

Questions and Answers

Annual Meeting, May 8, 1937

Q. Is research being made for parasites for latania scale? Is there any parasite for latania scale at present?

A. Dr. Horne did not know of any. Dean Palmer stated that Mr. Compere, of the Citrus Experiment Station, now traveling abroad searching for parasites, has had instructions to be on the lookout for parasites for latania scale.

Carter Barrett: Will you state for the benefit of those present what parasites we have at present? I think there are some, are there not?

A. Yes, we have five parasites at present time. We have a ladybird beetle; African beetle, quite abundant in San Diego County, doing some good work. We have two other parasites of lesser importance—and five altogether.

Carter Barrett: Calling on Mr. Harry Marsh—you have some interesting observations on these frozen trees. Let us hear from you, please.

Mr. Marsh: They were not very extended. One point I brought out very frequently in the case of frosted trees, particularly small ones—the top and upper branches are frosted and when the buds start to come out, the inclination is to try to save topmost buds whenever they are in limbs somewhat damaged and it has been my experience and proven most successful to try to build a new tree from some of the stronger shoots, coming very close to the bud union—at the bud union the tree is more vigorous—will grow more strongly and actually in case of undamaged tree, makes a finer tree than the best nursery tree that one could raise.

REESTABLISH FOLIAGE—ROOT BALANCE

It was also brought out last night that it is advisable to let all of the foliage that may come on the tree grow for considerable time before any effort to pick out or force the growth on the bud that you may select to make a new tree. In other words, first re-establish balance of foliage with root system. In that way you get a new tree more quickly and a more substantial one, than if you try to select too soon, the bud, you are going to use. If you don't allow plenty of foliage to come before you start training up the new shoot, that shoot is likely to be more weak and spindling.

G. R. Calkins: It would not be advisable to let the other limbs get high enough to interfere with the one you want to use. I think that is important. I don't think we should allow the extra shoots to grow equally with the other. They may be easily controlled by

frequent pinching back.

Q. Would there be any detrimental effect if in pruning frosted trees, some of the dead wood is left in the trunk of the tree?

A. (Dr. Parker) I think it is quite likely. There are others present with more experience than I. I think it would be detrimental to leave the dead area on the tree and build the tree above that in a way that it would not heal over satisfactorily.

Carter Barrett: I will take the liberty of supplementing that. I have an interesting experience in mind—on Mr. Chapman's grove—down in San Gabriel. The trees were planted before the 1922 freeze, which was the most severe cold experienced prior to this year. Those trees were Fuertes. There were about 25 trees out of this acre which came back from above the bud union and made Fuerte trees after the 1922 freeze. The other trees were frozen below the union and topworked later. On some of those trees injury severe enough to cause scars three to four inches wide and maybe two feet long. In some cases a great deal of decay set in, and tree surgery has been necessary to put the tree in proper condition.

My feeling in regard to that (if you have such injury on either the main trunk or major limbs) if you take proper care of them from tree surgery standpoint, there shouldn't be any trouble, but it might entail more expense. If such dead areas occur on the outlying limbs of the tree, I would not recommend taking them off entirely at this time if they are producing a considerable amount of foliage. I would allow that foliage to grow this season—possibly next season—but I have the feeling that it is very unwise at this time to remove any foliage that we can save, even though we may have to take it out later.

VERY FEW TREES KILLED

Question asked of Dr. Coit: Grower wants to know what proportion trees have been injured, in your estimation—or killed entirely.

Dr. Coit: Entire loss of trees has been limited to young, one to three year old trees in a few low spots on certain ranches. I have a very low spot on my own place where I think some five or six year old trees were killed below the bud union. Considering the state as a whole I believe that a very small percentage of total trees are actually killed to below the bud union. Possibly not more than two or three per cent.

Carter Barrett: Have you any different ideas, Mr. France?

James France: I think Dr. Coit's statement is pretty accurate. I don't believe there is a very large percentage of total trees dead. I want to take exception, however, to this proposition of not removing any foliage. I think we are apt to make some mistakes if we do not reduce the foliage on some of these trees. I think we are basing speculations entirely on what happened in the citrus industry. I don't believe the avocado is comparable to citrus in respect to cold injury. We can't make a definite recommendation on pruning at the present time—that will have to be based entirely on the condition of the tree concerned. I believe the trees severely defoliated will probably be better trees in a year from now if they have some pruning now.

Carter Barrett: Now that is worthwhile. There is a great deal of sound common sense in

that, and certainly conditions have to be dealt with individually. In any practice we can't lay down general blanket rules.

Q. I would like to have Mr. France go into more specific detail on the subject. Just how would you prune new growth coming out like hair on a dog's back?

France: I think I would just pinch off some of them but don't take them all off at once. Don't try to select your main limbs now. Keep pruning them for the next two years. It is going to make a lot of difference depending on the tree itself. I don't believe defoliation is half as severe as it is on citrus. A lot of them will lose leaves anyway.

START AGAIN NEAR BUD UNION

G. R. Calkins: If you have a tree not properly formed, above knots and scars and restrictions, the thing to do with that tree is to cut that top off and get below, and start some new growth near the bud union. I heartily believe that the closer you get to the ground, the better growth you will get.

Carter Barrett: I think you are right. Growers will lose the chance of making good trees if they don't seize this opportunity.

G. R. Calkins: I have been observing these old trees, around 25 years old, splendid producing trees—they have reached the stage where fruit is small and in hot spells the fruit will wither and drop. It has bothered me for some time as to what the trouble was and I have finally found out. As an example, you have a bunch of limbs and knots and scars, where you have cut off limbs, and that tree is working against a handicap. Every one of those places not healed over reduces the efficiency of the tree. If you have a half dozen of these which shut the area off from circulation of sap—if you have that condition and your tree is frosted; cut it off below those obstructions and you will have a better tree on the old foundation in the end.

Another thing—I have cut off a good many frozen trees—one particular case—that is coming out very nice—but a variety that I don't want—growth coming out all over. I cut it off 18 inches above the ground. It was still black in the bud union and to get into good wood I had to go below the ground. If you have got those conditions, get below diseased or discolored wood and start where conditions are absolutely healthy.

Carter Barrett: Professor Horne, would you care to discuss that a little?

HORNE ON WOOD DECAY

Prof. Horne: I don't think that I am able to add much to what these practical orchard men have said, but we have trees in a number of different conditions. If you have a tree with small branches all frozen just where you have a trunk and no small branches, all killed, the whole thing not killed, that is one situation. Now if you have your trunk killed fairly low down, and if you have dead spots on the trunk, clear down near the ground, you have quite a different situation. Just what is the best manner to manage a tree which has most of the small wood killed off, why that is a matter of experience—that is a question of response of the tree to those conditions.

We have some specific wood-rots which occur in avocado trees. In the dead wood in the tree there may become established a wood fungus, and once this wood destroying fungus is established there, the rot of course follows into the trunk and you get the problem of the hollow tree. If this decay gets far advanced into the trunk of the tree, you are going to have a hard time getting it out. Some of you have dead areas, large dead areas, especially toward the base of the tree, which should be taken care of to prevent specific infection with these wood rots. When you see a fungus on the trunk you know at once that probably there is wood decay going on in the trunk. Wood decay is not very liable to become established in small branches up in the tree.

SUNBLOTCH OBSERVATIONS

May I just mention another matter? You have all heard about sun-blotch. Now we believe it is a virus disease of the avocado. That doesn't mean that it is a desperate disease even if it is a virus disease, but it is something that needs to be studied. I am glad to say that it doesn't seem to be getting any worse. It is rather puzzling because some trees look as though they have recovered. We don't want to be too sure about their being cured.

You are going to have a fine opportunity to inspect these frozen trees for the presence of sun-blotch. These young sprouts coming out are going to show symptoms of the disease much more than if the trees were not injured—frozen back or cut back.

If the disease is present, the new suckers coming out will be very sharply marked. It is a good opportunity to inspect the trees that you want to keep for grafts and buds to see if there is any sun-blotch present. If you see the symptoms there will be a red streak in the young growth—sun-blotch will be red usually, then yellow and as growth goes on, they may appear to recover. If you see sun-blotch present in the tree, that doesn't condemn the tree necessarily. Simply do not use it as a mother tree from which to take budwood.

Dr. E. R. Parker: I should like to add a word to the comments of Professor Horne on sun-blotch. He mentioned that the freeze may permit the symptoms of this disease to show more clearly on affected trees. On the other hand, Dr. Coit, in his morning address, spoke of his observation that new sprouts from affected trees may show fewer symptoms. It is possible to harmonize both statements. When weak trees are affected it seems probable that new growth following the freeze may exhibit an increased amount of sun-blotch symptoms. This is in harmony with our observations that a set-back to the tree makes the disease more apparent. On the other hand, a severe injury to a vigorous affected tree by freezing may result in the stimulation of very vigorous new growth. In our experience such new growth may appear normal, at least for a few months or years. Although in some instances it has been observed to become severely sun-blotched after four years we do not know if it always succumbs to the disease. It would be a wise precaution, however, to avoid the use of propagating material from trees which have at any time shown signs of sun-blotch.

Q. Would an avocado tree be apt to be more hardy than a budded tree of the same variety of approximately the same age?

Dr. Coit: I don't know. Do you mean by that, a tree rooted as a cutting? Questioner: No,

I mean a seedling tree.

Dr. Coit: It would depend a great deal on the seedling. There is only one tree of that variety until it has been propagated. If you have a seedling tree which is promising and you have a cold snap, would the seedling be more susceptible than the other? I have twenty seedling trees of a variety that is now in commercial production. They went through the cold nicely while trees budded from the parent tree were all badly frozen.

Carter Barrett: What was the difference in age?

The seedling trees are somewhat younger, of course, but their age is fairly close. I judge the seedling tree has more vigor than the budded.

FARM BUREAU AVOCADO COMMITTEE

Q. What is, and why is, the Statewide Avocado Committee of the Farm Bureau, and what is it doing? I will call on Mr. Gardner to answer that.

H. H. Gardner: The State Avocado Committee is really the five avocado counties at the present time. Each County Farm Bureau is a member of the State Committee, entitled to certain representation. Only the five counties which raise avocados extensively have taken part at present. Santa Barbara has two representatives, Ventura has two, Los Angeles has two, Orange has two (were allowed three but when they were assessed they decided they only wanted two). The State Committee is a clearing house or go-between for the Avocado Departments of Counties and State Directors of the State Federation. In a general way, we are supposed to take up the general problems of the industry. We have done something on the tariff question. We have as one of our members an expert on prevention of thievery. He has been active in having a new law or amendment on avocado thievery introduced at Sacramento.

The State Committee was active at the Pasadena Convention. They saw to it that strangers were given a sample of the fruit, and also a descriptive folder. We meet four times a year, and we use the entire day at a meeting. Various problems are brought before us by our members and subcommittees work on details. For the future we have our eye on the Cuban question and our program of activities includes encouragement of research work, etc. Really our State Committee work is general industry problems like the tariff question, avocado thievery, etc. Carter Barrett: Thank you very much.

M. B. Rounds: The Committee, instead of being a Department of the California Farm Bureau Federation, is a committee of that organization. I believe that is because of the fact that it had a tie-in with the State organization and the American Farm Bureau Federation. If I am wrong in that, please correct me. The State Directors felt they could accomplish more by cooperating through the California Farm Bureau Federation in matters of national scope.