Spraying Pointers from Practical Sprayers

THE practical value of spraying becomes more and more evident as the seasons go by. Insects and fungi are becoming more numerous and are constantly changing their habits from one class of plants to another. Man is constantly enlarging the number of these foes by increasing the area of cultivated plants upon which they feed. Competition itself, which is the life of the fruit trade as well as all other branches of commerce, forces fruit growers to realize the necessity of spraying by elevating both the ideals of the growers and the demands of the market.

Government aid and legislation also have done much to encourage the practice of spraying, while there are some insurmountable difficulties in the enforcement of pest laws; yet, their value to the fruit industry of this country has been and is much greater than most people realize. Our pest laws have helped to keep out of the country many serious plant and tree troubles; they have demonstrated to the practical grower the practical value of spraying in holding within bounds the San Jose Scale and other pests now in the country; and also they have materially controlled the distribution of plant diseases and fungi that are more or less permanent or perennial, such as peach yellows and the black knot of the plum and cherry.

SODA BORDEAUX AND PARIS GREEN

In the Niagara district last year some growers suffered loss through the application of soda Bordeaux and Paris green to fruit trees, particularly in the case of cherries. Some time ago Professor Shutt, of Ottawa, and Professor Lochhead, of Guelph, recommended the use of this mixture on potatoes; they did not recommend its use on fruit trees. Many practical growers used it on their cherry and other trees—which they were free to do if they wished—and as a result considerable damage was done. Now, some of these growers are throwing the blame on the officials at Ottawa and Guelph. At the fruit growers' convention held in Toronto last November, Professor Shutt explained the cause of the damage as follows: When the compound that makes up soda Bordeaux comes in contact with the compound Paris green, the soda of the soda Bordeaux enters chemically into combination with the arsenic of the Paris green and forms a new compound known as arsenite of soda, which is known to be harmless when applied to the potato plant, but very injurious to fruit trees

THE CARE OF NOZZLE AND OUTFIT

Mr. W. H. Brand, Jordan Station, Ont., who has had many years' experience with various makes of spray pumps, gave the writer some general information in the following words: "From many people we hear a howl about the difficulty in starting up their spraying outfits after they have been idle for a period. A great deal of this could very easily be avoided if sprayer operators would spend about five or ten minutes in washing out by running perfectly clean water through the machine pipings, valves, etc., and by taking off the nozzle heads entirely and placing them in a bucket of clean water, there to remain until wanted again. Being of either brass or aluminum they will not rust Spraying outfits would be longer lived if accorded better care and better winter and summer housing."

STRAIN THE MIXTURE THOROUGHLY

"A large number of sprayer operators are astray in their preparation of mixtures, containing lime, sulphur, or other such ingredients from which a sediment forms or in which may be at the outset coarse particles. All such mixtures should be run through three screens, viz., first a 20-mesh, next a 30-mesh, and finish through a 40-mesh, (a 50-mesh would be still better).

This removes particles which are not of the slightest value but which prevent free flowing through very fine nozzles, which are best for finest atomizing. Spraying with the air current or wind saves from ¼ to ½ of the mixture and means *money*. Free flowing means less *time* spent in stops to clean out clogged nozzles and waste of material while so doing."

AN EXPERIMENT WITH SCALECIDE

Early in December last Mr W. H. Bunting, of St Catharines, made an application of Scalecide, in the proportion of two gallons to forty gallons of water, to plum, pear and peach trees badly encrusted with scale. On February 20 he examined the trees in company with your representative, and compared them with unsprayed trees in adjoining rows, and found no apparent injury to the trees from the application of the Scalecide After a careful examination under the glass, he came to the conclusion that while not all have been killed a very large percentage of the scale has been destroyed. Mr. Bunting has forwarded samples of sprayed twigs to Professor Lochhead of Guelph, and to Dr. Fletcher of Ottawa, for further examination. At a later date we hope to publish further details.

Scalecide was tried this winter also by Mr. F. G Stewart, Homer, who cites his experiences as follows: "About the middle of January I applied this mixture in the proportion of one gallon to 20 gallons of water, using about one gallon to a tree I examined the trees early in Feb., and found that the scales were loosened and could easily be rubbed off the bark with the fingers. I think that most, if not all, of the scales have been killed. If further examination confirms present results, I shall use Scalecide in my orchards in future instead of lime and sulphur."

SULPHUR FOR PLUM ROT

Mr Murray Pettit, Winona, said that plum rot can be controlled by dry sulphur dusted through the trees. Two applications should be made; first, when plums are just formed; and second, two weeks later. Mr. Pettit has tested the sulphur treatment on rows side by side with trees treated with Bordeaux mixture, and found the former to be the better.

IS SPRAYING NECESSARY?

In interviewing fruit growers I occasionally find a man who objects to spraying. Some have never given the operation a trial, and others have tried it and obtained no results. Both these classes of growers should bear in mind this fact—healthy foliage in fruit trees is necessary one year for the crop the following season. If a grower has an orchard with foliage that is vigorous and free from all kinds of tree troubles it may be a waste of time and expense to spray—but the grower cannot always be sure that his trees are immune, even in the face of good appearance. In the other case, good results from spraying may not be evident the first year, particularly when badly infected orchards are treated the first time Spraying should be done regularly each year

The opinion of ... W. E. Gorman, Stoney Creek, is this: "There is more in keeping the trees healthy by treating the ground with desirable food and good tillage than in doctoring the tree after it is diseased." Mr. A. O. Bowslaugh, Grimsby, is another grower with the same opinion: also Mr. J W. Nash, Stoney Creek This theory of making trees resistant is good as far as it goes, but practical experience and experiment has not proved it infallible. A case can be cited, at Jordan Harbor, where some apple orchards non-sprayed but otherwise well cared for, yielded less than 25 per cent. XXX stock; while in the same locality sprayed orchards yielded a much larger average, notably the orchard of Mr. W.S. Duncan, which last season yielded 12 XXX barrels for every one of XX stock.

THE CARLSON MIXTURE

A spray mixture for the San Jose Scale that is commanding considerable attention in the St. Catharines district is one originated by Mr. John Carlson. Many growers have tested it and all whom I visited were well pleased with the results. "I have used many spray mixtures including the lime and sulphur wash, and Carlson's, and with me the latter has given best results," said Mr. H. B. Kottmeir, St. Catharines "Last spring I applied Carlson's mixture to a plum orchard so badly infected that I was about to cut the trees down, and now the trees are clean and healthy. I applied the regular strength, 4 gallons to 40 gallons of water, on trees seven years old and the cost of labor, material and all amounted to only five cents a tree—on calm days it cost less. The beauty of this mixture is its cleanliness on operator, horse and apparatus."

This mixture was used last spring also by Mr. Archibald, who is working a farm for Mr. Edward McArdle, St. Catharines. In the same orchard he used lime and sulphur and Carlson's mixture and found that fruit from trees treated with the latter was the better in quality and appearance—pears brought 10 cents a basket more than those from trees sprayed with lime and sulphur. "On some trees," he said, "I used the mixture where pears and plums were half grown and infected with scale and it cleaned the fruit for market. Carlson's mixture can be used when trees are in leaf, if diluted one half; that is, two gallons to 40 gallons of water."

The New Method of Killing San Jose Scale

It has long been known that petroleum oils would kill San Jose Scale if they could be mixed with water so as to be conveniently applied. That Scalecide is such a practical triumph is shown by letters from growers and by references in bulletins, etc. It is a perfect mixture of oils that effectively penetrates the scale, causing it to curl up and die, and fall off. This new preparation is said to supplant the lime-sulphur wash with its bothersome preparation, boiling of ingredients and danger of serious injury to the clothes and hands.

Prof. R. L. Taft, Horticulturist Michigan Agricultural Experiment Station, wrote of Scalecide, "I find that the results of the winter application has been quite satisfactory as, judging from the results on peach trees, considerably less than one per cent. of the adult scales escaped treatment."

Prof John B. Smith, Entomologist New Jersey Agricultural Experiment Station, New Brunswick, N.J., wrote: "I believe that applied at the right time and in a thorough manner, this is as good, if not a better remedy for this pernicious insect than any we have up to the present time."

For further testimonials from fruit growers and experiment stations, and for samples, address, B G. Pratt, Company 11 Broadway, New York.

Horticulture in the West

THAT horticulture is increasing in the west as the population grows was shown by the interest taken in the sessions at the annual meeting of the Western Horticultural Society, held in Winnipeg, on Feb. 14 and 15. Horticultural subjects were ably dealt with, and the vast importance of forestry dwelt on. It was decided to hold an horticultural exhibition in Winnipeg this year in August or September. A resolution was passed asking for the establishment of experimental stations in horticulture throughout the country in connection with the Dominion Experimental farms. Other resolutions asked the western provincial Governments to endeavor to check the prevalence of prairie fires, which are very destructive to timber areas within the prairie region and endorsed the recent forestry convention at Ottawa.

The election of officers resulted as follows:—Pres., W. G. Scott; 1st vice-pres., A. P. Stevenson; 2nd vice-pres., John Caldwell; secretary, Geo. Batho.