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5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Contact: Archives
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

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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.

Field Book of
Wilson Popenoe
Antigua, Guatemala, commenced in
late March 1963.

Antigua, Guatemala

Thursday

28 March 1963

~~PLUM~~
METHLEY PLUM? In the market today I saw one basket of plums which I suspect may be Methley. This is the same plum I saw here on several occasions last year, when I was given the name Española by one person. The lot seen today came from Tacpan, so I was told.

This appears to be the earliest plum on the market here and answers the description of Methley as far as I can recall it. Fruits not large, about 1 to $1\frac{1}{2}$ ins. in diam. Round or almost so, bark purplish red in color. Flesh consubcolorous with skin, which does not seem to me as thick as that of Satsuma which it resembles in color. Soft, not firm when fully ripe, very juicy. Flavor not pronounced, inferior to many of the good salicina varieties.

I believe the shipping quality would not be very good. Principal value of the variety would seem to be its early season, though of course I can not evaluate its chilling requirement or productivity.

Esperanza-Intibucá

Thursday

9 May 1963

Elevation of Marcala 4000 feet.

Elevation of Esperanza 5400 by my aneroid, which agrees with figure of Capt-Norton S. Kivett, Operations Manager of SAHSA.

The important men, as far as concerns Temperate Zone fruits, are:

Pantelis Theodoraco (Greek)

Jorge Doblado Lara (esp. apples)

Jesus Mejia Paz (esp. plums)

In the sites are many seedling peach trees and a goodly number of plums. Only a few apples, but the ones I saw do not appear to be baseatas.

Some of the peaches are said to produce large fruits, "melocotones", but the majority seem to be like the common peaches everywhere else in Central America. Fruit not fully grown at this time with exception of a few I saw. In general the trees seem very healthy.

with very little delayed foliation.

The plums are said to be of one kind only; a. no, not quite round fruit of medium size. They are said to be seedlings but I wonder if some are not propagated by basal sprouts. In general the trees seem to be getting sufficient shilling - no conspicuous delayed foliation. Some of the trees seem to be 20 yrs or perhaps considerably older. The people with whom I talked - only a few - seemed rather enthusiastic about plums - much more so than about peaches.

I would suspect that apples have commenced to attract attention in relatively recent years. I saw no trees in the patios (patios) which looked as old as the original - that is, the Rodriguez-trees in Guinope.

Pantelis, who is well informed, says Lara must have about 100 trees, out of town a km or so, and that he has Delicious, Golden Delicious and Jonathan. I wish I could have

checked on this. The apples I saw showed some indications of delayed foliation - I did not see enough to get a complete picture.

Pantelis, on his property about 1 km from the airport or 2 kms from town, has a fine lot of one and two year old material from California Nursery Co. Santa Rosa plum has made the best growth of all but he thinks Mariposa is better. He has a lot of things which quite obviously are not happy in this climate - sweet cherries especially. He is not going in very much for apples as yet but intends to order some more trees this year. He has one pear from Greece, rec'd in the form of scions, which looks rather promising. He is enthusiastic about grapes - has a number of 2-yr-old vines on trellis, Kniffin system; Niagara is doing well and carrying fruit but he does not like the quality. Emperor is his favorite - looks well at 2 yrs and is carrying a few bunches.

There seem to be practically no

pears in this region. The climatic conditions are very interesting. More cool weather, I suspect, than in Guatemala at 5400 feet. Rain-fall probably 40-50 inches? The cultivated area is a rather extensive flat plain, the soils typical those hard, dark gray to yellowish brown clays which I do not like very well. On some of his land which is dark gray in color - I do not know how far down this goes - Pantelis is raising commercially, and in considerable quantity, Great Lakes lettuce, Grand Pascal celery, Cabbage and other truck crops which he ships to San Pedro, La Lima, Ceiba, and some to Salvador. He has also made a lot of money with potatoes - is now planting Kennebec.

I suspect the best bets for this area are peaches and plums but I would like to see some more attention paid to apples and some to the Florida pears.

Guinope

3 May 1963

Amado and I drove up in the Jeep to get more information on the peretes. Stopped at home of Julio R. Lagos, some 200 varas, thus (Lamarano) side of Mr Harney's place.

Lagos has some 20 trees of varying ages - none more than 25 years I believe. He says he propagates by basal sprouts from the trunk and showed some. Only a few small fruits visible at this time - not large enough to show whether the calyx lobes are deciduous or not, but the long petioles of the leaves and the fine and uniform serration certainly agree with Herick's characterization of Malus cracata.

At Mr Harney's place is one fine large tree right close to the road; he said he had other and younger ones inside. He also said the old tree (perhaps 25-30 years) bears large crops every year (about August) and they make fine apple butter from the fruits.

Zamorano

Thursday

15 May 1963

In the horticultural file here is a memo from Prof. W. H. Chandler, written after visiting Uruca on 17 August 1949, in company with Don Feister. Following items are of interest:

" Apple. White Astrachan. This is the leading early apple variety of southern California, reaching California markets in late May, June and early July depending on region where grown. Shows excellent delayed feliation resistance with us at San Luis Obispo and is grown commercially in most of citrus belt of Tulare county. Apple large smooth clear whitish green. Used for cooking "green apple" style.

Winter Banana. Best southern California delayed feliation resistance, and most vigorous grower of all the apples. Commonly used as grafting stock in Watsonville, being grown to secondary laterals in orchard form, then grafted to desired variety. Fair quality, good for

Sweet and for cooking. Clear yellow with reddish blush. September.

Transcendent Crabapple. Very delayed-foliation resistant; beautiful bright colored fruit. Heavy bearer, precocious. Fruit largest of the crabs. "

Pears. Bosc probably more resistant to delayed foliation than Bartlett and Winter Nelis and Seckel.

Plums. " Duarte, Tragedy. These two varieties, with us, stand well in winters and fruit very heavily. Tragedy is a blue prune-like European type; it is outstanding in delayed foliation resistance. "

Apples: " Gold, a new variety for southern California, might well be tried. "

Strawberries: He recommends Shasta and Donner.

Tuesday

Zamorano

21 May 1963

Quince. Chico de Sola asks about pruning membrilleros. L. H. Bailey, "The Pruning Manual", 1942, page 204 says:

"Quince trees should be headed very low. Some persons grow them to bush form, but a distinct short trunk is generally to be preferred. The lateral growth is thinned out each winter or spring, and if the growth is very heavy - say 18 to 30 inches on bearing trees, it may be headed back. Heading-in thins the point, since the flowers are co-terminal; but cutting off all the tips generally removes too much fruit. The top is kept moderately thin. Care is to be taken to prevent very strong growth, else danger of fire-blight is increased."

Brooks and Hease, in "Western Fruit Gardening" p. 247, say:

"If a rooted cutting is planted, deeply, encourage one of the several shoots which arise from near the

ground by pushing back all others.
This favored shoot will be used for
a trunk. The trees are trained to
the vase shape. They are headed at
about the same height as apples.....
Bearing trees are pruned lightly or
not at all. Many small branches
are desirable, for the fruit is borne
on shoots of the current season,
and the more of these there are, the
larger the crop. --- Suckers grow
nearly freely around the crown and
should be removed as long as they
appear..... Quinces can be trained as
bushes, but they seldom fruit well
when so handled."

Temple Orange

Nixon Smiley has a good article on this in Miami Herald, 19 May 1963. He says the origin of the var. is a puzzle but cites Ralph Robinson in 1946 Proc. Fla. State Hort. Soc. to the effect that it came into Florida prior to 1894, "undoubtedly from Jamaica" where recent investigations tie it to the "Magret" orange. Believed to be a natural cross between a tangerine and a sweet orange.

It attains its finest quality on sour orange, which is used in the Indian River area. On limestone soil it is only of good quality on Cleopatra. On rough slemon, high and dry soils, the fruits are "large, pulpy, and thick skinned." Its symmetrical growth, laurel-like foliage, and colorful fruit combine to make the Temple orange one of the most striking of all fruit varieties and one of our most handsome ornaments.

Publications on Macadamia

Following have been received by
Don Francisco de Isla from Dick Hamilton:

Proceedings, Second Annual Meeting,
Hawaiian Macadamia Producers Assn.
May 11 1962

Early yields of Seven Varieties of
Macadamia integrifolia. R. A. Ham-
ilton and E. T. Fukunaga, reprinted
from California Macadamia Society
yearbook, 1961. Vol. VII.

The Bearing Behavior of *Macadamia
integrifolia* in Hawaii, R. A. Hamilton.
Technical Paper No. 389, Univ. of
Hawaii Agric. Exp. Station.

Yields of *Macadamia Nut* Varieties
at Kona and Paomoho, by R. A.
Hamilton and E. T. Fukunaga,
Reprinted from Proc. Hawaii Macadamia
Producers Assn, 1st Annual
meeting, June 17, 1961.

Proc. of the Hawaii Macadamia
Producers Assn. 1st Annual mtg,
June 17 1961

Growing Macadamia Nuts in
Hawaii, R.A. Hamelton and E.T.
Fukunaga. Bul. 121, Hawaii Agr
Exp. Station, January 1959.

San Salvador

Friday

31 May 1963

Luis Gattoni says the following grafted macadamias are growing at Altamira:

No. 246	is variety	KEAHOH
No. 475	" "	WAILUA
No. 508	" "	KAKEA

all of these are M. integrifolia.

Following notes from my 1957 Field Note book. First, Citrus areas wh Dr Ziegler should see in July:

Felipe Viard's orchard, 50 manzanas in Citrus, well cared for, and numerous interesting varieties.

Santa Cruz Porrillo

La Chacra, about 900 m., interesting lot of Citrus planted by Dr Lucio Quironez, father of Roberto.

Finca Las Mercedes, at Ataco, 1200 mts. Best Washu Navels.

San Andres, collection at the Escuela
Nal. de Agricultura and perhaps
across the road in the old Exp. Station.

Guaranábanas.

At Dr Durán's place on coastal
plain southward of Comalapa. Several
good young trees in 1957, with more than
usual amt of fruit on them.

Finca of Mario Henríquez, $\frac{1}{2}$ mile
from Coatepeque, near Finca
Potosí. Finca is called San Luis
and is at 850 meters. One fine
guaranabana tree.

Persea schiedeana at Finca
Quisquisque, a mile or so above
the Centro Nal. de Agronomía at
Santa Tecla. Elev. 1200-1300 m.

Mr. Saundy brot together here a
fine lot of fruit trees, including
one aguacate de anís and one
schiedeana with very good fruit.

Armstrong Nurseries "Garden Book"
(Catalog) for 1962 gives the follow-
ing recommendations for planting
the Japanese plums to insure cross-
pollination. Certainly worth thinking
about, here in Central America:

"Santa Rosa and Sierra are partially
self-fruitful in many locations, though
all varieties, including these, will set
fruit much better when interplanted with
other varieties for cross-pollination."

Beauty. "Plant Santa Rosa with it." (This
means, they blossom at the same time
and are compatible. W.C.)

Santa Rosa. "Does fairly well every-
where without a pollinizer but usually
better planted with Mariposa."

Satsuma. "Plant Santa Rosa for a
pollinizer."

Mariposa. "Pollinizers are Satsuma
or Santa Rosa."

Pyrus malus and P. baccata

Trees and leaves are fairly but not always distinct in the two species, but there is one character of the fruit which always separates the species. The calyx persists on the ripened fruit of the common apple; it falls from the ripe fruit of P. baccata.

Pyrus malus. Bark separating into large, thick, ash-brown persistent scales. Leaves with serrate margins, borne on stout petioles. Fruit with a cavity about the stem, the calyx persistent and set in a well-marked basin.

Pyrus baccata. Bark much less rough and tree smoother in all its parts than the common apple. Leaves with slender petioles, margins finely and coarsely serrate. Calyx lobes long, narrow, acuminate; calyx falling away before maturity. Fruit borne on long and slender stems, basin shallow or none, often wrinkled or having mammiform protuberances.

Pyrus communis. Leaves oblong-ovate, acuminate, margin crenate-serrate or entire, near setose-serrate.

Pyrus serotina. Branchlets becoming glabrous. Leaves ovate-oblong, sometimes ovate, rounded at the base, long acuminate, sharply setose-serrate. Fruit-stalk slender, calyx deciduous.

P. serotina var. *culta*. Sand pear, Japanese pear, Chinese pear. Tree strong and rapid in growth with strong thick shoots. Leaves very large, broadly ovate, long-pointed, very dark green; margins setose-serrate, the teeth very sharp, almost bristle-like. Fruit more or less rough, with a well marked cavity about the stem; calyx usually deciduous.

Hybrids between this and the common pear are Kieffer, Le Conte, and Garber. In these the calyx is sometimes persistent and sometimes deciduous.

Chandler, p. 304:

Internal breakdown is a greater source of loss in pears than in apples, and accumulation of alcohol and acetaldehyde is more obviously associated with it; the inner part of the fruit will break down and become brown a considerable time before the outer part of the flesh begins to be overripe. Fruits picked rather green and fruits grown where the summers are hot and dry or the water supply deficient are much less apt to show core breakdown than fruits harvested full green or fruits grown where the summers are cool.

Fruit of most pear varieties can be harvested greener than can most other kinds of fruit without preventing it from developing good flavor. The fruit harvested greenest will wilt worse if held in cold storage than fruit harvested ripe and usually does not become so sweet, but it will be less apt to develop internal (core) breakdown. The best time for harvesting Bartlett is somewhat

before it has reached full size on the tree. Unlike most pure Pyrus communis pears, Kieffer pears seem to have appreciably better flavor if harvested full grown.

Oriental Pears

Hedrick p. 74 (Pears of N. Y.)

"The most constant differences, besides region of origin, are found in the leaves and the calyx. The leaves in most species are markedly acuminate and their margins are sharp serrate or sitose serrate. The calyx falls from the fruit in the species now cultivated for food, but does not in the two species promising for stocks."

Occidental Pears

Idem, p. 69. These pears are distinct from oriental pears in place of origin, and by well-marked botanical characters. Thus, the leaves of these occidental pears are crenate-serrate; and the calyx is persistent on the fruit.

Insititia Plums.

Hedrick, *Plums of N. Y.* p. 35:

The trees of the *Insititia* varieties are readily distinguished from the *Domestica* sorts in having a sweeter and more compact habit, much smaller and more ovate leaves with more closely serrate margins; branches more finely divided, more slender, with shorter joints, and bearing spines or spinescent spurs; having a more abundant and a more clustered inflorescence, with smaller flowers, a glabrous ~~and~~ instead of a pubescent pistil and calyx-tube; reflexed calyx lobes where in *Domestica* they are often erect; and flowers appearing nearly a week later. . . . The fruits are smaller, being less than inch in diameter, more nearly round or oval, more uniform in shape, never strongly compressed as in *Domestica*, with a less distinct suture and more often with a pronounced neck. . . . The stones are smaller, more oval, and much more swollen.

P. 40. The Mirabelles. The Mirabelles are round, yellowish or golden, free-stone *Insititias*, ranging from half an inch to an inch in diameter, very

slightly subacid or sweet The fruits represent the highest quality to be found in varieties of this species, approaching the Reine Claude of Prunus Somneria in richness of flavor.

P. 516. (Prunus) Pissardi. Cerasifera.
Tree large, shoots purplish; foliage white unfolding tinged with red, later becoming dark purple; fruit medium in size; skin purplish, showing color in immature stage, thin, tough, suture obscure; flesh firm, juicy, moderately acid, inferior in quality; clingstone.

Quezaltenango

Monday

24 June 1963

Elev. 7 a.m. 7400 ft X

Labor Coalle 10.30 a.m. 7800 ft.

Quezaltenango 12 m. 7500 ft

Capusano orchard. Trees well
farmed and well cared for. Don
Alberty not in the country, the
gardener says not know the names
of things. This is certainly a very
important collection.

Ticho reported Bartlett pear here.
We could not find anything we felt could
be that variety. There are many trees
of a variety the gardener says is Kieffer
but we are inclined to think it is
some other serotina hybrid. But there
appear to be several European pears
here. Gardener says some of the trees
in this hives were imported from
Argentina. If true, this helps to
make identification difficult.

Apples are the big feature. Lots
of Winter Banana, and Alaska,
a large apple, yellow with red cheek,
Did not Ticho say it is green?

Quite a lot of Gravensstein; a
tendency to Malformed fruits as
Ticho said, but not bad. Rosa Mundi
a fine looking large fruit. Quality?

Bing cherry - gardener says it bears
good crops. Tree shows no sign of

Delayed foliation. Several pine-ot
trees, gardener says they are not
very satisfactory. Do not bear good
crops nor regularly. One European
chestnut tree in bloom but gardener
says they don't craja. Also one nice
adellano shrub.

A number of plums. Satsuma
literally loaded with fruit. Mariposa
bearing good crop. There are a number
of the small to medium plums which
are abundant in the market - I can't
place this variety but I believe it
is a Japanese hybrid - A larger yellow
plum may be Reina Claudia.

Bourne Booc

Tecpaneca

Camuesa

Cerasifra

Pears called Frances

Sand pear

Thursday

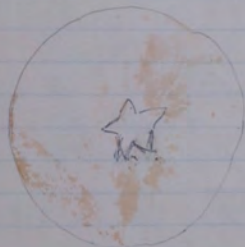
Zamorano

22 Aug 1963

"Spanish Cider Crab" from Güinope

Yesterday Prof Watkins and I drove to Güinope and got a fine lot of fruit from the old tree at Mr. Harlow's place - just inside the fence along the carretera.

The size is quite variable. Many small fruits, but the best run about two inches in diameter:



Color greenish yellow heavily streaked with red. Cavity rather deep. Stem very slender. Basin deep, furrowed, calyx not deciduous. Flesh white to slightly greenish, crisp, or very slightly mealy. Fairly juicy. ~~Not~~ astringent, pleasantly acid. Flavor about as good as many

standard apples. Core open when
the fruit is fully ripe.

Marcos stewed some of
them, peeled but entire and
they were very good eating.
I would call this a good
desert crab. It seems to have
some caecate blood, if one
can judge by the long and slender
petioles, which are glabrescent,
and the fine serration of the
leaves.

The fact that this crab behaves
well at 4200 feet makes it
worth propagating. We should
put it on Clyde and send
accons to Jorge Benitez.

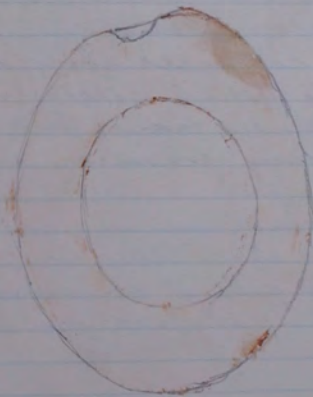
Tuesday

Zamorano

1 October 1963

Avocado 14375 from Rodiles Grove,
Atlixco, August 1948

There are two trees of this number
in the avocado variety plot. I believe
one may have something very good
in this number, because of its good
size, attractive form and external
appearance (very smooth surface,
glossy dark purple) and small seed
(from a Mexican).



Pomological Description follows:

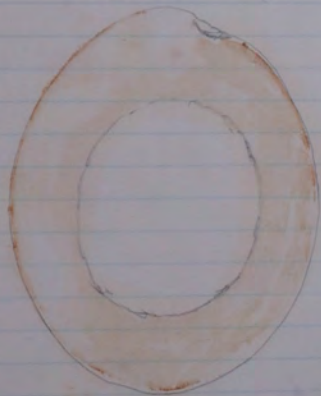
Form ovoid, size medium to rather large for an avocado of the Mexican race, length $3\frac{1}{4}$ ins, breadth $2\frac{1}{2}$ ins, weight (estimated) 5 to 8 ozs; surface smooth, lenticils few, yellowish; color dark purple, glossy; skin of typical thickness for a Mexican; flesh cream color changing to greenish near the skin, with slight fiber markings only; flavor rich and nutty; quality good; seed rather small for a Mexican, tight in its cavity with seed coats adhering closely; season October and perhaps November at Zamorano.

Tree rather spreading, with foliage typically Mexican. Productiveness hard to judge on the basis of two trees and only one season's observation.

I cannot see any indication of Guatemalan blood in this variety. I would call it an unusually good Mexican if it bears good crops regularly.



✓
21 October 1963
8 ozs



Another
specimen
8 ozs

Bulletin No. 125. September 1957

Pineapple ABC's

by Phillips K. Platts

Department of Agriculture

Tallahassee, Florida

Pear Notes Based on Hedrick, with
my comments in relation to Central America.

Bartlett. Productive - full crops year
after year. Vigorous trees, early coming
into bearing. Subject to fire blight.
Requires cross-pollination. Is the
chilling requirement high - see Chandler.

Beurré d'Anjou. "A fruit of this variety
cannot be mistaken for any other."
"Borne on a short, very thick stem."
Comes into bearing early, but an un-
certain cropper. Fairly free from blight.
One of the varieties most often self-sterile

Beurré Hardy. Has a tendency to soften
at the core as maturity advances. This
might be a factor in C.A. Productive but
"a little susceptible to blight".

Garber. "A few trivial differences separate
Garber from Kieffer - the fruits of both
are poor".

Kieffer. "Of all pears the trees of Kieffer
are most easily grown." "Often self-sterile."
"Worthless for dessert, much can be said
for the fruits of Kieffer for culinary
preparation".

Le Conte. "The fruits are rather poorer in quality than those of Kieffer - Seem to succeed better in warm climates and poor soils. - The fruits sometimes rot badly at the core. - The trees are often, if not usually, propagated from cuttings."

Lincoln. Looks like our Redonda.
"at its best, the fruits of Lincoln seem comparable to those of Bartlett. - Had its origin in a seedling grown in the spring of 1835 by Mrs Maria Fleming, Corwin, Illinois. "Free from blight." Productive. "Quality good." Check this with Tich's report."

Pound. "The fruits keep well and are said to be good for culinary purposes."
"Quality very poor."

Seckel. The trees do best in fertile soils which must not be a heavy clay. The blossoms are markedly self-fertile."

Summer Doyenne. Could this be our Tecpaneca? See illustration.
"Quality variable, good under best conditions."

"Preliminary Evaluation of New
and Uncommon Pear Varieties"
Research Bul. 790, Ohio Agrl Exp
Station. Freeman S. Howlett, June 1957.

Baldwin. Size medium, obovate
pyriform, obscure neck. Greenish
yellow, dull doughened skin, some-
what similar to Kieffer. Flavor
fair to good. First week in
October. Keeping quality: rel-
atively short for a variety of
the Oriental type. Flavor
somewhat superior to most
varieties of similar inheritance.

Hood. Size medium to below
medium. Roundish, obtuse
pyriform, neck wanting. Green-
ish yellow. Flesh yellow,
course, tender, juicy, subacid;
stone cells firm, not objection-
able, confined to core region.
Flavor poor; second week
in September; keeping qual-
ity poor.

Kieffer. Flavor poor to fair.
Harvest date third week in
October. Blight resistant. Poor

dessert quality. Keeping quality good. Does not always ripen properly at Wooster (Ohio)

Lincoln. Source unknown. Size medium; obovate pyriform. Yellow. Flesh white, soft medium melting, juicy, sweet. Stone cells abundant, confined to core region. Flavor fair. First week September. Quality variable. Only fairly attractive. Certainly one of the better flavored blight-resistant varieties of presumably Oriental inheritance.

Orient. Size very large. Roundish globular, Greenish yellow with some russet. Juicy, somewhat sweet, lacks depth of flavor. Flavor poor to fair. Second week of October. Oriental inheritance evident. Reported to be immune to fire-blight. of value only when blight immunity is imperative.

Rackham Triumph. (From
Tech. Bul. 41, Oregon Agr.
Exp Station, 1954) Medium
to large, obtuse pyriform.
Surface somewhat rough, green-
ish yellow or yellow. Flesh
white, melting, fine, very juicy,
quite free of grit. Sweet,
vinous flavor, rates among
best in desert quality. Season
late. Keeps as long as Beurre
d'Anjou. Rapidly gaining ground
as a commercial pear in this
country and abroad.

Pineapple. (As above, Oregon
Agr. Exp Station, and the
following). Fruit of no con-
sequence. Tree highly resistant
to blight but somewhat sus-
ceptible to winter injury in
southern Oregon.

Kieffer. Cross between Sand
Pear and Bartlett? Fruit
medium to large, ovate,
usually pointed at both stem
and calyx ends. Skin greenish
yellow, often flushed dull red.

numerous large russet dots.
Flesh gritty, fairly juicy, tender
but not fully buttery. Fair
in dessert quality, quite satis-
factory for culinary purposes.
Improves in quality if harvest-
ed at the proper time and ri-
pened at a constant temper-
ature of 65 degrees.

Le Conte. Fruit medium in
size, roundish, tapering at both
ends. Skin thick, tough, fairly
smooth, pale yellow in color,
numerous small dots. Flesh
firm, gritty, moderately juicy.
Inferior to Kieffer in flavor
and texture characteristics.
Breaks down at the core if
left on the tree too long.

5
Julian Martinez Castillo
natural de Zaragoza, Depto
de La Libertad. De 62 años.
No es casado, vendria sola.
Tuvo 5 años de primaria en
Zaragoza. Trabajaba en la
estacion de Larcotilla desde 1941
hasta 1951 o 52; despues trabajo
un año en La Lima.

Direccion postal: casa de
Humberto Aparacio, Vice Consul
de El Salvador en Tela.

Ha injertado rosas, mangos, aguacates
y citricos, en cantidad. No toma.

Saturday Antigua G. 5 Sept 1964

Visit to San Sebastian (4800 ft) and
Calderas (6800 ft.) and El Rosario (6900 ft.).

At Calderas: Laxson strawberry
bearing beautifully. Does it make runners?
Fruits large, handsome, not of very
aromatic flavor it seems to me.

Bruce plum looks good - plants from
Beautiful Ridge last December.

Early McIntosh apple seems to show
delayed foliation. Not growing well.
Perhaps lack of water?

Jonathan like above.

Rhylene Supreme idem - I feel this
location - that is the soil - too dry.
These trees seem to have had no water
and were planted at beginning of dry season.

Martha crabapple looks good. Making
good growth.

Sieckel pear not growing, but Rose
5 ft high, looks promising.

At Concepcion (El Rosario, 6900 ft)
Treea planted a year earlier (the
1963 shipment) First shipment - Jan.

Whitney crab started off well last year
but is like my tree this year - has
not continued good growth.

Chestnut crab fine, 6 ft high with
normal growth and good foliage.

Anoka apple fine, 6 ft high and
in bearing. No signs of delayed foliation.

At San Sebastian, 4500 ft, it seems
to me all the trees look better perhaps
because soil less sandy and they have
had some water?

Young America crab growing well,
3 ft high, planted Dec. 1963.

Lady Apple, 3 ft, growing well. Dec 1963

Rescue crab 2 ft growing well. Dec 1963

Transcendent crab, strong growth.

Hyslop crab the same.

Martha crab, 2½ ft, very strong.

Whitney crab, 3 ft high, strong growth. Looks promising.

U. S. D. A. 1225, 20 inches high, looks good.

Dalgo crab, 3 ft high, looks good.

~~Whitney crab, 5 ft high~~

Wetthy apple, from shipment rec'd in Jan 1963, shows delayed foliation or maybe that is not the right way to put it; has not continued to make good growth after first season. 5 ft high.

Methley plum behaving well, as it has in our site.

I am impressed by the better behavior of most things at San Sebastian in comparison with Calderas area. They should do better at the high elevation of the latter. Is it dry soil? I wonder if this is the trouble at Los Andes also.

Los Andes, 26 Aug 1967

Strawberries - The whole area devoted to Lassen Mammoth, Pedro Rivera says for two reasons viz: Its resistance to drought (shortage of water) and to leaf spot. Also its large size is a commercial advantage. He says it is quite inferior in flavor. They transplanted hijos in June - will have main crop from January onwards. He says replant every year.

Mora de Castilla. They sold 1000 qq in 1965, 900 in 1966. They have extended the planting.

Asparagus beds now 4 yrs old and he says, profitable

Apples. Winter Banana and Golden Delicious moved down to 6000 ft, not far from headquarters, because "gases from the volcano damaged them at the higher level". Both these varieties are carrying fruit - winter Banana of course the larger crop.

Chico should have at least 10
trees of Wealthy at present 6000 ft

Plums. Pedro says Kelsey bears
much more fruit than others 5600 ft
Satsuma next best - when left to
get fully ripe it is good eating.
"Reina Claudia" has made fine
growth (long branches which need
heading back) but Pedro says is
not bearing at all well.

Peaches. They sold a lot of Flore d'auon
to Kern's this season. Are going to
plant more. They should get others.

Pears. Order 10 Baldwin and 10
Hood.

8
Early gold is good - one tree
diseased - bacterial gummosis?
Saturn good crop on all trees

The old apple trees at Finca (Bella Vista) near Teopan are said by Julio Mathen the present owner of the finca to have been planted by Don Martin de Leon between 1880 and 1890. The elevation is about 7250 feet.

Quezaltenango 29 July 1968

White Winter Pearmain
good stout trees, trunks 2"
thick. Good crop - red fruits.

Fine large
crop

2" thick or more
Heavy crop

or good sized
fruit

low weak
recommended

- 10 rows
t high, some
over Red Mc Intosh

Jonathan
Winter and



Martes 23
arava

The old apple trees at Finca (Bella Vista) near Teopan are said by Julio Mathen the present owner of the finca to have been planted by Don Martin de Leon between 1880 and 1890. The elevation is about 7250 feet.

Quezaltenango 29 July 1968

White Winter Pearmain
good stout trees, trunks 2"
thick. good crop - red fruits.

Red Gravenstein - Fine large
strong trees. good crop

Jonson - trunks 2" thick or more
well branched heavy crop

Yellow Bellflower good sized
tree Fine crop of fruit

Red Delicious slow weak
grower. Not to be recommended

The 2 1/2 yr orchard - 10 rows
winter variety 5-6 ft high, some
fruit on them. 10 rows Red McIntosh
Red Delicious and Red Jonathan
all half the size of winter and
no fruit.

1965

Quezaltenango 7600 ft

Saturday 10 Sept

6 White Winter Pearmain

March 1961, 6 ft

high, good growth

Fruit yellow heavily

blushed red. Fair

size. Flavor subacid

Uniform growth,

stout trunks. Well

branched crown.

Jonathan Mar 1961

Trees small. 6 ft
but with few slender
branches. Trunks
such in diameter.
Fruit red with
some yellow. 2 1/2 in
D. Low. Weak
growth compared
to Pearmain.

Jonathan of
Jensen does not
appear with the
above nor with
Beach.

Jonwin Mar 1961

Jonwin trees growth
pretty uniform 6-7
ft, trunks stout,
crowns well branched.
Fruit crop. Fru 2 1/2"
yellow & red. Flavor
subacid. Promising.

Red Delicious 1961

Trees slow growers,
barely 6 ft but
well branched and
healthy trunks
1-1 1/2 in thick.
Smooth. Fine crop
Fruits 2 1/2 in. diam
no latex acid
present but flat

Yellow Newtown 1961

Trees weak slender
but 6-7 ft high
few branches but
lots of fruit in clusters
Plenty of dull red on
sides. Oblate 2 1/2 ins
Subacid

Yellow Delicatus 61

6 ft high pretty
good growth not
abundantly branched
good crop of fruit of
good yellow color
with plenty of
light and on side
yellow only in shade
Flavor muddly
subacid This is
a good bet

Yellow Bellflower

Tree 6-7 ft
well branched,
Trunks 1 1/2 - 2 in,
stout good crop +
fruit, yellow with
light rose on side
opposed. Wards
is OK here.

Is this the Limonera
of Cantel?

Not yet ready to eat
off the tree - late

Red + Yellow
Delicious to be
recommended

6 rows of Red
Delicious, trees
small but uniform
in growth with
some fruit.

Remember these are
no slower than
several others.

Roma Beauty 61

Angel Gutierrez:-

Sta Cruz del Quiché. -

2000 trees 2 yrs old

Winter Banana

Yellow Delicious

Red "

Gravenstein

Red + Yellow

Delicious to be
recommended

6 rows of Red
Delicious, trees
small but uniform
in growth with
some fruit.

Remember these are
so slower than
several others.

Rome Beauty 61

Very weak grower
5-6 ft slender trunk
few branches &
fruit on one tree
Not to be recommended
as yet.

Wentee Banana
1961

Twice as tall as
Rio Delicious of
same age, Trunks
1 to 2 ins thick
Some fruit 1 seen
from U.S. about 95
compare fruit
with local ones

Rio
Jonathan from U.S. 1961

Trees 6-7 ft, trunks
1-1 1/2" slender, not
spreading rather
few branches, quite
a few fruits

Red Macintosh 1961

Trees small and
weak 5-6 ft.
Trunks 1" Fruit
(flesh) dark red
flesh subacid
delicious

For its

Send Hector

Systematic Study
of the Mango

Airport Huerto
elevation 7800 ft

Muroder near

Los Encuentros

8500 ft

Tatomocapan
8100 feet

get Bob to train

Pedro Mejia in
pruning

Vista Bella
7900 ft

7 old apple

Trees from Europe
probably Planted
about 1890. See
note on previous
visit

Apple Orchard:

Rootstocks: 90% criollo
10% M.M. 109

Variety: Winter Banana 60%
Fuarez 20%
Red Gravenstein 20%

Rootstocks:

75% criollo
15% MM 109
10 Perote

Variety:

Winter Banana 60%
Fuarez 15
Green winter - 15
Beaufort 10

Paul Dougherty

140 Kentucky Ave

San Luis Obispo

1967

Santa Maria 20 Aug

Santa Maria. Tree
in front of the
house of Alejandro
Osay. Melocoton of
good large size.
Like others of this
type, probably
not a heavy bearer.

Feliciana. Tree

in back of Osay
site. ~~Heavy~~ bearer
like Osay, with
red cheek where
sun hits them.
Much like Osay.

Marcelo. In situ
of Marcelo Man-
roquin, above
pilita. Similar
to Feliciana -
red check, not
largest size fruit.

Yolcan. In situ
of Marcelo Man-
roquin - good size,
pretty good crop
Much like Feliciana

Recomendables

Winter
Juarez
Jonathan
Red Delicious
White Winter Pearmain
Yellow Bellflower

AGUACATE INJERTADO

Variedades seleccionadas para la exportación de fruta fresca; Nabal, Fuerte, Aztec, Hass y Obregón.

Preparadas en bolsas polietileno; El Frutal, Famajachel, Sololá.

Carme Montalván, 5a. Avenida «A», 20-68, zona 10. Teléfono: 680089. Ciudad Guatemala.

No. 48-2033 - Jun. 14, 13, 20

(foto)

RM
873

Recomendables

Winter
Juarez
Jonathan
Red Delicious
White Winter Pearmain
Yellow Bellflower

Right to Left (+oto)

Jonathan
Delicious
Juarez
Bellflower
Yellow Del
Winter Pearmain
Winter Banana

Sept 20 1967

W Winter Pearman

Strong grower very
fine crop lots
of red color on
fruit Trunks $2\frac{1}{2}$
ins thick B&B
says store well

Montebello

7600-7700 ft
one reading 7775
(10am)

Hermanas Ovale

Plant Propagation
Principles and Practices
Hudson T. Hartmann
Wale E. Kester
Prentice-Hall, Inc.

~~Sample~~

5th printing - June 1964

7500 ft

K 14 on road to
Sta Cruz Jimche

1 lot
cl
2
pa
ra
ga

Tienda "LA BENDICION DE DIOS"

Artículos de Primera Necesidad

CARTON CHUAKHITU

Santa María Chiquimula, TOTO.

Proprietario: MIGUEL TZUNUX PU

monajuyu finca

San Ar Morera

7100 ft. 16 July

Rafael Morera
Patricia

Jose Conde Ay
Juan Conde is
his cousin.
~~Juan Kesting~~

Look for his house
4- km from
Los Encuentros

Met at Los Encuentros
a smart Indian
and knows apple

2^o on this side
of Franciscana
between 8th + 9th
north perhaps 2
Arriola - Clemencia
v. de -

Juan Polop

Don Rodolfo Lemus

Pena de Oro, ^{Lo} de
Lemus

Quetzaltenango
Cantel

Pasac 2^o

no. 19 long waist
blue - black

Dwarfed Fruit Trees

1964. By H. B.

Turkey Macmillan.

562 pp. \$15⁰⁰

WERNER KOHLER
Sta. Lucie, M. A.
Gr. Sta. Teresa

Maxwell E. BECKER
% American Embassy
Tegucigalpa, Honduras

Recommendation
for Plums

Santa Rosa

Mariposa

Satsuma

} Good
cross
(pollination)

? Kelsey - home use

Threw out Reina
Claudia (Shiro)

Above list of 3 should
assume good cross
pollination according
to Armstrong

Hotel Modelo

Don Eduardo
Miralbes

Carlos J. Chau
Lambour

Kadman pear
quinta of

Pere don Nascio
6300 Curup

Seedling -
mother plant
imported by
Egonberger
Swiss

"Le Flou"
Hoisterin
1933? -

trudo

ome

Hotel Modelo

Don Eduardo

[Faint handwritten notes on a separate piece of paper pasted onto the left page]

Kadman pear
quinta of
Don Jorge Alfredo
Redondo

San Bartolome

Chirimacyn
penimajuyii

Bung avocado
buds + Baldwin
from Zamorana
for arana

Sat - luncheon
with Jorge Fidel

Oscar Hun

21 Av 7-92
Zona 3

Quezatenango

Saturnino Diaz
Tejulte
is canning melocotones
and has many trees

Antonio Costa G.

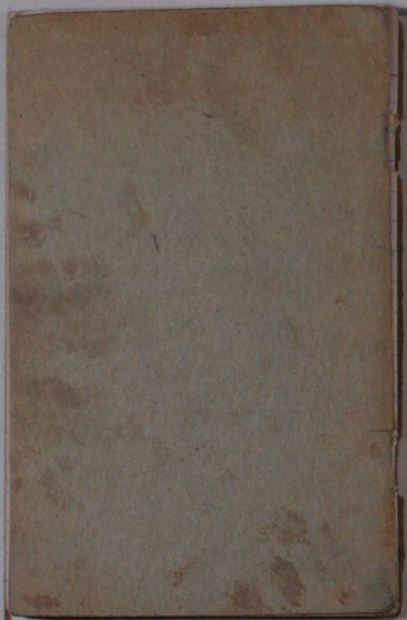
Roberto Sandoval

Sueto del Dr.

Delgadoillo
almendras
in quantity

Taxis Alvarez

2-9000



Wickson crab 4 trees 3-5 ft
growing well enough. In 5th
row from lower end of new planting

Father Ronaldo Fetter ex
La Libertad much interested in
fruits

There are numerous trees in Culco

Father Riley has charge of
the agricultural work of
the Garyknoll group

Tomas Ollej

30 años - soltero

4 yrs 7 months with Dr
Behrhorst en extension

agropecuaria. 6 años primaria
y dos pre-vocacional in

Chimaltenango - Regular
notas. 2 yrs with Marcial
Barrios.

Wayne Haig - finishing
his Masters at Michigan State

9 mos. at Turrialba with
Ford Ford grant.

Jose Manuel Montúfar.
4^a calle # 6-76. Zona 1.

Pedro Arce y Talladares.
3^a Cr. 'A' # 3-48, Zona 1.

Three quarter length
oleo in Zaguán

Juan Nepomuceno Batres
Najera, Caballero de Mon-
tesa - 1800 nacido en
la Nueva Guatemala
Después del 1773, fue
guardia de corte en Co-
paná. Dicen que la
María Luisa esposa de
Carlos IV se enamoró
de él.

Standing man over
bookcase in library
probably about 1800-1840
El Caballero Ignorado

get foto of Srta Najera
left side of library,
daughter of the man
on right side of fire-
place - Najera y Mancos

Right of fireplace - Maria
Francisca Durigueray.
1813. Rosales Ingreso
en Carmelitas 11 Mayo 1813.

get foto

The other woman with
cross on forehead is in
Sr Aparicio's work. Rosales

Maria Dolores Alvarez
de Asturias Arroyave y
Beteta Esposa de Don
Mamuel Najera y Mancos
en Sala. Must be by
Rosales.

about 1850

The padre over trunk
of chasubles - Gonzales
de la Campa Cos - buried
in Capuchinas. Guatemala
ask Juan Jose Falla

"El Anexo" Quezaltenango 7800 ft
7 August 1969

Jonathan - Trees imported in
1961 - 27 trees. 6 to 7 ft high
trunks $1\frac{1}{2}$ to 2 ins diam, loose
open crowns. 10 to 25 plants.
Seems to be the same as Jonathan
from Chichicastenango. Promising
matter of rootstock interesting. Trees
on excels 2 yrs older much larger.

Imported Winter Banana imported
at same time have trunks up to
4 ins thick - trees double in size
and much heavier crops.

Yellow Delicious 1962 Imported
6-7 ft, trunks $1\frac{1}{2}$ -2 ins, trees
erect, crops small.

Red Delicious next to yellow,
growth just about the same and
crop also. Better in some cases.
Performance somewhat better
than yellow Delicious.

Yellow Bellflower 1961

6 to 8 ft, trunks 3 to 4 in
well branched broad crowns,
fine crops. Recon needed.

In same row, McIntosh, same
age. Weak grower 5-6 ft
trunks 1 in diam, very few fruits.
Not at all promising.

Yellow Newtown 1961. Trunk tall
slender not well branched. Very
few fruits - one tree only. Not at
all promising.

Yellow Delicious 1961. Much
better than the 1962 trees. good
crops. I would say satisfactory
behaviour.

Red Astrakhan 1961. Very weak.
4-5 ft. No good.

Red Delicious 1961. Satisfactory.

Gonwin 1961. 7-8 ft 3-4 in
trunk good crown large crops
fruit off but looks well.

Red Gravenstein 1961. 8-10 ft
upright trunks 3-4 diam.
Not a heavy crop. Most of the
crop already harvested. good.
Quality excellent.

Red June 1961. Tall slender
trees 6 ft. little fruit.

White Winter Pearmain 1961
7 to 9 ft, trunk 3-4 in. Well
formed spreading crown. Crop
excellent. Recommendable
late. If planted about 14x14
ft would be a money maker at
8 yrs. Maybe even 12x12 ft. - good
for 20 yrs.

209939. Malus sylvestris.
Beautiful tree tremendous
crops but fruit with no flavor.

First Orchard planted - 1959

Jonathan of Quarey - We believe
is really Jonathan. 15 ft trunk,
4-5 inch fine spreading crown,
well branched, Fine crops

Red Delicious of Quarey is not
red delicious lacks 5 points at
apex and fruit too acid. This
must be Wealthy - too acid for
Red D.

Quarey - Wealthy? Big crop.
Well formed trees to 15 ft.

Based on today's observations
the situation is about as follows:

Winter Banana for vigorous
growth, heavy bearing and satis-
factory quality is the leader. Mid-
seasons perhaps to rather late.

Wealthy (Quarey) good grower,
well formed trees, heavy crops.
Quality satisfactory. Mid season.

Gravenstein for earliness. Not
a strong grower in all cases. Val-
uable for earliness and quality.

Jonathan. good grower, fine crops,
good quality.

Yellow Bellflower. Good grower,
makes a good crown. Heavy bearer
of acceptable fruit. Mid-season

White Winter Pearmain Good grower,
large crops. Probably late.

Jonwin. Strong grower, shapely
dense crown. Heavy bearer.
Fruits of fair quality.

Red Delicious. Fairly vigorous,
pretty good crops - flavor mild
as everywhere.

Fincas San Sebastian, Duenas,
17 May 1970. We had a look at
some of Dr Hough's material up
at Concepcion. Obviously quite a
few things have made a good start
and Arturo Falsa is watching
them (from time to time) but is
not taking any notes.

Highland Trip - 1970 - May 18 -

Los Aposentos. The only material
of Dr. Hough's which Don Chico says
is in the nursery here is apple.
I did not count the trees but there
quite a lot of them, whips about
2 ft high. White labels on them.
Don Chico says not know what gmo.
Arriaga plans to do with them

Vista Bella, Tecpan. Quite a lot
of Dr Hough's material is growing
and seems to be receiving good
care. I saw apples, apricots, nectar-
ines and a few pears. As is
usually the case the first year's
growth is good. It remains to be
seen how well the trees will con-
tinue this year.

Pears: "Larga answers well
Hedrick's description of Clapp
Favorite as well as season
of ripening. Redonda agrees
with Hedrick's description of
Lencola, which is an early
pear. The good pear from
Helvetia may be Comice which
on July 25 had immature seeds
which make it a relatively
late variety.

The variety known at
San Bartolome as Redman
appears to be Hood, based
on the two best trees from

Florida planted at Helvetia
about 1930."

John T. Brigger
July 27 1967

Enrique Chavez or Soney
Domicilio Sta Maria de Jesus
Cuarto Canton

Amigo de Alejandro Stzay
10 de Octubre 9am hasta 12
Convenimos 26 de setiembre 1967
Des me todas mis cosas /
7 matas para propagar en 1925

" I agree with Verhulst and Popenoe that based on observations made during three days in various areas in Guatemala, that the following varieties for planting at appropriate altitudes - Winter Banana, Wealthy (Guareg) ^(including red strains) Gravenstein and Jonathan, and Jonwin.

Varieties which appear much less suitable are Red Delicious and Yellow Delicious.

John T. Bruggen

Guareg apple as seen in the Guareg orchard at Chichicastenango appears to be the variety Wealthy. Based on foliage, time of ripening, large size and striped red fruit and heavy bearing.

We were ^{not} shown nor saw any trees in the orchard which I believe to be Red Delicious or Jonathan.

John T. Bruggen

Luis Alfredo Aguilar

care of Chris Hempstead

20 años, born at Finca
Argentina of the Hempstead family
Pre-vocacional completed in 1960
Graduated in Barcena Oct 1963
Ranked high in his class - never
below 10th place. 1st place in one
semester.

My pasoport 2051206

Sams Tourist card 024014

Carlos B. Polacios
reconocido a Don Ventura Estrada
Z. 10 #17-87 Diagonal 6

John Smith
21536 office hrs
68508 House
13^a calle 2-60 Zona 10

Annelio G. S. de Guisola (Chimi)
Finca Amanitla
Santa Tecla - El Salvador

Padre José María Casas
Director del Centro Indigenista
Chichicastenango

Francisco Pérez
de Quiché 21 años

Nelson Wolfe Send him stamps
10401 Hazard Rd
Rockville Md.

Samuel García Morales
7^a Ar Sur #1
Antigua



