

9-10 EDWARD VII., A. 1910

mens in this tube of the adult females of the San José scale, which I have extracted from underneath the scales. You will be able to see the scales on this bark in the form of small, grey, pinhead-like structures.

*By the Chairman:*

Q. They are very much like the bark louse only smaller?

A. Smaller and circular. Those are partially grown insects. You will find in some cases larger scales during the winter which are the scales of the hibernating females. These females in the spring begin to produce young ones again, and young insects which have passed the winter in that condition continue their growing. Some form females and some males and the latter are the only ones which are winged. I introduce this subject because it is an extremely important insect to the fruit growers of Ontario, and to tell you that measures are being taken to control and destroy this very injurious pest as much as possible. I was down in the Niagara district a short time ago and went through some badly infested localities, and in some places where it formerly occurred, I found it extremely difficult to secure a specimen of the San José scale. I must say that in many instances the San José scale have proved rather a blessing to fruit growers because it has got them into the habit of spraying. They have to spray, and as a result they are getting their trees clean and free from many other insect pests which otherwise would be injurious. Of course a very large number of trees have been destroyed, but if they would only preserve in these methods and pay more attention to the stock in the nurseries, I think we shall be able to keep the San José scale in control. The most useful wash, is the lime sulphur wash, the ingredients of which are fifteen to twenty pounds of lime, fifteen pounds of sulphur and forty-five gallons of water. Of course if any of you would like further particulars in regard to this or any of the other washes for remedies which I have suggested, you have only to write to me to the Experimental Farm and I shall only be too pleased to send you the exact proportions to use and the methods to employ.

Q. You say fifteen pounds of sulphur, twenty pounds of lime, and forty-five gallons of water?

A. Fifteen to twenty pounds of lime, fifteen pounds of sulphur and forty-five gallons of water. It is what we call on account of the proportions the 1-1-3 wash. You slake the lime first, and then while still boiling you add the sulphur and thoroughly stir adding more water as necessary, and boil for about forty-five minutes to an hour until it changes to a rich brown colour. Add sufficient water to make it up to forty-five gallons, and apply it while still warm, because if you allow it to become cool it chrySTALLIZES again, and when it does it is necessary to re-boil it.

*By Mr. Smith (Middlesex):*

Q. In destroying the insect life on animals you have to have it at a temperature of 110 in order to be effective, why does it not require that temperature on trees?

A. As a matter of fact one of the chief uses of lime and sulphur and the one which is not always recognized as it is usually considered that it directly kills the insects and their eggs, whereas, as a matter of fact the way in which it acts in the case of the eggs of insects, is that it covers the eggs and the scales with a thin film of lime, hence the necessity of thorough spraying. It is always a good thing to have the lime a little in excess of the sulphur because in that case it prevents the eggs from hatching by encrusting them. The sulphur is more of a fungicide and also destroy, such animals as the red spider and other mites which of course, are not insects.