900 *Polypodium*
on base of tree trunk

stump sprout from large
stump. "ojancho blanco"
tree 12 m. tall, 3 dm. thick,
fls. white, fragrant, bark
1 cm. thick, hard, warty, with
a woody-granular layer.
(bark sample). "ojancho blanco"

anal. Bellis:
not more
than traces
of anethone
alkaloids.

prostrate, spreading, fls.
white, petals small. bifid
to base of blade into two
linear-lanceolate lobes,
fruiting pedicels viscidous,
easily detached.

1600 m. stem about 4 dm. tall, spike
green, leaves deeply bifid
at apex.

tree 10 m. tall, 8 cm. thick, fls. white
rays white, disk yellow.

"

"

"

"

bluish green, veins pellucid

19901

Dictyostegia orobanchoides (Hook.) Niers subsp.~~*purdieana* (Benth.)~~
*Snelders & Maas det. Maas 1983*in moist or wet woods, ⁱⁿ damp humus

3 02

Columnnea

in recent clearing in wet forest

4 03

Crotophaga

in recent clearing in wet forest

4 04

Cinchona officinalis ~~*pitagorica*~~recent clearing in wet forest.
apparently a "mancha" of
this plant was cut, as
suckers are coming up
abundantly.

3 05

~~*edge of*~~ *Myrsine*

edge of clearing in wet woods

3 06

Urtica

wet woods

3 07

Polypodium granulosum *longig. var. (Pasc.) Morton*

wet woods det. Schimper 1969

3 08

Vaccinium?

moist woods

1 09

*Orchid*wet woods, along trail, on fallen
tree.

AB 2

10

Nertera

on humus by trail, wet woods

✓

Feb. 1 - below Finca la Estrella,
on Quebrada Cucaracha, ~~an affluent~~
of one of the headwaters of the
Quebrada Damas, 12 km. s.e. of
Garzon, Huila 1500 m.

4 11

Solanum

pasture, climbing over stumps

1800-1900 m. erect, fls. white

1900 m.

caespitose, erect, ~~fls.~~ leaves
with a red ~~tip~~ patch
at tip on under side,

"

fls. bright butter yellow.
vine, leaves purple
beneath, fls. dirty white.

"

suckers or stump sprouts
about 3-5 dm. tall. stipules
red.

"

shrub 2 m. tall, fls.
yellow-green.

"

erect herb to 1 m. tall,

2000 m.

pendent from tree trunk.

1800 m.

scandent shrub.

stems terete, fls. bright
yellow.prostrate, branches erect
fls. yellow-green, fruits scarlet

vine, fls. white, fruit immature

19912

thickets near stream

2 13

Passiflora

wet places near stream

6 14

Saurauia

thickets near stream

3 15

Lobelia

thickets near stream

2 16

Salvia

wet places and thickets near stream
abundant

2 17

Lanicula

along trail near stream

3 18

Comp.

along trail near stream

1 19

Hydrocotyle

abundantly carpeting ^{wet} ground
in grazed places ~~near stream~~

9 20

Acalypha

thickets in canyon, near stream

1 21

Solanium

climbing over rocks in openings
near stream

herb with stinging hairs,
petals white, enclosing
stamens, between them
large sac-like staminodes
yellow with red bands
near center.

fls. white

shrub 3 m. tall, inflorescence
reddish brown, fls. white
suffrutescent herb ~~to~~ 1 m.
tall, corolla scarlet, lobes
orange within, column
yellow, anthers crimson.

herb up to 1 m. tall,
buds enclosed by red bracts,
forming a pendent strobile,
flowers scarlet.

rays white.

prostrate, forming a carpet,
fls. white, peduncles erect.

shrub 1-2 m. tall, incompletely
dioecious, ^{stipitate} spikes pendent
staminate ~~stems~~ ascending,
staminate fls. white,
pistillate with ovary green
styles red.

vine, fls. white, fruit scarlet.

19922 *Helaginella*

shaded bank

23 *Pilea*~~at~~ moist open place near stream24 *Cinchona pubescens*;

top of steep bank beside stream

25 *Hydrocotyle*

growing on top of stump in pasture

✓ Feb. 1 - slope ~~near~~ n.w. of
Quebrada Lucaracha, one of the
headwaters of Quebrada Damas,
10 km. s.e. Gargon, Huila 1600 m.

26 *Palicourea*

moist woods

27 *Coccoloba*

moist woods

✓ Feb. 1 - Top of ridge bet. Quebrada
Cascajosa and Q. Damas, 9 km.
s.e. of Gargon, Huila 1700 m.
moist woods

28 *Liphocampylus scandens* (HBK.) G. Don
brushy clearing along trail.

✓ Feb. 1 - Finca los Cedros, on ridge
s. of Quebrada Cascajosa, 8 km. s.e.
of Gargon, Huila 1600 m.

arching, flat surface
toward light.

anal. Ballis: clump of sprouts about
10 cm. tall and 1 dm. thick
from a large stump, leaves
with veins reddish beneath
(bark sample)

B+C	in
Ca	0.2%
Fe	in
TC	0.2%

suffrutescent herb 1 m.
tall, scarcely branched,
thyse golden-yellow,
immature fruit black
with yellow calyx.
fruit blue, fls. lavender

wine, fls. deep red-purple.
(stems not rough)

19929 patch of woods left in clearing
Camp

7 30 *Cinchona pubescens* Vahl

11 ✓ Feb. 1 - saddle below Finca los Cedros,
on ridge s. of Quebrada Cascajosa,
7 m. s.e. of Gárgon, Huila 1500 m.

3 31 *Hedyosmum*
patch of woods left along
trail

8 32 *Ladenbergia magnifolia*
common along trail between ~~1400~~
1400 and 1600 m.

✓ Feb. 1 - steep slope at head of
small quebrada ~~at Gárgon~~
in hills above Gárgon, ridge
s. of Quebrada Cascajosa, Huila 1400 m.
small patch of woods left in
clearing.

AB 33 *Chlorococca alba*

4 34 *Cosmibuena*

vine climbing in trees, fls. yellow,
pleasantly fragrant.

anal. ballis: Tree 10 m. tall, 2 dm. thick
g.c. to below where it had been broken,
Ci 0.6% 1 dm. above, leaf veins reddish
qui to beneath (bark sample.)
TC 0.6%

small tree, fruit green,
herbage with a delicious
spicy-fruity odor when
broken. "granizo"
tree 15 m. tall, 2.5 dm. thick,
flowers white, fragrant,
fruiting clusters pendent,
not quite mature.

semiscandent shrub, fls. yellow.
tree 10 m. tall, 2 dm. thick,
leaves glossy, leathery,
veins indistinct, fruit
beginning to dehisce, buds green.

Feb. 4 - Valley of Rio Guarapas
between Pitalito and Palestina
and a bit above Palestina, Huila

1370-1600 m. ~~4000~~

About Pitalito the valley is broad and flat, largely devoted to pasture. The river has cut a ravine into it with steep sides. Going up the river the valley gradually narrows until, below Palestina, where the quebrada Quebradona joins it, the plain has quite disappeared, and the low mountains come together. The map of Huila prepared by the Oficina de Longitudines, Bogota, is apparently seriously in error about the distances in this valley, as in 7 hours slow travelling we covered a distance that would be 40-50 km. on the map. Either the whole drainage is entirely too long, or the quebrada Quebradona should join the river much lower down, or Pitalito is too near the mouth of the river.

A decidedly oriental cast is given to the landscape by the bamboo ~~plus~~ the steep mountains and low patchy clouds.

Here, as usual, most of the forest is cleared. a few tiny patches remain on steep places, as well as coffee plantations in the ravines.

Rodriguez says the bamboo here is native, not planted.

Bamboo (~~Bambusa~~ ^{Guadua} sp. ?), the same as observed in other parts of Huila and collected near San Antonio Fotalacillas, is more abundant here than seen anywhere else. (Rodriguez says than anywhere else except Caldas), and is the most conspicuous thing in the vegetation near the river and streams. Places where the rhizomes are somewhat exposed show that they are deeply buried, from 2 to 6 dm., and are as much as 10-15 cm. thick. Each culm terminates a branch up to 1 m. long, and one or two other branches arise below the culm.

The wood, up to 10 cm. or more thick, is used for innumerable purposes here, more than seen anywhere else. The frame-work of the mud houses is of bamboo ^{poles}, with split bamboo tied or nailed ~~to~~ it horizontally, then mud filled in and plastered outside. The fences are of horizontal split bamboo woven or vertical split bamboo. Aqueducts are constructed of half-bamboo conduits on bamboo poles. Gate hinges are 2 joints of bamboo with holes in each internode. ladders are one piece with notches, etc. etc.

Feb. 6 - On and about the
 juncture of the ridge between
 the Rio Guarapas drainage
 and Rio Guachicas drainage
 with the Cordillera Oriental
 boundary bet. Huila and ~~Cauca~~^{Cauca}.
 mossy ridge-type rain forest
 deep humus
 2200 m

19935

Palicourea

36

Cinchona officinalis

occurs in "manchas" and
 scattered through the forest,
 but mostly seedlings and
 root sprouts. Has been
 repeatedly harvested, even
 recently.

Q₂ = 43
C₂ = 1.0Q₂ = 2.4
C₂ = 0.8

37

Myrsine

38

Elaphoglossum

covering old rotting tree stumps
 covering humus and sticks
 in trail

39

Myrsine

headwaters of Rio Villalobos

(root bark)

anal. bellis:

g+C 5.3%

(g SO₄ 5.8%)

Ci tr

gui 0.1%

TC 5.4%

(trunk bark)

anal. bellis:

g+C 3.0%

(g SO₄ 3.0%)

Ci tr

gui tr

T.C. 3.0%

slender erect shrub 1 m.
 tall, fls. yellow with green
 corolla lobes. Infl. green.

sterile sprouts from
 partially fallen tree
 7 cm. thick and 2 m. tall,
 leaves dull above, midrib
 red, stipules reddish.

Bark at most 3 mm. thick,
 a thin brown or gray-brown
 layer outside, the rest
 greenish-white, quickly
 oxidizing red-brown, staining
 hands the same color.

(Bark samples - root and trunk)
 "guina tana" "guina fina"

slender shrub 1 m. tall,
 fls. whitish.

19940

*Polypodium*epiphytic on tree-trunks
1 m. from
ground

1 41

in thick ^{bushy} ground cover under trees

1 42

Palicourea

1 43

1 44

in humus on ground, apex
ascending among bushes

1 45

1 46

Hedyosmum
abundant

1 47

Thrysa

1 48

Polypodium longicaule (Desv.) Morton, *longicaule*
det. L. H. Raven 467

1 49

Hymenophyllum
climbing on small shrubs

pendent

stem about 1 m. long,
mostly on ground,
inflorescence erect.scandent shrub
tangled in lower part
of tree, 4 m. from ground.
fls. infl. green, fls. greenish-
yellow, corolla lobes greenish.
shrub 1.5 m. tall, leaves
very rugose, stems and
inflorescence ^{purple} red, fruit
bluish.short liana, roots tuberifer-
ous, fruit yellowish-green.shrub 2 m. tall, fruit
fleshy, grayish-white
tree 4 m. tall, leaves
aromatic when broken, but
with a rather lemon-scented
odor.slender shrub 1.5 m. tall
(same as '19977 but fruiting.)

pendant

rhizomes forming networks
on surface of shrub.

✓✓ same part 2300 m.
small humus-covered
knob with low vegetation,
surrounded by cloud-forest.

19950

Cyathea

3 51 Weinmannia

✓ 52 Heliconia

5 53 Bromel.

the dominant plant

4 54 Vaccinium

abundant on ground and in trees

4 55 Rub.

in bush on ground, seen lower
down in forest high in trees

6 56 Myrs.

57 Vaccinium

common on ground.

10 58 Ladenbergia *inifl.*

slender, not over 1 m tall, fronds
drooping at tips and tips of
pinnae.

small bushy tree, in
bud only. "encanillo".

shrub 1.5 m. tall, bushy,
~~stem~~ branching, covered
with dead leaves, up to
over a meter long, rosettes
and inflorescences erect.
fls. yellow, fruit blue-black
tangled shrub

shrub 1-1.5 m. tall, lvs.
fleshy-coriaceous, pale
beneath, infl. and fruit
~~red~~ bright red, ~~fls.~~

corolla pink, 5 parted.
shrub 1 m. or less tall,
fls. whitish, fruit
marked with brown.
tangled low shrub.

anal. bellis:
not more
than traces
of cinchon
alkaloids.

bushy tree 3 m. tall, fls.
white, fragrant, very
brittle, fruit pyriform.
splitting from apex.
Bark sample

Feb. 6th - ridge bet. Rio Guarapas
drainage and Rio Guadicaes,
just below the main ridge
of the Cordillera
rain forest, top of ridge 2000 - 2300m.

19959

60 *Palicourea*

61 *Polypodium*
epiphytic on tree trunks

62 *Orchid*
terrestrial

63 *Orchid*
terrestrial in deep loose humus

64 *Comp.*

65 *Ladenbergia*
seedlings and sprouts ~~seen~~
abundant but no large
trees seen.

66 *Phoradendron*
on dead fallen tree (not identified)

67 *Lepidocampylus scandens* (HBK) G. Don
det. M. V.

68 *Comp.*

69 *Mys. a. d. d.*

70 *Orchid*

71 *Hymenophyllum*
terrestrial, in deep humus

slender shrub 2 m. tall.

fruits white.

slender shrub 4 m. tall,

infl. & flo. bright purple

fronds arching and

pendent or ascending stipes

stem 1 m. long, weakly

calyx rose, corolla white ^{marked with yellow}

scape arching, flo. orange-brown.

liana climbing in lower

branches of tree

stump sprout 6 m. tall,

fruit immature, two dry

unopened corollas in one infl.

"ojando"

very brittle, fruit whitish

liana climbing in ~~small~~ small

trees, fls. beautiful crimson.

anthers greenish-gray.

liana climbing in trees,

fls. white

small tree 6 m. tall, leaves

coppery beneath, fruits green;

not noticeably lactiferous

shrub, inflorescence purple

fruit immature.

fronds erect, arching, dark green.

34

1947 - Colombia

19972

Camp.

- 2 73 *Trichomanes*
epiphytic
- 4 74 *Cinchona officinalis*
steep slope, scattered, no $Q_n = 9.3$
large trees seen, many $Q_d = 0.7$
seedlings and sprouts.
Region has been harvested
recently. Said to be many
small trees over a large area.
- 2 75 *Elaphoglossum*
epiphytic on trunk of tree, common
- 1 76 *Asplenium*
epiphytic on trunk of tree
- 1 77
deep humus
- 7 78 *Ladenbergia*
common from here down
- 4 79 *Carludovica*
common
- 2 80 *Colubrina* 1800-1900m
- 1 81 *Plant*
terrestrial in deep humus in recent
clearing
- 1 82 *Pilea*
in recent clearing
- 2 83 *Oreocarya*
shaded opening in forest, terrestrial
in humus

87

35

p. flo.

in tree

tall
dull
reddish
thin,

"fina".

ick

ifid,
mean.
urple
and
scarlet,

with
large
fleshy.

stips

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19972

7 73

4 74

2 75

1 76

1 77

7 78

6 79

2 80

1 81

82

2 83

shaded opening in forest, Terrestrial
in humus

erect shrub 3 m. tall, fls
whitish.
fronds pendent from tree
trunks.

Anal. Bellis: small sapling 4 m. tall
g+c 9.0% 3-4 cm thick, leaves dull
(1956) 4.1% above, midrib barely reddish,
stipules green, bark thin,
quickly oxidizing.
TC 4.0% (bark sample 1)
"Quing tuna" "Quing fina".

fls. white

Anal. Bellis: tree 15 m. tall, 2 dm. thick
not more
than traces T.C. (bark sample)
leaves erect, deeply bipid,
spike erect, crimson.
shrub, leaves red purple
beneath, ~~bark~~ calyx and
lower half of corolla scarlet,
upper half yellow.
fls. crimson, lip tinged with
yellowish and with a large
white scale. leaves fleshy.
stems purple.

fls. brown. with lip and tips
of perianth yellow.

19972

Comp.

- 7 73 *Trichomanes*
epiphytic
- 4 74 *Cinchona officinalis*
steep slope, scattered, no Q_{10} : 3.3
large trees seen, many Cd : 0.7
seedlings and sprouts.
Region has been harvested
recently. Said to be many
small trees over a large area.

- 2 75 *Elaphoglossum*
epiphytic on trunk of tree, common
- 1 76 *Asplenium*
epiphytic on trunk of tree

- 1 77 *Asplenium*
deep humus

- 7 78 *Ladenbergia*
common from here down

- ✓ 79 *Carludovica*
common

- 2 80 *Columnnea*

1800-1900m

- 1 81 *Onob.*
terrestrial in deep humus in recent
clearing

- 3 82 *Pilea*
in recent clearing

- 2 83 *Onob.*
shaded opening in forest, terrestrial
in humus

erect shrub 3 m. tall, fls.
whitish.
fronds pendent from tree
trunks.

Anal. Bellis: small sapling 4 m. tall
g+c 9.0% 3-4 cm thick, leaves dull
(l.g.s.g.) 4.1% above, midrib barely reddish,
stipules green, bark thin,
quickly oxidizing.
TC 4.0% (Bark sample 2.)
"Quing tuna" "Quing fina"

fls. white

Anal. Bellis: tree 15 m. tall, 2 dm. thick
not more
than traces TC. (bark sample)
leaves erect, deeply bipid,
- ~~fruit~~ spike erect, crimson.
shrub, leaves red purple
beneath, ~~bark~~ calyx and
lower half of corolla scarlet,
- upper half yellow.
fls. crimson, lip tinged with
yellowish and with a large
white scale. leaves fleshy.
stems purple.

fls. brown. with lip and tips
of perianth yellow.

19984

AD 7

Nertera granadensis (L.) Druce
in humus in recent clearing, rare,
only seen in two spots in this region.

85

in recent clearing, among
old ~~logs~~ logs, stumps & weeds.

86

in deep woods

87

epiphytic

88

Monotropa uniflora L.
in deep humus

89

open woods and edge of clearing

90

open woods

91

Feb. 7 - 2 km. above Palestina, along
~~bed~~ quebrada and quebrada Aguablanca,
s. of Pitalito, Huila 1600 m.
Pasture mostly overgrown with
pteridium, with wooded ravines.

92

under ferns

93

~~hypericium~~ *hypericium*

94

Borreria
common

95

Elephantopus
common

96

Hypericum
small wet place

97

Daucus

prostrate, light green,
fls. yellow-green.

vine, fls. purplish-white.

shrub 1.5 m. tall, fls. green,
ripe fruit lavender.

lip and edges of upper lip of
fls. deep purple, center green.
leaves fleshy.
erect, dead.

spike green

erect shrub up to 1 m. tall, spike
purple, fruit red. lower part
of stem with aerial roots.

fls. yellow, marked with
purplish brown.
fls. white, plant erect or
ascending.
spikes erect, fls. purple.

fls. yellow.

fls. white.

19997

3

wooded ravine

- 98 *Boehmeria*
single tree left in pasture
- 99 *Lambucus*
single tree planted near house
- 20000 *Eupatorium*
weed in pasture
- 01 *Salvia*
weed very common in coffee plantation
- 02 *Salvia*
weed in coffee plantation
- 03 *Lida*
weed in coffee plantation
- 04 *Portulaca*
weed in coffee plantation
- 05 *Broussaisia*
weed in coffee plantation
- 06 *Bidens*
very abundant weed in and around coffee plantation
- 07 *Salvia*
abundant weed in pastures and cultivated places
- 08 *Boehmeria*
wooded bottom land
- 09 *Galium*
wooded bottom land, edge of clearing

large liana ^{juice of stem} said to be used to cure snake bites, taken orally. "añaguasca" tree 4 m. tall, spikes pendent.

small tree, flowering profusely but seldom setting fruit. Inflorescence hemispheric, fls. white. bark used as purgative. "sauco"

herb, 1 m. tall, branched. flowers lavender. fls. yellow "botoncillo"

fls. blue.

spreading weed, up to 7 dm. or 1 m. long, fls. yellow. herb up to 1 m., sprawling, fls. bright chrome yellow. flowers brilliant blue-purple.

disk orange-yellow, rays white. ~~etc~~ from running rhizomes.

fls. deep blue-purple.

fls. pinkish white.

vine-like, roots red-orange, used for a dye for cloth. fruits orange, fleshy "raicilla"

20010

Acalypha

wooded bottom-land.

11

2

weedy clearing in wooded bottom-land

3 12

Heliconia popayanensis H.B.K.~~*Heliconia* *lagotis* *pyramidalis*~~

common in wooded bottom-land

"Palso"

shrub 2.5 m tall, [♂] spikes
pendent, ♀ ascending, styles
rose-colored.

vine, rachis of inflorescence
thicker than stem, upper
flowers brilliant scarlet,
lower ones green, deep purple
distally.

tall trees, up to 3-4 dm.
in diam. here, said to
reach over 1 m. down the
river. (specimen of leaves
from seedling) (specimens
of bark and wood from
large tree). Trunks bare
for some meters.

Dr. Romulo Quellar is
much interested in the
fiber from the inner bark.
It can be easily peeled
from the full length of the
logs, dried in about 15 days,
decorticated by hand with
no difficulty. The fiber
is light brown, quite fine,
much more so than figue,
and much stronger and
more durable. The fibers
are extremely long, and
are used locally for rope,
twine, halters, cinches,
pack saddles, etc. Enormous
quantities could be produced here
and in other parts of the country.

- ✓ Feb. 8 - Palestina, along Quebradona,
s. of Pitalito, Huila, 1800 m.
bushy cut-over land
20013 *Palicourea*

14 *Psychotria*

15 *Jussiaea*

abundant in muddy places

- ✓ Feb. 8 along
Quebradona 3 m. below
Palestina, s. of Pitalito,
Huila 1700 m.

16 *Cinchona pubescens* Vahl.
patch of woods in ravine,
mostly bamboos.

(sprouts and seedlings of this
occasional throughout region below Palestina)

17 *Palicourea*
patch of woods in ravine

~~18 *Cinchona*~~

- ✓ Feb. 8 - Rio Guarapas 5 km. below
Palestina, s. of Pitalito, Huila
Brushy hillside 1600 m.

18 *Cinchona*

19 *Coccoloba*
common

20 *Erneobia umbellata*

21 *Ladenbergia magnifolia*
sprouts common in cut-over slopes

shrub 4 m. tall, infl. red-purple,
fruit blue-black when ripe,
mostly immature.
bush 1 m. tall, fruit immature,
prostrate, stems fleshy,
forming a carpet on
mud. fls. bright
yellow, 5-merous.

Anal. Bellis:

T.C. to

level part
of valley.

small tree 6 m. tall, 1 dm.
thick, bark gray, older
leaves red. Others with
reddish veins, stipules
green, erect (bark sample.)
small tree 5 m. tall,
infl. and fls. range-red,
fruit immature

vine climbing through bushes,
fl. yellow, fruit green.
prostrate, fls. lavender,
fruit pyriform, blue
vine climbing in bushes,
fls. white.
sterile stump sprouts.

- 20022 *Biophytum*
common on rocky banks
- 223 *Mycopogon*?
common on lower slopes ~~and~~
above stream

224 *Gonzalagunia*

- 225 *Cuphea*
common weed in openings
and along trail.

✓ Feb. 8 - Rio Guarapas, 5 km.
above Pitalito, Huila 1350 m.
Wet bottom-land, wooded
principally with bamboo.

226 *Liparuna*

227 *Carpenteria*

- 228 *Boehmeria*
very common from here to above Palestina

✓ Feb. 9 - Pitalito, Huila 1330 m.
roadsides and fence-rows.

229 *Vit*

30 *Triumfetta*

31 *Triumfetta*

32 *Boerhaavia*

leaves somewhat serrated,
~~petals~~ pink, calyx yellow.
bush 2.5 m. tall, fruit
reddish, leaves distichous

shrub 1.5 m. tall, fls. white,
4-paired, fruits fleshy,
gray-white.
fls. rose-pink, 2 petals
erect, 4 depressed.

shrub 4 m. tall, odor faint
but pleasant, scarcely
resembling lemon-grass,
fruit pyriform, flesh pink,
2 cm. in diam., scarcely
any maturing

scandent shrub, fls. lavender
shrub 3 m. tall, spikes
~~drooping~~ pendent.

vine, fls. yellowish, fruit fleshy, black.
inflorescence flat, whitish
herb 1.5 m. tall, fls. yellow.
herb 1.5 m. tall, fls. yellow.
shrub 1 m. tall, ripe fruit
orange.

70033

~~W. L. L.~~

1-34 Borreria

2-35 Euphorbia

3-36 Monnina

3-37 Lantana

4-38

3-39 Acalypha

2-40 ~~Lappaceum~~ Witheringia solanacea L'Her.
shaded place det. A.T.2-41 Stellaria
shaded place, under bamboo2-42 Solanum
shaded place, under bamboo2-43
shaded place, under bamboo~~44~~
44 Solanum

5-45 Tournefortia

3-46

3-47 ~~Copaiba~~

4-48 Indigofera

- fls. white

- fls. white

- scandent herb up to
2 m. long, bracts white.
erect herb 1 m. tall, fls.blue-violet with yellow keel
erect herb 1 m. tall, fls.

- purple

- small tree

small tree, 4 m. tall,
monocious but staminate
spikes very rare at this
season.

- erect herb 1.5 m. tall,

fls. yellowish, ripe fruit red.

- prostrate, fls. white,
petals deeply bifid,
styles 3.- herb 1.5 m. tall fls. pale
green, anthers yellow, fruit
immature.- vine climbing on shrubs, fls.
green. leaves variable in
cutting.- herb up to 1 m. tall
calyx purple, corolla
white fruit immature
(another plants ripe ones
orange)

- shrub 1.5 m. tall.

- tree 6 m. tall, fls. greenish
white.- shrub 3 m. tall, fls. white
suffrutescent herb, 1.7 m. tall.var. solanacea
Humzigen

20049

Rubus
abundant

4 50

14 ✓ Feb. 10 - Las Mesitas, 3 km. ^{upper} av. of
San Augustin, valley of Rio
Magdalena, Huila 1750 m.

Small patch of tangled woods.

4 51 *Palicourea*
edge of woods

10 52 *Cinchona pubescens* Vahl
one large tree and several
small ones in a clump.
said to be very common
in the region

92 ✓ Feb. 11 - Lavadero^{h?} (ridge bet.
Rio Naranjo and Rio Granadillo)
south of San Augustin, Huila
Patches of thick moist forest
with clearings between.

2000 - 2200 m.

13 53 *Cinchona officinalis*
Abundant in a large "marcha"
the trees much larger along the
trail than in deep forest.

arching shrub 1 m. tall,
fls. white, fruit
immature.

wine climbing in
trees, fls. pale greenish.

shrub 3 m. tall, infl.
orange-red, turning red
in fruit, mature fruit blue-black.
large tree, 2 branches
from near base, main
trunk gone, one branch
3 dm. in diam., 15 m. tall.
Bark well over 1 cm. thick,
very bitter, whitish inside
but quickly oxidizing brown.
(bark sample) "cascarillo"
"requezon".

Anal. Bellis:

g+c tr.

ci 1.7%

qui tr

TC 1.7%

Anal. Bellis:

g+c tr

ci 0.2%

qui tr

TC 0.2%

tree 12 m. tall, 2 dm. thick,
leaves glossy above, older leaves
red, stipules erect; bark ^{1 cm.} thick
rough, checked, with a brown
corky layer (bark sample)
fls. red-purple, scarcely fragrant.

- 20054 *Bulmeiatera*
cleared trail-side
55 *Rub*
- 56 *Rub*
deep forest
- 57 *Cinchona officinalis* L.
isolated trees scattered
in pasture, said to be about 11 yrs. old.
- 58 *Ladenbergia*
~~small~~ isolated tree in pasture
abundant in forest
- 59 *Palicourea*
common in forest
- 60 *Guetarda*
edge of clearing
- 61 *Viola*
hummock in trail
- 62 *Fuchsia*
cleared trail-side
- 63 *Dioscorea*

- herb 1 m. tall, fls. purplish-green.
- vine climbing in shrubs,
fl. bright yellow with red
markings near center.
- slender shrub 4 m. tall,
fls. white, very fragrant,
both 4- + 5-parted even
in same inflorescence.
- anal. bellis: small tree 4-5 m. tall, 1 dm.
not more thick, fls. red-purple, scarcely
than fragrant, hairs white.
Traces of bark about 6 mm. thick (bark sample).
Cinch. alk. (photos)
- small tree 8 m. tall, flowers
white, very fragrant,
fleshy. (reaching much
larger size - 20 m. in forest).
- shrub 2.5 m. tall, inflorescence
deep red-purple, corollas
lavender.
- tree 15 m. tall, buttressed
trunk 5 dm. thick, fls. white
with thin edges, 5 corolla
lobes.
- prostrate, mat-forming,
fls. white, lower petal
deep purple.
- herb 1 m. tall, fls. with
calyx + hypanthium greenish-pink,
petals scarlet, fruit fleshy,
translucent when ripe.
- slender vine climbing in
small trees, spikes pendent.

- 20064 *Ladenbergia*
abundant in forest
- 10 65 *Cinchona pubescens* Vahl
common, chiefly as stump
sprouts and seedlings, up
to 2200 m., with *C. officinalis*
but showing no evident
signs of hybridization. ~~stipules~~
~~erect, green, turning red.~~
- 4 66 *Monnina*
second growth along trail
- 3 67 *Palicourea*
second growth along trail
- 4 68
second growth along trail
~~second growth along trail~~
- 3 69 *Tournefortia*
second growth along trail
- 3 70 *Tournefortia*
second growth along trail
- 3 71 *Ladenbergia magnifolia*
isolated tree in clearing on slope

- 19 ✓ Feb. 11 - Rio Naranjo, directly
south of San Augustin, Huila
bushy slope
- 10 72 *Cinchona pubescens* Vahl.
steep bushy slope, abundant,
found from 1600 to 2200 m.
- 2 73 *Rub.*
edge of wooded ravine in canyon
bottom
- 7 74 *Cinchona pubescens* Vahl
edge of wooded ravine in canyon
bottom.

tree 3 dm. thick, top broken
off.

- Anal. Ballis:
g.f.c. 2.
Ci 0.7%
Qui 2
TC 0.7%
small tree 7 m. tall, &
veins reddish, stipules
erect, bark hard, closely
adherent (bark sample)
fruits with fungus fruiting
blisters.

small tree 4 m. tall, fls.
indigo with yellow keel.
shrub 4 m. tall, inf.
red, fruit immature.
small tree 5 m. tall,
fruit green.

- shrub 3 m. tall, fls.
dull white.
1900 m. small tree 5 m. tall,
fruits white.
tree 6 m. tall, sterile.

1800 m.

- 1700 m. sapling 5 m. tall, leaf veins
red. "naranjo"

vine, climbing in small
tree.

shrub 4 m. tall, fls. deep rose,
edges of lobes white, hairs white,
very fragrant. "naranjo"

✓ Feb. 12 - Quebrada La Candela,
affluent of Rio Naranjo above
San Augustin, Huila 1900 m.
completely cleared land,
used as pasture but
dominated by Pteridium.
Thicket along stream

20075

Trema

tree in dooryard

3 76 Borreria

muddy shaded place

3 77 Lab

muddy place

4 78 Drymaria

muddy shaded place

2 79 Cardamine

muddy shaded place

5 80 Commel.

abundant weed in openings
and shaded places near stream.

11 81 Centropogon glaberr.

fence row, among "figue" plants

✓ Feb. 12 - ridge between Quebrada
La Candela and Rio Naranjo, West
of San Augustin, Huila 1900 m.
cleared land used as pasture
but largely overgrown with
Pteridium and clumps of
bushes, Baccharis, etc.

tree about 5 m. tall,
2 dm. thick, spreading.

- ripe fruit yellow

- weakly erect herb, fls. white

herb up to 2 m. tall, fls. white

fls. white, herb apparently
annual, branches ascending,

- weak

fls. white.

prostrate branched
herb, rooting at nodes,
fls. white, 3 parted.herb 2 m. tall, somewhat milky,
fls. green, two upper lobes somewhat
purplish outside, fruit immature.

- 20082 *Notholaena*
bare earth above trail
- 83 *Euphrea*
wet place
- 4 84 *Tagetes*
common weed
- ✓ 85 *Castilleja*
scarce
- 2 86 *Lisyrhynchium*
in thin grassy places
- 2 87 *Pteridium aquilinum* (L.) Kuhn
dominant plant on cleared hills
- 2 88 *Ageratum conyzoides* L. (white form)
abundant
- 2 89 *Galinsoga*
- 2 90 *Drymaria*
abundant on grassy slopes
- 3 91 *Galinsoga*
abundant on grassy slopes
- 4 92 *Melastoma*
common where not grazed off
- 11 93 *Comp*
very common weed practically
everywhere, these plants from
shaded spot.
- 1 94 *Drymaria*
shaded spot
- 5 95 *Unk*
shaded spot
- 5 96 *Lantana*
edge of thicket
- 2 97 *Baccharis*
dominant shrub in first stage after cutting and overgrazing.

white beneath

fls. pale pink.

herbage with strong
unpleasant aromatic
odor, fls. orange.
tips of bracts red.

tufts, in fruit only

from running rhizomes,
these odorless, bonds up to
2 m. tall.

strong odor, white fls.

ray, white, disk yellow.
fls. white.

rays and disk yellow.

erect, petals pink.

herb up to 1 m. tall, fls.
orange yellow.

practically odorless

bush 1 m. tall, fls. pinkish.

shrub 2 m. tall, fls. white.

20093

Galium

fairly common in sheltered places

99

Cinchona officinalis x *pubescens*?
hilltop with clump of woods

Feb. 12 - ridge north of Quebrada la Candela, affluent of Rio Naranjo, south west of San Augustin. Huila moist forest, undergrowth 2000 m. of ferns, on rounded ridge-top.

20100

Cinchona officinalis L.

abundant in a fair sized "mancha", here 50 or 60 trees of all sizes to an acre, not including hundreds of very small seedlings somewhat scattered, but common in the rest of this patch of woods (about 1/2 km. or more long).

01

Anguria

edge of woods near stream

wine like, climbing among weeds, fruits orange, fleshy.

sprout or seedling, growing with a clump of *C. officinalis*, *C. pubescens* not far away. has every appearance of being a hybrid, in habit, stipules, coloring, etc. resembling *C. officinalis*, but leaves approaching *C. pubescens*. (see #20131 and #20135 for probable parents) another similar seedling observed nearby.

tree 15 ^m tall, 2.5 dm. thick, leaves shiny above, rather leathery, petioles purple, blades turning red when old; inflorescence red-purple, fls. purple with white hairs on corolla-lobes; bark brown, longitudinally ridged, a little less than 1 cm. thick (bark sample). herbaceous vine climbing over trees, flowers orange, fruits pyriform, not quite ripe.

Anal. Bellis.

not more
than traces
of cinchona
alkaloids.

g.t.c. tr.

ci. 0.4%

qui. tr.

TC. 0.4%

20102

Weinmannia

edge of woods near stream, common locally

3 03

Rub.

open woods, filled with a rank growth of *Pteridium* 2 m. deep, on edge of ravine

4 04

Sphagnum

woods on ridge tops

4 05

Dictyostegia orabifolia (Hook.) Mierssubsp. *purdieana* (Benth.) Snelkers & Maas

in deep humus

det. Maas 1983

✓

Feb. 13 - ridge ~~at~~ n. w. of Rio Narango, w. of San Augustin Huila 2400 - 2900 m.

rain-forest (not extreme) on flat ridge-top.

4 06

Psychotria

2 07

Palicourea

8 08

Taraxacum

+ 09

Pennisetum clandestinum

the dominant grass in a clearing used for pasture

2 10

Cyperus

common in spots in clearing used for pasture

tree 7 m. tall, fls. white
 "enseñillo" used as a
 remedy for sickness in livestock
 shrub up to 2 m. tall,
 weak, supported by ferns,
 leaves leathery, midrib
 red, rest of veins obscure,
 blade white beneath,
 inflorescence and fruits
 red, corolla pinkish white,
 deep cushions, pink.
 "barbacha"
 whole plant whitish.

shrub 1 m. tall, fls. white,
 fruits mostly immature, blue
 when ripe.

shrub 2.5 m. tall, infl. and
 fls. purple

shrub, fls. white, very fragrant.
 fruit immature

forming a thick cushion,
 styles protruding from
 terminal bud. "pasta quicu"
 spikes black with
 yellowish edges.

20111

3

Senecio

clump growing on stump in clearing

7 12

12.

climbing on fence ~~at~~ is clearing

5 13

Sub Pandia

3 14

Hymenophyllum

on base of small tree,

7 15

Sub Pandia

~~common~~

1 16

Drymaria

in grassy clearing

5 17

Impatiens?

abundant on tree-trunks

4 18

Blechnum

abundant

2 19

Psychotria

4 20

Ladenbergia

common in forest

3 21

Passiflora

edge of forest climbing on tree-trunk

7 22

Palicourea

abundant in undergrowth

short scandent herb, fls. bright yellow, odor unpleasant. vine, fruit black.

tree 5 m. tall, leaves glossy, rugose, fruits spherical, glaucous, immature.

rhizome climbing on base of tree-trunk, fronds somewhat arching.

herb less than 1 m. tall, fls. yellow, calyx yellow-green, fls. white, petals bifid.

rhizome occasionally climbing

shrub 3 m. tall, fls. yellow

anal. bellis: tree 20 m. tall, 3 dm. thick, not more than (others much larger) flowers white, fleshy, fragrant; traces of "requecion".

woody vine climbing for several meters up tree trunk.

stems red-purple, calyx green, corolla lemon-yellow with green lobes.

shrub 3 m. tall, inflorescence bright purple, fls. lavender, fruits very juicy, blue-black. "frutillo".

20123 *Drymaria* ~~ovata~~
abundant in clearings

24 *Miconia*

25 *Blechnum*

26 *Blechnum*

27 *Piper*
in undergrowth

28 *Cinchona officinalis* L.
very rare

29 *Palicourea*

30 *Cinchona officinalis* L.
very rare here

Feb. 14 - ridge bet. Rio Naranjo
and quebrada la Landela, ^{with west}
of San Augustin, Huila 1900 m

31 *Cinchona officinalis* L.
clump of woods on hilltop

32 *Coccythium*
edge of woods, in grass.

33 *Palicourea*
clump of woods

herb up to 8 dm. tall, ~~very~~ weak,
supported by other plants,
has grayish cast, due to
pubescence, fls. white, petals
bifid, "alverhilla".
tree 12 m. tall, fruit immature.

rhizome climbing about
1 m. up trunk of tree.
herb up to 1 m. tall,
fls. white.

sterile sapling 3 m. tall, leaves
dull above, stipules pointed.
(like plant at head of Rio Villalobos)
shrub 2 m. tall, fls.
yellow.

sterile sapling 3 m. tall,
leaves dull above, stipules
blunt (intermediate between
#20128 and #20100).

~~sterile~~ sapling 3 m. tall,
(nearby were large trees)
old leaves red. "quina canchosa"
Bark said to be worthless, by old
guineos, and to have been used to adulterate
good bark of "quina".
prostrate, fls. lavender.

shrub 1.5 m. tall, infl.
yellow, fruit green.

20134

- clump of woods on hilltop
- 3 35 *Cinchona pubescens* Vahl.
end of clump of woods
on hilltop
- 6 36 *Solanum*
near clump of woods on hilltop
- 3 37 *Ladenbergia*
clump of woods on hilltop
- 1 38 *Borreria*
grassy place on edge of woods
- 32 ✓ Feb. 14 - near confluence of
Quebrada la Candela with
Rio Naranjo, ^{south} west of San
Augustin, Huila 1850 m.
- 2 39 *Palicourea*
bushy slope
- ✓ Feb. 14 - near San Augustin,
Huila 1700 m.
- 3 40 *Rhus* (*Toxicodendron*)
- ✓ Feb. 14 - gorge of Rio Magdalena below San
Augustin, Huila 1550 m.
- 13 41 *Ochroma*
bushy hill near edge of cliff, abundant, young trees abundant

shrub 1 m. tall, fruit red.

- sapling 5 m. tall
leaf veins red, stipules
erect, later reflexed.
small flat-topped tree,
branched only at extreme
top of trunk, stem-leaves
large, pinnately lobed.
fruit not mature, pendent
"tomate macho" | yellow when ripe
not eaten. ^{7 m. leafy from half-}
way up.
- sapling 5 m. tall, fls.
white, fleshy, fragrant.
- "guacillo"
decumbent, fls. white.

shrub 3 m. tall, infl.
pale green, fls. bluish,
lobes green.

shrub. "caspicaracha"
said to be very poisonous
to the skin.

tree 8 m. tall, 2 dm. thick, fls.
white. Bark apparently with
very little fiber. "balseo"

Data on Cinchona from Schultes' memo dated Feb. 8, 1943, entitled "Quinine in Vicinity of Pitalito, Huila".

Cinchona was seen at three localities, all apparently the same form, called "quina tuna". All of these localities were apparently at the headwaters of the affluents of the Rio Villalobos, above Yunguillo, in Cauca, in detail as follows:
Source of Rio Cauchos - ridges have considerable "quina tuna" including many large trees.

Alto de Petroles, ridge near Quebrada Hedionda - "quina tuna" up to 200 per hectare, including some trees one foot or more in diameter.

Alto de Guayabos, apparently running west from the head of Rio Guachicas, and a ridge at the head of R. Guachicas. Here "quina tuna" (Schultes 5239) is very abundant, 1500 (average) and even as much as 2000 small trees per hectare mostly about 2 inches in diameter.

Schultes says these ridges are sub-paramo.

His no. 5239 is very similar to my plants from above Palestina (Feb. 6-7), with pointed stipules, acuminate leaves, but the twigs, petioles and veins strigose.

Feb. 24 - <sup>caño tipo, bet. caño Aguas Claras
and caño grande,
4.5 km. s.w. of Villavicencio,</sup>
Meta 500-550 m.

rain-forest but not an
extreme type, the "foothill
forest" of Bates, somewhat
cut over but not cleared.

L 20142 ~~Heliconia~~ *Ranuncula guianensis*
small colony on slope

L 43 *Tococa guianensis* Aubl. ^{det. P. Jaramillo}
bottom of hill, upper edge
of plain

L 44 *Psychotria*
L 45 *Rubi*

L 46 *Myrsine*
L 47 *Passiflora*

L 48 *Weigeltia schlimmeri* Mez?
epiphytic on trunk of tree

L 49 *Jacaranda*

sandy soil, quite fine
and brownish.

tree 10-15 m. tall with a hard
woody stem 15 cm. in diam.
leaves distichous, 8 or 10
green at one time, petiole
1 m. or more long, blade
2 m. long, narrowly
elliptic-oblong, spikes
erect, 2 m. long, on a bracted
peduncle 1.5 m. long, fruits
green, aril of seed orange,
said to be brilliant red
when fully ripe

shrub 3 m. tall, tubercles
on leaves contain small
ants, fls. white, fruit
black, inflorescence red,
in fruit, green in flower.

shrub 1 m. tall, fls. white.

shrub 2 m. tall, inflorescences
pendent, ripe fruit black,
mostly immature.

shrub 1.5 m. tall
more or less horizontal.

single unbranched ~~stem~~
stem, fls. & fruit pinkish.
tree 30 m. tall, 3-4 dm. thick
flower lavender-purple.

20150

clump of plants on a small
branch (fallen on ground)

L 1 51 (Myrs.)

L 3 52 (Myrs.)

edge of clearing

L 2 53 Psychotria

L 4 54 (Labi.)

L 4 55 Randia (Rubiaceae)

L 6 56 (Myrs.)

Feb. 24 - along Rio Coca, ~~3 km.~~ 4.80 m. s.e. of
Villavicencio, Meta
somewhat disturbed "piedmont
forest" (Bates) slender trees
with much undergrowth.

L 2 57 Cephaelis ~~brachyloba~~
common in undergrowth

L 5 58 Palicourea

L 6 59 Cephaelis
common in undergrowth

roots fleshy, pale green,
fruits scarlet.

- slender shrub 4 m. tall,
infl. red, ripe fruit black.
fls. orange with greenish tips.
- plant erect, stem short.
shrub, 1 m. tall, fruit orange
- shrub, 1 m. tall, infl.
pendent. fruit immature.
- slender tree 6 m. tall, enlarge-
ments on stem house small
ants, fruit immature.
- small tree 10 m. tall,
fruit pendent, immature,
when cut with strong
resinous odor.

- shrub 2 m. tall, bracts
greenish, infl. stiff.
- shrub 2.5 m. tall, peduncle
red, infl. orange, corolla
yellow.
- shrub 1 m. tall, bracts
scarlet, calyxes yellow,
corolla cream-yellow, fruit
pyriform, blue.

L 20160 (Acanth.)

common in undergrowth

L 3 61 (Helast.) Monodactylum

L 3 62 Cephraelis fruticosa

L 2 63 Cochlospermum
second growth

L 3 64 (Rub.) " "

L 5 65 Selaginella

L 8 66 Psychotria

L 4 67 Lipanena

L 2 68 (Hel.) Centropogon cornutus
in second growth det. M. D.

L 1 69 Drymaria cordata
clearing, rather bushy

L 1 70 Jussiaea
wet place in clearing

L 3 71 Jossypium
clearing

L 8 72 Triplaris
edge of river.

erect herb, ^{1-1.5 m. tall} flowers scarlet.

weak herb, leaves purple beneath,
fls. white, stem winged.

shrub 1.5 m. tall, bracts
greenish

leafless small tree, flowers
brilliant yellow, fibers in
bark very strong.

shrub 2 m. tall, fls. white
stem erect, frond horizontal
slender shrub, 5 m. tall,

fls. white, fruits turning
yellow, then bright red.

shrub 3 m. tall, fruit pink.
herbage with lemon-grass
odor.

suffrutescent herb,
fls. pink.

fls. yellow, about 6-7 mm.
across

shrub 2.5 m. tall, fls.
bright lemon yellow,
turning pink

tree 18 m. tall, ~~stems~~ branchlets
hollow, ~~enlarged~~ inhabited
by very viscious large
stinging ants, enlarged
calyx lobes bright red-pink.
tree conspicuous in forest.
wood rather hard.

✓ Feb. 25 - near road to Puerto Lopez,
between (Rio Guenane) and Caño
Zuria, 3 km. e. of Apiaq, 13 km.
s. e. of Villavicencio, Meta
small patch of scrubby (480 m.)
moist forest surrounding a
swale, mostly dry at this
season, but obviously a
pond most of the year,
in savannah-type grassland.
Similar patches scattered
here and there. The soil
is rich and black, a typical
grassland soil. Debris
around anthills, brought
up from below is yellowish.

L 20173 (Gutt.) *Vismia*
edge of woods, pioneer species, common.

L 574 (Lab.)
grass at edge of woods

L 375 (Gent.)
grass at edge of woods

L 276 (Comp.)
grass at edge of woods

L 177 Gent.
grass at edge of woods

Judging by the amount
of invasion by seedlings
and sprouts of the pioneer
tree and shrub species,
this ~~sav~~ grassland is
maintained only by
periodic fires. Otherwise,
in a few years it would
be grown up to bushy
second-growth forest.
As it is it contains
scattered patches and
individuals of various
palms, including
Mauritia sp., as well
as patches of second-
growth bush and scrubby
forest, in addition to
forests in depressions
surrounding swales
and stream courses.

shrub 4 m. tall, bushy,
fls. copper-color.

herb ~~with~~ up to 3 dm. tall,
with penetrating aromatic
odor, calyces purple. leaves
very rugose.

erect, flowers greenish-white.
(stem sharply 4-angled)

suffrutescent herb up to
1 m. tall, fls. pinkish-lavender.
erect, fl. greenish-white.
(stem very slightly 4-angled)

- 20178 (Melast.)
grass at edge of woods, common.
- L 1 79 (Stercul.?)
grass at edge of woods
- L 3 80 Cuphea
grass at edge of woods.
- L 4 81 (Melast.)
- L 3 82 Panicum
common in grass at edge of woods
- L 7 83 (Gram.)
common carpeting forest floor
- L 4 84 Delaginella fragilis A. Braun det Sellenz
common carpeting forest floor
- L 1 85 ?
rare in woods, only one seen.
- L 4 86 (Mys.?)
edge of swale
- L 5 87 Miconia Trivenia (B.W.) Donnell-Smith
Det J. Winkler 1993
- L 1 88 Myrt.
edge of swale
- L 2 89 Jacaranda
- L 1 90
in mud in swale, ~~it~~ would
be inundated most of year.
- L 4 91
- L 4 92 Ficus
in mud in swale, common
edge of swale

fls. pink.

fl. deep chrome-yellow.

fls. deep rose-purple

erect herb, fls. pink

spreading from loose tufts.

culms spreading

part with inflorescence
ascending.

tending to be vine-like, apparently
sterile.

fls. pale lavender.

small straggly tree,
leaves with veins obscure,
inflorescences cauline,
many below leaves, white,
flowers white.

shrub 2-3 m. tall, fls. white,
fruit immature.

straggling shrub-like
tree, fruit green.

shrub 4 m. tall, fls. deep
violet, buds glossy.
fl. bluish

fls. white, petals 3, thin.

straggly tree 7 m. tall,
fruit immature.

L 20193 *Hirtella*

edge of swale

L 94 (Colm.?)

edge of swale

L 95 (

mud at edge of water, in swale

(3) ✓ Feb. 25 - road to Puerto Lopez
between Rio Guenane and
Caño Zuria, 7 km. e. of Apiay,
17 km. s. e. of Villavicencio,
Meta

480 m

savanna, with scattered
trees and patches of woods.

L 96 *Borreria*

L 97 *Borreria*

in edge of brush patch

L 98 *Liparuna*

brushy patch of second-
growth woods.

L 99 *Clusia*

brushy patch of second-growth
woods.

✓ Feb. 28 - west slope of Cordillera
Oriental 15 km. s. of Bogota on
road to Villavicencio, 2-4 km. n. of
Parí de la Cruz Verde, Cundinamarca

3300 m.

paramo and subparamo

straggling shrub,
fls. white with dark
red stamens.

straggling shrub, fls.
yellow, fruit immature.
fls. blue-lavender, stem
prostrate, leaves distichous.

erect, fls. white.
fls. white

shrub 2 m. tall, with
strong lemon-grass
odor, fruit flesh-pink,
pyriform, fleshy,
small tree 5 m. tall,
lactiferous, leaves
fleshy, fruit immature.
leaves paler beneath.

2019

20200

Befaria

tall bush on steep slope

L 3 01

Viburnum

tall bush on steep slope

L 1 02

Dact.

terrestrial on rocky ledge

L 3 03

Camp

in tall bush on steep slope

L 4 04

Miconia

in tall bush on steep slope

L 4 05

Bidens

in tall bush on steep slope

L 4 06

Cupressus

paramo, obviously planted
as this and a nearby Eucalyptus
are the only trees in the vicinity

L 3 07

Hyperchaen.

heavily grazed flat open
grassy place, common with #20208

L 2 08

Hyperchaen.

heavily grazed flat open
grassy place, common with #20207

L 1 09

flat place sparse

low bush with
abundant Espelletia, "paramo"

L 4 10

Espelletia

the abundant in this sparse
low bush, ~~on~~ on flat
bench, "paramo"shrub 3 m. tall, corollas
rose, sticky, anthers cream-
color, filaments white, turning
red with age.shrub 3 m. tall, fls. ivory-
white.

erect, fls. greenish-yellow.

shrub 1 m. tall, rays
white, disk greenish-yellow,
turning brown.

shrub 1.5 m. tall, fls. white.

vine-like, climbing in
bushes, fls. yellow.tree 6 m. tall, branches
rather drooping.

fls. bright yellow

fls. white, buff toward base
of ligules.rhizomes short, caespitose,
erect, fronds erect, stiffish.almost acaulescent, with
large rosette, scapes
axillary, fls. yellow.

- L₂ 11 *Befaria*
scattered in sparse low
brush or "paramo" on wide flat
bench.
- L₁ 12 *Unbellifer. sp.*
in sparse low brush or "paramo"
on wide flat bench
- L₁ 13 *Comp.*
rare in sparse low brush or "paramo"
on wide flat bench
- L₄ 14 *Melast.*
sparse low brush or "paramo"
on wide flat bench
- L₂ 15 *Berberis*
rare in sparse low brush or
"paramo" on wide flat bench
- L₁ 16 *Lobelia Tenara*
fairly common in sparse low
brush or "paramo" on wide
flat bench
- L₂ 17 *Halenia*
small colony in sparse
low brush or "paramo" on wide
flat bench.
- L₁ 18 *Graphalium*
rare in sparse low brush
or "paramo" on wide flat bench
- L₁ 19 *Gentiana*
rare in sparse low brush
or "paramo" on wide flat bench
- L₂ 20 *Hedyotis*
common in sparse low brush
or "paramo" on wide flat bench.

- shrub 3-4 dm. tall, fls.
rose, sticky, anthers
cream-color, filaments
pink, turning red.
low, spreading, fls. white.
- erect, flowers bright purple.
- shrub, m. tall, fruit dull
dark red.
- shrub, m. tall, leaves stiff,
revolute, white beneath,
fruit dark blue, glaucous.
calyx deep purple-black,
corolla blue-lavender.
- fls. greenish white.
- erect
- fls. varying shades of purple.
- shrub 3-4 dm. tall, bushy,
buds purple, fls. white
or very pale lavender inside,
purplish outside.

L 20221

Digitalis purpurea

common weed in sparse
low brush or "paramo", also
common along roadsides

✓

Feb. 28 - eastern slope of
Cordillera Oriental,

on road to Villavicencio
above and of Chipaque,
~~at~~ just below Paramo
la Cruz Verde, Cundinamarca
sparse brush, 3300 m.
transition between "paramo"
and "subparamo", on sloping
bench.

L 22

Hedyotis

common

L 23

Vicia

rare

L 24

Melastoma

common

L 25

Cup

scattered

L 26

Ranunculus

common locally in grassy spots

L 27

Hypericum

common locally in open spots

L 28

Hypericum

common

erect herb, up to 1.5 m. tall,
fls. bright purple, varying
to white.

shrub 0.5 m. tall, buds
purplish, fls. purplish
outside, white or pale
lavender inside, leaves
stiff, with a white band
beneath.

several spreading, vine-like
stems from common root,
fls. purple

shrub 1 m. tall, fls.

magenta, buds sticky,
fls. bright yellow

fls. bright yellow, leaves
tending to be vertical,
fls. yellow

erect shrub 0.5 - 1 m. tall,
leaves conspicuously 4-ranked,
fls. bright yellow.

- 20229 *Comp.*
 small colony in open place
 rare
- 30 *Analiacis*
 rare
- 31 *Valeriana*
 scattered
- 32 *Lycopodium*
 scattered in colonies
- 33 *Palicourea*
~~not common~~ occasional
- 34 *Acaena*
 common, especially in grazed places
- 35 ~~*Passiflora*~~ *Gaultheria*
 common
- 36 *Paepalanthus*
 common in wet places
- 37 *Archi.*
 scattered, terrestrial
- 38 *Valeriana*
- 39 *Plechnum*
 common, especially in wet places
- 40 *Castilleja*
 rare, in grazed places
- 41 ~~*Umbellifer*~~
 41 *Umbellifer*

- ligules white inside, with
 purplish stripes outside,
 disk yellow.
- shrub, 1 m. tall, ~~fruit~~
 oily-aromatic when
 broken, fruit green.
 somewhat caespitose,
 fls. white, inflorescence
 dull, dusty-purple
 extensively creeping
- shrub about 1 m. tall,
 leaves paler beneath,
 fruits ^{lighter} blue-green
 low spreading bushy
 shrub
- stiff densely branched
 shrub 1 m. tall, fruits
 turning purplish.
 rosettes almost acaulescent.
 heads gray.
- scapes erect or almost
 so, fls. bright chrome yellow.
 probably same as #20231, but
 rosettes smaller. flowers
 white, infl. purplish
 rhizomes short, erect
 buds erect.
- tips of bracts red,
 pubescence glistening
 white.
- aromatic when broken,
 fls. white.

- 20242 *Castilleja*
 scattered
 43 *Juncus*
 rare (only one seen) in wet places
 44 *Carex*
 rare (only one seen) in wet places
 45 *Lobelia tenera*
 small colony growing in
 a clump of spiny bromeliads
 46 *Carex*
 rare, one clump seen
 47 *Melastoma*
 scattered
 48 ~~*Geranium*~~ *Alchemilla*
 very common
 49 *Geranium*
 common
 50 *Rubus*
 common
 51 *Castilleja*
 rare (only one seen)
 52 *Cerastium*
 occasional
 53 *Croton*
 rare
 54 *Stellaria or fogelia*
 small colony
 55 *Pernettya*
 common
 56 *Hypericum*
 common locally
 57 *Bidens*
 58 *Geranium*
 common in open places

- tips of bracts red, calyx
 red, edged with yellow,
 yellow inside, galea
 green, lower edge yellow.
 small tuft.
 calyx purplish-black,
 corolla purple
 caespitose, culms
 spreading - arching.
 dense bush 1.5 m. tall,
 fruit green.
 scapes weakly ascending,
 fls. rose with darker veins.
 spreading, low-arching
 bush, fls. pink.
 suffrutescent; tips of
 bracts and calyx red.
 climbing in clumps
 of bushes. fls. white.
 bush 1 m. tall, fls. yellow.
 creeping, more or less prostrate
 low shrub, leaves pale
 beneath, fruit black.
 bush up to 1 m. tall,
 fls. yellow.
 fls. yellow.
 fls. pink

L 20259

Labi.

rare

L 60 Eupatorium
commonL 61 Galium
occasionalL 62 (Melast.)
commonL 63 Comp.
very commonL 64 Liatrum
occasionalL 65 Melast.
commonL 66 Cestrum
occasionalL 67 Palicourea
occasional

✓ Feb. 28 - eastern slope of
Cordillera Oriental on road
to Villavicencio, above and
of Chipaque, below
Paseo de la Cruz Verde, Cundinamarca
remnants of "subparamo" [3250 m.
a bush between cleared patches,
on ~~steep~~ slopes.

L 68 Borreria
common along road cuts

scandent shrub, several
m. long, corolla deep orange,
column whitish, anthers
dull blue-black, fruit green,
depressed-globose.

- weak shrub, stems
spreading to ascending,
fls. white.

- vine-like, fruits fleshy,
orange.

- shrub 1.5 m. tall, sticky,
bracts red-purple.

- rounded, densely branched
shrub, fls. whitish.

- vine-like, fls. bright
yellow.

- shrub 2-3 m. tall,
fls. deep red.

- shrub 1 m. tall, fls.
greenish-white.

- shrub 1 m. tall, fls. dull
yellow. (probably same
as #20233)

vine hanging over road
cut, fls. white.

- L 20269 *Pernettya*
 L 70 *Calceolaria mexicana* Benth. subsp. *mexicana*
 wet ground around spring
- L 71 *Drymaria*
 wet ground around spring
- L 72 *Graphalium*
 common
- L 73 *Gaultheria*
 common
- L 74 *Rubus*
 common
- L 75 *Breconia*
 occasional but just
 at this altitude
- L 76 *Castilleja*
 common
- L 77 *Nertera granadensis* (L.f.) Druce
 common on cut banks

Mar. 7 - from train, Girardot to
 Ibaque, Tolima.
 An interesting river Arroyo
 on Rio Coello above Gualanday.
 Above this, clear to

- low shrub, fruits black.
~~not ground around spring~~
 plant succulent, reddish,
 fls. yellow.
- plants spreading to ascending,
 petals white, bifid.
- weak, elongate extensively
 branched herb
- weak shrub, fruits
 black, fleshy.
- low spreading shrub,
 fls. white, fruit black
 when ripe. sour.
- tree-like shrub, 4 m.
 tall, latex range,
 not abundant, leaves
 blue-glaucous beneath,
 inflorescences pendent
 with ascending fruits.
 these not quite mature.
- supfruticent, 1 m. tall
 distal half of bracts
 and calyx red, galea
 green, edged below with
 orange-yellow.
- prostrate, mat-forming,
 fls. greenish-yellow,
 fruits bright coral red.

Ibaque is a tremendous
 flat plain or sabana,
 similar to that of Bogota, but
 at a little less than 1000 m.
 Ibaque is at the foot of the Mts.
 above this plain.

Mar. 7 - ~~at~~ Cordillera Central between Ibagué and Armenia.

The road winds through a pass, south of the Quindío, going over the hump at 10,500 ft.

The mountains are quite rugged and the canyons deep.

The vegetation has been practically destroyed within sight of the road. Overgrazing is not extreme, yet.

There are no paramos in sight of the road, even at the top.

Palms, which may be *Ceroxylon*, still exist near the top, where a little forest is left.

Along the road cuts several species of orchids are remarkably abundant and showy. *Condaminea* is one of the commonest plants, flowering when only a small shrub, and behaving like a weed.

More trees ~~are~~ remain on the west slope than on the east. *Quercus* sp. is still found along the road.

On the whole trip, not a single *Cinchona* or *Ladenbergia* was seen.

Mar. 7 - Between Armenia and Zarzal bamboo is so abundant as to dominate the landscape.

Mar. 9 - Along the railroad from Cali to Popayan.

Between Cali and Timba the Cauca Valley is much like that of the Magdalena above Girardot, flat, mostly pasture, with scattered trees and wooded stream-courses. Much bamboo near the streams. From Suarez, the train climbs up to a rolling plateau at about 1400-1700 m. North of Morales, the wooded ravines and steep places are covered with second growth, one of the dominant plants being *Ladenbergia magnifolia*. South of Morales this became scarcer and *Cinchona pubescens* appeared and became extremely common in second-growth and along fence-rows as far as Piendamó and on toward Popayan. It is especially common at about 1500-1700 m. west of Tunia. The plants were flowering and fruiting abundantly, and had erect stipules.

abundantly
fruiting

✓ Mar. 14 - ^{near} Rio Molino about 6 km.
above (s.e.) Popayan, Cauca
1900 m.

- L 20278 *Cinchona pubescens* Yahl
~~small tree~~ common in
small patch of woods
in ravine. ~~other~~

57 ✓ Mar. 14 - vicinity of confluence
of Rio Anambio and Rio Vinagre,
about 2.5 km. w. of Purace, about
22 km. e.s.e. of Popayan, Cauca
road cuts on L 2400-2500 m.
cleared canyon walls with
some scattered second-growth

- L 4 79 *Franseria*
L 3 80 *Pellaea ternifolia*
vertical banks
L 3 81 *Pellaea*
vertical banks
L 1 82 *Cheilanthes*
vertical banks
L 2 83 *Pityrogramma*
vertical banks
L 1 84 *Asplenium*
vertical banks

anal. Ballis

q+c 7

ci 1.6

qui 7

TC 1.6

small tree 7 m. tall,
(others larger) 10 cm. thick, fls. pink,
pale inside, coral outside.
hairs on lobes white.
~~stip~~ leaves dull above,
veins red, ^{beneath} stipules
erect, turning red with
age, inflorescences, fruits
and, to some extent, leaves,
covered with rust blisters.
Bark white when cut,
oxidizing brown, bitter.
(bark sample) "requeson"

aromatic herb 1.5 m. tall,
forming thickets

fronds whitish beneath

fronds very white beneath.

L 20285 Pellaea

vertical banks

L 36 Tephrosia or Palea

L 3 87 Phyllanthus

L 2 88 Coriaria

vertical banks

L 3 89 Amaranthus

L 8 90 Dahlia

abundant on slopes and embankments

L 1 91 Tagetes

common on disturbed slopes and embankments

L 1 92 Besleria

crevices in vertical rock cut

L 2 93 Eupatorium

erect herb up to 1 m. tall, corolla violet, calyx deep red. Said to be very useful as an insecticide. shrub 2 m. tall, main stem erect, slender, floriferous branches horizontal and drooping; stigmas dark red.

"yuco"

drooping, branchlets and leaves distichous, fertile branchlets pendent, fls. red with yellow stamens, fruit dark purple-brown.

erect herb, woody at base, fls. pinkish to white.

erect herb 2 m. tall, ~~fls.~~ rays lavender, disk yellow.

erect herb with a very strong oily-resinous odor, rays white (with no. 20294) plant tinged with red, especially the inflorescence, corolla lavender with green lobes, these spotted inside with deep purple. fls. pale beneath. erect, fls. white.

- L 20294 *Tagetes*
very common on embankments
and disturbed places.
- L 95 *Richardia*
roadside
- L 96 *Lupinus*
rocky place above road, ^{forming colonies} ~~abundant~~
very locally.
- L 97 ~~*Solanum*~~ *Euphorbia latayi* HBK.
very common, used as
living fence from Popayan
to Puracé, large trees
occasional in second growth.

✓ Mar. 14 - ~~between Rio Molino~~
~~and Rio Cauca~~. Road from
Popayan to Puracé, near
Rio Molino, 15 km. s.e. of
Popayan, Cauca. 2100 m

- L 98 *Solanum*
common in bushy ravine

✓ Mar. 14 - Puracé, Cauca
in the town 2646 m.

L 99 *Eugenia*
cultivated

- erect, strongly oily-resin
scented, fls. orange,
(with #20291)
prostrate, fls. white,
5-6 parted.
erect herb, flowers violet,
center wedge of banner
pink, turning red.
launifolia shrub, cut back
at top, very milky
when broken, capsules
immature (fruit from
different plant from
flowers. "Lechero"
plant has slight odor of mercaptan

bushy shrub up to 1.5
m. tall, stem prickly,
fls. yellowish, but
~~apparently~~ apparently mostly
abortive, fruit immature.
(immature fruit used
as a ~~soap~~ soap).

small tree, ~~fls.~~ leaves
glossy, fruit said to
be small (1 cm.) and
edible.

20300

Cinchona pitayensis

~~tree~~ planted in yard,
said to have been brought
from the woods nearby

anal. Bell
B+C 1.4%
C 3.7%
Q 1.1%
T 6.4%

~~TC 5.9%~~

L 3 01 *Verbena*

in yard

L 4 02

Cinchona pitayensis

in fence-row, possibly planted

L 5 03 *Fuchsia*

fence-row

tree about 8 m. tall, 15 cm.
thick, leaves dark green,
stiff, glossy, veins scarcely
reddish, infl. reddish,
calyx red, corolla dull
purple, becoming red
and larger toward
base, hair on inside
of lobes white, lobes 4-5(?),
this plant longistylous.
stipules green, erect.

fruit slightly compressed
perpendicularly to septum,
somewhat immature,
some high in tree apparently
opening from apex.

Bark gray outside, white
and bitter within when
fresh, over 1 cm. thick, firm.

(bark sample)

small tree, fls. white, ^{fragrant}
infl. dull purple.

small tree 6 m. tall, 3 cm. thick,
leaves rather stiff & glossy,
~~midrib~~ midrib and petiole red,
stipules erect, turning
red when old, inflorescence
and twigs ^{dark} red, calyx green
turning red, corolla dull
purple, hairs white, fruit
not mature, slightly
compressed; fls. brevistylous.

semi-scandent shrub up to
3 m. tall, fls. ^{somewhat} vermillion, ^{pendent}.
fruit immature, leaves dull green.

✓ March 19, Piendamó, 24 km.
n.n.w. of Popayan, Cauca
1750 m.

L 20304 *Heliconia popayanensis*
second growth thickets on
steep slope below road

L 2 05 *Borreria*
almost vertical road cut
cut in earth.

L 2 06 fern
almost vertical road cut
in earth.

L 2 07 *Anemia*
almost vertical road cut
in earth.

Finca El Salado.

✓ March 19 - Rio Machete near
its confluence with Rio
Piendamó, 25 km. n. of Popayan,
Cauca 1750-1800 m.

sparse forest which has
had all large trees removed
by lumbering.

L 5 08 *Orch.*
terrestrial

L 5 09 *Rub.*
scattered, not common

tree 6 m. tall, 10 cm. thick,
fls. greenish. bark
tough sap glutinous.
fls. white

procumbent, leaves in
one horizontal plane,
flowers on under side
of stem, hidden, green
with purple markings
on inside of petals and
on ~~top~~ column.
erect, unbranched or sparsely
branched 0.5 - 1 m. tall,
fruit blue when almost
ripe, black when ripe, fleshy.
stones 1-seeded, calyx + bracts reddish.

70310

Melast.

L 2 11

Melast.

L 8 12

Melast. a good one?

in thick humus, apparently saprophytic
abundant very locally.

L 5 13

Befaria

on ridge top, rather bushy
woods.

L 3 14

Baccharis

on ridge top, rather bushy
woods.

L 4 15

Myrsine

on ridge top, rather bushy woods.

L 2 16

Miconia

on ridge top, rather bushy
woods.

L 3 17

Pernettya

on ridge top, rather bushy woods.

L 3 18

Weinmannia

common on ridge top, rather
bushy woods.

L 2 19

Lycopodium

very abundant in places,
forming a dense groundcover.

L 3 20

Palicourea

common

weak sparsely branched
shrub, fruits ~~are~~ blue-black,
said to be eaten by children.
fl. pink, lvs. said to
be medicinal.
plant whitish, flowers
~~are~~ yellow.

shrub 1.5 m. tall (others
seen as much as 4 m.)
flowers bright pink,
paler inside, lvs. glaucous
beneath, fls. not sticky.
shrub 1.5 m. tall.

shrub 2 m. tall, ripe fruit
reddish-black.
shrub 1.5 m. tall,
fruit fleshy, blue-green.

shrub 1 m. tall, lvs.
stiff, dark green above,
pale and reticulate
below, fls. white, waxy
shrub 2 m. tall, others
form trees.

creeping, fruiting branches
erect.

shrub or small tree, 4 m.
tall, infl. red, pedicels
paler, yellowish, ripe fruits
black, most of fruits green.

20321

Orch.

common in more or less open,
rather sterile or disturbed places,
terrestrial

L 1 22

Orch.

epiphytic on shrub near ground.

L 1 23

Orch.

Terrestrial

L 5 24

Piper

ravine, near water

L 5 25

L 4 26

Coccocypselum

common as ground cover

L 3 27

Orch.

scattered

L 3 28

Palicourea

common, edge of clearing

L 3 29

Hedyosmum

edge of clearing

L 4 30

Lam.

L 3 31

Palicourea

erect, up to 1.5 m. tall,
fls. white with yellow
on lower ~~side~~ part of lip.

fls. greenish yellow.

fls. borne on tall canes
2-3 m. high, from large
caudex and dense root
system. petals rose-pink,
lip maroon-purple, paler
around the crisped edge.

shrub 4 m. tall, leaves
extremely rugose, spikes
pendent.

tree 8 m. tall, fruit green.

prostrate, tips ascending,
fls. lavender, fruit blue,
pyriform, fleshy.

shrub 4 m. tall (other
trees), with oily odor when
broken, fls. reddish-cream
color, style green.

shrub 2 m. tall, infl. red,
fruit green.

shrub 4 m. tall, leaves
with an aromatic, faintly
unpleasant odor when
broken, stigmas translucent.

tree with weakly drooping
lower branches, calyx red,

fruit

shrub 3 m. tall, inflorescence
purple, fruit green

20332

Label.

shaded place near stream

L 5 33

Cephaelis~~near~~ in ravine

L 7 34

low ground

L 7 35

Weinmannia

common

L 2 36

Palicourea

o

L 11 37

Cinchona pubescens Vahl.

common, especially in open places and near clearings.

✓ Mar. 19 - about 3 km. s. of Piendamó,
21 km. n.n.w. of Popayán, Cauca.
hilltop with bushy
second growth. 1850 m.

L 1 38

Amelia

bare road cut

L 1 39

legum.

grassy spot.

flowers scarlet.

shrub 1.5 m. tall, stems
green, bracts deep purple,
fruit green.

shrub or small tree,
branches with tendency
to be drooping or scandent,
fls. greenish, fruit
white, pendent. "granizo"
(inflorescences actually in
leaves)

Tree 8 m. tall, bark
used for tanning "encenill."

shrub 2.5 m. tall,
infl. and calyx deep red,
corolla purplish white, waxy.

Anal. Bellis:
traces of
Cinchona
alkaloids.

tree 10 m. tall, leaves
dull above, roseate beneath,
veins red beneath,
fls. pinkish inside,
with white hairs,
coral outside, fragrant.
stipules erect, green to red.
bark about 1 cm. or more
thick, whitish when cut,
oxidizing red-brown (bark sample)

fls. white

fls. yellow

10340

Mimosa
common

5 41

Orchid
common

"cañabava" is very abundant in many places. Along the rivers it forms great brakes, and in upland ravines smaller ones. The canes are used in house construction, as frame-work and especially to hold the roofing tiles in place. Bundles of them lie in the corners parts of the tiles.

Mar. 23 - Road from Popayan to La Union, Nariño.

The entire way is either cultivated or in pasture. A few *Cinchona pubescens* seen in the first few km. s. of Popayan. The lower flat portions of the Rio Patia drainage, north of Mercaderes, are dry and sterile. Palms are noticeably absent here. The region around Mercaderes is one vast pasture.

The valley around La Union is devoted to sugar cane, corn and "iracá" (*Carludovica palmata*). The latter is the basis of one of the principal occupations here, the making of Panama hats. Great numbers of the people participate in this in one way or another. The pay to the ones who actually weave the hats is extremely small, and Dr. Moquera says the occupation should be abolished because of its effect on the people. The young leaves of the

semi-scandent shrub, fls pinkish-lavender, fruit immature - erect or ascending, occasionally arched and rooting at tip, fls. orange-yellow, leaves fleshy. Iracá are prepared by cooking them before they are split into strips of varying widths. The hats as made are not perfectly white, but afterward they are bleached and whitened with a milky suspension of sulfur. They range in prices from 1 ps. to 15, here. The price is determined by the fineness of weave.

Mar. 24 - Road from La Union to Pasto, Nariño.

Just s. of La Union, at 6000' saw a few scattered *Cinchona pubescens*. This region is all cleared, though at 8000-8500' it has reverted in places to a sub-paramo bush.

Just north of Pasto the mountains contain forest that is little disturbed. Would be good collecting. In the valley of Pasto the land is almost completely cultivated.

✓ Mar. 26: grade above Encano, above
Laqueada Cocha, western part of Putumayo
road cut in cloud forest 2950 m.

L 20342 *Trichomanes*

✓ Mar. 26 - Paramo de San Antonio
(San Bernardo), between Encano
and Santiago, western Putumayo
road cut in subparamo (bushy)
vegetation

L 43 *Fuchsia*

L 44 *Fern.*

L 45 *Nertera tetragyna* HBK.
on earth banks

✓ Mar. 27 - Sachamates, drainage of
Rio Mocho, opposite mouth of Quebrada
Patoyaco, Camino Herradura, 18 km.
w. of Mocho, Putumayo 1700-1800 m.
Rain forest on steep slope, with
small clearing.

L 46

edge of deep ravine

L 47

Melastom.

edge of clearing

L 48

Calceolaria

small trickle of water along trail

L 49

Plantago major

clearing

L 50

Orchid.

mossy bank along trail, terrestrial

L 51

Borreria

clearing, along trail

fronds appressed to earth walls.

- fls. rose-pink, pendent
- fronds arching downward.
prostrate, forming mats,
fls. pale green, fruit red.
leaves stiff

angl. Bellis.
not more
than trace of
Cuscuta alk.

tree 20 m. tall, ^{3 dm. thick} very bushy
at top and dense. "tuna" being
harvested as a quina. (bark sample)
- small bushy tree, fls. white
with rose purple stamens.
- corolla sulfur-yellow.

"yaken" used as remedy
for infections.
fls. white.

fls. white.

- 20352 *Cuphea*
common weed along trail
- L 1 53 *Blechnum*
- L 2 54 *Paub.*
- L 3 55 *Passiflora*
in deep shade
- L 2 56 *Palicourea*
- L 4 57 *Billia*
- L 5 58 *Ladenbergia*
- L 3 59 *Asplenium*
in humus, occasionally climbing
on lower parts of trees.
- L 1 60 *Vittaria*
epiphytic on tree trunk
- L 11 61 *Verb.*
in deep forest
- L 1 62 *Cephaelis axillaris*
in deep forest
- L 2 63 *Ladenbergia*
in deep forest
- L 11 64 *Blechnum*
in deep forest, common
- L 5 65 *Gleichenia*
edge of clearing

- calyx deep red, corolla
pink.
- rhizome ^{rather} short, erect.
shrub 1 m. tall, stem
speckled, fruit immature.
weak shrub, corolla fleshy,
orange-red, pouch-like, with
small opening.
- shrub 3 m. tall, infl. purple,
fruit immature
- Anal. balls
no more
than traces
of function alkali. tall tree, 30 m. 4 dm. thick,
"naranja" ^{bark} being harvested as
a quina (Bark sample)
from a tree that had been cut several
days - bark being harvested
as a quina bark. "requezon"
long naked tips of fronds
rooting and developing new
plants.
- shrub 4 m. tall, slender,
fruits immature.
- weak shrub, fruit blue,
fleshy, obovoid.
- small sprout "requezon"
bark being harvested as quina.
rhizome elongate, climbing
trees, closely appressed to
trunk, sterile fronds in
stories, with gaps of bare
rhizome between, fertile
fronds terminal.
- stip erect, blades arcuate, more or
less flat topped, revolute. Forming low thickets.

✓ Mar. 23 - Drainage of Rio Mocoa,
below Sachamates, below
mouth of quebrada Patoyaco,
Camino Herradura 17 km. w. of
Mocoa, Putumayo 1600 m.
trail along steep canyon
side, rain forest.

20366 *Guettarda*
in small ravine

67 *Drymaria cordata*
cleared space beside trail

68 *Gynandropsis*
cleared space beside trail

69 *Gouania Kallia* sp. nov. det. Wiehler 1972
cleared space beside trail

70 *Lasiacis*
base of cliff

71 *Psychotria*
second growth on steep slope
abundant locally

72 *Palicourea*
rocky slope at base of cliff, shaded

73 *Hedyotis*
rocky slope at base of cliff, shaded

small tree 6 m. tall, wood
brittle, fls. white, edges of
lobes crisped, fruit immature.
stems prostrate at base,
ascending through weeds.
fls. white

herb 2 m. tall, fls. orange
with green stamens,
fruit green, valves
curving on dehiscence,
exposing fleshy
placenta and blackish seeds.

weak suffrutescent
herb, fls. deep scarlet,
marked with purple in
throat.

forming low tangles.

shrub 4 m. tall, fruit
dull translucent blue.

inflorescence yellow,
fruit immature

suffrutescent herb, 3 dm. tall,
fls. white, fruit immature.

74 ✓ Mar. 28 - ridge above Sachamates,
drainage of Rio Mocoa, opposite
mouth of Quebada Patoyaco,
18 km. w. of Mocoa, Putumayo
1750 - 1900 m.

Rain forest

20374 *Cinchona officinalis* L.
on edge of precipice, only one seen

Anal. Bellis
no more than
traces of
Cinchona alkaloids.

75

76
77 *Ladenbergia*?
edge of precipice

78 *Burmeistera*
~~decid.~~ woods, along trail

1900 m. tree 15 ft. tall, 2 dm. thick
at base, leaves glossy, old
ones bright red, stipules
erect, pale green, flowers
purple (only one open) calyxes
and immature fruits deep
red. Bark corky and rough
outside on trunk, 2 cm. thick,
white inside oxidizing
brown, gray on branches
and checked, 1 cm. or less
thick. (bark sample)

Anal. Bellis
not more
than traces
of *Cinchona*
alkaloids

large tree 40 m. tall, 6 dm. thick,
wood brown at center, hard
outer wood rose color, leaves
stiff, bark thick, red, bitter,
being harvested as quina,
called "calisaya" or "casarillo".
(bark sample).

Tree, lactiferous, fruit immature
sprouts from a fallen tree, not
seen fertile.

suffrutescent herb 2 m. tall,
with an elusive shrubby-like
odor, fls. pale green, touched
with brownish outside,
fruits inflated

20379

Lobelia

along trail in woods and at
edge of clearing.

L 30

Ladenbergia
dense woods

L 31

Psychotria
dense woods

L 32

Hymenophyllum
epiphytic on tree trunks

L 33

Psychotria
in woods

L 34

Acalypha
in woods

L 35

Quercus
edge of clearing

L 36

Acanthaceae
small colony in edge of clearing

L 37

Herb.
isolated plant in clearing

L 38

Condalia corymbosa
in clearing at edge of ravine

L 39

Burmeistera
in clearing, wet place

L 40

Herb.
at edge of clearing

scandent shrub, lactiferous,
fls. scarlet outside, orange
inside, calyx dark red,
stamens yellow, fls.

born on long pendent
almost naked branches.

Anal. Pollin.
no more
than traces
of C. lineata All.

tree 20 dm. tall, 3 dm. thick,
fruits all dry. bark being
harvested as a quina.

"requeson". (bark sample)
shrub 2 m. tall, stipules
divergent, fleshy, fruit
white.
pendent.

shrub 1 m. tall, fruit immature.

slender, sparsely
branched shrub 3 m.
tall, inflorescences weak,
styles white.

low suffrutescent herb,
fls. white.

erect, forming a dense
patch, fls. white.

tree-like shrub 4 m. tall,
no fruits in inflorescences.

small sterile plant -
said to be "barro de pasto".

herb 1 m. tall, fls. green
with brownish tinge
plant with elusive skunky
odor.

semi-scandent shrub.

March 29 - ~~1943~~ Rio Luauaga,
drainage of Rio Mocoa, above
mouth of Rio Patoyaco, 18-20
km. W. of Mocoa, Putumayo.
second growth in cleared
trail-side in rain forest.

20391

Siparuna

92 Siparuna

93 Palicourea

94 Lycopodium
wet rocky cliff in sparse vegetation

95 Fuchsia
abundant from here up to 2650 m.

1700 m.

shrub, sparsely branched,
branches quadrangular,
elongate, ~~the~~ foliage
with a slightly aromatic
slightly unpleasant
odor, fruits pyriform,
flesh colored, papillate,
occurring in axils
of leaves and in clusters
on lower part of branches,
pendent. leaves very rugose.
slender shrub, fruit spherical,
greenish-red, smooth,
leaves almost smooth,
plant with a rather
weak unpleasant
aromatic odor.

shrub 2-3 m. tall, infl.
yellow, pendent, fruit
immature.

1875 m.

erect.

2000 m.

low bush, 1 m. long but weak,
fls. scarlet, fruit purple-black,
fleshy. leaves rugose.

20396

Lycopodium

common in clearing

L

97

Bomarea

scattered in brush

L

98

fern

epiphytic on mossy tree trunk

L

99

Cinchona pubescens Vahl

on steep rocky slope in wet forest

10

Mar. 29 - upper part of Rio Minchory,
drainage of Rio Moron,

2500 m

L

20400

Epilobium

sandy patch in rocky
stream bed

L

01

Fuchsia

along rocky stream bed,
abundant also along cleared
sides of trail in second growth

L

02

Gunnera

scattered in woods from
here to summit, growing
with another much commoner
species.

L

03

Orchid

on rocky cut banks above trail, abundant

Mar. 29 - small affluent
headwaters of Rio
Putumayo, along Camino Verdadera
(to Moron), above San Francisco,
Putumayo

2500 m

talus above trail

L

04

Capparis

herb up to 1 m. tall, with
powerful stinging hairs,
petals orange.
flowers scarlet.
plant semiscandent.anal. Bellis.
g+c 0.6
Si 0.7
TC 1.4Tree 10 m. tall, 3 dm. thick,
older leaves reddish, especially
beneath, leaves with a
mildew of some sort. stipules
green, reflexed. (bark sample)
erect, flowers white,
turning pinkish, calyx
greenish red.
weak shrub 1 m. long,
flowers scarlet, ripe
fruit purplish black, fleshy.trunk erect, 1 m. tall, 2 dm.
thick, leaves ascending,
infl. ascending.

fl. white.

suffrutescent herb with rather
rank odor, 3 m. tall, fl. yellow-
green, stamens purple distally.

✓ Mar. 30 - Sibundoy, Valle de
Sibundoy, Putumayo 2200 m.

L 20405

Monnina

edge of cultivated plot

L 6 06

Monnina

in garden near house of
an Indian herb doctor

✓ April 2 - Encano, north end of
Laguna de la Cocha, Putumayo
partially cleared 2850 m.
foothills above the lake,
formerly dense rain forest,
patches now remain.

L 4 07

Monnina

patch of brush on a low ridge

L 5 08

Monnina

parasitic on various plants,
principally compositae

L 5 09

Monnina

pendent over edge of road
cut (other plants are
flat roadsides)

L 10

Oxalis

cultivated on cleared slopes
in rich black soil

shrub, fls. blue

erect shrub 3-4 m. tall,
flowers white, ~~some~~
somewhat irregular.
Plant apparently sterile,
as old flowers seem to
drop off, and the people
say it never sets fruit.
"culebra borrachero".
Planted here, not seen wild.

shrub 4 m. tall, fls.
cream color, slightly reddish
outside.

leafless, stems brownish
purple, fls. open wide
white, pinkish outside.
prostrate, forming a
mat, fls. white.

stem and leaves rather
fleshy, fls. yellow. roots
yield tubers which are eaten
like potatoes, called ~~oca~~ "oca"
mature in 9 or 10 months here.

L 20411

Lengua

cut bank of road

- L 4 12 *Oenothera*
grassy bank
- L 2 13 *Weinmannia*
patch of woods on steep slope
- L 15 14 *Cinchona pitayensis* Wedd.
patch of woods on steep
slope, scattered in the region.
- L 3 15 *Vittaria*
epiphytic on mossy tree trunk
- L 2 16 *Gentiana*
roadside bank
- L 2 17 *Galium*
bush along trail
- L 3 18 *Palicourea*
in patch of woods
- L 3 19 *Colub*
in patch of woods
- L 4 20 *Psychotria*
in patch of woods
- L 2 21 *Melast.*
bush along trail, abundant

herb 1 m. long, drooping
over bank, fls. white with
reddish marks outside
basally.

spreading from a thick
root, fls. scarlet,
yellow distally.
shrub 3 m. tall.

anal. Ballis:
G+C 1.9%
Ci 2.39%
Gru 0.19%
T.C. 4.39%

tree 10 m. tall, 1.5 dm. thick.
all fruits apparently opening
from summit. Bark being
harvested. (bark sample).

- pendent, fronds rather
thick and slightly spongy.
fls. ~~deep~~ deep lavender,
~~petals~~ corolla lobes
reflexed in mature fls.
vine-like, very scabrous,
fls. greenish, fruit dark brown,
shrub 3 m. tall, infl.
purplish, fls. bluish.
vine-like ~~herb~~ suff-
frutescent herb, lactiferous
fls. reddish green, fruits
pink, somewhat inflated,
shrub 2.5 m. tall, fls.
purple outside, lavender
within, ^{mature} fruit bright blue,
fleshy, mostly immature.
shrub 2 m. tall, fls.
bright purple.

134

1943 - Colombia

L 20472

Thalictrum

L 20473

brushy wet trailside
Cyclanthera cypripedifolia Cogn. det. Jeffrey 1974brushy ~~trailside~~ trailside

L 20474

Tropaeolum

brushy trailside

L 20475

Orchid.

L 20476

Lolium

weed cultivated slope

L 20477

Viola

weed in pasture, probably
escaped from gardens

L 20478

Liparuna

tree in fence-row on hill

L 20479

Lolium

fence-row on hill

L 20480

Orchid.

~~Orchid.~~

Putumayo

135

herb, 1 m. tall, fls. purple.

herbaceous vine climbing
in small trees, fruits
dehiscing in 3 valves
when still green, fls.
greenish white.herbaceous vine
climbing in brush,
fls. with spur coral red
with tip green, lobes
green, petals deep
maroon - purple.

fls. flame-orange

bushy herb 1 m. tall and
wide, tangled, calyx
purple-black, corolla
greenish-white, fruit
reddish when ripe.upper petals purple-black,
lower ones variously white,
yellowish or lavender,
marked with purple.tree 6 m. tall, calyx
waxy, yellow, turning
green, plant aromatic,
somewhat like lemon oil,
leaves very rugose,
no fruit setting.vine-like shrub, flowers
crimson, staminal column
white, anthers gray.
fls. ~~reddish~~ variegated
yellow, brown, and green.

L 20 431 *Fuchsia*
bushy patches around cultivated slopes.

L 5 32 *Cinchona pitayensis*
bushy patch, edge of cultivated field.

Qa: 1.8
Ad: 1.0

L 3 33 *Palicourea*
bushy slope

L 2 34 *Morina*
bushy slope

L 2 35 *Galium*
climbing in bush

L 5 36 *Nertera granadensis*
moist earth bank

~~Stylopodium~~

✓ April 2 - Grade above Encano,
Laguna La Cocha, road to Pasto,
Putumayo 2960 m.
steep slope below road, cleared.

L 4 37 *Lycopodium*

L 3 38 *Occlid*

erect suffrutescent herb
hypanthium flesh color,
sepals green, petals scarlet
fls. pendent. fruit immature

anal. Bellis

Q+C 2.3%

Ei 2.7%

Qui 2.1%

TC 5.8%

(Q904 2.4%)

small tree, obviously
a grown root sprout,
5 m. tall, branched from
near base, base 12 cm. thick.

sterile (bark sample)

shrub 3 m. tall, infl.

deep purple, fls. blue,

infl. fading somewhat

greenish when in immature

fruiting condition.

shrub 1 m. tall, fls. dark
blue, fruit pinkish.

vine-like, fruits orange,

fleshy.

prostrate, mat-forming,

fls. yellowish-green, fruit

coral red, juicy.

clumps, stems very white,
leaves green.

scape reclining, fls. chocolate

brown with yellowish

crisp edges to petals,

yellow tips to epichile

and yellow rugose thickening

at base of mesochile. fruit

triangular transversally.

138

1943 - Colombia

L 20439 *Phytolacca*
common

L 40 *Caryophyll.*

✓ April 2 - near top of grade
above pasts on road to Putu-
mayo,

Nariño

wet slopes, "subparamo" 3150 m.
bushy vegetation

L 41 *Nertera tetrasperma*
forming dense mat on open
earth banks, common.

L 42 *Gaiodendron*
apparently growing in earth

L 43 *Morrenia*

L 44 *Stellaria*
edge of road cut

L 45 *Fuchsia*

L 46 *Oxalis*
edge of road cut

L 47 *Calceolaria*
climbing in shrubs

L 48 *Centropogon* off *hardyensis* Beath.
common

✓ Apr. 4 - La Union, Nariño 1850 m.
L 49 *Pavonia*
in yard near house

Putumayo - Nariño

139

fleshy depressed herb,
fls. magenta
diffuse, ~~weak~~ weak herb,
fls. white.

leaves stiff, fruit coral red,
fleshy.

shrub 4 m. tall, fls.
yellow, parts spreading
shrub 1 m. tall, fls. deep
blue.

diffuse herb, fls. white.

small shrub, flowers
crimson, pendent.
vine-like herb, fls. yellow,
marked with red outside,
stems red.

scandent herb, leaves stiff,
revolute, fruit purplish-black.
shrub 1 m. tall, spreading,
fls. orange, staminal
column white, anthers
blue-gray.

large caespitose shrub, 3 m. tall,
fls. yellow, column bent downward.
"Escoba babosa" used as betrifuge

✓ Apr. 4 - 2 km. south of La Union,
on road to Pasto, Nariño, 2000 m.

20450 *Cuphea*

grassy roadside

51 *Croton*

grassy roadside

52 *Tagetes*

grassy roadside

53 *Cinchona pubescens* Vahl

ledge on precipice, side of
bushy ravine.

54 *Borreria*

roadside

✓ Apr. 4 - Side of valley of Rio Quina,
directly across from San Jose,
Nariño 1950 m.

55 *Cinchona pubescens* Vahl

wet ravine

✓ Apr. 3 - Rio Pajajoy, about 2 km. n.
of Buenaco, Nariño

rocky sides of ravine not far
above river.

56 *Lobelia*

road cut, rare

ascending, fls. pinkish.

fls. deep yellow.

erect, rays white, disk pale
yellow. odor like licorice
when crushed.

small tree, corollas pink,
deeper outside, with white
hairs. leaves dull above,
veins reddish. stipules

erect. fls. fragrant.
plant spreading to ascending,
fls. white

shrub 4 m. tall, leaves with
reddish veins, dull above,
becoming red with age,
stipules reddish, erect.
fls. fragrant, corolla deep rose
outside, lighter within, with
white hairs.

fl. dark blue at apex, white
near base.

20457

Vales

road cut

L 4 58

Ficus

L 6 59

Dodonaea viscosa L.

L 5 60

Selaginella

road cut, closely adhering to
rocks, forming a mat.

L 6 61

Hedyotis

on rocks and earth ledges

✓ April 12 - Ridge bet. headwaters
of quebrada Silencia and
quebrada Chupadero, (2 main
affluents of Rio Timba on
s. ~~to~~ side nearest source),
17 km. s.w. of Timba, Cauca
rain-forest, largely ~~open~~ 2300 m.
with clearings, ~~steep slope~~

L 6 62

Psychotria

dense forest, gentle slope

L 1 63

Tiparuna

dense forest, gentle slope

L 12 64

Cinchona pubescens Vahl

dense forest, gentle slope,
scattered large trees,
small ones abundant
around clearings (stipules erect
green)

erect, fls. white.

bushy tree 6 m. tall, leaves
stiff, figs immature,
speckled with white.

shrub 2 m. tall, fls.
green, with reddish stamens,
fruit slightly inflated.

caespitose, spreading to
erect, fls. white. "romerillo"

shrub 1.5 m. tall,
fls. white, corolla enlarged
at base, fruit immature.
small shrub, 1.5 m. tall,
~~fruit~~ aromatic, fruit
broadly pyriform, red
with white spots.
tree 25 m. tall, 4 dm. thick,
leaves dull above when
older roseate beneath,
esp. veins, fls. pink, fragrant
paler inside, hairs white.
bark 1.5 cm. thick, bitter, light, scaly (dark red)

anal. bellis:

g+c 2%

ci 0.5%

gui 2%

TC 0.5%

m

dense forest, gentle slope

dense forest, common

- 67 *Drymaria cordata* L.
common in clearing
- 68 *Cinchona pubescens*
seedlings and sprouts
abundant at edge of
clearing
- 69 *Castilleja*
rare in clearings
- 70 *Bomarea*
scattered in clearings
and edge of woods
- 71 *Muehlenbeckia tamnifolia*
in clearing
- 72 *Cinchona pubescens*
seedlings along trail
- 73 *Palicourea*
woods
- 74
woods along trail

tree 15 m. tall, 3 dm. thick,
leaves in one plane on
twig.

leaves in one plane, spotted
with red toward tip.

"ataha sangre" used to
stop bleeding.

diffusely spreading,
infl. erect, fls. white.

seedling, these varying
greatly in hairiness of
stem, this one is
extremely hairy. (see #20472)

stipules erect, green,
later drooping and
becoming red.

hairs glistening white,
bracts tipped with
red, calyx green.

vine about 2 m. long,
twining, fls. orange.
(plants seen more often
uniform.)

vine, fls. greenish.

seedling, these varying
in hairiness (see #20468)
this one somewhat hairy,

stipules erect, later
becoming red and drooping
shrub 2 m. tall, infl.

purple, fruit green.

shrub, fls. or leaves,
yellowish green, fruit white.

146

1943 - Colombia

20475 *Palicourea*
woods76 ~~near~~
on tree trunk in woods✓ April 12 - near head of
Quebrada Silencia, (affluent
of Rio Timba) 16 km. s.w.
of Timba, Cauca 1300 m.77 ~~Cordia~~ *Erythrina edulis*
cultivated, shaded by bananas✓ April 12 - Quebrada Silencia about
2 km. below source, (affluent
of Rio Timba), 16 km. s.w. of
Timba, Cauca 1550 m.
woods along stream in ravine.78 *Rub.*

Cauca

147

shrub 2 m. tall, erect,
infl. ~~red~~ purplish
green, fls. lavender.small tree, with ~~thorny~~
prickly branches. fls.
yellowish-green, fruit
abundant, pendent,
dehiscing while still
green and while still
in tree, seeds large,
dark red-brown,
soft, ~~green~~ starting
to germinate while
still on tree - cooked
and eaten, have a mealy
consistency and slightly
nutty flavor.
"chacha-fruta" or "chucha-
fruta"small tree 5 m. tall, fruit
immature.

148

1943 - Colombia

20479

Rub.

shaded in woods

80 *Cephaelis*

shaded in woods

81

shaded in woods

82

*Coccoloba*cut bank of trail, edge
of woods, prostrate,
extensive, rooted at nodes
fls. lavender, fruit blue
when ripe.

83

shaded in woods

84

Rub.

shaded in woods, only one seen

85

Bocconia

rocky bank above stream

Cauca

149

scandent shrub, sterile,
"crucecita", a piece of the stem
a few cm. long boiled in water,
the water then drunk to stop
menstrual hemorrhages.

(inf. from Ignacio

who got it from a Choco
Negro. He and his wife both
praise for its efficacy).

subshrub, 0.5 m. tall
or slightly more, bracts
dark purple, fruit
fleshy, blue.

slender shrub 2 m. tall,
fruit immature.

"yerba cancer" good for kidneys

slender shrub 3 m. tall,
fls. white, leaves
white beneath:

shrub 8 dm. tall, fruit
dark blue.

shrub 3 m. tall, leaves
glaucous beneath
old infl. with mature
fruits on stem below
leaves, young one terminal,
mature fruits mashed
with water and used for
mange-cure. latex orange.

L 20486 *Liparuma*
edge of woods

✓ April 13 - Southeast side
of valley of Quebrada Chupa-
ders (largest affluent of
Rio Timba on south side), 16 km.
w. s. w. of Timba, Cauca
bush along trail, 1300 m.
damp and shaded

L 3 37 *Lobelia*

L 2 38 *Rondeletia*
along trail in ^{rugged} clearing

L 1 39 *Palicourea*
in patch of woods

✓ April 13 - Ridge between
lower parts of Quebradas
Silencia and Chupaders,
(affluents of Rio Timba),
about 6 km. w. of Timba,
Cauca 1500 m.
cleared ridge, pasture

L 1 90 *Coccyzium*
cut bank ~~off~~ above trail

L 1 91 *Polygala*
~~abundant~~ common in pasture

shrub 4 m. tall, with a
disagreeable odor, leaves
very rugose, fls. yellow above.
fruits not mature but
turning pinkish.
"cojon de chucha", leaves
used for rheumatism.

suffrutescent herb up to
1 m. tall, fls. scarlet.
latex scanty.

erect shrub 3 m. tall, fls.
pink, tube deeper pink
than lobes.

slender erect shrub
3 m. tall, inflorescence
coral red, buds yellowish.

fls. white, fruits blue,
pyriform, soft.
"yerba de cancer" good for kidneys
erect, fls. rose.
"sarpoleta" roots with odor of
wintergreen.

20492

gent.

scattered in pasture

✓ April 13 - Rio Timba, 5 km.
above Timba, El Valle
wet wooded bottom lands, 1000 m.
mostly with bamboo and
gynenium.

93 Psychotria

94 ~~Ludwigia furcata~~
open marshy place

✓ Apr. 13 - Rio Timba at a
narrow rocky place
about 4 km. above
Timba, El Valle 1000 m.

95 Ladenbergia magnifolia
second growth woods
on slope of ravine

96
second growth woods
on slope of ~~savanna~~ river bank

97 Psychotria
second growth woods on
slope of river bank

✓ Apr. 17 - Rio Timba about
3 km. above Timba, El Valle
small marshy place
in bed of tiny trickle of
water 1000 m.

98 Xyris
rare

erect, fls. greenish-white

shrub 2 m. tall,
fls. white.
herb 1 m. tall, fls.
yellow.

Tree 10 m tall, 3 dm. thick,
leaves glossy, bark
bitter.
small tree, scaly
catkins green.

shrub 3 m. tall,
fls. white, ripe fruit
red, fleshy.

erect, heads ovoid,
fls. not seen

L 20499

L 20500 Eleocharis

73 ✓ Apr. 17 Llanaria, on Rio
Timba, 2 km. w. of Timba,
El Valle 1000 m.

L 01 Solanum
- common in pasture

L 02 Gossypium
cultivated

L 03 Solanum nigrum L.
weed in pasture

L 04
weed in pasture

L 05 Portulaca oleracea L.

L 06 Rubus
in thicket in pasture

L 07 Chenopodium ambrosioides L.
weed near house

L 08 Dependentia - bed of stream
weed in pasture

L 09 Equisetum
wooded ravine, second growth

erect, at least the green
part of stem, leaves
stiff.
tufts

shrub 1-2 m. tall, forming
tangled thickets, fl. white,
fruit reddish when
ripe.

~~not~~ "cujacu" evidently
not eaten by stock.

shrub 2 m. tall, flowers
yellow, turning red.

fls. white, "infusion
used as a disinfectant
to wash ulcers. "yuba mora".
fls. greenish white.

"escoba dulce"
fleshy, fls. whitish.

"verdolaga" used to soothe
irritations.

woody liana climbing
in tall shrubs.

very strong odor. "paico"
used for worms.

fl. yellow. "cargodita"
used with Equisetum to
make a kidney medicine.
erect, 4 m. tall, mostly
bent over. fruit not seen.

L 20510

Melast.

edge of guadua thicket near cultivated ground, wet river-bottom land.

L 11

Melast.

edge of guadua thicket, wet river bottom land.

L 3 12

Lantana camara L.

thicket in wet river-bottom land

L 2 13

Eryngium

weed in wet river-bottom land

L 2 14

Polygala

weed in cultivated river-bottom land.

L 3 15

Melast.

thickets in wet river-bottom land

L 1 16

Desmodium

rocky outcrop in cultivated land

L 1 17

Viola?

cultivated land

L 3 18

Stylosanthes

weedy cultivated land, wet river-bottom land.

erect or reclining, stems conspicuously quadrangular, fleshy, pleasantly acid, fls. bright rose-magenta. "cañagua" used to make a refreshing drink for fever patients. slightly oily odor.

shrub 1 m. tall, spreading, aromatic, fls. orange, turning red. "venturosa" or "mumupacha", used for whooping cough. erect, with a foetid oily odor, used to flavor soups and other foods, to which it gives an extremely bad flavor "culantro cimarró". fls. pinkish. root with strong wintergreen odor. "sapolita"

shrub 1.5 m. tall, pubescent reddish, esp. on young parts, fls. white, fruit dark blue when mature. prostrate, fls. indigo.

spreading, fls. white or pinkish white with deep red-purple center. extensively branched herb, basal parts prostrate, elongate, fls. yellow.

- L 20519 *Borreria*
weed in wet cultivated river-bottom land
- L 20 *Diodia*
weed in wet cultivated river-bottom land.
- L 21 *Scleria*
weed in wet cultivated river-bottom land.
- L 22 *Scleria*
weed in cultivated land, common
- L 23 *Borreria*
weed in banana patch
- L 24 *Peperomia*
common weed in banana patch
- L 25 *Lab*
weed in banana patch
- L 26 *Commelina*
common weed in banana patch
- L 27 *Physalis*
weed in banana patch
- L 28 *Stackytarpheta*
weed in banana patch
- L 29 *Croton*
weed in banana patch
- L 30 *Conchous*
weed in banana patch
- L 31 *Richardia*
weed in banana patch

Apr. 24 - Bucaco, Nariño 2000 m. bushy pasture

- L 32 *Lasiacis*
Thicket
- L 33 *Borreria*
- L 34 Verb.

erect or ascending, fls. white

prostrate to erect, stems strongly quadrangular, fls. white, fruit purplish, spreading clumps.

fls. violet.

fls. white

stems fleshy, leaves thin but fleshy, erect, aromatic, fls. purple.

decumbent, petals all blue.

fls. cream color.

erect, fls. bright purple.

erect, green, fls. white.

ascending, fls. yellow.

erect, fls. white.

main culms erect, less than 1 m. tall, branches diffuse.

weakly erect, fls. white.

erect, fls. magenta.

L 20635 Centaurium

L 236 Polygala

7 ✓ May 7 - Ipiales airport, about
5 km. w. of Ipiales, Nariño. 2950 m.
grassy field.

L 37 Eryngium acaule
common

L 5 38 Geranium
common

L 2 39 Veronica

8 ✓ May 10 - Cali, El Valle, 1000 m.
roadside weed

L 3 40 Microtea debilis Sw.

L 1 41 Euphorbia

L 2 42 Amaranthus

L 2 43 Boerhavia erecta ?

May 17 - 2 km. n.e. of Aguadita, on
a small affluent of Rio Barroblanco,
3 km. n.e. of Fusagasuga,
Cundinamarca 2150 m.
second growth woods on edge of
~~wooded ravine~~

L 1 44 Patiscouria
edge of wooded ravine

L 15 45 Cinchona officinalis L.

edge of wooded ravine, a number of
small trees in a "mancha"

fls. purplish pink.

fls. pink, roots with odor
of wintergreen.

slight parsley odor, bracts
green outside, whitish
within, flowers white.
stems prostrate, fls. pink.
fls. blue-violet.

spreading, fls. white, fruit sometimes
ascending, tips arching,
flowers greenish.
herb 1 m. tall. stem and
leaf veins rose-bronze.
several long prostrate
stems spreading from
central root, lvs. glaucous-
pallid beneath, fls. deep pink.

shrub 1.5 m. tall, infl.
yellow, fruit black. Fls. somewhat
glossy
small tree 7 m. tall, 8 cm. thick,
fls. dark red-purple with white hairs
on lobes. (bark sample) ^{actively reddish} few old bark red.

Anal. Bellis

940	2.6
(950w)	1.7
1000	1.1
1050	3.7

L 20546

Geanes.

4

edge of wooded ravine

L 47

Cinchona officinalis x *pubescens*
wooded slope(Bellis says appearance of bark
is between *officinalis* + *pubescens*,
possibly more like former)

L 1

48

Fuchsia

in bushes along trail (2000 m.)

L 13

49

Cinchona officinalis x *pubescens*
wooded slope

L 3

50

Tournefortia

wooded slope

L 7

51

Cinchona pubescens Vahl
fence row, side of trailweak shrub 2 m. long, ascending,
fls. orange.

Anal. Bellis:

G+C. 2.0%

Ci 1.3%

Qui 0.1%

TCA 2.4%

sterile sapling 4 m. tall,
branches pendent, appears
intermediate in leaf shape,
no. of veins, stipule shape,
luster of leaves. Both pre-
sumed parents nearby.

scandent shrub,

fls. pendent, scarlet.

several strong shoots
5 m. tall from a stump
1.5 m. tall ~~20~~ 20 cm. diam.looks like *C. officinalis*
with somewhat large
leaves and inflorescence
of *C. pubescens*. Both
presumed parents nearby.(bark sample) petioles
& midribs red, old leaves
bright crimson. (bark sample)

shrub forming thicket

2 m. tall. fruit immature.

small tree 8 m. tall. fls.

bright coral pink outside,

paler pink inside, very

fragrant, with white hairs.

stipules small, green, erect

at first, soon strongly

recurved, strongly

carinate. leaves green,

only petioles slightly

reddish.

May 17 - $\frac{7}{12}$ mi. n.e. of
Fusagasuga, below Aguabonita,
on road to Bogotá, Cundinamarca
2450 m.

steep wooded slope

L 20552 *Ladenbergia undata*

L 14 53 *Ladenbergia undata*

L 5 54 *Palicourea*

May 17, just below San
Miguel (~~by~~ summit of ~~San~~
road bet. Bogotá & Fusagasuga)
above Aguabonita, 10 km.
n.e. of Fusagasuga, Cundinamarca
steep brushy slope 2650 m.
below road.

L 10 55 *Cinchona ~~officinalis~~ pubescens*

slender tree 10 m. tall,
fls. white, fleshy,
very fragrant.

Tree 10 m. tall, flowers
white, fleshy, fragrant,
fruits club-shaped,
both immature and old.
weak shrub 3 m. tall,
fruit mostly immature,
ripe ones blue-black.

Anal Bellis

a+c 1.00

li 1.00

gum 4.00

f.c. 2.6

tree 1 m. thick, 20 m. tall,
portions of trunk dead,
stipules small, ciliate,
green, at first erect, then
recurved, containing gum
between them when
young; fls. ~~pink~~ coral
pink outside, paler within,
hairs on lobes white,
flowers fragrant. leaves
slightly roseate beneath.
(bark sample)

166

1943 - Colombia - U.S.A., Virginia

20556

Nertera granadensis

steep brushy talus slope

L 57

Centropogon ferrugineus

steep brushy talus slope

58

Fuchsia

under trees

59

Solanum

climbing in trees

May 30 - Sleepy Hollow Road
just north of Holmes Run,
2 miles s. of Falls Church,
Fairfax Co. Va. U.S.A. 85 m.

Open fields alternating
with patches of second
growth woods.

60

Gillenia trifoliata

roadside, acid soil

61

Lobelia spicata var.

pasture, acid soil

Cund.

Fairfax Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
red. - 1 lb. - 1.5 m. high;

Date 1948
Coll. F.R. Fosberg No. m. (estimated)

Occurrence

Locality

Det.

HONOLULU

PLANTS OF THE HAWAIIAN ISLANDS

OAHU

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., Virginia

20556

Nertera granadensis

steep bushy talus slope

L. 57

Centropogon ferrugineus

steep bushy talus slope

58

59

No

0

7

0

2

growth woods.

60

Gillenia trifoliata

roadside, acid soil

61

Lobelia spicata var.

pasture, acid soil

road
un
ch,
85 cm.

Cund.

Fairfax Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
" anthers purple;

Date 1/193
Collected by F. R. and V. O. Fosberg
DET. No.

Loc.
Habitat
Remarks

Plants of the Hawaiian Islands
OAHU

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., Virginia

20556

Nertera granadensis

steep brushy talus slope

L 57

Centropogon ferrugineus

steep brushy talus slope

58

59

60

growth woods.

60

Gillenia trifoliata

roadside, acid soil

61

Lobelia spicata var.

pasture, acid soil

Road
un-
rich,
85 m.

Cund.

Fairfax Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple;
latex scanty. leaves
fruit green.

Date / / 1993
Collected by F. R. and V. O. Fosberg
DET. No.

Remarks

Habitat

Loc.

OAHU

Plants of the Hawaiian Islands

2,
ndent,
yx
scarlet.
fls.
e.

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., Virginia

20556

Nertera granadensis

steep bushy talus slope

L 57

Centropogon ferrugineus

steep bushy talus slope

58

59

160

161

Lobelia spicata var.

pasture, acid soil

Road
cut,
rich,
85 m.ng
H

Cund.

Taurfax Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple;
latex scanty. leaves
rugose. fruit green.

erect,
scarlet
fls.

Plants of the Hawaiian Islands

OAHU

Loc.

Habitat

Remarks

Date

/ 1953

Alt. m.

Collected by F. R. and V. O. Fosberg

DET.

No.

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., Virginia

20556

Nertera granadensis

steep brushy talus slope

L 57

Centropogon ferrugineus

steep brushy talus slope

Road
Cun
arch,
85 m.

ing
H

60 g

61 *Lobelia spicata* var.
pasture, acid soil

Cund.

Taurfax Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple;
latex scanty, leaves
rugose. fruit green,
subglobose
scandent shrub,
inflorescences pendent,
hypanthium + calyx
flesh pink, corolla scarlet.
herbaceous vine, fls.
white, fruit blue.

calyx dark red, petals white
erect, fls. pale lavender

166

1943 - Colombia - U.S.A., Virginia

20550

Nertera granadensis

steep brushy talus slope

L 57

Centropogon ferrugineus

steep brushy talus slope

L 58

Fuchsia

under trees

L 59

Solanum

climbing in trees

May 30 - Sleepy Hollow Road
just north of Holmes Run,
2 miles s. of Falls Church,
Fairfax Co. Va. U.S.A. 85 m.

Open fields alternating
with patches of second
growth woods.

160

Gillenia trifoliata

roadside, acid soil

161

Lobelia spicata var.

pasture, acid soil

Cund.

Fairfax Co.

167

prostrate, fruit bright
red, fleshy, fls. pale green.
sprawling suffrutescent
herb, corolla scarlet
without, orange within,
staminal column greenish-
yellow, anthers purple;
latex scanty. leaves
rugose. fruit green,
subglobose
scandent shrub,
inflorescences pendent,
hypanthium + calyx
flesh pink, corolla scarlet.
herbaceous vine, fls.
white, fruit blue.

calyx dark red, petals white
erect, fls. pale lavender

✓ Fontibon, Cundinamarca ^{alt. 2576 m.}
wet roadside in the sabana July 6, 1943

L 20562 *Datura sanguinea*
common

~~63 *Cestrum*~~
L 63 *Cestrum*

✓ 3 km. w. of Fontibon, Cundinamarca
edge of yard near house ^{alt. 2576 m.}
July 6, 1943

L 64 *Verbena*
weed in yard

L 65 *Solanum*

L 66 *Labiate*

L 67 *Passiflora*

L 7 68 *Datura arborea*

tree-like shrub 4 m. tall
corolla yellow in middle,
green at base, scarlet
distally, pendent, almost
cylindric. "borachero"

shrub 1.5 m. tall, fls.
greenish yellow, fruits
shiny, black, fleshy.

flowers bright purple.
- used as remedy for typhoid.
vine-like, climbing
in bushes and on wall,
fls. white, fruit green.
- prostrate, aromatic.
- used in making sauces.
vine twining in shrubs,
leaves fleshy, flowers
white.

small tree-like shrub
5 m. tall, fls. white or
cream-white, pendent,
~~concrete~~ fruit pendent
immature. "borachero"

with
Vallejo
M. Vallejo

July 11 - Quebrada El Chico,
above the northern extremity
of Bogotá, Cundinamarca
alt. 2800-3250 m.

low bushy forest in ^{steep} ravine.

20569

Palicourea

2800 m.

L 3

70 Tournefortia

2800 m.

L 7

71 Cuphea ~~discolor~~
bush along trail

2850 m.

L 5

72 Vallea stipularis

3000 m.

L 6

73 Solanum (or Lappaceum)

3000 m.

L 4

74 ~~Comp.~~
edge of clearing

3000 m.

L 4

75 Eupatorium
edge of clearing

3100 m.

L 7

76 Weinmannia

3100 m.

L 5

77 ~~Flacourtia~~

3100 m.

L 8

78 ~~Dryobalanus~~

3100 m.

shrub 3 m. tall, flowers
greenish white, with
green lobes, ~~which~~ which
are erect, inflorescence
drooping, fruit immature.

shrub 2.5 m. tall,
fls. white.

weak shrub 0.5-1.5-
m. tall, 2 petals large,
erect, deep purple.

tree 8 m. tall, with slender
drooping branches,
fls. rose-pink. leaves
somewhat glaucous
beneath.

shrub 2.5 m. tall, fls.

white, fruits immature.

semi-scandent shrub
forming thicket, fls.

deep yellow, fragrant.

shrubby tree 4 m. tall,

fls. white, anthers brown.

small tree, 5 m. tall.

small tree, 5 m. tall, others
nearby up to 20 m., infl.

erect, flowers yellow.

shrub 3 m. tall

20579

4

in clearing

3000 m.

4 80

Psychotria

3000 m.

edge of clearing

2 81

Viburnum

3000 m.

5 82

Arac.

edge of clearing, common

4 83

Solanum

along trail

3200 m.

2 83a

Fragaria

open slope

3000 m.

July 11 - Paramo at head
of quebrada El Chico, above
the northern extremity
of Bogotá, Cundinamarca

Open paramo alt. 3300 m.
with bushy ravines and
great limestone boulders,
slopes moderate.

7 84

Hypericum

open slopes, common

5 85

Hypericum

8 86

Bartonia

open slopes and crests, common

7 87

Castilleja

open slopes

2 88

Pinguicula

damp places

shrub 3 m. tall, spinous
quite variable in same
plant. Ligules white,
filaments pink, anthers

dark brownish-purple.

shrub 2 m. tall, flowers
dark red.

small tree 5 m. tall,
flowers white.

shrubby tree 4 m. tall,
petals white.

shrub 2.5 m. tall,
flowers white, fruit green.
flowers white.

erect, sticky, fls. yellow,
leaves conspicuously
4-ranked.

fls. yellow
erect, bracts and calyx
deep purple, corolla pale
yellow.

bracts and calyx scarlet
distally, corolla green
with lower edge yellow.
leaves with conspicuous
stalked glands, flowers violet.
leaves revolute.

- L 20539 *Hypochaeris*
 open slope, rare
 L 5 90 *Alnus*
 open slope
 L 1 91 *Baccharis*
 open slope, rare
 L 3 92 *Melast.*
 open slope
 L 6 93 *Polygonum nepalense* Meisn. ^{det. K.C.}
 open slopes, common among
 limestone boulders
 L 4 94 *Jamesonia*
 under edge of limestone rock
 L 11 95 *Eupellitia grandiflora*
 abundant on open slopes
 L 8 96 *Gaiardendron*
 wooded ravine
 L 4 97 *Eupatorium*
 wooded ravine
 L 3 98 *Oxalis*
 brushy ravine
 L 2 99 *Rhynchospora*
~~edge of~~ opening in ravine
 L 70600 *Carex*
 opening in ravine
 L 1 01 *Hedyotis* ^{multidens}
 open slopes, common
 L 2 02 *Heiracium*
 open flat places

ligules white.

leaves distichous
 scape red, fls. ^{pale} yellow
 depressed shrub, fls.
 whitish.

flowers yellow

decumbent, fls. pink.

fronds erect.

stems up to 0.6 m. tall,
 topped with a large
 rosette, scapes
 axillary, erect, flowers
 yellow.

shrub 2.5 m. tall, flowers
 white, petals spreading.
 shrub 2 m. tall, fls. whitish

vine-like, climbing in
 bushes, stems red, flowers
 yellow.

culms spreading-ascending

loose tufts, culms spreading

low shrub, stature quite
 variable, fls. white,
 purplish outside.
 fls. yellow

176

Colombia 1943

20604

Madi

open flat place

5-05

Madi

common in bushy places

3-06

Paepalanthus

common on open slopes

1-07

Bidens

in bush sheltered by boulder

6-08

Nertera granadensis

in opening in ravine

2-09

Lycopodium

open slope

9-10

Weinmannia

wooded ravine

5-11

Peperomia

wooded ravine,

5-12

Drimys bogotensis

bush between great boulders.

July 13

Neiva, Huila

470 m.

4-13

Jussiaea

weed in patio garden, ground not especially damp.

Cund. Huila

177

rays yellow

shrub 2 m. tall,

fls. rose-pink.

caespitose, leaves stiff,

flowers white.

2.5 m. tall, weak, flowers

yellow.

prostrate, stiffness

of leaves seems to vary

with exposure, fruit

red, juicy.

main stems prostrate,

~~stems erect~~ erect

tree 7 m. tall, fls.

whitish.

stems fleshy

shrub 3 m. tall, leaves

white beneath, flowers

white, bark extremely

pungent to taste.

erect, virgate, 2.5 m. tall,

petals yellow, narrowly

obovate, acutish, 6 mm. long,

falling about noon.

189

Specimens collected by
others for F.R.F.

Ladenbergia magnifolia
bet. Mondomo and Pescador, on Popayan-
Cali Highway, 42 km. n. of Popayan, Cauca
1700 m. Mar. 16, 1943. F. C. Lehmann V.

Cinchona pitayensis Wedd.
near Quintana, on Rio Las Piedras,
30 km. s. s. of e. of Popayan, Cauca
(bark sample 19) 2500 m.
Mar. 19, 1943 Matias Delgado
"quina tuna"

Cinchona pitayensis Wedd.
near Quintana, on Rio Las Piedras,
30 km. s. s. of e. of Popayan, Cauca
(bark sample 20) 2500 m.
fruits slightly immature
Mar. 19, 1943 Matias Delgado
"quina tuna"

Cinchona pubescens Vahl
Buenavista, 6 km. s. of Popayan
Cauca
Apr. 17, 1943 Matias Delgado

Cinchona pubescens Vahl
Finca Chamisal 8 km. n. of Popayan
Cauca
April 17, 1943 Matias Delgado

Cinchona pitayensis
Hacienda Ambachica, near Silvia,
Cauca
April 28, 1943 C. A. Caicedo

Cinchona pubescens Vahl
Angelia, on the Huila-Caguata
boundary directly south
of Pitalito, Huila. 2500 m.
July 15, 1943 A. Chajin
stipules green, soon becoming
strongly reflexed.

Cinchona officinalis
Angelia, on the Huila-Caguata
boundary directly south
of Pitalito, Huila 3000 m.
July 15, 1943 A. Chajin
leaves somewhat glossy
above, dull beneath,
stipules light green,
varying from blunt to
pointed, fls. purple.

Cinchona pubescens Vahl
Sabaneta, bet. La Vega
& Facatativa, Cundinamarca
July 25, 1943 Lem Knobelachof

Remigia purdicana
Gomez, on railroad above Puerto
Wilches, Magdalena Valley,
Santander alt. 500 m.
July 18, 1943 E. Bonitto

200