

REPORT

OF THE

COMMISSION OF ENQUIRY

CONCERNING THE OPERATION OF THE

SAN JOSE SCALE ACT.

1899.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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COMMISSIONS and COMMITTEES

Commission of Enquiry concerning the
operation of the San José Scale Act.
Report.

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MEMBERS OF COMMISSION

(Appointed by Order in-Council, 16th June, 1899.)

JAMES MILLS, LL.D.,

PRESIDENT ONTARIO AGRICULTURAL COLLEGE,

Guelph, Ont.

JOHN DEARNESS,

EX-PRESIDENT ENTOMOLOGICAL SOCIETY,

London, Ont.

W. H. BUNTING,

FRUIT GROWER,

St. Catharines, Ont.

REPORT
OF THE
COMMISSION OF ENQUIRY CONCERNING THE OPERATION
OF THE
SAN JOSE SCALE ACT.

To the Honorable Sir Oliver Mowat, Lieutenant Governor of the Province of Ontario :

May it please your Honor :—

The following questions and commands touching the operation of the San Jose Scale Act and amendments thereto, as affecting the Province of Ontario, were submitted to the undersigned Commissioners, namely :

1. *As to the localities in which the scale exists to any appreciable extent outside of the infested areas already defined in the Niagara section and the counties of Essex and Kent.*

2. *If it is confined practically to those sections, whether the destruction of the infested trees, as provided for by the said San Jose Act, will in all probability be successful in checking the further spread of the scale and eventually exterminating it.*

3. *If the scale is proved to be more widespread than aforesaid, whether it is still practicable to combat it by the means already adopted with good hope of success.*

4. *As to the amount of danger that exists in the Niagara section of reinfestation through scale being carried from the United States side of the Niagara River, and what means, if any, might be taken to prevent this.*

5. *Whether opposition to the provisions of the said Scale Act is unanimous, or whether a diversity of opinion exists—(a) in the infested areas; (b) in the uninfested areas.*

6. *In the light of the information obtained by the Commissioners, what changes or modifications might with advantage be made by the Department in the method of procedure.*

7. *How the work of inspection has been performed hitherto—satisfactorily or otherwise.*

8. *And that the said Commissioners do make any suggestions that may occur to them which may lead to a complete suppression of the pest.*

Your Commissioners beg to report as follows :—

During the inquiry, begun on the 20th of June and ended on the 14th July, 1899, your Commissioners visited the counties of Lincoln, Welland, Wentworth, Elgin, Kent and Essex, in Ontario; also the New York side of the Niagara River, and Catawba

Island in the State of Ohio, U.S.A. They examined witnesses at Niagara-on-the-Lake, St. Catharines, St. Davids, Fonthill, Grimsby, Winona, Stony Creek, St. Thomas, Chatham, Blenheim, Guilds, Leamington, Kingsville, Amherstburg, and Windsor; and, in Catawba Island, they had the pleasure of interviewing Professor E. M. Webster, Entomologist of the Ohio State Experiment Station, Mr. W. H. Owen, a prominent fruit grower and experimenter, and other fruit growers on the Island.

One hundred and sixty-eight witnesses were examined upon oath; the evidence was taken down by a competent stenographer and will be submitted for your consideration.

Regarding the method of dealing with the scale in the State of Ohio, your Commissioners were informed that, upon the united request of three ratepayers, the councillors in any township are obliged to appoint two commissioners to examine all suspected areas in the township and take such steps as may be necessary to prevent the scale from spreading. These commissioners have authority to destroy badly infested trees, without compensating the owner, and to order at his expense such treatment as they deem advisable for the purpose of controlling the scale and protecting the fruit growers of the township; and in case the owner objects to the course pursued in any particular instance, he may appeal to the State Entomologist, whose decision is final. But the law is pronounced ineffective and unsatisfactory for several reasons; most of the commissioners have no preparation for the work, they are not obliged to make a thorough inspection, they generally go only where they are called, and they vary so much in character and efficiency that attentive, careful townships are often unable to protect themselves against the indifference and neglect of neighboring townships.

During their visit to Catawba Island, which is a continuous orchard for miles, your Commissioners, in company with Professor Webster, inspected what is said to have been the worst infestation in the State of Ohio. At that place, between 3,000 and 4,000 very badly infested pear and peach trees, with about a quarter of an acre of woods in close proximity, had been taken out in a block, and the surrounding orchards, which were infested more or less seriously, but not visibly injured, had been treated with whale-oil soap. Many of the trees had been treated twice, but some of them only once. The proportion of soap to water varied. The weakest winter wash was one pound to the gallon of water; and the most satisfactory proportion was found to be two pounds to the gallon. The amount of the wash used was about a gallon and a half on an average-sized peach tree.

Your Commissioners examined very closely some of the infested orchards which had been treated, and they were much struck with the exceptionally healthy and thrifty appearance of the trees. The scale in these orchards has not been exterminated as yet, but so far as one can judge from a careful inspection, the trees have not been injured by the insect in the slightest degree since the treatment began. The owners whom your Commissioners met, say that the soap treatment has been a blessing to them in several ways. It has held the scale in check—completely exterminating it on some trees—and at the same time has given new vigor to their orchards, by killing bark lice and other insect pests and destroying various fungus growths, especially the leaf curl on peach trees. One grower referred to a number of old peach trees which he had thought of taking out, but, on discovering that they were infested with the scale, as an experiment, he cut them back severely and treated them thoroughly with whale-oil soap (two pounds to the gallon of water), and, to his surprize, they threw out a vigorous growth of new shoots, and are now amongst the most healthy and thrifty-looking trees in his orchard.

As to Professor Webster's opinion, it may be stated that he has been regarded as an advocate of the most vigorous measures for the destruction of the scale. He undoubtedly considers it a very dangerous pest and thinks that energetic action by the most skilful and thorough-going men in the country is necessary to cope with it; and his experience throughout the State, and especially in Catawba Island, has led him to the following conclusions:

1. That the scale can be prevented from spreading, and in a few years be completely destroyed, by thorough treatment with whale-oil soap of the best brand.

2. That treatment by owners is apt to be defective and unsatisfactory.

3. That badly infested trees, of unprofitable varieties or in an unhealthy condition, should be destroyed, and all other infested and exposed trees be treated, say, with whale-oil soap.

4. That, to secure effective treatment, the work should be done by the State or under official supervision.

5. That none but thoroughly competent men should be employed—men of some experience and special practical training.

Regarding the points submitted for investigation, your Commissioners find as follows :

1. *As to the extent of the infestation*, they beg to report that, while they are not warranted in making a definite statement, they did not obtain any evidence at variance with that of the Inspector and his men, which is to the effect :

(1) That the largest known infestations are in one corner of Niagara Township, in the County of Lincoln, near Niagara on-the-Lake, and in the Township of Harwich, Kent County, in the neighborhood of Guilds P.O.

(2) That there is a limited infestation at Kingsville, in the County of Essex, confined chiefly to two adjoining farms, and smaller ones at St. Catharines, at Winona in Wentworth, Burlington in Halton, and near Chatham in the County of Kent.

(3) That, in ninety-one other places, trees planted within the last few years were found infested—in most cases only one or two at a place ; that these trees were all destroyed last year ; and that this year's inspection failed to discover scale in any but thirteen out of the ninety-one places.

(4) That the scale has been found in five nurseries, but the infested stock therein has been destroyed, and under present regulations all nursery stock must be fumigated with hydrocyanic acid gas before it is sent out.

While the worst areas of infestation are not large, they are in good fruit districts and include a considerable number of valuable orchards. Hence, after somewhat careful counting, the Inspector has estimated that it would be necessary to destroy 156,200 trees (most of them not infested but more or less exposed), in order to be reasonably sure of exterminating the scale from the known areas of infestation at once.

2. and 3. *As to the possibility of checking the further spread of the scale and eventually exterminating it*, by the destruction of the trees, as provided for by the San Jose Scale Act and amendments thereto, your Commissioners are in doubt.

The further spread of the scale can certainly be checked to a great extent by the destruction of the infested trees as they are discovered from time to time, and the Inspector thinks that the scale can be exterminated by prompt and vigorous enforcement of the Act ; but, with the evidence before them, especially as to the great difficulty of making a thoroughly reliable examination of trees, your Commissioners incline to the opposite opinion ; and they are fully satisfied that extermination, if possible, can practically be secured only by a very large expenditure of money and something like a guarantee that the work will be done promptly and the object undoubtedly accomplished, in order that those who lose trees may be exempt from further infestation and run no risk in re-planting.

4. *As to the danger of re-infestation from the United States side of the river*, your Commissioners are of opinion there is not much ground for alarm. They investigated the question as fully as they could in the time at their disposal, and succeeded in tracing only two cases of infestation on the New York side of the river ; so, while such re-infestation is possible, they do not think there is serious danger from that source at present.

5. *As to whether the opposition to the provisions of the said Scale Act is unanimous or not*, your Commissioners beg to state that the opposition is not unanimous.

The great majority of those whose orchards are infested or in immediate danger of infestation, are strongly opposed to the enforcement of the Act on the present lines, chiefly for two reasons: first, because the compensation is very much less than they think it should be; second, because the owners have not been consulted in any way, either as to the variety, age, condition, or value of the trees to be taken out. Many of them also add as a third reason their conviction that the extermination of the scale is impossible, and hence the futility and folly of destroying so many trees. Nearly all these maintain that they should be allowed the option of treating their trees.

Nine-tenths of the witnesses, whose orchards are not supposed to be in immediate danger, are in favor of the Act, but advise an amendment which would provide for larger compensation. In substance, they say, "If the scale is as bad as it is said to be, go ahead and enforce the Act in spite of opposition, provided the compensation is satisfactory"; and they define satisfactory compensation as not less than 50 per cent. of the value of infested trees and two-thirds of the value of uninfested trees.

Your Commissioners regret to say that they have not the data necessary to form a definite and reliable judgment as to the vitality of the scale and the injury likely to be done by it in our Canadian climate. They find that it has been in the Province of Ontario for about seven years, and that, in a few localities, it has done considerable damage during that time; but they think that the evidence as a whole rather favors the opinion that, while it is undoubtedly a most dangerous pest, and one which can withstand very low temperatures, nevertheless, it is not quite so destructive here as it is said to be in southern latitudes; and the members of the Commission have been gradually forced to the conclusion that the danger in Ontario has been somewhat over-estimated.

7. *As to the work of inspection*, your Commissioners beg to report that in some places a good deal of fault has been found with both the character and the manner of the inspection; but they have to state that the complaints, so far as they relate to a supposed lack of efficiency, have arisen in most cases from owners and onlookers not knowing the instructions under which the inspectors were working; as, for instance, when an Inspector, sent to trace suspected stock distributed from certain nurseries within the last few years, went hurriedly through an orchard in search of such stock, and, without even looking at other trees, passed on to the next place. In many a case of this kind, the owner, regarding the visit as an official inspection of the whole orchard, naturally pronounced it a farce. The findings of your Commissioners under this head may be summarized as follows:

(1) That, with perhaps exceptional instances, the work of inspection has been faithfully done.

(2) That the Head Inspector, Mr. George E. Fisher, has earnestly and faithfully endeavored to carry out his instructions, without fear or favor.

(3) That some of the sub-inspectors have not had the training necessary to enable them to distinguish the San Jose Scale from other scales which somewhat closely resemble it.

(4) That a good deal of irritation and ill-feeling in a few cases has been caused by inspectors entering orchards without informing the owners, and by severely blazing trees with axe and spade.

Your Commissioners are aware that many orchards were damaged a good deal by frost last year, and that, in the case of peaches and plums, the blazing was done in order, not merely to indicate what trees were to be destroyed, but also to determine whether or not they had been already killed by frost. They think, however, that in future a less offensive method of marking trees should be adopted; and they regret to have to express the opinion that in the past there has sometimes been at least an apparent lack of due regard for the feelings and natural rights of owners.

6 and 8. *As to the changes or modifications in the method of procedure and suggestions relating thereto*, your Commissioners beg most respectfully to recommend as follows:

(1) That the work of inspection, in a modified way, be continued for some time.

(2) That the knowledge of sub-inspectors be tested and none but certified and approved men be employed.

3) That the Inspector be authorized to destroy at once :

- a. All trees and shrubs which show signs of serious injury from the scale or have their trunks and principal branches incrustated therewith.
- b. Badly infested trees and shrubs of unprofitable varieties or in an unhealthy condition, even though not very much injured by the scale.
- c. Single infested branches or limbs on trees which appear to be otherwise free from infestation.

(4) That all infested trees and shrubs, except the above, and all exposed trees and orchards be thoroughly treated according to the most approved method.

(5) That large discretionary power be given to the Inspector in dealing with isolated infestation in districts which are otherwise free, or supposed to be free, from the scale.

(6) That, in order to secure effective treatment, the work be done by the Government, but the owner be required to pay for the material and board the men and horses during the time of treatment, with the proviso that this course is to be pursued only with infestations discovered and reported before the 1st of May, 1901, and that all infested trees discovered after that date be destroyed without compensation or treated wholly at the expense of the owner.

(7) That owners of trees in foliage which are so badly infested that in the judgment of the Inspector they involve serious risk to the neighboring orchards but not badly enough to warrant destruction, be required, for the purpose of destroying the young scale, to treat all such trees according to a prescribed method at least once a week from the time of notice until the 15th of October following ; that every owner of such trees be requested to enter into an agreement that he will faithfully treat said trees as ordered and will sign a statutory declaration at the close of the season setting forth the day and date of each such treatment ; and that in case an owner refuse to enter into the prescribed agreement all such of his trees as come in the list described in this section be at once destroyed.

(8) That the Inspector be authorized to order the destruction of small trees and shrubs growing in fence corners and other places, where in his judgment the removal of such growth is necessary to check the spread of the insect.

(9) That owners be paid one quarter of the value of their trees without discount, and that the fruit on a tree be regarded as part of its value.

(10) That the method of valuation be modified so that the owner may be represented in some way. Nearly all the witnesses objected to valuation by the Inspector alone. Hence, as one way of overcoming the difficulty, your Commissioners beg to recommend as follows :

- a. The owner of trees to be destroyed shall furnish a statement, according to the schedule annexed hereto, of his estimate of the value of said trees.
- b. The official valuator, with such schedule in hand, shall inspect and value the trees.
- c. When the owner refuses to accept the official valuation, he shall within three days select some one with whom the official valuator may consult about the valuation.
- d. In case the two latter do not agree, they shall select a third man, say the President of the Ontario Fruit Growers' Association. These three shall then settle the question by arbitration and their decision shall be final.

TREES CONDEMNED FOR DESTRUCTION UNDER THE SAN JOSE SCALE ACT.

No. of trees.	Kind.	Variety.	Age.	Condition.	Remarks.	Valuation.	
						Owner.	Official.

I hereby solemnly declare that, to the best of my knowledge and judgment, the above is a correct description and an honest valuation of the trees referred to.

(11) That in case of arbitration to settle a dispute as to value, the expense of the arbitration be paid by the losing party; and that where the value fixed by the arbitrators is between the respective values named by the inspector and the owner, the shares of the expenses to be borne by each be proportionate in the inverse ratio, the one whose valuation is furthest from that fixed by the arbitrators paying the larger share.

(12) That the fumigation of nursery stock be done under official supervision, and that nurserymen be required to attach to every parcel of stock sold, sent out, or disposed of, a certificate of a specified form to the effect that said stock has been fumigated according to the regulations.

In conclusion, your Commissioners would suggest:

(1) That the utmost care be taken to prevent the scale from spreading.

(2) That valuable trees be not destroyed when it may seem possible to save them without serious risk of infesting neighboring orchards.

(3) That the owners of orchards, especially those who are directly interested by infestation or exposure, be enlisted as far as possible by and with the official workers in the effort to exterminate the scale.

(4) That a brief circular of instruction *re* the most important facts in the life history of scale-insects, and of San Jose scale in particular, and the approved methods of treatment, be prepared at once and sent to every orchardist in the infested areas.

(5) That a plan, something like that submitted herewith, be adopted, to encourage every owner of an orchard in the Province to make a careful inspection of his orchard next winter, with a view to discover whether or not there is any San Jose Scale in it.

(Signed) { JAMES MILLS,
JOHN DEARNESS,
W. H. BUNTING.

TORONTO, Ontario, September 1st, 1899.



