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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.

Antigua, Guatemala, 20 October 1960

Mr Paul Stark Jr.
Louisiana, Missouri.

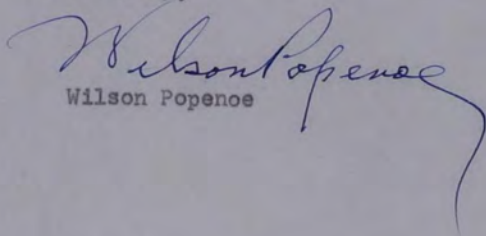
Dear Mr Stark:

Your article of fruit growing in the South Pacific, in the June issue of Fruit Varieties and Horticultural Digest, is most interesting. I refer especially to your statement about the Tropical Beauty apple. Are you going to propagate this and make it available in this part of the world? If not, do you suppose we could get a few scions for grafting here on some of the Malling rootstocks which we have?

Our apple problem, of course, is a matter of chilling requirement. So far, our best bet seems to be Winter Banana, which fruits well here at 6000 feet or slightly higher, when many other varieties need 7500 or at least 7000 feet. Red Delicious is coming along well, and in Mexico they are strong for Golden Delicious, but here in Guatemala the market leans strongly toward red apples.

I hope you can find time to answer this note from an old-timer in the American Pomological Society (I was Chairman of the Tropical Fruit Committee in 1915, believe it or not!).

Sincerely,


Wilson Popenoe

Stark Bro's Nurseries & Orchards Co.

(ESTABLISHED 1816)

General Nurserymen

Burbank Central
Experiment Grounds
General Offices &
Home Nurseries
Louisiana Missouri

Specialists in Growing

• Fruit Trees	• Berries
• Dwarf Fruit Trees	• Vines
• Shade Trees	• Hedges
• Shrubs	• Roses

Where Stark Trees and Plants are Grown
NORTH-SOUTH-EAST-WEST

Dansville, N. Y.	Farmington, Ark.
Atlas, Ill.	Checotah, Okla.
Marionville, Mo.	Porum, Okla.
Yakima, Wash.	Tyler, Texas
	Gustine, Calif.

OFFICES & HOME NURSERIES

Louisiana, Missouri.

October 27, 1960

Dr. Wilson Popenoe
Antigua
Guatemala, Central America

Dear Dr. Popenoe:

It gave me quite a thrill to receive your letter of 20 October, 1960. Your textbook has been my Bible on tropical fruits ever since I took L. H. McDaniel's course back in 1940.

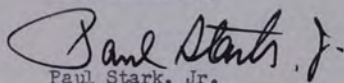
We, of course, will be delighted to send you scions of the Tropical Beauty apple which we now have out of post-entry quarantine here in our experimental orchards. If you will send me the necessary documents to get this scionwood through your customs inspection, we will forward this wood at the time you specify.

In some years we send quite a few deciduous fruit trees into Guatemala and our exports into Mexico run almost 100,000 apple trees in some seasons. Up in some of the northern states Starking, Golden Delicious and Scarlet Staymared do quite well. As a matter of fact, I think they grow better Stayman-type apples than any other place in the world. However their market continues to prefer the Red Delicious variety.

Since you expressed some interest in my excursion to the South Seas, I am enclosing a copy of my complete report with this letter, also information on our new Starkrimson (Bisbee strain of Delicious).

Rest assured of our full interest and cooperation, and thanking you for giving us an opportunity to test this Tropical Beauty apple in Guatemala, I remain

Very sincerely,



Paul Stark, Jr.
STARK BRO'S NURSERIES

PSjr:vm
enc.

P.S. Staymared also seems to be doing well in Hawaii.

FOR QUICKER PROFITS *** FOR GREATER PROFITS *** FOR EASIER PROFITS

PLANT

STARKRIMSON DELICIOUS (BISBEE) APPLE

U. S. PLANT PATENT 1565

THE MOST SENSATIONAL NEW APPLE IN THIRTY YEARS

The Starkrimson Delicious is a whole tree bud sport mutation discovered in a Starking block near Hood River, Oregon. This outstanding new apple ripens at about the same time or shortly before Starking. This variety takes on its color pattern in the form of a solid color as contrasted to the more pronounced striping color pigmentation of the Starking variety. On the opening date for harvest of Delicious apples this new strain will grade 100% extra fancy for color. The apples are the same size as Starking and tend to be a little more long and typey, with a more pronounced 5-point crown than Starking Delicious apples on adjacent trees.

The Starkrimson Delicious has a bright attractive glossy red color at the opening date for harvest maturity of the variety. As the season progresses the color gradually darkens but continues to hold an attractive bright glossy sheen even if the fruit reaches over-mature condition on the trees. It never gets the muddy dark appearance that is sometimes evident on other early coloring bud sport mutations of Starking that are now being evaluated in various parts of the country. Starkrimson Delicious apples are fully colored when ripe and all fruit can be harvested at once. The fruit can be picked at optimum maturity for successful storage, longer shelf life, better condition and finer flavored fruit for the consumer.

WHAT THE SPUR-TYPE STARKRIMSON WILL DO FOR YOU

The tree form of the new Starkrimson Delicious is definitely different from Starking in that it tends to produce a heavily fruit spurred type tree that gets into younger and heavier production than other strains of the Delicious type. Earlier studies of fruit spur type strains definitely indicate that this type of tree at maturity will be semi-dwarf, about 2/3 the size of a standard apple tree. We recommend planting 20 ft. on the square with Stark Jon-A-Red, McIntosh and/or Stark Golden Delicious Stark Hardy Dwarf used as pollenators. Under most conditions Stark Hardy Dwarf trees of these varieties will fit best into this spacing but standards can be used with a more detailed pruning program as they mature. If tree removal is necessary on exceptionally strong soils, take the diagonal square center tree out and this gives a permanent spacing of 28 ft. The minimum number of pollenators is every third tree in every third row.

Most fruits on regular apple trees are borne on "fruit spurs" which are short, fat growths along the limbs of bearing age trees. A fruit spur-type tree, like Starkrimson Delicious (Bisbee) Apple, has a completely different habit of growth from regular apple trees. The main difference is the more abundant production of strong, productive fruit-spurs which are well distributed throughout the trees. The fruit spurs are blunt, not sharp. All fruit spur buds are round and fat as contrasted to the long, sharp leaf buds. These fruit spurs form on this type of tree at a much younger age than on any other type of apple tree. This brings the spur-type tree into younger and heavier production and also gives better annual bearing, as there are always a number of spurs resting during each growing season to produce next year's crop.

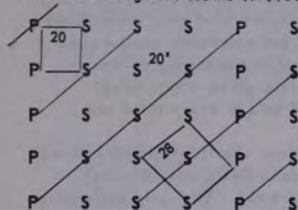
WHY STARKRIMSON WILL MAKE MORE MONEY FOR YOU

1. More trees per acre. Semi-dwarf, 2/3 size of standard trees. Bears on spurs all over the tree, up and down limbs.
2. 100% of apples Extra Fancy for color, all-over-red even in shade in center of tree. This means elimination of second grade due to poor color -- all apples can be picked at same time when they are in top condition for keeping juicy and solid until late marketing season. Color starts very early, in mid-summer, thus assuring full color at picking time.
3. Quick bearing and annual crops. Gets into bearing years sooner. Twice as many bushels per acre first 10 years in the orchard.
4. Tremendous Production per acre from spur-type trees -- as proven for past 35 years in the production record of the original spur-type Okanoma Delicious -- 11 year-old spur-type trees bore 1700 bushels per acre this year.
5. Smaller trees result in increased efficiency and lower production costs of spraying, pruning, thinning, harvesting, etc. and a better product.
6. Hardiness of tree and bloom. Extra hardy tree. Flowers resistant to Spring frost.
7. Size and shape. Large size and preferred long aristocratic shape with its 5-pointed crown.
8. Flavor. Same world-famous Delicious flavor that has never been matched in any other family of apples. Flavor of Starkrimson is best as fruit can be harvested at optimum maturity for long storage -- no need to wait until over-ripe for color.
9. Heavy production at lower cost per bushel on spur-type trees. Cuts labor and other costs of production and harvesting. Very little pruning needed on spur-type trees. Cheaper harvesting from smaller trees with less bruising.

PLANTING PLAN

For quickest, greatest profits
Plant 20 x 20

Remove Diagonal Rows if Trees Crowd



S = Starkrimson P = Pollinator

COMMERCIAL PRICES PER TREE

Size	50-99	100-199	200-299	300-500
4-5 ft.	\$2.70	\$1.75	\$1.50	\$1.25
3-4 ft.	2.45	1.65	1.40	1.15
Dwarfs	4.50	3.75	3.25	3.00

All prices F.O.B. Louisiana, Mo. Orders accepted subject to stock being unsold.

BEWARE OF IMITATIONS

STARKRIMSON DELICIOUS (BISBEE) APPLE sold ONLY by --

STARK BRO'S NURSERIES & ORCHARDS COMPANY
Louisiana, Missouri

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS

Territory of Hawaii
P. O. Box 1002
Hilo, Hawaii
August 15, 1960

UNIVERSITY OF HAWAII
COLLEGE OF AGRICULTURE
United States Department of Agriculture
Cooperating

*Agricultural Extension Service
County Extension Work*

Stark Bro's Nurseries
Department 6481
Louisiana, Missouri

Dear Sir:

A Mr. John Silva, Hilo, purchased a number of varieties of fruit trees from you several years ago. Among them was this variety Scarlet Staymared apples. He mentioned signing an agreement with you forbidding him to distribute such plants.

With your permission he is most happy to let me have slips to grow a plant. Will you allow him to do so?

We will appreciate having a copy of your catalogue to keep in our Hilo Extension Office.

Also if you are interested I will send you a picture of the apple tree with fruits.

Sincerely yours,

Wing You Chong
County Extension Agent

WYC:ys



FRUITGROWING IN THE SOUTH SEAS

It's an easy pleasant flight via Pan American Stratocruiser from San Francisco to Auckland, New Zealand. Plane leaves U.S.A. at midnight and arrives Honolulu for breakfast. At midmorning take off for Canton Island, a small coral atoll used by the Navy as a seaplane base during the war. Maximum Canton elevation about 6 ft. and only about 1/4 mile wide on most of the rim of the lagoon-- few palms and devoid of such other vegetation--some imported natives and GNA employees to service aircraft. Both the British and Americans seem to have a hold here and each has a separate post office 20 ft. apart. Next stop is Nandi, the main airport of the Fiji Islands, around 10 P.M. with take off for Auckland at midnight. Arrival Auckland (reminds me of San Diego) early next morning. One day is lost in the above transaction but you get it back on the way home. I also took it slower coming back home. The actual flying and airterminal time between San Francisco and Auckland is two night and one day if you go straight through. (Fiji economy seems to be changing over to sugar from coconuts but copra continues as an important export commodity. Indians brought in to work the sugar cane brakes are rapidly passing the natives in population and were on strike when I was there) New Zealand is responsible for administration of Fiji.

Auckland area grows some deciduous fruit but seems to be more of a tropical area. Lots of trouble with brown rot and scab-- rained the whole time I was there. Headed south towards Hamilton in the rich Waikato District, one of the most fabulous agricultural areas I've seen (a cow or 8 sheep per acre with no supplemental grain feeding). Visited Sunfruit Orchards and Nurseries, with whom I had corresponded for several years. Mr. Pick and his partner, Mr. Althan, operate a production and marketing program similar to Eckerts and Belleville, Ill. and all fruit is sold locally retail. Their present orchard is right in Hamilton and will be subdivided shortly, so they are developing a new planting several miles out of town but plan to maintain the packing plant sales area and storage. These folks also have a small nursery and sell trees to home planters in the area. They make a specialty of producing trees with 3 and 4 varieties on them. They are framework grafted instead of budded as in the case in the U.S.A. and apparently were making better trees without some of the problems of multi variety trees here. Most of his trees were grown on Spy stock and instead of stooling them he cuts up Spy Roots and sows them like potatoes-- seems to work in his soils and climate.

Mr. Pick is producing a very interesting ornamental plant that we should try. He stem builds up to 5 ft. a peach yearling, then buds to a weeping type of peach similar to the one we are testing from University of Illinois. He also puts one bud of an upright, double-flowering variety on top. The cascading blossoms of the weeping type with the globe top of flowers are quite spectacular.

Checked the original Sage McVerna Plum tree near Hamilton. (We have budding stock in post entry quarantine at Glean Dale). This plum is a large, red fleshed semi-freestone, ripening earlier than Elephant Heart. It propagates readily on peach and is vigorous, productive and highly resistant to B. Prunel.

The Sunfruit Orchards contain Apples on Spy stock, Peaches (the earliest, Le Vanquier, just ripe December 12), Plums, Pears and Table Grapes. Orchards were clean cultivated and a lake had been constructed for irrigation.

The trip the next morning appeared on the map to be a short half day across North Island to Hastings, but I was warned by the Picks to get a mighty early start if I expected to get to Don McKenzie's for a mid-day appointment. I soon learned what they meant. The road to Lake Taupo was hard surfaced but from there on across the Island it was

mostly sand, dirt and gravel and plenty crooked. (Had several harrowing experiences trying to get used to driving on the wrong side of the road. On the way up to the central plateau, which is desert, I passed through some of the finest forests, all of which had been planted to California's Radiata pine. These forests are now developing faster than being used and supply boxwood for fruits, pulp and other timber products. Just before reaching Lake Taupo passed through the Waitaki Thermal project where the subterranean steam is being developed as a source of power. Lots of racket -- sounded and looked like Dante's Inferno. The Lake Taupo area is quite like Tahoe in California, but not in quite as rugged terrain. The last few miles on the way to the east coast was quite rugged and rough mountain driving and quite like our California coastal range, less the highways. Napier on Hawke's Bay resembles Santa Cruz. The fruit section at Hastings and Havelock North reminds me of the Watsonville, California area. Apples, Peaches, Pears and Cherries are produced here. Main crop of Apples and Pears are mostly for export. The sweet cherries are all grown in huge cages here as well as in most of New Zealand because of the bird menace. These cages are constructed of poultry type netting and supported by large wood poles or used train rails. In spite of the heavy cost of the cages the cherry deal is profitable, because of high prices received for this luxury fruit (.50 to .75 per pound).

At the Havelock North Station varieties are tested on individual trees of Malling IX in short grass sod to conserve space -- might be more practical than our present top-working program in standard trees. (We are trying this on Clark Dwarf trees). The new Freyberg apple will be introduced through this station and the Fruitgrowers' Federation this next year. We can get the rights for the U.S.A. if it proves commercially valuable here (Bob Smock of Cornell is somewhat doubtful of its place here). Another variety that looks good is the Kidd Orange Red, a cross between Cox Orange and Delicious, carrying some of the best characteristics of both parents. Don sent me some ripe fruit this spring, and it's a mighty good eating apple, but may not have enough color for us. (Maybe we can try some of Jack Batjer's bench cuts to promote a red mutation). Norbury in England also reports it as the most promising new variety in their trials.

Golden Delicious apples grow to perfection in the Hastings area and Bob Smock tells me that some of the 11-year orchards I visited turned out 1200 packed boxes for export to England (the British buyers prefer them picked on the green side).

First observations on bulk handling of fruit here and every orchard I visited had some type of bins or trailers holding from 25 to 75 boxes. This bulk harvesting eliminates most of the manual work between picking and packing, reduces bruising, speeds up picking and substantially reduces costs between trees and the grader. This bulk handling originated in the Williams Orchards in Nelson, N. Z., and has been adapted by most growers. (Gaston and Levin of Michigan State also were pioneers in bulk handling). Our own Pacific Northwest and British Columbia, Canada are rapidly converting over to this type of equipment but on a more standardized bin size (mostly 25 bu.). (These modified bins can be adapted to nursery stock bulk handling. Elder has the first test bins under construction for early '59).

It was in Hastings that I made my first contact with the New Zealand Fruitgrowers' Federation. These folks greatly facilitated my further study of New Zealand orchards and had a representative to meet me and show me the works in every district. This outstanding organization unites fruit men into one central group with a collective voice in dealing with the government and others in matters of interest to the growers. The Federation has stores in all of the important growing areas to supply sprays, sprayers, packing equipment, nursery stock and other grower needs in the production of the crop. The annual sales volume is

in excess of a million dollars and practically all producers of fruit crops belong and pay a small tax of less than \$5.00 per year. The Federation is governed by fruit growers elected by the area delegates, and run by General Manager Anthony Osborne with the help of a qualified staff of 80 persons. The field men in the stores are qualified horticulturists and work with the growers in supplying latest information on spraying fertilizers and other production problems. The objectives of the federation are summed up as follows: "To engage in any trade or business dealing with fruit or any other products of the soil, to buy, sell or distribute anything that may be of use to fruitgrowers. To promote, foster and protect the fruit industry throughout New Zealand and to establish a closer bond of unity and cooperation amongst all those engaged in the products of the soil." Headquarters for the federation is in Wellington.

The New Zealand Apple and Pear Board, set up at the request of the Federation, is a complete and separate entity and its job is to market the entire crop of apples and pears. All fruit ownership passes from the grower when delivered to the assembly points and the grower is paid the cost of production guaranteed price of about \$1.77. When the fruit is sold profits go into the Board reserve fund for rough times ahead, construction of cold storage and other interests of fruit producers. When the reserve are between £ 1,000,000 and £ 2,500,000 25% of the profits go back to the growers and when above this 50% go back to the growers. The Board is a government authority and set up by law, and no grower can sell more than 2 boxes of fruit in any single transaction. Growers are well pleased with the performance of the Board and strive to deliver fruit that is up to grade and uniformly packed in Northwest type wooden boxes. After the kind of expert season these folks just enjoyed, I imagine the "kitty" is well reinforced. (All fruit is shipped under one label).

Hastings is the source of most of the budwood for the New Federation Nursery and has some of the finest, most productive trees in the Dominion. Growers and federation men are constantly on the lookout for superior trees of various varieties.

From Hastings I drove southwest towards Levin and the Federation Nursery. Spent the day with Tony Osborne of Wellington and Bill Tillson, the propagator. The nursery is located on the southwest coast of the North Island, apparently isolated from orchards and seemed to have excellent nursery soil. There are some interesting facts surrounding the origin and development of this nursery (grower owned). Apparently after the war the commercial nurseries became more interested in the production of ornamentals and got careless with their fruit tree propagation. Virus diseases came into the picture and untrue to name stock became quite a problem. As a result of this unhappy situation, the Fruit Growers Federation undertook the establishment of a nursery to produce quality trees. Land was purchased and has been enlarged as the demand increased.

Formerly most of the apple trees of Australia and New Zealand were grown on Northern Spy stock to avoid woolly aphis. This produced a tree about the size of Malling VII under most conditions. Spy has certain limitations and some varieties lack sufficient vigor to insure good production, is susceptible to wet feed during excessive rainfall or irrigation, almost impossible to replant, and sometimes develops one-sided root system. It is also a symptomless carrier of mosaic virus. Interest runs towards the more vigorous Malling and MM stocks, Malling XIII and XVI, M779 and M793 seem to be the preferred selections. M793 gives a tree of Spy size and M779 is like XVI but more resistant to woolly aphis.

The Federation nursery has all their stool beds indexed and apparently free of harmful virus diseases. Budwood is selected from superior trees of known production carefully checked for variety trueness to name and indexed by the Commonwealth Scientific Industrial and Research Organization (C.S.I.R.O.) against virus diseases.

This program has insured better trees and the growers seem to be pleased with the stock they are getting with their only objection being the difficulty of getting enough trees when they want them. I was assured that this situation was being overcome by expanding the production. Commercial nurseries of the U.S. should take warning from this development if we want to stay in the fruit tree business. (The Federation had been wrapping buds with a new plastic material that they obtained from South Africa as an improvement over raffia. This material worked fine for 2 years then the manufacturer changed his formula with disastrous results in heavy bud mortality. We sent a sample of our rubber and they have purchased 100,000 for part of their summer budding program that starts in December).

From Levin I went south to Wellington for the weekend as everything in the country and most in the city goes dormant from Friday night until Monday morning. In the rural areas it's hard to get a meal or gasoline over the weekend. I was saved by some leftover sandwiches and Chinese Gooseberries the Picks had supplied up in Hamilton. By the way, these tropical Chinese Gooseberries are a mighty fine fruit, and no relation or resemblance to ours. The fruits are about 3 inches long and 1 inch in diameter. The brown velvety outside appearance is not attractive. The fruits are rich in flavor and somewhat like a banana but more delicious. They are used fresh and in salads, also pickles, cakes and pies. They are grown on vigorous vines trained on high trellises and are dioecious, and proper proportion of male and female plants must be provided.

Spent Monday morning with the executives of the Federation and flew over to Nelson on the north tip of the South Island in the afternoon. Sid Riach, the local manager, drove me to several orchards and we wound up in the local Pub at 5 o'clock where I met quite a few more growers. This 5 o'clock pub time seems to be an old N. Z. custom and all the beer consumption ceases at 6 P.M. according to law. Tried to get this changed but the women got together and voted down the line to get the boys home shortly after 6. Many of the pubs are located out in the country away from the towns. Beer is delivered in huge tank trucks like we use for gasoline and pumped directly into tanks in the basement. It's dispensed at the bar through a garden size rubber hose.

The Nelson district has smaller trees than at Hastings and production per acre seemed to be considerably less. There is no irrigation here. Due to an unusual combination of climate, Lemons, Apples and Peaches seem to thrive side by side. Apparently they have enough cool weather to break the deciduous rest period but never have sufficient below freezing cold to injure the citrus. Quite a few trees had been worked over to Golden Delicious for the export market in England. Cox and Jons were the most important apples.

Bulk handling is in general practice here and fruit is trucked to the shipping point as there are no railroad facilities in the Nelson area, so I was told by the truckers, that is. Visited Frank Archer, the president of the Fruit Growers' Federation, a successful grower, looked over his orchard and saw packing house he was building at his second orchard rather than enlarge his home ranch facilities.

Central Otago is in an inland district in the south of the South Island. It is reached via Dunedin on the coast. The area resembles our Yakima, Wash. and is under irrigation. Cots, Cherries and Peaches are grown here in substantial quantity as well as Apples. Delicious doquite well here along with Cox, Sturmer and Granny Smiths. Most of the fruit from this area finds a home in N. Z. and is about the only volume stone fruit area in the Dominion. Cherries must be grown here under enclosures and one grower, Mr. Len Jackson, had over 5 acres under wire. Apricot trees are much smaller and lower headed than in the States and the Spy stocked apple trees are Helling VII size. Fine orchard of Mr. R. J. Hainsworth, a grower-director of the Federation. Real interesting and both Alexandre and Roxburgh, the

leading fruit communities of the Otago. They have just dammed the Clutha river to provide a terrific addition to their hydroelectric capacity.

The Marsh Bros. Strawberry planting was the best I saw in the south seas. The California varieties looked very poor here, but the British Talisman looked good and in spite of heavy rains during harvest they marketed over 10 tons per acre with a good quantity being air freighted to the North Island cities for sale at very fancy prices. Arranged to send Jack Marsh a selection of our strawberry varieties for trial--this has been planned for December planting. All berries in their second year were grown under a straw mulch. This area had been quite a gold mining center and in the early days had quite the same pattern as our west coast mining communities. The New Zealand Alps are just west of Alexandre but I stayed in the orchards and ate strawberries and sweet cherries in mid-December.

Flew back up to Christchurch on the Canterbury Plains. Few apple orchards here and mighty close to town with subdivision for city lots coming up soon. Had pleasant visit with H. R. Sampson of the Federation who saw the Stark Bear on my briefcase as he went to pick up his nephew who was coming in from Melbourne. Had tea with the Sampson family--by now I was averaging a half gallon of tea per day starting as early as five A.M. The New Zealanders are kind, generous and hospitable folks and I can never repay them for the pleasant time spent with them.

NEW ZEALAND: DECIDUOUS FRUIT REPORT.

<u>PRODUCTION</u>				
<u>Kind</u>	<u>Unit</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>
Apples	Bushels	3,620,000	3,363,000	3,744,000
Pears	Cases	602,000	550,000	619,000
Peaches	Bushels	610,000	585,000	687,000
Apricots	"	176,000	180,000	160,000
Plums	"	157,000	185,000	218,000
Nectarines	"	43,000	49,000	52,000
Cherries	"	18,000	14,000	17,000

The flight from Christchurch to Sydney was accomplished nonstop in about 4 hours via DC 6. Had an interesting visit with an Englishman who still lives in Bombay and operates large land holdings. His account of the Englishman's present existence there was quite enlightening.

Sydney's a rapidly developing cosmopolitan city like our Los Angeles. Looks like lots of the central European immigrants imported for farms are drifting back in here. Huge industrial development between the airport and downtown as well as throughout the metropolitan district. Dr. F. T. Bowman of the Department of Agriculture who, along with Ted Whittaker and E. Eastman, lined me out for visits to fruit farms in New South Wales. Ted took me through the metropolitan district where early peaches and apples are grown in a limited way. Saw (in the rain) the big Harry Hazelwood Nurseries--mostly ornamentals--Bill Flammer of Princeton had preceded me. Bill Richardson runs a rose nursery nearby in Kelleyville and produces some of the finest rose plants I've seen anywhere. He was about to be hauled into court for using too much of Sydney's scarce water for irrigation to save his crop. (A few days later it started to rain and just about washed the whole east side of N.S.W. out to sea according to letters from Bill). Had one of my best meals in their most attractive home in Warcombah across Sydney bridge east. The Australians are the only people I have encountered anywhere that can eat more and faster than "yours truly". The rose growers of the Sydney area have run into a

serious virus disease that is apparently carried in the stock. The department was getting on it fast and some selections of the rootstocks seem to carry resistance. The disease is fatal and shows up when the young buds start out in the growing season following budding. The stock are apparently asymptomatic carriers and some varieties are immune.

Some early apples are produced in the Sydney metropolitan district as are early peaches. Harvest was under way on both in late December. Lunch with E. Salisbury, Castle Hill Road, West Pennant Hills, near Sydney. Rained us out in the orchard but had a good chance to talk varieties. These folks interested in increasing their nectarine acreage.

Flew from Sydney up to Bathurst to see rootstock trials, etc. at the State Experiment Station. Jim Holbeache explained the work in progress at the Station. *Pyrus calleryana* looked mighty good especially for the favored *Packham Triumph* variety. The D6 selection seemed to be the favored clonal selection and I've arranged to get some for trials here. *Packham* was discovered near here and is the favorite of all Australian pear growers and eaters. The trees in this area are about all on *Spy* stock and are medium in size. Peaches seem to predominate in horticultural crops of this area with pears and apples in second and third place respectively. J. H. Hales grow to perfection here and seem to appreciate the relatively dry climate. The area is only partially irrigated and when I was on the premises it was drier than Oklahoma in 1936. The pastures were completely gone and were in shape for Hobbs Hickman's treatment—"disc to turn the roots so the cows and sheep can start eating from the other end." I learned from Ted Whittaker and others that later on they did get rain and finished out a quality and profitable crop.. Bathurst and Orange areas reminded me of the rolling hills on the western slopes of the Ozarks of eastern Oklahoma. Most growers were clean cultivating their orchards and some were terraced. Water mostly comes from catchment basins like we are using in Pike County, Missouri where subterranean water is limited to a slow flow from deep wells.

Orange is about 35 miles west of Bathurst and about 1000 ft. higher. Picked up Bill Pascoe here and visited some fine orchards, all of medium sized and efficient productive trees. Even their cherries are kept down in size by constant cutting to outward growing laterals (something I've been advocating and practiced here for some time). We need a good dwarfing cherry stock and may have it in *Prunus fruticosa* or *Stockton Morello* (we are now getting virus free strains of the latter). I've had some degree of success by frameworking onto pie cherry and Mahaleb frameworks. I often recall how the pickers would flock to these California Dwarf Cherry Orchards when I worked out of Davis in the upper Sacramento valley of California. Here at Orange some of the new cherries developed by Dr. Bowman are on trial -- some are showing crack resistance along with good size, color and quality. The standard variety of the area seems to be St. Margaret, a medium sized, fairly firm black. Rona seedling is one of the best in its season and will cross pollinate St. Margaret - bears big crops and carries fair resistance to cracking.

Rival is an open pollinated seedling of St. Margaret that has large size, good quality and is much more resistant to cracking than Early Lyons (guess this is same as Geneva's Lyons).

Regina, so named because the selection proved itself at the time of the Queen's visit to Australia, is a St. Margaret-Black Eagle cross and ripens in Rival season. It is large sized, excellent sweet flavor and crack resistant. Trees are prolific bearers.

Ransom's an open pollinated seedling of St. Margaret. Resembles St. Margaret but several days earlier. Fruit is large and more resistant to splitting than the parent variety - not quite as solid or as highly flavored.

Orange has a substantial acreage of Stark Delicious Apples and Bill Pascoe tells me they don't need the color mutations as there are plenty of red ones on the standard original variety. However both Bill and Mr. Symons of the Orange Rural Producer's Coop were interested in the work we are doing on color selection. Other favored varieties are Jonathan and Granny Smith, a late ripening green apple with excellent keeping ability and fine flavor.

Other fruit areas of note in New South Wales are Batlow-apples and pears-Ted P. E. Cook, Batlow Packing House Coop.--Griffith Leet on (Murrumbidgee Irrigation Area) H. Williams, Manager Leeton Coop Cannery Apples and canning fruits- Young 150 miles from Orange southwest.

Melbourne, Victoria is a city of well over a million people and the building is gradually encroaching out into the substantial metropolitan fruit district. They have a deal that agricultural land taxes can be held in line to protect growers and help them resist subdividing for housing. Soil is heavy and must be tile drained. To me Melbourne is the San Francisco of Australia without the fog but a similar climate with somewhat more and better distributed rainfall. Growers irrigate from city water and catchment basins. Blue Moon Coop. at Doncaster supplied my guide and transport to the orchards in this area and Mr. Boardman of the Australiana Fruit World (like our American Fruit Grower) took me to the Brunning Nurseries at Somerville where I met Bill Brunning and made an all too fast inspection of his stock (grown on sandy soils in the Tyabb district). Missed Frank Moore of the Blue Moon Coop. also Rus Tally (later had the pleasure of a visit with him here in Missouri). Trees in the Melbourne area are small and about the size of Malling VII. Pears also relatively small. At the Roberts orchard I saw some Jonathan trees 30 years old that had 10 to 12 inch trunks and tops only 8 to 9 ft. high.

The apple mosaic virus seems to be quite prevalent especially in the Jonathan variety (Spy Stox are symptomless carriers). The red sport of Jonathan seems to be completely infected, maybe even the parent limb. Australian growers don't seem to be too concerned as some Jonathan trees had up to 25% defoliation and even more chlorosis. Losing this much "foliar horsepower" certainly must have some deleterious effect on the tree fruit production. Well, anyway, we don't want it here. Was interested in the novel method of propping in the Lawford orchard where a may pole is set in the center of the trees and wires radiate out from it to the leaders which ran up to 15 in number.

Shepparton's in the Goulburn valley 125 to 150 miles northeast of Melbourne in Victoria. Arthur Perry is the pear man of the area and operates a big modern packing plant and cold store. He grows no fruit himself but buys from growers for export. This area resembles the interior valleys of California and grows peaches and pears for canning and export. The Granny Smith apple variety seems to be doing fairly well here but other varieties of apples are marginal at best. Packham and Bartlett are the leading pear varieties and I was interested in the set in the Roberts orchards where saturation pollination was available for Packham. Generally the set on Packham this year was light but Roberts had the topworked limbs set like grapes. I recall that Josephine or Winter Cole was doing the job--will check with Roberts. C. G. Turnbull of nearby Ardsena had just returned from a visit to the U. S., sorry we missed him here -- has a fine orchard of pears and markets through Blue Moon in Doncaster. The large modern canning factory is comparable to the best we have here. Their tonnage of cling peaches is way down due to heavy tree loss last year when it was a "wet fest" problem. Thousands of trees were killed. Apricots on Myrobalan seem to have taken this condition better than the peach and cot roots.

Mr. H. R. Black and his associate, Mr. Bailey, took me to the Bacchus Marsh area which is quite some distance from Melbourne west on the way to Ballarat. I was quite favorably impressed with the fine fruit farms of the Durham Brothers. Their orchards were irrigated and apparently had more and cheaper water than the growers in the regular metropolitan district to the east of Melbourne. This was one of the outstanding orchards I saw on the whole trip on the mainland of Australia. Trees were uniform, medium sized and productive. He was getting up to 2,000 boxes to the acre. Most of the work on these trees could be handled from the ground (on Spy stock I think), some short ladder work on Granny Smiths which are more upright in growth habit. It would truly be enjoyable to work an orchard of this kind and size, and the Durhams are to be congratulated on this excellent piece of horticulture.

<u>1957-58</u>	<u>Fresh</u>	<u>For Canning</u>	<u>For Drying</u>	<u>Total</u>
Apples	13,555,000	800,000	300,000	14,655,000
Apricots	351,000	694,000	217,000	1,262,000
Peaches	292,000	2,146,000	194,000	2,632,000
Pears	1,935,000	2,713,000	27,000	4,675,000

Landed in Hobart on the southeast coast of Tasmania, Australia's Apple Isle, on Christmas Eve. Frank Walker, Chief in Horticulture in the Department of Agriculture, came by the hotel to invite me for Christmas dinner with his family. This was most appreciated by an old stray appleknocker a long way from home. (Xmas Eve with Doug Jones of W. D. Peacock Co.). Turkey's scarce in Tasmania and geese is the order of the day on this occasion. Frank's #VI in a long line of Frank Walkers in horticulture and his teen age son's Frank #VII. The Walker family operate one of the leading fruit nurseries at Launceston on the north side of the Island, and selected and introduced the Lalla, an early coloring mutation of Delicious (very similar to Starking). Frank has studied and worked in the Wenatchee valley of Washington State, England and South Africa. His chief project at present is the adapting of bulk handling to the orchards and packing plants of Tasmania. (Frank's steel mesh bins used in bulk loading of tray cartons of fresh apples for export show definite possibilities as a collapsible unit for the bulk handling of fruit trees). Lined with polyethelene, they might be more durable than the collapsible wirebounds. Elder is building some now. (Better knock down ratio on wire bins). The Tasmanian climate is about as perfect as one can find anywhere and is cooler than the mainland. Its scenic beauty is unexcelled and is an important tourist attraction. Mr. Grattan Donnelly of the H. Jones and Co. took me to the Derwent valley orchard north and west of Hobart Christmas afternoon. Warners orchard at New Norfolk looked good. Lots of hope in the Derwent valley on some of the most productive soil in the world. Still haven't figured the deal on the setup on H. Jones and Co. and the W. D. Peacock Company. Both companies handle and export a lot of fruit. Jones has substantial acreage of fruit including apricots and process the famous IXL jams and other fruit products. Doug Jones runs the Peacock Company and Mr. Peacock runs the Jones Company -- too complicated for me. Another substantial fruit processor in the Hobart area is the Port Huon Coop, Mr. H. C. Sargent, manager. (Frank Cole's field man for the organization). Day after Christmas Frank Walker and son took me to the famous Huon valley which is heavily planted to apples. Was surprised to see the necessity for tile drainage in part of the area. Saw the Rex Oates Nurseries where yearling buds were making good growth. Rex has some fine bearing acreage also--his 8 year old Leganas averaged 8 bushels which is real production when you consider the hard pruning that is practiced in Tasmania. Most of the trees in the Huon are on seedling roots (stumpers, Fameuse, etc.) yet they were being held to size of a Malling VII by heavy pruning to well spurred multi-leaders.

T. A. Francomb's the pioneer Golden Delicious grower and has a beautiful block of this variety which finds a profitable market in England where they increase in popularity every season. Tom's Golden trees are a little taller than some of the others I've seen here and his pruning modified to where the fruit is borne on short hangers instead of close to the leaders on tight spurs. Fruit seems to be better formed when borne in this way. Basically his trees are multi-leadered, open vase shaped. Tom's having trouble with some of his Golden's showing funnel shaped depressions something like apple redbug damage here in the States. Thinks it might be a virus. Have anything on this, Dan and Harry? Seems to be worse on some trees. The Francomb orchards have an excellent cold store and do their own packing-were getting ready to switch over to bulk bins-about 40 bu. capacity.

On the way back to Hobart we looked over some of the Tasmanian raspberry plantations. No support is used, instead the canes are braided into 4 braids per hill and the crop takes them over in an outward direction allowing the new replacement canes to come up in the middle to carry next season's crop. Berries grow to perfection in the uplands where irrigation is unnecessary. (Misty climate of Scotland).

Tasmanian Apple Production

Variety	Potential Productions (bushels).	Percentage Total Production.
Sturmer Pippin	1,300,000	20.0
Jonathan	1,000,000	15.3
REDJOHN	300,000	4.7
DEMOCRAT	900,000	13.8
Cleopatra	700,000	10.7
Granny Smith	700,000	10.7
RED DELICIOUS	300,000	4.6
Delicious	50,000	0.8
CROFTON	220,000	3.3
TASMAN PRIDE	220,000	3.3
Scarlet Pearmain	170,000	2.6
Cox's Orange Pippin	150,000	2.3
GREVESTON FANNY	150,000	2.3
Worcester Pearmain	70,000	1.0
Total	6,230,000	95.4
Other Varieties	300,000	4.6
<hr/>		
Total Production	6,530,000	100.0
<hr/>		
Tasmanian Varieties	1,490,000	22.8
Tasmanian Red Sports	600,000	9.2
Total Tasmanian Sele- ctions	2,090,000	32.0

NOTE: Tasmanian varieties are indicated in this Table in capital letters.

Brisbane's the capital of Queensland and Stanthorp 125 miles southwest in the Granite Belt is the leading apple area. The growers were having troubles because of the extended drought in this Granite Area. Most trees were on Spy stock and very small. Production has been relatively low in this area, but is rapidly being

overcome by the selection of more vigorous stocks by Len Thomas of the CSIRO station at Applethorpe. Len's working with the Malling and MN vigorous selections and substantial increase per acre yields can be expected by the growers. Bruno Zanetta of the Biltmore Orchards has developed several catchment basins for water storage and his orchard showed the benefit of the supplemental water. He has some nice young plantings coming into production.

Henry Franklin of Posieres in the Granite Belt is a nurseryman, fruit grower and the "Burbank" of South Queensland. Some of his new early peaches and apples look quite promising and will be imported for trial here in the States. We've supplied him with some of our short chiller peaches which he has crossed with the Australian "Peen-to" flat types. Met my first Kangaroos, Wallabys, Wallaroos and Koala bears on the way back to Brisbane.

Flew north to the Tropics and Bundaberg to see the Tropical Beauty apple that is being developed by the Langbecker Nurseries for planting in those areas that can not grow our regular varieties because of lack of winter chilling. The original tree had a fair crop -- some apples large while others quite small, indicating a long blossom period. Trees in the test planting and in the nursery were doing well. Langbeckers had already propagated several thousand of them and were selling them like hot cakes at £ 3/3/- or \$7.11 each to such tropical climes as New Guinea and North Queensland.

Langbeckers have a fine nursery mostly growing tropical trees - citrus avocados. They also grow a substantial number of roses and have a fine variety evaluation program - had all the latest varieties under test including Cordes Perfecta before it was introduced here in the States. Were selling buds at about 15¢ each to other nurserymen. The Langbecker catalogue is comparable to some of our better mail order houses and has lots of color on the rose pages. Mangoes grow to perfection from here north and I enjoyed some of the best fruits I've tasted anywhere and they're big, too, - 3" by 6" to 8" long. They keep well and I carried a box along with me during the rest of my travels in Australia.

South Australia has quite an acreage in fruit in the hills east of Adelaide. Ken Caldicott, President of the Apple and Pear Growers, of Lenswood, visited us here this summer - produces apples and sweet cherries. He has a new red sport of Statesman which carries good size, color and quality, and ripens with Rome Beauty. This looks like the best apple yet to wind up the season. We have imported scions into post entry quarantine at Glenn Dale. South Australia, along with Mildura, Victoria, is the vineyard of the British Commonwealth and produces fine wines in quantity for both domestic and overseas markets.

Other important fruit areas are located in Western Australia in the Bridgeton district. It's interesting to note the effect of insect quarantines in an isolated area like this. They have completely eliminated codling moth by a saturation spray program and the quarantining of susceptible crops from the area. All home fruit planters must have the trees registered and must care for them or out they come by the axe of the Department of Agriculture.

Marketing in Australia is quite different from New Zealand and each grower decides whether he will market domestically or export. Export licenses are granted by the Australian Apple and Pear Board, and it is my understanding that they control the price in that no license will be granted for fruit sold at a price lower than that set by the Board as the minimum. They try to regulate the number of boxes of fruit exported to avoid surpluses piling up at the overseas markets. The mainland of Australia enjoys a good market in the ever growing cities for a substantial

part of the crop. It's Tasmania that is more concerned with the export of a heavy portion of their fruit. All export fruit must meet certain standards and is inspected at dockside before being loaded. There is a multiplicity of labels and brands to further complicate the marketing of the crop. These are just casual observations and to me it looked the one label New Zealand method was better especially for an area so far away from the market. Hoped to have more time with Mr. W. F. Broadhurst who was carrying on since the death of Mr. J. B. Mills, chairman, to learn more of the operation of the Board.

Economics of Fruit Industry in the South Seas

A big part of the tonnage of the fruit in Australia and New Zealand is dependent on export in a reverse season of the Southern Hemisphere. It looks to me that they are growing and packing fruit cheaper than we can here in the United States and Canada. The reasons for this will be dealt with shortly. The marketing problem will come in the future with the development of a great deciduous fruit area in South Africa, Argentina, and Chile. These countries have a much shorter haul to Northern Hemisphere markets and labor cost is probably less than half. Australians have overcome a part of this differential by greater efficiency of the trees and mechanization of harvesting and packing operations.

All Southern Hemisphere apple countries that carried a crop of fruit came out with a successful season this year due to light crops in England and Continental Europe following disastrous 1958 spring freezes in that area. There were some gluts of the pear market due to the London dock strike. Last year New Zealand ran clear out of apples and imported Nova Scotia McIntosh. These were prominently displayed in all the stores. The egg cell type cartons carried well and fruit I purchased was of good quality and condition. Another development that will influence future markets is the increased production in Europe and England and the construction of modified atmosphere cold storage facilities to lengthen the storage life of fruit from their orchards.

Tree Size. One of the great factors in the efficiency of the South Seas fruit production is the size of the trees. Many are grown on Northern Spy stock which gives a tree about the size of Malling VII. Pears are best on the Calleryana D 6 and some on Kieffer. They have some "hard end" on Kieffer but practically none on Calleryana.

Most trees even on seedling stock were held to manageable sizes by rather heavy pruning. This delays production but keeps the bearing surface close to the ground and evenly distributed throughout the trees. Tasmanian trees were on Sturmer seedling roots with some other varieties -- very few on dwarfing stocks. Spacing was on a 16 foot basis in many plantings and with hard pruning the trees were kept to this area. There were some larger trees like Tom Francomb's Golden Delicious on very strong soil and with a modified pruning program. Since women do a good part of the picking and other orchard work, this smaller tree is of great importance. Growers tell me that their profits slip through the ladder rungs as they go up each step. The trees are efficient and grow a high volume for the cubic space they occupy. The per acre production is less than in our better west coast districts with the exception of blocks like the Durham Brothers in Victoria and Frankcombs in Tasmania -- plus some in Hastings. These highest producing orchards which are on the finest soil and have unlimited irrigation water, confirm the productive capacity of semi-dwarf trees when they are well cared for and in the proper soils and climate.

Pruning. The Australians and New Zealanders start their young trees alike and head the young leaders to five or six, maybe more, leaders by the end of the second growing season. Here the similarity ceases and the New Zealanders take the five or six leaders up and build fruiting arms on the upright leaders, one big relatively low with smaller arms up to the established top of the scaffolds. A modified type of spur pruning is then practiced on the fruiting arms.

The Australians continue the heading of the leaders until they have from twelve to fifteen uprights. Then establish a well distributed spur system that literally covers each leader from top to bottom. This is not too different from some of the pruning of some Delicious in the Sebastopol, California area. Some Tasmanian growers as well as others on the Continent are changing over to a less drastic type of pruning which hastens fruit production and gives better balanced form to the fruits. They set up the same system of leaders but allow the spurs to develop into hangers with several fruiting spurs on each. Saw very few props except the maypoles and some wired leaders in New Zealand. I think that a similar type of pruning will adapt to our new spur trees, Starkrimson and the Mance Winesap. Main difference will be that we will not have to cut as hard or do so much detailed pruning since we get our heavy spurring naturally. As the new spur type trees come into maturity, very little pruning seems necessary with the exception of some thinning of the older weak wood.

My way through the orchards of New Zealand and Australia was paved by several who had preceded me. Dr. James Marshall of Summerland, B. C. Canada, and Ben Perkins of Yakima gave me locations of orchard areas, the men to see and other valuable information. Ted Cook of the Batlow, N. S. W. Co-Op. fixed up a schedule for me when he attended the Wenatchee Horticultural Meeting.

The New Zealand Federation, Apple and Pear Boards, and in both countries the state and commonwealth government fruit officers were most cooperative and helpful. I thoroughly enjoyed visiting with the fine folks who grow the fruit in this part of the Southern Hemisphere. The exchange of information I hope was mutually valuable. Every one I visited certainly was most generous of their time and hospitality. My only regret was the rather hurried itinerary.

Paul Stark, Jr.

ESCUELA AGRICOLA PANAMERICANA

Antigua, Guatemala, 9 March 1961

APARTADO 93

TEGUICIGALPA, HONDURAS
CENTRO AMERICA

Mr Paul Stark Jr.,
Stark Bro's Nurseries and Orchards Co
Louisiana, Missouri, USA.

Dear Mr Stark:

Going back to your letter of 27 October last, in which you kindly offered to send a few scions of the Tropical Beauty apple for trial in Guatemala, I wish to advise that the Instituto Agropecuario Nacional (dependency of the Ministry of Agricultura) now has a fine batch of Malling rootstocks from Oregon in condition for grafting. The man in charge of this work, Sr Jorge Benitez, who has been associated with me for 35 years, is probably the best nurseryman in Central America, and if you send him scions I feel sure he will have a good chance to make them grow, and this is a good season for grafting down here. I assume it is not too late to cut scions in Missouri. We do not need any documentation except the usual plant quarantine certificate from the States, but the scions should be sent by air mail addressed to Jorge M. Benitez, Instituto Agropecuario Nacional, La Aurora, Guatemala City, Guatemala, so as to facilitate getting them out of customs promptly. We shall greatly appreciate have perhaps 10 scions of this apple to get a start.

The way things stand down here is just about as follows: Based on experience to date we are recommending Winter Banana apple (so far the most successful variety here so far as production is concerned), Delicious and Yellow Delicious; and one or two others. We are somewhat in the dark about pears; there are several good ones here but the varietal names have been lost; we think one is Seckel and are recommending that until we know more about others. We have Kieffer here but as you know better than we do, the quality is pretty poor (Read what the great Hedrick had to say about that!). Plums are perhaps our best bet here, not requiring as much cold apples (but only varieties with Japanese blood); we are recommending Santa Rosa, the most important variety here today, Satsuma, very successful above 5000 feet, Kelsey and Wickson and a variety from Ecuador which they call down there Reina Claudia but which we are sure is not a Reine Claude at all but a yellow variety of salicina blood. Peaches are still a problem; we thought we had the game licked when we brought in the varieties from Florida with Honey or Peen-to blood, Jewel, Angel and Waldo. They do beautifully even as low as 3000 feet but people here say they are dry, mealy and have no flavor. They like the hard clingstones which have been grown here as seedlings for two or three centuries and I believe our best bet now is to select out some good ones and propagate them by grafting - nothing but seedlings here now. For grapes, we can rely on no viniferas but Isabella is a great success; Niagara pretty good; Golden Muscat a little more susceptible to disease but people like it better because it tastes more like a vinifera.

Will you be good enough to send me two copies of your catalog, one for myself and one for señor Benitez? Thanks.

Sincerely,

Wilson Popence

Stark Bro's Nurseries & Orchards Co.

(ESTABLISHED 1816)

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Burbank Central
Experiment Grounds
General Offices &
Home Nurseries
Louisiana Missouri

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OFFICES & HOME NURSERIES

Louisiana, Missouri.

July 23, 1963

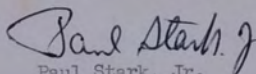
Dr. Wilson Popenoe
Antigua
Guatemala, Central America

Dear Dr. Popenoe:

Thank you very much for sending your interesting paper on "Temperate Zone Fruits in the Central American Highlands." Would it be possible to get two more copies for some of our fruit farming friends in marginal areas? I would loan them this one copy but it might not come back.

Again thanks for this interesting information, and with kindest regards and best wishes, I remain

Very sincerely,



Paul Stark, Jr.
STARK BRO'S NURSERIES

FSjr:vm

Antigua, Guatemala, 6 August 1963

Mr Paul Stark Jr.
Louisiana, Missouri.

Dear Mr Stark:

Your note of the 23rd of July arrived a few days ago, and I take pleasure in sending you herewith five copies of the paper on temperate zone fruits in Central America.

Benitez and I are right now at work on apples and pears, which are in season, and we have in recent weeks overhauled the plums. We plan to get out another paper in the autumn, which will have more definite recommendations regarding varieties than it was possible for us to give in this last one. I plan also to prepare a note for the little journal of the Am Pom Soc, which I will send to George Kessler in October or November.

On the basis of this season's work, we shall line up the most promising varieties somewhat as follows:

APPLES: Winter Banana almost certainly has the lowest chilling requirement and therefore will probably continue to be important, though for shipping it perhaps is not too satisfactory. As desert apples, of those which show promise here, we think Gravenstein, Red Delicious, Jonathan and one or two others will be safe above the 7000 foot level. Golden Delicious we do not think we can push, for a reason which may surprise you: our people insist on an apple with red color - and not an apple, but other fruits as well, e.g., plums.

PEARS. For the lower elevations, 5000 to 6500 feet, only varieties with Japanese blood. We shall probably recommend, in about the order named, Baldwin, Kieffer, and Pineapple. The latter doesn't taste like a pear, but it is a strong grower, productive, and of fair dessert quality when properly ripened. For the higher elevations, 7000 to 8500 feet, the really fine pears have, in our opinion, a great future, and many of them do well; it is only a question of picking out the best ones. We are strong for Beurre Bosc and Beurre d'Anjou. Rather strangely, Bartlett doesn't seem to have succeeded here even at the higher elevations. It needs more study. The real problem here is to get rid of the two very poor varieties which now constitute about 90 of the pear crop, and secondly, to teach people not to let pears ripen on the tree. They end up with brown core breakdown and poor flavor. We have been making some tests and the fine European pears are delicious when picked at the proper time.

PLUMS. We have this job licked. You can just take George Roeding's catalog and check all the varieties marked "Japanese" with confidence, if you live above 6000 feet. Of course, some are better than others: we are strong for Santa Rosa, Satsuma, Burbank and Kelsey, based on local experience; we are not going to recommend the so-called Reina Claudia of Ecuador because it is a yellow plum (see above). Some other varieties will come into the picture before long - perhaps Methley will be one.

So far as plums are concerned, the local market is already over-supplied. Santa Rosas are shipped to Salvador and in time may go even farther, just as apples are shipped today; trucks come clear up from Costa Rica to load Winter Banana at Quezaltenango and tote them back to San José where they sell for as much as 40 cents a pound. Here they sell for 10 to 15 cents.

PEACHES. The situation remains just about as we described it in our paper which is enclosed, but we will have, in another two or three years, a lot of information on the newer varieties of low chilling requirement from California and Florida. Earlgold from Armstrong bore magnificent crops at Quezaltenango this year, but the fruit, to us, lacks the high flavor of peaches with Honey blood. We have Flordawon and Floridaqueen under trial and feel hopeful. We have seen a few fruits of the older Florida varieties, principally Jewel we believe, on the market this year; perfectly delicious but they can't stand the rough handling they get here.

We are still impressed by the large, handsome "canning clings" which are not uncommon here. As big as any of the clings produced for canning in California, but I am afraid in general not quite as good in flavor. But they thrive here, which the standard sorts from California do not. This Spanish race of peaches is built for climates with mild winters, beyond a doubt.

With the data we will have available in a few months now, what do you think of offering thru your catalog a special set of temperate zone fruits for tropical America? I don't know how much business you have done this way. I have been working with George Roeding to get more attention to the best fruit varieties for the tropics. As you know, he gets out a catalog in Spanish and I assume does a lot of business down this way. His prices are not as high as those of some other nurserymen, and he knows how to pack and ship. This past year we have built up a profitable contact with Bountiful Ridge. They are propagating this season more than ten hybrid crabs for us. We feel sure one or more of these will push the zone of fairly good apples down to 4000 feet. We are especially interested, and have under trial at present, Wealthy, Whitney, and Chestnut.

Many months ago you sent me scions of the Tropical Beauty apple. I was in Florida at the time - in the hospital as a matter of fact, - and my gardener did not know what to do with them so when I finally returned to Antigua I found them hopeless. It was good of you to send them and I thank you. I believe my nephew John Popenoe got material from you and it is on trial at the Homestead Station in Florida. I may get material from him next year. Incidentally, John has just left Homestead to tackle the job of Director of the Fairchild Tropical Garden, but like his uncle he is not going to let anything kill his interest in tropical fruit growing and he will maintain close contact with Homestead where there is a fine lot of interesting material on trial, including peaches from Saharanpur, India, which strike me as being very good.

With best regards,

Sincerely,

Wilson Popenoe

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- Dwarf Fruit Trees
- Shade Trees
- Shrubs
- Berries
- Vines
- Hedges
- Roses

Where Stark Trees and Plants are Grown NORTH-SOUTH-EAST-WEST

Dansville, N. Y. Checotah, Okla.
Atlas, Ill. Porum, Okla.
Marionville, Mo. Phoenix, Ariz.
Farmington, Ark. Yakima, Wash.
 Gustine, Calif.

OFFICES & HOME NURSERIES

Louisiana, Missouri.

August 20, 1963

Dr. Wilson Popenoe
Antigua
Guatemala, Central America

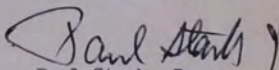
Dear Dr. Popenoe:

Many thanks for the extra copies of your paper, along with the very interesting information contained in your letter of 6 August, 1963.

We have never done much business in Guatemala or any other Central American countries, except limited numbers of trees mostly for trial plantings. In recent years we have also given up the propagation of Winter Banana and maybe we should reconsider this as we had a beautiful red blushed strain that might fit into the picture down there in the future. We also have something that might be of interest in our Tropical Beauty, although this apple leaves a lot to be desired in the way of quality and other characteristics. By the way, if John Popenoe can't supply you wood of this selection, please let me know and we will Air Parcel Post some budwood when you have stocks ready for it.

Thanks again for the wonderful information which you have so generously supplied, and with kindest regards and best wishes, I remain

Very sincerely,



Paul Stark, Jr.
STARK BRO'S NURSERIES

PSjr:vm

Stark Bro's Nurseries & Orchards Co.

(ESTABLISHED 1816)

General Nurserymen

Burbank Central
Experiment Grounds
General Offices &
Home Nurseries
Louisiana Missouri

Specialists in Growing

- Fruit Trees
- Dwarf Fruit Trees
- Shade Trees
- Shrubs
- Berries
- Vines
- Hedges
- Roses

Where Stark Trees and Plants are Grown
NORTH-SOUTH-EAST-WEST

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	Gustine, Calif.

OFFICES & HOME NURSERIES

Louisiana, Missouri.

October 10, 1963

Dr. Wilson Popenoe
Antigua
Guatemala, Central America

Dear Dr. Popenoe:

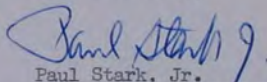
We have again exhausted our supply of your bulletin on deciduous fruits in Central America, and would appreciate another half dozen reprints at your convenience. We continue to have a very active interest on the part of several Hawaiians who want to at least try some of the low chilling apple varieties as well as Japanese plums. We plan to set a pilot planting this coming January and the fine information you have given us in your letters and the bulletin have been most helpful in setting up this program.

I have been on the West Coast for an extended trip through the fruit areas and just as soon as I get caught up on the enormous correspondence that has backed up on me, I will be writing you more in detail regarding several matters covered in your most recent letter.

We continue to have a hot and very dry autumn with no rain in sight. Fortunately we are able to irrigate a substantial part of our acreage here and in Illinois. Due to the government soil bank program, it was most difficult to rent satisfactory ground near water in Oklahoma and down there we were only able to irrigate about 40% of the field, which resulted in some rather disastrous results in a year when fruit trees are at a premium and very much in demand.

Hope all continues to go well with you, and with kindest regards and best wishes, I remain

Very sincerely,


Paul Stark, Jr.
STARK BRO'S NURSERIES

PSjr:vm
Enc.

c.c. Dr. John Popenoe
Sub-Tropical Experiment Station
Route 1, Box 560
Homestead, Florida

Stark Bro's Nurseries & Orchards Co.

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Farmington, Ark.	McFarland, Calif.
Checotah, Okla.	Yakima, Wash.

OFFICES & HOME NURSERIES

Louisiana, Missouri.

January 7, 1964

Dr. Wilson Popenoe
Antigua
Guatemala, Central America

Dear Dr. Popenoe:

Two or three weeks ago you sent us a mimeographed copy of more information on the evaluation of fruit varieties for sub-tropical conditions. This material was inadvertently sent to one of our customers needing this information. We should have made a copy of same and kept the original for our file.

Would it be possible for you to send us another copy of this information? We are not referring to your bulletin but just the mimeographed sheets.

With kindest regards and best wishes, I remain

Very sincerely,

Paul Stark, Jr.
Paul Stark, Jr. F.R.S.
STARK BRO'S NURSERIES

PSjr:vm

Stark Bro's Nurseries & Orchards Co.

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OFFICES & HOME NURSERIES

Louisiana, Missouri 63353

Dr. Wilson Popenoe
Antigua
Guatemala, Central America

November 5, 1964

Dear Dr. Popenoe:

Just a quick note to enclose a letter I received from Dave Kilpatrick in South Australia. This is a rather revolting situation, especially in light of the Woolly Aphis problem in your part of Central America as well as the Highlands, and in our Gulf States ~~where~~ rapidly becoming interested in growing apples. Anyway, be that as it may, I know that we have the chemicals to control Woolly Aphis, provided saturation coverage is given at the proper time.

I don't believe you ever mentioned whether you were able to get scionwood of the Tropical Beauty apple from your nephew, John Popenoe in Florida. If not, advise and we will forward scions from here in time for early spring grafting. We had a nice crop of Tropical Beauty apples this year and even though the variety wasn't as attractive as some of our commercial sorts, it still is quite acceptable and deserves further consideration for areas where other apples do not perform well due to the lack of winter chilling.

The exact origin of this variety is somewhat uncertain. We picked it up from Langbeckers in Queensland, Australia when I was over there in 1957. On the other hand, I saw trees of this variety in our licensee nursery near Johannesburg last winter and from all evidence the variety actually originated somewhere in South Africa.

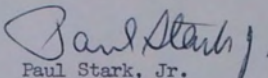
The Gerber Products Company is getting ready to establish quite a production program for deciduous fruits in some of the higher elevations around Mexico City. Since we supply a lot of their trees, we are interested in working with them on this project. They plan to propagate some of the Spanish race canning cling peaches which you mention as being similar to the California types. Is there any way we could get budwood in time to put in some dormant buds in April or May for our climate. We have ample seedlings carried over and adequate cold facilities to hold the wood until the proper time for successful propagation. Are these all seedlings or have certain selections been made from them?

In apples, they are quite interested in growing Golden Delicious which is a premium processing variety but need a good source of pollination. I have suggested Brones and possibly Winter Banana, at least in limited quantities. How about some of the crab apples as well as Early McIntosh and Wealthy?

November 5, 1964

Mr. Harry Guengerich, our Director of Research, and myself plan to attend the fruit meetings in New Mexico in late January and one of us will be coming into Mexico and possibly Guatemala after that session is completed. Hope to get together at that time, and with kindest regards and best wishes, I remain

Very sincerely,



Paul Stark, Jr.

STARK BRO'S NURSERIES

PSjr:vm
Enc.

1st July, 1964.

Mr. Paul Stark, Jr.
 Stark Co.'s Nurseries, & Orchards Co.,
 Burbank Central Experiment Grounds,
 General Offices and Home Nurseries,
 Louisiana,
MISSOURI, U.S.A.

Dear Paul,

Thank you for your recent letter. Actually my object in sending you the apricot gummosis leaflet showing its relationship to Ceanothus was prompted by the fact that we have fairly recently learned that the apricot gummosis fungus occurs in California where of course there are millions of native Ceanothus.

When I passed through Davis in 1962 Harley English had already discovered the imperfect or Cytosporina stage but two weeks after my visit he turned up the Rutyea, perfect stage. I sent the leaflet along knowing of your general interest in these things.

I would say that the Northern Spy position is much as it was but we are still regarding it as a very good standard stock for our conditions. Following my visit to East Walling I came back and assembled what I thought would be the most useful stocks for our situation and decided on a trial using only MM 106, and 111, Merton 793 and 778, having eliminated all the others on their known faults or unsuitable features. These have been budded and are to go in at our new Hills Research Station at Forest Range near Lenawood. Under our conditions, i.e. mainland conditions Woolly Aphis can be a very serious problem and we can only really recommend the blight proof stocks.

You can imagine our surprise when we found the whole of our wide range of layered stocks at our Blackwood Research Station simply drenched with aphid this year. M I and XIII are slightly affected but IV, XII and XXV are all heavily affected. That is to be expected but we were surprised to find the whole of our Merton-Walling range also are badly affected. To date, MM 101, 103, 104, 105, 106, 109, 110, 111, 113, 115, 116 and 829 are all very heavily infested. MM 102, 108 and 114 are only lightly infested and the only one unaffected is MM 112.

I have written to Preston, East Walling telling him about this and apparently it is their first record of breakdown. Incidentally Northern Spy and Merton 793, in the same bed, are also very slightly affected. I would say that Northern Spy is a very satisfactory semi-dwarfing stock for all varieties. I don't know whether I told you earlier that K. Caldicott turned up a very nice solid ~~apple~~ Delicious sport this year. The branch is at least 14 years old in a mature tree and apparently had escaped their notice until

FOLD FLAPS BEFORE MOISTENING ADHESIVE

this year. The fruit is somewhat similar to Richared but a slightly deeper colour and a better shape. We have not the same range of varieties that you have to draw a better comparison than this but it does seem to be quite a good variety. We had a tasting panel comparing it with the small range of Delicious spores which we had available and it was judged to be the best in flavour and condition at the time and certainly compared more than favourably with the common Delicious off the same tree which had been kept under the same conditions.

Another grower also turned up with a single apple, another solid red which he found on a common Delicious but in this case it was borne only a nine year old spur which had no lateral growth, so we will have to propagate that one from its bourse bud tip.

Considering that these two have shown up as well as the spur-type Granny Smith, from the amount of publicity which has been given I would say that there must be lots of spores around which have not been observed.

I thank you very much for the red cap Seal and Heal Leaflet. We are still looking for an ideal wound covering for apricot trees and in our trials so far we have found Shell Mastic L. superior to all others. I will send you the transparency of Ken's apple alongside the common Delicious from the same tree when I have the film developed. With kind regards,

Yours faithfully,

D. T. Kilpatrick
AGRICULTURAL ADV.

Overseas Service
AEROGRAMME

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ADELAIDE
1 SEP
4 2 JULY 4
1964



Mr. Paul Stark, Jr.
Stark Bro's Nurseries and Orchards Company,
Burbank Central Experiment Grounds,
General Offices and Home Nurseries,
Louisiana, MISSOURI. U.S.A.

SECOND FOLD HERE

SENDER'S NAME AND ADDRESS.

Department of Agriculture,
Agriculture Building,
Gawler Place,
ADELAIDE. S.AUST.

IF ANYTHING IS ENCLOSED OR ANY TAPE OR STICKER ATTACHED, THIS FORM
MUST BEAR POSTAGE AT THE RATE FOR AIR MAIL LETTERS.