Report of Secretary.

Mr. President, Ladies and Gentlemen:

At one time it looked as if the membership of the Horticultural Society was going to be considerably behind that of last year as there were not very many remittances received for membership fees during the year. However, the last notice to the members brought out a large response and many of the members did some good missionary work in the way of securing new members and today I am able to make the following report:

Membership fee received for 1905 reports since last meeting..	$ 76.00
Membership fees for 1906	436.00
Seven life members at $10 each..	70.00
For 1907 memberships	2.00
Postage	.10
	$584.10
Draft to the Treasurer to balance	584.10

These figures place our present membership as follows:

New annual members for 1906.....	436
New life members	7
Old life members	60
	503

The Society has developed a new friend at St. Petersburg, Mr. James Henry, who at one time sent in 13 members. Mrs. McCarty has also put in good work having sent in 12 members. Mr. E. L. Richardson of Avon Park sent in 4 as also did Mr. F. M. Campbell of Largo. Quite a number of members sent in from one to three.

The following list of expenses since last meeting is respectfully submitted:

1905.		
Dec. 23.	Noble Newspaper Union for printing....	$440.35
May 22.	Stenographer	50.00
	Secretary's salary	100.00
Dec. 20.	Mailing 1905 reports.	27.14
1906.		
Jan. 5.	E. O. Painter Printing Co., stationery	4.00
Jan. 5.	E. O. Painter Printing Co., stationery	9.47
	Telegrams	.62
Jan.	Postage, Printing and Mailing reports ...	71.05
Mar. 3.	S. F. Hall & Sons, printing	4.00
Apr. 20.	S. F. Hall & Sons, printing	13.25
	Cash balance on hand of Treasurer	274.49
		$994.37
	Treasurer's balance on hand .....$410.27.....	
	Secretary's draft check to Treasurer .... 584.10—	994.37

It will be seen from the above report that the society is going to be considerably short of sufficient funds to meet the coming year's expenses, to say nothing of the expense of presenting a resolution to the State Legislature for an appropriation. It is earnestly hoped that all members of the society will increase their efforts towards getting more new mem-

bers through the year as we should enroll, at least 300 more.

The expenses of the coming year can be cut down by reducing the cost of printing the Report by leaving out the catalogue of fruits and doing away with the illustrations. This feature of the Report, however, is a very desirable one and if it can be possibly done one or more illustrations should be continued.

All of the above is respectfully submitted.

E. O. PAINTER,
Secretary.

Treasurer's Report.

1905.			
May 1.	To Balance	$410.27	
May 1.	Membership Fee	3.00	
1906.			
May 3.	Record of Secretary Painter	584.10	—$997.37
May 24.	By Stenographer's Bill	$ 50.00	
Jan. 1.	Noble Newspaper Union	360.37	
Jan. 13.	Noble Newspaper Union	79.98	
Apl. 13.	Secretary Painter membership fees	2.00	
May 3.	Secretary Painter membership fees	1.00	
May 3.	Secretary Painter Miscellaneous bills	229.53	
May 3.	Balance in Treasury	274.49	—$997.37

W. S. HART,
Treasurer.

Annual Report Executive Committee Florida State Horticultural Society.

JACKSONVILLE, FLA., May 3, 1906.

Mr. President, Ladies and Gentlemen:

This Committee met in the office of the Secretary in Jacksonville, June, 9 1905. Rev. Lyman Phelps by proxy, E. S. Hubbard, President McCarty and Secretary Painter present. The Secretary was instructed to have the Annual Report, 1000 copies, published in the same style and form as the 1903 Report.

By request the Committee assisted the President in forming standing committees for the next annual meeting.

The President was requested to make

arrangements if possible for special address and other features that would add to the interest of the next meeting.

Meeting adjourned without date.

This Committee met at the Windsor Hotel March 16, 1906; present, President McCarty, Secretary Painter, exoffi-cio Rev. Lyman Phelps by proxy, E. S. Hubbard, G. L. Taber. Minutes of previous meeting approved, next annual meeting appointed to begin Tuesday May 1st, 1906 at 8 p. m.

Offer of the Windsor Hotel as headquarters and the auditorium for place of holding sessions unanimously accepted. A reception and introduction committee of twenty ladies and gentlemen was appointed. A committee of local arrangements consisting of Messrs G. W. Wilson, E. O. Painter and C. R. Tysen was appointed. Several bills were audited,

Meeting adjourned without date.

This Committee met in the Windsor May 3, 1906; present, Rev. Lyman Phelps by proxy, E. S. Hubbard, G. L. Taber by proxy, President McCarty, Secretary Painter, Treasurer Hart. Remaining bills for the current year were audited. Secretary's and Treasurer's books were examined and finances of Society discussed.

Meeting adjourned.

REV. LYMAN PHELPS, by
E. S. HUBBARD, proxy.
E. S. HUBBARD.
G. L. TABER, by
C. T. MCCARTY, proxy.

Report of Committee on Legislation.

BY M. F. ROBINSON.

Mr. President, Ladies and Gentlemen of the Florida State Horticultural Society.

DEAR SIR: As a member of your committee on Legislation, I would respectfully report: That it has been suggested by our honored President and Secretary that it is with the greatest difficulty that the expenses of this Society can be maintained from the modest membership fees; That no inconsiderable part of the expense, is the publication of the Society's Annual Report of its meetings; and that the Legislature of the State should be petitioned to make an annual appropriation in aid of these expenses. Such a petition would be entirely proper and in line with the action of the legislatures of other States that aid in the support of similar Societies. That such a petition should specify the amount of funds desired, and name the purpose for which it will be used, is believed by your Committeeman to be highly important. Therefore it is recommended that the Secretary make a careful estimate of the amount necessary for the publication of the Annual Report, and prepare an appropriate resolution, requesting the desired appropriation by the legislature, and submit it to this meeting for action.

Another matter which in the opinion of your Committeeman is highly important to the members of this Society, and which it is the duty of the Society to lay before the legislature of the State and ask for relief; and that is the deplorable fence laws of the State; whereby cattle, horses, hogs, sheep, and goats are permitted to run at large. Therefore to bring this matter before the Society for its consideration, the following preamble and resolution is hereby introduced. Your Committeeman offers the following and moves its adoption.

PREAMBLE AND RESOLUTION.

WHEREAS, The farming and horticultural community and the towns and cities of the State of Florida are greatly harassed and damaged besides being put to an enormous expense by reason of the fact that cattle, horses, hogs, sheep, and goats are permitted to run at large; and,

WHEREAS, The finances of the State would be vastly improved, if the owners of such stock were compelled to fence, and, directly or indirectly, pay taxes or rent on the pastures used for such stock, instead of being permitted to pasture their stock on the land belonging to others or belonging to the public domain; and,

WHEREAS, It is believed that a large majority of the voters in the State are in favor of a radical change in the present law; therefore, be it

Resolved, By the Florida State Horticultural Society in meeting asembled; that the Legislature of the State of Florida, be and is hereby petitioned and im-

plored to make and inforce such laws as will prohibit the running at large of cattle, horses, hogs, sheep and goats in the State. And if, in the wisdom of the Legislature, it is thought that any County in the State contains a majority of voters in favor of the present law, let it be submitted to the voters of each County to decide whether the new law or the present law shall be enforced in that particular county.

Resolved, That the above resolution be submitted to the next Legislature, by the Secretary of this Society.

Notes from Abroad.

BY DR. WM. C. RICHARDSON, TAMPA, FLA.

When Doctor W. C. Richardson advised me early in January that he was about to visit the Citrus sections around the Mediterranean I asked him to write something on his observations. He kindly consented to do so and mailed the letter from Paris thinking it would reach me at Jacksonville in time to be read to the Society. It failed to reach me in time and I am doing the next best thing—printing it in the proceedings. Personally and on behalf of the Society I thank Dr. Richardson for his most instructive and interesting letter.—C. T. McCarty.

PARIS, FRANCE, April 25, 1906.

C. T. McCarty, Esq., President Florida State Horticultural Society, Florida U. S. A.

DEAR SIR: In accordance with your request to write you relative to things of interest that I might see on my cruise around the Mediterranean, in the way of horticultural matters, I take occasion to say that the first stop was at Funchal Island, of Maderia. This island grows some oranges of a rather inferior quality, and all sub-tropical fruits and vegetables flourish as extensively as the small limits of the island will permit. Sugar cane, however, seems to be the principal article of cultivation.

The next place visited was Cadiz, Spain, located on an almost barren little peninsula, and aside from the splendid harbor, its commerce as the chief port of South Western Spain, and the manufacture of salt by evaporation, it has little of interest in a business way, but is rich in art treasures and historical associations.

A visit to the interior, some hundred and fifty miles, revealed quite extensive orange groves, and many quite large olive orchards. The orange trees are planted in squares in regular order, eighteen or twenty feet apart, and do not seem to grow anything like as large as our Florida trees. In the gardens of the palace of the Alcazar there are many very old trees, one of which is said to have an authentic history of over six hundred years; It is a bitter sweet, and the man showing us through the place said that sweet oranges injected into the bitter stock, he meant budded, were growing in the grounds and bearing abundantly at ages of two and three hundred years. These trees did indeed look thrifty and healthy, but they were no larger than our fifteen or sixteen year old trees. All the unprotected orange and other sub-tropical trees had been nipped with the cold to the extent of losing their leaves, but this did not seem to worry the Spaniards any, and they apparently treated it as nothing unusual, or of any consequence. Spanish oranges are not of the best quality, and aside from color have little to recommend them; they are tender, thick skinned and of a negative flavor.

The next stop was at Algiers, in Northern Africa, where oranges, lemons, guavas, bananas, etc., were found in profusion. All showed the effect of recent cold, but had not suffered as much as in Spain. The orange groves were set out in a much more crowded way, the trees being only 12 or 15 feet apart, and, like in Spain, all pruned up very high. The mandarine oranges are raised very extensively in Algiers, and are of a most excellent quality—in fact all the oranges here are very good indeed.

After visiting Greece, Turkey and Asia Minor, where olives and figs are raised extensively, and oranges are grown in a rather limited way, and where they suffer a great deal from cold every winter, the next place of interest from an horticultural standpoint was Jaffa in Palestine.

Jaffa is the home of the very best oranges we have seen outside of Florida, if an exception be made in favor of a *blood navel* found in a small way on the island of Malta. The cultivation of the orange in Jaffa is more wonderful to a Florida grower than is the delicious character of the fruit. The trees are planted in rows not more than seven or eight feet apart, and not more than five or six feet distant from one another in the rows. All cultivation is done with hoes and spades and they dig deep everywhere, even close up to the trees. They have a loose sandy soil, richer apparently than ours and their only knowledge of fertilizers seems to be confined to barn yard manure.

When the trees get so large as to make them too close together for convenient cultivation and harvesting the fruit, they cut them off alternately in the rows and rebud the sprouts, I do not think any trees are allowed to get more than ten or twelve feet high before they are thus treated. I was told by a man whose family are the most extensive growers in this country that small thrifty trees close together gave larger returns per acre and better fruit than any other system of culture they had been able to devise.

Egypt was found to be almost as wonderful from an horticultural and agricultural view as it is from an ethnological and historical standpoint. At Cario in latitude 30 degrees north, where it never rains and where the climate in much warmer especially in summer, than in Jacksonville, we found many things to interest us. We were fortunate enough to secure an introduction to the Director of the Botanical and Zoological gardens, who kindly devoted a forenoon to showing us through the wonderfully rich possessions under his management, including rare specimens of all kinds of fruits and plants that grow, in this lavishly productive country. Everything we ever saw growing in Florida seemed to flourish here, including two splendid real American alligators kept in a pool enclosed by wire netting, separating them from the Crocodiles. It seemed like meeting friends from home, and after long association with Arabs, camels, donkeys, etc., it cheered us up wonderfully.

We were also fortunate enough to be in Cairo at the time of the Egyptian Horticultural Exposition, conducted with a great flourish under the auspices of the Khedive, who by the way is a very pleasant appearing, popular and democratic monarch. The Exposition had a few very fine exhibits of fruits and some of the finest kinds of large appetizing appearing vegetables, also a beautiful show of flowers and tropical plants, but taken as a whole it did not begin to come up to the

exhibit of any one of several single counties as shown at the Florida State Fair held at Tampa. Oranges are grown and cared for in Egypt about the same way as in Algiers, except they depend on irrigation entirely. Guava trees are not small bushy things as with us, but quite as large as orange trees and are kept pruned up.

From Egypt we went to Italy and Southern France, where from Naples to Nice, along the shore of the Mediterranean, the orange flourishes in a more or less precarious way, being often found growing on narrow terraces of a mountain side with snow capped peaks in plain view. In fact it appears to me that the Mediterranean varieties of citrus fruits can, and do, stand much more cold than they do with us in Fla. Even in Egypt there had been, shortly before our visit, enough cold to cut down bananas and knock the leaves off the guava and other tender trees. While the cold is always felt it is seldom extreme enough to freeze the fruit, and at Nice in Southern France, where they had recently experienced a real freeze, we were told that all fruit that did not drop off the trees within a couple of weeks was considered as good and marketable as if there had been no freezing. Blooming seems later than with us, and it was after the first of April before we saw any trees in full bloom.

None of these countries produce oranges in quantities large enough to have much apparent effect on our markets, and in fact they do not seem to raise more than enough for home consumption and to supply local and adjacent markets. We only had opportunity to get at the prices of oranges as sold at retail, and found them selling at approximately the same price as at home. As a table necessity they seem to be well appreciated, and I do not remember a single dinner anywhere in the Orient or Europe that we did not have them.

We noticed surprising and astonishing things that completely upset our ideas, based on experience, of the disposition and nature of orange trees, such as seeing them growing and flourishing luxuriantly out of holes in solid rock pavements with no apparent soil or other nourishment for their support and no possible chance to cultivate or fertilize them. We saw them trained against houses and palaces, and shaded into arbors like vines. In Egypt we saw several large enclosures fenced in with hedges of orange trees pruned and trimmed into various shapes as the owner's fancy dictated.

In conclusion I may say that the most prominent feature of our trip was cold always and everywhere, and with the exception of a few days in Cairo, and one day clambering over lava and in warm volcanic ashes on Mt. Vesuvius, the very day before the great and destructive eruption, we have not had a chance to get warm !

In the lower end of the Jordan Valley, near the Dead Sea, around the towns of Jericho and Gillgal, was the only place where we did not see evidence of frost. In this small territory are a few lemons, guavas, etc., but the Turkish system of taxation is so oppressive that little is undertaken by the wretched inhabitants in the way of fruit growing. They told us that each and every fruit tree was taxed the same, no matter whether it was large or small, barren or productive. Many were cutting down their trees and selling the wood as the only way to escape this ridiculous method of taxation. With

irrigation and better laws the Valley of the Jordan, now a howling wilderness in possession of wild animals and fierce Bedouins, could be made one of the most productive and delightful places in the world.

With kindest regards to you and yours, and best wishes for the splendid society of a splendid State over which you preside, I am,

Yours truly,
WM. C. RICHARDSON.

Question Box.

A VARIETY OF QUESTIONS FROM A VARIETY OF SOURCES, ANSWERED BY VARIOUS MEMBERS.

1. What is the cause of thick-skinned grapefruit or oranges? Can the trees be fertilized in a way to produce thin-skinned fruit?

Mr. Taber.—Mr. President, I think Mr. Sampson should be called upon to answer this question.

Mr. Sampson.—There are a number of causes for thick-skinned fruit. The first crop might have thick skins while the second would not. If you put on too much ammonia in proportion to phosphoric acid and potash, you might expect coarse-skinned fruit.

Mr. Sample.—I would like to know if cultivating it is conducive to thick skin.

Mr. Sampson.—I think it is. We had a portion of a natural sour grove where trees were left too thick for anything but hoe cultivation—three times a year—that invariably grew much thinner-skinned fruit than same variety where trees had clean cultivation till rainy reason. They produced much less fruit but it was solid, handsome fruit and ripened earlier.

Maj. Fairbanks.—I have noticed that where I had my stables the land was very rich and the trees planted near there bore very thick skinned fruit. I concluded that too much ammonia was the cause of this thick skin.

Mr. Connor.—In my last report I said something about cultivation. I think the matter of cultivation can be overdone to a great extent. I have some old soil and I think it is as poor as any in the State. My plan has been to cultivate it without cultivation, in other words, to make use of the growth of beggar weed etc., mow it down in summer and use what I want for hay, then in the fall and spring run over it with cutaway harrow and chop it into the soil. After three years such treatment it now looks like good soil.

Mr. Cook.—I did not hear all that Mr. Fairbanks said in reference to thick-skinned grape fruit. My experience has been this; in cultivating the citrus tree and its fruit the use of a highly ammoniated fertilizer with constant and late cultivation produces a vigorous growth of wood and a large, coarse, thick-skinned fruit either grapefruit or orange. By the free use of potash this result can be modified somewhat as to the fruit.

Mr. Painter.—The thickness of the orange peel depends on several conditions—fertilizer, cultivation and moisture, or a combination of the three. Young trees that are highly fertilized and thoroughly cultivated will bear thick skinned fruit if the season is one of abundant moisture. A dry season would produce thin-skinned fruit because the tree cannot take up as much of the plant food from the soil—a lack of moisture means a lack of nitrification. Old trees that have but little cul-

tivation generally produce the thinnest-skinned and best appearing fruit.

Mr. Hart.—I will say my groves have not been plowed in many years. I do not cultivate deeply after the second year from setting a grove.

I wish to speak of budding the orange, more especially the Washington Navel on rough lemon stock. This variety is a shy bearer on sweet or sour stock but fruits well on lemon yet my experience is that on stock the navels are very coarse and poor. My navels were so poor on this stock the past season that I would not have shipped them at all had I known just how poor they were. The fruit may be better on pine lands but for hammock I would say, don't use lemon stock at all.

I am cutting down my navels and putting in other varieties.

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2. Citrus trees in a grove eight to ten years old have grown so thick limbed that it is almost impossible to gather the fruit grown inside of the trees. Would it be well to prune out a lot of the inner branches and twigs? Would it be a good time directly after the blossoming season is passed?

Mr. Hart.—The older I grow in orange culture the more I find that I am not positive of many things I thought I had settled in my mind, I have not settled. I believe in letting the tree grow, I do not think it was born depraved and has to be cut to pieces every year. I do hardly any pruning at all except to take out dead wood and I am very much pleased with results. Now as to the second question, I would say this much, I would not prune right after the trees bloom, if I were going to prune at all it would be right before the starting of new growth.

Mr. Connor.—I was with Mr. Waite while he was pruning some trees in Manatee Lemon Co. Grove at Palmetto three years ago. If he has made it pay—after the use of the knife in what I called at that time a very free manner, it would convince me that pruning is a good thing. I would like to know what his success has been.

Mr. Waite.—If the grove is situated near, or in the white fly belt, I should advise pruning out the centers of the orange trees, for the fly likes these thick places, and we have noticed that almost immediately after it gets started in a grove the scale insects kill the most of this inside wood and unless the tree is cleaned out you will get but little fruit.

With us the grapefruit and lemon trees do not grow as compact, and the lemon especially, sheds a great deal of its inside foliage from the fruit spur wood, yet these will invariably produce bloom which is well protected from cold, and the fruit thus produced is of the finest quality. As the fly is quite severe on the lemon we have found that the scale soon kills a greater portion of this inside wood.

We have no set time for pruning, but I believe that January is the best month in which to prune, as the tree at that time has enough sap flowing to enable it to heal the wounds thus produced.

Mr. Longley.—Mr. President, I do not want to interfere only to prove as near as I can that pruning is very objectionable. I had a neighbor who had a grove of about 85 acres who is always pruning and today he claims four thousand trees, but he will not average one box of fruit to the tree. I do not prune at all and have a good crop of fruit all through my trees. I claim that pruning is good in the fore part of the winter before blooming time.

3. What will labor and material cost to spray 5000 medium sized orange trees?

Mr. Connor.—During the last three weeks I have had some experience in this line, just the experience fruit growers would have who have not the complete apparatus for spraying. The cost of spraying for about 500 trees was something over $7.00, with an additional cost of $8.00 for material used, or about $15.00 which would be an average cost to depend upon. Trees bearing from two to four boxes.

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4. Will whitewashing orange trees with pure carbonate of lime be detrimental?

Mr. Hart.—I remember twenty five or thirty years ago there was quite a discussion in regard to whitewashing orange trees. In California several years ago I saw where they had cut back their trees to bud them, and that they had whitewashed the trunks eight or ten feet high to protect them. This might be all right but I remember there were objections found to white-washing but they have gone out of my mind just now and I cannot state them. Perhaps Maj. Fairbanks can give us something on this line.

Maj. Fairbanks.—I wish to say that I have no information whatever. I like the orange tree and think it is the most beautiful tree in creation and it is a sacrilege to white-wash it.

Mr. Painter.—Anything put on the orange tree to cover up its pores is injurious, especially during the growing season. White-wash your fence and outbuildings but wash the trunk of your trees with water and whaleoil soap.

5. I have Mexican clover in my grove and would like to know how to get it out.

Maj. Healey.—Let more of it grow and you will not want to get it out.

Mr. Painter.—I would suggest that if he really wants to get rid of it he move to another county.

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6. Explain how, when and what quantity of blue vitriol to use for dieback.

Mr. Brown.—I suppose that the regular Bordeaux formula would be used; it should be used just previous to the starting of new growth, I should say the latter part of January, but it could be used later in the season. If the tree is in a very bad condition, inoculate the tree, but my plan is to use a spray.

Mr. Longley.—I would like to know what quantity to use in this inoculation.

Mr. Brown.—I use a quantity about equal to that of the size of a pea inserted right under the bark of the tree.

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7. What is the best remedy for foot rot? Is it best to resort to remedies for the cure of this disease, or pull out the tree and plant a new one.

Mr. Phelps.—Some time prior to 1895 I set out ten trees. I found this foot rot on them later. I happened to meet Mr. M. F. Robinson who advised me to apply sulphuric acid to the ground and rake it in well, this I did and the very worst tree I had came out fine, in fact better than any of them.

I should dread very much pulling up a tree as it is no little job, and shall do everything I can to save them otherwise and I have saved a good many so far; I still believe in the sulphuric acid well raked in.

Mr. Painter.—The sulphuric acid remedy referred to by Mr. Phelps is a dilute form. Three gallons of 50 per cent. B. acid is diluted with seventeen gallons of water.

Mr. Blackman.—I have tried a good many remedies, spraying, cutting away the wood, sulphuric acid, in fact almost everything I could hear of; but the only effective remedy I have found for this disease is blue stone. I inoculate the tree close to the ground, cutting the bark the same as for budding and inserting a piece of blue stone about as large as a grain of wheat. This must be done when the sap is up and the tree in a growing condition. I think that for foot rot blue stone is a grand panacea. In some cases it will scar the tree badly, but in time it will heal over and the tree will put on a most vigorous growth. I have found quite a good many trees that were affected; but in every case they were trees grown on low land. I have never seen a tree in our section that was grown on high pine land affected by this disease.

Dr. Bessey.—What is the appearance of a tree with foot rot?

Mr. Brown.—Thy become yellow and drop their leaves. I did not know just what it was at first, but I wish I might tell every grower who has foot rot in his grove that if they will put blue stone in the root just at the surface of the ground, it will surely do the trees good.

Prof. Rolfs.—About four years ago we tried some experiments in treating dieback by inserting a small piece of blue stone under the bark of trees. In this experiment a certain number of trees were chosen to work upon, a number of trees were treated as described above and along side of these an equal number left untreated, careful notes as to the extent of dieback and the location of the lesions in the tree. About three months elapsed before it was practicable to return to take notes on the work, and it was found that treated and the untreated trees were entirely free from dieback. The point I wish to make here is, that it is absolutely impossible to draw a reasonable conclusion from any experiment unless we have checks upon our operations. Dieback or citrus tree indigestion, may be brought on by a variety of causes, even different trees in the same grove may have dieback from entirely different causes. The matter of first importance in treating dieback is to ascertain what caused it and then to remove the cause. Often times this is all that is necessary. The recovery of the tree may, however, be hastened by an application of weak Bordeaux mixture to the upper surface of the leaves. Among the most frequent causes of dieback I may mention plowing during the rainy season, applications of organic ammonia, hard pan or a rather hard sub-stratum under the tree. A tree that has a tendency to dieback may be set over into a case of dieback by pruning or cases or dieback have been known to be brought on by root pruning. In other cases of dieback have been known to be ables them to secure too much organic ammonia are apt to have dieback.

Mr. Hart.—In this matter of foot rot, the time to cure the disease is in its early stages; look out for it, examine the trees and if you find gum exuding at or near the ground, dig the dirt away and expose the roots, this will usually cure it. I think when a tree has foot rot so as it loses its leaves it is best to dig it up and set sour stock in its place that is budded eighteen inches above the collar.

Mr. Frink.—I would like to hear from

Mr. Wilson as to his experience with this foot rot in Porto Rico.

Mr. Wilson.—We have a kind of foot rot in Porto Rico which we have fought with carbolic acid and Bordeaux mixture, but whether this is the same foot rot you have in Florida or not I do not know. We discovered it a few years ago only on a few trees. When I first found this foot rot on my trees my men put on the carbolic acid too strong and killed the tree but since then I have used this carbolic treatment, superintending it myself, and found it very successful. A neighbor of mine has found this remedy very successful by pulling the dirt away from the trees and washing them with this mixture.

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8. Will Dr. Walker please give the society a report of the camphor experiment at Huntington?

Dr. Walker.—Mr. President, I am afraid the subject on which I am going to speak, will place me in rather a false light. I have in my possession a sample of camphor prepared in Huntington and purified in Washington, but first must tell you how this came into importance (and must confess that it is of great importance to us.)

Most of the camphor used in the United States today comes from Formosa. Recently several Japanese authorities were quietly sent over here to see how much camphor was grown, and whether we could raise it successfully or not.

The results of their visit were so serious that the celluloid manufacturers—our great camphor consumers—said, in their report to Washington that they must have American camphor or move to Formosa. Camphor, up to this time had been worth about thirty cents per pound, but immediately advanced to $1.00 per pound.

In 1898 I met Prof. Hubbard who was our State Entomologist and he showed me the results of his experiments. I found that one pound of camphor could be extracted from 70 pounds of leaves. It was at this time, when it was worth only thirty cents per pound, that people thought it would be a profitable business to plant camphor trees here.

The camphor trees are very beautiful, and I got rather enthusiastic over mine, which were growing well. When I heard that another grade of camphor—a chemical product could be put on the market at fifteen cents per pound, so thought it would be useless for us to try and raise the trees. Camphor is very similar to turpentine. Many people have tried to make camphor out of turpentine and think it will yet be done.

We waited for a year or two, during which time the camphor workers were said to be hard at work, but no camphor was produced. Then, at a very opportune moment, these works were burned and we do not think they will be rebuilt.

Camphor is also very essential in the manufacture of smokeless powder. Altho' other substances might be used yet if anything should happen to draw us into a war, when we would require a quantity of powder immediately, we would be in a dilemma if Japan decided not to provide us with the camphor.

About a year ago, a gentleman came down from the experimental station—Washington—to see what the camphor outlook was in Florida. After a general look around he took samples of this Florida made camphor back to Washington and purified it. The celluloid people were interviewed and shown the samples which

resulted in an order from the president of the company for 500,000 pounds of Florida camphor at $1.00 per pound. But unfortunately it was not procurable, and we are out that $500,000. (Laughter.)

The gentleman from the experimental station came down later to experiment in Huntington. I was only too willing to offer him all the facilities I had for the experiment, as this was such an important question, and should be pushed forward. In six weeks time he (and his assistant) returned to Washington and purified this camphor. I had gotten 1.42 per cent of camphor from my own trees but am told they can do better at Washington. I did not expect to go into the matter very thoroughly, but just pass this information along.

Other trees may be cut down by severe cold, and that is the end, but not so with the camphor trees, as we can use them even four months after they are cut down. I used some old trees that had been cut down three months, and obtained 1.021 per cent of camphor, so I know that this is true. So, if we go extensively into the business, and a severe frost cuts down the trees, we can still obtain the camphor from them.

I wish to call attention to the value the camphor tree will be to us within the next ten years. It will be worth millions of dollars, if we only take hold of it. Japan has all the trade now, but can we afford to let her keep it? If Japan says they must pay $2.00 per pound for their camphor, we, who are obliged to have it, will be obliged to pay. And if she says we cannot have any at any price we will not get it. If we do not stop the growth of camphor in Formosa, for use in this country, it means the loss to us of millions of dollars.

I will take my chances on the camphor growing. It is surprising what can be done, and the only thing we need worry about is that this Cynthetic camphor may be made. Yet if it should be, we still have our ornamental trees.

I would like to have the opinion of this association on this subject.

Scattered about in different parts of Putnam county are groves of these trees, varying in size from a dozen trees to several acres. If we can get the government to take the matter up, you see of what great importance it will be to us. I have offered them every inducement to come to Huntington and experiment on my trees. I am willing for them to cut them down, dig them up, or do anything they like with them. I would like expressions from this society in favor of having this work pushed forward and suggest that they show the government their approval and appreciation of the experimental work being carried on.

Mr. Steele.—On what character of soil is the camphor grown?

Dr. Walker.—It will grow well on any high pine land. I have beautiful trees growing on my place at Huntington. The cost of extracting the camphor cannot yet be determined, as we were only experimenting. I do not know how the government sample was extracted, but will know in the fall, how it was done. In about two weeks I expect to have a sample of the first celluloid made from this Florida camphor. (Applause.)

Mr. Steele.—Mr. President, I had a large camphor tree that was killed down in the freeze of 1899, but now it has grown up and is as large as ever. If you will give a camphor tree a fair start, it will grow right on, almost anywhere. There is hardly any soil on which it will

not grow. It does not do so well on dry soil.

Mr. Frink.—I would like to supplement what Dr. Walker has just said on the subject of camphor, I have recently had letters from two different gentlemen connected with the United States Department of Agriculture, who stated that recent experiments in producing camphor gum have been extremely successful and they seem to think it highly feasible to produce camphor gum here on a profitable commercial scale. As a result of those experiments I have recently had inquiries for trees in lots of five to twenty thousand. From these letters and inquiries I think within a comparatively short time camphor production will become quite an extensive industry here.

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9. Have any of the members of the society seen the nitro culture that is being introduced by the United States Department of Agriculture, and with what success?

Mr. Hubbard.—I would like to ask the gentlemen from the State Experiment Station what success they have had with Alfalfa and nitro culture.

Dr. Bessey.—In behalf of the department I would ask that a distinction be made between nitro culture and nitrogen gathering bacteria.

Mr. Hubbard.—Either one of them.

Mr. Henderson.—I did not know there were two kinds, I want to know if their use is satisfactory to the department of agriculture.

Mr. Hubbard.—Prof. Connor said that they were experimenting with alfalfa at Lake City and I wished to know if they could give us any report that would be of advantage in growing alfalfa.

Mr. Merriam.—I have had some experience with nitro culture, some of it is very good. There has been a great deal of discussion about this commercial nitro culture and some of the experiment stations claim that it is not as good as that sent out by the government. I tried some last spring on beans and English peas and it was a success on my peas, I tried it very fully putting it on the seeds and in connection with this I used fertilizer without any nitrogen and right along side of it I put in some that contained five percent. nitrogen, but the phosphoric acid and potash, with the nitro culture made better peas than the fertilizer. I do not know why it was but I did not get very good results. I used this on some beans but the cold killed the beans so I could not tell about them. I could not see any difference on cow peas at all, one was as good as the other. I presume that the reason was that the ground was already well inoculated. I understand that it is necessary to have the nitro culture fresh as it will not keep very long in the shape the department puts it up.

Mr. Ellis.—Mr. President, I have used the commercial nitro culture on both cow peas and velvet beans and I planted one half with and one half without the nitro culture and we could discover no difference at all. The nitro culture was bought from a good reliable firm who claimed that it was fresh. The bacteria seemed to develop all right in the jars, but I could see no difference in the crops at all.

Mr. Henderson.—I tried peas similar to Mr. Merriam with a commercial nitro-culture but could see no difference.

10. Has any member of the society had any experience in growing "Ginseng"? With what success? Can it be successfully grown in Florida?

Mr. Painter.—Ginseng has been tried in Florida but the only one who made money out of the deal was the firm who sold the roots for planting.

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11. Can a grove be cared for and fertilized so that it will give a full crop each year, if so, how and when to fertilize it?

Mr. Blackman.—Mr. President, I can answer that in part, not from my own experience, but for another. This gentleman take it one year with another, has good to heavy crops of grapefruit. The first few years his grove bore, it would produce a heavy crop one year, the next lighter. The owner commenced experimenting in fertilizing and for the past three years his grove has been loaded almost to the breaking point. I do not know what kind of fertilizer he uses, or how many applications or when applied. He uses a fertilizer manufactured in this State. He works his grove in the spring, allowing the weeds and grass to grow through a portion of the summer. I do not know how much fertilizer he uses to the tree; but I do know that he gets a full crop each year.

Mr. Connor.—I do not know that I can give any light on this subject but I wish to say that there are so many things that have to be taken into consideration to produce a full crop of fruit that I do not think we can lay it altogether on the kind of fertilizer used for the reason that there as so many other things that we have to take into account. If we do not have moisture then we are not apt to have a full crop of fruit, then again I think the time, and quality of fertilizer used has something to do with it. My idea is that the time of fertilizing is in the fall of the year, it seems to get the grove in better shape to set fruit and then I would follow that with a light application in the spring, then feed the tree gradually all along the year. If you feed the trees well, being careful to have suitable analysis, you will have no trouble in getting a good crop each year.

Mr. Gist.—All of Florida is not so fortunate as to have a rock foundation to put their groves on, therefore some suffer for the lack of moisture. I think Mr. Connor's remarks were well made, for my observation is that a tree that has been well fed winters well. Down in Miami they do not have to consider the winters as we do. A well fertilized tree will stand a lower degree of temperature than a poorly fed one and thus better crops will be the result the next year.

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12. How are bamboos propagated? Will they grow from cuttings, if so what time should they be put out?

Dr. Walker.—They are propagated by taking the roots. This can be done at most any time.

Mr. Steele.—I saw in a neighbor's yard a large clump of bamboo, from which it was impossible to get a sprout. I took some cuttings, slender twigs, and planted them in moist soil and all grew.

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13. Given a sandy soil of a tidewater island that is too salt for growing oranges is it possible to neutralize the excess of salt by the use of a special fertilizer? The soil is so salty that the kelsey plum after being transplanted when matured will taste as salty as if it had been pickled

in brine. Larger pear trees planted in this soil in February continue to grow, putting on a large crop of fruit and again blooming and fruiting, as did the plums, and dying the second year after having fruited three crops; the third crop of the second year being immature. This land is well above the ordinary tide and has a fine growth of palmettoes, live oak, cedar, accacia and camphor but it is of a peculiarly dry character getting dry immediately after being soaked, seeming to lack nitrogen also. I would be glad to know how I can make oranges and other fruits grow on this land.

Mr. Painter.—There is no hope for your ever being able to neutralize the salt in the lower strata of your soil. It is evidently there from salt water from below. The only "neutralizer" salt has is water. This dissolves it and would eventually clear the soil if you had perfect drainage and no return of salt water from below.

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14. What is the best size of budded stock of the orange or grapefruit to transplant.

Mr. Frink.—In reference to size of budded trees, I wish to say that there is considerable difference of opinion as to most desirable for planting. Some people prefer a two year bud and others one year bud. The demand is heavier for four to five feet one year buds than any other size, and two year buds probably come second. My own observation and experience goes to show that a four to five foot one year bud is easier to transplant and everything considered the most desirable size.

Mr. Connor.—We all know that the smaller the plant is or the closer it is to the seed, the better it transplants. When it is removed from the seed bed, and is tough enough to be transplanted I think this is very true with the orange tree, for this reason; you can get nearly all the fiberous root with the young tree but if you wait until the stock gets to be of large size the feeding roots are necessarily thrown out farther from the plants and it takes a tree in that condition longer to adopt itself to its surroundings and start new roots. My opinion is that stock from two to two and a half years old well supplied with fibre roots will adopt itself better and receive less shock by transplanting than the large ones with no fibers.. I do not care so much about the age of the bud it may be one or two years old.

Mr. Hart.—My interests simply call for the best tree I can get and my experience has been that the size of stock is of more importance in successful transplanting than size of bud. I would prefer the stock to be two inches through. I have trees bought from nursery stock that were not larger than my finger after the freeze of 1899 and they are not much larger yet, but I have some trees of my own growing that I planted out three years ago, these buds were thrifty, the stocks of good size and the trees now are many times larger than the smaller ones set years before. I came to this State when the trees for our groves were all taken from wild hammock and we did not take any stock less than two inches in diameter and some were six inches through. We set them out and budded them as they were set out, you cannot do that with the small nursery trees. It takes them some time to start new growth but you take large trees at the ground, not too large say about three and one-half inches through and you will get your

grove quicker and make more fruit. You bud the trees after they are transplanted and your buds start right to growing and in three years you have profitable bearing trees. I would not cut the old stock down close to the bud until the buds get to growing rapidly, then cut them off and wax them and the wound will soon be covered over and a smooth trunk result. You will get thrifty bearing trees from large stock, while the small stock will give away to drouth or any of the ills to which the trees are heir.

Mr. Connor.—Did you ever try transplanting smaller trees from the nursery?

Mr. Hart.—I certainly have. Have you ever planted four inch stock? That is well worth trying.

Mr Connor.—Take a good tree and at the end of three years you cannot reach the tops of them. I have some now that I tried this with and I cannot reach the tops of them. I have never seen finer trees than I have in my grove planted three years, and I used the ordinary four or five foot bud, one year old in nursery.

Mr. Longley.—It makes a great difference in conditions. I suppose Mr. Hart's place is on hammock land. On my pine land I have taken stock three eights of an inch thick and planted between trees that had been planted two years, that had grown from one and a half to two inches. In three years from that time the small trees were the finest by far and all planted in the same row.

Mr. Chilton.—In the past few years I have set out in groves about 20,000 trees of different varieties and I certainly must bear out the view of Mr. Hart in reference to a good large thrifty stock with a two year old bud in preference to a small stock and bud. I have been in the business for the past thirty years and came to this State in the old time, which Mr. Hart speaks of when we had large wild groves of the orange scattered all through our hammocks and know the time when we set those large sour stumps, six and eight inches in diameter and after budding they made a quick bearing grove.

In three years we could count on a good crop. It takes too long to wait with small stock. I prefer a good thrifty four year old stock with a two years old bud of not less than three inches in diameter to start with and a two year bud. The stock should be vigorous which is one of the main points to beginners.

Mr. Blackman.—Is it possible to lay down any iron clad rules that will govern all conditions in the different parts of the state?

Mr. McCarty.—No, of course not.

Mr. Blackman.—The first two years is the critical time with orange and grapefruit trees in Dade county and my experience is that a year old bud is the best for planting in that climate and soil. In Marion county I used three year old buds with good success; but not so at Miami.

Mr. Hart.—Mr. President, I have a few government hybrid buds here that I cut last winter, if I remember correctly about six hundred. I now have permission to distribute these and if any one present would like to try these oranges I will be glad to give them some buds. Many people have been writing and asking me for these varieties and some seem inclined to go into these new varieties heavily. I would not advise that yet, we do not know enough about them. Orange trees when they first bear do not

show just what the fruit will be later. I am the only one who has fruited these two varieties the Trimble and Weshart and both of them have been earlier in former seasons than the ordinary tangerine and of larger size. The fruit has been large this year but not quite so early as heretofore. It may develop later to be an early orange or it may not, we do not know, I would advise testing them in a small way on different soil.

Mr. Taber.—I would like to ask again what these two varieties are, as conditions were so unsettled we did not get them.

Mr. Hart.—They are Trimble and Weshart, I will give a few buds to any one who would like them; they are hybrids, crosses between the Parson Brown and Dancy Tangerine but are practically tangerines. I took it for granted that most of the members had read of them. As I cannot supply them by mail I take this opportunity.

No. 15. Will some one tell us what basic slag is and how much available phosphoric acid it contains? Is it as good as lime to sweeten sour soils?

Mr. Painter.—Basic slag is a by-product in the manufacture of iron. It is also known as odorless phosphate or Thomas slag. It was introduced into Florida about fifteen years ago but did not become popular. It was then manufactured at or near Philadelphia but is no longer made there. Basic slag does not contain any water soluble phosphoric acid. About one-half of the total phosphoric acid is soluble in citrate of ammonia, being tri-calcium phosphate or reverted phosphoric acid. It would be impossible to have water soluble phosphoric acid and lime in the same mixture as the lime would at once revert the phosphoric acid. Slag is good for sweetening sour land but lime is much cheaper. One ton of lime will neutralize about seven times as much acid as one ton of slag.