

## ENTOMOLOGY.

## Legislating Against the San Jose Scale.

In order to protect the fruit-growing interests of Canada from injury by the further introduction of the insect pest known as the San Jose scale, Hon. Mr. Fisher, Dominion Minister of Agriculture, on March 16th introduced a bill prohibiting the importation of any trees, shrubs, plants, vines, grafts, cuttings or buds usually called nursery stock from any country to which the Act may be declared to apply by order-in-council. In like manner its application may be suspended when it appears that the importation of nursery stock may safely be permitted. Any importations made shall be forfeited to the Crown, and may be destroyed, and the person so doing will be liable for an offence under the Customs Act. Any classes of plants, cuttings, etc., shown not to be liable to the scale may be exempted by order-in-council, and the importation of nursery stock for scientific purposes permitted. The rules of the House were suspended so that this Bill could be given the three readings at one session, which was done, the Opposition concurring. Two or three members took exception to the measure as altogether too drastic, its supporters, however, contending that prohibition was the only effective way to deal with the pest, and to supplement such legislation as that adopted by the Ontario Legislature for getting rid of the pest in a few counties where it has been introduced. Hon. Mr. Fisher was backed up in his position by petitions from fruit-growers, and practically all the views of entomologists as to the serious nature of the scale and the difficulty of combating it, though so far as the published reports go little information of a specific nature was given as to the actual destruction on fruit or other trees wholly or in part by the pest. Protests have been made by those interested in importing U. S. nursery stock or desirous of so doing, and it will be felt severe in Manitoba and the Northwest where nursery stock from Eastern Canada does not thrive like that grown in Northern Minnesota. In the meantime dependence will have to be placed altogether both East and on home-grown stock. The new Act placed a strong lever in the hands of Canadian nurserymen with which to raise prices, but of which they would do well not to press, otherwise strong feeling will be provoked. The Bill also passed the Senate, and the following day received the Royal assent, and became law. The countries from which importations are prohibited are the United States, Japan, and Hawaii. Orders were at once issued to all customs officers concerned. The urgency in pushing the Bill through was that advantage might not be taken of any interval to flood the country with American stock which might be infested.

## GARDEN AND ORCHARD.

## The Spraying of Fruit Trees.

In your issue of March 15th there is a timely article by Mr. E. Edwards, of Prince Edward Island, on this subject. My object in speaking of this article is to draw attention to some inaccuracies in the latter part.

In the first place, I think it a great pity that nearly every writer—whether he has had any practical experience or not—offers a different formula for the preparation of Bordeaux mixture. They all "go down" with the newspaper men, if the article happens to be apropos of the season. The result of this great variety of formulas is that we have a corresponding variety in results. One man says: "I sprayed my peach trees with Bordeaux mixture last year and burned the leaves very badly." He is asked to give the formula which he used; he probably doesn't remember, but "took it from one of the newspapers." Another has had a similar experience with plum trees, another with apples, and so on.

The first formula for the making of Bordeaux mixture, offered by French vineyardists, was 6 lbs. of bluestone, 4 lbs. of lime to 22 gallons water. This was to prevent diseases of the grape. The foliage of the grape is not easily injured by fungicidal sprays, so that this strength could be used with safety. Later experiments proved, however, that it was unnecessary and inconvenient to use so much lime and bluestone, and twice the amount of water was added to the above, or 50 gallons, and the resulting mixture found to be equally satisfactory. The foliage of fruit trees differs very much in its susceptibility to injury from copper, salt and arsenical sprays. Even among apples there are varietal differences. Mr. Edwards makes a serious mistake in recommending Bordeaux mixture as strong as 10 lbs. of copper sulphate to 50 gallons water, with Paris green at the rate of 1 lb. to 240 gallons of Bordeaux fluid. There is hardly any doubt that such a mixture would take every leaf off peach and plum trees. I have never been able to use in spraying peach and plum trees a formula stronger than 3 lbs. each of copper sulphate and lime to a barrel containing 45 to 50 gallons of water, and Paris green at the rate of 1 lb. to 300 gallons.

The main point I wish to emphasize, however, is the desirability of adopting a *uniform recipe*, or *formula*, for the preparation of Bordeaux mixture.

The more formulas before the public, the more confusion and mistakes are sure to follow.

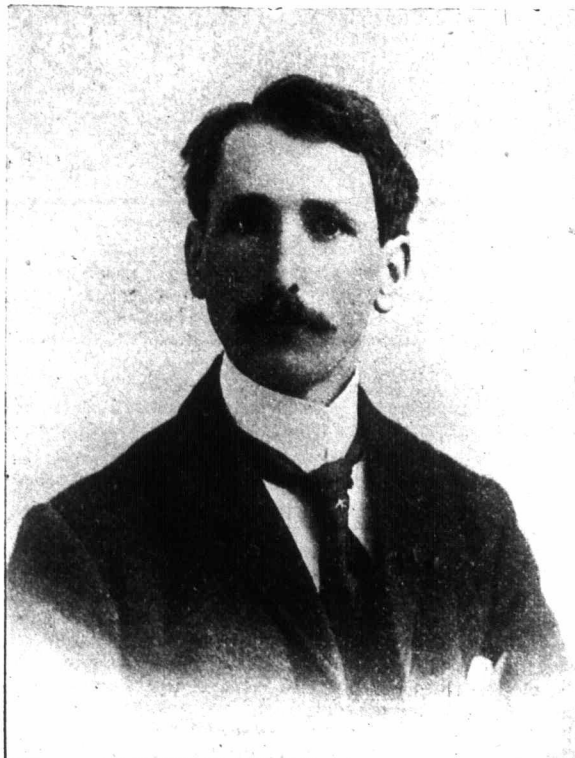
The Ontario Government has done excellent work in carrying on spraying object lessons throughout the Province. Why not adopt the formula which has given such satisfactory results in Ontario, thus lessening confusion and helping to popularize a desirable and I may say necessary orchard practice.

JOHN CRAIG.

Cornell University, March 21, 1898.

## The New Dominion Horticulturist.

The vacancy in the staff at the Central Experimental Farm, caused by the resignation of Mr. John Craig, the late Horticulturist, has been filled by the appointment of Mr. W. T. Macoun to that position, whose portrait appears herewith. Mr. Macoun, a son of Prof. John Macoun, Botanist and Naturalist of the Dominion Geological Survey Dept., was born in 1869, at Belleville, Ont. He attended the Central School there until 1882, when he removed to Ottawa, where his education was continued at the Collegiate Institute. During the summers of 1883, 1884, 1885 and 1887, he acted as his father's assistant in his botanical and biological researches, and travelled through parts of Nova Scotia, Northern Ontario, the Northwest Territories, and British Columbia. Having concluded his preparatory studies, he obtained employment, in 1888, at the Central Experimental Farm, where he has been since. After the resignation of the former Horticulturist, Mr. W. W. Hilborn, in the winter of 1888 and 1889, Mr. Macoun assisted the Director in carrying on the work of the Horticulturist during the following spring and summer. He was continued in this work until the appointment of Mr. John Craig, in 1890, and at that time paid special attention to the study of varieties of fruit. Since 1889



MR. W. T. MACOUN.

Mr. Macoun has had charge of a large proportion of the agricultural experimental work on the farm. During the autumn of 1892 he went to Europe and visited some of the more important institutions there, where experimental work is being done, particularly Rothamstead, established by Sir John Lawes; the Royal Agricultural Society's Experiment Grounds, Woburn Sands; and the trial grounds of Henry Vilmorin, Esq., of Paris. In 1893 he was appointed assistant to the Director and Foreman of Forestry, and since that time has carried on the work in the forestry belts and on the ornamental grounds. In 1896, at the request of Dr. Fletcher (Entomologist and Botanist), who has hitherto managed this part of the work, Mr. Macoun was placed in charge of the Arboretum and Botanic Garden. The reports prepared by Mr. Macoun concerning the branches of the work carried on under his charge, which were included in the report of the Director during 1893, 1894, 1895 and 1896, give evidence of much careful work and are very creditable to the author. He has also assisted the Director, Dr. Saunders, in carrying on the work of the cross-fertilization of cereals and fruits, and many of the more promising varieties now under trial are the result of his careful work.

## Small Fruits, and How to Grow Them.

BY A. E. SHERRINGTON, BRUCE CO., ONT.

The growing of small fruits in the farmer's garden is quite simple if the main points are understood. The garden should be laid out properly; that is, instead of the old-fashioned garden of a few rods square with a high picket fence around it, it should be a long, narrow piece, making it convenient to do most of the work with the horse and cultivator. The rows of plants should be long and straight and at a proper distance apart so as to allow the cultivator to be worked easily between

the rows, which will leave but little to be done with the hand hoe. The varieties of fruit the farmer would mostly need would be strawberries, raspberries, gooseberries, black and red currants. The ground for strawberries and all small fruits should be prepared the fall previous to planting by plowing deeply and subsoiling if possible and working in a liberal coat of yard manure; or, what is better, plow down a good clover sod and apply about fifty bushels of wood ashes per acre. Top-work the ground in the spring as soon as dry enough until fine; then plow and top-work again, when it will be ready for planting. Now mark out the rows for strawberries, either with a marker or a line 3½ feet apart. Use a spade for making the holes, and if a marker has been used set the spade with the center of the blade on the mark and force into the soil with the foot, shoving the handle from you and back again. Insert the roots of the plant by holding the plant in the left hand and spreading the roots out well with the other hand, covering them and at the same time firming the soil well around the plant. This is a very important point in the planting of all trees and plants. Leave the crown of the plant on a level with the soil. The plants should be set from 15 to 18 inches in the row, and nothing but strong, healthy young plants that have never fruited should be used, and as soon as all the plants are set the cultivator should be run through them so as to loosen the soil that has been trampled down in planting. This process should be continued at least once a week throughout the season, always going the same way. This will keep the runners in their proper place, and as the new plants begin to set narrow down the cultivator until the row has become 18 or 20 inches wide, then hold them at that. Cut off all blossoms the first year, as any fruit produced the first season is at the expense of the plant.

A new plantation should be put out every spring, as this method will be found to take less time than cleaning an old bed, at the same time giving a larger yield and of superior fruit. In sections of the country where the snowfall is light a mulch of coarse manure applied late in the fall after the ground has become frozen will be found to be beneficial, but where much snow falls it should be put on very light, or not until the month of March. When plants begin to grow rake the covering into the space between rows. This will hold moisture and keep fruit clean. It should be sufficient to keep down all weeds, as no cultivation is done until all fruit is picked.

## VARIETIES.

Out of the two hundred or so varieties that are grown at the present time, I will select three or four varieties that I consider most suitable for the farmer's garden. They will comprise early and late varieties, so as to prolong the season. *Van Diemen* is a good grower and healthy, an early, perfect bloomer; season of fruiting extra early; good yielder. The fruit is uniformly of good size and very handsome, of a dark crimson color, firm, and of good quality. *Haverland* is a good one to plant alongside of *Van Diemen*, as it requires a perfect bloomer to make it productive. Time of blooming the same, plant healthy, and vigorous grower; plants can be set two feet apart in row. It is very productive, berry large and long, of a bright scarlet color, ripens early and holds out well to the end of the season; a good berry for home use. *Saunders* is a variety of great value; plants are strong growers and quite healthy; very productive, a perfect flowering variety; it blooms late, and thus often escapes the spring frost. The berry is large, well shaped, and of good dark color; a good variety for market or home use. *Bubach* is an imperfect bloomer; plant large and vigorous; does not throw out many runners, but enough for a matted row; berry very large, of a bright, showy color; firm, and of good quality; a good one for home or near market.

(To be continued.)

## POULTRY.

## An April Fool in the Poultry House.

Eggs were not coming in as plentiful as I thought they should be, so I decided to spend a little time in the poultry house. Before long I saw one of my best biddies approach a nest and begin picking at an egg which she soon broke and proceeded to enjoy as one of the dainties of the season. She was immediately caught and imprisoned, where she was left without even water until the next day.

Then armed with a sharp penknife I caught her and pared her sharp bill, being careful not to cut too deeply, until it was no longer so useful as a chisel. Then placing her in the center of the scratching floor in a vacated henhouse, placed before her a tempting new-laid egg. She looked at it, then began picking it, first on one side, then on the other and from all possible points, scratching it over and rolling it around as if to find a weak spot. Then she walked away, apparently disgusted; but on second thought returned and renewed the attack, repeating with emphasis her former efforts. Then she took a look in the gravel box, no doubt wishing to find a stone heavy enough to break that egg. Four or five times she returned to the egg and spent considerable time with it, but at last she became convinced that it was beyond her skill, and she repaired to the dust bath and would not even look at it again. I believe she is cured, at least as

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