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*About the Institute*

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

CROSS-SECTION BOOK

373

Turrialba, C. R.  
5 Mar 1964 Elev. 4300 ft?

Visit to the San Antonio  
nurseries of Dufrene supplier  
(Col. Fabris nurseries)

Following pH values taken:

Nursery beds, clay loam  
top soil - 6.5, 5.5, 6.5

Seed bed topsoil mixture 4.5

Seed bed (2nd) basic soil 5.5

Use  $\frac{1}{2}$  lb crystalline calcium  
chloride to 10 gals. space for  
seed storage. Put in wide mouthed  
bottle, covered with cheese cloth in  
upper part of container

At Balij, Congoil got these results:

4.5, 5.0, 5.5, growth good

6.0 drops off a little

6.5 definitely poorer growth

These results presumably with  
Col. Fabris seedlings.

Finca Las Encarnadas  
6 Mar 1944 Elev 8200 ft

Results of pH tests:

Seed bed No 39, Succubras 5.0  
Seed bed No 12, spot about 2 ft  
to diam where ledgerians have  
done very poorly (which high as  
compared with 6-10 in elsewhere)  
at 1 ft is 6.5.

In the same bed, 8 ft away, where  
the plants are of normal size, 6 to  
8 in. pH is about 5.8

Visera on the barren quebrada, where  
Ledgerians 8" high look very well  
pH is about 6.5. A spot of rather  
heavy and black soil.

Another sample, the typical light  
brown soil of this region 5.5.

At Porosane, visera of Ledgerians  
planted out last June, quite  
good and uniform stands of plants  
found on the heavy side - was  
a forest until last June, 6.3  
Same area, soil at depth of  
1 foot 5.3

Two hours, sandy clay surface  
6.5. At 2 ft is typical soil

In visera, 90,000 Ledgerians  
185,000 Succubras

In seedbeds available for  
immediate disposal elsewhere,  
150,000 Ledgerians, from  
Helvetic 8-12 ft trees.  
250,000 Succubras, of about 5% PCA

The only problem I can see  
here is the "enfermedad de  
invernal" which does not attack  
very young seedlings but kills  
plants when they are 8"  
or more in height. There  
is no "red mottling" here and  
Ledgerians in general look  
very well.

More attention to drainage  
might help and should be given.  
Perhaps planting would be on  
ridges, like I can field.  
But how about field plantings?

Seedbed No. 1, bar spot where  
Ledgerians are 2-3 in high  
as opposed to 8-12" elsewhere,  
6.4. Good spot 10 ft away  
plants 12" high, pH almost 5.5

9 tablons Succubras } 4 x 100 pieces  
4 Ledgerians }

Alberto Branchi  
3° Av Sur 42, Guatemala

Jorge Benitez  
casa de la lujia Cide Montero  
calle Alfredo Velaz, 50 varas  
al norte Hotel Europa, con-  
tiguo panadero Pacheta

Soils here run about as follows:  
surface 5.5 to 6.0, subsoil 5.5

Write Lukens re Jorge's trip.

Hope tells me that Conzatti's  
experiments at Bell showed,

6.0 poor 6.5 useful  
pH of cell, approx. 5.5  
rather low for good  
results

Antigua, Guatemala  
8 March 1944 Elev. 5150 ft  
pH values at our house

Main patio, geranium bed  
on south side of surface 7.5  
at foot of Camellia bush 7.3  
water falling in pile 7.3.  
Garden de Arrietas,  
North arrieta 7.2.  
New garden, vegetable  
bed toward south end 7.2  
Rose garden 7.2  
Canna bed 7.2  
Arrieta near pile 7.2

Albert Muller says the disease  
on specimens from Buenos  
Vista de San Carlos is probably  
*Phytophthora omnivora* (also  
*Phytophthora terricola*)  
occurs widely on many plants.

Telegraphic address Villa Nueva

Manure used in our garden 7.5

Finca Panamó  
Guatemala

11 March 1944

Santa Maria Santiago planting  
S.E. corner, 4000 ft Row 4  
Plant 3. Surface 6.0

On top of hill, 6.0. Ledger  
readings are not doing well  
here - they probably will not  
survive. Soil is sandy loam  
quite sandy.  
Nearby, Spring trail, at depth  
of 13 ft, 6.4.

Area where 3000 Philippine Ledgers  
died out. Sandy loam. Elev. 3600  
Surface 5.8. At three ft, 6.5

Irrigation water, running  
in ditch 7.5

Seed bed in which some humus  
was incorporated, 6.5

Seed bed without humus 6.5  
growth looks very satisfactory  
in both: succubula 2-3" high

Cabulada, 6.0 Surface  
Merck Area surface 6.0, at  
1 ft 6.4. Alongside dying ledgers

Experimental succubula beds at  
Gran Rancheria, top soil 6.0

Losses on these plantings, 5 to 70%  
average about 40%

Merck -

Seed bed without compost 6.0

Seed bed with compost 5.8

Finca El Morango  
12 March 1964

Laja 5000 ft  
Surface 6.4, at 3 ft 6.4

Chumborozo 6000 ft  
Surface 6.2, at 2 1/2 ft 6.0

Growth in general has been very  
poor here. In pruning too today.  
They are putting plants 6-8"  
high in beds. Spacing too small.  
Most of the succubras have  
been set out at the small size,  
it was a mistake.

Aconagua 7000 ft  
Surface 6.0, at 2 ft 6.0

Calwaya + Succubras doing  
poorly here. One hybrid tree *Perla*  
well. They pitayunas + offcinalis

Agave bay (cat + sand mix) 7.0

Rio Machudate sand 6.2

Helictia sand 6.2

Volparaso sand 7.0

And Parker cuttings of  
*Delchou hosei* + *Quercus*

bed bed no 20, with poor  
stands of succubras, 15.57

bed bed no 3, treated before  
planting with piece acacia gas  
to sterilize soil, fine stands  
of succubras, 1-2" high, pH 5.5  
Another section of same bed,  
not treated, plants about half  
the size in above, 6.0

They are doing a poor job  
here! Possible still doing  
grafting to budding. 33  
pieces of Java tobacco  
planted.

Timothy Oden  
V. Durgen

Finca Helvetia

13 March 1944

Tinecos,  $2\frac{1}{2}$  yr old planting of  
Krukoff 100, chocolate brown  
sandy loam, old coffee nursery,  
surface 5.5.

La Suiza (La Playa) old nursery  
where *Ledgeriana*s were grown  
surface 5.8; technical 5.5  
typical soil at  $2\frac{1}{2}$  ft. 5.5

Chocolate brown CL or SCL

Guardiana, at foot of 7 yr old  
Ledger tree, surface 5.2; at  
 $2\frac{1}{2}$  ft. 5.6 Chocolate brown SCL

El Nil, SE slope, at foot of  
7 yr old *Ledgeriana*, surface  
sandy clay, brown, 5.7.

Pumice sand on surface, from  
1902 eruption 5.7

NE slope, among *Ledgeriana*s.  
typical chocolate brown SL, at  
18 ins. 5.7.

El Nil seedbed - natural

for irrigation, 7.5  
Soil mixture on surface of seed  
bed (*Succubras*) 5.6.

El Nil, Alianza where ledgers  
were planted in deep pumice sand  
wh contains some recent organic  
matter, pH 6.0. Ledgers have  
not done very well here but hybrids  
are growing fairly well.

Same in a spot where both seedlings  
and grafted ledgers here died out  
and are dying, surface 6.0.

Volcanic sand with a little humus

Acatzinca, nursery bed, seedlings  
of H-2492, brown SL, plants  
3-4 ft high, pH 5.6

Same bed, bad spot, plants only  
18" high, with some red mottling  
and poorer color generally, 6.0

Area being prepared for nursery,  
from wh 5 ft of 1902 pumice has  
been removed. Surface dark brown  
SL 5.8; at 18 ins light brown  
SCL - 5.5



14 Mar 1944 El Porrenir Elev. 3450 ft

Seed bed D-7-1 native soil  
under alfagnum 5.5, "statis"  
alfagnum surfacing 6.0, due  
to saturation with water?

Plan de Pati, nursery site,  
black-brown sandy loam, 5.6; 5.5

Roadside in old Cinchona,  
topsoil, dark brown SC - 5.7;  
at 3 ft light brown SC, 4.5;  
at 6 ft, on top of parent decim.  
passing granite 4.2

Along acacia, parent material  
(disintegrating granite) 15 ft  
below surface 7.0

Surface soil in area where  
old hedgers are growing, SL  
6.3; 6.5; at 6 ins depth 5.0

Nursery bed, top soil 5.6

In nursery bed of hedgers 1 ft  
high - where plants show red  
topsoil 6.6

Tap water 7.5 to 7.8 says  
Walter Plochanski

Sandy clay, dark brown on  
hill top near Bump's house,  
at depth of 6 ins pH 5.6

Points to be discussed in  
report, El Porvenir:

Seed supply - use of  
propagating by cuttings of  
best specimens here.  
Use of Zapotec seed.

Proper base for OFAR work  
get Sando in it.

Bunpa long term program 22g.

Hook of OKW - OFAR

Antigua G  
16 Mar 1944

Finca Touja, at foot of old  
succirubra tree 6.5 surface

In finca across road, under  
coffee, surface 7.0

Planting board - 20 plants

1 man filling for 2 planting  
= 12,000 plants a day (4  
men preparing land.)

Tatumbula  
6 June 1944 4100 ft

Above Campamento de los Rios,  
on slopes of Uyuca, topsoil  
on burned area, 5400 ft,  
pH 6.3. Affected by burning?

5600 ft. Buckshot clay in corn  
field, black, topsoil 5.8

Highest cultivated plot, light  
brown clay loam or light clay,  
topsoil. 5.5 or 5.6. 5900 ft.

In virgin forest at 6200 ft.  
topsoil, black clay loam, 5.0  
At depth of 6", beautiful black  
clay loam, pH 4.7  
Campamento 5200 ft

Farmers Irrigation Guide  
Conservation Bulletin No 2  
Bureau of Reclamation  
Dept. of the Interior 1939

The Drainage of Irrigated Farms  
Farmers Bul. 805, by R.A. Hart

Home Tanning of Leather + Small Skins  
Farmers Bul 1334 1940

3 Nov 1944.

Masotepe - soil pH 6.0  
Rivas - Finca Sta. Ursula of  
Saenz de Tejada, pH 7.0

Cacao Nicaraguense or  
Criollo from Hacienda  
San Francisco of Don  
Alberto Argüello.

San Antonio 12 Nov 1944  
Costa Rica

Capt. Hope says soils here are basically 4.4 to 5.2 average range in pH with LoMatte indicator.

Three diseases here

Phytophthora  
Rosellinia?  
Fusarium?

Fertilizer has given results, especially N. Thinks red matting in Guatemala perhaps lack of Zinc - or other minor element.

Ledgeriana side shoots put in beds under shade, 80% rooted in spite of some dry weather and removal of shade. Would have had 95% if shade not removed.

Second cuts also grow OK if leaves left on. Doubts that branches from mature trees will grow - should be from young seedlings in cool weather - he put in 12,000

pH at their plantation  $\pm$  4.0

Thinks 4 to 5 alright. 5.5 maximum for good growth of ledgers; from 5.5 upward growth drops off.

Soil must be friable. Pack it in your hand and toss it in the air a few ins. If ball breaks on falling in hand, alright.

Plantation site too wet - 200 ins rain or more

Finds disease where old logs have been

Transplants at 15" minimum, likes 18" better; strips off lower leaves - trimming too much work

A little "red matting" here - zinc or boron? or 15 ft a virus?

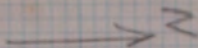
Grant suspects virus. Hope zinc.

Wet soil fatal.

Sphagnum, 1" deep on seed beds - a little sifted in top.

Multiple stem trees

Abaco



○  
1

○  
1

○  
1

○  
2

○  
2

○  
2

○  
2

1 = Maguindanao  
2 = Bungulanon

Planted 3 Jan. 1945

Mrs. George G. Masters.  
Telephone - Geneva 5065

Proctor

Mrs. James Barabony  
786 North Van Buren  
Pawnee Co. Calif.

Batist Lies  
Politics

19 W. 8 St. New York City

Mrs. Paul Armitage - 28 E. 10 St  
NY City

Business: Douglas + Armitage  
Woolworth Bldg.

Mrs. Samuel W. Anderson - Iovanna  
Box 147

Halasite, Long Island, NY  
Phone in booth under Huntington, N.Y.

Mary B. Kidder  
North 8739  
3030 Cambridge Place

Sierra Sob - Medellin  
Prospect for staff

Send Buck a copy of  
Soils and Men

Send Sec. Bogert set  
of our bldg. Plans  
Plans for making log cabin

Hawaiian sweet corn  
for Buck + Bichtel

Send Buck red beans

Hawaiian Sweet corn  
Mangosteen

Avocados

Oil palms

Loguats

for Sr Bogert

Luis Emilio Ant.  
Santelices  
Finca "El Gallo"  
Santiago R.D.  
nacido en Santiago  
Edad 24 años

8-11 September 1945  
Elevations:  
San Marcos de Colon 3400 ft  
Choluteca 300  
Pespire 400  
Sabanagrande 3300

Along back road  
5 Excelsior Plum  
6 Hamlin orange  
Planted Jan. 1947.

Farther East  
6 Celeste fig

Planted Jan. 1947

Waldo

Angel

Waldo

x

Jewel

Waldo

Angel

Angel

Jewel

Jewel

x



Upper end of bed

Watkinsonii

Aurea

Alba  
Grandiflora

LeGeant  
Pink

Cacomite

Melissa  
Joan

LeGeant  
Real

Lutea  
Immaculata

Speciosa

Alba  
Immaculata

Canariensis

Lilacea  
Spotted  
Ruby  
Queen

Carminea

Wheeleri

Lilacea  
Immaculata

Cannas - Howard & Smith  
Planted 4 Jan 1950.  
Beginning at North end:

Mohank  
Rigoletto  
La Boheme  
Ludwig von Kopf  
Baltimore  
Richard Wallace  
Madam Butterfly  
The President  
Queen Helene  
La Traviata  
Los Angeles  
Madam Louis Cayeux  
Stuttgartia  
Eureka  
Mrs Paul J. Howard  
Ambassador  
Copper Giant  
Aida

Mrs. Pierre S. Dupont

Brilliant

Exquisite

End of Row

Donn hill:

Mignon

King Humbert

Cannas from Howard and  
Smith, planted 5 Feb 1950

↑ uphill

Unknown

Mignon

Unknown

Brilliant

La Boheme

Aida

Richard Wallace

Los Angeles

Exquisite

Ambassador

Ludwig von Kopf

Copper Giant

Eureka

La Traviata

Baltimore

Rigoletto

Stuttgartia

Mrs P.J. Howard

King Humbert

Madam Butterfly

Queen Helen

Mrs Pierre Dufont

Mohawk

Vrs. DE CANNAS EN HORTALIZA  
DE SUR A NORTE

"PRIMERA LINEA"

MOHAWK

RIGOLETTO

LA BOHEME

LUDWIG VON KOPF

BALTIMORE

"SEGUNDA LINEA"

RICHARD WALLACE

MADAM BUTTERFLY

THE PRESIDENT

QUEEN HELENE

LA TRAVIATA

LOS ANGELES

MADAM LUISE CAYEUX

EUREKA

TERCERA LINEA

Mrs. PAUL J. HOWARDY

AMBASSADOR

COPPER GIANT

AIDA

Mrs. PIERRE S. DUPONT

BRILLIANT ← falta → STUTTGART

EXQUISITE

MIGNON

KING - HUMBERT -

CUARTA LINEA

COPPER GIANT -

WILLIAM MUELLER MUEHLE

QUINTA LINEA

Mrs. PIERRE S. DUPONT

THE PRESIDENT

SEXTA LINEA

WYOMING

KINK - HUMBERT

SEPTIMA - LINEA

AUSTRIA

HOWARD - SMITH

Nueva - Coleccion

8- linea

Mrs. Pierre Dupont

Mme. Butterfly

Mrs. P. J. HOWARD

Rigoletto

Copper Giant

La - travista

~~Ambas~~

Ambassador

Mignon

UNKNOWN

---

9- linea

Brilliant

RIDA

Richard Wallace

La Boheme

EXQUISITE

ENREKA

LUDWIG Von KOPF

10- linea

Mohawk

Queen Helen

Baltimore

Stt

Stuttgartia

King - Humbert

Los Angeles

---

Dragon Chino

des lineas max

por semilla



Jan	7-11	Exp in Guatemala	12.00
Jan	11	In New Orleans	3.50
	12	" "	9.00
	13	" "	14.00
	16	" "	7.50
	17	" "	8.00
	18-21	Boston	32.00
	21-27	Washn plus Cosmos Club	18.00
	27-28	En route Miami	7.00
	28-30	Miami	14.00
	31-to		
Feb	11	St Domingo	90.00
Feb	11-14	En route	50.00

437.5 grains = 1 oz avoird.

$\pm 15.4$  grains = 1 gram

28.35 grams = 1 oz

7000 grains = 1 lb. avoird.

35.28 ozs. = 1 kilogram

2.205 lbs = 1 kilogram

100 lb. 5% TCA bark =

5 lb TCA = 35000 grains

1 lb = 350 grains or 70 pills

Atabrine tablets contain  
 $\frac{1}{10}$  gram of the active principle  
( $1\frac{1}{2}$  grains)

Claxton + Clement  
Walker Bldg  
735 15<sup>th</sup> St



