

The hedges certainly seemed quite sufficient to turn stock without any other protection. Most of them were fully three feet wide and about seven feet high, and they formed a firm, solid wall. They are trimmed in June. The trimming is a most important matter, neglect of which would soon spoil the hedge.

Some two miles from Dr. Sibbald's, around the church at Sibbald's Point, I saw a combination of stone and cedar hedge which made an impenetrable fence. The stone was laid on the outside, along the road, to a height of about three feet, while the cedars grew inside and were allowed to spread over the wall till they were flush with the outside surface, when they were trimmed in a line with the wall. Where much stone is present it would seem an excellent way of getting rid of them to good advantage, while the overgrowing cedar relieves the stiffness of the stone and forms a pleasing feature in the landscape.

I had almost forgotten to mention one desirable point about cedar hedges, viz., the relief to the eye that they present in the winter time with their perennial greenness standing out amid the dreary whiteness of the snow. Some may make light of this point, but, nevertheless, it is not one to be despised. When nature seems dead the cedars and evergreen trees remind us of the coming spring and cheer us up with their presence. It is, after all, the little things in life that help to make it pleasant.

G. W. G.

The Cultivation of the Cherry.

There is probably no class of fruit of which less notice is taken either in our Farmers' Institute meetings or agricultural papers than the cherry, and yet, while the production of other fruits and grains is largely increasing, nothing like the quantity of cherries are grown by ordinary farmers now as was done a dozen or more years ago. If this change were caused by newer and better kinds of fruit taking the place of the cherry I would have nothing to say. But this is not the case. There are many who will agree with me when I say that there is no fruit more pleasant to the taste or more healthful than the cherry. It makes one's mouth water even to think of the clusters of plump, rosy fellows which hang so invitingly within our reach in the hot July days, tempting us to taste of their richness, and in the winter it is a special occasion that calls for a jar of cherries.

When apples, plums and berries are a "glut" in the market and can hardly be disposed of at any price, cherries are always in demand and realize good prices. If the cherry is such a valuable fruit why is it that its cultivation has fallen off so largely among farmers of late years.

Like the virgin soil which for some years had only to be "tickled" to yield abundant crops, so the cherry had only to be planted to thrive and bring forth a rich harvest. But it, as well as other things, became a prey to disease. The black knot fell upon it like a scourge; the curculio was suddenly smitten with a fondness for cherry; the rot made its way into many cherry orchards, and after a few spasmodic efforts to subdue the enemies the sentence went forth: the cherry must go, and go it did from the majority of our farms.

I think the fight was given up much too easily. If a tithe of the energy that is being devoted to the apple scab and other diseases had been devoted to the black knot it might have been banished from our orchards long ago and thousands of trees saved. Out of forty young trees, all of which were badly infested with the black knot for several years, I succeeded in saving thirty, and for two or three years have had very little trouble in keeping them free of disease.

I think the worst stage of these diseases is past. With the better knowledge we have of how to fight them, together with the enemies they have in nature, there should be no difficulty in keeping them in check, therefore I would advise those who have cut down their cherry trees to plant again.

A few hints with regard to planting, varieties, etc., may be of use to some of your readers. Cherries will grow and thrive on almost any soil if well drained. Do not try to grow them on wet, heavy clay, but on a dry, clay soil they will do well. A very good place to plant is along fences enclosing orchards or gardens, or, in fact, any fence where they can be protected from stock and kept clean. If possible have the ground prepared the summer before by following a narrow ridge close to the fence or by digging holes considerably larger and deeper than required for the roots.

Set the trees fifteen to twenty feet apart and mulch the first year to keep the moisture in. Very little attention is needed from time of planting till the trees come into bearing, but what little there is must not be neglected if we would look for success. Be sure and protect young trees from girdling by mice in winter or from being broken down by stock. Watch closely for black knot and upon first appearance cut off and burn; otherwise very little pruning is needed.

Varities.—Fruit-tree agents and nursery catalogues will furnish you with a host of varieties—some good, others indifferent. I have very little faith in agents who come around selling new, high-priced varieties "absolutely curculio and black knot proof." Even the insects and the fungi seem to know a good thing when they find it, and if you get something that they will not touch you will probably not think much of it yourself.

There are two distinct classes of cherries. (1) The Heart and Bigarrean cherries are rapid

growing, forming shapely pyramidal heads and bearing good crops of heart-shaped cherries, generally sweet in taste. This class, like the pear, should not be grown on very rich land or be heavily manured, as they grow so rapidly that they are liable to crack open or blight. Of this class the Black Tartarian (ripening in June), Elkhorn or Black Heart (July), Coe's Transparent (June), and Napoleon Bigarrean (July) are among the best. The first two mentioned are black and the last two light red in color. The other class consists of the Duke and Morello cherries and is more common. The fruit is more or less acid, round in shape, and generally red. The common red cherry belongs to this class. Not being such rapid growers, this class will do on richer soil, although they will bear abundantly for years without manure. The Early Richmond for an early variety, ripening in June; the common red or American pie cherry, two weeks later; and the English Morello, very late, are to be recommended. For general use in one's own family I know of no better variety than the common red.

The necessity of keeping the black knot cleaned off trees every year cannot be too forcibly impressed upon cherry growers. To neglect this for one year may mean ten times the work the next year or perhaps the loss of some valuable trees. Most authorities say to cut the knots off in the fall. Do it then if you can, but if it is not done then do it early in the spring. I have gone over the trees about beginning of March for several years and went over thirty trees this spring in twice as many minutes.

When the trees begin to bear it is absolutely necessary to spray if a full crop is wanted. Spray with Paris green immediately after the blossoms fall and a week or ten days after. If there is any danger of rot use Bordeaux mixture with Paris green. Cherry trees have given me better results from spraying than any other fruit I have tried. In picking for market let the fruit ripen well on the tree and pull leaving the stems on the cherries. In this way they will ship and keep for some time. Be very careful not to put in any bitten fruit, as one wormy cherry, like a bad egg, may lose you a good customer.

Whether it would be profitable to plant out large orchards of cherry trees or not I am not prepared to say, but one thing I am sure of, and that is that every farmer might grow enough to supply his own family, and that with very little outlay either in time or money.

J. G. COWIE.

Haldimand Co., Ont.

ENTOMOLOGY.

Injurious Insects -- II

BY DR. JAMES FLETCHER, DOMINION ENTOMOLOGIST.
THE SAN JOSÉ SCALE.

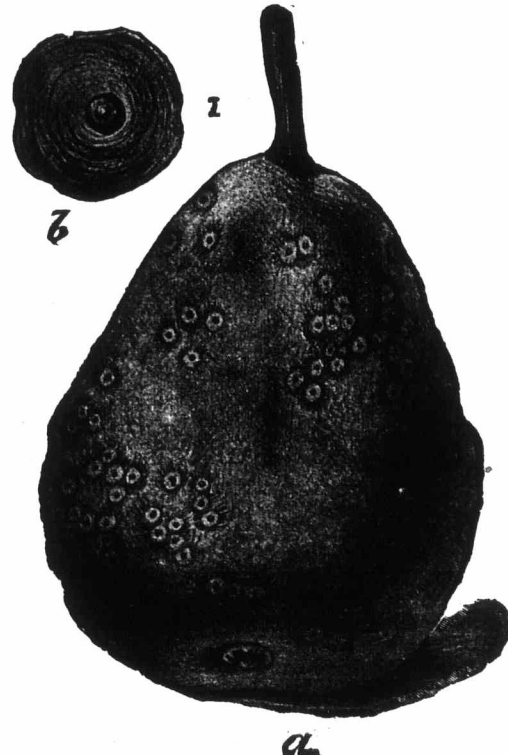


FIG. 1.—San José scale: a, pear moderately infested; b, female scale enlarged.

Few insects have attracted more attention during the last three years than the San José scale. Newspaper articles have appeared, addresses have been delivered at meetings, and numberless letters have been written in the endeavor to arouse nurserymen who were likely to have and distribute infested stock, as well as fruit growers who might purchase trees bearing this very inconspicuous but terribly injurious pest. The San José scale has for many years been recognized as one of the enemies most to be dreaded among the fruit orchards of the Pacific Coast, and, since its introduction into the East, only a few years ago, it has established itself in many of the Eastern United States, where it has already caused a great amount of damage.

The history of the introduction into the East, and the early recognition of its dangerous character by Prof. Comstock, who named it the Pernicious Scale (*Aspidiotus perniciosus*, Comstock), were treated of at some length in the FARMER'S ADVOCATE for December 15th, 1894. Attention was

drawn to it at that time on account of specimens having been found in the interior of British Columbia upon some neglected apple trees. These trees were cut down and burnt. A close watch has been kept for any further appearance in Canada of this scale insect, but until quite recently no trace of it or its work was detected. Two instances have lately come to my knowledge—one on Vancouver Island, the other at Chatham, Kent Co., Ont.

The original home of the San José scale is still a matter of doubt. Its appearance in injurious numbers was first recorded at San José, in California, twenty years ago. "In twelve years the insect spread through all the fruit-growing regions of California, through Oregon and into the State of Washington. It is known as the worst insect pest of deciduous fruit trees on the Pacific Coast, and has caused great pecuniary loss. Many crops of fruit have been ruined and thousands of trees have been killed."—(L. O. Howard, Circular No. 3, 1893.) Writing of its distribution in 1895, in "Some Scale Insects of the Orchard," Dr. Howard says: "It has extended by natural spread to Idaho on the north, and Nevada, Arizona, and New Mexico on the south. It is established at many points in the East, and particularly in the States of New Jersey, New York, Pennsylvania, Delaware, Maryland, Ohio, Indiana, Virginia, Georgia, Alabama, Louisiana, and Florida." The limits of distribution of this insect, like those of all other insects, are undoubtedly controlled to a large extent by climate. It has been found from long-continued observation that both animals and plants are restricted in their distribution to what have been called "life zones," which are determined, according to Dr. C. H. Merriam, the eminent zoologist, who has studied this subject more than anyone else, "by the total quantity of heat during the season of growth and reproduction." The San José scale occurs to a greater or lesser degree in all the States lying to the south of the great lakes, and although the data upon which life zones could be laid down accurately in Canada are too meagre to be of use in consideration of the question whether this insect would be likely to spread and become a serious enemy of the fruit grower in Canada, there is no doubt that it must be regarded as a very possible danger, at any rate in those parts of Ontario which lie along the north shore of Lake Erie, extending perhaps from the County of Essex to the County of Wentworth. It was supposed at one time that the San José scale would not thrive east of the Rocky Mountains, but we now know that this supposition was erroneous, and the present article is written with the idea of urging all fruit growers, particularly in that part of Ontario mentioned above, to be keenly on the alert to watch for and report promptly any occurrence of this or any other scale insect which resembles it, either in their orchards or upon young nursery stock imported from the United States. In cases of doubt specimens should be forwarded for examination, and perhaps it may not be amiss to mention again that all such specimens and correspondence concerning injurious insects can be sent by mail free of postage to the writer at the Central Experimental Farm, Ottawa, and will be reported upon in the next number of the FARMER'S ADVOCATE after receipt.

One of the chief difficulties with regard to the San José scale is that it is very inconspicuous, being only about one sixteenth of an inch in diameter and very flat. When occurring in large numbers upon the bark of trees the minute scales lie close together, frequently overlapping, and can only be distinguished by means of a magnifying glass. The general appearance which they present is of a grayish, very slightly roughened, scurfy deposit, but their occurrence on a suspected branch can be readily detected if the branch be scraped with the finger nail, when a yellowish, oily liquid will appear, resulting from the crushing of the bodies of the small insects. During the summer an easily recognized indication of the presence of the San José scale upon fruit or tender twigs is a reddening of the tissues immediately around the scales.

This scale belongs to the same division of its class as the oyster-shell bark-louse, but differs widely from that species in that it gives birth to several broods of living young during the summer, instead of laying eggs which hatch only at one restricted season of the year. It passes the winter as a half-grown or nearly full-grown female. At Washington, where the full life-history of this insect was first worked out, it was found that about the middle of May the female begins giving birth to living young and continues to do so for six weeks. As soon as these appear they wander about a short distance and soon attach themselves by their beaks to the young bark, from which they suck their nourishment. They then begin to form their scales of a white secretion, which in about two days hide the insect. In about twenty-four days the winged males appear, and the females become full-grown a few days later. At about forty days these females begin to give birth to a new brood. There were apparently in the latitude of Washington five generations annually.

The careful working out of this life-history by Dr. Howard and his assistants at Washington has been of the greatest importance in arriving at useful conclusions with regard to remedies.

Remedy.—A very complete series of experiments was conducted, not only at Washington, but also in many other parts of the Eastern United States, in which every material known as an insecticide for scale insects was tried, and Dr. Howard's final conclusion, of great value to us. He says:

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