

The Canadian Horticulturist

MARCH, 1908

Volume 31, No. 3

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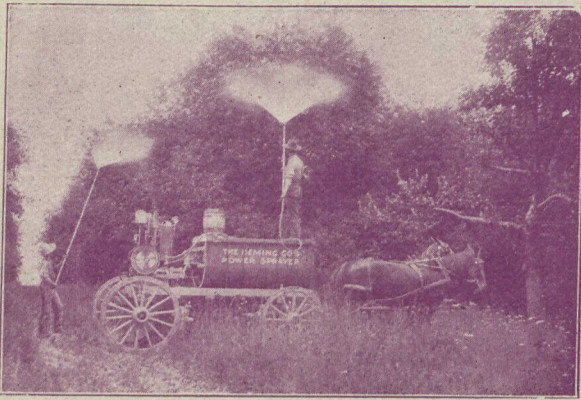


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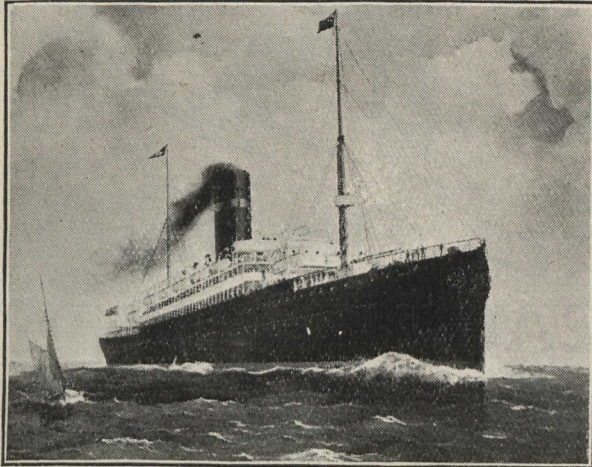
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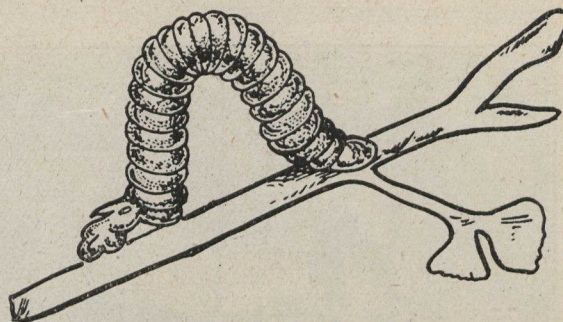
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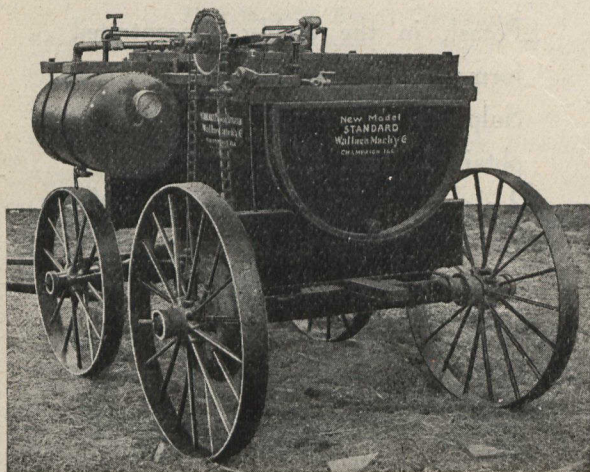
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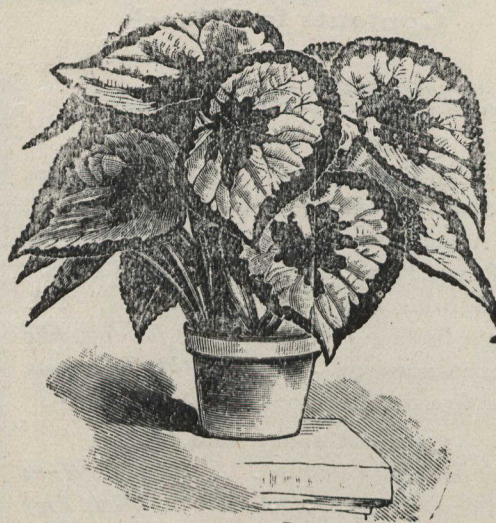
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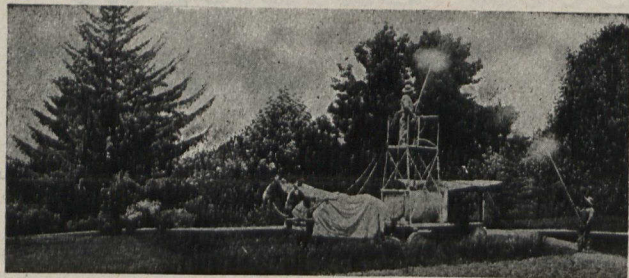
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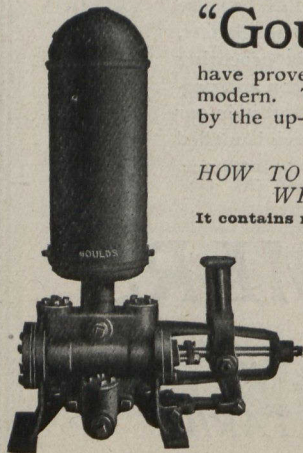
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The Canadian Horticulturist

Vol. XXXI

MARCH, 1908

No. 3

The Best Stock on Which to Top-Graft the Spy

W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa

THERE is no winter apple so popular in the province of Ontario as the Northern Spy, and its popularity is not confined to Ontario alone. The men who have gone from that province and settled in the newer parts of Canada remember the Spy as the favorite variety of their youth, and they want it in their homes in the west. Owing to its fine appearance and good quality, it is popular in every part of Canada where it succeeds and is in high favor in Great Britain. Because of its popularity there is a great demand for this fruit, and it is proving one of the most profitable apples where there are trees in full bearing. Unfortunately it has one serious defect, which has checked in some measure the general planting of it. It does not bear early enough. The well-known fact that "top-grafts" fruit sooner than standard trees has induced fruit growers to top-graft the Northern Spy either on bearing trees of less value or on young trees planted especially for the purpose. The increasing attention which is being given to top-grafting makes it important that the best stocks for Northern Spy should be known and this article is written partly for the purpose of getting others to give their experience in THE CANADIAN HORTICULTURIST, of top-grafting this variety on different varieties.

The Northern Spy is a strong-growing tree; hence, in order to have a tree which is not top heavy, and that will not break down, it is necessary to have a strong growing stock, for, although the kind of stock used does in some measure check the growth of the top, the individual characteristics of the two remain largely the same, and if the Northern Spy is top-grafted on a slow-growing tree, it will sooner or later so outgrow it that the tree becomes top heavy, and just when we are expecting good returns it may blow down or break off at the grafted part. Even strong growing trees sometimes do not make good unions with other strong growing trees. For best results, the Northern Spy should be grafted on a strong grow-

ing variety which will make a good union with it. At the Central Experimental Farm, parts of three trees were top-grafted with Northern Spy in 1891. Two trees were Wealthy, and one was Duchess. These were chosen as being hardy, and not with the idea that they were especially good stocks for the Northern Spy, nor did they turn out to be. They all fruited in 1897. The graft broke off one Wealthy tree during a high wind in 1899, and off the other from the same cause in 1902. The stocks were not strong enough growers

Officially Adopted

At the annual meeting of the New Brunswick Fruit Growers' Association, held at Fredericton on January 24, 1908, it was decided, on motion, to adopt THE CANADIAN HORTICULTURIST as their official organ for the Dominion.—S. B. Hatheway, Secretary.

and the grafts were top heavy. The grafts on the Duchess tree remained longer, but during the winter of 1903-4, the Northern Spy was killed, the stock remaining alive. If the Spy had not been killed, it would have soon broken off, as it had already begun to go. The results of these tests show the importance of having strong growing stocks.

Mr. G. C. Caston, Craighurst, Ontario, has had considerable experience in top-grafting Northern Spy. Following are extracts from a letter received from him: "I have Northern Spy on many different stocks—Tolman Sweet, Wealthy, Baxter, Yellow Transparent, on several kinds of crabs, on Belle de Boskoop, and over a dozen of the other Russian varieties. I may say that it is doing well on all of them. No variety has done better as a stock for Spy than Yellow Transparent. The union is perfect, and the top luxuriant. The worst I have tried are Golden Russet and Astrachan."

Mr. J. I. Graham, Vandeleur, Ontario, stated at the last annual meeting of the Ontario Fruit Growers' Association that he had had good success in the use of Ben Davis as a stock for Northern Spy. In a letter since received from Mr. Graham he states: "My trees were planted in the early '80's. I was guided by the Provincial Agricultural Committee Report, which was published in '81. When they began to bear I was not suited with them. I am well pleased with the Ben Davis as a stock. At first I grafted a few of the best varieties, such as King, Baldwin and Hurlbut. The last was highly recommended, but I do not like it, but they are choice trees in every way. No person could tell that they were grafted, and they are very heavy bearers. I have Spys also on Colvert, twenty-five years grafted and a number later. The union is good and stocks sufficiently large. About the time of grafting the Ben Davis, I grafted some Duchess. I was telling you then, and you expressed a doubt about the stock being sufficiently large. A year ago the 10th of October last, we had a heavy fall of soft snow, twelve inches, and they were loaded with apples. They broke at the crotch, while about twelve Spys split. They were raised with team, rope and pulley, and had a nice crop. This year the Duchess were done.

"One spring I grafted a number of Colvert, St. Lawrence, Astrachan, and Sherwoods' Favorite. None of the Sherwoods' Favorite I considered a success. They seemed to sunscald, to send out shoots and the scions did not grow like the others. I have Spy on Fall Jenneting, Fall Pippin, Colvert, Wealthy, Keswick, Codlin, and a seedling. I regard the seedling the best where the branches grow out from the stock without making a crotch. I have some old Spy grafts; the tree is twenty-five feet high, and of late years I am trying to cut back about one-half of the year's growth to see if I can get them to bear nearer the ground. That seems to be the fault of the scion even more so than the Spy tree. I have some Ben Davis

not top-grafted yet, some time planted. They give good crops and all stocks are sound and healthy whether grafted or not."

These are interesting records. Before grafting time, let us hear from others who have had experience with top-grafting Northern Spy. The longer the experience the better, as sometimes

grafts do well at first but afterwards become top heavy.

The information growers want is: What stocks are the best? How long does it take Northern Spy to come into bearing when top-grafted on bearing trees? How long does it take Spy to come into bearing when grafted on young trees?

Pointers on Growing Strawberries

At a recent meeting of the Toronto branch of the Ontario Vegetable Growers' Association, two valuable addresses were given on growing strawberries. Many practical hints were given, not only by the speakers, but also by others who took part in the discussion. Mr. J. C. Bell, of Cooksville, Ont., spoke in part as follows:

"Although strawberries will grow on almost any kind of soil, they do best on a rich, heavy sand, with a quicksand bottom. This type of soil furnishes plenty of moisture, not only for the growth of the plants, but also for giving size to the fruit. The land should be prepared during the previous fall by plowing in about sixty tons of manure an acre. In the following spring, it should be worked up and fertilized again with about twenty-five loads of well-rotted manure an acre.

"The land is marked three and one-half feet apart for the rows and two feet for planting in the rows. By means of a scuffler, a shallow drill is made along the row markings. The whole area is then rolled and the drills are once more opened. Planting is done with a spade. Well-grown plants are selected from rows of stock plants. A small portion of both tops and roots are trimmed off. The plants are placed in small holes made by the spade and planted firmly. In about a week after planting, a Breed's weeder is run over the patch, then about 500 pounds an acre of a bone and potash fertilizer are applied and worked in. Scuffling and hoeing are continued all summer. It costs at least \$150 an acre to produce a crop of strawberries.

"It is difficult to recommend varieties that will do well in all localities. Those that have done best with me are, practically in the order of ripening, Excelsior, Michel's Early, Auguste Luther, Lovett, Tennessee Prolific, Clyde, Wm. Belt and Williams. For home use, three varieties that will cover the season nicely are, Auguste Luther, Wm. Belt and Brandywine."

Mr. Edward Eagle, of Weston, Ont., supported most of the recommendations of the foregoing speaker, and gave a few additional hints. As Mr. Eagle's land is low and flat, rather than high and comparatively dry, such as Mr. Bell's, he practises a somewhat different sys-

tem of culture. He grows his strawberries on a black, sandy loam, which is manured in the spring with thirty tons an acre of well-rotted horse manure. The land is plowed four or five inches deep, harrowed and marked. Planting is done as soon as the ground is ready. The plants are placed one and one-half to two feet apart in rows that are four feet apart. For planting, a round-mouth draining spade is used. The spade is inserted in the ground and moved backwards and forwards. Into the opening thus made, the roots of the plants are spread and planted firmly by pressure of the foot. Cultivation is started at once, so as to produce a dust mulch as early as possible. To produce strong growth the first season, the blossom stalks are removed from the mother plants.

"On the old patch," said Mr. Eagle, "picking is done in the morning so that the fruit can be taken to the market as early as possible. The berries are kept shaded and as clean as possible and the boxes are picked full. As soon as picking is concluded for the season, the patch is plowed down and sown with oats. These are cut and used for mulching the new patch that is coming on."

Spraying Apple Trees

On the front cover of this issue of THE CANADIAN HORTICULTURIST is illustrated the spraying outfit used by the Norfolk Fruit Growers' Association, Simcoe, Ont. This organization has been in existence only a short time and has done excellent work in a cooperative way for the fruit growers and farmers of that locality. One of the requirements of membership in the association is that thorough spraying must be done in the orchards of the members. To aid in having the work done properly, the executive of the association distributes the following information; the advice given is valuable for fruit growers everywhere:

"Apply the first spraying when the buds begin to swell. Use twenty pounds of blue vitriol, sixty pounds of lime, and 200 gallons of water. Always estimate ten pounds of water to the gallon.

"The second spraying should be done just before the buds break open and the third spraying just as soon as the blos-

soms fall, with twelve pounds of blue vitriol, twelve ounces of Paris green, twelve ounces of white arsenic, two and one-half pounds of sal soda, fifty pounds of lime, and 200 gallons of water.

"Always prepare the arsenic by boiling twelve ounces of arsenic with two and one-half pounds of sal soda in two gallons of water for forty-five minutes; if you have a kettle large enough, you can make up a stock solution. Keep this kettle away from live stock as it is poison.

"To make 200 gallons for the second spraying: Put twelve pounds of vitriol in a hopper with burlap bottom, which place over the hole in your tank. Pump or pour 150 gallons of water on this vitriol, straining in the tank. Then slack fifty pounds of good lime (none air-slacked) in fifty gallons of water and strain through a hopper with a wire bottom into the 150 gallons already in the tank. Then, of your boiled arsenic solution, add an amount equivalent to twelve ounces of white arsenic and two and one-half pounds of sal soda. Then add twelve ounces of Paris green by dissolving in a small pail of water. Each time in adding lime, arsenic and Paris green, agitate thoroughly. Now you are ready for the orchard; keep well agitated and a good pressure.

"Always clean out the lime box with water every time after using. Pump some clean water through your pump nozzles, and so forth, every night when in use and keep the tank well cleaned.

THE CANADIAN HORTICULTURIST would like to receive for publication letters from its readers on their experiences in spraying for San Jose scale, oyster-shell scale, codling moth, apple and pear scab, and for other orchard pests. Have one or two photographs taken.

In strawberry culture, runners that reach beyond a reasonable limit should be cut off. The plants should be cultivated at least once a week and after each rain, and utter extermination of weeds is necessary to success. If the ground has been kept free from weeds the previous year the weed killing will be a much easier job. Rows must not be ridged up too high when cultivated.

"Oyster-shell scale can be exterminated by spraying, in exactly the same manner as when using the lime and sulphur wash for San Jose scale. A double spraying is necessary. It is most important to give a re-touching spray. The trees should be gone over in the customary way and repeated a few days later, so as to make sure of bringing the mixture in contact with every portion of twig and branch.—H. A. Surface, M. Sc., Harrisburg, Penn.

Pruning Pears, Plums and Peaches

Joseph Tweddle, Fruitland, Ontario

PRUNE pears according to the previous season's growth, to the amount of fruit buds in sight, and to the prevalence or prospect of fire blight. In our own practice we first cut

ditions and find a tree with strong, thrifty, new wood with probably few fruit buds. In such cases we pursue the opposite course, thinning only for light and air and as much fruit as we can get

we would get an overgrowth of wood and but little fruit. Every fruit spur would grow a shoot one to two feet in length and the tree would set no more fruit buds for two years or more. Such a condition of growth invites fire blight.

All intermediate conditions of growth and fruit buds occur between the two extremes aforementioned. They should be pruned with the same purpose in view; that is, to balance the tree for a fair crop of good fruit.

Peach and plum trees are pruned by the same rules except that heavy pruning does not hinder fruit bud setting and that we prune much more severely, heading back nearly all the twigs so as to get large fruit by leaving only fifty per cent. of the fruit buds. Even a small branch overlooked in pruning will produce small fruit.

We find that the use of wagons is a great advantage over ladders. All our tools are carried on the wagons, which can be moved quickly from tree to tree. We use small fruit decks with one board out in the centre to vary our height as needed. Quiet horses are used with blankets under the harness. We gain twenty-five per cent in time by the use of wagons.

The culture of grapes for market is an industry that is assuming large proportions in some sections of Canada, particularly in the Niagara district. For the benefit of beginners, experienced grape growers are requested to contribute letters and articles for publication in *THE CANADIAN HORTICULTURIST* on their methods of growing.



Pruning Plums in the Niagara Peninsula

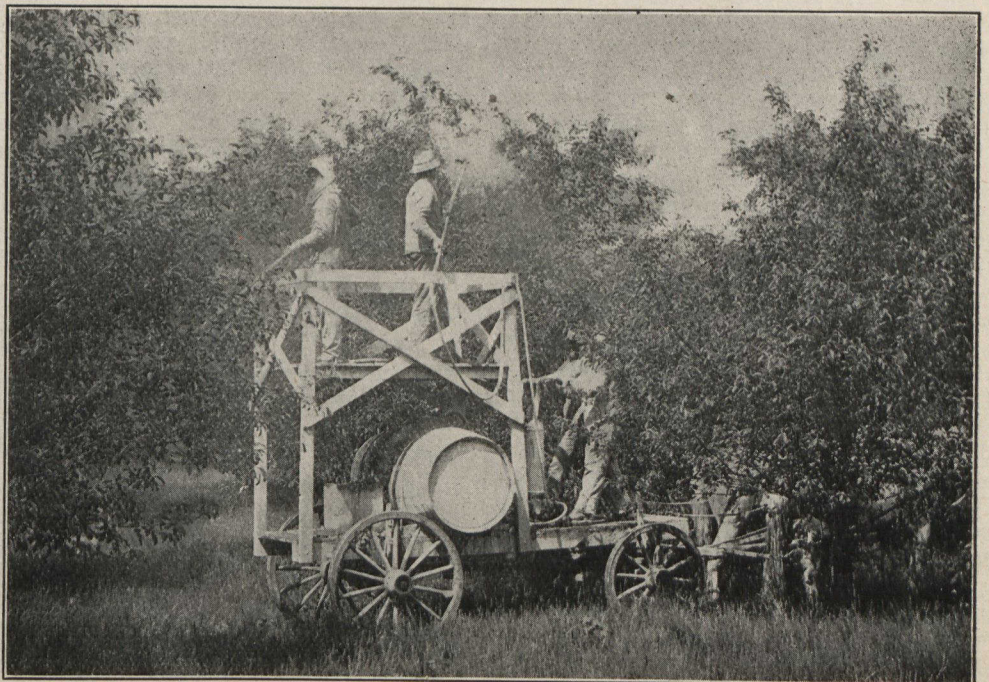
Orchard of Joseph Tweddle, Fruitland, Ontario. Note that wagons are used instead of ladders.

out any existing blight well below the affected parts, using continuously, a five per cent. solution of carbolic acid for disinfecting the tools and also the cuts to avoid carrying the infection from diseased to healthy parts. Then we start a gang, consisting of a competent foreman and three men mounted on two single fruit wagons, as shown in the illustration, one rig on each side of the row, the foreman overseeing and directing the work and at the same time pruning his share of the tree. He corrects mistakes and quickly teaches the men with him the "why and how" to prune into proper shape the varying forms and conditions of each tree.

We may approach a tree with very little new growth and set too full of fruit buds. Such a tree probably would set so much fruit (if left unpruned) that the whole crop would be so far below normal or good size that all would be unsaleable. We thin this crop by pruning back to reduce the fruit buds fully thirty to forty per cent. Then we thin freely to give light and air, and to shape the tree generally.

We may come to the opposite con-

by leaving all the buds possible. If we pruned this tree as we did the former,



A Hand Power Goulds Sprayer at Work Spraying Large Trees.

Apples That Bring Big Prices

"HOW to Grow and Market Apples to Sell for \$3.37½ a Box," was the subject of an address delivered by Mr. W. F. Cash, of Underwood, Wash., at a meeting of fruit growers in British Columbia, at which a representative of THE CANADIAN HORTICULTURIST was present. The system used by the growers in the Hood River district of Oregon, was described as follows:

"We do not expect to grow high-class fruit on every tree. In the growing of stock, it is as necessary to select the scions from good bearing trees as it is

branches. Men follow with short ladders and remove the balance of the fruit.

"Most of our apples are packed in the orchard under the supervision of expert foremen. No packer is allowed to work by himself until he has packed for one season under an expert packer. Great care is taken not to bruise the fruit. We insist that the apples be handled individually when being delivered to the packer. Each apple is wiped clean and wrapped in paper. The boxes used are the standard size box, and a box one inch shorter and broader. The use of

Operating a Boiler Plant

Joseph Tweddle, Fruitland, Ont.

Our lime-sulphur boiling plant is operated and managed by an association of seven members, as follows: R. H. Dewar, W. M. Orr and Son, Fred. Carpenter, Fred. Dewitt, Jos. Tweddle, Geo. Millen and C. W. Dewitt.

Each member paid in \$12.78 in stock to pay for the building of the plant. It is located in the orchard of the writer. It costs seventy-five cents a barrel to make the wash. This includes cost of material, fees for use of engine and wages of men operating. Each member is charged the same price for the mixture.

We engage one man with a threshing engine to run the plant. From a creek he pumps the water through the inspirator up into the upper boiling tank, which the water enters quite warm, then steam is turned on and brought to a boiling point. This tank holds four barrels, as also do the two lower tanks. Sixty pounds of fresh lime are thrown into one of the boiling tanks. Then fifty-six pounds of flour of sulphur are made into a paste with a little hot water.

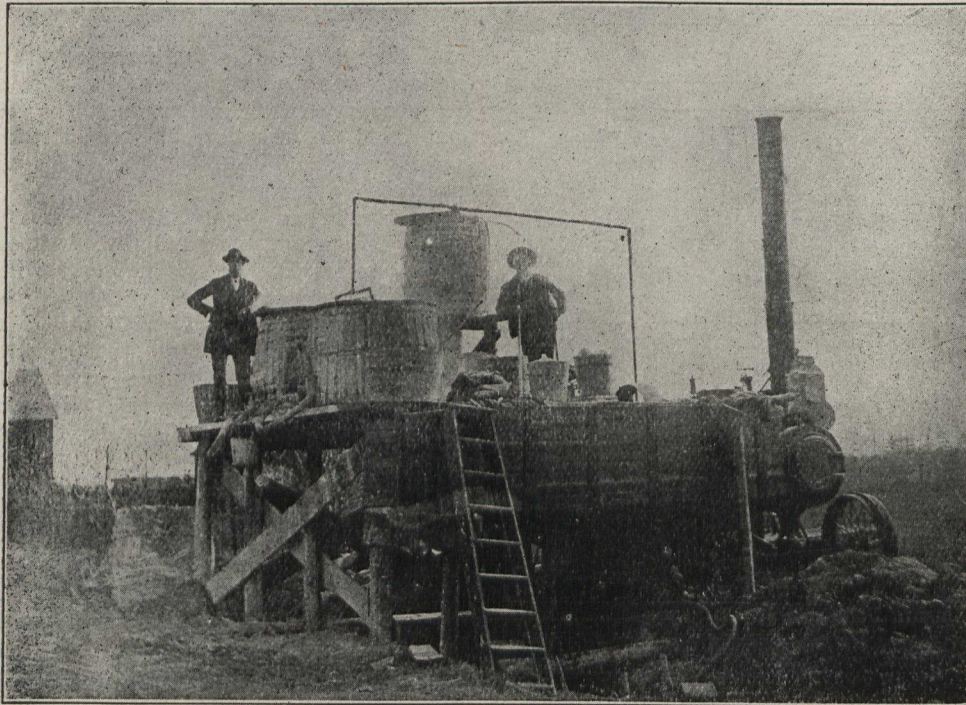
This is added to the lime in the boiling tank and one barrel of boiling water is run in from the tank above. Then steam is turned on and the mixture is boiled vigorously for the greater part of an hour, when the tank is filled with boiling water from the upper tank. Rapid boiling is continued for the balance of the hour, when the batch of four barrels, or 160 gallons, is finished, making fifteen pounds of lime and 14 pounds of sulphur to each barrel. No salt is used.

This operation is repeated in the same way with the other tank. In this way forty to fifty barrels are boiled per day.

This next spring we will spray over one half a mile square of solid orchard and vineyard, and will defy San Jose or any other scale to dare to set foot on any part thereof.

Low-headed fruit trees are best. A better shaped head is secured and the fruit can be picked easier.—A. J. Dryden, Carlton, Ont.

Pruning Currants.—If planted far enough apart, not much pruning will be required until the fourth year. Let the bush spread, prune out when the limbs come so close together that they prevent the sun shining and the air circulating freely. All the limbs which grow down close to the ground should be removed, as the fruit should not be allowed to touch the ground. This pruning should be done before the leaves open in the spring.—Wm. Fleming, Owen Sound.



A Plant for Boiling Lime-Sulphur Wash Operated on Cooperative Plan

necessary to select good parents in animal breeding. All that we expect from the nurseries is trees true to name. Some of the trees will be found to be better producers than the others. It is from these that we grow our own stock, a practice that is becoming common in the Hood River district. Our soil is of volcanic ash and sand, but we have found that, with the application of water, it will produce wonderful crops.

"We are confining ourselves to the growing of only a few varieties. By making a success of a few, the district becomes noted for those varieties. The varieties mostly grown are Spitzenburg, Newtown Pippin, Baldwin, Jonathan and the much-despised Ben Davis, which does well and commands as high a price as some other varieties.

"Several years ago we adopted the practice of low-heading our trees. It has many advantages over the old system. It enables us to have women and children pick the fruit from the lower

the two sizes enables us to pack the apples in the box best suited to the size of apple. Between each layer is placed a sheet of cardboard, unless the top layer is too high. We have found that apples packed on their sides do not ship as well as those packed on their ends; the sides seem to bruise easier.

"Last year our fruit was shipped to the Eastern States, and a large shipment was made to Russia. The prices paid in our district were \$1.90 a box for Baldwins, Ben Davis and Jonathan; \$2.75 for Newtown Pippin; and \$3.37½ for Spitzenburg. A few boxes of Winter Banana sold for \$8.00 a box. These prices were received F.O.B. cars.

"We estimate the cost of care and labor from the time the fruit sets until it is packed, to be fifty cents a box. The reputation of Hood River apples is so high that representatives come from points all over the world to buy fruit."—W.G.R.

Difficulties in Spraying

Robt. Thompson, St. Catharines, Ontario

AS the season for spraying is rapidly approaching, we find many of our growers dreading the work of applying the lime and sulphur wash. In the preparation of this mixture, if there is no boiling plant nearby, and the grower wishes to prepare his material cheaply and efficiently, he can make a plank box about three or four feet wide, from five to seven feet long and twelve inches high. Secure a sheet of boiler plate that will project a couple of inches outside of box. Fasten the box to the sheet iron securely by means of screws through drilled holes.

strainer fifty meshes to the inch. Fine nozzles can then be used, and no trouble will be experienced from clogging. Better work can be done with small nozzles, and less material used.

Spray the first time about two-thirds of the tree from the windy side; then when there is a change of wind to one of the opposite quarters, the other third can be sprayed. A good breeze is found to be a good aid in spraying, especially for large trees. Be sure and cover every spot on the trees.

When spraying with Bordeaux mixture and poison for codling moth, see



Government Power Sprayer at Work in Orchard of C. C. H. Eaton, Canard, Nova Scotia

A fire-place can be built of bricks so that the boiler plate will rest on brick-work. Leave open at end, and put in two or three lengths of stove pipe. Limbs or brush can be used for firing. This makes the cheapest place for boiling lime and sulphur. The back end of the box can be lowered a little, and a large faucet put in to run the liquid out of the pan.

For fifty gallons of mixture put fifteen gallons of water in the pan. Bring to a boil and add twenty-two pounds of good fresh lime. Have eighteen pounds of finely ground sulphur mixed to a paste previously in hot water. Pour this in on the lime. When the lime begins to slack, stir occasionally. Boil for one or two hours or until the mixture turns a greenish color. Keep boiling vigorously all the time. Add more water to make the fifty gallons. The last few gallons added may be of cold water so that the mixture, if going directly into the pump to be used, will not be boiling and thus injure the hose. Great care should be exercised in straining into the tank, using for the last straining a

that every leaf and twig is covered, and every apple covered so that the poison will have filled the calyx end of the fruit. Thoroughness in every particular is one of the secrets of success in spraying.

Stocks for Grafting

Intend planting an orchard of plums, apples and some peaches, the latter in a sheltered location, and am desirous of budding my own trees. What stocks are most hardy my own locality, and where can I procure seedlings for the purpose? Are the French Myrobolan and St. Julien seedling plum stocks used in Canada?—T. G., Mono Centre, Ont.

The Myrobolan and St. Julien stocks should both be hardy enough in your district. The former is, we believe, the stock most generally used by nurserymen. The apple seedlings used in the nursery trade should prove satisfactory. For peaches we should suggest using the Americana plum in your district, as they are hardier than the peach stock, and the peach unites readily with them. If seedling stocks cannot be obtained from Canadian nurserymen, and we have not seen any advertised, they could be

obtained from the Shenandoah Nurseries, Shenandoah, Iowa, and other large wholesale nurseries.—W. T. Macoun.

Apples to Glasgow

Where are the best flavored apples grown in Ontario, and what prices do the growers get per barrel on the trees? What is the freight rate per carload of apples from Toronto to Montreal, and how many barrels are allowed to the car?—F. Paterson, Glasgow, Scotland.

The cost for freight and other charges, per barrel, from Ontario points to Glasgow, varies from 90 cents to \$1.10 per barrel. It is generally conceded that the district north of Lake Ontario, and including the central portion of Ontario to Lake Huron and the Georgian Bay, grows the best winter apples for commercial purposes. The capacity of cars varies from 150 to 200 barrels.

White Fly on House Plants

What can I do to get rid of a sort of louse that is ruining my house plants? They are like tiny white flies and cover the under side of the leaves with little eggs. When you touch the plants they fly off to others. They are especially bad on my fuchsias, heliotrope and nicotine, but do not molest geraniums or begonias. I have tried several remedies, but the pest seems to thrive and multiply at a great rate. Have washed the plants with tobacco water, soap suds, coal oil, and have had them smoked on, but all to no purpose?—J. W., Scarboro Jct., Ont.

The insect mentioned is probably what is known as the white fly, *Aleyrodes vaporarum*, and is a comparatively new insect pest to plant growers. In greenhouses it can be easily kept down by the fumes of hydrocyanic gas. This latter must not, however, be used by amateur plant growers in a dwelling house under ordinary conditions, as the fumes are fatal to almost all animate life of any kind, hence it cannot be used without great danger to human life as well as insect life. A very strong solution of soapy water—one ounce of common soap dissolved in a quart of warm water and allowed to cool—is a good remedy. This should be sprinkled thoroughly on the underneath side of the foliage once or twice a week with a fine rubber sprinkler. Scollay's angle or bent nozzle rubber sprinkler is the best appliance for this purpose. It can be purchased at seed stores. After sprinkling, before the foliage is quite dry, dust on some Pyrethrum powder, or tobacco dust made from a dry cigar. This also should be dusted on the under side of the leaves, with a Jumbo Powder Gun, which can be purchased at seed stores. The soap solution has been used effectively by some florists in keeping down this pest in greenhouses. Keeping the under side of the foliage sprinkled with clear, tepid water as often as possible is a good preventive, as the fly delights in a dry atmosphere, and does not like moisture. In sprinkling, dampen all parts of the foliage and stems of plants.—Wm. Hunt, O.A.C., Guelph.

Bedding Plants, Where to Use Them*

RIDING through parks, along boulevards and country roads, speeding in trains through villages and towns all over the country, passing the magnificent palaces of the wealthy with their beautiful lawns and the humble cottages of the poor surrounded by modest yards, everywhere, during the growing season, the eyes meet the brightness of flowers and richly colored plants, which at once impress upon us the popularity and universal love for bedding plants.

There is such a large variety of these plants, from the smallest annual, like portulaca, to the stately sub-tropical plants. The perennials figure greatly in various effective displays. Then we have tulips, hyacinths, daffodils, and so forth, for early spring flowering. No garden need be without flowers from the time the dainty little crocuses peep out of the snow until late in fall.

No matter how small the purse, enough seed can be purchased to obtain a very harmonious and artistic effect, as well as a continuous season of flowers. It is not the means of being able to procure a large number of choice plants, but it is the good taste and skill of the designer, who understands how to make an arrangement, to harmoniously and discriminately combine the various colors with immediate surroundings, no matter how inexpensive, that appeals to the lover of nature with all its art and beauty, and this is what we are striving for more and more every day.

It requires just as much artistic judgment and ability to arrange flowers properly, as the painting of a picture on canvas. The designer must show individuality and know exactly what proportions the plants will attain, how soon they will be fully developed, also how the colors will blend together; in fact, he must see the finished picture before him when he designs his plans. We have everything to do it with; now let us understand how to do it. To cover the subject best, I have divided it into two chapters, as the title of this article indicates: "Where to use them and how to use them."

PROPER SELECTION OF PLACE ESSENTIAL

The proper selection of the place for the floral display is first to be considered; a place where it will be properly effective is just as important as the execution of the planting, as this takes a definite part in the entire scheme. Locality, building and size of grounds must be taken into consideration. The smaller the

place, the simpler should be the display. It is so easy to overcrowd a small front lawn, whereby the proper effect is entirely lost. Large places in proportion will have more elaborate paintings, and the artist will have occasion to plan special features, such as courtyards, parterres, sunken gardens, Italian gardens, and so forth.

The front of a building is almost always selected for the display, which is generally formal, and, if the space is limited, a narrow border of plants adjoining the building will be sufficient, with perhaps one or two beds on the lawn, proportional to the latter. There should always be plenty of green grass to offset the beds. The backyard, as a rule, is very much neglected and in many instances unsightly; here I would advocate to have a grass plot with a border plantation. How much more cheerful one would feel looking into a well-kept yard than at a lot of rubbish.

Places of larger dimensions, with their beautiful landscape effects, must be treated more in detail; here we have an opportunity to lay out in connection with residences, conservatories and public buildings, courtyards, parterres, rose gardens, and so on, which, as a general rule, are part of the architectural scheme and in harmony with the style of the building. In the last few years Italian gardens have again become quite popular, and these especially set apart from the rest of the landscape must be treated by themselves; they are very set and usually contain considerable color well blended together.

Besides the forms of special treatment already mentioned, we also have other flower gardens, which give an opportunity for a larger variety of flowering plants, in the line of annuals, roses and perennials, and so forth, which properly arranged make a brilliant effect without interfering with the more subdued and restful landscape.

IN CEMETERIES

A few words should be devoted to the homes of our loved dead. There is nothing more soothing to the grief-stricken heart than the sight of well-kept cemeteries, bedded with appropriate flowers speaking the language of peace and rest.

PARKS AND FACTORY GROUNDS

Public parks, especially, are a great field for floral displays, and although some authorities on landscape gardening do not favor them, I believe the public fully appreciate flowers; though the utmost care must be taken not to let them run wild all over the park, but keep them in the vicinity of buildings or entirely away and screened off from the quiet landscape. Boulevards also and

small squares can be most admirably brightened with the ornamentation of flower beds.

FLOWER BOXES

How many people are not fortunate enough to possess a home with a lawn and flower beds! There is no necessity to deprive themselves of nature's gifts, but they can enjoy them in a more modest way, by keeping flower boxes, which, no matter how obscure and unassuming the dwelling, give it a home-like air and enliven the aspect of many an otherwise sombre home. On the other hand, many beautiful residences rely solely upon piazza boxes for their floral display and exquisite results can be obtained in this manner.

Making a Tennis Court

T. McVittie, Toronto

In making a lawn tennis court, there should be a clear margin of at least twelve feet on each side and twenty-one feet at each end of the court. When the ground is selected, measure off a portion, say 100 by 50 feet, which will allow ample margin. The portion for playing on requires only seventy-eight by thirty-six feet. If economy must be considered, only the latter need be carefully prepared, but it is better to do the whole if possible.

The ground which is to be turfed is best prepared previously. Carefully remove the weeds from the turves. If it is very poor, work in a dressing of decayed manure, taking care not to have it rank. Make it perfectly level and evenly balanced by means of a straight edge and a spirit level. The whole plot should be made very firm with a rammer or the back of a spade. Scratch it over with a rake, lay the edges of the turves close together and ram thoroughly.

If grass seed is to be sown, see that it is good by purchasing from a reliable firm. I prefer turfing, if sods can be procured free from weeds.

During the season the grass should be kept cut very close and the court afterwards rolled well with a heavy roller.

To have extra early cucumbers for slicing, start the seed in hotbeds in March.

Sow seeds of nasturtiums in pots or boxes, but do not sow thickly, as nasturtiums do not transplant readily. Early flowers of mignonette may be had by sowing the seeds in pots; also, petunias, verbenas, cosmos and lobelia.

*Extracts from a paper read by Mr. Alois Frey, Chicago, at the last convention of the Society of American Florists and Ornamental Horticulturists. Valuable suggestions are given that are applicable to Canadian parks and home gardens. In the next issue the question of how to use bedding plants will be discussed.

What Amateurs Can Do in March

THERE are many things that amateurs can do before the busy season actually begins. Order your seeds, trees, plants, fertilizers, tools and spraying outfit. A better garden can be had by planning now than later. By ordering early you will get your trees and plants as soon as the weather is safe for shipping. Look over the old tools; repair those that need it, and sharpen all.

In the localities where the snow leaves early, considerable work can be done on the lawn and in the garden. The lawn may be raked, fertilized and rolled; bare spots can be sodded. Walks and drives

WITH THE FRUITS

If you have some old fruit trees of worthless varieties, graft them with scions taken from trees of desirable varieties. They will bear in about three years.

Prune currants, gooseberries, raspberries and blackberries. Currants and gooseberries produce their fruit on wood that is at least two years old. When pruning remove only a portion of the old wood, and allow a similar number of new branches to take their places. If you did not do so last fall, remove the old wood from the raspberries and black-

know same, send specimens with descriptive notes to THE CANADIAN HORTICULTURIST.

IN THE VEGETABLE GARDEN

A hotbed or cold frame is useful in the kitchen garden. The material for it soon should be in course of preparation. Fresh manure should be placed in a heap for ten days or so, and turned once during that time. A hotbed or cold frame is useful for starting early vegetables. Sometimes four to six weeks may be gained in hotbeds, and two to four weeks in cold frames. If you have neither of these, start some vegetables in boxes on the window-sill.

Home-grown rhubarb may be had early by placing a barrel or box, from which the top and bottom have been removed, over a clump of rhubarb in the garden. Cover the top at night and during cold days.

Beds of asparagus and rhubarb may be manured. If manure is not available, use nitrate of soda at the rate of one ounce to the square yard. Rake it in and repeat the dose three weeks later.

If you are burning wood in the house stove or furnace save the ashes for fertilizer. Keep the pile dry. Even coal ashes are useful. They supply practically no plant food, but improve the texture of the soil.

If the soil in the vegetable garden is heavy, it would be well to buy sand to lighten it. An application of lime or strawy manure also would aid in loosening a clay soil.

THE OUTDOOR FLOWER GARDEN

Do not remove the cover from bulb beds until danger of severe frost is over. Remove by degrees. It is best to leave the mulching near by, so that it can be replaced when severe weather threatens.

Plan to rearrange the hardy border and to fill the gaps. The effect of alternate thawing and freezing is very trying for plant life out-of-doors. If the ground is frozen, there is still time to give some protection. Cover with some strawy manure held in place by branches of trees. Remove the covering as soon as danger of severe frost is past.

FLOWERS INDOORS

Late in March repot the hardiest kinds of window plants, such as geraniums, ferns, and plants required for summer decoration. Water them thoroughly so that all the soil in the pot is moistened.

Flowering bulbs should have plenty of water when in flower. When the flowers have faded, the bulbs will be of little or no use for pot culture another year. They may be removed to the garden, however, and will make a useful addition to the border.

After freesias have finished flowering dry them off slowly. They should be



A Well-made and Well-kept Tennis Court

At residence of Mr. A. Alexander, Hamilton

can be graded and rolled; apply fresh gravel where needed. Remove from the lawn, garden and walks all the rubbish that was left over winter.

Repair all holes in tree trunks by removing the rotten wood, singeing the cut surfaces, and filling with cement.

Birds kill insects and add much to the charm and pleasure one can have in the garden. Make houses for them.

Remove all dead wood from trees, shrubs and vines; if overgrown, they may be thinned out. Most shrubs require very little pruning. Late-flowering shrubs may be pruned while dormant. Early flowering shrubs should not be pruned until they have bloomed, as they will produce their flowers on twigs that were formed last season. Hardy roses may be pruned towards the end of the month.

berries. Thin out the new canes, and cut them back to about three and a half feet.

Prune the fruit trees. Thin out the apple and cherry trees. The growth produced last season on peach, pear and plum trees should be headed back.

Prune the grape vines after the severe weather is over, and before vegetation begins, so that they will not bleed too profusely.

Much trouble with insects and fungous pests can be averted by action now. Destroy the egg masses of tent caterpillar, cocoons of fall webworm, and the winter stages of all injurious insects that you may happen to come across. If you happen to find an insect or fungous disease on your trees, no matter what the stage of its life cycle, and do not

kept dry in the pots until next season.

Bring to the light hydrangeas, oleanders and similar plants, and start them into growth. If necessary, put them into larger pots or tubs.

Pot flowering and foliage begonias. Give good drainage and water thoroughly, then withhold water until the plants have well started into growth.

Strike in sand, cuttings of fuchsias, geraniums, verbenas, and so forth.

Plan to keep a record of all the operations that you perform indoors or in the outdoor garden during the coming season. Have some photographs taken of your work and results. Then write an experience letter for THE CANADIAN HORTICULTURIST, and send the photographs for publication.

Imantophyllums

Annie L. Jack, Chateauguay Basin, Que.

Living in the same pot year after year for the past ten years, and never failing to bloom all through the three winter months, when flowers are most valued, are bulbs of the above named. The invariable question of those who see my plant window for the first time is: "What is it?" and I often answer that it has too long a name for one



Imantophyllum Nobilis

Showing spike of flowers and seed ovaries on former flower-stem. Grown at O.A.C., Guelph, by Wm. Hunt.

breath, being of thirteen letters. But it is often claimed by good authority that "*Clivea nobilis*" is synonymous as a title, being named after the Duchess of Northumberland, who was a member of the Clive family, and a plant enthusiast in her day.

The imantophyllums were introduced from Africa, and do well in an ordinary living room, or greenhouse, with even winter heating. They adapt themselves

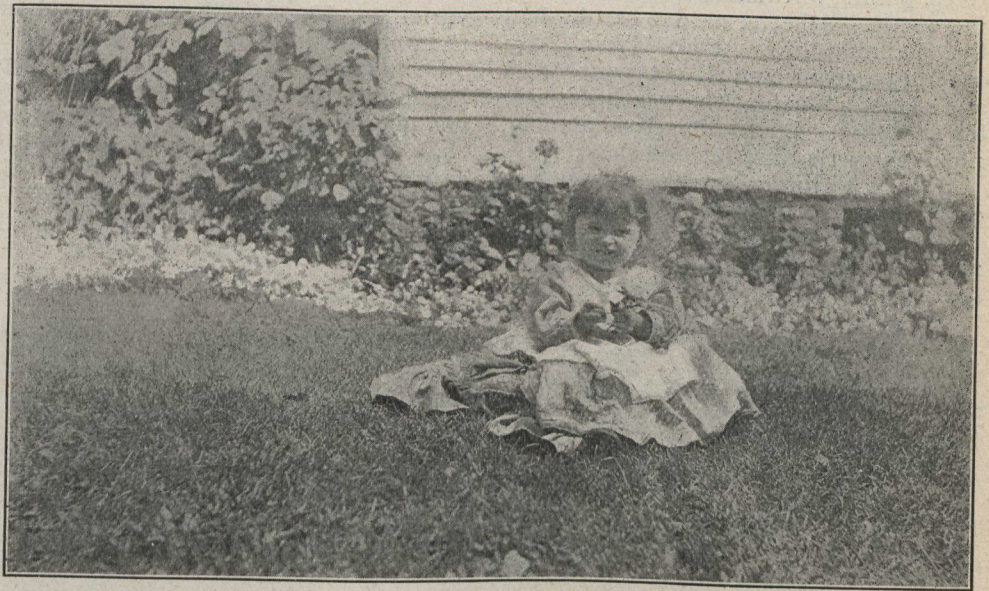
to any condition, and if the resting season is made in summer (leaving the bulbs in the pot in a warm corner) they will bloom at the opposite season, when watered and brought to the light.

They have the valuable quality of remaining long in bloom and are more

Six Courses of Bloom

A. Barber, Bowmanville, Ont.

The accompanying illustration shows the sixth course of bloom produced last season in the border shown. The little tot in the foreground is busy with one of Groff's best gladioli, even though she



In This Border Six Courses of Bloom were Had Last Season

easily managed than the popular amaryllis which requires much the same treatment. A heavy, rich soil, with some coarse sand, is the best mixture. While growing, they require a liberal supply of water. The window gardener who has a fancy for plants of unusual appearance and stately beauty, with handsome foliage, will do well to cultivate the imantophyllums in spite of the formidable name.

Begonia Curiosity.—A lover of flowers recently showed *The Thorold Post* something of a curiosity. It was a begonia plant which had been resting during the winter, and had a long, sturdy trunk but very little foliage. While set away, the trunk had curled around just above the pot into a perfect circle, or loop, three inches in diameter, about the size of and very much resembling a doughnut. The loop hung gracefully over the edge of the pot, and the plant was healthy and promising. When put away the trunk was mostly straight, and was not touched while in seclusion. Can some nature student explain the phenomenon?

Every one knows in a general way, many from experience, that evergreens need more care in planting than deciduous trees. The reason is that the sap of evergreens, being of a resinous nature will not flow afresh if dried out; or, at least, not so easily as the sap of deciduous sorts. The roots must never be allowed to dry.

may appear to be quite young for plant study.

In order to give flower lovers an idea of what may be done with a small area, it may be of interest to mention briefly the results that I have secured with the border illustrated. First, in spring I have about 200 to 300 snowdrops, which show as soon or before the snow disappears. These are followed quickly by about 100 crocuses, and then come about 100 scillas, cheery little blue flowers that should be grown in abundance by amateurs. Next comes the hyacinths, and last in the bulb line, the tulips. Of the latter I have three varieties, Cottage Maid, Proserpine, and in the rear, Darwins.

After the tulips are done the ground is cleaned a little, and filled with standards for the summer. When the photograph was taken there were alyssum in the front, asters next, and geraniums in the rear. Throughout the entire season, therefore, the border presented a pleasing display.

Asparagus grows readily from seed. One ounce of seed is sufficient for about fifty feet of drill, and should produce about 400 plants.

The columns of THE CANADIAN HORTICULTURIST are open at all times for letters and articles from its readers relating experiences in the management of fruit trees, small fruits, vegetables, flower gardens, lawns, shrubbery, and so forth.

Herbaceous Plants for the Amateur

J. McPherson Ross, Toronto

I DO not know of any class of ornamental plants more useful and suitable for the amateur to try his or her skill in growing than the herbaceous perennials. I might say that, as a class, they do not receive the attention that their beauty and value deserve, more attention being paid to bedding out plants and annuals; but this neglect is passing away, and even professional florists are paying attention to their cultivation in a much more lively manner than formerly. To the amateur they are particularly desirable, being perfectly hardy, easy of cultivation and, once planted, they are permanent. They possess a dignity and force which no annuals have, and are as effective and beautiful in color as one could desire.



A Nice Clump of Campanula

The best method of planting them is in groups or masses. This is nature's plan of growing anything. She is always prodigal when she does the planting, and although she does not sometimes suit our convenience as to where she does plant, yet the effect is always charming if the masses are only the commonest weeds, such as burdocks, thistles or dandelions.

Whatever planting you may do, aim to make it impressive, aim to make an effect, aim to make a picture, so that the eye of the least observant may be struck by its beauty, and the sensation of pleasure produced may linger long in the memory after the scene has passed from their view. How often have we heard such expressions as: "Oh! What a beautiful mass of lilies," or "What a show of gladioli!" This is the result of effective planting.

Group whatever you plant in masses without definite form. Always avoid circles, or squares, or rows, and by keeping this in mind when planting you suggest the effect of the plants growing and spreading naturally. Art is most effective when best concealed. The average effect of planting is meaningless. The beauty of the whole is lost in so much detail or, in other words, a great deal of the public indifference to herbaceous plants is owing to this indiscriminate planting, this hit and miss style, that has prevailed in the past.

KINDS TO PLANT

For the amateur's sake we are going to recommend only a few varieties, as we know that the average amateur is always ambitious and would like to plant everything he finds in the catalog. Have patience and *make haste slowly*. Try the simplest and easiest of cultivation at first, then as you gain in experience and skill from the cultivation of the few, you may proceed in joy and confidence to the many. Do not forget the effect already mentioned. It is gained only by planting a group of three or four or half a dozen of one kind. Never a single specimen. It would be better as a whole to plant twenty-five plants of a single variety than to plant single specimens of twenty-five varieties.

BLEEDING HEART

One of the easiest of all herbaceous plants to grow is the bleeding heart or dielytra—thrives in any situation, is handsome in foliage, perfectly hardy, coming into bloom very early in spring, is beautiful when in flower. The plant itself attains quite a size. When fully grown it stands over three feet, and quite ample in circumference. Covered with its long racemes of pendant pink and white flowers it is a charming plant as a single specimen on the lawn and presents, as a group of four or five plants, quite a formidable mass of foliage and flowers. A group like this would perhaps take up too much space in small gardens, but, in large areas, it appears to great advantage. It increases easily by division of the roots

and makes a beautiful pot plant when forced under glass.

PERENNIAL PHLOX

The next to recommend is the perennial phlox. If I were confined to a



Give Columbines a Place in the Garden

choice of only one plant for my garden, I would select the phlox. Of this plant there are two classes—tall growing and dwarf growing. There are countless varieties of this beautiful free-blooming flower. To get a selection the amateur is advised to go to his nearest florist and get his list. The most effective colors are white and pink. Plant the tall varieties in the centre or at the back of the bed and keep the dwarf kinds for the front or outside. This arrangement would produce a bank of bloom. The phlox comes early into flower. The dwarf phlox is one of the earliest of gardening flowers, and is a welcome plant when it does bloom after the dreary season of winter. I have reference, however, mainly to the other classes whose flowering season extends nearly over the summer. If the flowering spikes are cut back there will come a lateral growth of flowering spikes which prolongs their flowering season. The phlox requires dividing and replanting every three or four years. If left any longer it rapidly deteriorates in size of floret and in beauty of color.

Next to the phlox we have the peony, the rhododendron of Canadian gardens.

Hardest of the hardy, magnificent in color and prodigious in flower, no one can help admiring the pæony. If there is a fault to the pæony it is the short time it remains in bloom, but the compact habit of the plant, with the dark green peculiarly divided foliage, makes some amends for it. As a single plant on the lawn it is grand; in a mass of twenty or thirty plants it is magnificent. It stands our coldest winters with impunity (it is a native of Siberia), and once planted, grows finer every year, increasing in size and flowering qualities the longer it is undisturbed.

HOLLYHOCKS

No amateur can afford to be without the hollyhock. Whether single or double it is always delightful. Its flowers embrace the whole scale of color from white to deeper than black. Planted in groups of a half dozen it attracts attention wherever it is, and its stately spikes lend grace and beauty to either cottage or hall. Though the hollyhock is, properly speaking, more of a biennial than a perennial, yet with but little attention a goodly supply of young plants may be always kept up, by layering the offshoots.

THE LARKSPUR

The larkspur or delphinium is the most beautiful blue flower grown as a hardy plant, with the exception of *Salvia patens*, but the salvia is not one to be recommended to the amateur till he has had a few years' more experience, as it is rather tender. There are numerous varieties of the larkspur, in all shades of lavender, mauve and a lot of indefinite tints, but I love the deep blue variety in preference to any of the others. The tall spikes of larkspur are always charming. Springing from the encircling cluster of its graceful lacinated foliage, they reach a height of five to six feet. It blooms in all stages of advancement, from the perfect open flower to the tiny green bud higher up just asserting itself.

GOLDEN GLOW

If the larkspur suggests the sky the rudbeckia suggests the sunlight. As a hardy, showy flower the rudbeckia has come to stay. Of the freest habit in blooming, its tall spikes of golden-yellow flowers light up a garden like a burst of sunshine. It is an exceedingly effective plant in the back portions of the garden. For hiding fences or objects of ugly prominence, the rudbeckia plays a kindly part.

CAMPANULAS, SPIRÆAS AND AQUILEGIAS

The foregoing plants are nearly all of a robust and tall habit, therefore we want some a little more modest but not less sweet and desirable as a contrast. The campanulas or canterbury bells are a beautiful family of free flowering habit. In colors, violet and white, they are always a charming addition to a

collection. Of the spiræas we must have *Spiræa Ulmaria*, *S. lobata*, and *S. Filipendula*. Lovely in foliage, with their creamy white blooms balanced on slender stems, the spiræas are indispensable, especially the one last mentioned.

The aquilegias or columbines also deserve a place in our herbaceous border. They are free growing, profuse in flowering and covering a great range in colors, white, cream, flesh, mauve, purple, brown, crimson and yellow—no painter's palette could be spread with more varying or contrasting tints than the graceful columbine yields us.

IRIS AND SOME LILIES

We must have half a dozen of the iris in its varying varieties, and its rush-like

plants, I have reserved a half-shaded corner for a clump of lily of the valley, that exquisite lovely little flower, so graceful and sweet in flower and foliage.

SOIL CULTURE AND CARE

Any combination of the foregoing plants are suitable for the amateur. Good clean soil, well fertilized with old rotted manure, will suit them all; it should be well drained and the border so graded that no water will lay on it at any time. Most of the plants will thrive in any kind of soil, but they all do better under the best conditions. Good clean cultivation should be given after planting, keeping the soil free of weeds and loose on top.



An Informal Grouping of Foxgloves is Effective

Photograph taken at residence of Mr. A. Alexander, Hamilton

foliage; it is hardy and beautiful. The funkia, plantain lily, most effective in clumps and distinct in flower, is always pleasing and unique.

A dozen more plants are clamoring to get into our border; all of them choice company and move in the best circles, but we have not time to introduce them as they deserve to be introduced, and they must stand aside for Lady Candidum. I beg her pardon, Miss *Lilium candidum*, the white queen of the border. We must have a clump of this lovely flower and, to do so, will plant the bulbs in August or early in September. This plant makes it roots early in fall so as to produce flowers in early summer.

We have room for one strong, showy plant, a veritable bonfire when alight, *Papaver Orientalis*, the Chinese poppy. This is a free growing plant with prodigious paperlike blossoms of intense crimson scarlet.

At the risk of offending the tradescantias, achilleas, and all other deserving

Aim to keep your borders neat by not allowing old flowering stalks or dead foliage to remain. Keep the soil nicely raked. Grounds that are kept in order go a great way sometimes in making amends for the lack of other qualities.

Keep the plants in groups as already suggested, and plant in vacant places or intersperse as it were with annuals, gladioli, or anything that will give a wealth of foliage and flower. This creates what may be termed an "informal flower garden." A prevailing charm about this kind of planting is the surprises one meets with in contrast to the ordinary ribbon bed, where one sees at a glance the whole effect, no matter how beautiful, but, in the herbaceous border, interesting surprises are met with at every step.

When the flowering season is over, cut down all the old flowering stalks and dead foliage and lay on the ground as a protection to your plants; if not enough to cover all, add leaves, strawy manure or other litter that will cover the

soil and prevent too hard freezing or upheaval of the plants.

All the plants mentioned may be grown from seed sown as soon as ripe, but this takes trouble and is, more properly speaking, the business of the professional florist. They are all so easily grown by division that it does not pay for the trouble of growing them from seed.

In conclusion let me advise the amateur to love his garden and also to cultivate patience at the same time

he or she is cultivating the plants. As amateurs grow in patience, skill and love, so will their success be. The quality of happiness is not governed by the size of the garden, but rather lies in the heart of the grower. A solitary plant in an old box may yield more pleasure to its owner than extensive lawns and conservatories may to another. Seek to cultivate in yourself a delight in your flowers and all the other joys will be added unto you

on leaves are caused probably by imperfect root conditions, or perhaps the soil has been allowed to become too dry at some time or other. If the pot is full of roots, repot the plant into a one or two sized larger pot, using a little lump charcoal, broken flower pot, or coal cinder for drainage, and a soil composed of one part sand and five or six parts of enriched loamy potting soil. Imperfect drainage or sour soil would also cause the trouble mentioned. Re-potting and removing some of the old soil is the remedy for the last named trouble. A blister-like substance on the leaves is sometimes caused by either of the above conditions, or exposure to the sun in very hot weather. The small black spots probably proceed from imperfect root conditions. Re-potting into fresh soil is the remedy, unless these spots and the mass of little brown spots are really scale. If they are, they can be easily removed by washing the scale off with a strong solution of common soap and water, applied with a brush or sponge. The leaves should be sponged with clear tepid water after using the soap solution. Sponging the leaves once a week with clear tepid water, or spraying with the same, is good for the rubber plant at any time. A small, thin, almost black insect, about a quarter of an inch in length, called "thrip," often attacks the under side of the leaves of the rubber plant. Where attacked, the leaves assume a whitish appearance. Washing the affected parts with a strong solution of soap and tobacco water is a good remedy for thrip. A too dry atmosphere induces the thrip to appear.—Wm. Hunt, O.A.C., Guelph.

Daffodils Singly in Pots

G. A. Chase, Toronto

NOW that the blooming season for home-grown plants has come, I would like to make a plea for individual daffodils in small pots. Our city dealers rarely have any other than the cut blooms, and if by chance they have a few pots, they are large, each containing five or six plants, in strict accord with the rule in the seedsmen's catalogs, "plant five or six bulbs in a pot."

I have no fault to find with those who, in buying daffodils, look only to the mass of rich bright color that a bunch of cut blooms or a crowded pot will give. But to the lover of daffodils, mere color is not enough; he wants the flower itself to fill the eye, its lovely form and delicate tracery, as well as its color, standing out full and clear against the dark, rich foliage. This he cannot have in a bunch of cut blooms or in a crowded pot, for in these, the single flower is lost in the mass and foliage is either absent or scanty and sickly.

I would urge the professional growers of daffodils to try the experiment of growing some single bulbs in four-inch pots. It certainly will pay; for while a six-inch pot or a pan with its six bulbs in bloom sells in the shops for twenty-five cents, the smaller pot, with its one bulb, will readily sell for eight or ten cents, a price that will give a much greater profit, all differences in growing being allowed for, than will the six-inch pots.

The bulbs grow well in these small pots and throw up a fine body of foliage; and when, as is usually the case, there is a secondary bulb (sometimes two of them) attached to the main one, two blooms will be produced, the one from the main bulb usually being on a somewhat larger stalk and opening from two to three days earlier. A flower such as this, sitting in a jardiniere, makes an effective, though unobtrusive centerpiece for the family table, and a very pretty ornament for the mantel or elsewhere; and when placed a few inches in front of a mirror, the effect is beauti-

ful. To the home grower, who, like myself, has no other greenhouse than the window and its attached shelf, the



A Home-grown Daffodil

When grown singly in pots fine large blooms are secured. The one illustrated is about two-thirds natural size.

small pot needs no recommendations. Nor need any lice be feared if only the simple precaution be taken of half-boiling and half-baking the earth before the bulbs are potted.

Trouble with Rubber Plant

What is the matter with my rubber plant, and what can I do to get rid of the trouble and make it a clean, healthy plant? It is about two and a half feet high. The lower leaves are cracked, and where they crack they turn brown. On other leaves there are brown spots which keep getting larger, also a mass of little brown spots like scale or blisters. On some others there are black spots, a little larger than a pin's head.—Subscriber, Orillia, Ont.

The cracked leaves and brown spots

Ashes for Vegetables

Are wood ashes good to use for all kinds of vegetables? Are they good for clay and loam? How much should be used per acre? I have the chance of buying about 1,500 bushels at five cents a bushel. Will it pay?—Arthur T. Smith, Hartington, Ont.

Wood ashes contain potash, phosphoric acid, and lime, all of which are useful in the growing of vegetables. The ashes are usually valued more for the potash which they contain than either of the other two constituents, for vegetables require potash more than lime or phosphoric acid. On clay soils, lime has an additional advantage in that it liberates potash from the soil. Thus the ashes will supply potash direct and lime will liberate it from the insoluble combinations in the soil. If you can buy wood ashes that have not been leached, and of which you know something of the history, for five cents per bushel, they will make a very cheap form of fertilizer. For vegetable crops you may safely apply these at the rate of a ton to a ton and a half per acre.—Prof. R. Harcourt, O.A.C., Guelph.

Growing Early Tomatoes

Frank F. Reeves, Humber Bay, Ontario

TO produce early tomatoes for market, the seed should be sown about the last week in February or the first week in March. The varieties will depend largely on what your market demands. We use for early: Earliana, McInnes Plentiful, Dwarf Stone and Chalk's Jewel, to be followed by Perfection and Imperial.

The seed should be sown thickly in flats. As soon as the plants are about an inch high, they should be pricked out in flats, giving each plant about an inch of space. This transplanting should be done three or four times, each time giving the plants more room. The oftener they are moved the stouter will the plants be and more abundant the small roots; this enables us to move the plants without checking them. For the last move, I like to use strawberry boxes, as when planting out, these can be broken easily.

One great thing to avoid with tomatoes when in the greenhouse is too much water. If the plants are watered frequently they grow too rapidly and are soft. The best way is to let them get thoroughly dry and then give them a good soaking.

Care should be taken to have the plants thoroughly hardened before planting out. The best way to do this is with

canvas lights, removing the canvas every day, only covering when there is danger of frost.

To get the first early tomatoes, all the side shoots should be pinched out as they appear. These can then be planted out close together, two by two feet, and staked. The best ground for early tomatoes is a sandy loam, with a gravel subsoil.

The majority of growers who go in for mixed gardening make a mistake in having the land too heavily manured for tomatoes; the consequence is that they have all vine and no fruit.

To allow room for picking, they should be planted at least four feet apart each way. This will allow of their being scuffled close both ways, and will save hand labor.

In the vicinity of Toronto, planting is usually done during the last week in May or the first week in June, or as soon as danger from frost is over. The ground should be scuffled every two weeks to keep down weeds and to keep the plants growing.

The worst pest that attacks the tomato is the leaf blight. This can be controlled largely by using Bordeaux mixture, starting with the plants when in the seed-bed and giving two or three applications after planting out.

Late Cauliflower

John N. Watts, Portsmouth, Ontario

THE success of cauliflower growing depends largely on four things, namely, the season, the condition of the soil, the condition of the plants, and on procuring a first-class strain of seed. In Ontario, where summer droughts are frequently a feature of the climate, the time of the year during which cauliflower may head successfully is limited to an indefinite period. Often there are only a few weeks between the beginning of the fall rains and the setting in of winter. It becomes, therefore, a matter of first importance to set the plants at such a time that the heads shall mature during this favorable season.

It is easy to grow cauliflowers, but to get them to head at a time when the heads will be of the best quality, requires an amount of judgment and experience which, particularly in the western part of the province, have thus far prevented the general and successful cultivation of this vegetable. In fact, the growing of cauliflower in this country has attained but temporary and local success, owing to the generally unfavorable soil and climate or seasons. Within the limits of almost every province, or even

neighborhood, these conditions vary so much as to render it necessary for a grower of cauliflower to make a careful study of local conditions.

Cauliflowers will not grow in soil unless it is properly underdrained, unless the soil is naturally loose and free from all waxy nature. The land must be well manured with well-rotted manure, thoroughly mixed with the soil before the plants are set out. Fall plowing is best followed by good, deep cultivation in spring.

ADVANTAGES OF A LATE CROP

Growers should plan to have the cauliflower crop head late in the season. The advantages of this should impress growers who want profit. They are as follows:

1. The heads do not mature so rapidly as in warm weather, but come along a few at a time, giving better opportunity to get them to market.

2. They can be kept longer after being cut, and thus may be shipped to a distant market without wilting or heating.

3. The heads are of better quality, firmer in texture, milder in flavor, and, owing to the cool and often cloudy weather which prevails at that season

of the year, retain their clear white color, with little or no artificial blanching.

4. Late cauliflower is less subject to insect enemies. Cabbage worms and plant lice are much less troublesome late in the season than early, while cutworms do not attack plants that are set after the first of July.

Tomato Culture*

R. H. Lewis, Hamilton, Ont.

For early tomatoes start the seed in March. The date will depend upon the locality. In the Hamilton district, it is from March 1 to 15. Sow in drills, four inches apart, in hotbeds. Earliana is the best variety. The young plants should be transplanted twice, the first time to four inches apart, and the second to six inches. Keep the plants growing without a check. Spray with Bordeaux mixture to prevent injury from fungi.

Plant early varieties outdoors about May 15 to 20. Before removing from the hotbeds, soak the soil well with water, then remove in boxes and plant with a spade. Place the plants about four to five feet apart. The land should be fairly rich for the early varieties. For best results, it should be prepared and manured during the fall previous. When planting, it is necessary to use a marker. This may be done by hand or with a horse, depending upon the area to be planted.

The seed for late tomatoes should be sown about two weeks later than recommended for the early ones. These should be transplanted once to four inches apart. The land for late tomatoes should not be too rich or vine will be produced at the expense of fruit. The leading varieties are Stone and Success. The former is the better for long distance shipping but is not so productive.

Sixty Tomatoes From a Plant

Editor, THE CANADIAN HORTICULTURIST: I had, last summer, an extraordinary crop of tomatoes. I was given one tomato plant by a friend, the seed of which came from California. I planted it in my garden along with other tomato plants. The products of the one plant were about as follows: The largest tomato weighed one pound, thirteen ounces, and the sixteen largest tomatoes weighed seventeen pounds. Sixteen others would average half a pound each. The balance were ordinary size. There were scarcely any that would be called small. The one plant produced about sixty fruits all told.

I saved the seed from the earliest and best of the fruit, and shall try again this year. I would like to hear from any one who can beat this from one single plant.—J. N. Colier, Hespler, Ont.

* A portion of an address delivered at a recent meeting of the Toronto branch of the Ontario Vegetable Growers' Association.

How to Grow Melons that Bring Big Money*

J. T. Gorman, Outremont, Quebec

WE prefer a light soil, and high ground so as to prevent water from getting underneath. Our hotbeds are six by twelve feet, three sashes. The seed is sown in a hotbed in the beginning of April in drills six inches apart, and when the third leaf begins to show, the young plants are

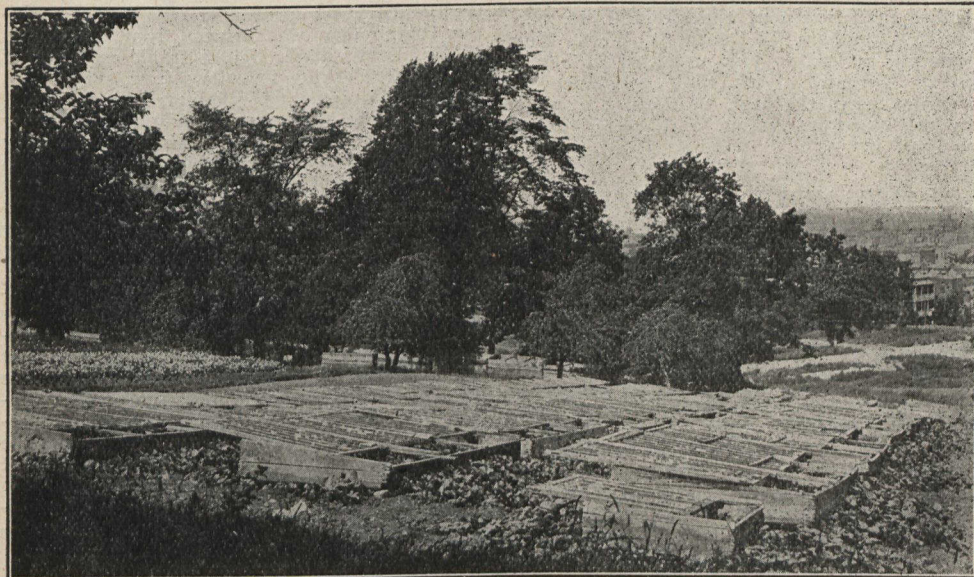
stopping that they receive. In planting, remove the pot carefully, place the plants in the centre of each light, leaving two or three inches of earth over the manure; pack the soil well around the plants, and water; this is the only hard watering that we give them. As they require it during the

to one side, and throw in sufficient earth to level off the beds. Repeat the same operation on the other side and train out the vines, pinching out the centre or top of each vine. This is the second stopping.

By this time, the space between the beds requires attention. This we dig or plow and level in such a manner as to have a fall to the centre between the frames. As the beds begin to fill with vines, they require to be let out. We take off the sashes, raise the frames about a foot, and train out the vines carefully, again pinching back the tops. This is the last stopping they receive. Place four blocks or flat stones, one at each corner, to receive the frame; this leaves a space of three or four inches and prevents the vines from being crushed. Replace the sashes and air as usual.

By this time, most of the melons have set, and as they begin to swell and net, they should be turned, not completely around, but just enough to relieve the part that rests on the earth and in such a manner as not to bring the exposed part in direct contact with the sun. This process of turning is very important and should be done at least once a week throughout the season. About a week or less, as near as we can judge, before the fruit begins to ripen, we remove the sashes and frames, store them away and train out any vines that may require it.

In marketing the melons, we are careful not to have any of them over-ripe.



Hotbeds Used by Mr. Gorman for Growing Melons

ready for potting. We use five-inch pots, two plants to a pot, and place or plunge them in another bed which has been made for the purpose. Care should be taken to shade them for two or three days to prevent wilting.

To the place where they are to be set out or grown, we give a liberal dressing of well-rotted manure and plow in, after which we dig the trenches; these trenches are made in rows twelve to fifteen feet apart, and eighteen to twenty inches deep, the same in width. When the time comes for planting out, say the first week in May, we fill these trenches with well-heated horse manure, packed firmly and level off to the surface of the soil. We then put on the beds or frames two or three feet apart in the rows, being careful to have the manure in the centre of each bed lengthwise. Next day, we fill in the earth. This we take from both sides of the frame and throw in the centre of each bed, right over the manure. If this work is done in the morning, they are ready for planting that afternoon, which is the best time to plant, about four o'clock.

Before planting we water the plants thoroughly and pinch out the top or centre of each plant; this is the first

season, we pull back the sashes for favorable showers, being careful to replace them the same evening.

Airing is also very important. This is done about eight o'clock every morning, closing down around five in



The Famous Gorman Melons as They Appear in the Field

the afternoon, so as to retain sufficient heat to do them over night.

When the plants begin to run, that is when the plants are from a foot and one-half to two feet long, they require earthing. To do this, we take off the sashes, remove any weeds that may have started, turn the vines over

To prevent this we go over the patch every morning, and should it be a very warm day, we place them in the storehouse in the evening and ship or dispose of them every day.

In the next issue an article will appear on growing tomatoes in pots.

* A portion of an address given at last convention of the Ontario Vegetable Growers' Association.

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January 1907	4,947
February 1907	5,520
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April 1907	6,460
May 1907	6,620
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Average each issue	6,627
January 1908	7,650
February 1908	7,824

Sworn detailed statements will be mailed upon application.

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We want the readers of THE CANADIAN HORTICULTURIST to feel that they can deal with our advertisers with our assurance of the advertisers' reliability. We try to admit to our columns only the most reliable advertisers. Should any subscriber, therefore, have good cause to be dissatisfied with the treatment he receives from any of our advertisers, we will look into the matter and investigate the circumstances fully. Should we find reason to believe that any of our advertisers are unreliable, even in the slightest degree, we will discontinue immediately the publication of their advertisements in THE HORTICULTURIST. Should the circumstances warrant we will expose them through the columns of the paper. Thus, we will not only protect our readers, but our reputable advertisers as well. All that is necessary to entitle you to the benefits of this Protective Policy is that you include in all your letters to advertisers the words "I saw your ad. in THE CANADIAN HORTICULTURIST." Complaints should be sent to us as soon as possible after reason for dissatisfaction has been found.

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THE CANADIAN HORTICULTURIST,
506-7-8 Manning Chambers,
TORONTO CANADA

EDITORIAL

CHANGE OF ADDRESS

Beginning with the April issue, THE CANADIAN HORTICULTURIST will be published in Peterboro. The change will ensure better service for our readers. Owing to a material decrease in the cost of printing and other expenses, we will be in a position to make improvements now that could not be accomplished until a later date were THE CANADIAN HORTICULTURIST to remain in Toronto. While the place of printing and the business and editorial offices will be in Peterboro, we will also have an office in Toronto at the old address, 508 Manning Chambers, 72 Queen St. West. Our friends are invited to visit us either in Peterboro or Toronto. With their assistance in the future, as in the past, we shall turn out a stronger, more interesting and better paper than ever.

THE APPLE SITUATION

The apple business of 1907-08 presents many interesting features and teaches some lessons. At present apples in storage for re-packing are being hurried out rapidly. The estimated 420,000 barrels in storage in Ontario at the beginning of the re-packing season, has dwindled away to less than half that quantity. The fruit has kept fairly well so far, but there is great danger of depreciation in keeping qualities for late holding, owing to that fact that large quantities of our best fruit were frosted while on the trees.

The prices realized during the past two months must mean disaster to some dealers. The wonder is, "How did it all happen?" Of course, as usual, there are some wise ones who say, "I knew it would happen," and "I told you so." It is doubtful, however, if even the wise fellows will profit by this season's experience, when July comes around once again.

While many causes contributed towards the bad results, the principal one is the fact that fully sixty per cent. of the crop could be classed as No. 2, or a lower grade. While under usual conditions only twenty-five to thirty per cent. of No. 2 grade, free from trash, will find a paying market in Great Britain, more than twice that percentage has gone forward this season, as well as thousands of barrels of absolute trash, marked No. 3. These shipments have completely demoralized the demand for the lower grades.

It is safe to say that twenty-five per cent., or at least 100,000 barrels of the apples that were placed in storage for re-packing, could be called nothing more than absolute trash. If the dealers had been given this stuff free of cost, at the prices it has sold for, they would lose more than a dollar a barrel.

The first crash in the market was caused largely by the fact that an oversupply of inferior and frosted fruit was rushed on the market. This gave the impression not only that the general quality was inferior, but also that the fruit was badly injured by frost.

Mr. A. McNeill, Chief, Fruit Division, Ottawa, reports that the apple situation is assuming somewhat serious proportions with the buyers in Nova Scotia. The returns in some cases are showing from 50 cents to \$1.00 a barrel less than the price paid for the fruit.

It is estimated that there are over 100,000 barrels still in store in the valley, including some rather poor stock. The Baldwins and Greenings are turning out very disappointing. The weather has not been favorable for keeping the apples in the best condition, and there will be a heavy shrinkage. The general price paid to growers in the fall was \$2.00 to \$2.25 a barrel, taking everything. While the market still may brighten considerably, both for Ontario

fruit and Nova Scotian, it is to be feared that it will not strengthen sufficiently to place the season of 1907-08 on record as other than a poor one for the export apple trade.

BETTER SERVICE NEEDED

The glaring indifference of the railway companies of Canada to the demands of fruit shippers for adequate facilities for transporting fruit rapidly and in good condition, has brought about the organization of the Ontario Apple Shippers' Association. By united effort through this organization, the fruit shippers of the province expect to secure better treatment. Following the organization of the association and recognizing at last the growing need of the industry for proper transportation facilities, a circular was issued from the office of Mr. J. W. Loud, freight traffic manager of the G.T.R., asking for views from shippers in regard to equipment best adapted for the handling of apples and other fruit during the winter season. The company is desirous of knowing what is the extent of the shipments of fruit to Europe, to the United States, to the west and to other points, and the type of cars that would give the best results. It is important that every shipper should assist in giving the necessary information.

The favorable attitude of the Board of Railway Commissioners towards the fruit shippers and growers when they met in session in Toronto a few weeks ago, would indicate that the board appreciates the serious position the shippers are placed in during the present winter, and intends to force the railways to provide at least reasonable equipment for the fruit traffic. It is up to the shippers to assist in every possible way the railway commission in securing evidence of actual cases of negligence and indifference on the part of the railways.

Since Prof. M. Cumming, Secretary for Agriculture for Nova Scotia, announced at the fruit growers' meeting in Berwick last December that the Government would pay a bounty of ten cents for every brown-tail moth nest found, valuable results have been had. During the Christmas holidays, one of the students of the Agricultural College found and collected nearly 400 nests near his home at Bear River, Digby County. The children of the Bear River school have found over 1,200 nests since the announcement of the payment of the bounty. It looks as if there still might be a good many brown-tail moths in Nova Scotia, but the payment of this liberal bounty will greatly reduce the number, if not completely eradicate the pest. The Government is to be commended on its action, and should continue the work until the province is freed of the pest, or at least, until there is no possibility of it gaining a dangerous foothold.

The establishment of a horticultural club at the Ontario Agricultural College, Guelph, is a movement that should give stimulus to the study and practice of horticulture at that institution. It will afford an opportunity for the acquiring of advanced knowledge that cannot always be had in the class-room. The social features of such a club, centred in a horticultural atmosphere, should play their part in making it a success. Only profit should come from such an organization, and it will if it is founded on enthusiasm.

The legal weights for vegetables in Canada are, per bushel: Potatoes, turnips, carrots, parsnips and beets, 60 pounds; onions, 50.

Orchard cultivation should be thorough. One of the best implements for the purpose is the disc harrow. Write for the catalog of T. E. Bissell Co., Ltd., Elora, Ont.

Montreal

E. H. Wartman, Dominion Fruit Inspector

For some time I have been visiting packing houses in and around Colborne. In all, about 100 packers are employed, which means that a lot of apples are re-packed daily for export. The quantity on hand for re-packing on Feb. 19, numbered about 35,000 bbls. One thing that puzzles me, and that is why No. 3 apples are shipped. I have just figured up the net returns on 1,210 bbls., various kinds, and can only credit the shippers with getting back nine cents a barrel for the apples. If one Liverpool firm sells this amount in 12 days, can we imagine the aggregate of 15 firms doing the same business and what the loss is to our country? The nine cents per barrel would not pay for re-packing them.

I find that apples are keeping remarkably well. Even when an occasional barrel of Snows are opened up, they are found to be in good condition. The varieties most in evidence are Ben Davis, Golden Russet and Spy. It is not likely that packing operations will end before April 1st in this locality.

New Brunswick

G. Bidlake, Fredericton

The annual meeting of the New Brunswick Fruit Growers' Association was held at Fredericton on January 24. In connection with the meeting was an exhibition of fruit grown by the members. Some fine specimens were shown, which were favorably commented on by Mr. G. H. Vroom, who acted as judge.

The president, Mr. J. C. Gilman, of Kingsclear, in his opening address, referred to the fruit crop of the past year, and said that, in spite of adverse weather conditions that had to be encountered, the crop gave ample evidence of being reliable and profitable in many sections of the province. The outlook has never been more encouraging for increasing their acreage of fruit than it is at the present time.

Mr. W. McIntosh, the curator of the Natural History Museum at St. John, gave an interesting address on "Insect Pests in Orchard and Farm," which was illustrated with large colored drawings of the various insects described. The bud moth, the codling moth, the aphid or green fly, the oyster-shell barklouse, the borers and the tent moth were fully dealt with and the several remedies for combatting them described. The brown-tail moth and the gypsy moth also came in for some attention on the part of the lecturer, who expressed his gratification that these two latter had not as yet arrived in New Brunswick, with the exception of one or two stray specimens which had been found and summarily dealt with. He advised his hearers to be on the lookout for any nests; those of the brown-tail moth were easily seen, being always at the end of a branch. The nests of the gypsy moth were not quite so conspicuous, as the female, not being able to fly, had to deposit her eggs in the most convenient place she could find.

Mr. S. B. Hatheway, Kingsclear, gave a short account of his experience as an amateur orchardist. Beginning some few years ago, he laid out an orchard of six acres, planting trees of the McIntosh Red, Gano and Dudley Winter varieties. He gave an interesting account of the system under which he went to work, but said he found the continuous cultivation which the young trees required rather costly. He was, therefore, on the lookout for some less expensive method of keeping down the weeds, and he thought he would follow the example of the president and lay a thick mulch round the trees. This method was much less trouble and expense. He made a practice of going round the orchard frequently with his clippers and taking off the shoots here and there, which made the training of the young

trees a much simpler matter. He would like to see more farmers taking an interest in orchard work, as it was certainly sufficiently profitable, if properly attended to, to make it worth while.

Vroom, Dominion Fruit Inspector, gave a practical demonstration on box packing. In an address on "Orchard Practice," he said that it was no use for a man to start orcharding unless he bought good trees, locally grown if they could be got, and of a variety suited to the district. Plant them 30 feet apart and head them low, as low-headed trees were more convenient for pruning, gathering and spraying. Pruning should be done in May or June, and at least half the growth should be cut off every year. Frequent cultivation was necessary, and it must be thorough, though it was not necessary to go very close to the roots, as they would find the requisite nourishment for themselves. Grass should not be allowed to grow too near the trees, as it harbored mice and other pests. Spraying must be done thoroughly. Mr. Vroom advised those who contemplated going into apple growing, to give their whole attention to it, or keep out. He thought the box business was the most remunerative; a good variety of apple nicely packed and the quality always to be depended on would soon get a man a reputation, which would find him all the customers that he could supply.

Mr. Isaac Stephenson, of Sheffield, was elected president; Mr. W. B. Gilman, vice-pres.; Mr. Henry Wilmot, treas.; and Mr. S. B. Hatheway, sec'y, for the ensuing year. It was resolved to adopt THE CANADIAN HORTICULTURIST as the association's official organ for the Dominion.

Nova Scotia

R. J. Messenger, Bridgetown

"Disastrous" is probably the best term to apply to the season's operations in export fruit so far. The trouble seems to have begun by one or more Americans who, hearing that we had an exceptionally good crop of clean fruit, came over early in October and paid \$3.00 for apples. This, and the Government reports of a small crop, set our speculators wild. They lost all control of themselves, and acted like a lot of schoolboys after a con. As high as \$2.50 a barrel was paid for apples as they came from the trees, and \$3.00 to \$3.25 for packed apples, something that no cool business man should do in this 20th century of great fruit production. Then the bottom dropped out of the English markets, and it will probably not get back into place again this year.

Numberless reasons for this unforeseen state of affairs have been given; such as an overrun of poor apples, larger shipments than ever before in spite of the early reports, fraudulent combines of dealers, and so forth. The fact remains, however, that apples, for which \$3.00 was paid, are netting 75c to \$1.00 a barrel.

The speculators are now acting characteristically, in that since fate has allowed the farmer for once to get a seeming advantage of them, they are trying to combine to compel the farmer to refund some of the purchase price. One heavy speculator has gone crazy for the second time in the past decade, and some are unsympathetic enough to say that it is his way of paying his debts. A meeting of these worthies was held at Middleton last week "for purposes of self protection," so it was given out, but more probably it was to get the foot more firmly planted on the neck of the "poor, stupid, unenterprising farmer."

One speculator said to me: "No more apples would be bought in this valley for anything near \$3.00 a barrel." He also said that \$1.00 a barrel was enough for apples, and "we" would see that the price was kept down to that or near it. I wonder if the farmers of Nova Scotia will submit to this when the remedy "cooperation" is in their own hands.

British Columbia

The annual meeting of the British Columbia Fruit Growers' Association was held at Victoria in January. The election of officers resulted as follows: Pres., Jas. Johnston, Nelson; 1st vice-pres., S. Bartholomew, Summerland; 2nd vice-pres., A. E. Gale, Keating; 3rd vice-pres., S. McClenaghan, Golden; 4th vice-pres., Thos. Wilson, Vancouver; sec.-treas., W. J. Brandrith, Ladner. Thos. Cunningham, W. J. Brandrith and Thos. Wilson were made honorary life members with all the privileges of membership. A resolution endorsing the action of the chief fruit pest inspector in connection with orchard cleansing, was unanimously passed. A resolution was passed asking the Government to make an exhibit of butter and fresh fruit at Calgary.

The reports of the president and secretary were filled with interesting information. They referred encouragingly to the progress of fruit growing in the province and the possibilities. The treasurer's report showed the association to be in a good financial position. It was decided to hold the next annual meeting also in Victoria. Agassiz was decided upon for the holding of the next quarterly meeting, Cranbrook for the second, and New Westminster for the third.

A Horticultural Club

The students of the Ontario Agricultural College, Guelph, who are most interested in horticulture, have organized a club through the efforts of Mr. A. McMeans, the Ontario Vegetable Growers' Association representative, and Mr. J. W. Crow, lecturer in the horticultural department. The aim of the club will be to encourage the study and the love of horticulture among the students, and to advance horticultural interests at the college. A reading room, to be accessible at all times, has been fitted up in the horticultural building, and in it, all the leading fruit, vegetable and flower papers will be kept on file. New bulletins will be on hand, and a bulletin board will be used to announce new books, valuable articles in the papers, good bulletins, and so forth. A very large majority of the horticultural publications have very kindly agreed to list the club free, and to them, the thanks of the members are heartily given.

Meetings will be held every alternate Monday for the discussion of all matters relating to horticulture. The first regular one was held Feb. 10, and to judge by the enthusiasm and optimism manifested, the club affords an opportunity for good work, and will be a valuable stimulus to the study of horticulture. Its possibilities for the encouragement of the pursuit of horticulture are great, and Mr. McMeans was accorded liberal applause on a live address outlining the place the club should, and could, occupy in the affairs of the college.

The officers elected were: Pres., A. McMeans; vice-pres., R. M. Winslow; sec.-treas., J. W. Crow, B.S.A. A committee of students of the first, second and third years was elected to give adequate representation. The paid-up membership totals twenty-seven, and this will be increased considerably in a short time.

High Class Sprayers.—Elsewhere will be found the advertisements of the Spramotor Co. Particular attention is asked from our readers to the sectional views of the Hand Spramotors on page 70. This machine in its several sizes has had such a vogue in Canada since the famous Spray Pump Contest held at Grimsby, where it was awarded the first place, that we believe we are safe in saying that there are more of this class of machines in use in Canada than all other kinds combined. Its use is so varied, being well adapted for all the uses in spraying, there being no operations in spraying to which a hand machine may be put that

it is not capable of doing. This style machine is adapted for fruit trees of all kinds, potatoes, mustard, painting. It is easy working, durable, and gives high efficiency. This machine is only one of many kinds. We recommend any who contemplate commencing spraying

for the first time, or those desiring renewals, to get the latest information of the Spramotor. They make a full and reliable line of Spramotors for all purposes, to be operated by hand, horse power and gasoline power. Their address is Spramotor, 1066 King St., London, Canada.

Each year will see a gradual advance in its value.

The possibilities of British Columbia as a fruit growing province are almost unknown. The trade is yet in its infancy. Land that can be purchased now for \$150 an acre will, with proper care, command \$1,000 an acre in 10 years' time.

The climatic conditions and the mountainous nature of the land lend themselves admirably to fruit growing. Other lines of agriculture are almost impossible in most of the fruit sections. In the future British Columbia will be known, as California is in the United States, as the greatest fruit producing province in Canada.—W.G.R.

Land Values in British Columbia

The fourth of a series of articles on fruit growing in British Columbia, written by a staff representative of The Canadian Horticulturist, who visited the leading fruit districts of that province

MANY intending purchasers of fruit land in British Columbia are surprised when they find the prices asked for orchard lands. It is difficult to convince them that there is a reasonable chance to secure a profitable return upon the investment required. Old rules for determining the value of an acre of land do not apply. The best method is to know what revenue the land will return to a grower.

Land suitable for fruit growing can be purchased from ten dollars to \$200 an acre. Some land is ready for the plow at \$150 an acre, while other land is being sold at \$150 an acre that will require an expenditure of from \$25 to \$250 an acre to clear. On some of the land near the coast the timber and underbrush is of such a tropical nature that, in some instances, it will cost \$300 an acre to clear it. Land east of the Chilliwack Valley that requires clearing can be put in shape at an average cost of about \$75 an acre.

There are several items of expenditure that must be considered by the purchaser when computing the price to be paid for land, such as clearing, irrigation (which costs on an average of \$2.50 an acre each year), taxes, transportation charges, distance from markets and

fencing. Ten acres of good fruit land can be purchased, cleared and planted with apple or peach trees, fenced and with an irrigation system constructed, for \$1,900. The cost of irrigating and cultivating the land, and spraying and pruning the trees for four years, would amount to \$800. Add to this \$500 for interest and taxes, and you have a net cost of \$3,200 for a 10-acre block of land at the end of four years. The crop of peaches picked from an acre of land in Peachland last season, in its fourth year, was sold for \$300. At this rate, the revenue to be derived each year after bearing, is nearly equal to the total cost of the land for the first four years. A well-cared-for orchard, at the end of five years, is considered to be worth \$600 an acre; at 10 years of age, \$1,000. The revenue to be derived from the land depends largely upon the individuality of the purchaser. Intense cultivation of the land in certain sections has returned a profit of from \$500 to \$1,000 an acre. Offers of \$1,000 an acre for bearing orchards have been made and refused. Land that can be secured at the prices that are being asked for good fruit lands in British Columbia is cheap, when the question of what the land will produce is considered. The prospects are that land never will be cheaper.

Practical Labor Savers



The Planet Jr. tools for farm and garden have an established reputation for quality as well as efficiency and they are popular everywhere. They are used as successfully in Egypt and other foreign countries as they are in all sections of our own land. They represent the most advanced thought and ideas in farm imple-

ments making, and hardly a year passes without the introduction of some new device or improvement to increase their usefulness to the man who tills the soil. The No. 4 Planet Jr., which is a combination of hill and drill seeder, wheel hoe, cultivator, furrower and plow, is the most complete tool a farmer or gardener can have on his place. With it he can do more work and keep things in better condition with one-fourth the work required without it. This is only one of

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Bartlett	Idaho	Ritson
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All strong, thrifty, $\frac{3}{4}$ inch Stock, grown on the choicest spots in the Niagara Peninsula.

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the many Planet Jr. combination tools—there is one for every farm and garden task whether for hand or horse-power—and all of them are sold with an iron-clad guarantee of absolute satisfaction. If you will drop a postal to S. L. Allen & Co., Box 1106G, Philadelphia, they will be pleased to send you one of their catalogs.

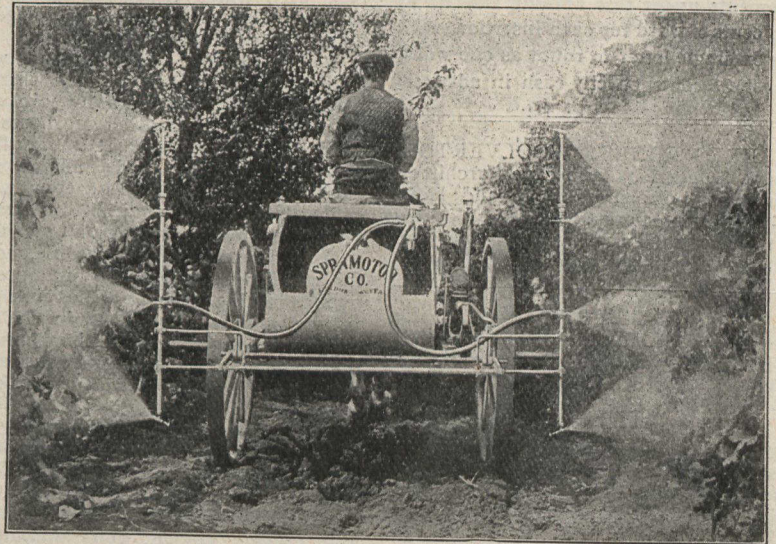
Our readers will be interested in a new spray nozzle that is being put on the market by the E. C. Brown Co., Rochester, N.Y. It has many exclusive features. It is adjustable and can be made to throw either a diffused or wide angle, bell-shaped spray or a concentrated one for long distance work. This is not the only advantage. Write for further information to the makers above mentioned.

A device that should find favor with the users of hose is the "Time Saving Coupler." These couplers can be adjusted instantaneously. The washer is situated in a recessed seat, and is protected by an annular shoulder, so that it is impossible for it to become displaced unless purposely removed for renewal. The wedge-like action of the lever brings the tip of the male section into such tight engagement with the washer, that there is no possibility of leakage, thereby saving force. This coupler is being manufactured by the Time Saving Coupler Company of Toronto. Their advertisement appears in this issue.

Peerless Apple.—Samples of the Peerless apple were shown at the Toronto Fruit and Flower Show in Toronto last fall, and attracted a great deal of interest. It was originated from a seed of Duchess, planted by J. G. Miller, near Faribault, Minn., and is exceedingly hardy and productive. The fruit is large and of good quality; color, a brilliant red on yellowish green

ground. Stem short and hangs on tree well. The Pelham Nursery Co., of Toronto, who are pushing its sale, have such confidence in this

variety that they are increasing their stock to 10,000 and will further increase same from season to season as the variety becomes better known.



This is a photographic reproduction of the latest model Horse Power Spramotor, fitted as a vineyard sprayer. A most excellent machine, worthy of your careful investigation. For vineyard, orchard, potato, mustard or surface spraying. If you are interested write me personally.

H. H. Heard, 1067 King Street, London, Canada
or 1067 Erie Street, Buffalo, N. Y.

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Plant Pelham's Peerless Apple



PEERLESS APPLE

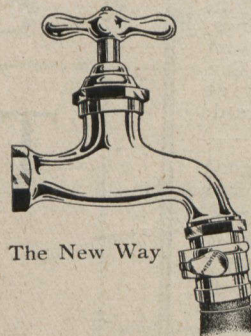
A big, hardy, red, winter apple that sells on sight. Also a full line of fruit and ornamental trees, rose bushes, small fruits, etc. Write for the catalogue that tells the truth. N. B.—Reliable agents wanted.

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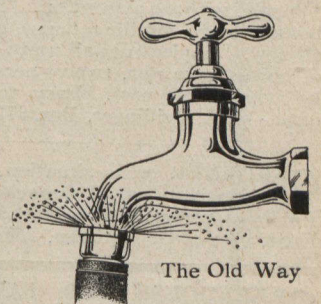
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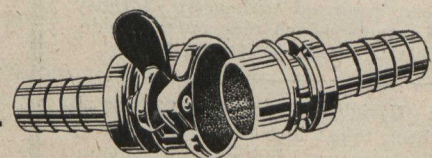


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A MILLION STRAWBERRY PLANTS for sale, not bought from dealers, but grown on my own farm last year. Fifty-five varieties. New Highland, Three W, Victor, Wonder, Thompson's No. 2, President, Morningstar, Abington, Almo, Governor Rollins, and others, and all the leading old varieties. If you want plants this year that will please you when they arrive, and please you better still when they fruit, order Downham's. They have pleased others and will please you. It will pay you to get my free catalog before you buy, ready to mail now. Raspberry and Blackberry plants, and Seed Potatoes. John Downham, Strathroy, Ont.

FRUIT GROWERS! Drain your land and double your income. This may seem exaggerated but it's a fact. Use Doyle's tile. Estimates given. R. J. Doyle, Owen Sound.

SEND YOUR ADDRESS for list of strawberry plants, also red and black raspberry plants and seed potatoes. R. C. Crysler, St. George, Ont.

FOR SALE, Six No. 8 Gurney Hot Water Boilers in good condition, suitable for private house or greenhouse work. Apply Stevenson & Malcolm Co., Guelph, Ont.

FOR SALE—400 acres in Russel Township, 70 good for orcharding.—W. G. Parham, Maritana, Que.

A FIRST-CLASS MARKET GARDEN for sale, with no opposition. Two large greenhouses, large dwelling house, stable buildings, all new. Implements all up-to-date, good team of horses, new rigs, twelve acres of land. Can be bought for cost. Easy terms. Apply at once.—J. A. Brillinger, Box 377, New Liskeard.

GARDENER seeks situation, ten years' good experience in all branches, in first-class English gardens. Excellent testimonials.—E. Fane, care of G. Ruthven, Alliston, Ont.

GREENHOUSE FOR SALE—Length, 42 ft.; width, 18 ft.; hinged double glass windows on each side, 5 top ventilators with floor stand and gear, equipped with a No. 3 Daisy boiler, and 6 run of 4-inch pipe on each side. Apply Box G CANADIAN HORTICULTURIST.

High-Class Upright Piano for \$225.00.—There have been taken into the warerooms of Heintzman & Company, Limited, 115-117 King Street West, Toronto, within the past few days, two upright pianos, very little used, and bearing the names of well-known manufacturers. One of these may be bought for \$225, and the other for \$250. It is an opportunity to get what is practically a new piano at nearly half the manufacturer's regular price.

Selecting a Spray Pump

When selecting a pump, one should not have in view the cheapest one that will do good work. Durability, capacity, ease of working, ease with which the parts may be gotten at and repaired or replaced, are other essentials that should be thought of.

A good pump for all-around work is the "Admiral." Its size is such that it can be used with equal results for orchard or field spraying, also for other purposes about the farm when necessary. It is of sufficient capacity to supply four leads of hose or two leads, each with two, three or four nozzles. For orchards not large enough to warrant the purchase of a power outfit, a pump of this capacity will be found very serviceable, as it is built for continuous work and high pressure. The cylinder lining is made of heavy seamless brass tubing, and is firmly held in the cylinder by threaded connections. This manner of securing the lining in the cylinder makes it possible to remove it when worn out and replace with a new one.

The valves are made of brass. They are so situated that each one can be readily reached by removing the valve covers. To do this it is only necessary to use a wrench, iron rod or stout stick. The piston rod is made of brass and outside guided, thus making it impossible to get any other than a perfectly straight thrust through the stuffing box. Many features that will be found valuable to the prospective buyer are to be found in this pump. Complete circulars describing the Admiral Spray Pumper will be supplied by the Goulds Manufacturing Co. of Seneca Falls, N.Y.

THE CANADIAN HORTICULTURIST is invaluable to people interested in the fruit industry.—C. H. Deakin, Manchester, England.

The Niagara Peninsula Fruit Growers' Association will hold a series of meetings early this month. The first meeting will be held in Grimsby on March 4, followed by others at St. Catharines on the 5th and 6th. Mr. J. H. Hale, of Georgia and Connecticut, the "Peach King," and Mr. W. W. Farnsworth, secretary Ohio State Horticultural Society, have been secured as speakers.

Prince Edward Island

Rev. Father Burke, Alberton

There is no snow here this winter to break down anything in the shape of trees, and unless these frequent thaws with rising temperature should conspire to hurt sap circulation too early there should be a good enough prospect of fruit in our orchard under usual conditions at blossomtime. We really require a good crop of fruit to put growers in proper fettle for their work. Lean years discourage tremendously.

There is more talk of wretchedly picked fruit this year than ever. This province has been the dumping ground for much of it—from Ontario and from Nova Scotia. I saw a barrel of No. 1 Spy (Ontario), a day or two ago, which really surpassed in rascality anything I had ever previously witnessed, and that is saying a good deal. That anyone could find courage enough to put up such a job on his fellow-man, was a marvel to me. But he should and must be found out and punished.

The plan for cooperation in buying here is now launched so far as nursery stock is concerned. The Fruit Growers' Association is sending out circulars to intending planters, guaranteeing the stock and the price and promising to have it delivered in proper condition. There should be considerable planting.

Inspector Bovyer is moving about examining the apple imports of the province, and he will have a tale to tell shortly which will not edify anybody too much as to the honesty of apple packers.

A Fair Spraying Proposition.—Test is the strongest argument. When a reputable firm like the Hurst Mfg. Co., of Canton, Ohio, offer to send a choice of three different sprayers with no money in advance, it means that there is value and honesty in the proposition. You can try one of their sprayers for 10 days, and then if you buy you can pay the cash, or they will wait until you sell your crop. All their sprayers are protected by a five-year guarantee. There are no strings to this offer. Their new free catalog will be sent to every applicant. It describes their spraying machines, and explains how one can get a Hurst Sprayer free. It contains their agreement by which any farmer or fruit grower can try their machines "without sending one cent."

CALIFORNIA OF CANADA

The Chilliwack Valley

BRITISH COLUMBIA

We have some of the choicest Fruit Land to be found in the Dominion of Canada, at half the price of California land, and which will give as good results. The soil is right, the climate is right, and above all an inexhaustible market. A post card will bring our 72-page pamphlet on Chilliwack free. For particulars write

Cawley & Paisley, Chilliwack, B.C.

BOX 294

Mention The Canadian Horticulturist when writing

Horticultural Societies Act

It is understood that at the present session of the Ontario Legislature some important amendments will be made to the Horticultural Societies Act along the lines recommended at the last annual convention of the Ontario Horticultural Association. In the address delivered by Mr. H. B. Cowan, managing editor of THE CANADIAN HORTICULTURIST, it was recommended that the Act be so changed that the horticultural societies would be allowed to hold their annual meetings during the first week in November, instead of in January as is now required.

In this direction it was pointed out that the enthusiasm of the work had not died out in November, and more interest would be taken, therefore, in the election of the officers for the following year's work. The election of directors in November would enable them to plan their work for the following year at an early date. Another benefit derived would be that the annual reports would be in the hands of the Government about the first of the year, enabling the society to receive their annual grants early in the year, instead of late in the summer, as has been the case heretofore.

Another advantage recommended was that the clause in the Act requiring that, on or before the first day of May, the officers of every society shall send an affidavit to the Department in regard to the past year's work, should be eliminated and embodied in the clause requiring that the annual reports shall be sent to the Government within one month after the annual meeting of the society in January. A third suggestion was that the clause requiring that the special grant of \$800 to the four city societies, which is divided among them in proportion to their membership during the current year, shall be changed so that the grant would be divided upon the basis of the membership of the preceding year.

These matters were discussed at the recent convention, and the advantages recommended were endorsed, and it is understood that Hon. Nelson Monteith will adopt the amendments to the Act accordingly. It is probable, also, that the clause which restricts a society by requiring that it shall not expend more than one-third of its funds in any one line of work, will be amended to read "not more than one-half of its funds."

At the time of the convention Mr. C. C. James, Deputy Minister of Agriculture, gave a very interesting address bearing on the Horticultural Societies Act. He said, in his address: "I do not know of anything definite that is not workable. It would be most extraordinary if a perfect act were to be worked out, one that would not permit of any amendments. The points brought out in discussion at this meeting will be taken into consideration." He said, also, that the societies must give good reasons for wanting to know earlier what their grants are to be, for as the question stood now, no good reason had been given. It meant a radical change in the basis of distribution of the \$8,000. He referred to the one-third clause and said if they wanted it out, he was quite willing to take it out, but it always seemed to him to be a clause worth keeping in. One member suggested that the one-third clause be changed to one-half, and Mr. James said that as far as the department was concerned, and as far as their relationship with the present society was concerned, they were quite willing to leave that with the members to work out for themselves. He then referred to the exhibition at St. Catharines, and said it would have been a most lamentable proceeding if any section of that act had been enforced to prevent the holding of that exhibition, for it was a rare treat.

NOTE—At the last moment before going to press, we received a copy of the proposed amendments to the Horticultural Societies Act. The suggestions mentioned in this article have been adopted in full and will be placed before the Legislature at an early date.—Editor.

The Lenox Knapsack

A concern of standing, and a good one, twenty-five years in the business—the Lenox Sprayer Co., 165 w. 23rd St., New York, makers of many kinds of spraying apparatus for the trade, and spraying material which the San Jose scale do not like very much—are offering the real Lenox Knapsack Sprayer, particularly adapted for use on small fruit, low trees, vineyards, shrubbery, strawberry beds, in the nursery, potatoes, tomatoes, cabbage field, the poultry house, and upon the stock and in the stable. An important fact about this sprayer is, it does not require every few minutes to stop to pump air—or to swear. It can really be used by a lady, as the work is so easy and so simplified; you fill up the apparatus, and it is ready to work until empty. The regular market value of the machine is about \$6.00. Even though a barrel pump is owned on the place, a Knapsack Sprayer is handy many times in a great many places where a barrel pump cannot be used. Even the unwilling working boy delights in using this Sprayer—the Lenox particularly so. The company, owing to being a little overstocked—*over-manufactured*—offer them duties all paid, at a great cut price, which makes the investment well worth the while. Particularly at the present sacrifice in price, even though the season is a bit late, it is a good investment in order to have it early next season. Anyone having but few trees, a cow, and a chicken house, should have one of these sprayers on the place. See their advertisement on page 68 of this issue.

Famous Okanagan Valley

PENTICTON IS THE HUB

Buy land in the valley that wins the gold medal for British Columbia. In the centre of the peach belt. Apricots, grapes, Yellow Newtown pippins, Spitzenbergs, etc. Lying between two lakes, Penticton enjoys both moderate summers and winters. Ben. h or bttom land, in lots from one acre upwards, unimproved, or in one, two, or three-year-old orchards. A fast growing town on a beautiful beach, with a nice community. The terminus of C.P.R. SS. Okanagan, and the connection in the near future with the C.P.R. main line through the Crow's Nest Pass.

Write, stating what you particularly want to

M. C. Kendall, Penticton

Okanagan Lake, British Columbia

PROVINCIAL CHEMICAL FERTILIZER CO.

St. John, New Brunswick

Limited

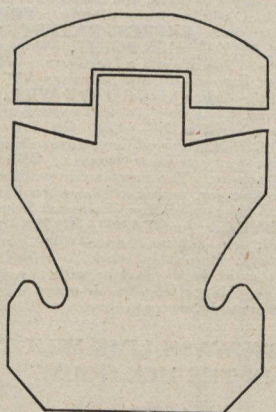
THE LARGEST MANUFACTURERS OF COMPLETE FERTILIZERS IN CANADA

IMPORTERS OF CHEMICALS

Live Agents Wanted in Unoccupied Territory

Mention The Canadian Horticulturist when writing

BATTS, LIMITED



Section of our No. 6 Bar and Cap

MANUFACTURERS OF

Cypress Building Material

Made only out of the best clear Cypress — 3 CENTS A FOOT

Suitable for Conservatories and VEGETABLE FORCING HOUSES

50 PACIFIC AVENUE

TORONTO JUNCTION

PHONE JUNCTION 427
LONG DISTANCE CONNECTION

Mention The Canadian Horticulturist when writing

Duties all paid by us.

SEND FOR IT TO NEW YORK

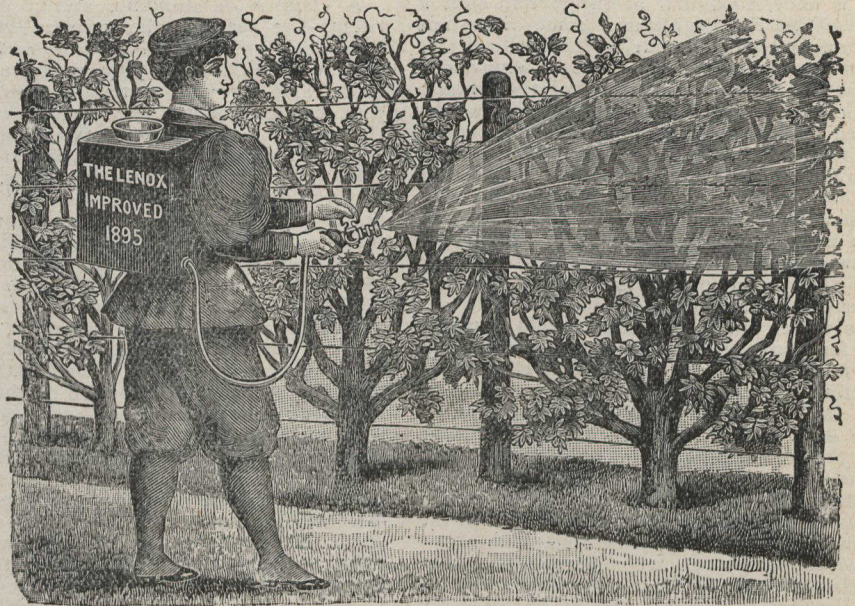
NEW YORK IS THE PLACE FOR IT!

We Are Overstocked

Sprayer \$4.00

We Pay the Duties Here

WE MUST UNLOAD



NO STOPPING TO PUMP AIR

YES!

You will get the regular \$6 LENOX IMPROVED SPRAYER for \$4. 2 for \$7, by sending for it to New York. BEATS THEM ALL, ALL IMPROVEMENTS. It will spray trees 20 FEET HIGH, holds 24 quarts, built of Apollo galvanized iron. Never rusts, never leaks; forcible and fine spray. DON'T TALK LONG. It will do your STRAWBERRIES, VINEYARD, GRAPES and all your small fruits, POTATOES, TOMATOES, CABBAGE and everything on your place. WHITEWASHING the hen house, cow stables, etc. A well-built machine, with care and if not abused, we will warrant it good for 12 years. Turn nozzle up, spray will reach all insects upon the ceilings in stables, breeding nests, in poultry houses, in all crevices and cracks, particularly THE UNDER SIDES OF THE ROOSTS, and between the HORNS OF THE COW, where most of the trouble comes from.

NO AIR PUMP BUSINESS. So easy A LADY CAN USE IT. NO STOPPING TO PUMP AIR or to SWEAR. Compress the bulb, you get your spray; stop your pressure and you stop the spray, on the principle of an engine PLUNGER pumping water, only much easier. By pressing and releasing the bulb, spray continuously reaches top of tree without artificial power. You can put your hand inside of sprayer to wash it out as easy as you would a milk can.



NO SWEARING

LOTS OF TIMES you can use a knapsack sprayer in places where you can not a barrel pump. While talking or hitching up the horses the work is done. Handy at any place. Even if you have a barrel pump you will use this one anyhow. Lots of times a patch off yonder ought to be sprayed, but won't pay to hitch up the horses. If this machine is handy John will sling it on his back and the spraying will be done while you are thinking. Send for our circular. YOU SHOULD KNOW ALL ABOUT IT. Or perfectly safe to send for the sprayer direct without waiting for the circular. A small can "Sure Destruction to San Jose Scale" sent free with each sprayer, if ordered at once.

A RECIPE issued by a chemist, how to prepare a sanitary lime milk for a whitewash that will stick and stay on the walls of the hen house, trees or stable walls, making insect breeding impossible. Anyone can make it cheaply and quickly wherever located. This recipe will be sent complimentary with each sprayer, if ordered immediately.

\$4.00
2 for \$7

Just Now!



BETTER MILK AND MORE OF IT



NO AIR PUMPING

REMEMBER this is the regular \$6 Sprayer we are talking about, but made too many, we would rather sell at \$4 than wait until season opens to get \$6. JUST NOW you can have ONE FOR \$4 or TWO FOR \$7, DUTIES ALL PREPAID BY US. Order before they are gone. Time counts. NO LENGTHY LETTERS necessary. We will know what you want—that you want one of these LENOX IMPROVED SPRAYERS, perhaps a couple of them, and that you want them quick, too; but give us your name and address very plainly. PROMPT SHIPMENT. Twenty-four hours delivery. EXPRESS RATES FROM NEW YORK LOWER THAN FROM ANY OTHER POINT. Newspaper people have known us for over 20 years. We are old advertisers. What we say WE DO, we DO-DO. You can discount all our promises AT YOUR BANK. We SAY we will pay all the duties here, SO WE WILL.

Remit by express or post money-order; no checks taken for this price. Go down to the POST OFFICE now while you are talking about it. You may get your Spraying Solution and the Disinfecting Mixture all ready. The expressman will soon drive up to your house with the sprayer, and it will be a good one, too, VERY WELL FIT even to take orders for, if wanted from neighbors THE LENOX IMPROVED is the STANDARD KNAPSACK SPRAYER, beats them all; you take no chances when you have a LENOX. You won't have to stop from work to take it to the machine shop to find out what is the matter with the air-pump chamber or the nozzle, or anything else. No air-pump nuisance in this case. Our Lenox is ever ready, never failing.

FINE FOR WHITWASH LIME MILK TO BE USED IN THE HEN HOUSE

CAN. LENOX SPRAYER CO.

165 West 23rd Street

New York City



PRESS THE BULB, THAT'S ALL



MORE EGGS

Mention The Canadian Horticulturist when writing

Iron Age Implements

A copy of the catalog issued by the Bate-man Mfg. Co., which manufactures "Iron Age" farm and garden implements, has been received. It is interesting to note that "Iron Age" tools and implements are the product of a factory that has been established for 70 years. In the early days, these tools were made and sold only in local territory. Of late years the firm has been sending them into every state in the Union, every province in the Dominion, to islands in the sea and to every foreign country where agriculturists are adopting up-to-date methods and using labor-saving implements. The quality of the implements and tools manufactured by this firm has increased with

FOR SALE—Parties desiring to purchase any of the cuts that have appeared in THE CANADIAN HORTICULTURIST, may do so upon reasonable terms. Apply to
The Horticultural Publishing Company
 Toronto, Ontario

CAHOON
 is the name of the most accurate and durable Hand Seed Sower on the market. Sows 4 to 5 acres per hour. Write for new booklet, "Sowing for Results" and 50th anniversary souvenir.
GODELL COMPANY
 95 Main St., Antrim, N. H.




ROOF RIGHT NOW

There is one roof that saves money because it will last 100 years. Guaranteed in writing for 25 years.

"OSHAWA" GALVANIZED STEEL SHINGLES

This roof saves you work because its so easy to put on (do it yourself with a hammer and snips), and save you worry because they fireproof, windproof and weather-proof the building they cover. Write us about it and hear all about 207 ROOFING RIGHT. Address

The PEDLAR People (Est'd 1861).
 Oshawa Montreal Ottawa Toronto London Winnipeg



BABY RAMBLER
 Ever-blooming Crimson Dwarf. Think of roses every day from June until frost out of doors.

The Central Nurseries

are supplying splendid value in Fruit and Ornamental Trees, Shrubs, Roses, Grape Vines, New Herbert Raspberry, Rykman Strawberry Plants in varieties. All well grown. True, dependable stock. Send for our Free Priced Catalogue. We ship direct to our customers with satisfactory results. Try us. 28th year.



Seed potatoes: Climax, Eureka, Eldorado, Peck's Early, Early King, Golden Coin and others.

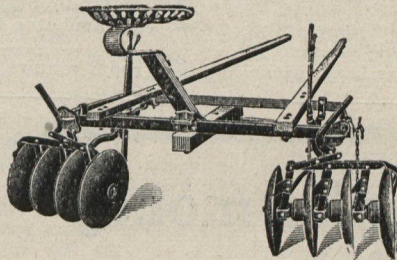
Poultry: R. I. Reds; none better; cockerels from \$1 up. Eggs in season.

A. G. Hull & Son, St. Catharines, Ontario

Mention The Canadian Horticulturist when writing.

The BISSELL ORCHARD DISK

A Reversible Disk Harrow which can be used in the In-Throw or Out-Throw form. Gangs can be set close or extended to reach under trees. Built in a variety of sizes for one or two horses, with immense capacity and the many good features of all Bissell Disks. Gardeners, Fruit Growers, Dairy Farmers, Wheat Kings, Ranchers, etc., find what they want in Bissell Implements.



Ask your agent to order for you or write direct to the manufacturers.

T. E. BISSELL CO., LIMITED
 DEPT. "N" ELORA, ONTARIO

None genuine without the name "Bissell."
 Mention The Canadian Horticulturist when writing

SELECTED SEEDS

GIVE SATISFACTORY RESULTS

Our Vegetable Seeds are of undoubted purity and produce abundant crops. Our Flower Seeds are true to name and of the highest germinating power. Sutton's Specialties are always in stock. We do not make up special collections of seeds and advertise \$1.00 worth for 50c. as specials. We give every customer \$1 worth of pure seeds for every dollar spent with us. A trial order will convince you that we sell only those seeds that are sure to grow. Illustrated catalogue sent free to those who wish to grow pure seeds. SEND YOUR NAME TO-DAY

DUPUY & FERGUSON

36 JACQUES CARTIER SQUARE, MONTREAL

Mention The Canadian Horticulturist when writing

Intending Planters

Of Nursery Stock Should Write Us for Prices at Once

SEND in list of stock wanted and we shall be glad to give our lowest quotations on same. Shipping season is close at hand and your orders should be placed without delay. Sales have been heavy, but we still have a large stock of fine trees of the leading varieties. All orders, large or small, will be given careful attention. We lead in quality and price. Send for Catalog. Our stock is strictly first class and guaranteed true to name. We pay freight and express; no extra charge for boxing or packing.

"Canada's Oldest Nurseries"

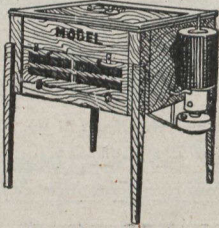
The Thomas W. Bowman & Son Co.
 Limited
 RIDGEVILLE, ONT.

Mention The Canadian Horticulturist when writing

the development of the business. A large list of all kinds of wheel hoes, seed drills, wheel plows and cultivators, and horse hoes and cultivators are listed in the catalog for 1908.

CHAS. A. CYPHERS' Model Incubators and Brooders

On my Model Poultry Farm I now have poultry numbering **80,000** hatched and brooded in my famous Model Incubators and Brooders. Buying your incubators and brooders of a man who knows nothing (or next to nothing) about hatching and raising poultry is running a useless risk. Don't do it.



I not only sell you a Model Incubator or Brooder, but I add to them the valuable experience of years as shown in their construction. Model Incubators show excellent hatches, hatch every hatchable egg. The Model Brooder grow sturdy chicks.

Send your order in to-day, and get in line with the profit getters.

Free catalogue for everyone.

THE MODEL INCUBATOR CO.
196-200 River Street TORONTO, ONT.

The "Iron Age" potato planter also is described and illustrated. This implement should be used more extensively by farmers and vegetable gardeners. It is a great labor saver and does the work better than it can be done by hand.

POULTRY DEPT.

Conducted by S. Short, Ottawa

In the February number of THE CANADIAN HORTICULTURIST reference was made to the growing popularity of the incubator which has become such a necessity to successful poultry keeping. It may be in order to enumerate some points wherein the incubator has the advantage in comparison to hens.

In the first place, the hen should never be set in the same pen with laying hens, for the layers will certainly lay in the same nest, and the result is usually one or more broken eggs, which necessitates the washing of the sound egg and a fresh nest to be made. To avoid this difficulty, it is imperative that the setting hens should be in a pen by themselves. Now the trouble begins. Rarely the hen takes kindly to her new surroundings, and great patience, perseverance and temper control are required before Bidy decides to do business at the new stand. With the incubator their trouble is overcome.

The hens in the hatching room require con-

stant watching, to see that they keep to their respective nests, that they do not foul their nests, for if so, as when they break an egg, the nest has to be made over and the eggs carefully washed; in some cases, a most disgusting piece of work. With the machine, this never happens.

During the incubation period the hens should be dusted liberally with an insecticide, to destroy the several varieties of lice which infest their bodies. No matter how faithfully this is done, the chicks are invariably lousy, and have to be treated for vermin every week or two during the first two months of their lives. The machine does not hatch lice as well as chicks, and therefore the chicks escape this, at times, a fatal evil.

Not more than 10 to 12 hens should be hatching at one time in the same pen. It will take more time in feeding and caring for these 10 or 12 brooding hens than one machine and 12 hens will, on the average, not hatch any more chicks than one machine of 120 eggs capacity. Nor is the cost of running the machine very much more than the feeding of the hens.

Any one who hatches by machine will have no trouble in rearing chicks by artificial methods. Brooders are made to resemble the hen as near as possible in providing warmth and light, in conjunction with good ventilation. Thermometers and instructions are provided with all brooders. Watch the one and carefully follow the other, that is, if the operator has had no previous experience. After a few successful trials it is time enough to go in search of original methods, which are expected to be improvements on those approved by the maker of the brooder. If the breeding pens are not now complete, they should be made so immediately, for it is essential to success, and only fair to the machine, that fertile eggs from healthy fowls should be used in the first trial of the new machine.

Fruit growers in British Columbia should be interested in knowing that the Harris Nursery Co. of Penticton, have in stock a general line of fruit and ornamental trees, small fruits and shrubbery.

A Piano for \$25.00.—In every sense of the word the sale of somewhat used, but not badly used, square pianos at Heintzman & Co.'s, Limited, 115-117 King Street West, Toronto, is sensational. The announcement has brought this firm orders from almost every corner of the Dominion. The determination is to clear out every square piano in the place between now and stock-taking, and surely prices like \$25, \$30, \$35, and \$40 will do it—in payments of \$5 down and 50c. a week.

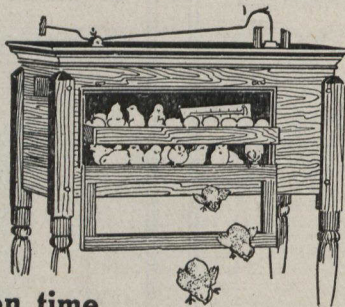


You can make money raising chickens—I know you can

I want you to write me to-day and say, "Send me full particulars of how I can make money raising chickens." Then I will send you my 1908 booklet on the Chatham Incubator, which is full of valuable information.

I will also send you a booklet giving the experience of Chatham users all over Canada—showing in actual figures what big success they have had. This will prove to you how easy it is to turn a very small amount of time into good money.

In the same mail I will give you



My special price, on time

I know that as soon as you get this information and my easy terms you'll want to start raising chickens at once. My booklet tells you how the Chatham Incubator is made—the sound lumber and honest workmanship—tells why it hatches more chickens than any other make. It also tells why I can guarantee my incubator for five years, and the strength of the Company that is back of that guarantee. Sit right down now, while you have it in mind, and send me a post card asking for my booklets and special price on time. To save time address my nearest office.

The Manson Campbell Co., Limited, Brandon, Man.
The Manson Campbell Co., Limited, Calgary, Alta.
D. Hammond, Box 194, Victoria, B.C.
Cote & Co., 6 St. Peter St., Montreal, Que.

Manson Campbell, President
The Manson Campbell Co., Ltd.
Dept. 82 Chatham, Ont.

I also have a shipping warehouse at Halifax, N.S.



This sectional cut shows why the Spramotor Hand Sprayer is so effective, simple and durable. There are more of these Spramotors in use in Canada than all others combined. See latest catalogue, free.

ADDRESS
SPRAMOTOR
1668 King St.
LONDON, ONTARIO

Mention The Canadian Horticulturist when writing.

Pear Blight

We Can Cure It

Our work has extended over a period of three years. Process and formula patented. Address correspondence to

Pear-Blight Remedy Co.

Vacaville California

Mention Canadian Horticulturist when writing

A Good Spraying Nozzle

Experience has fully demonstrated that a spray nozzle to-day, in order to best meet the strong, peculiar requirements of the up-to-date fruit grower, must possess the following principles:

It must be of sufficient capacity in order to do a way entirely with the usual cluster of fine nozzles. Its aperture and orifice must be sufficiently large to permit the passage of sediment. It must be free from sensitive, internal, movable parts that operate nicely when new, but stick when corroded. It must have no stems, horns or hooks to catch in the limbs; must not drip or drizzle. It must be so constructed as to insure long life, especially to prevent the boring effect by the heavy solution under pressure into the face of the body of the nozzle. It must produce the so much desired fine spray.

Many of the leading manufacturers are endeavoring to produce such a nozzle. Fruit growers should be cautious as to what they buy. The manufacturer should do the experimental work. We manufacture only a nozzle which is the original of this type. It is covered by several strong patents with others pending. It is the result of years of experimental work, costing thousands of dollars to perfect it. Thousands of the one pictured were used last season with best results. Its manufacturers and holders of the patents "Are Reliable."

Fruit growers may obtain this nozzle, post-paid, by remitting \$1.55 to The "Friend" Mfg. Co., Gasport, N. Y., manufacturers of complete hand and power spraying outfits. Their situation as it is in the heart of the Niagara fruit district; pioneers in the art as they are, building every part of their machines as they do, makes it possible for them to give fruit growers more for their money than any other manufacturers. They have a new ball shut-off which keeps the hands dry, price \$2.20 postpaid. Good inducements are offered to live Agents. Their new illustrated catalogue is free.

Mention The Canadian Horticulturist when writing

Shippers' Association

Letters respecting the organization of the Ontario Apple Shippers' Association and its purpose were sent by THE CANADIAN HORTICULTURIST to members of the executive. The following replies have been received:

Mr. E. D. Smith, M.P., Winona: "This Association will have my hearty cooperation. I thoroughly believe in associations of this kind and sincerely trust that we may be able to remedy many of the defects and short comings in the apple shipping business. There is a great deal to be done and it can only be done by the cooperation of all the shippers."

McWilliam and Everist, Toronto: "The association was formed for the purpose of trying to secure better transportation facilities both by railway and steamship lines. So far nothing definite has been done outside of discussing the best methods to take to secure these facilities."

Mr. M. S. Schell, Woodstock: "That the railroads have lamentably failed in giving anything like an adequate service in supplying cars and handling the same for the apple business is beyond question, and united action by shippers should compel a better recognition."

Mr. J. G. Anderson, Lucknow: "While it was doubtless the transportation question which called the association into existence, yet there are many other matters affecting the apple trade, which will no doubt receive careful attention. It is a lamentable fact that in many districts of the province, the proper care of apple orchards has been sadly neglected, and it will be the purpose of the association to promote a movement amongst apple growers in these districts to pay more attention to the cultivation, pruning, spraying and fertilization of their orchards. Then, again, the Fruit Marks Act, which has admittedly done some good, has some features which, in my opinion, are very bad, and it will be for the association to make such representations to the government as will secure the elimination of these objectionable features. These and many other matters affecting the apple trade present a fine field for useful work, and I look for good results on account of the formation of the Ontario Apple Shippers' Association."

The Popular Piano-Player.—The player-piano has stirred up any amount of enthusiasm in musical circles, if the many sales being made by Heintzman & Co., Limited, 115-117 King St. West, Toronto, are to be taken as a criterion. This firm have a very wide selection of player-pianos at terms of payment to suit almost any purchaser;

Altogether I regard THE CANADIAN HORTICULTURIST as very valuable to anyone interested in gardening.—T. H. Reddit, Principal High School, Barrie, Ont.

Big Potato Crop at Least Expense

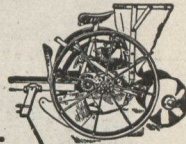
Write now for **Free Book** that tells how to increase your Potato Crop 40 to 75% and how to cut out **labor and expense** by using

ASPINWALL POTATO MACHINES

which cut, plant, cover, fertilize, spray, dig and sort potatoes. Practical Success guaranteed and proven by our 25 years' experience in potato machine building. Address Head Office.

Aspinwall Mfg. Co.
319 Sabin St.
Jackson, Mich., U. S. A.

Canadian Factory, Guelph, Ont., Canada



Okanagan-Grown Fruit Trees

D. Gellatly, Grower and Propagator of high-grade Fruit and Ornamental Trees, Seeds, Bulbs, Roses, Shrubs, etc. Send for Catalog.

DAVID GELLATLY, GELLATLY, B. C.

TREES PLANTS VINES SPECIALTIES PERFECTION CURRANT HERBERT RASPBERRY

Shrubs, Roses, Norway Spruce
Descriptive price list

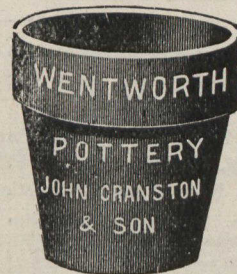
A. W. GRAHAM, ST. THOMAS, ONT.

"\$100" STRAWBERRY PLANTS

Highland, Hummer, Hundred Dollar, Abundance, 3 W's, Arnout, Evening Star, Ekey, Oak's Early, Golden Gate, Oswego, Saratoga.

150 varieties, including all that have proved of value. Send post card for prices.

E. B. STEVENSON, Maple Bank, GUELPH, ONT.



WENTWORTH POTTERY

Standard Flower Pots, Fern Pans, Hanging Baskets, Cut Flower Jars, and all Florists' Supplies.

Mail orders given prompt attention.

JOHN CRANSTON & SON
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Bulletin on Miscible Oils

Reviewed by Prof. W. Lochhead

Home-made Miscible Oils and Orchard Tests of Miscible Oils.—Delaware Agricultural Experiment Station, Bull. 79, by Penny & Houghton.—Horticulturists appear to be as anxious to find out some easily prepared and easily applied cheap substance that will control the San Jose scale, as the alchemists of the middle ages were to discover the Elixir of Life. The lime-sulphur wash does not satisfy them, for it is abominable substance to apply. For some years, efforts have been made to prepare a cheap miscible oil that will emulsify readily with water. The Delaware station has done more perhaps than any other in the line of experimenting with soluble oils. The kerosene-limoid (K-L) mixture was well received a few years ago, but the verdict is that it is not thoroughly effective against the scale. A more viscid oil than kerosene was needed. Accordingly, experiments were begun with the heavy oils, such as paraffin oil, crude oil, and rosin oil, and so forth.

The miscible oil was prepared by mixing (1) the soap solution with (2) the heavy oils. The soap solution was made by heating to about 300 degrees Fahrenheit in a large iron kettle: Menhaden fish oil, 10 gals.; carbolic acid (liquid crude), 8 gals.; caustic potash, 15 lbs; and adding to this hot mixture: kerosene, 14 gals.; water, 22 gals. This on stirring forms a uniform liquid which does not separate on standing, and which may be kept for months.

To make the miscible oil (Delaware formula 34, considered one of the best), the following proportions are used: Soap solution (as above), 9 gals.; paraffin oil, 40 gals.; resin oil, 6 gals.; water, 1 1/4 gals. These mix well when cold. This miscible oil is mixed with about ten parts of water for spraying purposes. Thus, the writers state, nine gallons of soap solution will make 35 to 50 gallons of miscible oil, and this in turn form 350 to 750 gallons of spray material, at a cost of about one cent to one and a half cent per gallon. This miscible oil can be used along with Bordeaux by adding from two to five gallons to a barrel of Bordeaux. Professor Houghton, the entomologist, tested the different miscible oils on scale-infested trees, and found them very effective.

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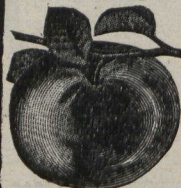
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Bargains in Fruit Trees, Vines and Plants

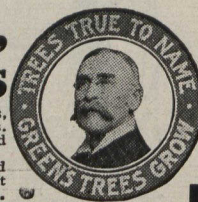


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Australian Laws

A letter from Australia, recently, was received by Mr. P. J. Carey, Dominion Fruit Inspector, Toronto. It contains information of interest. Extracts from it are as follows:

"Our Fruit Marks Bill has been formed on the lines of Canadian Act. There have been several new ideas worked into our bill. The first of these is that it deals with the retail shops, barrows, markets, stalls, and so forth. Another point is that it deals with the sale of potatoes and onions. I do not see any reference to retail trade in your bill. I found the drafting of clauses dealing with the retailers a matter of great difficulty. We have, in Victoria, a clique of growers who are always "agin the Gov'ment." They systematically oppose all fruit legislation and continue opposing it even after it has been proved that it is beneficial to their interests.

"Since receiving your letter, I have been lecturing on cooperation. I was called upon to do this at short notice and without any facts or figures to work upon as cooperation is almost unknown here. Thus you will see that I am awaiting the arrival of Mr. McNeill's bulletin on that subject with much interest. It is a difficult matter to handle an unknown subject, but I generally manage to fill in two hours' lecture and discussion. It is well known among members of our staff that we have a lot to learn from Canada and the United States in the way of handling fruit, but at the same time, little is known as to the actual methods pursued in the two countries mentioned. I would be much obliged if you could let me have any pamphlets or bulletins dealing with your system. I will be pleased to reciprocate in any direction if possible. Information on your "central packing house" system will be very acceptable.

"You asked in your letter for a copy of our Vegetation Diseases Act. I am enclosing same with much pleasure. You will observe that this Act deals with the diseases in the orchard and a small amending Act has since been issued pro-

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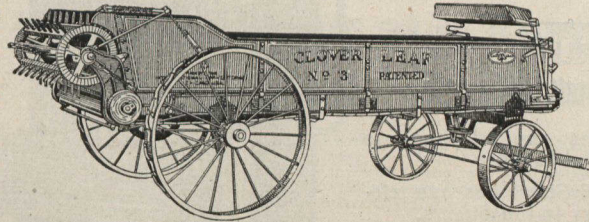
You will make no mistake in buying either one of these right working, durable I. H. C. spreaders.

I. H. C. spreaders are not built excessively heavy, but they have the strength required by such machines. The draft is as light as possible in any spreader.

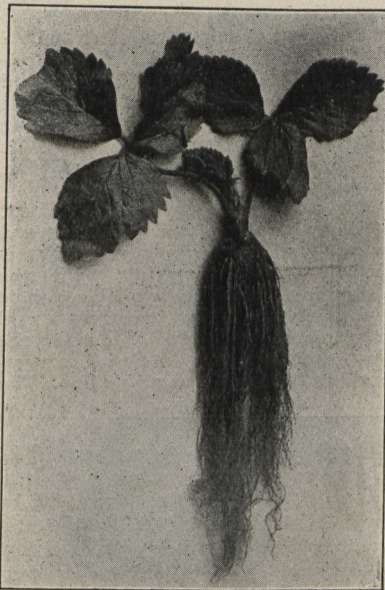
The machines differ in certain features, but each have good strong broad tired wheels, simple and strong driving parts, are easily and conveniently controlled, and do first class work with any kind of manure.

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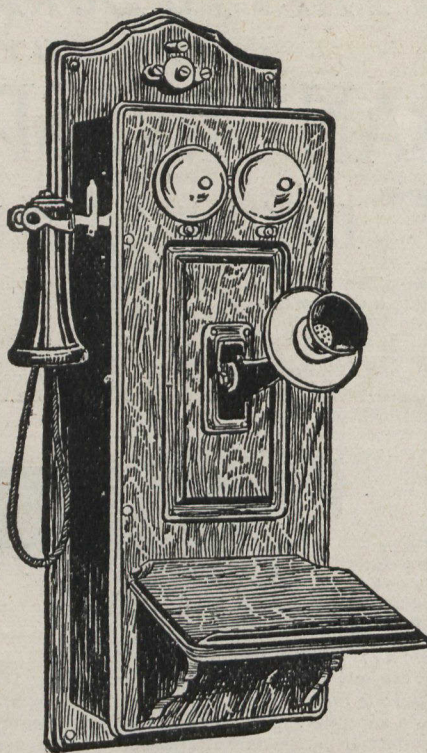
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WALL TELEPHONE, MAGNETO TYPE

hibiting the sale of diseased fruit. This has been found to be a very effective lever towards compelling the careless or indifferent grower to keep down disease in his orchard. There have been several regulations published from time to time, but as these are mostly directed against fruit from other Australian states and countries, I have not included them. Our minister of agriculture, Hon. Geo. Swinburne, read your letter with much interest, and quoted portions of it to the press when announcing his intention to bring in a similar bill. He was also favorably impressed with your Canadian system of publishing summaries of Acts in bulletin form, and has directed that such shall be done here in future.—J. G. Turner, Senior Inspector, Fruit Imports and Exports, Victoria."

Fruit in Kent and Essex*

In the district between Chatham and Windsor, on the line of the C.P.R., there is a large area of land that could be used profitably for the culture of fruit. The splendid possibilities of that section for fruit growing were pointed out at a meeting of the Board of Trade in Chatham, Ont., on Jan. 16, by Mr. James Osborne, General Superintendent of the C.P.R. for Ontario; Prof. H. L. Hutt of the O. A. C., Guelph, and Mr. A. B. Cutting of THE CANADIAN HORTICULTURIST. The kernel of the addresses brought out the fact that Kent and Essex counties should plant extensively of early fruits and vegetables. Climatic conditions, particularly the fact that the district is from 10 days to three weeks earlier in season than the other fruit sections of the province, warrant the assertion that Kent and Essex should plant with a view to capturing the market for early fruits.

Mr. Osborne spoke on the fruit growing possibilities of the district and on other topics of local and general interest. He pointed out that Chatham is exceptionally well situated as a fruit-growing centre. It has transportation facilities that can scarcely be improved upon. There are six railroads, one electric road and a waterway. Mr. Osborne was of the opinion that the members of the Board of Trade should stir up enthusiasm in the district. He referred, also, glowingly to the many industries in the city of Chatham, and to the natural resources of the surrounding country. All this went to show, he stated, that Chatham promises to be a large city. Mr. Osborne suggested the organization of a "100,000 Club." The tobacco and bean industries were mentioned and the great wealth that the district has in oil. Mr. Osborne promised the hearty cooperation of the C.P.R. in the development of the city and, in particular, of the fruit-growing industry of the county.

In the address delivered by Professor Hutt, he stated that there is no reason why Kent and Essex cannot do what the Niagara district is doing in the matter of growing fruit. With the excellent shipping facilities available, there would be no trouble in finding a market for all the fruit that could be grown. To make the industry pay it must be gone into with earnestness and not treated merely as a side line. The

The Popular Piano-Player.—The player-piano has stirred up any amount of enthusiasm in musical circles, if the many sales being made by Heintzman & Co., Limited, 115-117 King Street West, Toronto, are to be taken as a criterion. This firm have a very wide selection of player-pianos at terms of payment to suit almost any purchaser.

Buy an Organ for \$10.00.—The one hundred organs of well-known makers that Heintzman & Co., Limited, 115-117 King Street West, Toronto, are clearing at \$10, \$15, \$20, \$25, \$35 and up, are going like a fire on a windy night. These organs can be bought at these prices, in payments of 50c. a week.

*Lack of space crowded this report out of February issue.



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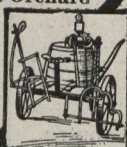
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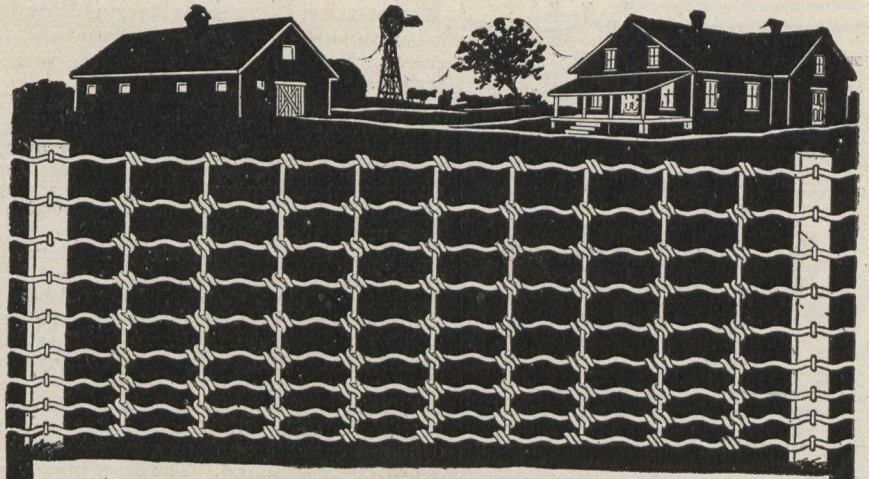
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professor pointed out the many advantages that the district has in the matter of soil, climate, and so forth, and he recommended measures for overcoming the few difficulties that might be met with. He said that Kent and Essex lie 50 to 60 miles further south than the Niagara district. This meant an early start and, as a consequence, the early fruit would capture the high prices that prevail at the beginning of the season. The planting of shelter belts was recommended as protection against prevailing winds. To get the growers of the district interested in developing the industry rapidly, the professor suggested that a series of meetings be held throughout the two counties. He pledged the cooperation of the Provincial Government and said that a speaker would be furnished for meetings where 15 interested persons would assemble.

Mr. Cutting dealt specially with the kinds of fruits that could be grown with profit. With the other speakers, he recommended the planting of early apples in preference to late varieties. The early apple industry could be developed with perfect confidence, because in these two counties, an advantage of one to two weeks in point of time is had over any other part of the province, even if contiguous counties planted early apples, but as these counties are not likely to plant them, the competition would be with the northern parts of Ontario where early apples are planted because they are hardy; over such counties, Kent and Essex would have an advantage of from three to four weeks. The great market for early apples is the west and there are also excellent facilities and opportunities for shipping them to the British markets. Among the varieties that should be grown are Duchess, Red Astrachan, Wealthy, Gravenstein, Blenheim, Pippin, Alexander and so forth. Bartlett and Kieffer pears do well. Sour cherries can be grown with profit. There is an excellent opportunity for the production of early small fruits, particularly strawberries, if grown in quantities sufficiently large to ship in carload lots. Grapes also can be grown on favorable soils. The planting of peaches should be done cautiously. Although they had been grown successfully near the lake and injured severely by recent cold winters, there is still hope, if particular attention is given to lessening the chances for root-killing and to combatting the San Jose scale. In this connection it was pointed out that the Provincial Government intends conducting experiments in the growing of peach varieties on plum roots, which are harder than those of the peach. The growth of the vegetable industry of the counties was referred to and it was pointed out that canning factories should be established at Chatham and other points. Mr. Cutting recommended the organization of a horticultural society in Chatham.

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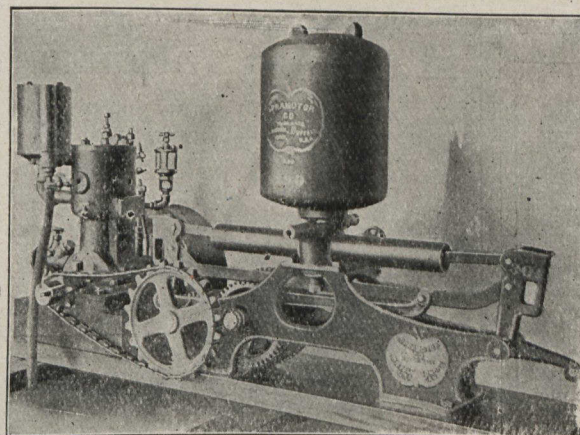
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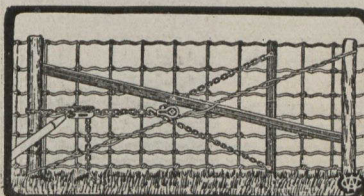


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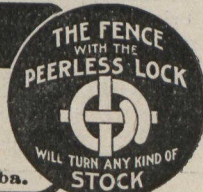
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Napanee Horticultural Society

At the annual meeting of the Napanee Horticultural Society, the officers of the preceding year were re-elected.

The meeting approved the action of the directors in offering to supply vines and decorative shrubs for any of the churches in town, adding the single condition that the church authorities undertake to take proper care of them. The Harvey Warner Park, which has been under the special care of the Society, will receive some additional attention during the coming year.

The spring distribution of seeds will be a generous one and will include the school children as well as the members. Prizes will again be awarded to the children producing the most satisfactory results.

The event of the evening was an address prepared by Mrs. W. H. Wilkinson, the first president of the society, and forwarded to the president from Switzerland. The descriptive powers of the writer found ample scope for exercise in portraying her experiences during the last 30 months in England and upon the continent, with special reference to parks, horticultural gardens and rural drives she had visited. The address was intensely interesting and was greatly appreciated by the members. The address was followed by "a question drawer," which proved attractive and instructive.

Seeds, fruit trees, plants, bulbs and so forth, suitable for British Columbia planting, are specialties of M. J. Henry, of Vancouver, B.C. In the catalog of this firm will be found many useful suggestions and a list of the most desirable varieties to plant in that part of the Dominion.

An excellent short course in fruit growing was held at O.A.C., Guelph, Jan. 28-Feb. 7. A report of same will appear in next issue.

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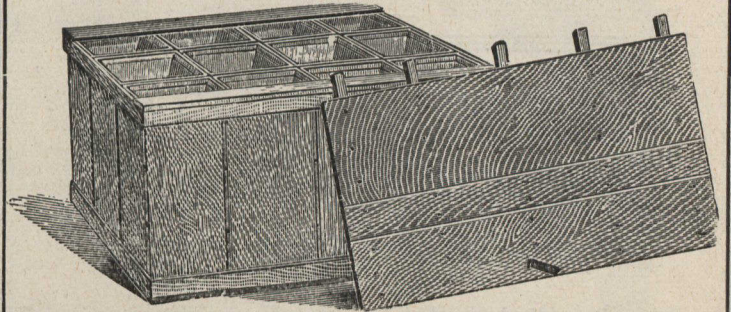
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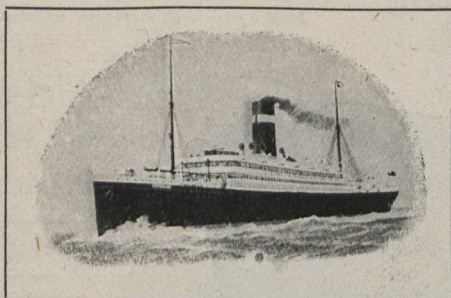
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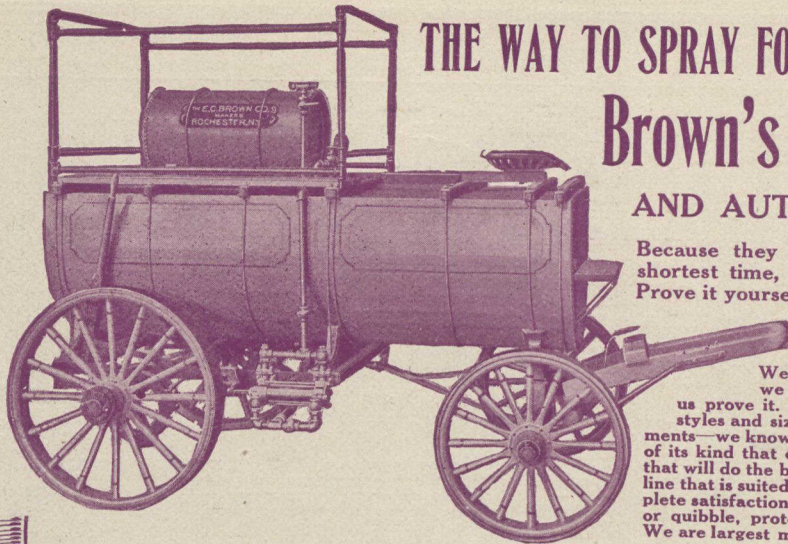
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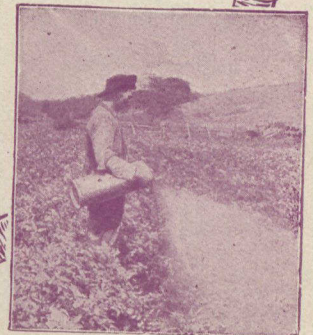
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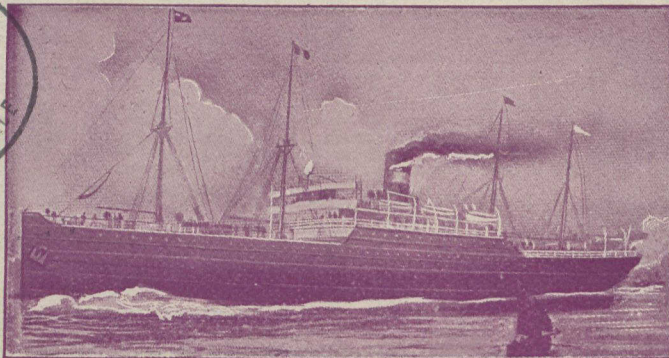
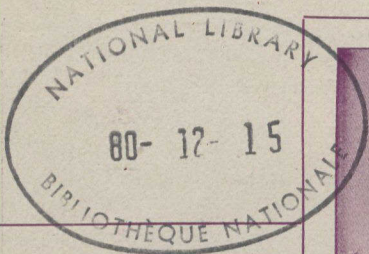
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