

we knew would be of a uniform strength, and he has done so. I do not know that it varies particularly from Mr. Good's soap, only I believe it is more reliable, that is all.

PROF. JAMES: Has all the treatment on Catawba Island been under your directions?

PROF. WEBSTER: Not lately; I have not had very much to do with it the last year. The most that has been done the last year has been done independently by individuals. Of course, they brought a good deal of pressure to bear on those that were delinquent. I have had very little to with it after the scale was once gotten under control.

THE CHAIRMAN: It seems to me that we have come to these particulars through the able address of Prof. Webster. That the right remedy is whale oil soap, that should be applied in the winter and in the case of the peach when the tree is about to bud. What is necessary is a strong pull and a long pull and a pull altogether, or else that some one, with considerable powers of coercion, should be appointed to see that the fruit growers do their duty.

MR. FISHER: I would like to ask Prof. Webster what additional benefits seem to result from the use of whale oil soap for the destruction of the scale.

PROF. WEBSTER: It is claimed, and I think with reason, that it acts as a fertilizer, and I would simply say that, to my certain knowledge, it has done so in some of our nurseries. It has been used a good deal stronger than was necessary in some of our nurseries, and when I asked why it was being used so strong the reply was that the stock that had been treated was a great deal more thrifty and in a great deal better condition than the untreated stock, and it was a question if it did not pay in that respect. I think as a fertilizer it has a very good effect. Some of our nurserymen are applying it to destroy the apple leaf aphid.

DR. FLETCHER: That is the potash?

PROF. WEBSTER: Yes, the potash, and, possibly, the fish oil also. Fish is a good fertilizer. I do not know to what extent it is a fungicide, but I do know that trees that were treated in the spring were exempt from the peach leaf curl, where the same variety, untreated, in the same row in the same orchard, was badly affected and the fruit nearly all destroyed. So, as a fungicide, to that extent it is certainly a very great benefit. This, and the fertilizing effects, are two very great benefits that would be gained by its use.

MR. DEARNESS: What about insect eggs on the trees?

PROF. WEBSTER: That I do not know. It has been so stated, and perhaps it will prove true, that fumigation will destroy insect eggs. We have made no fumigation in orchards, but the longer we use hydrocyanic acid gas in treating nursery stock, the more we are convinced of its utility. With a proper fumigating house, and the fumigating done properly, we have never yet had a single living scale pass through the process alive.

DR. FLETCHER: How long do you keep the plants in?

PROF. WEBSTER: About 45 minutes. In regard to effect of kerosene, there was sent to me, I think two or three years ago, a limb that was cut off from a tree infested with the oyster-shell bark-louse. The section sent was said to have been drenched with coal oil, but not only did the young bark lice hatch and live, but we actually got parasites from that scale after it had been treated with the kerosene.

DR. FLETCHER: Perhaps Prof. James can tell us if there are any fertilizing effects from the whale oil soap?

PROF. JAMES: Certainly not in the oil, but potash certainly would be very beneficial.

DR. FLETCHER: Is it not an expensive way of applying potash?

PROF. JAMES: Some contend it is not expensive. Last week, when I was talking to a lady who took over an old orchard near Philadelphia, she told me she started washing the trees with potash solution in order to clean the trees, and she said that the old trees that had not been bearing fruit for years commenced to bear. They seemed to renew their youth, and she said she thought it was a more effective way of applying potash to the orchard than by putting it on the ground.