

## GARDEN AND ORCHARD.

## Remedies for San Jose Scale.

DEAR SIR,—In reply to your enquiry for my estimate of the relative value of the various spraying remedies which have been used for the destruction of the San Jose scale, and particularly in regard to crude petroleum as compared with whale-oil soap, I may say that my conclusions are drawn not only from the results obtained from the use of these remedies in Ontario last spring, but also from visiting infested sections in Ohio, Maryland, New Jersey, and New York, at the close of the season, closely examining the work done and talking with the people.

The effect of *whale-oil soap* on fruit trees is very beneficial indeed. It destroys fungus, and is an almost perfect remedy for leaf curl. The bark is cleaned and loosened, which greatly facilitates circulation and growth. Trees upon which the soap was used are much improved in vigor and appearance. Soap does not in any way injure trees, and is consequently safe to recommend for general use. If used after the buds begin to swell, there will be no injury, but if used before the frosts are over, it will certainly destroy the blossom buds of tender varieties, being much more injurious to buds than crude petroleum applied at this season. The soap used at full strength, and properly applied, checked the scale severely, and infested orchards which were treated with soap last spring have now a great advantage over orchards which were similarly affected, but not treated. The soap we used last year, even when a full strength solution was carefully applied, left too many of the scales alive, which before the end of the season entirely restored the degree of infestation which existed when the treating was done, and generally much more, for soap, even when recently applied, offers very little resistance to re-attack. The larva will fix upon it, mature and reproduce without any apparent inconvenience from the soap. Whale-oil soap, to be effective as an insecticide, must be used at full strength, say 2½ lbs. to the imp. gallon of water, and every part of the tree must be saturated.

*Crude Petroleum*, being strong medicine, must be carefully used, and should not exceed in quantity what is necessary to penetrate incrustation. Every part of a tree must be reached, but no part should be covered by the spray a second time, and a light, even and perfect application secured. The parts most likely to be missed are the upper side of the branches, the twigs, and deep crevices in the bark, which should have special attention. It is safer to use crude oil diluted to say 25% with water, the only advantage of the water being that it assists greatly in distributing a light covering of oil. Crude petroleum is much more destructive to insect life than any other remedy I have tried, and it not only kills nearly all of the scale, but protects the old wood of the tree during the balance of the season, for no scale can live on an oil-treated bark, and on trees carefully treated, larva from any overwintered scale remaining alive must find accommodation in crevices which escape treatment and on the young growth. There are in Ontario some splendid examples of smooth-barked Japan plum and other trees, which were so badly infested as to be incrustated, being so cleaned up by a single application of crude oil that it is now difficult to find any live scale on them. In sections where crude oil has been extensively used many trees have been killed, but in all such cases which I enquired into there was unmistakable evidence of an overdose having been administered either through carelessness or the imperfect working of the pump used, an intermediate or other unsuitable oil had been used, or the trees, being weakened by scale, borers, frost, or some other cause, did not successfully resist the treatment. I am much impressed with the advantage of keeping up the vigor of orchards as the only means of fortifying against an attack of scale and fitting them for treatment, which is especially necessary with tender varieties, such as peaches, etc., in which the margin between what the tree will withstand and what is necessary to kill the scale is much narrower than that in pears and apples. The London Spramotor combination pump is the only pump I have used which will give satisfactory results in applying mechanical mixtures of oil and water. Crude-petroleum treatment costs only about ¼ of the cost of thorough soap treatment, and is very much more effective in controlling the scale. I have no hesitation in recommending a 25% mechanical emulsion for apples, pears, and the hardy varieties of plums; but if this mixture be used on peaches, etc., there should be special pains taken to make a light application. For such trees, many would prefer whale-oil soap, but if my peach trees were infested I would use crude oil.

I have used a combination of soap in the proportion of 1 lb. to the gallon, with 18% of crude oil, with good results. By varying the proportions any strength can be secured, which would make the mixture suitable for any condition of trees.

Kerosene in winter or spring treating did little in checking the scale, and seriously injured the trees. It may be used more satisfactorily in summer, in the proportion of 10% with water for killing the young scales.

Yours, etc.,

GEO. E. FISHER,

Chief Inspector.

Halton Co., Ont.

P. S.—I shall be pleased to report upon any suspected specimens of scale which may be sent to the FARMER'S ADVOCATE.—G. E. F.

## San Jose Scale Inspection.

On Friday, February 1st, a deputation, representing the Ontario Fruit Growers' Association, submitted the following recommendations to Hon. John Dryden, Provincial Minister of Agriculture, which will be duly considered during the present session of the Legislature:

1. That a system of inspection be carried on in all suspected districts, with a limited number of suitable assistants.

2. That every grower in suspected districts be required to inspect his own trees during the months of November and December in each year, and to report to the inspector not later than the 1st day of January following, on suitable blank forms to be furnished, that the work had been carefully performed, together with a statement of the condition of the orchard at the time of inspection.

3. That, as the work of treatment is still in an experimental stage, the Government should make suitable material, both whale-oil soap and crude petroleum, available to the people on the same terms as supplied to growers last year.

4. That in isolated sections where the scale is found to a very limited extent, the treatment of the trees be carried on by and at the expense of the Government, under the direction of the inspector.

5. That, with regard to nursery stock, the most careful measures be continued to properly protect the purchaser from infestation from this source, and to this end all fumigation be done under the supervision of the Government, and official certificates be issued to accompany each shipment.

Hon. Mr. Dryden suggested that in order to secure the enforcement of precautionary measures, the Association appoint a committee of three to co-operate with the Department, particularly in the placing of suitable spraying material within reach of the public.

## Meeting of Nova Scotia Fruit Growers.

The 31st annual meeting of the Nova Scotia Fruit Growers' Association has passed into history. In point of attendance, and in the interest shown in the discussion, it was one of the best ever held by this Association, though there was great diversity of opinion on most of the subjects considered. The transportation problem, spraying and agricultural education were the three principal questions discussed, though there were a number of others of considerable importance.

President J. W. Bigelow, in his annual address, stated that he could find no record of any export of fruit grown in North America in 1801, which has developed in the last century to a product now valued at over four hundred million dollars a year. In Canada the annual value of fruit grown may be safely estimated at eight million dollars, and in Nova Scotia it has passed the one million dollar mark annually. The past year has been one of the most disappointing and unprofitable for fruit culture in Nova Scotia ever recorded. Starting in June, with abundant blossoms, our apple crop developed unfavorably, with a yield of less than 300,000 bbls. of inferior fruit, one-half of which never should have been marketed, and one-third of which was lost in drops and culls; and having to compete with a good crop of superior fruit from U. S. and Ontario, as well as Europe, in foreign markets, the price has ranged from 0 to \$2 per barrel, and in many cases money has been remitted to pay expenses. A number of unfavorable conditions conspired to render this year's fruit business unfavorable: 1st—An unusually mild winter, with frequent cold changes, injured the fruit buds. 2nd—A cold, wet May produced an increased fungous and insect development. 3rd—A terrific wind storm, on the 12th September, destroyed one-fourth of the best of the fruit, and injured both trees and fruit. 4th—An unusually severe frost, early in October, injured the fruit and produced a skin rot. 5th—The worst class of steamers ever employed in the carrying trade, cooked and practically destroyed the fruit during the 15 to 20 days cargo was in transit. The plum crop, where carefully cultivated, was abundant, and is estimated at twelve thousand baskets (10 lbs. each). Pears were a good crop, and of fair average quality. Peaches, strawberries and other berries were a good crop, and brought remunerative prices.

The 200 bottles of fruit in acid, and 80 boxes and 30 barrels of Nova Scotia fruit sent to Paris Exhibition, and exhibited in cold storage by the Canadian Government, proved to be one of the most important and attractive exhibits of food products of the world there shown, and our Nonpareils and other long keepers were shown, after being twelve months in cold storage, perfect in flavor and keeping quality. The exhibit of food products from Canada at Paris has developed our trade to all parts of the world, and orders for Canadian apples are now being filled from almost every country. The bottled fruits shown at Paris, supplemented by 75 Cochran cases of this season's crop of apples, will be staged in the exhibit at Glasgow, Scotland, from May 1st to Nov. 1st, 1901.

The School of Horticulture is progressing most favorably under the able direction of Prof. Sears, with 61 students, representing nearly every county in the Province, and many from N. B., P. E. I. and England. Prof. Sears' lectures through the Province, on practical points of fruit culture, are developing an interest in fruit culture of great

value, and the fact is being demonstrated that every county can raise superior fruits in favorable localities. It has been found necessary, in order to successfully conduct experiment work, to extend the grounds, and C. R. H. Starr, Esq., has donated a piece of land joining the school grounds, for ten years, at the nominal rental of \$1.00 per year, with the privilege of purchasing. By careful management the expenses of this work have been kept within the income, and when the Government fully realizes its value and importance to the whole Province, it will be induced to increase the grant and extend the work. Most of the graduates of this school are either successfully prosecuting fruit culture on their own account, or are receiving large salaries in horticultural work—noticeably, E. Higgins, C. Blair, S. Hooper, Miss Morse, Miss Watts—and there is an increasing demand for graduates at the highest salaries paid any profession.

*Transportation.*—This difficulty is now more disastrous to the N. S. shipper than at any time in twenty years. The following important facts may assist us in removing the difficulties: 1st. That the Halifax and St. John merchants have had and always will have sufficient influence with any Government to subsidize a line of boats to London for their own benefit even if they are totally unfit to carry apple cargoes, or whether they carry any apples or not,—hence fruit-growers need no longer contest the subsidy question. 2nd. The line subsidized this year by petition from and for the benefit of fruit-growers, from Annapolis, has given the worst service of any in the trade for twenty years. 3rd. All attempts to combine fruit-growers to form a shipping company for their own interests have failed. A commissioner appointed by the Government to inspect all steamers carrying apples, with power to prevent shipment of inferior fruit in unsuitable vessels, improper stowage, etc., would remedy much of the wrong complained of, and would this year have saved fruit-growers in N. S. over \$100,000.

The President suggested establishing branch Associations in every county (the first branch is now being organized in Antigonish), as has been successfully accomplished in Ontario and the U. S. To carry out this and other useful work, it is necessary to increase the Government grant from the paltry sum of \$300 to at least \$1,000.

We have estimated the value of the fruit industry to N. S. as follows:

|                                                                                                                                      |             |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 1. Annual value of fruit crop, average about.....                                                                                    | \$1,000,000 |
| 2. Net receipts for apples sold in G. B., 1899 crop.....                                                                             | 800,000     |
| 3. do. do. 1900 do. ....                                                                                                             | 200,000     |
| 4. Value of orchards now bearing, 9,000 acres, at \$500 per acre.....                                                                | 4,500,000   |
| 5. Annual additional value to permanent wealth of Province by young orchards, 5,000 acres, at \$200 per acre.....                    | 1,000,000   |
| 6. No. of men employed in fruit culture, 7,000.....                                                                                  |             |
| 7. No. of men employed in barrel and box factories, nurseries, fertilizer and other industries required by fruit culture, 4,000..... |             |
| 8. Freight paid for fruit to railroads.....                                                                                          | 60,000      |
| 9. Freight paid steamboats for do.....                                                                                               | 200,000     |

In the matter of *transportation*, the fruit-growers feel that two points should be remedied: First, they consider that the rate paid on apples is too high, owing largely to the place which apples are given in the present classification of freight. The meeting took action upon this phase of the question by passing the following resolution, which was introduced by Mr. Peter Innes, Vice-president of the Association: "Whereas the freight classification of apples by the railways of Canada was fixed at a time when the production was small and prices high; and whereas since that time production has enormously increased, while prices have been continually falling; and whereas in Western Nova Scotia apple-growing has become a great staple industry, averaging 500,000 barrels a year; and whereas the said classification has to be submitted to and approved by the Governor-in-Council, therefore Resolved,—That this Association, recognizing that the present classification does not suit the altered circumstances, and is oppressive to the apple growers and shippers of the Province, do respectfully memorialize the Governor-in-Council to take the subject into early and favorable consideration, it being suggested that, in the opinion of this Association, apples should be placed at least on an equal footing with flour." The second matter of transportation which received attention was in reference to the character of the steamers which are allowed to carry freight upon the subsidized lines running between London and points in Nova Scotia. It was shown beyond any question, that the vessels which have this year been carrying apples from Halifax and Annapolis have, in some cases, been unfit for such a purpose, and have furthermore been allowed so free a hand in the matter of when they should leave port, how the fruit consigned to them should be handled, and how other freight, such as deals, should be stowed in connection with the apples, that great damage has been done to the fruit. Secretary S. C. Parkersaid he had personally examined the account of sales of more than one thousand barrels of Gravensteins, and they would not average 10 cents per barrel net. It was felt by all that some action should be taken which would remedy this state of affairs in future; that steamers which are subsidized by the Government should be rigidly inspected, and so supervised as to insure the proper handling of the fruit, and such a system of ventilation as should give the greatest possible assurance of the apples carrying satisfactorily; and, furthermore, that the failure of the