Report of the Standing Committee on Peaches, Plums and Pears.

BY G. M. GRIFFING.

Mr. President, Ladies and Gentlemen:

I as chairman of the committee, addressed a letter to the two other members of the committee, Mr. E. H. Hayward, of DeLand and Mr. J. Y. McKinney of Candler, asking if it was their wish that the report be made jointly, or if they wished to make a separate report and asked for suggestions, as neither offered any suggestions or assistance, I proceed to prepare the following report. Was quite in hope of getting some valuable assistance from these gentlemen as each are from sections where there is interest taken in peach growing.

"In no line of business is there more need of Enterprise, and more problems to answer than in the growing and marketing of fancy peaches." These were the words of Prof. M. B. Waite of the Department of Agriculture, in opening his Address before the Georgia Horticultural Society at Dublin, Ga. in 1900, a man who has not only studied peach growing from a scientific standpoint, but from a practical as well, he owning large orchard interests. Never was there a statement truer. Yet, where in all this vast country of ours can we find a people better fitted, better qualified to master this branch of horticulture, and reach the maximum of results, than we find in the Ranks of the Florida Horticultural Society. Men who have withstood the adversities and the disappointments that they have, yet who have come out victorous over all; certainly will not acknowledge defeat and abandon an enterprise that has made our big sister States, Georgia and Texas famous. It is true that we are farther from market than our Georgia Brothers and that we do not have the famous Elberta variety. These are slight disadvantages we will admit, but we have advantages that outweigh these many times. What are they? Well, I should not think that any true Floridian would ask that question. It is some thing you all brag of and talk about. Why just simply Florida climate that enables us to grow and market the first good peaches of the season offered to the American people, and we have this market all our own for from two to four weeks. Not only this, but in point of flavor and carrying quality it is the best of the year, whether from Georgia, Texas or Michigan. This is rather a broad statement, but before I am through I hope to prove it to your entire satisfaction.

I do not mean that every neglected, gnarly and diseased tree or orchard of Jewell, Waldo, Imperial and other Florida varieties is going to produce this superb peach if left in that neglected un-

healthy condition. No most certainly not. What I do mean is that the orchard planted in soil adapted to the growth of peaches, that is well cultivated and cared for from the day it is planted, that is rightly fertilized and fruit properly thinned, picked at the right stage of maturity, carefully handled, packed and shipped under refrigeration, will vindicate the statement that I have made. It has done it for the Griffing Florida Orchard Company and will do it for others. If the same careful painstaking attention is given to the growing and marketing that is given by our successful Horticulturist and trucker to the growing and marketing of oranges and the tender vegetable crops, that has proved the backbone and the chief support of our State. In the brief time allotted for the reading of this paper I am not going to attempt touching on the details of planting, pruning and cultivation, these are primary points known to all horticulturists.

What we want is to interest more people in peach growing, then a few words about the selection of the orchard site, the treating of the diseases, and last but not least, the harvesting and shipping.

We need five hundred carloads of Florida peaches a year to sufficiently introduce them in the great markets of our country, so that even a small percentage of the fruit eating, fruit loving people will learn to know, remember, and recognize them and call for them from their fruiters so long as they are to be had in the markets. How many markets know them this way now? One! Just one! Philadelphia is the only city that it can be said any perceptible number of the consumers recognize the merits of our Florida peach, and last year over forty cars of our Florida peaches were marketed there. Each day leading the market. Many of these cars were held in storage from two to three weeks. I was on the market one morning when there was over thirty cars of Elbertas displayed and sold, and that morning two carloads of The Griffing Florida Orchard Company pack of Imperial peaches were sold from the cold storage without the buyers even examining or looking at a crate at a price 25 cents above the price paid for the Elbertas on the dock. Why? Because these buyers knew that they had customers that would have no others so long as these lasted.

It is not my object to pit our Florida peaches against the famous Elberta or to encroach upon the season of the Elberta in Georgia, Alabama or Texas, but I do want to condemn to everlasting doom, that miserable class known as the Persian type, comprising such varieties as Amsden, Alexander, Early Beatrice, and of the later introductions, Greensboro, Triumph, Sneed, etc. As Downing once said of this class of peach "a peach quick to ripen and quick to rot." In fact, they are green, ripe and rotten at one and the same time, the under or shaded side will be green, the side next to the sun and light will be ripe, and the blossom end rotten. Delightful conditions to find in a fruit to create and build up a demand for it. Yet, hundreds of carloads of this class of peaches are shipped from Georgia, Alabama and Texas yearly. So soon as Florida produces sufficient peaches to be really felt and known upon the market, the demand for this class of peaches will cease and good Florida peaches will bring good prices with a strong demand. Fully ninety per cent. of the fruit eating people supplied from our great markets do

not know that there are any good peaches until in July and August when the Elbertas and the later, better class of fruit is being marketed, and for that reason there is no strong demand in May and June. A burned child dreads the fire and will give it a wide birth after suffering from its effects. So also the careful housewife who after buying one or two lots of inferior peaches with no quality, hesitates about trying another lot. Restaurants and Hotels will not put peaches on the menues until the Stewards know that there is a sufficient supply of good fruit so that they can be sure to get it daily and in sufficient quantities for their needs. As the situation now exists, Florida peaches only reach the Cheap Dago fruit stand trade. There is no real life in most markets for our peaches and there will not be until sufficient quantities are produced for them to become an item in the markets.

If Florida produced from twelve to fifteen hundred carloads of peaches a year the average price per crate would be fully 25 cents higher than has been realized.

The Secretary has a few account sales realized by the Griffing Florida Orchard Company the past three years, which he will pass around for those interested to examine. These I consider fair prices and which will yield the owners of an orchard as great a percentage of profit as any branch of fruit growing or trucking. These account sales are taken at random, out of three years sales, we of course omitting those, that owing to delays in transit, insufficient or improper refrigeration caused the fruit to arrive in bad order, and covers the shipping season from early in June until late in July.

The following are memorandums from the Account Sale Exhibited:

H. B. Williams, Inc.

Philadelphia, Pa., July 8th, 1903.

409 crates peaches sold @ $2.00 to $2.50	$956.00
Freight, Comm, etc.	369.58
Net proceeds	$586.42

F. G. E. Car 15297

H. B. Williams, Inc.

Philadelphia, Pa., June 18th, 1903.

449 crates peaches sold @ $1.75 to $2.25	$973.00
Freight, Comm. etc.	409.12
Net proceeds	$563.88

The Lyon Brothers Co.

New York, June 11th, 1904.

416 crates peaches and canteloupes		
277 crates peaches sold @ $2.00 to $2.50	$587.50	
139 crates canteloupes sold @ $1.50 to $3.00	305.13	$892.63
Freight, Comm. etc.		363.32
Net proceeds		$529.31

(Net for the 277 crates peaches $345.19).

The Lyon Brothers Co.

New York, June 16th, 1904.

334 crates peaches in car C. F. X. 10-015 sold @ $2.00 to $3.00	$785.88
Freight, Comm. etc.	298.54
Net proceeds	$487.34

H. B. Williams, Inc.

Philadelphia, Pa., June 13th, 1904.

436 crates peaches sold @ $2.00 to $2.75	$993.75
Freight, Comm., etc.	388.32
Net proceeds	$605.42

M. O. Coggins Co.

Pittsburg, Pa., July 5th, 1904.

403 crates peaches C. F. X. 10900	$700.20
Freight, Comm., etc.	269.41
Net proceeds	$530.79

H. B. Williams, Inc.

Philadelphia, Pa., June 12th, 1905.

392 crates peaches sold @ $1.75 to $2.50	$861.60
Freight, Comm., etc.	354.07
Net proceeds	$507.53

H. B. Williams, Inc.

Philadelphia, Pa., June 13th, 1905.

385 crates peaches sold @ $2.25 to $2.50	$881.25
Freight, Comm., etc.	377.49
Net proceeds	$503.76

H. B. Williams, Inc.

Philadelphia, Pa., July 10th, 1905.

446 crates peaches F. G. E. car 18585	$887.60
Freight, Comm., etc.	398.62
Net proceeds	$488.98

H. B. Williams, Inc.

Philadelphia, Pa., July 28th, 1905.

475 crates peaches car No. 21-443 gross sales		$956.20
Freight, Comm., etc.	$394.68	
Cold Storage charges	42.00	436.68
Net proceeds		$519.52

Cars selling in July came in direct competition with the Georgia movement and in nearly every case sold from 25 to 50 cents per crate higher than the average Georgia stock. Several cars were held in cold storage all of which came out in fine condition.

We give the account sales of the last one taken out which sold on July 28th.

None of the Jewell variety is included in these cars. The Jewell would have commenced ripening about two weeks earlier and would have prolonged the season that much. The Griffing Florida Orchard Company now has about 100 acres of Jewell at Komoko, all of which were killed by frost, and a hundred acres at Richland Pasco county planted this past winter. Another year we hope to move our first cars by 10th to 15th of May.

As further evidence of the impression good Florida peaches make upon the market will read the following extracts from letters from our Commission Men, the originals of which can be seen at the Secretary's desk.

PHILADELPHIA, PA., June 22nd, 1903.

GENTLEMEN: Car of peaches arrived last night, found them good color, but no larger in size than previous lot, selling fancies $2.25, choice $1.85, expect to finish the car at these prices. Very good demand and outlook favorable. Wired you situation. Sorry to know you have no more for immediate shipment, just got our customers nicely started on this fruit, and could handle three cars a week to advantage. Quite a good many Georgia peaches in today, mostly Carmen, Waddells and Early River, fruit much larger than the Florida stock but not as good color or flavor, fancies selling $1.75 to $2.00 and choice $1.25 to $1.50. So you see your Florida peaches are bringing more than the best Georgias.

H. B. WILLIAMS, INC.

The following is copy of a letter H. B. Williams wrote Mr. Frank Lindsey, their representative, with reference to Florida peaches:

DEAR SIR: Have telegraphed you on peaches, Griffings car arrived, took out a portion, sold fancies $2.25 choice $1.85. Good color but small compared with Georgia fruit. Had car from Hale Georgia Orchard Co. their smallest grade much larger than the Florida fancies and selling at a lower price. Selling Hales Extra Fancies $1.75 to $2.00, fancies $1.50, choice $1.25, so you see Florida fruit is bringing high prices compared with Georgia.

H. B. WILLIAMS, INC.

JULY 1ST, 1903.

GENTS: Have no letter or wire from you today in reference to shipment of peaches; fear you did not get car off. This is unfortunate as market continues active for your peaches. No trouble to get $2.50 for fancies and $2.25 for choice. Outlook favorable. Our customers will want more of the Florida stock, while Georgias are larger they are not as good flavor as the Floridas.

H. B. WILLIAMS, INC.

JULY 21ST, 1904.

GENTS: We took one crate of the Imperial peaches out of Cold Storage today, which had been put in there July 2nd, and it came out sound as a dollar. If we had a car of them today could get two dollars for them. With a big crop of Imperial peaches, and a short crop in Georgia, twenty or twenty five cars of these peaches in storage they would sell like gold dollars. Their keeping qualities are excellent.

H. B. WILLIAMS, INC.

NEW YORK, JUNE 17TH, 1905.

GENTLEMEN: I want to state that it is a pleasure to handle goods put up in the style and careful manner which you ship in. The trade here recognizes that your brand of Florida peaches, is by far the best that comes from Florida. There will be no trouble in the future of obtaining top of the market.

LYON BROS. CO.

PHILADELPHIA, PA., MAY 11, 1905.

DEAR SIRS: We are enclosing you a letter received from Mr. J. H. Hale on the conditions of the crop in Georgia.

One of our customers called on us and wanted to know if your crop was secured this year from the cold weather. When we assured him it was he has gone to the expense of twenty to twenty-five dollars in having a large sign painted across the front of his store "Headquarters for Griffing Peaches." He has given us instructions that he wants 100 crates every day as long as you ship, so you see we feel very much encouraged over the inquiry we are having for your peaches.

H. B. WILLIAMS.

NEW YORK, JULY 25TH ,1904.

GENTLEMEN: We have your several communications and it is very satisfactory to us to have you express yourselves as being satisfied with the results, but, we wish to state that a great deal of credit for the results we obtained for your peaches is due to yourselves, for by the style of your packing and the delicious flavor of your peaches, caused the buyers to seek for more and buy liberally.

They were at the top of the market every day we had them to offer. We can say honestly that the eating quality of your peaches were superior in flavor and lacked that bitter taste from the skin that many of the Florida peaches had, that were on the market, and we can assure you that you can look forward to always having New York take your peaches at the top prices and as many as you can place on this market.

THE LYON BROS. CO.

PHILADELPHIA, JULY 8, 1905.

DEAR SIRS: We wired you today to ship all peaches possible here. I enclose you a letter received from Mr. Hale today in which you will note he says about the peach crop there. This is contrary to

what he wrote us a few days ago in regard to the situation, so they must have gone to rot very suddenly. You will notice he says they are rotting green on the trees.

If your peaches arriving here Monday are in good shape and the Elbertas begin to show any rot here, we are going to put them in the cold room, because the last few cars of peaches you shipped us have been the finest you have ever shipped in the last few years and the trade are more than pleased with them. I could have sold ten cars today as easily as one at these prices. I never saw them any better size and better color.

H. B. WILLIAMS.

I hope that I have now impressed upon your mind three things. *First,* that there is a good demand for Florida peaches, *Second,* that if properly grown we have the best flavored and best keeping peach of the year. *Third,* that there is money in it.

Now for the troubles and vexations. And I assure you that the path of the peach grower is not strewn with roses. Neither can he lay on beds of ease and wait for nature and our climate to bring forth fruit in abundance. Nature and climate if yoked together, and intelligently worked will produce wonders. But it wont answer to let them run loose. Oh yes! they will continue to work. But as if vexed at your presumption in yoking them together, and working them for your benefit, they voluntarily enlist in the enemies forces. Nature has created an insect or a form of plant life to prey on and feed off of every other form of insect or plant life in existence, and our climatic conditions are such as to rapidly develop these forms of insect and plant growth which could be justly termed enemies of mankind. Therefore if we would succeed in the cultivation of peaches, plums and pears all of which are especially subject to these enemies, we must either stir ourselves and find nature's way of controlling them, either by parasitic or predacious insects or fungus, or find artificial means of combating them.

As the peach is the first and most important of the fruits under consideration, will dwell more at length on the troubles of the peach grower. It commences with the nurseryman at the time the pit is planted for no sooner is the little seedling fairly taken root, than an enemy is ready to devour it. This enemy is the Nematode Angoulula, commonly called root knot. For a remedy or a preventative from this nematode, we are forced to appeal to nature for no artificial means for controlling or eradicating, praticable for the orchardist, has been discovered. The preventative nature provides is the planting of the nursery or the orchard on virgin soil, not subject to washes from old field land. This nematode, the Angoulula, is present in all our light southern soils, and only needs the presence of plant roots pleasing to his majesty's palate for him to feed upon to multiply in myriads and so infest the land that a young peach tree, however healthy when placed there, cannot thrive. The only known means of eradicating this pest from the soil is heating it to a high degree, or the saturation of the earth with bi-sulphide of carbon as suggested by Mr. Bessey in his valuable paper on Nematodes. This is sometimes practiced for potting earth for greenhouse or bedding plants, but not practical

for the orchardist. Therefore the simple and effective preventative is to plant on virgin soils, free from washes from old fields. With this simple precaution, and planting trees free from the disease, no serious annoyance should be experienced from this source.

The next trouble likely to attract the peach grower's attention, will probably be the borer. Many are the devices that have been invented and remedies tried all of which have proven more or less a failure. Of these remedies I believe the Porter system of treatment the best and most practical. This system of treatment as invited by Mr. C. M. Porter of Douglas, Ga. and offered by him in farm rights, consists of a series of mounding, worming and applying a caustic wash. We have tried it on our own orchards, and from present observation and status of experiment believe it of some value. The method of treatment employed most largely in our own orchards and by many of the largest and most successful orchardists of the south, is the banking around the trees to a height of eight to fifteen inches in July and August, before the fly deposits the egg on the body of the trees. This forces him to deposit the egg well up on the body. In the fall or early winter this dirt is removed,leaving the young larva in the body of the tree well up in the air, where the bark will harden as soon as the earth is removed causing many to perish. Would also recommend after removing the earth, the scraping the body of the tree from the crown roots up to 12 or 15 inches in height with a sharpedged instrument, this will disturb and kill many more of the young larva. The painting of the bodies from the crown to the limbs after the earth has been removed, with a strong caustic solution, will also be beneficial in killing many of the larva and preventing others that hatch higher up or that have been knocked off from entering the bark. After these precautions have been taken, a few will likely have escaped, dig them out with the point of pruning knife, as soon as they show themselves by their signs, an excretion of a half gummy half sawdusty matter from the point where the young larva entered and commenced to feed. With these precautions no serious trouble or loss should be experienced from the borer.

The next annoyance noticed is likely to be Gall knots on the roots and crowns and which is generally accepted as Crown Gall and if it is the true Crown Gall, I consider that it has been much over-rated, and especially so by some of the entomologists and pittiologists in some sections.

Mr. A. C. Weiting Commissioner of Agriculture, Albany, N. Y. in an article in the National Nurserymen, in discussing Crown Gall said, "All Galls on the roots are not Crown Galls, a distinction between them may be made." He further said "the galls caused by aphids are usally knotty and very hard, while the Crown Gall is rather soft and as easily cut as a turnip. Its tissues being brain like in formation." As the knots usually found on the peach trees are usually hard woody substance covered with thick pulpy bark and wart-like formation, I am very doubtful about the most of it being the true Crown Gall. This Gall knot has by some been confused with the root-knot Angoulula, and by others with the black-knot of the cherry and plum of the states farther north. It is entirely distinct and different from the former, but

somewhat similar yet different from the latter. It seems to be caused from a fungus which I believe is either always present or develops spontaneously in much of our southern soil. This may be a little radical and not in accordance with some of my professional friends' views, but I will give one of my reasons for the assertion and I believe the experience of those present, who may have had occasion to note same will sustain me. Natural peach seed can be gathered, and I believe if test wanted to be carried far enough, sterilized sufficient to kill any possible germs on the exterior of the pits, and planted in virgin soil, and a percent. will develop these gall knots. In some pieces of ground not one tree in 5000 will develop a knot, while in another plat, or possibly in a different section of the same field, one or even two per cent. may show it. The Marianna plum roots are especially subject to the attack of Gall knots. Cuttings from apparently healthy trees can be planted in any ordinary field, grown one year, and grafted the following winter with scions of the desired variety taken from an equally healthy tree, and by digging time, one to ten, sometimes as high as fifteen percent. will develop gall knot. Now where did these knots come from if, the fungus causing same, was not either already present in the soil simply waiting for a suitable plant to establish itself upon or developed spontaneously. The loss from these Gall knots is usually small. As a remedy would advise removing the knots if they appear on the body or crown of the tree where they can be detected and the cut place moistened with a saturated solution of Blue stone water. They will never appear again at the place. If you get too much of the Sulphate of Copper (Blue Stone) in the wound it may cause a dead place in the wood. I have seen these gall knots for twenty years, or ever since the first work I did in a nursery, even before our own nursery was founded. I have seen the same in all portions of this State, in Georgia, Alabama and my brother reports the same in Texas. I cannot see that it is any worse now than twenty years ago and do not believe that it will be any more serious in twenty years hence.

Will next consider the part in Florida peach growing played by the most widely known and widely disseminated scale insect of my knowledge. The San Jose Scale. The rapid spread and dissemination of this scale insect caused more activity and discussion by Entomologists than all other scale insects and has caused many very stringent State and Foreign National laws to be enacted, some of which are now proving a menace to American fruit commerce. This scale pest while bad if allowed to run its own course, is easily controlled, either by natural enemies, the Red or Brown Fungus a, native Florida Fungus discovered by Prof P. H. Rolfs, now Director Florida Experiment Station, Lake City, Fla., and the other the Chinese Lady Bird (Chilocorus Similis) the Natural enemy of the San Jose scale in China, or by artificial means. The most practical and successful artificial means is the spraying of the trees once or twice during the winter months with lime, sulphur and salt mixture. Two applications during the dormant period is sufficient to keep the scale under perfect control if not eradicating it until introduced again from

other infected trees. The following is the formula for the lime, sulphur and salt mixture and our method of preparing and applying it.

LIME, SULPHUR AND SALT MLXTURE.

Rock Lime .....21 pounds.
Flour of Sulphur .....15 pounds.
Salt ..... 5 pounds.
Water to make fifty gallons.

The lime is placed in the cooking barrel with about 10 or 12 gallons of water. The steam is turned on, which agitates the lime while slacking preventing it from burning, and renders the slacking more perfect. After lime is thoroughly slacked fill barrel about one-half full of water. Mix the sulphur into a paste, after lime is slacked add the sulphur paste and salt and boil vigorously for forty minutes.

The arranging of cooking plant I will be glad to explain to any one sufficiently interested to write or ask about it.

In spray machinery we have used everything from a knapsack sprayer to a traction engine and steam pump, the latter carrying 20 to 30 nozzles, except the gasoline power sprayer. The gasoline power sprayers have never appealed to us for two reasons, first: The weight of engine, pump and tank of water for cooling engine, neccessary to haul around, and second, the intricacy of the little engines and a scarcity of a class of help with a knowledge of gasoline engines that would care to work in as disagreeable work as spraying. When you have a days weather, right for spraying you want the most reliable machine possible. The most practical we have yet found is the Wallace Sprayer, manufactured by Wallace Machinery Company, Champaign, Ill. The pump is driven by a gear from the wheel, one extra mule or horse will pull the extra load occasioned by this gearing and maintain a pressure of from 90 to 120 pounds. For effective spraying a high pressure must be maintained. The traction engine outfit did good service, though do not know as it is an economical outfit, the trouble came from the little annoyances such as two or three of the nozzles out of a cluster of four or six becoming clogged, necessitating the stopping of the remainder of the twenty or thirty nozzles for these two or three to be cleaned. With this steam outfit, an engineer, fireman and six men could spray thoroughly one side of three rows of trees ranging from 12 to 15 feet in height, about one half as fast as a man would naturally walk up and down the rows, covering about ten acres a day. With the Wallace outfit three mules and three men would spray one side of one row at a little faster pace than the engine moved, in fact the team was kept moving slowly and steadily. While I do not know that the Wallace Sprayers would be practical in an orange grove, where a great amount of leaf surface is to be covered but for spraying peaches, while in a dormant condition they are practical.

The curculio, curculio stung or wormy peaches and plums are found in every old peach growing section and in fact in nearly every plum thicket. Cures or remedies for this little rascal are few and difficult, preventatives are about our only hope. Here are a few of them.

Plant your trees in a place as far distant from other peach and plum trees where you find worms in the fruit, as possible. Keep all brush heaps, old rotten logs, and such trash cleaned out

from the orchard, and away from around it. Have if possible, a cleared and cultivated strip of ground from 150 to 200 feet between your orchard and uncleared woodland. Trash and rough woodland harbors the curculio; in a large orchard you will invariably find worms worse next to woods or near a pile of trash. Jar the trees and pick up all fruit that drops off and also stung fruit found on the trees. This should be repeated every two weeks from the time that peaches are the size of a marble until they are ready to ship. Never allow a drop peach to be plowed under or decay in the orchard for in 99 cases out of 100, it has a worm in it that will develop into a beetle that will ruin a thousand peaches next spring. Jarring the trees and catching in a sheet or bug catcher the peaches that fall and also the beetles (curculio) that may play o'possum and drop off is an old method practiced by successful plum growers in nearly all parts of the country, and by peach growers in many places. All the drop peaches that may have dropped the night or day or so before should also be picked up and destroyed.

If these precautions are taken it will be years before sufficient worms will develop in an orchard to be a menace to the fruit. This year we are trying some spray experiments for curculio and next year hope to be able to report the results.

Brown Rot Fungus (Monilia Fructigina) is another pest that must be combated by preventatives rather than remedies, for by the time it makes its appearance and you commence applying your remedy, the mischief is done. The precautions recommended for the curculio are the principal ones in preventing Brown Rot. The removal of all decaying peaches is important. Especially the mummied peaches, that you may occasionally see hanging in the trees. Plow the orchard by blooming time every spring and be sure to stir the entire surface. This will disturb any mummied and decayed peaches that may have accidently been left in the orchard and prevent them from throwing up a lot of larger fungus growth in the form of toad stools that will throw off sufficient brown rot fungus spores from a single mummied peach to infest the trees of a five acre orchard. All caustic spray solutions are good as fungicides, the lime sulphur and salt mixture is equal to almost any fungicide known and one or two sprayings during the winter to kill scale, will rid the trees of all fungus spores that may be carrying over on the trees, again if these trees are well sprayed and well covered with this caustic solution, at blooming time the spores that may be thrown off from the toad stools in the spring cannot get a foot hold on the trees. Another precaution is to so fertilize and cultivate the trees as not to produce a heavy foliage, also trim all the trees so as to be open in the middle when carrying a load of fruit so as to admit as much air and light as possible.

This I believe covers a list of insects and fungus pests that cause the worst trouble to the peach grower. The same ones that we have here, trouble them in the north also Georgia, Alabama and Texas. Besides in the north and in portions of the other states mentioned they have peach yellows and rosette neither of which have ever been known within the state and either one of which is more serious that all of the pests

we have. Ours can be combated, peach yellow and rosette cannot. If they can make a success of peach growing in other less favored sections, are we to give it up and acknowledge that we are not as skilfull horticulturalists as they.

Now for the harvesting and shipping.

First, you should plant sufficient acreage yourself or organize an association in your neighborhood who would plant sufficient acreage to load and ship in carload lots, about thirty acres of a variety is sufficient for this, forty or fifty would be better. Grade and pack all the fruit uniformly, being sure to have every crate so full that you could not get another peach in the baskets. Separate the fruit and don't put any cull fruit in the bottom of the baskets, let the bottom be as good or better fruit than the top. Use nothing to fill up baskets but peaches. Excelsior either in top or bottom, paper used in any manner prevents ventilation, deceives the buyer and makes a bad reputation for your pack and brand. Have the fruit graded and packed by professional fruit packers, it will cost you but little more and your pack is right. Care in packing peaches is more important than any other fruit. In loading your refrigerator cars, see that the car is clean and that nothing obstructs the ventilators between the ice chests and the body of the car at each end both next to floor and at the ceiling. This is necessary for circulation. Remember without circulation there will be no refrigeration. Load peaches as soon after picking as possible and if you have to detain car more than one day, arrange to get a ton and a half of ice to put in bunkers, so as to have them as full as possible when car leaves the orchards. Arrange with the railroad to have car reiced as soon after leaving the orchard as possible. Remember that the first 24 hours after the fruit is placed in the car is the critical time. The fruit continues to ripen and mature until cooled and refrigerated to the pit. If car is poorly iced and it takes 36 or 48 hours for this refrigeration, the fruit has had that many hours of ripening process going on within it. and it matters not how well the car is iced during the latter part of journey, the damage is done and your fruit melts down almost as soon as it comes from the car. If good refrigeration can be had at first and the fruit cooled to refrigeration point in from 6 to 12 hours, the iceing for the last part of the journey is not so important.

Experiments are being made in quick cooling of the fruit before the cars move, by artifically circulating the cold air in the car, and by this means bring the fruit to a refrigeration point in from four to six hours. Fruit quickly cooled this way, is claimed to hold up, an almost indefinite time. if temperature is kept reasonably low, and when taken off the ice holds up almost as long as when picked direct from the tree.

I will not attempt to tell a Florida Horticulturalist how to market his fruit. But would say that of all fruit, you should try to establish a reputation for your pack of peaches and I would say put enough of them on one market so that your commission house at least knows that you are in the peach business. Do not scatter your shipments a few crates in a place, on such shipments is where you are robbed by both express company and questionable commission men.

This paper being long and no

doubt many of you are already tired and as plums and pears are not generally enough grown for commercial purposes, I will not attempt to say anything with reference to them. If however any member knows of any plums of any special merit, it would be of interest to myself and dare say to others of the society, to hear about them. The same for pears.

Supplementary to regular report would say that a few days ago I sent out a circular letter, asking for information relative to present conditions of peaches in several sections of the state with reference to damage by frosts of March 1st and 22nd. Also about varieties grown in the several sections. The following is the essence of the replies received bearing on these two points. Some mention was made in some of the replies relative to scale, gall knots and other troubles all of which I think have been covered by report.

DINSMORE, FLA.

I estimate that the frost of March 20th and 21st killed 75 per cent. of the crop.

WM. MACKLIN.

WALDO, FLA.

Peaches not hurt here in the least. Waldo and Jewell only kind grown for market.

T. K. GODBY.

STETSON, FLA.

So far as I know, none of the peaches were hurt at all in this section.

H. B. STEVENS.

FULTON, FLA.

The March first frost was local in its effects, in and around Fulton some orchards were much more injured than others. Jewell variety suffered most. Waldos came off better. Later varieties some.

H. F. HALE.

INVERNESS, FLA.

We will have a good peach crop. I hear of none being killed by frost.

S. M. WILSON.

BOARDMAN, FLA.

No commercial orchards in this section, only for family, but so far as they go the promise is for full crop, the frost not having hurt them.

F. G. SAMPSON.

INTERLACHEN, FLA.

The frost of this Spring did but little damage in fact only thinned the fruit on outer limbs. None of the early varieties seem to be injured by the cold.

J. H. WYLIE.

LADY LAKE, FLA.

The frost did not do us any damage at all. Peach trees of all kinds are full. Jewell the best.

L. B. MILLER.

DEFUNIAK SPRINGS, FLA.

Peaches and plums not injured in the least by frost. Holding fruit well during this dry weather. Varieties principally Elberta.

L. W. PLANK.

MELROSE, FLA.

Peach crop is as good as can be, we

never miss a crop of peaches in this immediate vicinity. Varieties, Jewell, Climax and Imperial.

W. E. BAKER.

JESSAMINE, FLA.

The frost did not affect the peaches in this region and there is now good prospects for crops. Varieties most preferred Jewell, Waldo and Angel.

W. J. ELLWORTH.

MANATEE, FLA.

None of the peaches were damaged by cold. Varieties Jewel, Waldo, Bidwells Early and Angel.

A. J. PETTIGREW.

EARLTON, FLA.

The Spring frosts did no damage in South Eastern part Alachua county, but have been told in the northern part some damage was done. Varieties Jewell and Seedling of my own.

H. VON LUTTICHAN.

EARLTON, FLA.

No peaches, plums or pears were hurt in the neighborhood of Lake Sante Fe. Varieties Jewell and Waldo.

C. C. SHOOTER.

DADE CITY, FLA.

Crop in this Section not at all damaged by cold. J. C. CARTER.

LAKE HELEN, FLA.

No damage here by cold.

J. P. MACE.

Mr. J. Y. McKinney, a member of committee who is here, reports no damage at Candler.

GAINESVILLE, FLA.

The peach crop in this immediate section is probably less that half. We had heavy frosts soon after setting both early and medium late varieties. Varieties, Waldo, Florida Gem, Oviedo and Pallas mostly.

H. S. GRAVES.

The damage to Jewell variety in the Komoko orchards of the Griffing Florida Orchard Company was 90 per cent. practically destroying entire crop. Waldos 70 to 80 per cent. The Imperial and other medium late varieties suffered very little, practically full crop. In the Baker county orchards near Macclenny, no Jewells were planted, Waldos damages 60 to 75 per cent. Later varieties not hurt.

By studying the map of Florida you can see that the setion in which damage was done is comparatively small.

DISCUSSION.

Mr. Henderson.—As I have had a good deal of experience in peach growing, I think I can give some points that may be interesting. I used to think I could not raise peaches without spraying. I have an orchard of about 100 acres and last year we sprayed until I discovered what has proven to be a red fungus. At first I did not know what it was. I sent to the Experiment Station and found that I had this red fungus and I stopped spraying. I wrote and asked some questions. I asked if I could trust my orchard in the hands of this fungus if it was very slightly affected. The answer was that I could. The scale had practically killed 25 per cent. of my trees, but today I cannot find a single scale anywhere. The

scale is off and it was left in the hands of this fungus alone. Today I am very much more encouraged.

The San Jose scale is worse than any other scale, but there is no let up of the fungus until this scale is all off. I think this is one of the greatest things for the peach growers, in the State of Florida. Take a limb with this fungus on it and it will spread in moist weather in twenty-four hours and little orange colored pimples show over the trees. As soon as it kills all the scale these become black spots on the tree, hence the name black fungus.

Mr. Griffing.—I would like to ask if the trees were not putting on new growth after this fungus had been on it.

Mr. Henderson.—They are, after having been cut back. All the trees that were affected with this scale have put on beautiful new growth and some branches are from five to eight feet long.

Mr. Wood.—Should we cut back healthy trees?

Mr. Henderson.—By all means. Those from five to six years old.

Mr. Wood.—I cut back some of my trees, but those I did not cut back had more dense foilage.

Mr. Henderson.—The fruit will be better next year. The best time to cut it back is just after the fruit is gathered, say in July.

Mr. Ellis.—What is the probable life of the peach orchard from the time it is planted.

Mr. Henderson.—That depends on the class of land and the kind of tree planted. If planted with yellow subsoil, the orchard will be very poor and probably die after it has borne three or four crops. If the tops were cut off and a new crop allowed to come on, it would probably bear from twelve to fourteen crops of fruit. The average crop is only from seven to eight crops.

Mr. Wood.—Would you advise clean culture.

Mr. Griffing.—I would not, but would advise plowing each spring. Be sure to turn over every inch of the surface, then let it grow up in beggar-weed. The beggar-weed will save fertilizer bills.

Mr. Ellis.—On a land naturally salt, would it do for peaches?

Mr. Griffing.—I would not think so. If old land is to be used for planting a peach orchard, plant and grow velvet beans and beggar weed on it for two or three years before planting the peach trees, letting nothing else but these grow on the land. This will not only build up and fertilize the land, but will reduce the nematodes in the soil to such an extent that the young trees will become established before the nematode sufficiently increases in numbers to injure the tree. The nematode, may cause some of the trees to be short lived, yet fairly satisfactory results may be expected.