Proceedings

THIRD ANNUAL MEETING
FLORIDA HORTICULTURAL SOCIETY

1890

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FLORIDA HORTICULTURAL SOCIETY

Proceedings of the Third Annual Meeting of the Florida Horticultural Society, Held at DeLand, April 30th and May 1st and 2nd, 1890.

President Dudley W. Adams called the meeting to order at 10:30 A.M. Wednesday.

Professor John F. Forbes, of DeLand University, made a most eloquent and earnest prayer, and Hon. C. F. A. Bielby, in behalf of the citizens of DeLand, welcomed the Society as follows:

MR. BIELBY'S WELCOME.

Mr. President and Gentlemen of the Florida Horticultural Society:

I gladly bid you welcome to DeLand because we believe that we have just reasons to be proud of our city and its surrounding country, with all its wealth - urban and suburban - with all its beauty of locality and accomplished results in established business, in educational facilities and in horticultural pursuits. We are glad that you should see what has been, in a few short years, carved from the naked wilderness.

But while this is one reason why I welcome you with gladness, it is not the only one, or even the chief one. DeLand delights to honor herself by honoring those whose aim and purpose it is to shed light upon the pathway of the seeker after truth, and we recognize in your society a body of men who seek, by theory and practice, after the truth in horticulture, and who are willing to give consolation and inspire hope by telling of failures and successes with equal impartiality.

So exacting is modern science in all its branches that no man, if he be wise, attempts to cover more than a limited portion, even of a single branch, and what is true in this respect of other fields is true of horticulture. For the successful growing of plants and trees is a science, and the better we understand all the conditions necessary to its pursuit - the climatic and soil influences, favorable and unfavorable; the insects that benefit, and those that destroy - the sooner we shall be able to attain to that full measure of success which is certainly in store for us. And, Mr. President, we recognize in the committees which have been to make their reports the names of men who are authority in their various fields, and we know that the information which the study and experiment of the past year was gained by them will be fully given for the benefit of the toiling thousands who, possibly, have neither the time nor the inclination to find out for themselves. So as upbuilders, not only of horticulture, but of the State, we welcome you to DeLand, and we trust that your sojourn with us will be as full of pleasure to you as it will be both of pleasure and profit to us.

MR. WRIGHT'S RESPONSE.

Rev. J. P. DePass, of Lake City, had been delegated to make the response on behalf of the Society, but he not being present the President called upon Hon. Geo. H. Wright, of Chuluota, who responded as follows:
Mr. President and Gentlemen of the Florida Horticultural Society:

It will be unnecessary for me to state to you that it is a pleasure to accept the welcome to this beautiful city which has been tendered this Society. While I was not expecting to be called upon in this occasion, yet I feel it a duty, and it is the duty of every horticulturist to be ready to speak a word for a noble cause. When I learned last May that the selection had been made to meet here at DeLand, I said at once no better could have been made, surrounded as we are here with beautiful groves of orange trees and homes of wealth and of education. It is one of the finest locations in our beautiful State, and yet to be made more so.

We come here among you today to exchange views, to talk upon the subject of making a new paradise. We learn from God's Holy Writ that the first parents that were placed in the garden were horticulturists. It is one of the noble callings of this world, and he who makes two spears of grass grow where but one has grown before, does good for his fellow men. We meet here and will have different views as we have had experiences in different localities and have treated with different fruits, and if we have failed in one thing have succeeded in another, and we will learn from our neighbor what is best, and from our brother what to do in the evil.

In behalf of the State Horticultural Society we thank the citizens of DeLand for inviting us here and for the kind welcome which we have received at their hands.

The President then made the following address:

Gentlemen of the Florida Horticultural Society:

Once more the Horticulturists of Florida meet in annual council. We meet to review the past and therefrom draw instruction for future guidance. We meet not alone to gather information but also to impart it through our organization. Members have been assigned to explore different parts of the field, and we meet today to receive the result of their researches. We meet with a main object of doing what we can to improve horticulture, but incidentally these meetings do a more valuable work in improving horticulturists. A fountain cannot rise above its source, neither can the culture of the gardens excel the culture of the gardener. Here then is one of the greatest benefits to be derived from these annual meetings. They supply, to some extent, the most serious fault of American farm life; they are oases of social green in the great Sahara of agricultural isolation. We drink deep draughts from the spring of social and friendly companionship, and we are refreshed, nourished and stimulated, whether we learn much or little we go home stronger, happier men, more patriotic citizens and better horticulturists.

Let us then keep this in full sight that success in growing the finest oranges, the largest cabbages, the handsomest roses or the biggest bank balances is not the end we should have in view, but we should regard such success only as a means to make our homes happier, our lives higher and our country greater.

It is not necessary for me to take much of your time in reviewing the past year's work in the field. That has been admirably done week by week in the columns of our agricultural and horticultural journals of which our State may be justly proud.

The Society at its last meeting passed a resolution asking the Legislature to publish (for distribution) its transactions. In obedience to this resolution your President wrote to several members calling attention to the importance of giving this to our people, but I am sorry to say that nothing at all was accomplished. In States younger than ours and whose horticultural interests are immeasurably inferior to ours, liberal appropriations are made in aid of horticultural education. But in Florida the prospect of success was so poor that no member would even introduce a bill. So the work of our Society for last year is now to be found only in the musty files of old papers.

The fruits, flowers and gardens of Florida have done more than all else to bring her into prominent notice among the States. It would seem to be the part of good statesmanship to foster and encourage the developments of this growing glory of the State. In many things she is equal to any. In this she excels them all.

The excessive rains of February and March, 1889, and the drouth of April and May caused a wide-spread alarm lest a small crop of oranges would result. As the season advanced prospects constantly improved and finally we harvested the greatest crop ever grown in the State. On the whole, too, I believe the growers received better prices than ever before, though "looking backwards" we can see how still better results could have been achieved. A great mistake was made in forwarding green fruit unfit for use. People bought once, and then with anathemas upon sour Florida oranges went and bought the Jamaicas and Messinas at prices above ours. After our market was completely broken by our own folly we stopped shipping till the accumulation of green oranges had been worked off. This gave foreigners a fine market in which to unload their surplus. About the time these arrived we again opened our floodgates and deluged the markets with 30,000 boxes of oranges per day, till again the market was wrecked and the prices went down. A majority of the crop of the State was sold during these two gluts, resulting in a loss to the grower of fully one dollar per box. It is safe to say that $1,000,000 was lost to the grower by this irregular forwarding of the crop. To remedy this evil is a task worthy of the most profound thought.

The growing of oranges presents many opportunities for earnest and profitable study, but marketing the crop is beset with incomparably greater difficulties. Some of the ablest of our members are giving their best energy to this matter, and that their success has not been fully up to their expectations only proves the magnitude of the task under-taken. How shall we cultivate our orange groves to best combine present vigor, future fruitfulness and economical investment is a question, apparently, as far as ever from a generally accepted answer. If you will take a careful look at Northern agricultural papers and notice the absolute want of agreement among farmers as to the best methods of growing corn (the main crop of that section for a century) and one that takes only four months from planting to maturity, you will not wonder that orange growers who have not yet perfected even one crop of orange trees are not agreed as to the proper mode of precedure. To the careful observer, however, it is apparent that progress is made, and that the application of common sense to our methods is leading us forward. It is still the case, and no doubt always will be, that many people can learn nothing from the experience of others. They come to Florida and go right forward and strike the same rocks on which others have wrecked. The wrecks in sight have no terrors to one whose self-confidence is supreme, till bye and bye he makes the discovery of the sunken reef and another wreck ornaments the shore. The oracle who can tell us all about the business is the one who is about to or has just embarked on his first trip. I think I speak safely

within grounds when I say that half the money that has been spent in making orange groves in Florida has been wasted. In other words, one half the money already invested would (if economically and intelligently expended) have produced greater results. One of the most important things in profitable culture of our groves is the building up and maintaining the fertility of our soil. It is not always the quickest that is the most profitable way to make permanent investment in a grove.

Men go into grove making for diverse purposes. One starts out with a determination that money shall make oranges, another starts out with the hope that his oranges will make money. The one makes a grove for the same reason that he would buy a fast horse or build a fine house. He makes it because he wants it and has the money to pay for it, and he may care no more for the profitableness than in a silk hat. The other has his fortune yet to make, and invests his savings or labor in an orange grove, not for fun, not for ornament, not to spend money, but for profit. His object is eventually to take out more money than he puts in. Of course a mode of treatment that will accomplish the object of the former perfectly might utterly fail to accomplish the purpose of the latter.

Next to the proper management and maintenance of our soil come the conquering of insect enemies and curing the diseases that affect our trees. Unfortunately the text books that treat scientifically of insects are in foreign languages that place their comprehension out of the reach of most of us. Here and there however are individuals of uncommon determination and large leisure, who have surmounted this difficulty and they are giving us valuable aid in combatting insect foes.

The subject of varieties of fruits should receive our careful consideration. A committee on nomenclature is mainly in charge of bringing this matter properly before us, but I cannot refrain from referring to the great and increasing number of names that already encumber our catalogue, between which there is no material difference.

The exhibition of fruits which our Society made at Ocala under the auspices of the Semi-Tropical Exposition, was probably the most complete and accurately named collection of citrus fruits ever exhibited in the world, and yet I feel sure that had the labels been removed from those plates there is not a man living who could have put them back in their places without an error; and in the great markets of the country which take our oranges, I doubt if a single man could be found who could correctly name ten of nearly 100 sorts labeled.

I don't wish to be understood as undervaluing the correct nomenclature of fruit. My object in referring to this subject is to illuminate from our books a host of names that, so far as any practical purpose is served, are synonyms.

The horticulturists of Florida are to be congratulated on the favorable progress made in securing protection for our products from foreign competition. The Congressional Committee on Ways and Means was confronted with a very difficult problem. The revenue of the Government was in excess of its needs, and it became necessary to reduce it to prevent a dangerous accumulation of surplus. At the same time many American industries were suffering from the competition of cheap foreign labor and needed protection. Under these circumstances we feel grateful to note that the committee has recommended in increase of 100 per cent in the tariff on oranges and lemons, and on the product of our gardens, such as cabbage, potatoes, onions, etc., a very large increase. That we have been so liberally treated when the general schedule had been cut down over $50,000,000 is certainly cause for rejoicing, and should give us courage to go forward and fully supply the market in which we have this advantage, and which is, by unanimous voice, pronounced the best in the world.

Though the unseasonable frosts of March have done serious damage and occasioned serious loss, yet every day gives new evidence of the wonderful recuperative power of our groves, and another year but little evidence will remain of the disaster. Excepting that, the summing up of the year is favorable as a whole. We have made substantial progress in many ways, and retrograded in none.

Our Society has nobly stood the strain of organization and infancy, and now claims the high place among similar societies to which she is justly entitled by the diligence, energy, number and progressive spirit of its members.

May its maturity fully justify the promise of its youth.

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EXECUTIVE MATTERS

The following resolution was adopted by the State Horticultural Society, Friday:

WHEREAS, There is to be a Quadri-Centennial celebration at Chicago, commemorative of the discovery of America, at which will be exhibited evidence of the material and intellectual progress of this country; therefore, be it

Resolved, By the Florida State Horticultural Society, that we deem it for the best interests of our State that her interests be properly represented there, and to that end we express the opinion that it would be good policy for our Legislature to make a liberal appropriation.

Mr. W. S. Hart offered a resolution, which was adopted, by which the Florida State Horticultural Society formally recommend to Governor Fleming the President of the Society, Mr. Dudley W. Adams, for nomination by His Excellency as one of the Florida Commissioners to the coming World's Fair at Chicago.

Mr. Phelps moved that the laborious task of cataloguing the Florida fruits for the forthcoming Catalogue of the American Pomological Society be assigned to the Executive Committee. Carried.

Messrs. Bielby, Duncan and Wright were nominated by the President a committee to make the proper representation of the interests of the Society to the State Legislature.

The Executive Committee were instructed to make provision for the place of the next annual meeting, to accept invitations from different towns, etc.

Mr. Bacon moved a vote of thanks to the railroad company, and to the DeLand hotels, for the reduced rates and other courtesies extended to the Society. Carried.

The following series of resolutions were presented by Mr. Hart, chairman of the committee appointed for that purpose:

WHEREAS, This Society has been the recipient of many courtesies from the people of DeLand, during its present session, in the way of carriages and escort provided to take its members to visit the many points of interest in and about their pretty town, including a visit to the John E. Stetson University, an institution of learning of which any town, North or South, might well be proud; also, in their kind provision of a commodious hall, freshly decorated with an abundance of beautiful flowers each morning, for our meetings, all of which were furnished without expense to this Society; therefore be it

Resolved, That the hearty thanks of the Florida State Horticultural Society are due and are hereby extended to the good people of DeLand for their courteous generosity to this organization in their midst; be it also

Resolved, That the hearty thanks of this Society are hereby tendered, to the officers for their efficient and careful discharge of all the arduous duties required of them during the past year.

Resolved, That these resolutions be sent, for publication, to the Florida Agriculturist, the Daily News and the Record of this town, and also to the FARMER AND FRUIT GROWER and other leading papers of the State.

Adjourned sine die.

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OFFICERS FOR 1890

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Following are the officers of the State Horticultural Society for the ensuing year: President, Dudley W. Adams, Tangerine: Vice Presidents, Theodore L. Mead, Oviedo; George L. Taber, Glen St. Mary; George H. Wright, Chuluota; Secretary, W. S. Hart, New Smyrna; Corresponding Secretary, E. O. Painter, DeLand; Treasurer, J. B. Anderson, San Mateo; Executive Committee: Lyman Phelps, Sanford; A. H. Manville, Jacksonville; C. F. A. Bielb, DeLand.

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PROCEEDINGS OF THE STATE HORTICULTURAL SOCIETY

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Wednesday, 2 P.M.

In a discussion as to the best date for the annual meeting, the Secretary stated that the regular date is the first Wednesday in April. It was suggested that it would be better to have the meetings as near as possible to those of the Orange Growers' Union and the Fruit Exchange, to enable members to attend all of them in one trip.

Mr. W. S. Hart moved, and Mr. W. H. Mann seconded it, that the Society recommend its President, Mr. Dudley W. Adams, to the Governor for nomination as a State Commissioner to the World's Fair. Carried unanimously.

Mr. W. W. Breeze read an essay on strawberry culture, a part of which is given in another column.

Rev. Lyman Phelps asked why an application of lime was recommended.

Mr. Breeze said it was to correct the acidity of the new soil; that plants set on sour, raw soil did not do so well.

Mr. Phelps replied that he considered the only good effect of lime is mechanical.

He thinks that it burns up the nitrogen and ammonia in the soil; should not wonder if it even consumed a part of the cotton-seed meal that had been applied. Florida soil is already sufficiently burned up by the sun. Why roast it still further with lime?

Mr. Breeze said he had had experience with a field, part of which was limed and part not; the unlimed part did not produce as strong, thrifty plants as the limed part.

Mr. Mann, of Glenwood, remarked that, since alkalies and acids neutralized each other, it would seem to be the proper thing to apply lime to soil which showed its acidity by a copious growth of sorrel.

Mr. James Mott says that sorrel land is about good for nothing. Sorrel means poverty. He also opposes the use of lime.

Mr. Phelps. -- As for correcting acid, lime is not a strong anti-acid anyhow. A strong solution of lime and milk is given to sick infants, with great advantage.

President Adams queried whether sorrel is a necessary evidence of acidity in the soil. Sorrel means poverty; that is all. Plenty of good manure will kill sorrel quick enough.

Mr. F. W. Munson corroborated this view. In Wisconsin he had cut a heavy crop of sorrel on land, then the next year, without having manured any to speak of, he had grown 100 bushels of oats to the acre.

Mr. Phelps had grown fifty bushels of corn to the acre when the sorrel was so thick that it was inconvenient to hoe the corn.

Mr. Adams agrees with Mr. Phelps in thinking that a heavy growth of sorrel denotes strong soil.

VARIETIES OF STRAWBERRIES

Mr. T. L. Mead stated that the flea beetles had eaten his strawberry plants a good deal, and he finally tried a solution of Paris green on them, one pound to 200 gallons of water. It did the business for the beetles. When the berries got ripe he and his family ate a saucerful apiece of them, and were not harmed in the least. He wanted to know if there was not some variety that was fit to eat; the acid sorts that we now have are fit only to ship to the North.

Mr. Geo. H. Wright, of Chuluota, said he had received a seedling from Chicago which was sweet and delicious, and a great yielder withal; the best he has ever seen in Florida, but too soft for shipment.

Mr. Mead received six choice varieties from Peter Henderson, but they all died out.

TALK ON IRRIGATION

Mr. Munson asked if a trough with half-inch augur holes, running along the middle of a bed thirty feet wide would irrigate it enough.

Mr. Breeze replied that Professor Dubois has three acres of nursery in thrifty growth, which he irrigates no other way. Still, he admits that beds only fifteen or eighteen feet wide would be better.

Mr. Cole, at Glen St. Mary, one year irrigated three or four acres of strawberries by means of a force pump and common wells only ten feet deep. He had a series of them along the upper side of his lot; he carried the pump from one to another in succession, and so irrigated half the patch each evening in succession, greatly increasing the yield.

Mr. Wright stated that in California they keep their strawberries in bearing ten months in the year simply by copious irrigation.

Mr. Mead said that a modification of the DeLand plan would be good. Carry a trough along about ten inches under ground; have a layer of shells or pebbles in the bottom; the water will plow along in this and rise to the surface by capillary attraction.

Mr. Wright. - In Colorado porous clay tiles are laid under ground, and the seepage from them affords sufficient irrigation. It is found that one-fourth the water carried under ground this way will do as much good as the whole amount on the surface.

Mr. Mead asked if a bored well is superior to a driven one.

Mr. Painter replied that he had sunk a six inch pipe thirty feet, and his windmill over it had never failed in the dryest time. At first he thought the pipe had to be perforated, but he found this a mistake; it constantly filled with sand. They are now put down fifty to sixty feet or more,

and do good work. Dr. Cernish, of Spring Garden has invented what he would call a subterranean hydraulic ram that is a success.

FRIDAY FORENOON -- STRAWBERRY TRANSPORTATION

After the presentation of Mr. Hoyt's report on tropical fruits the subject of strawberry transportation was next taken up.

Mr. E. G. Hill made a verbal report, stating the difficulties in transportation, against which the growers have to contend. The growers of Florida pay ten cents a quart, $3.20 a crate, $960.00 for a full car load to New York or Philadelphia. Most of the fruit early in the season is shipped by express or in "ponies" (small refrigerators holding a bushel each); but when the season is well spent the fruit has to go forward on ice, and the above rate is very onerous. As a basis of comparison he stated the rates which are paid by the growers of Louisiana and Mississippi to Chicago. They pay a total rate of $2.50 a hundred pounds, and six cases of twenty-four pints each are allowed for a hundred pounds. Thus they pay about three and a half cents a quart, and about $336 a car load, against the onerous tariff which oppresses the Florida growers.

Mr. Hill also gave the rates which prevail from Mobile to Cincinnati and to Chicago, and from Texas to St. Louis, showing that the growers of all other Gulf States have an immense advantage over those of Florida in the matter of transportation rates; an advantage which the latter cannot long survive unless they obtain relief.

Mr. Hill intimated that the railroad companies may have been induced to establish and maintain these enormous rates partly by the rose-colored newspaper stories which have been published concerning the fabulous profits of strawberry growing. Whatever these profits may formerly have been, the day for such has gone by. A prominent commission merchant in Chicago told him that seventeen quarts of strawberries at two dollars a quart broke the Chicago market. After they begin to go forward in car lots the growers do not receive over twenty-five or twenty cents, and when ten cents is taken out of this for freightage there is very little left for the grower, the picker, the packer, and their families.

Mr. Phelps said the same thing had happened to the orange growers; in former times they had talked too much about their great profits, and the railroads took them at their word.

Mr. Hill, in replying to several questions, gave further particulars. California pays $475 for a refrigerator car to New York, while we, for one third of the distance, pay $960, and for a car which was loaded to its utmost capacity there was once paid the enormous sum of $1,040! The California fruit comes across the continent in seven to nine days; the Florida fruit is four days on the road to New York. Louisiana pays $2.50 per 100 pounds; Florida $6.40; and their 100 pounds covers seventy-two quarts, while Florida's 100 pounds covers only sixty-four quarts.

In reply to Mr. Bacon, he said the Alliance had tried to secure lower rates from the railroad companies, but no other organization had ever attempted to effect a compromise with them.

In reply to Mr. Phelps, Mr. Hill stated that the initial road in this service is the Florida Central and Peninsular, and that it is beyond the power of this company to control the through rate, except by agreement among the traffic managers of the entire route. The Florida Central and Peninsular officials are credited with a desire to do whatever they can to assist the growers and to develop the industry. They have, without extra charge, furnished an engine to play back and forth along their line to collect the refrigerator cars together, and they have given orders that no train of whatever description shall ever go by a crate of strawberries anywhere on the road without taking it along to the common rendezvous. They do not receive

a disproportionate share of the total freight charges for the service performed by an initial road. Yet the fact remains that the growers are burdened by an extortionate charge for the entire haul to New York, of which the Florida road controls less than fifty miles.

Mr. Phelps. -- There are too many lines on the route to New York, too many sets of officers; one solid through line would be better. All rational and dispassionate agitation will have a good effect.

Mr. Bacon said that a corporation cannot take notice of one man, but that some association of growers ought to take up the matter and make representations or petitions to the transportation companies.

Mr. Phelps. -- We have made rapid progress in Florida in five years toward reasonable rates of transportation, much faster than the great Northwest did in their early struggles.

Mr. Wright made some statements as to transportation rates from Texas to Chicago, with which the Florida rates compare very unfavorably.

REPORT ON ORNAMENTALS

The report of Mr. Theo. L. Mead was read from a printed copy, and elicited some amusing discussion as to the use of botanical names.

Mr. Bacon said he sent to extreme South Florida for a catalogue on palms, intending to purchase some. It came, and his wife looked it over before he came to the house. When he came in she said: "There's nothing in it we want; we had better send it to Mr. Berckmans." The joke was, the names in the catalogue were all in Latin, and she could not read them, neither could Mr. Bacon. The South Florida nurseryman lost an order by not publishing the English names of his palms, as well as the Latin.

Mr. Adams attacked the botanical names, saying that a plant often has as many different Latin names as it has English.

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THE DEWBERRY

(Read before the State Horticultural Society, at DeLand,)

The low blackberry, trailing blackberry, dewberry, Rubus Canadensis, of Downing, "a low, trailing shrub, producing large, white blossoms in May, and very large, roundish-oblong black fruit in mid-summer; leaflets from three to five in number. The fruit, when in good soil and fully exposed to the sun, is high flavored, sweet and excellent."

The plant is native to most sections of the extreme South, Texas, Louisiana; and in some parts of Florida as well as of the other Southern States bordering on the Gulf and Atlantic we find it wild. Often the fruit is much larger than the wild blackberry, ripening two months earlier.

I have seen them brought into the New Orleans market from the adjacent country, gathered from the wild plants, early in April. They were much larger, as well as superior in quality to the common blackberry that came in from the same sections at the commencement of summer.

A neighbor, Mr. L. G. Dollins, has two rows of them in his grounds here; has them trained up on a wire some two feet from the ground, being a mass of foilage from the ground up. At the time of the March freeze they were literally covered with fruit that was half or two-thirds grown, which was all killed by the frost. They are now setting a second crop of fruit. Mr. Dollins said of it: The fruit is not only very fine, but the most productive of the berry class.

Early in March I visited a friend, Mr. C. H. Hoffner, at Boca Grande, in this county, and in an old field I found some plants that at some early

day may have been planted here, but they are now wild, and the fruit uninjured by the frost and some of it then ripening.

Again I visited there on March 16th, and enjoyed the hospitality of friend Hoffner and his excellent wife. She had prepared some of this fruit, what in Southern parlance is called a black-berry cobbler (in other sections the term would be a blackberry shortcake), that was most excellent eating.

The drought, so common to this section in April and May, is against the culture of the blackberry in use; for want of sufficient moisture the fruit is small and poor in quality. The dewberry, coming as it does so much earlier, so far as my observation goes, often is ripe, or nearly so, before the drought sets in, so that it is very little injured by it.

Mr. J. McQueen Auld, of Orlando, tells me that Col. C. M. Davis, of Apopka, has a native variety of it that he has been cultivating for several years, and that not only for his own use, but is receiving quite a revenue from the sale of the fruit, it finding ready sale at his own price.

Respectfully submitted,
James Mott.

Orlando, Fla., April 30, 1890.

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PROCEEDINGS OF THE STATE HORTICULTURAL SOCIETY

WEDNESDAY EVENING

Following the report of the committee on grapes (seen elsewhere) Mrs. M. M. Lindley read a paper on grape growing, which was received with generous applause.

Correcting a statement made, Prof. Dubois said the average yield of wine would not be above 250 gallons per acre. Replying to Mr. Mott, he stated that he had made a scuppernong wine and liked it, but he can sell forty gallons of common wine to one of scuppernont. Besides, it is very difficult to obtain all the juice of the scuppernong unless it is treated with water and sugar, and that is not wine. Just ferment the juice of the grape - that is wine.

Replying to Mr. Breeze, the Professor said that he does not graft the grape-vine; it does not do well. After two years they die; the union does not seem to be perfect.

Mr. Haynes (of Messrs. Haynes, Young & Bailey) said his experience was anything but favorable to grafting on wild roots. He grafted 500, but had to dig them all up.

Mr. Wright never had favorable results from grafting. A vine that will not do on its own roots is a failure. There is too much published as to grape grafting. Nurserymen are too anxious to increase their number of varieties. He has never found the Concord to flourish over two years in South Florida. The Duchess is one of the most valuable for that section; is second only to the Niagara. Somebody had once said to him eventually grapes would fall to 8 or 10 cents, then there would be no money in a vineyard. At two cents a pound (at the vineyard) there is more profit than there is in New York.

Wine making and the growing of grapes for market ought to be combined. Ship the good bunches, press the culls. He does not care where his vines come from; would just as lief buy in the North; all he requires is that the vines must be of a first class variety in first class condition.

Mr. Haynes said when his firm first began to plant they were called "those lunatics from the North". Did not intend to plant at first, but finally decided to stay and try it two years. They could not plant strictly fancy varieties; they had to have quantity as well as quality. They succeeded because they took care of their vines. There will be hundreds of failures because people will not do that. He recommends the setting of two year old, thrifty Northern vines. Have tried several hundred varieties on their grounds. They find the Niagara best, and have high hopes for the Diamond.

They prefer to raise bunch-grapes for they cannot afford to make wine out of 30 cent grapes. That is what they average, though some have sold as high as 75 cents a pound. $600 a ton, for tons per acre, is good enough for him! (Applause) Mr. Haynes earnestly exhorted all grape growers to give their utmost care and attention to their business; to raise good grapes and put them up nicely. It is only this way they can expect to make money.

Prof. Dubois says he has planted Northern and home-grown grapes side by side and could never see any difference in their thrift.

Mr. Mann made an earnest prohibition protest against making the society a wine-making one. (Applause and hisses in about equal measure.)

Mr. A. L. Duncan. What kind of land is best for grapes?

Mr. Wright would not advise pine land; lower land is better. Had seen grapes do well where the hardpan was only eighteen inches below the surface.

Mr. Haynes raises the best grapes on the lowest land he has. They must have good drainage, but they must have moisture. Notwithstanding the drouth at present, his vines are as full as they were last year, but they are one month later. If you want your vines to start early in the spring, you must put your plow among them.

In reply to Mr. C. A. Bacon, Prof. Dubois said the Herbemont would probably do well on coquina soil.

Mr. Haynes says no one can tell for certain what a given soil will do; the only sure way is to test it. Land must not be too rich; it will make vines at the expense of fruit.

Prof. Dubois, in exemplification of the patchy character of Florida soil, said he planted the Concord in six places, all within a radius of 500 yards; but they did well in only one place out of the six.

THURSDAY FORENOON -- ORANGE SCALE

Replying to Mr. Bean, Mr. Phelps said he had seen a white cottony scale near Jacksonville, but it was not the genuine California article; it was only a variety of the mealy bug. It yielded readily to the following emulsion: Bi-sulphate of soda, 10 pounds; arseniate of lime (London purple), ½ pound; water, 50 gallons. Thinks there will never be a visitation of the true California cushion scale in our damp climate. In this section there has been only 1.27 inches of rain in six months, which is a very favorable condition for scale; two or three varieties of them are thicker than he ever saw them before.

Replying to Mr. Bean, Mr. Phelps said that the twice-stabbed lady bug, which is the great enemy of the long scale, is rather on the increase. Still, it is a see-saw; sometimes the scale gets ahead, sometimes the lady-bugs. Emulsions would help very little without the help of the lady-bugs. Some emulsions disguise the odor of the scale, and thus send the lady-bugs away, as they are probably guided largely by the odor in the quest for their prey.

Mr. Bielby says that an inexperienced man finds it difficult to determine, in the mass of debris on a tree, whether there are more dead scales than live ones.

Mr. Mead. -- Watch the lady-bugs in their search; they pass by dead scales, but stop to devour live ones. If the living ones are very thick on the tree, spray it. This reduces the food supply for the lady-bug and causes it to search more closely. Both the lady-bug and its larva (the little, black, bristle-covered bug) are always active in searching for scales to eat; if they are seen to stop often it is an indication that the living ones are thick.

Mr. Phelps. -- Lady-bugs are increasing very fast; faster than the scale.

President Adams says he has 100 acres of oranges, either his own or in his charge, and for the last six years he has depended entirely on the lady-bug to suppress the scale. Once in a while a colony of scale may get started on a small tree and damage it a good deal before a colony of lady-bugs can get established; but on the large trees the latter will generally take care of the scale without any help. He uses no emulsion.

Mr. Mead. -- The prunings of orange trees ought to be removed some distance and left a few days to wither. The lady-bug can fly back to the tree, but the scale cannot crawl back very far on the hot sand. When the lady-bugs have had time to emigrate, burn the brush at once.

Mr. Phelps burns his prunings as fast as he cuts them off. This is especially necessary with the Oncideres Congulatus, which girdles pecan twigs. Burn them without delay. One of his neighbors neglects this and gets no nuts.

Mr. Bielby. -- Emulsion sometimes hurts trees very much. He had 100 young Tangerines which he sprayed for the scale and damaged them so that they did not recover wholly in a year, though he gave his personal attention to the making of the emulsion.

Mr. Phelps asked if it was not too dry weather when it was done? The men may have gone too far; the work ought to be stopped as soon as the tree is thoroughly moistened once. A few seconds too long will do much mischief on a hot day.

In reply to a query, Mr. Mead said scales are conveyed, when very young and small, by birds on their claws, by beetles and other bugs, on gossamer spider webs, and on the long moss which flies in the air.

Mr. Bielby said, replying to Mr. Mead's question, that Persian insect powder, sprinkled in their holes, would effectually destroy mole crickets.

Mr. Bean said Judge Vann told him that China berries sprinkled around plants would keep off cut-worms.

Mr. Adams. -- Ground moles eat vegetable matter, plenty of it; one had been caught and kept for weeks on sweet potatoes.

Mr. Phelps had also found sweet potato vines in their stomachs, and that, too, in greater quantity than insects.

Mr. Painter thinks the salamander more injurious than the mole.

Mr. Breeze asked a number of questions as to orange culture to which he desired short practical answers.

Mr. Phelps said no shotgun prescription will do. He will give no rules for anything in soil culture. Every spot of soil, every plant must stand on its own merits. The individual must keep two eyes wide open, as he goes through life. Rules for working brass and steel will do, but soil and climate are infinitely differentiated. Give an orange tree perfect food all its life; not one kind this year and another kind next year. He gave a strong picture of his personal experience, his coming to Florida when he had already reached the mouth of the grave, his hard labor, and his ultimate solid success.

Mr. C. A. Bacon was stirred up to an eloquent speech. He desired to be ranked among the few who did not come to Florida for their health. He came because he found here a most delightful climate, with 375 days in the year

(if you rise an hour early, as you ought to do) in short, God's country, if there is one on earth. He narrated his personal experience, how he came to the banks of the Halifax with just fifty cents, how he lived in a camp, how he built "Number Nine" (not "Orange Ridge", not "Magnolia Bluff", nor any other lackadaisical name, etc., etc.). Then he told how he came to change his system of grove cultivation; he did it by observing Nature. He had been giving clean culture, raking, scraping, sandpapering his grove; when he began to observe that the forest trees do nothing of the kind, but retain all their trash and waste at their roots. He thereupon reversed his policy; instead of making his grove as clean as he could, he made it as dirty as he could. Instead of buying commercial fertilizer he bought a horse and began to haul all manner of trash into his grove. All this mulching kept the ground moist last summer and cool last winter; he had bright fruit and it stuck to the trees. He wants a little bone and potash, but plenty of humus.

Now, as to pruning. A dead limb takes away more sap than a living one. Cut it off. Open up the top and let the sun shine down in; open up the middle and let the air pass through and keep out the cobwebs and the scale.

This freeze has been a benefit to Florida; it has frozen out the speculators, the big land-holders, who are keeping land away from actual settlers.

Mr. Phelps. -- The forest trees give back all that Nature furnishes them, but from the orange it is shipped off and sold out of the State. Has often wondered how 25 cents' worth of chemicals could restore what 1,000 lbs. of oranges had carried away. And can it do it? The air must give a great deal; thinks the time will come when chemists will obtain the needed ammonia directly from the atmosphere.

Mr. Bacon. -- Has come down a little on pruning; wants a low tree with an open center. Never let the sprouts come clear up from the ground.

Mr. Phelps has low trees with open tops. Has Mediterranean Sweets 10 feet high, with 10 to 12 feet spread, that yielded five or six boxes each. Wants them planted close, 35 X 15 feet to shade the ground. Does not want all the weeds cut out; cultivates and fertilizes only in October and November. Has not touched his ground since last November.

THURSDAY AFTERNOON -- PEACHES.

Mr. Wright has no success with the Peen-tos and Bidwell's Early. Thinks well of Reeve's Mammouth; is as large as Early Crawford and nearly as good flavor.

Mr. W. H. Mann. -- My neighbors have fine orchards of Peen-tos, but no fruit. No money in the Peen-to. Believes in native peaches.

Mr. Mead. Had some very fine Peen-tos, but shipped only one crate. His return for same was memorable and perhaps without precedent, to wit: two mills for the crate! The peach likes high yellow land; the area of real peach land is limited.

Mr. E. S. Hubbard has seen and tasted the peaches and watermelons of the St. Cloud reclaimed land. They are very large but flavorless, almost worthless. This was last year; this year they were killed by the frost.

Mr. Mott shipped two quarts this spring from twenty acres! They brought $1 a quart. In six years this is the first failure he has seen in peaches. In Arkansas he got two crops in ten years. Eli Mimmich says the sands of Michigan need everything in order to be made into soil; so it is here. Root knot will not injure a thoroughly strong tree.

Mr. A. L. Duncan used phosphatic clay, dug out of a well, as fertilizer for peaches, with advantage. Will use it on oranges and report next year.

Mr. Mead has tried the Chinese Blood peach, and likes it for home use.

Mr. Taber and Mr. Mott differ as to the Marianna plum stock; the former has found it proof against root knot; the latter has not. Mr. Taber questions the lasting character of the plum as a stock to work the peach on. Does well for two years, but will it last? Does not like plum on peach, or peach on plum; both start well, but fail in a year or two.

Mr. Bacon finds the peach very short lived everywhere; has come to the conclusion to set young trees between the large ones as a constant relay to replace those that die. Peen-to will not succeed on plum stock, but the Honey will.

Mr. Mott has failed entirely in getting peaches on other roots; they must be on their own roots.

Mr. Taber does not bother about root-knot; he gives it the slip, by simply moving his nursery on to new land. In a few years it will work in; then he moves. When land lies fallow a year or two the root-knot worm dies out for lack of food; then he can come back. As Dr. Neal says, it has its cycles; it comes and goes. It is not nearly as bad now on his old trees as it was two years ago.

Mr. Wright asked some questions about root-knot, and Mr. Bielby reminded him that Dr. Neal had thoroughly investigated and reported on the subject two years ago. Where he lives Mr. Bielby is unable to raise peaches. The only remedy he finds against root-knot is the axe. Used $18 worth of copperas on an orchard, and it did no good at all. The root-knot severely injured even his olives and figs.

Mr. Taber does nothing whatever for the peach borer. It may kill a few young trees now and then, but the labor of digging them out from a large orchard costs more than a few young trees are worth. An acquaintance in Georgia, a very large grower, never bothers with the borer either.

DEWBERRIES AND STRAWBERRIES

Mr. Mott read a paper on dewberries, which was discussed by Messrs. Mead, Wright, and Duncan. Mr. Bacon said if one would pile up a large heap of old wood and trash and leave it to rot, planting dewberries beside it, he would get fruit in abundance, especially if some ashes were on the ground.

Mr. Mead has tried the Himalayan blackberry (Rubus rosifolius); it is a beauty, with its brilliant, ruby-red berries, but not a good market fruit.

Mr. Duncan found a fertilizer carrying about four per cent of potash gave good results on strawberries.

Messrs. Bacon and Mead cautioned against the Mammoth dewberry; it is a humbug.

Mr. Phelps thinks extremely little of Canada ashes and lime. He would like to see more ammonia in a fertilizer formula for strawberries.

Mr. Adams coincided; ammonia does a great work for orange trees. Nothing else will color up and darken a yellow tree so quickly.

Mr. Phelps. -- Pineapples feed largely on ammonia. He had had them set between orange trees and given the pines plenty of ammonia; the trees next to the pines did best. Sulphate of ammonia is the best remedy for dieback that he has tried. He raised a sample pineapple once, giving it two pounds sulphate of ammonia and a pint of salt. It was a wonder for size and flavor; he sent it to Dr. Hexamer, of the American Agriculturist, and it was placed on exhibition, to the great admiration of hundreds.

Replying to Mr. Hart, Mr. Phelps said that cotton seed meal will not furnish much ammonia, and that is what the tree needs. It ferments in the ground, the ammonia escapes and worms consume the best part of it.

Mr. Mead. -- A neighbor used cotton-seed meal on a hillside grove; the rain carried it down to the lower trees in excess, and there the oranges turned black, cracked and fell off. Has sent for some nitrate of soda for his trees.

Mr. Phelps. -- "Don't".

Mr. A. H. Robie. -- Cotton-seed meal gives the citrus trees dieback and scale, in his experience.

Mr. Phelps does not care for cow peas. Does not want any green stuff turned under, but wants it on the surface. Cow peas won't even raise thorns! On old bearing wood on seedlings there are very small thorns or none; the trees are giving their attention to making fruit and they require something more substantial than cow peas or cotton-seed meal.

Mr. Mott thinks cow peas always hurt orange trees.

Mr. Phelps thinks it is better to burn tobacco stems than to apply them raw as fertilizer. So with wood and brush. Still he does not approve of a very hot fire on land in dry weather; it burns up the humus. If all fires were kept off, pine land would probably become hammock in the end. All hammocks were pine land once; this is shown by the trunks of trees found in them.

Mr. Duncan. -- In my section twenty years ago the farmer used cotton-seed meal and cow peas for manure. For the last ten years commercial fertilizers have been in fashion. Now people are going back to the old way again.

Mr. Mead. -- Chemicals are useless without humus, and conversely.

Mr. Bielby -- Plants really feed on nothing but chemicals. Seeds will germinate and grow in a bottle of water; this proves it.

Mr. Phelps. -- Humus is only the bottle that holds the water; it affords plants no nourishment itself.

The discussion gradually dwindled into an argument on muck. Adjourned.

EVENING SESSION -- THURSDAY

The committee of three, Messrs. E. S. Hubbard, W. S. Hart and A. H. Manville, made a report on judging citrus fruits, which was amended and adopted. Following is the scale of points -- 100 in all; 10 for each, except acid and sweetness, which have fifteen each:

RULES FOR JUDGING CITRUS FRUITS

1. The Executive Committee of the Florida Horticultural Society shall choose a superintendent of exhibition and three judges, with a substitute, and a secretary. The Executive Committee, including ex officio members and competing exhibitors, shall not be eligible as superintendent and judges. The three judges shall conduct the tests, and their decision shall be final.

2. The deliberations of these judges shall be secret. The superintendent of exhibition, on application of the chairman of judges, shall supply the judges with specimens for judgment, and shall use diligence to secure them from intrusion.

3. Each exhibitor is expected to be present with and in charge of his own exhibit. His selections for entries, when ready, must be formally turned over to the superintendent of exhibits, who will then enter by name and number in a book of record, and furnish him a duplicate card to accompany each entry. Entries will be delivered to the judges in the order of their reception and entry by the superintendent. Responsibility for wasty fruit shall rest with the exhibitor. But poor specimens can be replaced or entries withdrawn by consent of the superintendent before fruit is delivered to the judges. If an exhibitor is unable to be present he shall make a written statement to the superintendent of exhibits as to his fruit and entries, and the superintendent shall make selections if necessary.

4. Diplomas or cash premiums, at the disposal of the Society, shall be divided into classes, 1, 2, 3, and 4, in ratio of merit as to premiums of 4, 3, 2, and 1, to make the decimal 10, for collection, and with 1 and 2 with ratio of 3 and 2 for single plate premiums. Seven specimens shall constitute

a plate to entitle to entry, and two of these specimens must be delivered to the judges, who will examine both and score the best. These scores will be eligible both for single plate and collection premiums. The judges reserve the right to debar unworthy or bogus specimens.

5. The judges shall use the amended scale, giving ten points each to the following scores and standards of perfection. (1), size 2½ to 3½ inches diameter; (2), appearance -- specimen must be fancy, and skin silky; (3), for juiciness it must sink below the surface of water; emergence the size of a silver dollar to count 9, one half the bulk zero; (4), thickness of peel 3/32 of an inch for 3 inches in diameter, and one point off for each additional 1/32 of an inch; (5), two seeds to count one point off, and two rudiments as one seed; (6), absence of tissue, membranes to be very tender, and core porous, 1/8 to 1/4 of an inch in diameter as to size of fruit; qualities of flavor of acid, 15; sweetness, 15, bouquet, 10; to be judged by taste. Specimens of varieties excelling in balance and richness of flavor to be used as standards for reference. Lemons and limes to count twenty for acid, and twenty for flavor.

6. These rules must be published with the premium list, and after the judges have made the awards with the superintendent of exhibits they shall deliver the entry book and scores to the Executive Committee, and will receive their discharge.

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GROVE AND ORCHARD

FIG CULTURE IN FLORIDA

(Read before the State Horticultural Society, at DeLand.)

VARIETIES. -- In reply to letters addressed to various parties, asking as to the adaptability of varieties, we received, amongst other replies, the following from Hon. Harrison Reed, of South Jacksonville:

"I should take great pleasure in adding to the interest of your report on Fig Culture, but all I know is derived from practical experience of twenty-five years in one locality. In '67 I purchased a home here, and found several fig trees in a neglected condition. One large tree of the yellow, or light green, variety (variously designated as the Lemon, White, Smyrna, etc., common to Florida), standing where it received the slops from the kitchen, has expanded and borne continuous crops of ten to fifteen bushels. It has increased in size of fruit from its condition as found, and is of uniform shape and size, flattened at the apex, flesh white or yellowish, and altogether resembles the dried fig of commerce.

"Other trees of a small, brown variety, called Celeste, Brown Smyrna, etc., the earliest ripe and best for table as gathered without preparation - is oblong and smaller than the others. Other trees found in a dilapidated condition bear a large, purple fruit, answering to the Brunswick, which, with proper pruning and manuring, I have induced to double its primitive size, and continue to bear from June to December, its heaviest yield being in August. The fruit is pear-shaped, and frequently as large as a coffee-cup; it is very prolific, and finds ready market for the table and for pre-

serving. Another variety in an obscure and wet portion was found to be the Brown Turkey; a solid, compact fruit, with light-brown skin, fine seed and sweet flesh; a better fruit for transportation than any other, but not so prolific.

"These four constitute my varieties; all bear annual crops, and in proportion as they are fed and protected against drought. It is the easiest raised and most certain of all our fruits, and should find a place on every farm and in every garden. It has no insect or fungus enemies that I have known, and my trees that are forty years old are as fresh and vigorous as the younger. I prune and cut away about 25 per cent of the annual wood product."

Your committee also wrote to Mr. D. Redmond, of St. Nicholas, asking for his views as to the adaptability of varieties, to which he replies as follows: "On page 95 of Report of American Pomological Society for 1889, article, 'The Fig and the Pomegranate', you will find all I can say in regard to the fig at present. Were I selecting varieties I would name: 1st, White Adriatic; 2nd, Brunswick; 3rd, Celeste; 4th, Black Ischia; 5th, Brown Turkey; 6th, White Genoa."

Your committee would here say that the report of D. Redmond above alluded to (page 95 American Pomological Society's Report for 1889), is a most valuable article on Fig Culture; and that the same volume also contains a valuable article on the same subject (page 93) from Ex-Governor Reed; and we would earnestly recommend a careful perusal of these two articles by all who are interested in the cultivation of the fig.

We would call the attention of the Society to the high rank given to the Brunswick, both by Mr. Redmond and Ex-Governor Reed. The chairman of this committee has repeatedly had fine fruit of this variety mature in the nursery rows the same season that the cuttings were planted.

Owing to the varying conditions under which different varieties are often grown, even in contigious localities, it requires additional careful experiments in order to fully determine the comparative value of all varieties to any given section. The White Adriatac has, however, succeeded admirably in many sections of the State, and the tree is an exceedingly strong grower. The Brunswick, above alluded to, is believed to be one of the best. The Celeste, or Celestial, is a very fine variety, one of the heaviest bearers that we have; and the fruit, though small, is the sweetest of any of the known varieties. The Black Ischia, Green Ischia, White Genoa and White Marseilles have all done well in the central and northern section of the State; but as to their adaptability to extreme Southern Florida, we have not been able to obtain as definite information as we would wish.

TRANSPLANTING. -- In transplanting fig trees we would recommend severe amputation at both ends. The fig has an enormous amount of thickly matted, fibrous roots, and experience has taught us that the severe pruning of these fibrous roots before transplanting is an advantage. By cutting them off to within two inches of the main root, and then cutting off the top of the tree entire, and simply planting this pruned root, we will get a larger and more vigorous tree at the end of the first season than we would by leaving both root and top intact at the time of planting.

In recommending this system of pruning, please bear in mind that we are reccommending this treatment for the fig only; and we would further say that while some may object, theoretically, to this practice, a careful trial of the two methods of planting will convince them of the superiority of the method here recommended.

AFTER-TREATMENT. -- There are very few fruit trees that will thrive with so little cultivation as the fig, and perhaps none that are more easily damaged by too deep plowing. One light plowing in the spring is beneficial,

as is also the keeping down with hoe or cultivator of a too rank growth of weeds and grass. But frequent deep plowing during the season is detrimental as the fig is a great surface-feeder and will not submit kindly to its roots being disturbed.

The tree delights in a close, compact soil, which, while retentive of moisture, is not wet; and those conditions, if not always readily obtainable, can be perhaps more nearly approached by a liberal use of mulching than in any other way.

CURING AND DOMESTIC USE. -- No fruit can be prepared in a greater variety of ways than the fig. It may be eaten fresh from the tree, dried, preserved, pickled, made into pudding, pies and paste, or used for jellies, jams, candies and cakes.

In its dried, or cured state, it is probably most common to us, being largely exported from Smyrna in this form, and also in smaller quantities from nearly all the countries bordering on the Mediterranean and Adriatic Seas.

The packages in which it is shipped vary in size from the six pound package of the wholesale merchant, to the small, elliptical quarter pound box offered us by the train boy for a dime, and which generally contains a couple of bay leaves and one good fig on top, concealing two or three very poor ones in the bottom of the box; these poor ones in turn often concealing an equal or additional amount of worms.

As far as we are aware, the curing of figs has not yet been attempted on any large scale in Florida. Whenever it is attempted it will undoubtedly be necessary to use evaporators instead of relying upon sun-drying, as practiced in Smyrna, as a large portion of our Florida crop matures during the rainy season. For this reason it is unnecessary to give the details of sun-curing, as practiced in Eastern countries, and also to some extent in California.

We will say, confidentially, that we had, however, thought of giving to the members of this Society some valuable recipes on the preparation of the pickles, puddings, jellies, jams, etc., above alluded to, and in fact had them all beautifully arranged and written out; but after triumphantly submitting these recipes to our wives for their approval, we were met with the contemptuous, crushing and wholly unanswerable query: "What do you men know about cooking?" This was a conundrum that we were wholly unprepared for, and up to the present writing, we are thankful to say, unable to successfully cope with. It was, however, the sad cause of our abbreviating this report by about a page and a half.

Geo. L. Taber,
E. S. Hubbard,
N. A. Robie,
COMMITTEE

FIGS AND FIG DISEASES.

Following the committee's report, Mr. Bielby asked why men always report the fig free from diseases. His figs have been greatly troubled with a leaf-rust, a fungus disease. It begins in the old leaves at the bottom of the tree, and goes up through it, generally defoliating the tree. It often makes two attacks in the course of the season.

He denounced the White Adriatic. Had a fine orchard of them, with a promise of at least fifty bushels of fruit. When the rainy season came on they all burst open and soured; not four quarts of good fruit left. Did the same thing five years. He pulled them all up. The Brown Turkey and some others are good enough, but he will fool away no more time with the White Adriatic.

Mr. Phelps in fifteen years, has never seen a thoroughly healthy fig tree.

Mr. Mead, in nine years, has not had even four gills of good fruit.

Mr. Bacon set seventeen fig trees, cultivated them three years, then pulled them all up but one. He went at it and girdled and slashed it, and it bears a plenty now. Had the same result with another treated the same way. The fig is subject to root-knot, but he does not think it hurts it materially.

Mr. Robie says South Florida is too cold for the White Adriatic; the frost of March 17th killed all his to the ground.

Mr. Bielby thinks the white Genoa the least hardy against cold. The fruit is exceedingly fine, small but sweet; but the tree is dwarfish and tender.

Committee on Kaki; no one present.

Committee on fertilizer, ditto. A letter was read from Prof. Whitner, of Lake City, regretting his inability to report on account of duties at the college.

TROPICAL FRUITS.

(Read before the State Horticultural Society, at DeLand.)

There is little doubt but that our last great freeze of March 17th has wrought more or less damage to tropical fruit trees, according to locality. Although a most unwelcome visitor, it has given us the opportunity of testing the relative hardiness of the different species now growing here.

Not having had time to gather any exact data from other localities, I can report from this section only.

Our thermometer here in latitude 27 degrees 57' registered a minimum of 36 degrees, and while the ground was slightly frozen in some places, there was remarkably little damage done, owing, probably, to nearly everything being still in a dormant state.

Of the exotic fruit plants tabulated below, I will divide them into three sections.

First, those that were entirely uninjured at above temperature.

Second, those that were slightly injured, either by defoliation or loss of some of the tenderest branches.

Third, those that were killed outright.

The same species, in one instance at least, will appear in both the first and second sections; and whether it is possible that acclimation has had anything to do with it or not, I leave others to judge. In my opinion it has.

FIRST SECTION. -- Persea gratissima, alligator pear, No. 1; trees from native seeds entirely uninjured, some of the trees with new growth showing. These same trees passed through the freeze of 1886. They were small plants then, and were protected with a light covering of palmetto leaves.

Monstera deliciosa, under cheesecloth cover, is growing vigorously.

Annona cherimola reticulata and squamosa, under lath frame are all doing nicely. I regret that there were none fully exposed.

Achras Zapota, under same conditions, fared equally well, and I think all of them would have come through outside, with perhaps the loss of a few leaves.

Cocos nucifera, our well known cocoanut palm, had the leaves slightly browned, but it did not seem to interrupt the growth.

Caraca papaya, although fully exposed, lost neither leaves nor green fruit, and shows a degree of hardiness I did not suppose it capable of.

Eugenia jambos was under the lath frame and covered with long, tender growth, none of which was injured. Eugenia Mitchelli, outside, fared equally well.

Passiflora edulis, although a tropical vine, is as hardy as an orange tree and does not mind sharp frosts.

Lucuma rivicoa had its leaves slightly browned.

Triphosia trifoliata, some plants show browned leaves, while others do not.

Rhodemystus tomentosus seems to be capable of standing frosts without the least injury, and, although the fruit is of but little value, the shrub is a very handsome one, and a profuse bloomer, worthy of more extensive cultivation.

SECOND SECTION. -- Pineapples. These, I believe, suffered more in exposed situations than any other fruit planted in this section. Many plants had half grown fruit on them, and this was killed, although the plants themselves showed very little damage to the leaves. Others that had the least protection, afforded by a tree or a light covering of palmetto leaves, escaped entirely. All varieties seem equally tender, and, as the plants are easily protected, it is best to erect a light covering over them whenever light frosts may be expected.

Chrysophyllum cainito the beautiful star apple, under lath frame, escaped with but slight injury to a few of the tender leaves. Outside the leaves were killed, but the wood seems to be uninjured, and plants are now starting into growth.

Cicca disticha, Otaheite gooseberry. In exposed situations plants lost their leaves, but otherwise unhurt.

Lucuma mammosa where it had some protection, fared very well, but outside it lost leaves and tips of branches.

Mammea Americana is a trifle more hardy, and where it had the slightest protection was not injured in the least. Fully exposed the leaves were only slightly browned.

Meclicocoa bijuga defoliated, otherwise uninjured.

Mangifera Indica suffered only the loss of a small portion of the foliage, with the exception of a few that were mulched with grass and leaves; those were killed to the ground. Clean, dry soil around a tree that is entirely free from grass or weeds will do much toward saving it from injury by frost.

Musa varieties (Hart's Choice, Orinoco and Red Baracoa) all seem to be pretty much alike; leaves killed to the midrib, but, unless just ready to fruit, this seems to do them little injury, and they start into growth again almost immediately. The dwarf banana, M. Cavendishii, is much more susceptible, and does not recover as quickly as the others. The Tall French variety is, I think, killed to the ground.

Alligator pear, No. 2; trees from Cuban seed all defoliated, and a part of the branches killed. The situation of these is the same as those from native seed.

Psidium, the various species of the guava lose but a portion of their leaves (Cattley's not included), and do not show any further injury.

Tennanalia catappa, delicious with us, wood apparently uninjured.

THIRD SECTION. -- All very tender plants were in a cool green house, and it is only necessary to mention those which were killed outright.

Artocorpus incisa, the famous breadfruit tree, wilted and died at a temperature of 45 degrees. And Anacardium occidentale followed it very soon. These two are the only ones that were injured in the houses from too low a temperature, and where frost was not allowed to come in direct contact with them.

We have nothing new in tropical fruits since last report that have been tested far enough to determine their value, but many new plants have been imported, and a great many seeds planted; and it is hoped that from the whole some little that is of value will be found.

The Department of Agriculture, through the efforts of Professor Van Deman, has imported the first lot of named cocoanuts brought to Florida. He has also imported six varieties of mangos from India, all of which will be, or already have been, planted in the southern part of the State; and I propose that Professor Van Deman receive the thanks of the Society for the interest he has manifested in our behalf.

Mention should also be made of two mango plants, now in vigorous growth, that have been grown from seeds procured by Rev. Lyman Phelps from the Imperial Gardens, India, and by him named Imperial Mammoth. As these seeds came from a tree said to produce the finest fruit in all India, it will probably prove a valuable acquisition.

R. D. Hoyt.

Bay View, Fla.

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THE VINEYARD

(This article was probably read at this meeting of the Florida Horticultural Society.)

THE PAST AND THE FUTURE OF THE GRAPE IN FLORIDA

The record of the past is history and a forecast of the future is prophecy, and yet I am neither a historian nor a prophet.

As a rule the present minimizes the past and magnifies the future, and the present subject is no exception to the rule. But in this case the present entirely ignores the past. The rising generation of vineyardists in Florida allegate to themselves the credit for all the success attained in their chosen pursuit in the State.

I quote Prof. Dubois as a representative of the present. In his paper read before the State Horticultural Society, at Ocala, he says: "Up to two or three years ago it seems to have been the accredited opinion that only the clay hills of Florida were suited to grapes, just as it was believed some six or seven years ago that the scuppernong was the only grape for that same section."

According to this writer, it is only "two or three years" since it was discovered that bunch grapes could be successfully grown elsewhere than on "the clay hills of Florida." But more than thirty years ago several vineyards were established along the St. Johns river. In 1867 the late A. I. Bidwell planted a vineyard near Jacksonville, and three years later E. H. Mason, also of Duval county, planted a thousand vines, and such was the success of those that in 1874 he planted two thousand more. The object of the present writing is,

1. To vindicate the claim of the pioneers in this industry by recognition.
2. To place on record the leading facts upon which this claim is based.
3. To place on record at least one protest against these facts being ignored.

And now for a few of the facts. As early as 1867 George W. Atwood, of St. Augustine, wrote to the Department of Agriculture at Washington as follows:

"The finer European varieties of this fruit, such as are cultivated under glass at the North, are all hardy, and are grown more or less successfully in the open air in Florida, ripening at St. Augustine about the first of July. The northern or native varieties have not been sufficiently tested to form a correct estimate of their value."

In 1874 the late A. I. Bidwell read a paper on "Grape Culture" before the "Florida Fruit-Growers Convention", from which I extract the following:

"In Florida, previous to 1860, several vineyards had been established on the St. Johns river, but during the war they were neglected or abandoned, and up to 1866 their cultivation had not been resumed, with the exception of a few vines of Scuppernong and Augustine grapes, which grew mostly untrimmed and uncared for.

"When I came to the State in the fall of 1867 and planted out a small vineyard, it was with some misgivings that the results would prove a failure. Now, after an experience of seven years, I can say that my endeavors have been successful; and the abundance of grapes in the markets of Jacksonville the past season is also abundant proof that others have been equally so. The advantages Florida possesses over all other States, in point of early ripening, places us beyond competition. While the Northern grape grower is content with three to ten cents per pound, we can safely expect to realize from twenty to forty.

"In regard to choice of varieties much depends, although a large proportion of Northern varieties will succeed well here. After testing some forty varieties in the past seven years on my grounds, I would recommend Hartford, Delaware, Greveling, Ives' Seedling, Concord, Rogers' 4,15,19, and Telegraph, for early, and Salem and Rogers' No. 1 for late. Of the above Hartford is the earliest. Bunch large, compact; berries large, black; vines vigorous, productive and healthy; ripe June 16th the past season. Others ripened as follows: Delaware, Ives' Seedling and Telegraph, June 25; Concord and Merrimac, July 1st; Goetha and Salem, July 8th."

In the discussion that followed, J. S. Adams said that "Gadsden county is famed for its wine." Col. Martin, of the same county, said: "I have made at the rate of 2,000 gallons per acre. * * * I find ready sale for it at $2.25 per gallon."

At the meeting of the association in 1875 Mr. E. H. Mason, of Duval county, said: "Five years ago I planted 1,000 grape vines on light sandy soil. * * *I found the grapes grown on our light soil better than at the North - richer, more spicy, sweeter, and exceedingly nutritious - just such grapes as one would like to offer to his friends. * * *

I have just planted 2,000 vines, mostly Salems." A. I. Bidwell said: "Grapes will pay over $300 per acre. My Hartford Prolifics have paid over $400. The bunch grapes are too valuable in themselves to make wine of them. The most profitable are the Hartford, Ives and some of Rogers', because they ripen early." W. K. Cessna, of Alachua county, testified to the correctness of those views." These are some of the points made emphatic in this discussion.

In September, 1875, a monthly magazine was started in Jacksonville, called The Semi-Tropical. In the initial number there was an article by J. A. Craig, of Tallahassee, on "The Vineyard in West Florida," from which I give the following items:

"The occupation of the vintner, which is now attracting marked attention, and has yearly been on the increase, bids fair in the near future to develop a most lucrative and fascinating employment of the residents of Middle Florida. In our high, undulating section, dotted with its clear water lakes, we have the climate and soil, in fact the home of the vine.

"Our climate, from the length of its growing season, enables us, by selecting suitable varieties, to have a succession of grapes ripening from the middle of June to the last of October.

"We find that the same grapes that grow well North are increased in size and flavor here. The Hartford Prolific, for instance, at the North is a very ordinary grape in point of flavor, and probably would not be cultivated were it not for its early maturing qualities, while here, although not of the first quality, it is a very palatable grape.

"All through our section of the State fine grape lands can be selected.

"Of the Labrusca family we would recommend Hartford Prolific, Concord, Martha, Ives' Seedling, Diana and Maxatawney; of the Aestavalis: Herbemont and the purple grape of St. Augustine; Vitis Vulpena: Scuppernong, Thomas, Flowers; Vitis Vinifera: Rulander, Malaga, Sweet Water, Zinfinland and White and Red Riesling, together with Rogers' Hybrids, Nos. 1,2,4,9, and 53, and Delaware.

"Florida is frequently called the Italy of America, from the balmy air, agreeable climate, bright skies, fruits and flowers, and we have taken pride in the comparison, but when from statistics we compare the yield of wine per acre, Florida nearly triples her in production. Italy averages 440 gallons per acre, Florida may be safely estimated at 1,000. Our still or dry wines bring from $1.50 to $3.00 per gallon; sparkling wines command a higher price."

These are some of the points made by Mr. Craig that are germain to our purpose.

Before I came to Florida, in 1874, I had quite an extended correspondence with this gentleman on the subject of grapes. His experience had extended through several years and was marked by abundant success.

The writer coming from Tennessee, in 1875, brought several varieties of grapevines to Merritt's Island.

The third year after planting they fruited abundantly, and on the 12th of July, 1879, the Indian River Horticultural Society held a meeting at our Island Home, for the purpose of seeing and sampling these grapes. At this meeting a committee was appointed to report upon grapes.

From this report I here transcribe a few sentences:

"Mr. White has 400 vines set comprising thirty-two varieties. Most of these are too young to fruit. The present season fifteen varieties fruited. The fruit of Hartford, Crevelling and Aminia (Rogers' 39) was all gone before the meeting.

The committee, the members of the society, and the ladies present, as a Committee of the Whole, tested the fruit of twelve varieties, and the universal verdict was, "they are all excellent." Of these twelve sorts, mine were Rogers' Hybrids. A member of our committee who has grown grapes in New Jersey for nearly forty years and has grown most of Rogers' Hybrids, pronounces these Wilders' the largest grapes he ever saw, and has never before seen the hybrids produce such large clusters. * * * The Delaware also does well here. A member of our committee from Delaware, Ohio, where this grape originated, says these bunches are the largest he has ever seen. Another member of the society, who had handled Delawares by the cart load on the islands of Lake Erie, pronounces these berries the largest he ever saw. We also saw an illustration of the superiority of home grown vines over those brought from a distance. Two vines of the same age and kind, set at the same time, side by side, under the same treatment, the home grown vine has this season produced a cane more than three times as large and three times as long as the other."

This meeting directed me to send samples of grapes to the Florida Agriculturist and also to the FARMER AND FRUIT GROWER.

Of them Col. Codrington said: "The grapes were really the best we have seen grown in the State in both flavor and size. Some of them were three inches in circumference."

The editor of the FARMER AND FRUIT GROWER said: "They are as fine specimens as the country can produce."

The testimony of these witnesses fully justifies the conclusion that it is no new discovery that grapes can be successfully grown elsewhere than on the "clay hills of Florida"; that Prof. Dubois' bantling of only "two or three" summers is really a well grown lass, well along in her teens, having already passed to the shady side of sweet sixteen.

The future is also misjudged by the popular thought of today. Judged by the utterances of the agricultural press, this thinking is largely a mixture of the impractical and the absurd. As an example, I quote from "Sigma" in the Orlando Reporter: "Will it not be wonderful if the next ten years should behold Florida sending out millions of pounds of white and purple table grapes and tons of home cured raisins."

Others have been equally extravagant upon the question of wine production in the State. For the future of this industry in Florida there are three lines of development proposed: Raisins, wine and table grapes.

As to the first, viz: the production of raisins as an article of commerce. One who has any knowledge of its first principles, and of its climatic conditions, will never give it a moment's serious thought. If our climatic conditions did not make it impossible, the question of money values would make it impracticable. In the best raisin districts of the world the grapes, when ready to dry, are worth from one to one and a half cents per pound, and wine production promises the grower only about half these values. Professor Dubois, in the FARMER AND FRUIT GROWER, of November 12, 1888 gives the value of wine grapes in California at $12 per ton, and in Florida $80. The California grapes are the choicest European varieties, and the Florida grapes are American varieties, whose most ardent admirers claim no more for them than that they are "just as good" as the European grapes. This high value is based on a local and limited supply. Local markets and a limited supply are one thing, but competition in the open markets of the world quite another thing. Fifteen years ago pineapples sold on Indian river at a dollar each, but increased production has reduced the price to ten cents each. It is so the world over. As a rule, increased production decreases money values.

This has been the experience of wine makers in California and Missouri, and will be the experience of wine makers in Florida, if its production is carried beyond the supply of a local demand.

Then, too, the price of grapes will be fixed by the manufacturers, instead of the grower, for the reason that wine plants are expensive, and its manufacture requires rare skill and experience. Many people think that fermented grape juice is wine, which is true in the laboratory; but when they try to sell their fermented grape juice they find that they have made a mistake. They discover that in the wine markets of the world wine is more than grape juice with a given percent of alcohol - it is grape juice with certain characteristics that can be imparted only by the most skillful manipulation and the use of costly appliances.

Mr. A. J. Bidwell, as quoted above, strikes the key-note of the money music when he says, "The bunch grapes are too valuable in themselves to make them into wine."

Their food value is far above their drink value, and, as an article of food, will bring more money by far than the manufacturers of wine pay for grapes in any of the wine districts of the world. Another obstacle in the way of the production of wine grapes in Florida is our facilities for the production of high priced commodities.

Does any man, in his senses, imagine that the trucker can be wheeled into the abandoning of cabbages at $60 per ton for the production of grapes at $15 per ton? Or Irish potatoes at $80 per ton? Or egg plant at $100 to $150 per ton?

The growing of wine grapes is not profitable in California, though the Foot Hills Tidings, of California, some time ago said: "At any figure above $10 per ton grape culture is very profitable." But here is a more sober extimate of the case from the California Agriculturist: "Grape growing in this State can be made a very profitable business, notwithstanding the fact that the 'wine growers' have not made money, and many of them have been obliged to give up everything to foreclosures of mortgages on their property after years of hard work."

But there is one line of development for this industry that is full of promise as well as profit, which is the production of table grapes.

No sensible man expects that present prices of 25 to 40 cents per pound will be maintained under greatly increased production, but there is a wide margin between these prices and a "living profit."

At 40 cents a pound only the few eat grapes; at 10 cents a pound many, and at 5 cents "everybody and the children." Here comes the law of compensation. The decrease in price increases the demand, which, at 5 cents a pound, would be absolutely without limit.

But can grapes be profitably grown at 5 cents a pound?

In Southern California producing raisin grapes is one of their best industries. To make a pound of raisins requires three pounds of grapes. When dried ready for packing the packers pay 5 to 5½ cents per pound, being less than two cents a pound for the fresh grapes.

In the FARMER AND FRUIT GROWER of December 5th, 1889, a Northern grape grower is reported as saying: "In 1866 I saw Concord grapes sold in Des Moines, Iowa, at 20 cents a pound, and in ten years at 10 cents, and in 1880 at 2 cents, * * * and the word comes that they are still planting more vines."

In some of her products Florida has to compete with other regions, but in grapes she has no rival. In the market for early grapes she stands alone.

In July, 1887, I was in New York. By the 20th of the month the Florida grapes had disappeared; for Georgia grapes it was too early, and the first Californians were a few Black Hamburgs, of which I purchased some on the 22nd.

As to the question of white or black grapes, I will not enter upon it further than to say that quality rather than color will be the ultimate test. If white grapes in the past have been generally poor, there is plenty of time for a really good white grape to make a reputation for itself.

James H. White

Island Home, April 22nd, 1890.

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THE VINEYARD

GRAPES IN SOUTH FLORIDA

(Read before the State Horticultural Society, at DeLand.)

Grape growing in South Florida is of so recent date there will be found quite a wide range of opinion as to location, soil, planting, pruning, training and fertilizing, and as I have been requested to furnish a paper on the subject, I will give my own observations, experience and methods.

I would select pine land nearly level, yet susceptible of being thoroughly drained; a clay sub-soil is preferable; avoid selection where hardpan comes nearer than three feet of the surface or not present at all.

PREPARING THE LAND

In clearing the land remove all trees, stumps and roots as clean as possible, avoid burning out trees, better chop out all stumps and roots, as burning lowers the vitality of sandy soil. After the land is cleared, plow with a good, strong mule team as deep as possible, by doing so you will reach many roots not before found, harrow smooth; again pick up all roots made visible by plowing. Prepare as many stakes as you have vines to plant. Stakes should be two feet long, three-fourths of an inch in diameter.

Set first stakes where you want first vine, say ten feet from east line of field and fifteen feet from north line, set range stake at southeast corner of field and arbitrary stake at northwest corner at right angles with first line, return to first corner and set line of stakes north and south on east line the distance you desire vines to be in row. Now return to first corner and set a line of stakes across north line of field, set this line of stakes the distance apart the rows of vines are to be. Set row of stakes on south side of field same distance as those set on north side, giving same number of stakes in both cases, return to north side of field and ten rows from east line set a row of stakes through to south line; now fill in space, having a man to sight for you so as to get stakes in line, proceed in this manner until all the stakes are set in the entire field.

We are now ready to begin to dig the holes and to plant the vines. If the vines to be planted are grown from cuttings, I dig a round hole from twenty to thirty inches apart, according to size of vines and roots. Drive stake down one foot, dig hole around the stake one foot deep at centre and twenty inches deep at outer circle. Scatter evenly in the hole one pound of best ground bone, cover this bone two inches deep with surface soil. Remove stake and place vine in centre of hole, separate the roots after they have been pruned off to about ten inches. Too much care cannot be exercised in the planting; see that no two roots come in contact. Cover the roots with top soil, pressing soil firmly with the feet, fill hole about two thirds full. Place the stake directly east of the vine slanting north, proceed in this manner until all vines are planted. The usual time to plant is from middle of February to first of April. Cultivate the ground each way before setting post for wire.

Set outside posts five feet from first vine two and one half feet deep, brace with five foot brace well spiked to post. Set post at third space or between third and fourth vine. Place lower wires thirty inches from the ground. Use No. 12 Bessemer steel galvanized wire and common fence staples to attach wire to post.

Cultivation is a very important matter, and the right time to lay the vineyard by the season must be determined by locality, soil and observation.

My present opinion is nearly all working of the soil should cease by the middle of July, although the greater growth of weeds and grass will be after this time. Late cultivation is liable to shorten the crop of fruit the following year. Use the small two feet stakes to tie up the vines until they reach the wire, pinch off the tip of the vine under the wire so as to cause it to branch each way on the wire. Keep off all suckers from the ground to wire.

Train the vines to the horizontal wire. Prune the vines in December, as the vine will then be dormant.

The amount of wood to remain must be determined by vigor of vine, soil, location, etc.; if the vines have made a good, strong growth, prune back each

branch to two feet from place of branching, so as to have from three to five buds on each branch. This practically ends the first year's work. In March of second year fertilize with one pound of best ground bone.

Again the first part of May use one pound of bone meal and one to two pounds of good hard wood ashes or other potash of equal value. Place second wire thirty inches above first wire, this brings top wire five feet from the ground.

The method of treating a vineyard in culture, training, pruning and bagging fruit for second and third years should be the subject for another paper.

George H. Wright.

Chuluota.

THE FLORIDA DISPATCH

FARMER AND FRUIT GROWER

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GROVE AND ORCHARD

Essay on Citrus Nomenclature

(Delivered at the meeting of the Florida Horticultural Society, DeLand, Wednesday, April 30, 1890.)

"Every observed order of facts in physical phenomena suggests irresistibly to the mind the operation of some physical cause. * * *

"Although we know nothing of the real nature of Force, even that Force which is resident in ourselves, we do know for what ends we exert it, and the principle that governs our devices for its use.

"That principle is, combination for the accomplishment of purpose. * *

The How is very often incomprehensible, where the Why is apparent at a glance. And be it observed, that when Purpose is perceived, it is a "making plain" to a higher faculty of the mind than the mere sense of Order. It is a making plain to Reason. It is a reduction of phenomena to that Order of Thought which is the basis of all other Order in the works of Man, and which, he instinctively concludes, is the basis of all order in the works of Nature.

"And here it is important to observe, that although this general conclusion like all other general conclusions, belongs to the category of mental inferences, and not to the category of physical facts, yet each particular instance of Purpose on which the general inference is formed is not an inference merely, but a fact. The function of an organ, for example, is a matter of purely physical investigation. But the function of an organ is not merely that which it does, but is that which some special construction enables it to do. It is not merely its work, but it is the work assigned to it as an Apparatus, and as fitted to other organs having other functions related to its own. The nature of that apparatus, as being in itself an adjustment for a particular purpose, is not an inference from the facts, but it is part of the facts themselves. The very idea of Function is inseparable from the idea of Purpose. The Function of an organ is its Purpose; and the relation of its parts, and of the whole to that Purpose, is as much and

as definitely a scientific fact as the relation of any other phenomena to Space, Time, or Number. This distinction between Purpose as a general inference and Purpose as a particular fact, has not been sufficiently observed." - - From the Reign of Law, by the Duke of Argyll.

It is now known that the whole citrus family is prone to change from difference in soil and climate, as well as from its natural tendency to "sport" when cultivated from seeds after the manner of most of our orchard fruits. It is also said that in many parts of the West Indies and South America the whole tribe is found growing wild, springing up spontaneously from the seeds of the trees originally planted by the Spaniards, varying in size, form, and in every gradation, from the lime to the shaddock. Oranges are found there equal in flavor and sweetness to those of the Azores, though of much larger size, while others in the same grove vary from these to a degree of sourness and acrid bitterness as sufficient to draw blood from the mouth accompanied by severe pain.

There you may see the lemon, lime, shaddock, and sour, sweet and bitter oranges growing indiscriminately together in the same forest.

They are round, flattened, rough, smooth, ovate, pear-shaped, thick and thin-skinned, juicy, dry, some with and others without seeds, some bearing seeds at the end, outside of the fruit, while others present a navel-like protuberance at the same point with no seeds, and in passing through these groves it will be observed that some trees will contain but little fruit while others will be loaded to excess. - - Essay on Limits of Profitable Citrus Culture, by H. J. Rudisill, American Horticultural Society, 1888.

The above extracts outline the scope of the scientific naturalist investigation and the breadth of the field as applied to citrus fruits. I will here express regret that the treatise of Gallesio on the citrus is out of print and inaccessible to the public.

It contains the results of years of patient experiment and investigation by which were established the divisions and classification of the species then accessible. The work should be in the hands of every orange-grower who takes more than a mercenary interest in his calling, and is of more practical value in promoting exact knowledge than all the other works we have on the subject. It is not edifying to see from time to time in print, crude remarks on Navels and their origin, strangely marked hybrids and varieties or occasional individual monsters.

There are well defined laws of pollen fertilization by which these are formed, and I will briefly comment on the facts discovered by Gallesio, our present knowledge, and the possibilities of the future.

Although his work was done nearly a century ago, before the day of Darwin's theories, yet he recognized in the citrus family the diversity of species which have become fixed from the primal types, and comments on their evolution. He divides the citrus of Europe into two sections, the sour or Bigarade orange, and the citron. He was unacquainted with the shaddock and Citrus Nobilis, which he describes from the observation of others. There came true to seed in his day which, for that reason, he classified as species the sour orange, sweet orange, lemon and citron. We now have the lime, bitter-sweet and blood oranges and perhaps others that come fairly true to seed.

He established the law of direct pollen fertilization as the source of all hybrids and varieties which could come only from seed and scouted the idea of bud variation then held by cultivators, which Mr. Phelps has established as being due to the direct influence of pollen on adjacent twig buds which can be propagated if budded soon after blooming.

To propagate varieties with certainty true to type, budding wood must be taken before the bloom comes out. Gallesio searched exhaustively to discover when the sweet orange was introduced into Europe, but could find no

date, and convinced himself it must have been brought gradually by way of Arabia and Egypt. I am, however, of the opinion it originated separately in the different places where the sour orange and citron were grown together in Europe as well as China, as no hybrids were known of the citron till the sour orange was introduced by the Crusaders.

The characteristics of the different strains of oranges are too diverse to have sprung from the same source. Fortuitous hybrids of excellence are few and far between, as the tendency of their seedlings is backward toward the primary types.

All species of citrus were, till the latter part of the eighteenth century, propagated entirely by layers and grafts, as the tradition and experience had been that seedlings, especially of the sweet orange, would revert toward the sour or bitter orange. The type, however, had then by long cultivation become fixed, and the same is becoming true of the Bloods and Navels. The exceeding diversity and gradation of effect on and of the points that go to make up the physical and juice characteristics, has produced innumerable hybrids and varieties, and our horticultural progress demands that similar and inferior varieties should be simplified as to names or discarded, and the strains that form the best types described systematically as with the apple, grape and peach.

It is the labor of a generation to fix and develop oranges like the Washington Navel and Tardiff, and from analyzing the parentage of such we can gain data to aid in the work of making artificially new varieties.

We can surpass in merit the present varieties, but at the same time it must be remembered that a term of years is necessary to establish by successive propagation a new variety so it can be depended on to produce with certainty its type.

E. S. Hubbard

Federal Point, Fla., April 28, 1890.

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GRAPES FOR MARKET

(Read before the Horticultural Society, at DeLand, April 30th.)

It was assigned to me, by your committee, to report to you about the success or non-success of different varieties of grapes in Florida. Such could have been but a repetition of what had just been presented to you at your last meeting in Ocala. Besides, like Mr. Berckmans remarked to me a year ago, there is hardly a grape left somebody does not claim a grand success somewhere in Florida. It is impossible to examine all those different statements, sometimes most extravagant, most suitable for President Adams' Emigration Circular. I must say the largest number of these so-called successful grapes have been, more or less, a failure with me. A variety bringing a few good bunches here and there may be called successful by one grower, and considered worthless by his neighbor. A successful grape is not the one that grows only, but one which also pays -- a grape, sufficiently prolific, which we can send to market and receive returns for our labor. A wide field is presented to the amateur, who will find a very attractive amusement in experimenting with different varieties of the grape. For the practical grower (for a paying vineyard) varieties to recommend are few. By naming American kinds -- Ives, Delaware and Niagara -- at the present all is told. I am aware other varieties are also recommended; for example, some of Rogers'

hybrids or Perkins. I do not wish to contradict such opinions, but my experience is, except perhaps Lindly, all of Rogers' grapes have the same fault, too many imperfect bunches, some few real good ones, but not enough to make them pay. Perkins, also often recommended, is a grape of a partly red, partly green color, berries dropping off, blessed with a repulsive odor, and of no quality. I have tried to sell this grape for a few years; wherever I have sent them I have been requested to do so no more, and when a colored fruit peddler in Waldo declined with thanks, I grafted them to Chasselas, and now these Perkins roots pay me well. Time would not permit to give you any more examples, but the two named are good types of, in a sense successful, but, more or less, worthless grapes.

But now, what does constitute a truly successful grape, for market, for homes, or whatever you want it for? I can answer this question no better than to read to you part of a reply received from Pancoast & Griffiths, commission merchants at Philadelphia, to a circular I had sent to a large number of commission merchants, and of which later

Pancoast & Griffiths say: "Let us call your attention to a fact too often overlooked in the South, and that is, that no grape, no matter as to other qualities, will sell here in scraggly bunches and loose from the stem. The first market quality is the size, compactness and tenacity of cluster, and you will never succeed in grapes for Northern marketing without you succeed in producing a good size, compact and tenacious cluster."

This seems to me to be most correct and to the point, and whoever can grow such a grape, it matters little as to name, provided it is sufficiently prolific, will have a truly successful grape.

Believing that at present our standby has to be Niagara, Delaware and Ives, to ascertain their market value, the following was sent a number of commission merchants in our principal cities,

"Please state average prices Florida grapes sold for last season, Niagara, Delaware, and Ives; and is demand best for white, black or red grapes?"

I added the last question on account of a discussion going through our papers last summer in regard to a preference of black to white grapes. From a well intending beginning it became quite ridiculous, and looked very much as if somebody was going to start a new black grape and was preparing the way for it.

Reports received are in favor of white grapes, except Jacksonville, where Marx Bros. prefer black varieties, and stating 10 to 15 cents average price ruling last season.

Chicago, Savannah, Augusta, Atlanta and Richmond can give no opinion; have received but very few if any grapes from Florida; but what few were received sold well -- from 10 to 30 cents. No variety given. Boston and Baltimore prefer white grapes; report but few received, selling from 12 to 30 cents. Philadelphia, from 10 to 30 cents, and also in favor of white grapes. The reply from Pancoast & Griffiths is rather interesting, and I will give it to you in full. After their remarks about market grapes, which I already have read to you, they say:

"Prices grapes usually sell for as follows: Concord, 3 to 4; Ives, 2 to 4; Niagara, 6 to 12; Delaware, 6 to 10; foreign varieties, 10 to 20 cents per pound. White command highest prices, red next, black next; other qualities of cluster, flavor, etc., being equal. The above prices are the wholesale, ranging during the buying and shipping time of the respective kinds."

I wrote to them, prices given seemed not to apply to our early grapes, they themselves having sold my Chasselas for 40 cents a pound. I received the following reply, which I shall read to you, refraining from comments:

"Replying to your favor of the 24th; yes, the prices apply to the time when grapes are most plentiful here, and you must bear in mind then is the only time when large quantities of them are in demand, and that large quantities put here out of that season of natural demand for them here, in all

probability will at best not command any more money. True, we have sold Florida grapes as high as 50 cents a pound very early in the season for grapes, and consequently these fancy prices are paid more for the novelty than for the food of the grapes; and that with any considerable quantity it would be very different, especially with Southern grapes, which, to be honest, we must tell you plainly are not a very desirable market commodity, as a rule. Now, this may not at all agree with what you want to hear and report, but we are giving you the actual case, otherwise would lead you astray. We don't mean to deny that the season could be legitimately advanced from the fall to the summer, and even to the spring of the year for grapes; but what we say is that, from our experience and observation, we don't believe the low, humid country of the Southern coast will successfully yield a satisfactory marketable grape for our Northern cities in any large quantities. Only very few of the first pickings possess the required tenacity of cluster to arrive here in good order; and poor cluster, with more or less loose grapes, will not sell in the North.

"PANCOAST & GRIFFITHS."

Replies from New York are more inviting, and some of them I will also give in full.

Edward L. Goodsell says:

"There have been no large quantities of Florida grapes in our market here, and, in consequence of this, it is impossible to give you any positive information as to what the same sold for, and the relative market value.

"Generally, I would say that, so far as the Hudson river grapes are concerned, the Delaware is the variety of grape that brings the most money. This, however, is not so unless the quality is up to the very best. I would say that, generally, everything depends upon quality, and not upon variety. Anything really fancy in any line of fruit always sells at a very high price to the fancy trade in New York.

"E. L. Goodsell."

Archdeacon & Co., of New York, who, to my personal knowledge, are doing a large business in all kinds of native and foreign grapes, write as follows:

"In reply to your favor of the 19th, we are afraid that the information we can give you may not be as exhaustive as you might desire; but we will give you, as near as we can, our experience of the past seasons, and, perhaps, they may be an indication for future methods, even if not as thorough as one should wish. Grape growing, as we are led to believe, is in its infancy as yet in Florida. It does not seem, therefore as if judgment should be passed unreservedly as regards the different varieties; for the riper experience of the grower, after he discovers the nature of his soil, climate, etc., and their adaptability to the various varieties in regard to quality and prolificness, will of itself determine the question of what kinds shall we cultivate and improve; what kinds cast aside as worthless for us.

"We will now answer the different questions you ask as near right as in our power. Ives always rule low; we do not remember of their ever having paid the shipper. The same holds good about black varieties. When they arrive here they seem to have lost all luster, and the appearance they present is not very attractive. Delaware grapes, last season, seemed to be the most successful, as far as we remember; they arrived here in fair order, and, being wanted, they sold well.

"The prices of grapes, no matter where they may come from, depends upon the quality, condition on arrival and the demand in the market for that particular kind. Last season the price ruled from 25 to 50 cents in good order. These remarks hold good about the Niagara grapes shipped to this market last season. The prices for them ranged the same as for Delaware if in good order.

As regards foreign grapes, if in good order and well grown, they command fancy prices.

"ARCHDEACON & CO."

The value of foreign grapes is indisputable; wherever there is hope they may succeed, they should receive a trial.

Notably among the Chasselas are the very earliest grapes we have and the most perfect market grapes in existence. Some succeed well with me and the farther south they will be taken the better they will do. There are but few of our native roots which can really be called successful; we cannot in reason expect any better from the foreign grapes. In conclusion I may say, a vineyard for profit in Florida should at present consist of 60 per cent Niagara, 30 per cent Delaware, and 10 per cent Ives. Varieties of the foreign Chasselas should be tried and planted or grafted according as they succeed.

H. VON LUTTICHAU.

GRAPE GROWING IN WALDO

EDITOR FARMER AND FRUIT GROWER:

I have read Mr. Livingston's article of explanation, "Grapes in Waldo." As one of the subscribers, in fact, the originator of the protest in question (which it would have been an easy matter to get nearly the whole town to sign), and requested by the less skilled grape growers of Waldo, I desire to give the reason for opposing Mr. Livingston's derision in regard to grape growing in Waldo, although, as he correctly stated, I live some five miles from that town. But, all the same, I am not an entire stranger to that locality. In protesting against Mr. Livingston's writings, now supported, as it seems, in a way, by Mr. Cushing and Mr. P. Minnich, who have attempted to grow a few grapes, it will be well to explain the principle of growing grapevines, as followed by Mr. Livingston and his most skilled grape growers.

Grapes are raised to a stake six or seven feet high. They are trimmed to any amount of spurs and limbs up from six to any number of eyes. Every eye is expected to fruit, and vines have carried from forty to any number of bunches for as many years as I have seen them. Mr. Godbey's vines, which are on well drained land, well fertilized and well cared for, were nothing but a mass of fruit; and Mr. Livingston and his skilled grape growers have looked on these vines for an example to follow, regardless of proper drainage, and, although experts in growing persimmons and peaches, are novices in growing the grape.

This attempted imitation has, to all appearance, not been a success. Mr. Godbey's vines have borne, have done all they possibly could do; and if they really should now begin to give up, as Mr. Livingston says he has heard a neighbor say, who has heard somebody else also say, it would prove nothing whatever against grape growing in Waldo. Giving due credit to the skill of Mr. Livingston and his two supporters, these gentlemen should consider that it is but a natural consequence for vines, overbearing for years, finally to give up, or die back, as he calls it. A new shoot should have been raised from the base at intervals to take the place of the old, wornout stock.

The freeze has also injured many eyes this season, causing the vine to die back, and such is the case with some of Mr. Godbey's vines, as he tells me. His vines are still in good order, have borne the heaviest crops of good fruit I have seen for many years, in spite of Mr. Livingston's, doubtless, very scientific bog-iron discovery. Mr. Livingston looked over the fence into what he calls a little garden spot; before passing judgment, it would have been of advantage to him to have walked in. He would have seen some 300 of as beautiful and thrifty vines as can be found anywhere, of many

varieties, but usually bearing much more than they should. But, by Dr. Ambrose's way of heavy fertilizing and growing young wood from the base, he has kept them in proper condition. I have seen there remarkably fine Triumph and Delaware, and last season Black Hamburgs better than my own. The something white that struck Mr. Livingston's eyes, in looking over that fence, but indicates the Doctor's superior skill, who, by an early application of lime and sulphur, provides against insects and possible disease. If such applications indicate failure, as Mr. Livingston hints, all other fruits are also a failure in Waldo or anywhere else. Orange trees, first of all; for a number of different washes are used by intelligent growers to prevent the ravages of insects or the like. I am sure Mr. Livingston used some himself before he ever wrote on grapes and geology.

Besides Mr. Godbey's fine vineyard, I will now name some others of the less skilled grape growers, who, nevertheless, sell large quantities of the fruit every year, and who have, as yet, not complained of bog-iron interference: Mr. Sparkman, with a large number of bearing vines. Capt. Dale, with nearly 1,000, tells me grapes pay him better than any other fruit. Mr. Geo. Minnich, with about four acres, an experienced grape grower from Illinois, has expressed himself that grapes do better here than there. Mr. Lever, with two to three acres, and Mr. Demmitt with ten acres, shipping plenty of fruit -- Mr. Demmitt, one of the signers of that protest. It was difficult for Mr. Livingston to come up with his few vines in a mud-puddle against a ten-acre opinion, and so he says, very unprettily, "Mr. Demmitt wants to sell vines." He may sell some few vines here and there, as any one does who has them, as Mr. Livingston sold persimmons. But if selling vines has to come up against grape growing, Mr. Livingston had better kept that argument against the writer, who really sells vines in a business way.

Now, whether Mr. Livingston believes it or not, better men than I will tell him that flat woods, with all the bog-iron or anything else, he will, in time, discover, is as good a place for grapes as any, provided it is properly drained and the planter knows what he is about. If the roots are in the water they will rot and die correspondingly. Not even the amount of taxes one pays will prevent it. Not long ago a gentleman well versed in agriculture told me he thought grapes a failure. I asked him if he had trimmed his vines. He said, "No, they are left to themselves." Another attempt at grape growing I know of is where many hundreds of young vines are planted a few feet from and all around LeConte pear trees; this is expected to be a success! Grape growers will know this enterprise must fail, and the planter of this mixture of pears and grapes will surely, in time, also pronounce grape growing a failure, and will, perhaps, also attribute it to bog-iron in the soil.

Of course, nobody can object to Mr. Livingston having his own opinion; but by his own admission, knowing little about grapes, hearing some doubts from one or two individuals, looking, in passing by, over some fences, and then declaring a fruit a "snare and a delusion" -- permit me to ask, is this not going a little too far?

Just as Mr. Livingston requires a skillful grower for his Kaki (which he undoubtedly is; I surely have myself listened, with profit, to his discussions on that subject), so does it require a skillful grower for any other fruit, if that fruit is to come to perfection; and a decision for success or failure should only be given when the growing of the fruit in question is well understood. Neglect, faulty judgment or imaginary skill will fail everywhere and with everything.

For myself, I have enough of the Kaki; I have heard some otherwise well informed growers here pronounce them good for nothing. If I should now declare them a "snare and a delusion", I should surely be guilty of most unwarranted assumption.

H. von Luttichau.

Earleton, May 9th, 1890.

THE GRAPES THAT DO NOT GROW AT WALDO

EDITOR FARMER AND FRUIT GROWER:

In your issue of the 24th of March a broadside of "grapeshot" is poured into me from Prof. Dubois for saying that "grape culture in Waldo is a snare and a delusion". This is a long range shot, coming all the way from Tallahassee, where my pop-gun was not expected to reach. It seems, though, that the Professor was hit, or thought he was, for he kicks worse than a newly lassoed Mexican mustang. But he finds blessed consolation for himself, and congratulations for his readers, over the fact that I am not authority on grape culture. He says "it matters little what I say" with those who have made grape culture a success, but seems to fear the dire consequences my article might have in misleading "some would-be grape growers". If these would-be grape growers had a chance of success, or a ghost of a chance, I would not be the means of deterring them from engaging in the business; but, as I honestly believe that defeat and disaster await almost all who engage extensively in the enterprise, my duty to myself, no less than to them, demands that I should raise my warning voice to avert an impending evil. This is my answer to your question, "Why did I make that assertion?"

You ask me to answer half a dozen other questions, such as "have I tried all the varieties recommended for Florida, and did I give them proper attention, training" etc. You ask me to give you the names of the skilled grape growers of Waldo, etc.

To the first of these I answer that I have tried all the varieties that you recommended and twenty others, and none have done well; the Niagara has probably done the best.

I have fertilized with bone meal, hard wood ashes and cotton seed meal, and other complete manures.

Dr. M. A. Cushing, Fred Thompson, Peter C. Minnich, W. N. Gillett and myself are the principal ones who are discouraged viticulturists at Waldo.

I have taken considerable pains to inform myself on grape culture, and have dotted down a few points as I waded through the "grape lore" of the past and present.

The cultivation of the vine was among the earliest industries of man, and the Latin nations were, and are, among the champions in its successful propagation.

Now, I ask you if it is reasonable to conclude that the early Spanish colonists in Florida did not thoroughly test and, failing, abandoned the enterprise?

Is it reasonable to conclude that grape culture in Florida is a success, when, for three hundred years, all attempts at its successful cultivation have proven abortive?

If we can succeed now, why did not these early Spanish colonists, many of whom were adept in viticulture (and whose love for the wine and its vintage was equalled by few), not succeed?

You refer me to your own forty-seven acres of vines and eight years' experience, about which I really know very little; but before deciding I must know whether you have made more money out of the sale of vines or wines. I concede that Florida is adapted to the growing of some kinds of grapes, such as the Vitis Vulpina, which is a perfect success here, one variety of which (the white scuppernong) I am cultivating, and which I esteem very highly. It is a sure crop, and other varieties of this same family seem perfectly at home here. But the Vitis Labrusca and its various hybrids, the principal varieties of the so called Northern, or bunch grape, can never be made a perfect success; that is, a paying crop. These Northern grapes are known to require at least five inches of rainfall during

their growing season, February, March, and April, and almost perfect dryness and absence of dew during the ripening season, May, June, and July. Our seasons would be just right if they were reversed; as they are, they are just wrong.

Your assumption that a special knowledge of the business is all essentail in grape culture, and that without that skill no success is attainable under any ordinary circumstances, is not logical. My own opinion is, that where favorable climatic conditions exist, there grapes will grow even in the absence of your special knowledge or experience in cultivation; and that unfavorable climatic conditions, such as we have here in Florida, cannot be overcome by any amount of skill or special knowledge.

Your statement that two thirds of the orange groves set out in Florida have already been abandoned is a monstrous inaccuracy. I don't know of a single instance of the kind in or around Waldo.

It is true that our losses by freezes are terrible some years, but the years of good crops and favorable harvest, generally, a little more than recoup us.

I don't wish to be understood as saying that grapes cannot be grown in any part of Florida, for I don't say or think any such thing; but on the contrary, I think they can be grown for local consumption and for early market in many places in Florida, but never as a general crop to go on the market in competition with real grape growing districts, such as a part of Virginia, Arkansas, Texas, Arizona, and California.

In conclusion, I must say that the broadside from your Gatling guns has damaged friends as well as foes, for if two thirds of the orange industry has already failed, how must your friends, the land boomers, proceed in bagging new game if the orange grove bait is no longer to be used? You can supply the grape, but wouldn't it be better to get up a little variety; say grapes and gophers? How would that do? If the grape growers "jump" at this combination, they will have the good company of the geologists, who are going to "jump" at my "vast knowledge" of the formation of this "peninsula's sub-soil".

But, by-the-by, Professor, I am not the originator of that ocean current accretion formation; the credit of it, I believe, belongs to Agassis, but I don't suppose he knew much about grapes.

B. F. Livingston.

Waldo, Fla.