

The operation of spraying has of course developed within the last ten or twelve years; but it is now so well known that thousands of spraying pumps are sold in Canada every year. Every fruit grower knows that he has to attend to this operation the same as he has to pruning and to fertilizing the soil. Take for example the potato beetle. Every farmer now knows that this insect belongs to a certain class of leaf-eaters for which we have a general remedy well known to all, viz., an active poison like Paris green applied to the leaves and eaten with them. Then we have special remedies for special pests and these can be got only from one who knows them from special study; but the people of Canada are employing specialists to work these out for them and they know that these can be got by writing to us for them.

SAN JOSE SCALE,—REMEDY FOR FUMIGATION.

By Mr. Clancy:

Q. Is there any remedy found to be a preventive of the San José scale, considering the difficulty of reaching it? Would you recommend Paris green?

A. Not for the San José scale which is a sucking insect. The scale insects must have some remedy applied which destroys them by direct contact with their bodies. The remedies are of two kinds: either a viscid remedy such as oils which will run all over their bodies and suffocate them by stopping their breathing pores, such as petroleum or the various emulsions of kerosene or the lately recommended crude petroleum, now considered one of the best remedies. Another method is suffocating with gas such as hydrocyanic acid gas, which terribly poisonous gas is liberated by the action of sulphuric acid on cyanide of potassium and water. Thus is generated an exceedingly poisonous gas to all animal life. When dormant plants are exposed to this gas for 45 minutes it does not injure the trees but entirely destroys the scale.

Q. That is not quite my question. What I asked was, in view of the difficulty that has been found with these applications, have such been found effectual in destroying the scale, always considering the means we have of treating them?

A. Yes. The hydrocyanic gas is perfectly effective when applied in the proper way and by specialists. It is a difficult matter, but any matter of difficulty may be overcome. In California and many other places where there have been serious visitations of these insects this gas has been applied with good results. Prof. Johnson of Maryland, who perhaps has had more experience with the gas treatment than anyone else in the United States, has had tents made by which he can cover over the whole tree. He generates the gas inside the tent and has met with perfect success, but this method is expensive and dangerous.

Q. I am asking this question for information. Can you suggest a remedy that the farmers can apply themselves?

A. No, I do not think there is any remedy that the ordinary farmer can be trusted to apply without danger to his trees or to himself. The hydrocyanic acid gas is so intensely poisonous that it cannot be recommended for general use. On a recent occasion, the rolling stock of a railway in South Africa having become thoroughly infested with bed bugs, it was decided to fumigate the cars with this poisonous gas. They closed up the cars, put in the acid and cyanide and left them shut up closely. Within an hour everything inside the cars so treated is dead. It is of course necessary to watch carefully that no one goes into these cars.

Q. I presume that application of this gas by farmers, considering the cost, would have to be abandoned?

A. I do not know that. I would not say that it would have to be abandoned, but that it cannot be adopted as yet; that is the point I think. Bisulphide of carbon is now largely used by pea merchants for killing the Pea-weevil. By knowing what has to be done and doing it, the men who are handling it gradually obtain that skill and method which enables them to do it without danger; and now the ordinary