

be supplied with some good samples of the scale. This action would be safe, because the San Jose Scales soon die, and are perfectly harmless on a twig which has been cut away from the infested tree. Samples should be given to every school inspector so that he could leave them with the teachers, and give them an object lesson on the scale whenever opportunity offered itself. The teachers could ask the parents to call at the school and see the scale, and in this manner the public would be informed generally as to its appearance.

The Government has to rely upon the co-operation of the orchardmen themselves for future action against the scale, and when they find that no radical method of uprooting trees or burning them down is going to be adopted by the Government, they will come forward readily and report the presence of scale to the proper authorities. It would not be difficult for Mr. Fisher to cut down a badly infested tree and cut it up into little pieces, so that thousands of these could be distributed to the schools of the province. Even if the orchardmen find something that was not the San Jose Scale, let them inform the proper authorities and get information on the subject.

PROF. LOCHHEAD then read the following :

#### NOTES ON THE ECONOMIC ASPECT OF THE SAN JOSE SCALE AND ITS ALLIES.

The past year, 1899, has been a very eventful one in the history of Economic Entomology in Ontario. Early in April the Legislature passed the Fumigation Act, which compelled all nursery stock, with a few exceptions, to be fumigated with Hydrocyanic Acid Gas. To carry out this process of fumigation special air-tight sheds and buildings had to be erected by the nurseryman.

The Minister of Agriculture placed the conduct of the whole affair in the hands of myself, and I at once proceeded to make an inspection of all the nurseries for the purpose of instructing the nurserymen how to build their fumigating houses and how to fumigate. The chemicals were sent out from the Ontario Agricultural College in measured quantities suited to the capacity of each house. Very careful instructions were pasted on each parcel so as to reduce the danger from poisoning to a minimum. The substances used were Potassium Cyanide, 98% pure; Sulphuric Acid, sp. gr. 1.84, and water. The quantities used per 100 cubic feet of air space in the house were 25/28 of an ounce of Potassium Cyanide, 1 1/3 fluid ounces of acid, and 2 fluid ounces of water. In this the Johnson formula was followed.

The work of inspecting the nurseries, of preparing the chemicals, and shipping them to the different places required much careful work on the part of the College authorities, for the shipping season of nursery stock was very short this year.

At the opening of the season many of the nurserymen were afraid the work of fumigation would delay the despatch of their orders, but it is believed that all received their chemicals in plenty of time, and that very few suffered from the anticipated delay by fumigating their stock.

From reports received from the nurserymen it must be acknowledged that the initial series of fumigation experiments in Ontario has been a decided success so far as the effects of gas upon the dormant nursery stock are concerned. Very few reported injury to the stock, and these few do not state definitely whether the injury was due to the effects of the gas, or to the effects of the very severe winter upon young trees.

It must be conceded that this successful initiation of gas treatment of nursery stock to prevent the dissemination of the San Jose Scale is another victory for Economic Entomology. The people are gradually being convinced that something can be done to help them in fighting pernicious insect pests.

INSPECTOR FISHER :—I came here at the request of the Minister of Agriculture only to answer any questions as to the condition of the country in regard to the San Jose Scale. It has been pretty generally discussed through the Commission and their report so that I think that I can add very little to the information you have got from that source.

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