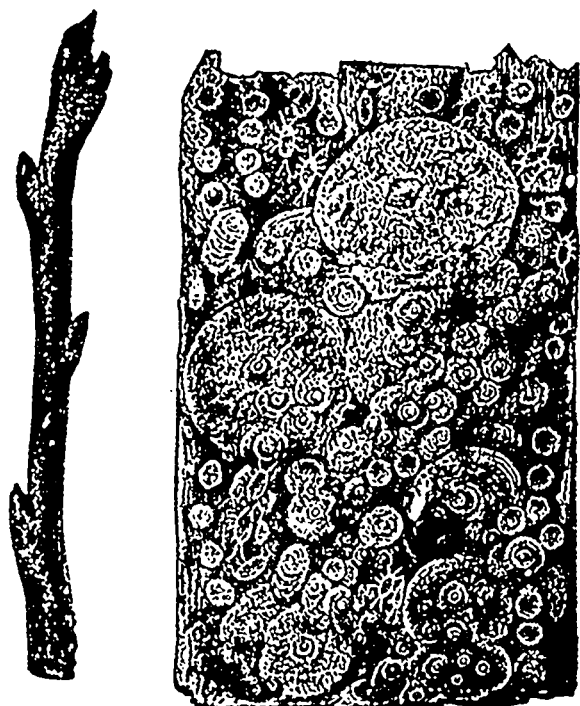


Dr. L. O. Howard, U.S. Entomologist, upon whom I also called, stated that no more serious menace to the fruit interests of this country has ever been known. These are strong words coming from strong men, who have fought the scale for many years in its worst strongholds.

Both Dr Howard and Prof. Johnson were pleased that the Government of Ontario was adopting stern measures, and hoped that the inevitable outcry of a few persons would not deter the officers in charge of the work from doing their work thoroughly. A few thousand dollars spent at the present time would be the means of saving millions of dollars a few years later.

My own observations and experience led me to the conviction that it would be most unjust to the orchard interests of Ontario to allow fruit-growers to apply their own remedies and to uproot trees which have become a decided menace to the other trees of the orchard. The tendency of all recent legislation in the Northern States, where climatic conditions are very similar to our own, is towards the autocratic method; that is, the power of life or death over infested trees is vested in a responsible person, who is generally State entomologist.



Appearance of scale on bark; A. Infested Twig—natural size; B. Bark as it appears under hand lens, showing scales in various stages of development and young larvae.

Nor should we trust to predaceous insects and parasites to keep the scale in subjection. Many persons have pointed to California as an instance where the San José scale is not feared so much now as it was formerly on account of the efficacy of winter-washes, predaceous and parasitic insects. But California is an exceptional region. The resin and the sulphur washes, so effective there, are valueless in the eastern portion of the continent, owing to differences in climate. In the East the rain, snow, and other agencies do not allow the washes to operate sufficiently long before they are washed off; while in California the long dry season, at the beginning of which the washes are applied, allows the operation to be prolonged, and hence quite fatal to the scale. The predaceous insects are also more effective in California than in the East for the reason that many of them can breed the year round in the mild winters of the Pacific coast. Dr. Howard says: "The possible usefulness of parasitic and predaceous insects should, at least in the East, not be allowed for a moment to interfere with active operations with remedies, nor blind one to the importance of the San José scale, and the extraordinary precautions which should always be taken to prevent its wider dissemination."

The San José scale is an armored insect, protected by a scale, and is so small that even the most careful observer sometimes fails to detect its presence. Most of the complaints that have been made have arisen through ignorance of the true structure and habits of this scale insect. Alkaline washes do not suffice for its destruction, and kerosene emulsion has not by any means proved a success. The power of reproduction possessed by the scale is simply marvellous, and there are instances in Ontario where good, healthy trees have been killed in a single season. In Maryland, I was told that many orchards have been killed outright in two seasons. Do facts then confirm the statement that the San José scale is a comparatively harmless insect? So far as I am aware this pest has not been in Ontario more than three or four years, and I am not prepared to admit that trees infested for seven or eight years have remained healthy and vigorous.

That the scale spreads by means of birds, wind and other agencies during the young larval stage is another reason why the strong measures, now being adopted to check its distribution, be continued. It is the opinion of most of the experienced entomologists of the United States and Canada that the San José scale can be controlled if taken in time, but if allowed to spread it is questionable if it can be controlled, much less exterminated.

The spread of the scale through young nursery stock, I am convinced, has been effectively stopped by the enactment of the Fumigation Act passed at the last Session of the Legislature, which compels all nurserymen to fumigate the stock which is being sent out with hydrocyanic acid gas.

I was much pleased during my recent trip among the nurseries of Ontario to witness the willingness of the nurserymen to comply with the demand of the Act. As intelligent citizens they were watching with great interest the efforts of the Government to stamp out the pest, and they were willing to do their part in the work. The fruit-growers in the Eastern part of the province are looking anxiously for the outcome of the struggle in the Niagara and South-West districts of the province, for they feel that the whole fruit-industry of Ontario is at stake. Mr. Fisher, who is doing his work well, reports that he is very hopeful of success in exterminating the scale from the orchards in a short time. Common sense tells us that if we can keep our orchards clear, and present "a clean bill of health," the demand for our fruit in European markets will continue to grow, more especially since it is well-known that American orchards are badly infested.

On the other hand, to allow the scale to infest our orchards means the loss of thousands of dollars annually by the exclusion of our fruit from European markets, and, eventually, the loss of the orchards themselves.

Who will deny that the San José problem is not a most difficult and serious one? I am aware that there are persons who doubt the wisdom of all the precautionary measures taken by the Dominion and Provincial Governments, but let me say here, with as much persuasiveness as possible, that if we do not combat this San José Scale it will soon overcome us. Let not the people of the cities and towns be indifferent in this matter, for in New Jersey the scale has already spread to suburban garden hedges and ornamental trees. The scale in that State was not attended to on its first appearance, and when public attention was finally called to its ravages it was simply impossible to control the pest.

Assistance to Cheese and Butter Makers

The Bacteriological Department of the Ontario Agricultural College has issued an announcement to the cheese and butter makers of the province, offering assistance in cases of difficulty caused by undesirable bacterial infections. The following are some of the more frequent causes of trouble mentioned: