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## The Culture of Old Country Gooseberries

Wm. Dick, Echo Place, Brant County

I was in eighteen hundred and ninety-five that I first thought of growing gooseberries in Canada, but as I was told by everyone to whom I spoke concerning the matter that I would be troubled with mildew and would perhaps be unable to grow them, I started on a small scale. I sent to Scotland and obtained twelve plants. I met with such success with these that three or four years later I purchased about one hundred and ninety more plants from the same company. I received these plants late in the fall, and so was forced to wait till spring before planting them out. Nevertheless, I did not lose one. My method of keeping them over the winter was by putting them in the cellar and covering the roots with soil. Since this time I have grown my own plants for increase.

My patch is on a southerly slope; the soil being a heavy clay loam, which is naturally well drained. The last two features are essential to success. I once tried to grow some berries on light soil, but had poor results, being troubled with mildew. Good drainage is necessary for almost every crop, and gooseberries are no exception.

I plant the bushes so that the rows are five feet apart, and the bushes three

feet apart in the rows. I plant the bush as follows:

A hole is dug, and a considerable amount of well rotted manure is placed at the bottom. Soil is then spread over this, upon which the roots and root fibres are carefully spread out in a natural position. Soil is now spread over the roots and another layer of the manure put on and finally the hole is filled with earth. This method has given me the best results.

After the patch has been set out, I do not think that too much cultivating can be done from spring till fall. If the bushes are arranged as described, most of the cultivating can be done with a horse, so that the work is materially lessened.

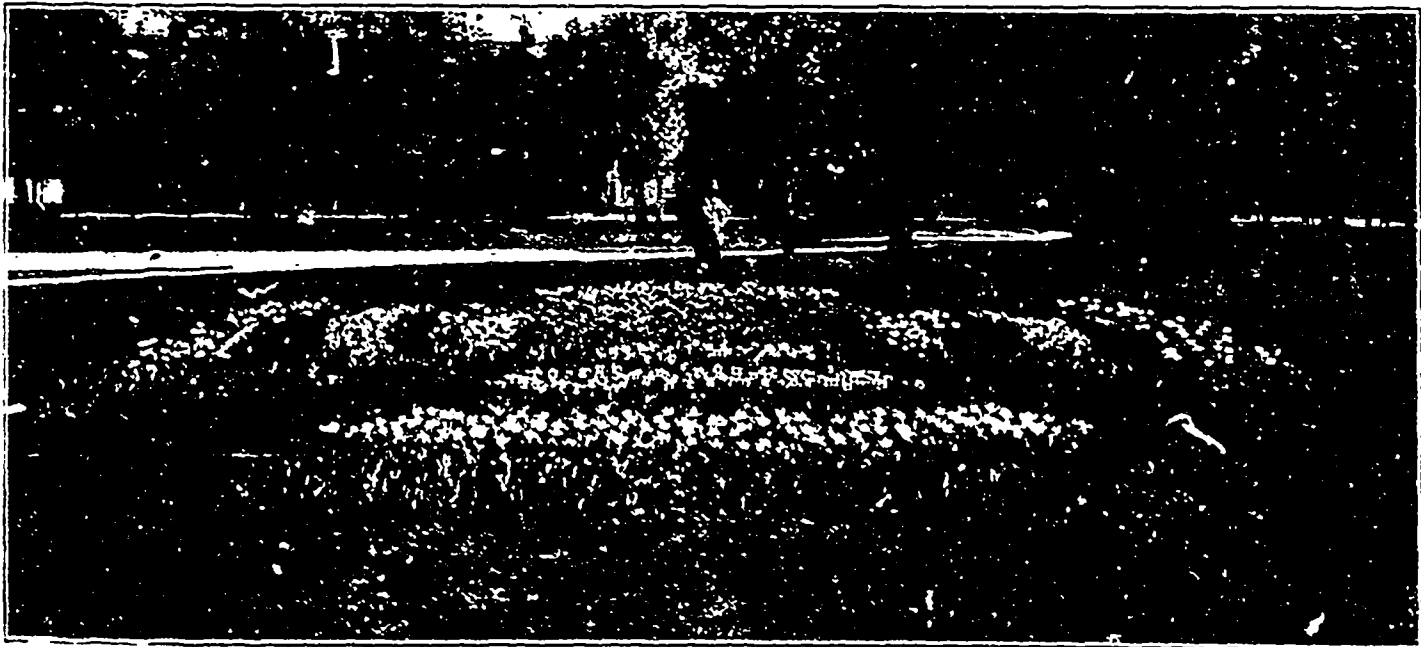
### PRUNING

It is best to do all the pruning in the fall. All the old wood should be removed except when the new growth has not been sufficient to warrant this. I consider that it is best to prune so that four shoots are left, each one coming directly out from the roots, thus giving the bush type of plant. This form, I think, is better than the tree type, in which the shoots are allowed to come from a single stalk, which alone comes from the roots. In the former all the old wood can be

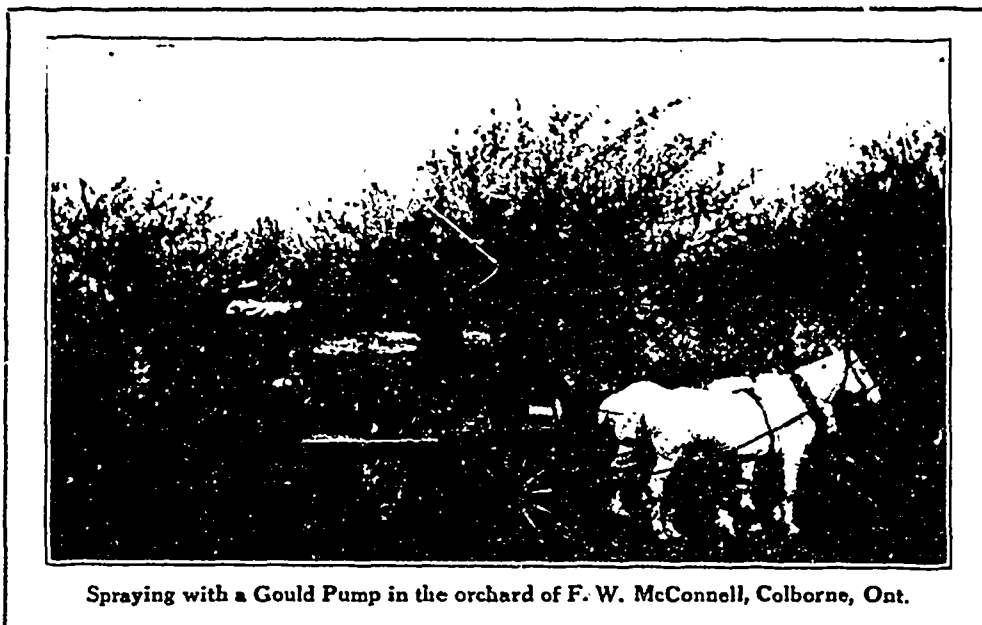
removed while in the latter the old stalk has necessarily to be left. The advantage of this is readily seen when it is remembered that the largest and best berries grow on, and are produced by, the new wood.

Fall is the best time to carry on the work of propagation. The method which has given me the best results is as follows: The year's growth, which it is desired to use for this purpose, is laid down upon the ground, covered with manure and then with soil. This causes roots to grow where a bud would otherwise have appeared. These roots are now cut off with a fair length of the wood, and the whole is then planted. If the propagation work is carried on late in the fall no shoots appear until spring, which does not give as good results as doing the work early in the autumn.

Let me again emphasize that I believe it absolutely necessary that gooseberries should be grown on heavy, well-drained soil. Following the methods I have outlined, I have met with gratifying success and have never been troubled with mildew. The berries have been not only delicious in flavor, but have also been of such a quality as to stand shipping. This is indicated by the fact that I have



[Spring's Welcome Harbingers of the Gladsome Summer. Fine Tulip Beds in the Normal School Grounds, Toronto, Ont.]



Spraying with a Gould Pump in the orchard of F. W. McConnell, Colborne, Ont.

sent them as far as Boston and Montreal with complete satisfaction.

It might be of interest to mention that last season was my best. Some idea of the heavy yield I obtained may be gained when it is stated that within a distance of about eight inches on a branch, enough berries could be picked to fill one's hand. Also one berry, the largest I ever grew, was four inches in circumference. I attribute this exceptional yield to the cool weather of the spring and the abundance of rain throughout the summer.

I cannot give the names of all the varieties with which I have experimented, as these number about sixty; but I can give the names of thirteen which I

can confidently say will give good results under the conditions described.

These are: Soutar Johnny, Plunder Green, Hit or Miss, Stella Yellow, Postman White, Haunham's Industry Red, Careless White, Stockwell Green, Clayton Red, Lord Dudley Red, Lancashire Lad Red, High Sheriff Yellow, Golden Purse.

It would be hard to draw any comparison between these varieties, but I believe that Postman White, Haunham's Industry Red, and High Sheriff Yellow have given me the most satisfaction. As I would like to see more engaged in this branch of horticulture, I will give any further information that I can to anyone who is interested.

## Further Facts on Fertilizers\*1

J. B. Dandeno, B.A. (Queens), A.M., Ph.D. (Harv.)

**I**N continuing the discussion on fertilizers, I have but one aim, namely, to give information to the tiller of the soil. Referring to Mr. Emslie's statement, "I still maintain that the theory of plant excretion, in its bearing on soil fertility, was long ago discredited," and also to Mr. Innes' statement that "the use of fertilizers is no longer baffling," let me give a few quotations. Bul. 77, "Soils," U.S. Dept. Ag., 1911, p. 3: "The action of fertilizers on soil is a much contested question, but the weight of evidence is against the assumption that their effect is due altogether to the increase of plant food." Also (referring to plant excretions), Bul. 57, 1912, p. 69: "The results of these investigations show clearly that the soil contains compounds beneficial to plant life as well as compounds injurious to proper plant development," and further, "The know-

ledge that harmful organic compounds exist in soils, plays so prominent a part in plant life, is of fundamental significance in soil fertility and gives a breadth of view to the subject, which, in its horizon, can not be compared with the restricted vision imposed by the purely mineral considerations." In Bul. 194, p. 108, U.S. Dept. Ag. (Lipman), is this statement: "Future research will teach how the bacterial flora is affected by crop rotation. We shall learn many an instructive lesson to turn to good account in crop production. There is for each soil a condition of highest bacterial efficiency."

Quoting from Mr. Innes: "Most certainly the value of a fertilizer which is primarily a source of plant food does not depend on its own biological characters." It certainly does depend upon its bacterial flora. What would a load of stable manure be worth if sterilized? Very little. And its value does not depend on its so-called "food." Mr. Innes

does not seem to appreciate the fact that there is a number of species of bacteria (other than those on legumes) that extract nitrogen from the air, and increase the nitrate contents of the soil. The biological characters are of the utmost importance.

Also Rep. O.A.C. Exp. Union, 1911, p. 45 (Prof. Harcourt): "I would strongly advise using these (artificial fertilizers) in a small way at first so as to demonstrate whether they can be used with profit or not." In Farmer's Bul. 245, U.S. Dept. Ag., 1907, p. 16. "The fertilizer requirements of different soils and crops in different seasons are so little understood that we are not yet in a position to make positive recommendations that are of general application."

These quotations are from soil experts and show clearly that excretions of plants are highly important factors in soil fertility, and that the problem of fertilizers is by no means a settled one, as Mr. Innes seems to think.

Mr. Emslie raises the point that the Geneva test is an isolated case. In a sense it is, because there has been none to compare with it. Life is too short to obtain many such. There is none in America on orchards, aside from this, that is worth much. But I should prefer one experiment where all the conditions were guarded than one hundred of the average tests.

### SOME TESTS

But let me give you a few results that are not isolated cases, taken from Bul. 67, U.S. Dept. Ag., 1910:

Oats—One thousand four hundred and eighty-three tests, for over forty years, twenty-five different States, twenty-three kinds of fertilizers, arranged singly, in combination of two and of three or more. Cost of fertilizer taken into account but not cost of applying: average loss per acre when fertilizers applied singly, two dollars forty-six cents; when in combination of two, loss one dollar sixty-five cents per acre; in combination of three or more, loss is six dollars fifty-four cents; organic fertilizer (tankage, etc.), loss five dollars fourteen cents per acre. Price of oats estimate at forty-seven cents per bushel.

Hay—One thousand two hundred and sixty-three tests, arranged as for oats and at nine dollars a ton; fertilizers singly, loss per acre, one dollar ninety cents; in twos, loss one dollar forty cents; in threes, loss twenty dollars seventy-two cents; organic fertilizer (tankage, etc.), loss five dollars fifteen cents.

Alfalfa—Forty-two tests, price ten dollars a ton; average loss per acre for three or more, sixteen dollars forty-eight cents.

Rye—Fifty-four tests; one fertilizer.  
(Concluded on page 92)

\*This article was written for publication in the March issue, and, therefore, is not intended as a reply to the article on fertilizers that appeared in that issue.—Editor.

# The Renovation of Old Neglected Orchards

R. S. Duncan, B.S.A., Port Hope, Ont., District Representative for Northumberland and Durham Counties



Spy Tree in Mr. Nickolls' Orchard Before Dehorning

**I**n the spring of 1911, four orchards in the counties of Northumberland and Durham, which had been very badly neglected, were taken in hand for a period of three years to be treated according to the best orchard practices. The idea was to see whether the "old orchard" on the farm could be made to pay; if not, what would be the use of fruit men talking of rejuvenating the neglected orchards? The orchards were situated near the main road, where they could be under observation throughout the season, so that the results of the demonstration could be noted.

The orchards selected and which now have been managed for two years, were those of F. W. McConnell, Colborne, with one hundred and seventeen trees on a sandy loam soil; W. G. Noble's, Port Hope, one hundred and thirty-five trees on a clay loam soil; and Nathaniel Nickoll's, Welcome, seventy-two trees on clay loam soil. In West Durham we were forced to abandon the orchard of James Stanley, Bowmanville, owing to the C.P.R. running their line diagonally through the orchard. The orchard of W. H. Gibson, Newcastle, comprising one hundred and forty trees, was selected in the spring of 1912.

These orchards were planted some thirty or forty years ago, and had been utterly neglected as to pruning, cultivation, fertilization, and spraying—in

fact, they had never been sprayed, and hence the quality of the fruit was very inferior, the percentage of number one's varying from thirty to sixty per cent. Some of the orchards were "lousy" with oyster shell, bark louse, and the limbs were fast dying back owing to neglect.

Two of these orchards had been in sod and had never been ploughed for years. Manure was applied as a light dressing every few years, depending upon the supply.

The orchards were properly pruned, not very severely the first year, the operation being more a thinning out of the dead wood and a thinning out of the top. Cuts of one and one-half inches



The Same Tree After Dehorning

diameter and over were painted with white lead and raw linseed oil to assist in the healing of the wound and prevent the entrance of fungus spores which might cause decay and disease. The rough, loose, shelly bark was scraped off the trees to facilitate spraying operations.

The orchards were measured at the rate of ten to twelve loads of farmyard manure per acre, in one instance the manure being supplemented with commercial fertilizer.

In Mr. F. W. McConnell's orchard, Colborne, we suggested that two hundred pounds muriate of potash and four hundred pounds acid phosphate be applied per acre. The fertilizer respond-

ed on this light soil, and together with the nitrogen in the manure we got a good wood growth, which was quite lacking.

All the orchards were ploughed early in the spring, and received thorough cultivation up to the end of June when a cover crop of red clover, at the rate of twenty pounds per acre, was sown in Mr. McConnell's orchard; red clover in half of Mr. Noble's orchard at twenty pounds per acre, and hairy vetch in the other half at the rate of thirty pounds per acre; and a mixture of red clover, alsike, timothy, and oats in Mr. Nickoll's orchard. All the cover crops made a fairly good growth—the red clover probably giving the best results.

The orchards were sprayed very thoroughly three times as follows: First, before or as the leaf buds burst, with commercial lime-sulphur, one to ten, to control oyster shell, bark louse, and leaf blister mite. Second, just before the blossoms opened or as pink was beginning to show in the leaves, with commercial lime-sulphur, one to thirty-five, with two pounds arsenate of lead added as a poison for forty gallons of the mixture. This is to control apple scab, caterpillars, case bearers, cankerworms, bud moths, etc. Third, immediately after the blossoms fell with commercial lime-sulphur, one to forty, with two pounds arsenate of lead added per forty



A Spy Tree Three Months After Severe Dehorning

gallons mixture to control codling moth, apple scab, curculio, etc. Our methods of spraying were described in the last issue of *The Canadian Horticulturist*.)

The results obtained in 1911 were in striking contrast to the small and indifferent crops yielded in unsprayed and uncared for orchards of the same locality. The quality of the fruit was exceptionally high—the percentage of number one's being raised from thirty to sixty per cent. in 1908, 1909, and 1910, prior to our having charge, to eighty-two to eighty-seven decimal six per cent. in 1911. Further, ninety-eight per cent. of all the apples packed in these orchards was absolutely free from any insect pest or fungus disease.

Mr. McConnell's orchard at Colborne gave a net profit per acre of two hundred and twelve dollars and eighteen cents; Mr. Noble's at Port Hope, fifty-seven dollars and eighty-three cents; and Mr. Nicholl's at Welcome, one hundred and ninety-five dollars and twelve cents; while Mr. Stanley's at Bowmanville shows a net loss of twelve dollars and sixteen cents. The latter can be accounted for by the fact that the orchard was situated on a clay knoll with a gravelly subsoil. The year 1911 being exceptionally dry, the fruit suffered very severely from lack of moisture and cultivation, which was not very thoroughly done. Further, it was an off-year for this orchard, particularly the Baldwins and King's, which constituted two-fifths of the trees.

The orchards were again pruned—more severely this time—in 1912. Some very tall trees were cut back, or "dehorned," to use a popular expression, some five to twelve feet. The cuts were painted as before with white lead and raw linseed oil.

The orchards received a coating of ten tons of barnyard manure per acre, and the orchard at Colborne was again treated to the same application of potash and phosphate. The green crop was ploughed down early in the spring and the orchards kept well cultivated up to the middle of June, when another cover crop of clover, hairy vetch, and buckwheat was sown at practically the same rate per acre as in the year previous. The orchards were sprayed three times very systematically and thoroughly—using the same materials as the year before, and spraying at the same time.

Despite the poor year, as far as price is concerned, the returns per acre might be considered good. Mr. McConnell's orchard gave a net profit of one hundred and eight dollars sixty-three cents per acre, less than half of the net returns of 1911, yet the number of barrels was increased slightly. Mr. Noble's orchard gave forty-eight dollars fifty-six cents net profit per acre, and the number of barrels was increased from one hundred

and thirty-one in 1911 to one hundred and sixty-seven in 1912. Mr. Nicholl's orchard gave ninety-four dollars eleven cents, less than one-half of the net profit made in 1911. Mr. Gibson's orchard resulted in a net loss this year, the explanation of which is given below. These orchards were steadily going backward prior to our having charge. Owing to the aphid attacking the fruit during the past season, the percentage of number one's was not quite so high, varying from seventy-five per cent. to eighty-six decimal eight per cent. Calculating from our figures, we find that it will cost the grower on the average about sixty dollars to care for his orchard per acre per year. This includes pruning, spraying, manuring, cultivation, and cover crop, but of course does not include rent nor interest on investment. According to our figures, the average net return per acre for the three paying orchards, under two years' treatment, was one hundred and nineteen dollars ninety cents.

"The old neglected orchard pays."

### Further Facts on Fertilizers

(Continued from page 90)

loss per acre, one dollar fifty-one cents; in twos, loss one dollar eighty-five cents; in three or more, loss five dollars twenty-one cents.

In the bulletin mentioned are many other crops, some showing loss, some a gain; some showing increase, but not enough to prove of profit, and some profitable. What the farmer or fruit grower wants to know is, Does it pay? From the above facts and the quotations given, it can easily be seen that my contention at first is well sustained, that the problem is still baffling.

Mr. Innes' article is too "wordy" to do much harm. He takes one hundred and seventy-six lines of space and two diagrams to say that slaughterhouse products are less soluble than the mixture of pure chemicals, as if that had anything to do with the question. His article looks as though paid for by the word by some packing house. I don't say it is, but it looks like it. His definition of plant food is laughable, he says, "Plant food may be defined as manure," that definition should be tacked up in the barn as the limit for puerility. But what is manure?

If fertilizers are so uncertain, then what is the farmer to do to keep up the productivity of the soil? By cultivation and cultivation, by draining, by green crops, by using stable manure, spread very thinly, a given amount of such manure is worth double as much when spread evenly and thinly. And lastly, by using clean chemical fertilizers experimentally at first and afterwards more extensively when the farmer knows the individual requirements

of his fields and how the crops respond. Even then he ought to figure out whether it will pay. Fertilizers have proved beneficial here and there and occasionally profitable.

The slaughterhouse fertilizer I would not use at all, and for three reasons—first, they are vile smelling and nasty; second, they contain much that is of no value at all; third, the chemicals they do contain that are supposed to influence plant growth can be more cheaply bought and handled when obtained pure. As they are ready mixed, the farmer is deprived of testing experimentally the ingredients separately.

Let me give two instances of the use of such material in this locality last season. One man bought sixty-two dollars fifty cents' worth, and said he could not see as it had done any good at all. Another bought fifty dollars' worth and applied it in strips as a test, and as a result said he might as well have thrown his money into the lake. The names of these men could be given if necessary.

Mr. Emslie states that my reference to oxygen acting as a catalyser is ambiguous. Not at all, if one knows the meaning of catalysis, and I explained it by reference to other substances. His reference to the formaldehyde theory is out of place, because it does not belong to the fertilizer problem at all, and it is particularly out of place because it never was much of a theory, and was abandoned about fifteen or twenty years ago by plant physiologists (see Pierce's *Plant Physiology*, p. 61). If a man drags in irrelevant matter he should see that it is sound.

The action of chemical fertilizers is found now to be largely one of catalysis, and not "plant food." Such material may increase productivity without entering the plant. Such substances as carbon black, ferric hydrate, toluene, and even such inert substances as sand, have actually promoted growth without, of course, entering the plant. This gives a new meaning to the use of fertilizers. Mr. Innes' article might easily have been written twenty years ago for all it shows of modern research on soils.

As to Mr. Emslie's denial of giving a definition of "plant food," let the reader see this journal, December, column two, line thirty-seven; and to his denial of using the word "hash," see line thirty-six. I call his bluff.

In conclusion, let me say that I should be foremost to recommend fertilizers if I could do so with certainty of profit. If the farmer finds a fertilizer of any kind that proves profitable, by all means let him use it.

In my quotations, I refrained from giving results of my own researches and also from giving results in Germany or France. Those that I gave can all easily be verified.



A Productive Orchard Near Grimsby, Niagara District, Ont.

## Methods of Successful Pear Growers\*

Allan G. Bland, Ontario Dept. of Agriculture

**L**AST summer I visited a number of the larger pear growers in New York state in order to learn something about their orchards, methods, and how they were dealing with pear blight. While there are many neglected orchards in the state which are positive eyesores and of no commercial value I also visited orchards where almost the last word had been spoken on the subject of good care. I should like to outline the way in which pears are grown on a couple of these farms.

Mr. L. I. Morrell, of Kinderhook, has some one hundred and seventy-five acres in fruit and has made a special study of pear growing, especially of Keiffers. The varieties he grows are Bartlett, Secke, Clapps, and Keiffer. The soil is a sandy loam and was in very poor condition when he bought it. Since then he has built up the land until at present it is in excellent condition. In one block he has two hundred and twenty-eight Keiffer trees nineteen years old, which are in great shape. In the early spring he sends a man through these Keiffers to prune back all the branches to old wood; that is to say, he removes all last year's growth. This causes the trees to make a very vigorous growth each year, although they are not allowed to get any larger. Fruit spurs are developed all along the main branches of the trees and a heavy set of fruit is the result.

Every year he applies a mulch of tobacco stems around his trees at the rate

of twenty-five pounds to the tree, which costs him twelve dollars a ton by the car. Besides this he plows in a cover crop every year which consists of a mixture of rape, clover, and vetch. Added to the tobacco stems, and cover crop, he applies a commercial fertilizer of 4% N. and 18-20% phosphoric acid. Mr. Morrell is absolutely convinced that commercial fertilizers are necessary in order to get the best results. He cultivates about every ten days from the early spring to the middle of June. Last year he sold all his pears at an average of four dollars twenty-five cents a barrel, including Keiffers.

The trees are planted twenty feet apart, and he estimates that for the past five years his Keiffers have averaged between three and five barrels. Mr. Morrell has blight in his orchard, but is doing all he can to control it, and feels confident that he will succeed. The application of fertilizers and his system of pruning are the most noticeable features of Mr. Morrell's method of handling his orchard. The amounts used seem heavy, but for twenty years he has been experimenting and now feels convinced that he cannot do with less.

Mr. B. J. Case grows Seckel, Bartlett, Keiffer, and Duchess, and has had very good success. Although he does not believe in as severe pruning as some growers recommend, he has his orchard gone over every year and a certain amount of pruning done. He cultivates and uses cover crops of clover, and has

done so for years. It may be of interest to give his returns for the past few years. Mr. Case has kept strict account of all expenses on his farm and can tell his exact profit on every crop each year. In 1906 he netted one hundred and forty dollars an acre from Bartletts. In 1907, one hundred and forty-one dollars; 1908, seventy-three dollars; 1909, one hundred and six dollars; 1910, forty-four dollars; 1911, sixty-seven dollars; making an average net profit of ninety-five dollars an acre a year from this block of Bartletts.

Taking these two places as illustrations of many others we must admit that they seem to show that good culture is necessary in order to make pears pay. If heavy crops are to be expected, the trees must have plenty of available food and must be in a vigorous condition.

## Investigation Work on Peaches\*

Prof. L. Caesar, Provincial Entomologist, Guelph, Ont.

In order to eliminate the danger of the trees that are being experimented on to find the cause of peach yellows and little peach contracting disease from other trees of the district, I am arranging to carry on a series of experiments in a section of Norfolk county several miles from where any peach trees are growing.

Moreover, as the degree to which the nurseries spread the disease is very important, I am planning next year (1913) with the cooperation of Mr. Biggar and the other inspectors, to accumulate data on this point.

Whatever time I had left after performing the experiments this year, was largely devoted to studying more closely the various symptoms of the diseases, helping the inspectors to recognize them and holding demonstration meetings in various sections. These meetings were well attended.

On my invitation, Dr. Duggar, who, as I have mentioned, is investigating the cause of Yellows and Little Peach, visited the district and spent nearly three days with Mr. Biggar and myself studying the various symptoms of Yellows and Little Peach, and other matters of interest in different parts of the Niagara District. I have heard from Dr. Duggar since his return home, and he says he feels more confident than before of ultimately getting to the root of the trouble. During his visit, he suggested a few ways of investigation that I hope to take up next year. Mr. McCubbin, of the Botanical Department, of Ottawa, has started to study these diseases. I look for much help next year from his cooperation.

Investigations, however, will not cure

\*Extract from an address delivered before the last annual convention of the Ontario Fruit Growers' Association.



**A Combination Raspberry-Strawberry**  
See descriptive article on this page

these diseases, and I cannot urge too strongly upon peach growers the necessity of destroying promptly every diseased tree in their orchards whether marked by an inspector or not. I regret to say that while this is being done conscientiously in some districts, in others the growers, even some of the leading men, are very careless and indifferent and doing little or nothing towards encouraging thorough work in their districts.

### A Raspberry-Strawberry

Eight years ago Mr. J. E. Hopkins, of 35 Kippendavie Avenue, Toronto, started an attempt to produce a fruit that would combine the desirable qualities of the raspberry and strawberry. For two years he worked, and there was very little to show for it, but at the end of four years there was a little bloom, and the plant began to assume the shape of a bush. At six years the bloom again appeared, and a small, half-matured fruit appeared, but never developed or ripened.

Last year, about August the first, the fruit began to appear plentifully and hung in great clusters on the bushes, and later matured and ripened.

The bushes are about eighteen inches

in height. The branches have thorns similar to the common garden raspberry, but the bushes are unlike the raspberry, as they have branches more like a tree. The leaf resembles the strawberry leaf, except for a deeper marking where the veins are and probably a little greater length than the strawberry leaf.

At first sight the fruit looks like overgrown raspberries, but it has not the number of seeds that there is in the raspberry. The outside of the berry is smoother than the raspberry, and the color is more of a brilliant red. The flavor is a mixture of both the raspberry and the strawberry, and the shape of the fruit is something like that of the raspberry. Mr. Hopkins has several hundred plants, and already has been offered a considerable sum for them.

Two years ago when I had an order for five barrels of No. 1 apples I could not fill it out of thirty-five acres of orchard, and had to go out and buy them. Last year I sprayed three times, once with lime-sulphur and twice with Bordeaux, using three pounds of arsenate of lead to fifty gallons, and obtained ninety per cent. number ones. —L. Wolverton, Grimsby.

### Window Boxes

H. Gibson, Fergus, Ont.

For many city dwellers the window box is the only substitute for a flower garden. Many out-of-town residents also are glad to bring the beauty and fragrance of the garden a little closer to their daily round of duties. Many a time a tired woman who could not find time or is too weary to visit the garden, is refreshed and cheered by lingering for a moment over a flower in the window. Even the poorest in our cities can bring a little of beauty and brightness into their lives by having a few flowers in a window box which can be constructed so cheaply that all can afford it. Therefore the growing of flowers in boxes should be encouraged everywhere and especially among the poorer classes, to whom the possibility of a real garden is a thing not to be dreamed of.

#### MAKING A WINDOW BOX

The lumber of a window box should be cut the length of the window sill, about a foot wide and from ten to twelve inches deep. The price of lumber should be no barrier to anyone wishing to have a window box. The local grocery store might furnish a box free that with very little trouble could be converted into an ideal article for this purpose. When finished it should be so secured that it cannot fall or be blown down by the wind.

Before commencing to plant anything in the box a number of small holes should be bored in the bottom to drain off surplus water. Over the holes place pieces of crock, (i.e., broken pots) to prevent the soil from clogging. Use good sweet loam, to which has been added a liberal sprinkling of bone meal. Place the rougher parts of the compost over the crock, cover the earth with a thin layer of moss or hay, and then fill up to within an inch of the top with the finer soil. The moss serves the double purpose of retaining moisture, and preventing the finer particles of soil from working their way down to the bottom of the box, and there clogging the drainage.

Among plants best adapted for cultivation in window boxes are geraniums, in variety, fuchsias in variety, begonias, petunias, heliotropes, lobelias, nasturtiums, plumbagoes and pansies, for flowers; German ivy, hysimachia and moneywort for trailers.

For foliage plants, the following will meet most requirements: Dracaenas, coleus, Solleroi geranium, ferns in variety, aspidistra and achyranthes.

The begonias and pansies will thrive where there is a great deal of shade. The petunias and nasturtiums, too, will furnish both flowers and foliage, and the latter is not at all particular whether it is trained up the sides of the window or allowed to droop over the side of the box.

# Flower Gardens of Walkerville\*

W. H. Smith, Secretary Walkerville Horticultural Society

THE beauty of a town or city is determined not so much by the gardens of the rich who employ professional gardeners as it is by the gardens of the working people, the men and women who cultivate and watch with loving care the plants they them-

selves have planted and who thereby gain pleasure and recreation. If this article, therefore, encourages others to make their surroundings more pleasant, it will have achieved the object for which it was written.

There are so many flower gardens in this town it was hard to pick out the ones considered the best. Gardening in Walkerville is encouraged by Messrs. Hiram Walker & Sons, Limited, who issue their own prize list. They offer prizes for owners, and prizes for tenants, and contribute about four hundred dollars in prizes for general appearance, shrubs, blooming plants, roses, climbing vines, and other similar classes. The Walkerville Horticultural Society is also doing its share by giving a liberal premium list and encouraging citizens to keep their boulevards graded and mown.

man who cultivates it was a novice at gardening two years ago, and it shows what can be accomplished when once you are interested.

## A RIVAL GARDEN

Figure three shows the garden of Mr. Montrose, a next door neighbor of Mr. Humble. There is a friendly rivalry between them; of hanging baskets, tubs of boxwood, tripods with their baskets, clematis (*Jackmanii*), and border of coleus, geraniums, salvia, petunia, balsams, and begonias, all edged with lobelia.

## THE AUTHOR'S GARDEN

The residence of the secretary of the Walkerville Horticultural Society is shown in illustration number four. The border around the verandah contains mixed annuals, bulbs and plants—a medley of plants, balsams, geraniums (the Nutt and Mme. Barney in the majority), petunia in striped effect, canans (the King Humbolt), and a liberal scattering of gladioli, some caladium nodding their large ears on the corners, while celosia, the Castle Gould, lend gracefulness with their plumes of orange, pink, and red—the whole thing being edged with ageratum, *cobaea scandens* climbing around the pillars and openings of the verandah, while swinging from the openings are hanging baskets containing the usual trailers, vinca, thunbergia, lobelia, geraniums, petunias, fuchsias, and others.

The back garden, of which a glimpse is shown, is bordered with English privet three feet high and two and a half feet in width, trimmed flat, the top being level from one end to the other.



The Front Garden of Mr. Humble's Residence. No. 1

A RIOT OF BLOOM

Illustrations one and two show the front and back gardens of Mr. Humble, Lincoln Road. There is a riot of color in the border of geraniums, begonias, coleus, salvia, and lilies. The window boxes, vieing with the border, contain vincas, Black-eyed Susans, dusty millers, col-

mondi, gladiolus, and morning glories trailing from the shed. Can you picture to yourself the wondrous beauty of the many blossoms? This garden should be of interest to many, because the gentle-

man who cultivates it was a novice at gardening two years ago, and it shows what can be accomplished when once you are interested.



The Garden in the Rear of Mr. Humble's Residence. No. 2.

\*Just when going to press it was found necessary on account of lack of space, to leave out the descriptions and illustrations of a couple of gardens. These will be published later.—Editor.





The Garden of Mr. Montrose, a Next Door Neighbor of Mr. Humble. No. 3

In the centre of the garden is a large bed of cannas edged with caladiums (elephant ears), further back is a perennial garden containing hollyhocks, hibiscus, crimson eye, tritoma pfitzerii, larkspur, and columbine, peonies, perennial phlox, foxglove, sweet william, and dianthus. Mixed through these, gladiolus are planted, also nicotiana, petunias, and phlox drummondii.

#### THE ROSE GARDEN

Facing the south are hybrid tea roses, which bloom all summer. The varieties of roses which do the best with me are Gruss an Teplitz, Madam Caroline Testout, Dean Hole, Killarney, Jules Grolez, Kaiserin Augusta Victoria, Madam Ravery Etolie de France, and Richmond. Facing the east are the hybrid perpetual roses, Frau Karl Druschki, Paul Neyron, Alfred Colomb, General Jacqueminot, Magna Charta, Marshall P. Wilder, Margaret Dickson, Prince Camille de Rohan, Ulrich Brunner, and J. B. Clark; the later rose in the hybrid perpetual class because that is where it belongs, although some class it with the hybrid teas. There is nothing to warrant it being placed there except its foliage and fragrance, the flowers are of enormous size, the buds pointed and perfectly formed. This rose should be grown by all rose lovers.

Did space permit, I might give detailed descriptions of Walkerville's many other lovely gardens. Nothing less than a visit, however, can reveal half their beauty. Such a visit the readers of The Canadian Horticulturist are invited to make in order that they may learn why it is that Walkerville has become noted

for its attractive homes and alluring streets.

#### Cold Frames

R. S. Rose, Peterboro, Ont.

Having got your seeds in order, look up your hot or cold frame. Now is the time for getting them in readiness.

For those who have not used either frames, a few words of how to make one may be of use.

A cold frame is used to keep off cold winds, to keep the ground clear of snow, and also to increase the feeble heat of the sun in the early spring days.

The construction of the frame is simple. Anyone can knock one together. Make the back board, say, twelve inches high, and the front board eight inches, so as to give the frame a slant. The standard size is three feet by six feet. Of course you can make the frame any size to suit yourself. Set it up in a sheltered, well drained position, as near the house as possible.

#### NO HEAT USED

A cold frame is a frame with a sash, but no other means of heating. Fill the frame with soil to within six inches depth in front and nine inches at back. Make shallow drills, three or four inches apart across the face of the soil; sow your seeds; cover thinly; then press down gently, but firmly, or rather evenly. Water moderately with a fine watering can. Put in the sash or glass window. Keep everything snug and warm until seedlings appear. The glass may then be tilted up at one end so as to allow fresh air inside the frame, that the young plants may become sturdy. As the plants get stronger, the glass can be removed during the day time, if the weather is warm, but always cover up during the night. If the weather gets frosty cover the glass with an old blanket or straw litter, in fact anything that will protect the delicate seedlings.

#### USE FLATS

I prefer to sow my seeds in flats or small shallow boxes, with holes in the bottom for drainage. I find that the boxes give me more satisfaction, for this reason, some seed germinate faster than others. Those that come along the fastest can be removed to more light and allowed more fresh air, and the ones that take a longer time can be kept by themselves.



Residence of Mr. W. H. Smith, Secretary of the Walkerville Horticultural Society. No. 4

# The Rose and How to Grow It\*

James M. Hull, Hamilton, Ont.

THE amateur is sure to encounter difficulties in growing roses. If, however, their culture is once commenced, it will be found hard to give it up, as their attractions become more and more fascinating as the years go by.

Start in the right way by selecting an open situation, with shelter, not too near

having become dried out before planting.

Puddle the roots in thin mud, and set them firmly when planting. Rake the top soil loose. It should be kept loose all summer, especially after rain. If a crust forms on the soil, it prevents the air getting at the roots, which the health of the plant makes necessary.

Do not cultivate too deep. When the bed is well made the roots are near the surface. All the cultivation it will need for a few years is a top dressing. Bone meal or very fine sifted wood ashes, or coal cinders are good, when fine. They keep the top soil open and loose. I use bone meal and also manure from the hen house. It is spread a few inches from the plants. It placed too near it is apt to burn the plants. The manure contains an amount of ammonia which helps to kill the insects that the rose is subject to.

## INSECT PESTS

A fine spray from the hose early in the season is good to keep the plants free from insect pests. Tobacco solution controls the aphid or green fly. Apply it with a whisk, and in such a manner that it will reach the underside of the foliage, as well as the top. There are many other solutions that are good. I have found the foregoing sufficient.

The perpetual roses should be pruned well back, but with tea roses only the weak wood requires to be taken out after growth in the spring. My favorite roses are hybrid teas, a cross between tea and perpetual roses. They have all the good qualities of both parents, and continue in bloom all summer. I have cut bloom as late as November.

The winter protection I give tea roses is to drive small stakes around the plants. These are filled in loosely with leaves. Around this is placed a coarse litter from the garden, which helps to keep the leaves from blowing away.

There are so many good roses it is impossible to name them all. I will there-



The Rose—J. B. Clark



Madame Caroline Gestout

trees. Otherwise the roots of the trees will rob the roses of their required food.

The ground should be well drained. I dig about two feet deep, and put in a layer of cinders, stone or any other material, for drainage, and on top of this manure, well packed down, and then the soil. Keep the fine soil, mixed with some well decayed manure, for the top. Raise the bed above the surrounding soil.

Roses that are budded will grow stronger and give better bloom than roses on their own roots. Nevertheless I prefer roses on their own roots.

There is no danger of suckers growing from below where budded.

When planting budded roses, the bud should be three or four inches below the surface. This will tend to prevent the suckers springing from the roots, or from the bud.

## THE SOIL REQUIRED

The soil for the rose bed, especially for hybrid perpetuals, should contain some clay, as it retains the moisture longer than where all sand is used. Tea roses require warmer and lighter soil, such as sand and leaf mould. The loose soil from sod is good.

Plants from the nursery if not grown in pots, should be set in warm water for a day, in case the roots are too dry. Many roses are lost through the roots

\*First prize essay in the competition for prizes offered by Messrs. Hermann Blumers, of Toronto, and H. B. Whyte, of Ottawa.



White Killarney Roses



The Rose—Betty

Climbers: Dorothy Perkins, pink; Crimson Rambler, crimson; Baltimore Bell, pale pink; Perfection, pale pink; Prairie Queen, rose; and many other beautiful new varieties which prolong the season.

The climbing roses are used for covering the fences. They are a splendid background for perennials, which I use in between the rose plants, as they come in bloom after the June roses are through blooming. When garden space is limited, as mine is, bloom may be continued all season with the help of perennials.

**The Modern Peony\***

J. H. Beckett, Barrie, Ont.

When spring arrives remove the coarse mulch and stir the finer parts well into the soil, taking care not to disturb the pinkish white buds then just beginning to show. Peonies, as stated before, are quite hardy without mulch, and while this attention is not essential, it will be more than repaid.

The best time for planting is in the fall when the roots have well ripened, usually early in September, though they may be planted as late as the ground may be cultivated. They may also be planted in the spring, but this practice is not recommended, as the growth the first season is not so vigorous and they seldom bloom as strong. This is also partially true of very late fall planting. All peonies give better blooms after becoming established, and should not be finally judged the first season.

The peony is propagated—at least for the purposes of the average gardener—from the root. To get at the roots do not spade. The better plan is to dig down beside the plant until the root is exposed,

\*Extract from a paper read at the last annual convention in Toronto of the Ontario Horticultural Association

attack the plant from above with a and then cut off with a sharp knife the desired buds attached to part of the root. If you wish to take out the whole plant or root the best plan is to dig all around it, and when loosened up so as to be easily removed whole, do so; when it can then be divided into sections with one or more buds desired. From three to five buds make good plants. But once more the warning must be given to take care that the buds are not injured in dividing.

Propagation from seed is a slow matter, for it takes four or five years for a peony to grow from the seed to the blooming period, and even then it will hardly repay the trouble, for the chances are all against producing anything worth while.

If, however, one deems the delight of giving to the world a really desirable new variety is worth the risk, then gather the seeds as soon as they are ripe, and store them in sand over winter. Plant early in the spring in well prepared soil, and exercise patience.

**Planning the Garden**

At this season of the year many amateur flower growers are at a loss to know how to lay out their gardens to the best advantage. On this page appears a diagram of the garden of Mr. K. W. McKay, of St. Thomas, a description of which was published in The Canadian Horticulturist last fall.

The outside measurement of the garden is one hundred by sixty-six feet. The paths are two feet six inches wide, with a curb of two by four inches cypress stained green. The long beds on either side are ten feet wide and may be cultivated by rake or Dutch hoe from the paths.

The general arrangement of the paths and beds has given Mr. McKay good satisfaction. With the exception of a few perennials, the space devoted to flowers and vegetables will go on an adjoining lot to make room for roses and

additional flowers. The compost box, twelve feet by four feet by four feet, takes care of house garbage, weeds, grass clippings, and leaves. These decompose quickly, and form a mulch most suitable for flowers.

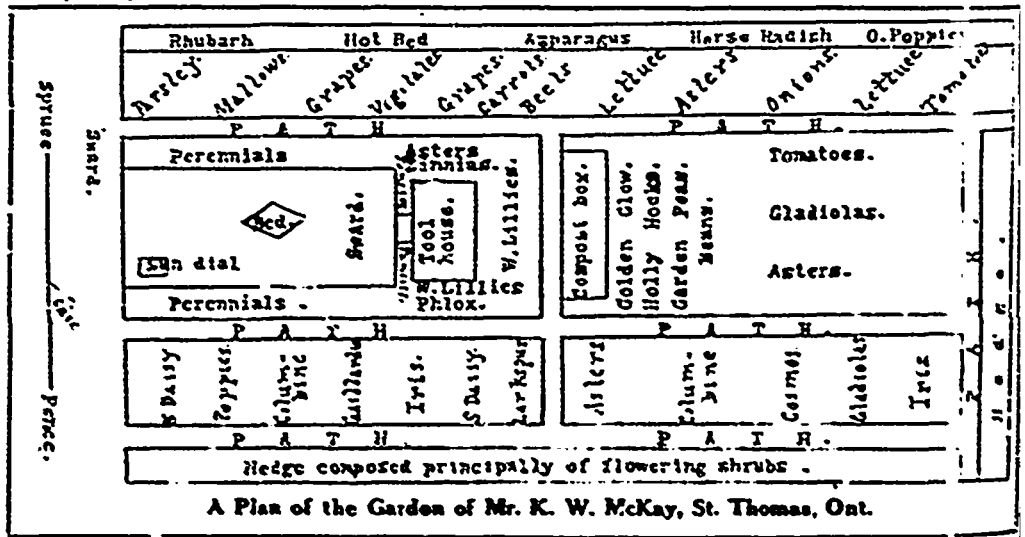
**Making the Compost Pit**

J. MacPherson Ross, Toronto, Ont.

The compost pit may be of any dimensions that will answer to hold such refuse as would accumulate about any ordinary household. It is not necessary to have it boarded, although it would be better in order to hold the earth sides more securely.

A space eight feet long by six feet wide and four feet deep would be a convenient size. A pit as shallow as two feet would answer if placed in a corner of the garden not very much exposed to view so long as it would be convenient to throw kitchen slops or soapsuds into. Nothing could be more fertilizing than dishwater or soapsuds, as they contain potash and all other fertilizing ingredients. You can readily see how convenient it would be to throw weeds into such a pit through the summer when cultivating your garden, grass clippings from the lawn, leaves, litter, and even cornstalks, decayed fruit, straw, and in fact, anything except wood. Wood readily ferments and decays. Sifted coal ashes would be all right, as they would absorb liquids of any kind rich in nitrates and other fertilizing chemicals. Coal ashes, though not in themselves of particular value, yet serve as a medium to lighten stiff soil and are a good retainer for fugitive fertilizers. The leaves of the lawn make desirable and valuable leaf mould.

The longer you can leave such refuse to decay the better. If it should become in any way offensive, a covering of earth spread over it would prevent any nuisance. Such a pit would serve also as a place, when emptied of its contents in the spring, to place manure in to make a hotbed.



A Plan of the Garden of Mr. K. W. McKay, St. Thomas, Ont.

# Tomatoes in a City Garden

Frederick Davy, Ottawa, Ont.

If a census were taken of the vacant and uncultivated yet cultivable land in towns and cities and the possible produce computed from the market gardening standpoint, it might easily be

looks for a better offering from the ready soil than such fruit as is grown in the field. If a man, he knows the pleased look that lightens the face of his wife as he hands her a basket of plump, round, smooth, even-sized, prettily-ripened pink or red tomatoes. And her words of pleasure at the gift are as great a delight to his heart as was the sight to Abel of the smoke of his sacrifice ascending straight to heaven. Only care and gardening skill can produce such fruit. But it is skill such as every son of Adam may possess if he wishes.

## BEST VARIETIES

The facts given in this short article are from the experience of the writer, who cultivated a plot of less than one-thirtieth of an acre in the city of Ottawa. The photos are from plants in the plot. The first thing to decide when following suit in any locality is the variety or varieties that will be used. After a good

deal of experience which was checked by consultation with the best authorities of the Dominion, the conclusion arrived at was that for a city garden it would be hard to beat a combination of Sparks' Earliana, Chalk's Early Jewel, and Henderson's Ponderosa. These ripen in the order named.

The first are good on account of their earliness, but for table use they do not show the quality of the later and latest of the three. In all average seasons, these three varieties if properly cared for can be made to give ripe fruit for the table from the latter part of July until very late in the autumn or even till Christmas if the late green fruit is gathered with the first frost and wrapped in paper and stored on shelves in the cellar. When so handled the fruit goes through a slow ripening process, and can be used as it becomes ready.

The plants can be started in the house



**Henderson's Ponderosa**

The big tomato in the foreground weighed a pound and a quarter, and was of excellent quality.

proved that a careful use of such land for gardens would decrease largely the cost of living of the town and city dweller. Many people do not plant a garden because they think that they have not enough land. Yet something useful can be grown on every foot of land where the sunlight falls. In the case of a small, well-exposed, well-drained piece of land, no crop will yield better returns in produce and satisfaction than tomatoes.

There is no garden crop that gives more pleasure to housewives—or, indeed, more satisfaction to those who appear three times per day about the family mahogany—than tomatoes. Tomatoes at table are always in order. Ripe, with salt, pepper, or sugar, according to taste, cooked as vegetables, or in pickles or sauce, they never fail to command the appetites of the hungry.

The householder who desires a crop of tomatoes for personal use generally



**Chalk's Early Jewel Tomatoes**

These plants reached a height of eight feet six inches and bore fruit all the way up. Mr. Davy is shown in the illustration.



if one has a sunny window and an even temperature indoors. Little boxes should be prepared with nice, loose, loamy soil, and the seeds planted in twos or threes about three inches apart. When they come up, the plants which show the strongest growth should be selected to live and the rest nipped off. The seeds should be in the boxes from the first to the middle of March, as under such conditions the growth is slow. During growth the soil should be kept from coal gas or bad air. Of course, if you wish you may buy the plants from the professional gardener. But it is best to make sure that he is a reliable man, reliable not only in honesty, but also in ability, as otherwise you may get plants

that are not just the varieties you want.

If one wishes early fruit, the plants should be in the ground early. It is best to start in the boxes more than one is likely to need. A few should be set out as soon as the ground is ready, regardless of the danger of frost. Then if there is none you will be the gainer. If a frost is anticipated, the plants can be protected by paper or cardboard coverings. But if the worst happens and the frost kills them while the householders are away on a visit new plants can be set out from the reserve supply.

#### TRAIN THE VINES

If the city gardener is satisfied with any kind of fruit he may let the vines sprawl all over the ground at their own sweet will. If, however, he wants a first quality of fruit, his vines should be trained off the ground. This may be done in two ways, on posts, allowing a post to each plant, or on a trellis. The method the grower adopts should depend on the nature of the garden. He may save space by having a trellis along some sunny wall. But the experience of the writer has been that the tomato plant does not grow well along a wall or fence. It needs plenty of light and air all about it.

The plants shown in the accompanying illustrations were grown on stakes. This method is good in a small garden where space is at a premium. On the same principle that in a crowded city it pays to put up high buildings, the tomato plant can be made to economize space by training it up into the air.

#### LET TWO SHOOTS GROW

In regard to the training of the plants it has been the practice of the writer to allow two shoots of each plant to grow. All the rest as they appear in the axils of the leaves are nipped off. Then up go the ones selected to live. If properly cared for the plants will begin to bear close to the ground and will keep up the game until the autumn frosts prevent further expansion.

The plants shown in one of the accom-

panying illustrations were allowed to grow to the extent of two shoots each, and when about five feet high were allowed to branch. They ultimately grew to a height of eight feet six inches and produced a wonderful crop of clean, delicious fruit. They were Chalk's Early Jewel, and were planted in the house about the middle of March. They were planted in a central position and were not affected by the early frosts which destroyed plants in more exposed positions.

#### HOW TO TIE

As the plants grow the new growth must be tied to the stake before it can droop. The tying must not be too tight, but must allow for the swelling of the stem. If too tight the stem is pinched, and the sap prevented from rising. In tying a soft, cheap string should be used. A hard string or twine will not do so well as it cuts the tender surface of the stems.

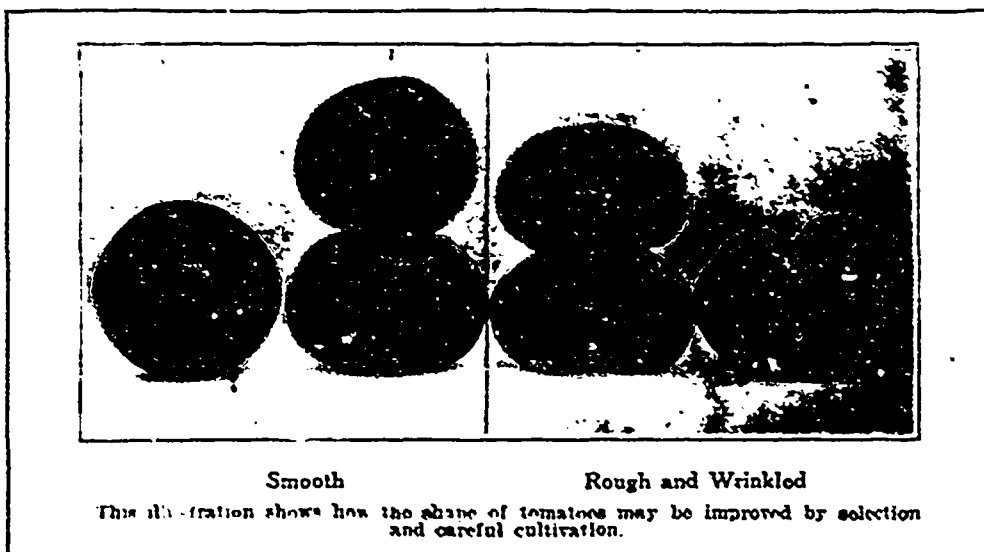
Land for tomatoes should be rich, loose and loamy, but don't be discouraged if the land you have does not conform to this description. Work up what you have even if it be mixed with bits of brick and the scraps of broken china that have been thrown out of the house. Stir in a liberal supply of stable manure, and you will get results the first year, and better ones the next year if you stick to it. But, of course, the better the soil the better the results if all the other points are attended to.

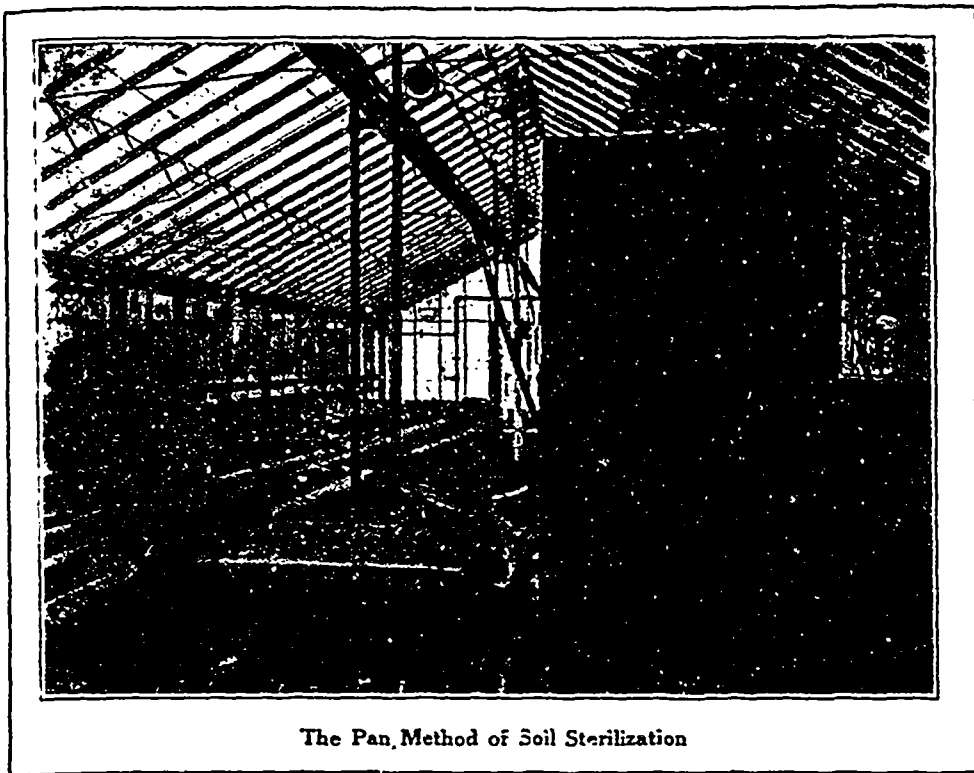
There are other things than fruit and vegetables to be gained from handling a small plot of ground. Health, peace, contentment, knowledge and a preservation of man's best instincts are wrapped up in the cultivation of a garden.

### Vegetables and Their Sprays

Prof. E. M. Straight

When we ask men to spray the garden, we are often met by the objection. "Spraying is all right, but we shall never put poison on that part of a vegetable which later we intend to eat!" When the case of potatoes is cited, which already they are spraying, we are again told that that is different, for the potatoes are under ground, while only the top is touched by the spray. There can be no possible danger from this score. It has been shown that from eight to ten barrels of apples must be eaten at one time, and immediately after spraying, to get any bad results from arsenic. A few days after an application, there is not enough poison remaining to kill a canker worm. The same is true of copper. Thousands of sprayed plants must be eaten to get a tonic dose of copper, and many more are required to kill. A wagon load of celery must be eaten at one time to get sufficient copper to injure a man, so the danger is not great.





The Pan Method of Soil Sterilization

## The Sterilization of Soils\*

A. H. MacLennan, B.S.A., O.A.C., Guelph

The spread of many diseases and insect pests within the soil in the greenhouse has turned investigation work to find a solution. Perhaps the commonest example is the eel-worm or Nematode (Heterodera), which affects the roots of indoor tomatoes and Damping-off Fungus (Pythium), which destroys many seedlings.

Two results are very noticeable after sterilization: First, disease organisms and pests are killed or greatly reduced in numbers; second, while many of the bacteria in the soil are destroyed, those whose presence is beneficial remain, become much more active, and plant food is made more rapidly.

In a bacterial count of soil—sterilized and unsterilized—made by the Bacteriological Department of the College last year, the following results were obtained:

1. Unsterilized One million six hundred thousand bacteria per cubic centimetre.

2. Sterilized (a) in first two inches of soil, temperature two hundred and ten degrees, nine hundred bacteria per cubic centimetre; (b) at depth of six inches, temperature one hundred and seventy degrees, six hundred bacteria per cubic centimetre.

In number two the bacteria that remained were beneficial and aided in breaking down the plant food in the soil. The action of sterilizing is shown

in the sturdier growth of the plants and their darker color.

Two methods are in use to-day,—steam and chemicals, the chief being formaldehyde and Toluol. The work with chemicals has been but little tried in this country, but in England has so far not given quite as good results as steam.

### METHODS OF STERILIZING

There are three methods of steam sterilizing: First, by underground tile, the method explained by Mr. Streight in the February, 1912, number of *The Canadian Horticulturist*. This method is very easy where one uses sub-irrigation.

Second, by the laying of a system of three three-quarter inch iron pipes like this:



placed eight to nine inches under ground. In each side of each pipe, there are one-eighth to one-quarter inch holes every ten inches, thus . . . . . i.e., alternately. The steam is put in at a pressure of thirty to fifty pounds until it rises in a cloud from the bed.

Third. The pan method, of which a picture is shown. This pan is of galvanized iron of any convenient size,—say, three feet by nine feet, and six inches deep. This is pressed into the soil about two to three inches. Connection is made by hose to centre of top of pan. The steam is turned on at thirty pounds for thirty minutes. Where one

renews the soil each year the soil that is used for potting up can be easily sterilized in a sort of oven made of wood side with pipes in the bottom, as in number two.

In all cases, the earth should be freshly dug over and friable in order that the steam may work through it.

We have done little with chemical sterilizers, the only one we have used being formaldehyde. It gave very satisfactory results, but the bed must be left ten to twelve days after application before planting, while with steam it is ready for use in twenty-four hours.

The greater part of our work has been on tomatoes. We have raised our average per plant by one and a half to two pounds of fruit. In lettuce and cucumber, the results have also been very noticeable. At Rothamsted Experiment Station in England, they have had very similar results to ours. A very interesting account of their work is given in the *Journal of the Board of Agriculture* for January, 1913.

## Forcing Rhubarb

John Gall, Inglewood, Ont.

A simple means of forcing rhubarb that is specially advantageous after the crops indoors are more or less exhausted is that of raising supplies outdoors by artificial means. This may be done as soon as the worst of the winter is over, and is a practice that should be extremely popular, as anyone with a small amount of trouble may achieve results that are very satisfactory. For successional crops, outdoor forcing is much to be preferred. The plants should be forced where they are growing, and if a warm border is available, so much the better.

All that need be done in forcing a crop outdoors is to cover the crowns of the plants with barrels, tubs, boxes, or any such article which shall have a movable lid. Large barrels should be sawn in two. The top end of the barrel should be knocked out, and made to suit the purpose of a movable lid, this being removed for observation and air-giving, also for obtaining supplies when ready. These utensils should be embedded in stable manure and leaves, this material providing the necessary warmth to excite the crowns into growth. When leaves and stable litter are mixed in the proportion of about two of the former to one of the latter, a gentle heat may be provided.

It is surprising how simple and effective is this mode of forcing rhubarb. A splendid crop of luscious stalks may be readily obtained by these means.

On a soil containing large quantities of lime use superphosphate as a top dressing in the spring and at the rate of 300 to 500 lbs. per acre.

\*Outline of an address delivered recently before the Toronto Branch of the Ontario Vegetable Growers' Association.

# The Canadian Horticulturist

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7. Articles and Illustrations for publication will be thankfully received by the Editor.

### CIRCULATION STATEMENT

The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with December, 1912. The figures given are exclusive of samples and spoiled copies. Most months, including the sample copies, from 11,000 to 12,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

January, 1912	9,988
February, 1912	10,437
March, 1912	10,877
April, 1912	11,788
May, 1912	12,112
June, 1912	10,946
July, 1912	10,906
August, 1912	11,148
September, 1912	10,977
October, 1912	10,971
November, 1912	11,182
December, 1912	11,144
	<b>132,556</b>

Average each issue in 1907	6,627
" " " " 1908	8,295
" " " " 1909	8,979
" " " " 1910	9,067
" " " " 1911	9,541
" " " " 1912	11,057
March, 1913	11,106

Sworn detailed statements will be mailed upon application.

### OUR GUARANTEE

We guarantee that every advertiser in this issue is reliable. We are able to do this because the advertising columns of The Canadian Horticulturist are as carefully edited as the reading columns, and because to protect our readers we turn away all unscrupulous advertisers. Should any advertiser herein deal dishonestly with any subscriber, we will make good the amount of your loss, provided such transaction occurs within one month from date of this issue, that it is reported to us within a week of its occurrence, and that we find the facts to be as stated. It is a condition of this contract that in writing to advertisers you state: "I saw your advertisement in The Canadian Horticulturist."

Refuge shall not ply their trade at the expense of our subscribers, who are our friends, through the medium of these columns; but we shall not attempt to adjust trifling disputes between subscribers and honourable business men who advertise, nor pay the debts of honest bankrupts.

Communications should be addressed

THE CANADIAN HORTICULTURIST, PETERBORO, ONT.

## EDITORIAL

### THE JORDAN HARBOR STATION

In a defence of the Jordan Harbor Experiment Station, which was under discussion recently in the Ontario Legislature, Hon. J. S. Duff, Minister of Agriculture for Ontario, according to reports in the public press, explained that one reason why better work had not been accomplished at the Station was because soon after the station had been started it was found that the soil was unsuitable for small fruits. This, if the Minister was correctly reported, can hardly be considered a satisfactory explanation.

The land used by the station was donated to the Government by Mr. M. F. Rittenhouse in 1906. Before the Government accepted this land it was examined by officers of the Department of Agriculture and of the Agricultural College, who reported on its suitability for the purposes for which it was intended. The Government was fully aware of the work that it was purposed should be undertaken at the new station. If the soil was not suitable its acceptance for the purpose should either have been declined then or arrangements made for the purchase of additional land adjoining better adapted for experimental purposes.

When it was announced that the Government had decided to establish an experiment station at Jordan Harbor, keen interest was taken in the proposal by the fruit growers of the province, more especially those of the Niagara District. This led The Canadian Horticulturist to send one of its editors, a graduate in horticulture of the Ontario Agriculture College, to Jordan Harbor to inspect the soil of the proposed station. In the July, 1906, issue of The Canadian Horticulturist, the introductory article dealt with the soil conditions at the proposed station, as did the leading editorial. In both the article and editorial it was shown that while otherwise well suited to its purpose, the soil of the proposed station had two defects: It lacked the protection of the mountain, only two miles and a half away, and it also lacked a sufficient quantity of light soil to be ideal for experimental work with peaches and other tender fruits. It was pointed out that this defect could be overcome by the purchase of some suitable land across the road, on which the Government had been given an option on reasonable terms. This option, although the need of the land was fully recognized at the time or the option would never have been given, has never been taken up by the Government. We fail to see, therefore, after seven years have passed, why the Government should advance as an excuse for the fact that the station has not accomplished more, that the station soil is not suitable.

We have no desire to criticise the Government unduly in this matter, but its utter failure to deal with the station in the broad, sympathetic manner that the fruit growers have hoped for and which the Department of Agriculture has extended to other branches of its work, has resulted in several years of largely wasted efforts at the station. Nothing will remedy these conditions until the Government completely reverses its policy and treats the station with the same generosity and foresight that is characteristic of the man-

agement of the leading fruit experiment stations in the fruit districts of the United States.

### A NOT UNEXPECTED RESULT

The practical failure of the National Land Fruit and Packing Company, which was launched some two years ago with a blare of trumpets, was not entirely unexpected by those in close touch with the fruit interests of Ontario. In discussing the undertaking of the company in the May issue of The Canadian Horticulturist in 1911, we pointed out editorially that counting the time lost by the employees of the company going to and from their work and from unfavorable weather it was a safe estimate that the farmers could care for their orchards for one-half the money it cost the proposed company where close supervision of the work in the orchards was undertaken.

The project had many commendable features and in various ways has had beneficial results in the province. Many fruit growers have been led to appreciate their orchards more fully and to take better care of them. The main cause of the failure of the project appears to have been the fact that an effort was made to accomplish too much at once. The great majority of successful business enterprises have grown out of small beginnings. In this case an effort was made by men lacking sufficient knowledge of the underlying principles of the industry concerned, to launch a large enterprise without sufficient preliminary experience. Had the promoters been content to operate a few orchards for a year or two before embarking on the larger enterprise their prospects for success would have been greatly improved.

It appears that an effort may be made to continue the enterprise. While many will doubt its ultimate success there are few, if any, who would not like to see it succeed if for no other reason than to avoid the loss that will otherwise be sustained by the many investors who were led to invest their money in the expectation of receiving liberal dividends thereon.

### USE MORE TACT

April is the month when most of our horticultural societies begin their summer activities. The officers of societies as a rule realize the importance of obtaining the sympathetic support of the editors of their local papers. Many, however, fail utterly to do so. In some cases this may be due to a defect in the make-up of the local editors, but in the majority of cases we believe that it will be found to be due to a failure on the part of the officers of the society to clearly understand how best to set about the work in hand.

Most societies make the same mistakes. In the first place they are apt to find fault with their local editors for not taking a deeper interest in horticultural improvement. Thereby they overlook the fact that many other classes in the community are constantly pressing their claims for recognition upon the editor whose time and space in every case are limited. Other societies sometimes prepare reports for the local papers, but send these in for publication too late in the day for them to receive the attention or setting required. Other societies prepare their articles more for consumption by horticultural enthusiasts, losing sight of the fact that the local papers cater to what is commonly called "The Man on the Street."

A horticultural society should first appoint a press committee and have its members wait on the local editor to enlist their support. Later they should prepare newsy, interesting notes, including descriptions of local gardens, accounts of particularly good plants or flowers grown by citizens, and plans for city improvement, and have these reach the editors, where possible, the night before the day of publication, and at the latest on the morning of publication. In the great majority of cases where this is done there will be little or no difficulty experienced having such material published. A little judgment, tact, and enthusiasm will accomplish wonders in the handling of editors, as well as with other ordinary mortals.

Cooperation is slowly but steadily making progress in Canada. Local fruit growers' associations have now advanced to the stage in different provinces where they are cooperating on a more extensive scale through provincial organizations. In most cases these larger organizations are proving a success. The vegetable growers' associations are now becoming active along somewhat similar lines. The success of the Ottawa branch of the Ontario Vegetable Growers' Association in the cooperative purchasing of supplies, as described elsewhere in this issue, should encourage other similar organizations to undertake this line of work. In cooperation, as in other lines of effort, we learn by our failures. The successes of to-day have been made possible by the failures of yesterday.

The truth of the old saying that the early bird catches the worm will come home this month with force to many amateur gardeners who have neglected to lay plans for their gardens and summer work until the advent of warmer weather brought these matters to mind. If all such will only remember to do better next year their gardens another season will show the benefit of their foresight.

## PUBLISHER'S DESK

We anticipate that our readers will enjoy this our Second Annual Spring Gardening and Planting Number. Never have we had a more capable list of contributors. Every contributor in this issue has had wide experience in the matters dealt with. Out of this experience they are endeavoring to benefit the readers of The Canadian Horticulturist. We are satisfied that their efforts will be crowned with success.

How do you like the front cover of this issue? Does it not make your fingers ache to be at work in the garden and your feet long for a stroll in the woods? How do you like Mr. Smith's description of the gardens of Walkerville, the town of which he is so justly proud? Does it not make you feel a desire to promote the beautification of your home town? Can you resist the temptation to grow your own tomatoes, if you are not already in the habit of doing so, after reading the results of Mr. Davey's experience. Those who have never grown roses will feel like doing so after perusing Mr. Hull's interesting article. Space does not permit our mentioning the many other splendid articles in this issue. We hope that our readers will read them all and gain fresh enthusiasm, as well as valuable suggestions in the process.

The February, March, and April issues

of The Canadian Horticulturist have surpassed all previous issues in size, in the general excellence of their illustrations and reading matter, as well as in the volume of business carried. We feel somewhat proud of the fact that the volume of advertising carried has showed an increase of almost fifty per cent. over the business of last year, which established new records up to that time. This means that it will soon be possible for us to make still further improvements in The Canadian Horticulturist. We are busy planning them.

## SOCIETY NOTES

We invite the officers of Horticultural Societies to send in short, pithy reports of work that would interest members of other Horticultural Societies.

### Markdale

The Markdale Horticultural Society this year has issued an attractive option list. It includes a choice of plants and shrubs to the value of one dollar. In addition, members will be given a year's subscription to The Canadian Horticulturist and a ten cent package of Burpee's sweet peas.

The options were as follow, members being allowed to take one of each of several kinds, all of one variety, or to make their choice in any way that suited them best to the amount named:

Shrubs.—Hydrangea 30c, spiraea—Van

Houetti 30c, snowball (Viburnum Opulus) 30c, syringa (Golden Leaves) 35c, spiraea (Anthony Waterer) 35c, Norway spruce 25c.

Rambler and Climbing Roses.—Crimson Rambler 30c, Dorothy Perkins 30c, Gem of the Prairie 30c.

Hybrid Perpetual Roses.—Mable Morrison 25c, Persian Yellow 25c, Chestnut Moss 25c, Glory of Mosses 25c.

Climbers.—Virginia Creeper 25c, Jackmanii Clematis 50c, Clematis Paniculata 25c.

House Plants.—Begonia Rex 25c, Hydrangeas (Hosea Hortensis) 35c, Rubber tree 90c.

Cactus Dahlias.—General Buller 30c, Iceberg 25c, J. H. Jackson 25c, Floradora 25c.

Show Dahlias.—Queen Victoria (deep yellow) 25c, Majesty (pinkish white) 30c, Apple Blossom 25c.

Dormant Giadiolus (Bulbs).—Childs (mixed) doz. 50c.

Begonias (Bulbs).—Tuberous - Rooted (single) 10c.

Cannas (Roots).—Mad. Crozy (foliage bright green) 15c, King Humbert (foliage, rich reddish bronze) 15c.

The children in the public schools in the town of Strathroy, Ontario, were encouraged last year to grow flowers. In the fall an exhibition of their products was held. The School Board gave the children a half-holiday. The display was a most creditable one. Were similar encouragement given the children in other towns, equally satisfactory results might be obtained.

## Marketing British Columbia Fruit

The following extract from a statement issued by the directors of the British Columbia Fruit Growers' Association, will be of interest to eastern fruit growers, as well as to those in the west:

The generally low prices received for fruit during the past season have made pertinent and proper a discussion of the fundamental considerations affecting the future of our fruit growing industry. Many different opinions are held as to the remedy for a situation which, if continued, would be intolerable. Your directors have fully considered the facts, and have endeavored to reach proper conclusions in regard to them.

The principal condition affecting the prices of British Columbia fruit was the very large crop in the United States, resulting in the importation of large quantities of American fruit at low prices, or what is worse, shipped on consignment—all soft fruits yielded very much above the average. The figures are not yet to hand, save that we know that some 40 000 carloads of peaches were shipped commercially last year in the United States. The United States apple crop was thirty-four per cent. larger than the average of the last ten years. It was twelve per cent. larger than the 1912 crop. It totalled around forty million barrels. The quality was generally high, fifteen per cent. better than the ten years' average. In the north-western states, the box apple states, about twenty thousand carloads were shipped as against only nine thousand in 1911.

As a result of these extremely large crops, prices would naturally be low, supply greatly exceeding demand; twenty-five per cent. of the Ontario apple crop is said to have rotted on the ground; there has been a similar condition in New York State. The Western States, however,

will get something for practically all their apples. British Columbia did comparatively well in the matter of prices, for our fruit brought more than in any other section of America.

Other general conditions which helped to lower the prices were:

First. Tightness of the money market of the United States and generally throughout the world.

Second. The largest proportion of boxed apples to barrels ever experienced.

Third. Defective methods of picking and packing, which injured fruit, and lessened its keeping qualities.

Fourth. Lack of storage facilities.

Fifth. The fruit growers require their money in the fall, and bank loans are not made on unsold apples; apples must, therefore, be sold in the fall.

Sixth. Our fruit distributing organization both in British Columbia and in the north-west states, in the latter particularly, should be made much stronger.

Seventh. The boxed apple business is a new one, and little is known about effective means of distributing it to the best advantage.

Eighth. Practically no advertising is done to increase the demand for the western boxed apple—while two hundred thousand dollars is spent in advertising California oranges.

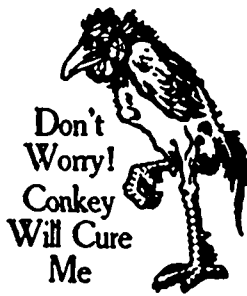
Ninth. The very large apple-handling concerns in England and New York are working to depress prices on boxed apples.

Tenth. British Columbia is fighting for her natural markets, which we are just beginning to adequately supply, and in which our competitors are strongly entrenched.

Eleventh. Because of a peculiar condition with regard to the Fruit Marks Act

(Continued on page 118)





Don't  
Worry!  
Conkey  
Will Cure  
Me

Do not let your chickens mope and die. Send for catalogue, with price list of Reliable Poultry Remedies, and prices of Eggs for hatching from different breeds of Poultry, including Turkeys, Ducks and Geese.

**J. H. RUTHERFORD**

Box 62

**CALEDON EAST, ONTARIO**

## How Eastern Fruit Men May Retain a Market in the West

R. B. Ireland, Saskatoon, Sask.

Fruit growers East and West are both competing for a place on the markets of Western Canada; and in this case the wise men do not come from the East. The Westerners—the fruit growers of British Columbia, Oregon, and Washington—are taking first place and rapidly ousting the Ontario producer. If Ontario producers wish to retain the Western fruit trade it will be necessary for them to observe some of the following points, which from my experience in the fruit trade of the West, I judge would enable them to meet the consumers' demand.

For small fruits a box of a pint to a pint and a half with 18 boxes to the crate and the crates of heavier material than the present 24-box crate now used is advisable. This applies to boxes for strawberries, raspberries, and all the more juicy fruits, as the present imperial quart box is too deep for long shipment, the lower berries being weighed down by those above. In the shallower box the berries would be only two to three layers deep and would keep better. If a slat box crate with ends from nine-sixteenths to three-quarters of an inch in thickness were used, the crates could then be piled in a car and would not be damaged by handling or the rolling of the car. In a crate containing 18 boxes there would be sufficient ventilation to prevent the fruit moulding.

### PACKING TENDER FRUIT

Such fruit as peaches, pears, plums, tomatoes, and early apples should be packed in a small box about eight to nine inches

square and four to the crate; or eight to the crate if there is a bottom placed under the top layer to keep them from the under boxes by an inch or so. The boxes should be deep enough to contain not more than two layers of paper wrapped fruit of all the soft varieties as the fruit, coming in contact and rubbing by the vibration while in transit, begins to decay and therefore lowers the profit of handling and also the desire to order any more from the same source.

Ontario fruit men must adopt a standard box of about 60 to 70 pounds for the apples and harder pears. For several reasons the box is preferable. The barrels now in use are unsatisfactory. They are too heavy for one person to handle and have to be rolled or dropped to places required. Many people prefer to buy two or three kinds of apples or one or two boxes of apples and one box of pears; or they may be driving many miles into the country with a buggy in which a box of pears or apples is all they can accommodate. And still another and all too frequent a reason why the box is preferred, is that many have only \$2 or \$2.50 which they feel they can spare to buy apples. All these are valid reasons for the producer complying with the requirements of the customer.

### TO DISCOURAGE DISHONESTY

As regards grading of fruit and honesty in packing, I believe that a law requiring the packer to place his name on each outer crate in type plain enough to be read dis-

## Surplus Stock

We offer subject to sale the following stock, which we guarantee to be true to name, No. 1. stock in every respect, 5-7 ft. high. Price F.O.B. Pointe Claire, \$27 per 100.

- 200 Alexander
- 200 Baldwin
- 200 Baxter
- 500 Ben Davis
- 500 Duchess
- 500 Fameuse
- 600 Starke
- 600 Spy
- 500 Wealthy
- 200 Yellow Transparent

Also complete list of Ornamental Shrubs and Trees of all kinds.

**The CANADIAN NURSERY CO., Ltd.**  
10 PHILLIPS PLACE - MONTREAL, P. Q.

## For the Land's Sake

Use the best Manure  
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## Good Crops

For Nurseries, Fruit Growers  
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## Sure Growth Compost

Makes poor land fertile and keeps fertile  
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tinely would soon compel the dishonest packer to go out of business. The consumer would learn that he, the packer, was dishonest. By making the law so that an inspector or any constable or police officer could summon any person using a receptacle with another's name on it or packing fruit not true to name and grade, before the most convenient magistrate for trial and place the risk beyond the likelihood of gain by a stiff penalty, this constant receiving of doctored boxes and barrels experienced in this country would be stopped. And from many years of experience on the market at Hamilton, Ont. before coming here three years ago, I can say the writer is pretty sure it is possible to have Ontario fruit so good as to hold the same respect in this western country as the fruit of any other place.

#### THE TRANSPORTATION PROBLEM

I know the producers in Ontario are handicapped by the railroads into these provinces giving them poor accommodation. There is no reason why fruit should take 11 or 12 days to get from the Niagara Peninsula to this point, three or four of which are spent at Sutherland Station, three miles from here. If proper methods of packing were followed there would soon be enough fruit in cars shipped west that the railroads could also, by cooperation, place their cars at a central point such as Hamilton or Toronto, and then make a solid fruit train to some central point such as Brandon, Regina, Moose Jaw, or here, and then have those cars attached to the first freight to continue the journey to destination. The writer believes this would prove as profitable to the railway companies as the present arrangements by which they forward settlers' effects and

other merchandise. The writer is a firm believer in compelling the railroads to give the people the accommodation to which they are entitled. The people have helped our railroads handsomely with guarantees of bonds, bonuses, and grants of different kinds; and fair play hurts no person.

A third reason why the Ontario producer is not meeting the market demands to best advantage is the same as explains the loss of millions of dollars to the farmers of the West on their grain, no arrangements having been made to hold the fruit of keeping varieties. As it is there is a slaughter market as soon as the fruit is picked. The farmer builds large buildings to house his stock so that he may not be forced to sell all off in the fall of the year, and then buy again in the spring. He does not make this provision because he wants the trouble of feeding the stock all winter, but because he knows if that were the rule he would have to sell when all his neighbors were selling; therefore, he would get a low price, and when he came to buy in the spring he would have to buy in competition with many of his neighbors and therefore pay a high price. So he invests his money in material, buys fittings, etc., and when the buildings are completed he disposes of what he considers he can do without at a price that he dictates to the purchaser, whether that customer is a consumer or a dealer.

#### STORAGE FOR FRUIT

If Ontario fruit growers would use the same business tact with regard to their perishable produce as they use with their stock they would reap handsome profits. They must realize that cooperation in building storage plants for their fruit is by far a cheaper way than holding pri-

## Douglas Gardens

Oakville, Ontario

We invite special attention, for Spring Planting, to the following:

**PERENNIALS**—Aquilegia (Columbine), Hardy Asters (Michaelmas Daisies), Astilbe (Spiraea), Shasta Daisies, Coreopsis, Delphiniums (Larkspurs), Hemerocallis (Day Lily), Hibiscus, Kniphofia (Torch Lily), Phlox, Physostegia (False Dragon's Head), and Spiraea (Meadow Sweet).

**BULBS and TUBERS**—Cannas, Dahlias, and Gladioli.

**BEDDING PLANTS**—Antirrhinum (Snapdragon), China Asters, Geraniums, Salvias, and Stocks.

These are all described in our Spring Planting List, a copy of which will be mailed free on application.

JOHN CAVERS

# Fruit Trees, Shade Trees and Ornamentals

We have a full stock of the leading sorts of fruit trees and bush fruits. Our stock of **APPLES, PEARS, CHERRIES and PLUMS** is exceptionally fine. Should you not decide now to plant that orchard this spring? Each year saved is one season gained. We give each order special care, and know that for nice rooting and grading **OUR GOODS ARE UNEXCELLED.**

We breed our trees as much as possible from selected mother trees, and are now preparing to engage an expert Horticulturist, who will devote his entire time and skill to selecting breeding trees. Will it not pay you to deal with an up-to-date firm? We know it will be to our mutual advantage.

**OUR RODERICK CAMERON** has returned from Great Britain and the Continent, bringing with him a splendid collection of the very latest creations in hardy herbaceous perennials, Roses, Shrubs, Evergreens, etc., from the best English, Scotch and Continental Nurseries, including the **MACKENDRICK COLLECTION OF ROSES**, embracing the finest of hardy sorts. The majority of these cannot be obtained elsewhere in Canada.

**HORTICULTURAL SOCIETIES** and others would do well to get our collections, as they have been chosen with great care by a man who has had a lifelong experience amongst the flowers.

## THE AUBURN NURSERIES, Ltd.

SIMCOE

Head Office: QUEENSTON

OAKVILLE

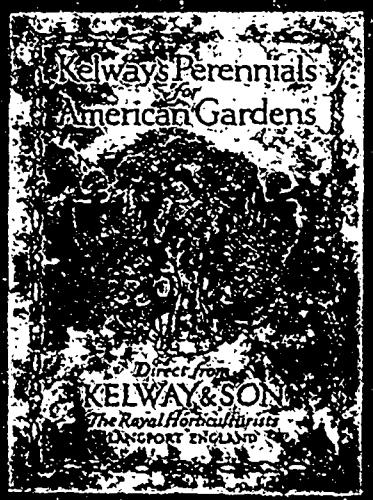
# FAVOURITE FLOWERS From the BEAUTIFUL OLD-FASHIONED GARDENS of ENGLAND

**K**ELWAY'S famous Hardy Herbaceous Plants are modern developments of the old English favourites. The cottage "Piny Rose" has become the Pæony, incomparable in form, colour and fragrance. The old-fashioned Larkspur has developed into the stately blooms of the Delphiniums; Gaillardias, Pyrethrums and the rest, all serve to bring back the charm of the old-world English garden. Special care is taken in packing plants to arrive in America in good order, and they can be relied upon to thrive with a minimum of attention.

Full particulars and illustrations given in the Kelway Manual of Horticulture mailed free on request to

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vately and a much better way. One has to haul his fruit anyway, and it is little more trouble to take all one has for sale to some central point on the railway where one can have laborers to pack it, choose in grading of fruit. At such a point one knows what the inferior fruit will bring for the canning, evaporating, or other companies to manufacture. One knows that at such a cooperative station the companies' brand is not disgraced by some unprincipled, selfish person who seeks to gain a few dollars at the expense of losing thousands of dollars to the many in the business. Some may say that holding the apples or fruit might not be convenient to many. The writer has also considered that point and knows that the man who may be cramped for money could be satisfied better by borrowing the money from the banks, upon his warehouse receipts, than he would by taking all the cash he could get when the goods have been sold on a "laughter market".

The only thing necessary for the producer in Ontario to do to hold his Western trade is to compel honesty in grading, adopt a crate enclosing a number of the low boxes for the smaller fruits, which will admit of their being piled up high in the car without crushing, cooperate in packing at central points with storage buildings to let crop go gradually on to the market in order to keep a market from being overloaded; pack the fruit of keeping varieties in boxes which suit the convenience of the customer, as he can buy to the limit of his money only and no more; and lastly, endeavor to get the fruit on to the market at the consumer's door in as good condition as possible, as the better the condition of the fruit and the better he is satisfied with his purchase the oftener he will buy your goods.

### Items of Interest

A resolution was passed at a recent meeting of The St. Joseph's Fruit Cooperative Society in the Province of Quebec, requiring every member of that association to spray his orchard.

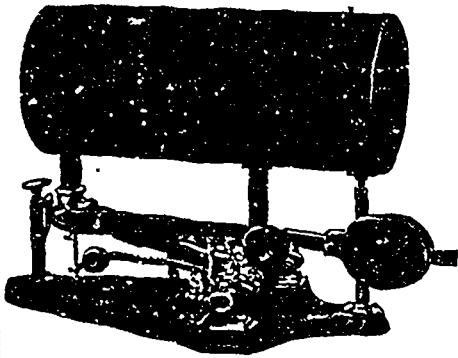
Mr. P. W. Hodgetts, Director of Horticulture for the Province of Ontario, is preparing, for the Department, a bill for submission to the Legislature which will give incorporated fruit growers' associations wider powers.

Mr. John A. Muir, Port Dalhousie, Ontario, last year planted a number of roasted peanuts, which grew up with other vegetable crops in his garden, although no particular attention was given to them. Mr. Muir obtained a fair crop of peanuts. They grow underground like potatoes.

### Trees Roses Shrubs

- Apple Trees, No. 1, Baldwin, Spy McIntosh, &c., \$30 per 100.
- Cherry, Pear and Plum Trees, No. 1, \$30 per 100.
- Roses, 2 year No. 1, all kinds, 25¢ for \$1.
- Shrubs, 2 year No. 1, all kinds, 25¢ five for \$1.
- 5000 Cuthbert Rasp., No. 1, \$30 1000.
- Peach and Quince Trees, Grape Vines, Currants, Gooseberries, Asparagus, Rhubarb, Dahlias, Paeonies, Gladiolus, &c. at attractive prices.

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—there is need for a Morehead Steam Trap. Condensation in steam lines is akin to matter out of place—means wasted energy.

If your lines are sluggish—if your houses are not of uniform temperature, write us. We guarantee to drain your lines perfectly—return the pure, hot condensation to your boiler without pump or injector, or make no charge for the trial. Obey that impulse—write now. Ask for Trial Trap.

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## Greenhouse Glass

We manufacture a special line for greenhouses. It is of good quality, flat, squarely cut and even thickness, virtues which cannot be dispensed with for lapping or butting.

Shall be pleased to quote prices on application to any of our Canadian depots:

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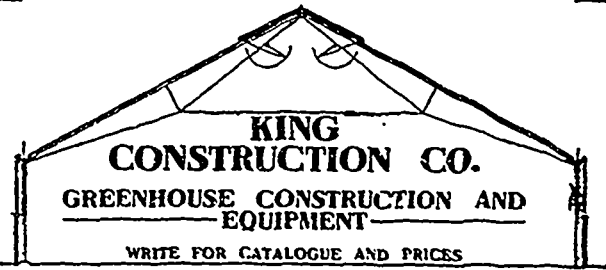
Works at St. Helens, Eng.

## KING GREENHOUSES

Are the most

### MODERN AND PERMANENT

Greenhouses that can be constructed. Years of actual test and the experience of large and small growers have gained for our houses the reputation of being the most satisfactory ever erected for vegetable or flower growing, or private conservatories.



Plans prepared for complete plants and equipment at a moderate cost: all or part of the necessary materials supplied and houses of any size erected under our personal supervision if desired by builder.

Write and tell us the kind of houses you desire to erect or ask for question blank and we will mail you our descriptive bulletin by return of mail.

**THE KING CONSTRUCTION CO.**  
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Mention The Canadian Horticulturist when writing.

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AGENTS WANTED

# BASIC SLAG

## Renovates Old Worn Out Pastures Without Re-Seeding

There are thousands of farmers in Ontario whose pastures have been worn out by the continued grazing of dairy stock. Such lands have been drained of fertility and now grow only poor, worthless vegetation. Clover has entirely disappeared. This need not continue. A dressing of Basic Slag applied broadcast at the rate of 1000 lbs. per acre will bring such pastures back into good heart, and double or treble their capacity for stock carrying. The effect of such an application should be apparent for four or five years.

Basic Slag is being used in thousands of tons in the Maritime Provinces and Quebec, and the consumption in Europe amounts to over two million tons per annum. It is therefore no untried Fertilizer. Every farmer from the Old Country knows about Basic Slag, but for your own satisfaction ask the Department of Agriculture Instructor for your district, or the editor of any farming journal as to its merits. Basic Slag is the ideal Fertilizer to apply to stiff clay lands, to wet, marshy fields and to all soils which have become sour. If you have any such pasture buy one ton of Basic Slag and broadcast it over two acres, applying it at the earliest opportunity—the sooner the better.

Until our selling arrangements in Ontario are completed, you can be supplied direct from the Factory at \$20.00 per ton, freight prepaid to your nearest station—cash with order.

Make this experiment and you will feel grateful to us for bringing the merits of Basic Slag under your notice. An interesting pamphlet giving particulars of the results obtained by leading agriculturists from the use of Basic Slag, will be forwarded by post on application to

**THE CROSS FERTILIZER CO., Ltd.**  
**SYDNEY, N.S.**

Or to their Sales Agents for

Western Ontario, MR. A. E. WARR, Wanstead  
Eastern Ontario, MR. A. L. SMITH, 220 Alfred St., Kingston

### Sales Agents Paid

Last year the Wentworth (Ont.) Fruit Growers' Association sent its manager, Lorne H. Carey, to the western provinces to market its crop of fourteen thousand barrels of apples. It cost the Association one thousand dollars and the results obtained are believed to have been satisfactory, as not only were good prices obtained last year, but already orders have been received for about eight thousand barrels of this year's crop.

The prices received amounted to about three dollars for Number One Spys, Baldwins, Russets, and Kings, with two dollars

### A Special Offer

The Canadian Horticulturist has completed arrangements with The Fruit Grower and Farmer, published at St. Joseph, Mo., by which we are enabled to offer a year's subscription to that publication and The Canadian Horticulturist for only \$1.15. The regular subscription price of The Fruit Grower and Farmer is \$1 a year, plus twenty-five cents for extra postage charges. Thus the regular rate of The Fruit Grower and Farmer and The Canadian Horticulturist would be \$1.85.

The Fruit Grower and Farmer is one of the leading fruit magazines of the United States. This, therefore, is an exceptional opportunity for readers of The Canadian Horticulturist who would like to keep in touch with fruit conditions in the United States to do so at low cost. All remittances should be sent direct to The Canadian Horticulturist Peterboro, Ontario. Remember! Only \$1.15 for two papers for a year including postage.

fifty cents for Number Twos. Fall apples brought low returns. Shipments on consignment to Great Britain were not satisfactory. Baldwins were the leading variety exported and the returns were low. Mr. Carey, the manager, is inclined to believe that there was an "understanding" between the commission men in the Old Country, for there was a variance of only two cents in the returns from different fruit firms. These prices included about one dollar each for expenses of barrel and handling, so that the grower got somewhere around two dollars net for his apples.

## Imperial Bank

Established OF CANADA 1875  
HEAD OFFICE TORONTO

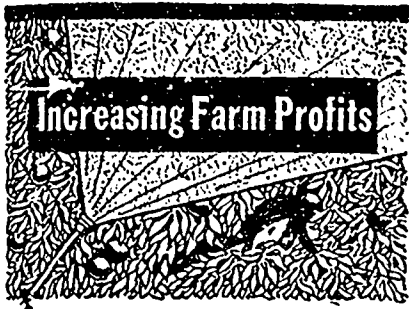
Capital Paid-up.	6,770,000.00
Reserve Fund	6,770,000.00
Total Assets	72,000,000.00

D. R. WILKIE, President and General Manager  
HON. R. JAFFRAY, Vice-President

Branches and Agencies throughout  
the Dominion of Canada

Special attention given to collections

Savings Department at all Branches  
Interest allowed on deposits at best current rate



Spray better if you would have better fruit—more profitable fruit. Statistics prove that well-sprayed trees produce 25 to 75 per cent more fruit and bring 25 per cent higher prices than unsprayed or poorly sprayed trees. Neglected and poorly sprayed trees mean small yields and stunted, rough and wormy fruit. Cheap, inefficient sprayers are an expensive nuisance.



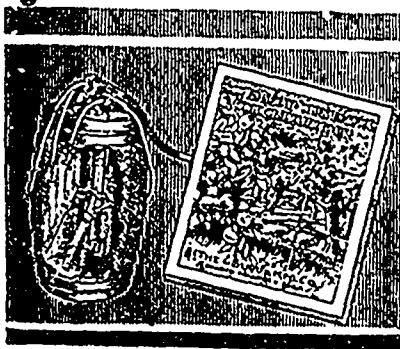
are the world's sprayer standard. They give the utmost satisfaction under the hardest conditions. Years of experience prove it. The Goulds way of spraying is easy. The pump works easy and evenly, the nozzles never clog but spread the solution properly. The agitators keep the solution well mixed and the materials used are chemical proof. Made in all types for hand or power at prices to suit everyone.

### Get the Facts

"How to Spray—When to Spray—Which Sprayer to Use"

Every farmer, every fruit grower should have a copy of this great book. Brimful of just the things you want to know about spraying. Write for it today—it's free. Act now!

THE GOULDS MFG. CO., 17 W. FALL ST., SENECA FALLS, N. Y.  
Largest Manufacturers of Pumps for Every Service



# Mature your crop early HOW?

The market gardener gets the top of the market for early produce, and the general farmer saves many dollars from early frosts by using a soluble, high-grade complete fertilizer, like one of our Stockbridge manures. There is no mystery about it. A crop, like a calf, will grow quicker and healthier on a full ration, but the ration must be right. The

## Stockbridge Manures

offer this sort of ration for crops.



The Stockbridge Manures were formulated by the late Professor Stockbridge of the Massachusetts Agricultural College and were introduced forty years ago. They have been improved and kept up-to-date. The Stockbridge and all the other Bowker brands are soluble, active, sure. They are made from the best materials by special factory methods. Prompt service and moderate prices go with them.

We want Agents in unoccupied territory. Write today for prices and terms; this may mean a good business for you if your act at once.

Write anyway for our illustrated catalogue and calendar. We want you to know what we can do before you buy your spring fertilizer.

## BOWKER FERTILIZER COMPANY

73 Lyman Street, Buffalo, N. Y. 39 Chatham Street, Boston, Mass.  
Original and largest manufacturers of special fertilizers.

# Fruit and Vegetables Solicited

WE GET YOU BEST PRICES

OUR facilities enable us to realize top prices at all times for your fruit, vegetables or general produce. Aside from our large connection on the Toronto market, we have established branch warehouses with competent men in charge at Sudbury, North Bay, Cobalt, Cochrane and Porcupine. In time of congestion on the Toronto market we have a ready outlet through these branches. We never have to sacrifice your interests.

## H. PETERS

88 Front St. East, Toronto

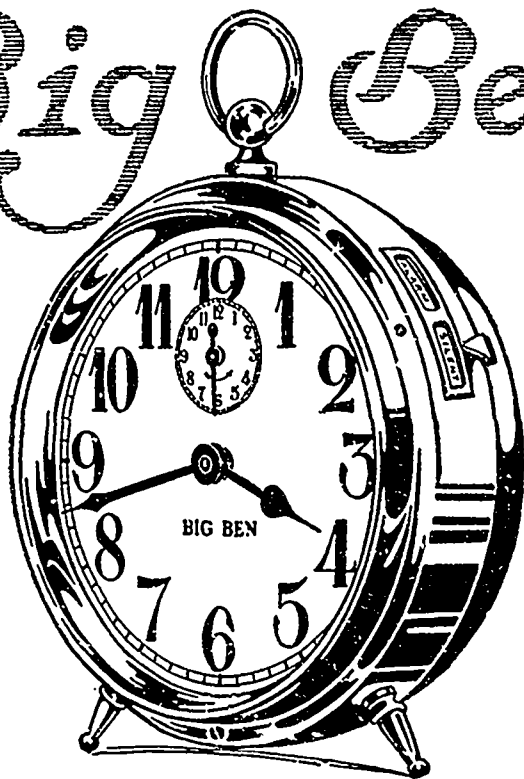
References: The Canadian Bank of Commerce, (Market Branch) and Commercial Agencies.



Branch Warehouses:  
Sudbury, North Bay,  
Cobalt, Cochrane and  
Porcupine

Send for  
Shipping Stamp

# Big Ben



## Use Big Ben All Day Long

Big Ben not only gets you up on time every morning, but he serves the whole family all day long as a reliable clock to tell the right time by.

He's really two good clocks in one—a crackerjack of a time-keeper—a crackerjack of an alarm.

He can ring you up in the morning just when you want and either way you want—five straight minutes or every other half minute for all of ten minutes.

If you're a light sleeper, turn on the half minute taps before you go to bed. If you sleep heavily, set the five-minute call and you can slumber then without the get-up worry on your mind.

Then when you're up and doing,

carry Big Ben downstairs into the living room so that the whole family can use him to tell the right time by. He stands seven inches tall and his great big open face can be seen distinctly across the largest room.

Big Ben is triple nickel-plated and wears an inner vest of steel that insures him for life. His big, bold figures and hands are easy to read in the dim morning light. His large, comfortable keys almost wind themselves. He rings five minutes steadily or ten intermittently. If he is oiled every other year, there is no telling how long he will last.

He is sold by 6,000 Canadian dealers. His price is \$1.00 anywhere. If you can't find him at your dealer's, a money order mailed to his dealers, *Wentz, La Salle, Illinois*, will send him anywhere you say, express charges prepaid.

## Where do We Stand in Apple Industry?

P. J. Carey, Dominion Fruit Inspector

After a season such as the past year has been, many people are asking the question, where do we stand in the apple business? Have we overdone the industry? Is it advisable to plant out more apple trees? To these questions I make answer that it is advisable to plant still more trees, but these must be only of desirable varieties. We must cut out the undesirable. We must give the people what they are asking for—the varieties they want.

In the West, and in our larger cities even here in the East, we are up against competition from American apples such as the Roan Beauty, which are even now retailing in Toronto at five cents apiece. They are not up to much in quality but they have a most attractive appearance. They are clean apples, perfectly formed, and attractively packed.

The bad state of the markets this past year put a great many irresponsible buyers out of business. The money from abroad usually advanced to them was withdrawn. Only the reputable buyers and the co-operative associations were left, and thus there were not enough buyers to go around, and many apples of necessity went begging for buyers, realized a very low price, and in some cases even rotted in the orchards.

The key to the whole situation is to produce good fruit, properly care for it, properly pack it, and market it where the people want it. Our Ontario and Eastern apples cared for and packed as they should be, have Western apples beat to a frazzle. We have got to raise better apples and larger apples having abundance of high color. There is a good thing in apples yet—in fact, they are the best thing yet on the farm—but it all depends on how you treat your orchards. "Eternal vigilance in orcharding is the price of success."

## Experience with Commercial Fertilizer

J. W. Clark, Brant Co., Ont.

I have been using commercial fertilizer for 15 years and fully appreciate its value. I value it especially for fruit and vegetables. Before one can use commercial fertilizer to best advantage, however, he must thoroughly understand the needs of the plants to which he is applying fertilizer, and he must also have a good knowledge of the deficiency in his own soil. Otherwise, how can he decide what fertilizers are needed?

Experimental experience is the only way in which this knowledge can be gained. From my own experience in orchard work, I have found that mature trees show best results when treated with acid phosphate and muriate of potash, about 200 lbs. to the acre. I prefer finely ground bone as a source of supply for acid phosphate. This bone is not in a very available condition, and it must be applied as early in the spring as possible.

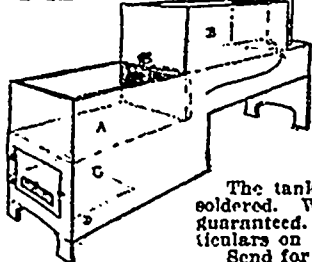
In addition to this, I have been using

## For Sale Strawberry Plants

Parsons and Williams Varieties, also Cuthbertson Raspberry plants

D. SULEY, Successor to W. E. Fitch  
Niagara Falls South, Ont.

- A—Cooking Tank
- B—Hot Water Tank
- C—Fire Box
- D—Ash Pan
- E—Smoke Pipe



## Make Your Own Spray

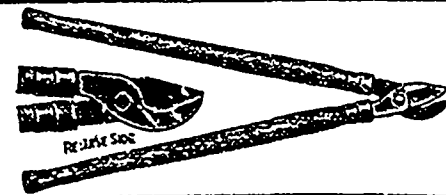
Home Bolled Lime Sulphur is being used in increasing quantities by leading fruit growers and fruit growers' associations. They find that by making their own spray they can effect a considerable money saving, and at the same time produce a preparation that will do the work thoroughly.

It is an easy matter to make home bolled lime sulphur. The chief essential is a proper spray cooker. We manufacture two kinds of cookers, one with a single tank, and one with a double tank. (See illustration.) They are designed especially for this purpose, and will give the greatest efficiency with the greatest saving of fuel. They can be used for either wood or soft coal.

The tanks are made of heavily galvanized steel, thoroughly rivetted and soldered. Will not leak. They are built to give satisfaction, and are guaranteed. Made in five sizes, capacity 30 to 75 gals. Prices and full particulars on application. Get your outfit now. Write us to-day.

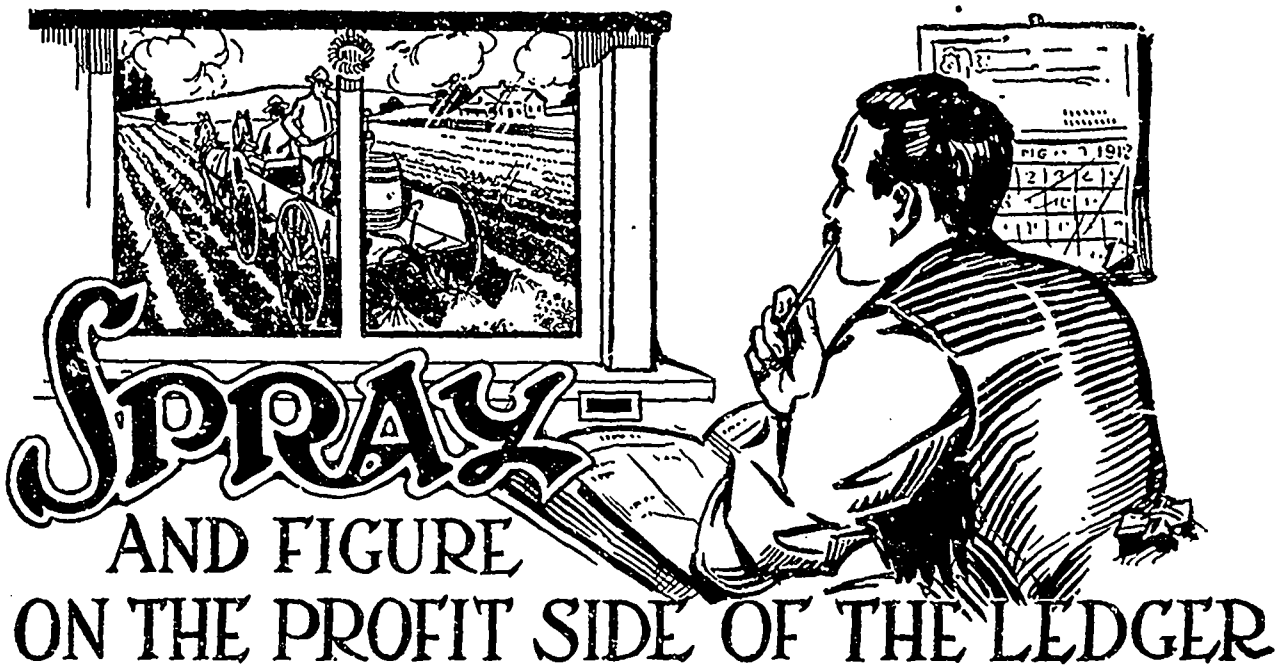
Send for pamphlet illustrating the finest pruning saw on the market.

STEEL TROUGH AND MACHINE CO., Ltd., TWEED, Ont.



## Cronk's Pruning Shears

To introduce a high-grade pruning shears at a very low price, we are now offering direct, provided your dealer does not have them, our 25-inch No. 099, guaranteed pruner at \$1.25 per pair, via parcel post, prepaid; cash with order.  
CRONK & CARRIER MFG. CO., ELMIRA, N. Y.



# SPRAY

## AND FIGURE ON THE PROFIT SIDE OF THE LEDGER

TO-DAY—if you would make the most of your Orchard and Garden—you must protect them from insect pests.

Sherwin-Williams New Process Arsenate of Lead is sure death to leaf-eating insects. It is a strictly neutral arsenate and for that reason is superior to ordinary acid arsenates.

By neutral, we mean that all the arsenic, which is the poisoning agent, is taken up or neutralized by the lead. This gives you an arsenate that will kill the bugs, but

will not burn the foliage or russet the fruit. A neutral arsenate is the only safe arsenate to use with Bordeaux or Lime-Sulphur.



Write us to-day for a copy of "Spraying a Profitable Investment." A new edition will be ready in a few days. It is probably the most complete booklet on insects and the way to control them, that has been printed.

**THE SHERWIN-WILLIAMS Co.**

*of Canada, Limited*

MANUFACTURERS OF INSECTICIDES

OFFICES & WAREHOUSES: MONTREAL, TORONTO, WINNIPEG, VANCOUVER, LONDON, ENG.







# NA-DRU-CO ROYAL ROSE TALCUM POWDER

**N**A-DRU-CO Royal Rose Talcum is as comforting to Baby's tender skin as it is to Mother's wind-chafed cheek or Father's chin smarting after a shave. Its remarkable fineness—its pronounced healing, antiseptic qualities—and its captivating odor of fresh-cut roses—have won for Na-Dru-Co Royal Rose Talcum the favored place on the dressing tables and in the nurseries of the most discriminating people.

25c. a tin, at your Druggist's—  
or write for free sample to the

**NATIONAL DRUG AND CHEMICAL CO.  
OF CANADA, LIMITED, - MONTREAL.**

191

a cover crop which is plowed down each year and every third year I make an application in the orchard of barnyard manure. Where wood growth is desired nitrate of soda is the desirable fertilizer, but I find that with bearing trees the nitrate tends to delay maturity, and its use will not be advisable on winter varieties, especially where color is essential.

Fertilizers, however, are not all. The fruit grower must ever bear in mind the importance of humus in the soil as a retainer of moisture. Proper pruning, thorough spraying, and cultivation are the other factors in successful fruit growing.

### Transportation Problems\*

E. E. Adams, Leamington, Ont.

In both America and Europe railways traverse the country east, west, north, and south, with lateral lines that cover an immense territory, and give service, both passenger and freight, to millions of people. We find people in Europe are able to send us oranges, lemons, raisins, and other commodities, first by steamship and then by railroads, and all these are given to us at such low prices that we often wonder how it can be done. It all comes largely from the low freight rates.

The people of Australia and New Zealand send to our shores mutton, butter, and similar products in large quantities, and compete with our growers. From Spain we receive onions at such low prices it really does not pay us to grow the large varieties here. I am told that these have been laid down in Toronto at one dollar sixty-five cents a case of about one hundred and thirty pounds, even though we have a duty of thirty per cent. against them. We find, also, on account of low freight rates, that our country this season is fairly flooded with onions from the United States. We also are having potatoes delivered in the province of Ontario from New Brunswick, and I understand the freight rate is twenty cents a hundred pounds. We have to pay thirty-two cents a hundred pounds on onions to the same province. Just why there should be such an unfair rate, we who are engaged in the business fail to see.

There are many imperfections in rates which should be remedied by those concerned. In the western part of the province, we purpose trying to lay before the Railway Commission a series of what we consider unfair rates, and to endeavor to have them arranged on a more equitable basis. We are largely shut out of the west beyond Winnipeg, and we think that trade is ours by right. But to obtain it we will have to fight for it.

\*Extract from a paper read at the last annual convention of the Ontario Fruit Growers' Association.

**Peerless  
Guaranteed Fencing**

Strongly made and closely spaced—making it a complete barrier against large animals as well as small poultry. Top and bottom wires No. 9—intermediate No. 12 wire—made by the Open Hearth process which time and other tests have proven to be the best material made for the manufacture of wire fencing. Send for literature. Ask about our farm and ornamental fencing. Agencies nearly everywhere. Live agents wanted in unworked territory.

**The Barwell-Waxle Wire Fence Co., Ltd.,**      **Winnipeg, Man., Hamilton, Ont.**

### Black Raspberries

Big Money now for the man who grows the  
"FARMER"

the largest and most prolific improved Black Cap known. Bushes hardy, quick growing, very heavy croppers from first year.

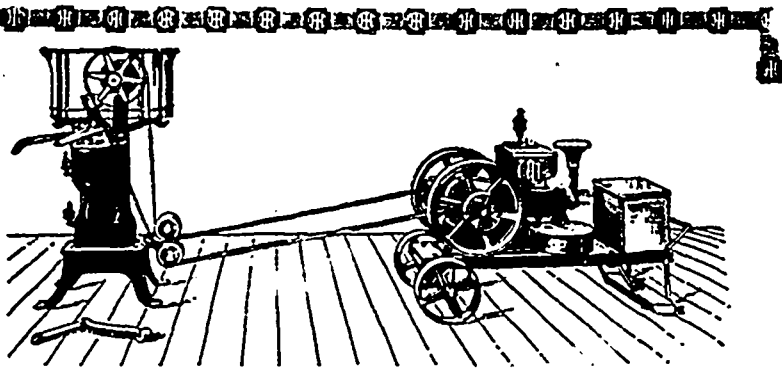
Fruit early, extra large, firm, good size, new delightful flavor. Bring the highest price.

We are offering for early Spring delivery selected plants, our own growing.

**Per 1,000, \$15.00. Per 100, \$2.00**

Order now.

**ROBERT LOWREY, St. Davids, Ont.**



## Cream Separator Savings

**A**N IHC cream separator saves money for you in more ways than most people know. It saves cream because it skims practically all the butter fat out of the milk. It saves on the feed bills. Calves and pigs thrive on the sweet, warm skim milk that comes fresh from the separator. It saves fertility. The dairyman who feeds the skim milk to animals parts with a very small amount of fertility. The man who sells whole milk loses close to \$4.80 per cow per year in fertilizing matter. These three savings, while not all that a cream separator makes, are important enough to warrant the most thoughtful consideration.

## I H C Cream Separators Dairymaid and Bluebell

are also furnished as complete power outfits, as illustrated above. The engine is a one-horse power, back geared, hopper-cooled, I H C engine which can be detached and used to run any small machine. The separators are built for long life and skinning efficiency. They have heavy phosphor bronze bushings for bearings; a never-failing splash oiling system; trouble proof bowl spindle bearings; dirt and milk proof spiral gears which are easily accessible for cleaning. There are four convenient sizes of each style. Ask the I H C local agents who handle these machines for demonstration. Get a catalogue and full information from them, or, write the nearest branch house.



**International Harvester Company of Canada, Ltd**  
BRANCH HOUSES

At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, North Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton



## Hemingway's "London Purple" Co., Ltd.

17 Battery Place  
NEW YORK

15 Seething Lane  
LONDON, E.C.

Cables: "Nevritique," London or New York  
Works: Stratford, London, E.

For over 35 years we have been doing very large business in insecticides throughout the U.S.A., Australia, New Zealand, West Indies, Egypt, etc., etc.

"LONDON PURPLE," Trade Mark, our original product is still one of the most effective of all insecticides. Millions of pounds have been used. Many who have used it in 1879 are using to this day. It has one disadvantage, it is so active that occasionally a few leaves may be scorched if used without considerable dilution or carefully distributing over a wide area, *but a few leaves in a large orchard or potato farm are of very little account compared with the benefit derived, and this slight danger can be obviated by adding ¼ lb. of slacked lime to every 1 lb. of "London Purple" used.*

### ANALYSIS:

Arsenic Lime Compounds ... 70%  
Dye stuffs and inert matter ... 30%  
Use 1 lb. to a barrel of water.

## Hemingway's Pure Lead Arsenate Pulp

The best ever made—absolutely pure.

### ANALYSIS:

Arsenic Oxide ..... 15%  
Lead Oxide ..... 32%  
Moisture ..... 50%  
Soluble Arsenic, under ..... ½%

It thins down very easily in the spray tank.

It is the most neutral of all makes. Its adhesion is perfect.

Its composition absolutely consistent, owing to the great care taken in manufacture.

Careful orchardists use less of our make than recommended quantities and still get the best results.

Please write for further information.



## New Sweet Peas High Grade Seeds

Successful Gardeners everywhere depend on Dupuy & Ferguson's High Grade Seeds to produce the finest vegetables and the most beautiful flowers. 63 First Prizes were awarded at the Montreal Horticultural Exhibition, Sept., 1912, to Mr. F. S. Watson, on products grown from seeds supplied by us.

### COLLECTION A.—TWELVE SPLENDID EXHIBITION VARIETIES

White Spencer, King Edward Spencer, Otello Spencer, Florence Morse Spencer, George Herbert Spencer, Helen Lewis, Mrs. Hugh Dickson, Primrose Spencer, Marie Correll, Countess Spencer, Florence Nightingale, Asta Ohn.  
Price, 1 pkt., each, \$1.25.

### COLLECTION B.—SIX SPLENDID EXHIBITION VARIETIES

Countess Spencer, White Spencer, King Edward Spencer, Helen Lewis, Florence Nightingale, Asta Ohn.  
Price, 1 pkt., each, 65c.

## THE GRAND NEW HARDY ROSE CLIMBING AMERICAN BEAUTY

The Rose "We-All" Have Been Waiting For

This wonderful new Rose is a cross between the "Queen" of all Roses, American Beauty, and an unnamed seedling. Color a rosy crimson similar to its parent (the most loved of all Roses) and with the same exquisite fragrance, a variety indeed in hardy climbing Roses. The plant is of very strong habit and growth, making shoots eight to ten feet in a season, flowers are of large size and produced in great profusion throughout the season—unlike the bush Rose, "American Beauty." It is as hardy as an oak. Supply limited. Extra Size plants, each, \$1.50; per doz., \$12.50.

Write for our New Illustrated Catalogue replete with choicest strain of VEGETABLE and FLOWER SEEDS

**DUPUY & FERGUSON 38 Jacques Cartier Square, Montreal**

# Good Cheer

THE FURNACE WITH A REAL WATERPAN

Winter Warmth in the home like the breath of a day in June, compared to the July-like dryness and intensity of the furnace heat with which you are familiar. It's all in the big **CIRCLE WATERPAN** with its adequate provision for humidifying the heated air, and a furnace construction absolutely gas and dust tight.

## "Bumper" Barley Crops

are easily obtained by the intelligent application and use of Nitrate.

CHILEAN

## Nitrate of Soda

gives plants a good start, carries them along to proper development and maturity, and provides a "bumper crop."

Clean—uniform—odorless—cheap. Its results are astonishing and convincing. 100% immediately available.

Be sure and write today for our booklet—FREE,

"Fertilizers for Corn and Cereals."

**Dr. WILLIAM S. MYERS**  
Director Chilean Nitrate Propaganda  
17 Madison Ave., New York  
No Branch Offices

In a general way, we have a great deal to be thankful for. While freight trains do run very slow, still in time we get our goods through to their destination. At times we find when we send cars to the west, even though we ship a car a day, they often arrive four, five, or six at a time. It always causes a loss to the shipper when so much is thrown on the market at one time. The same thing happens in Toronto, as somehow we are unable to get prompt delivery to the fruit market. The same applies to Montreal. We hope that something will be done in the future to put the transportation business on a better basis, not only as regards more prompt delivery at terminals, but better car service as well.

### Shady Highways

E. B. Lake, Montreal Que.

It is interesting and in keeping with the times to read in the Metropolitan daily articles under such headings as "An Automobile Road from Montreal to Vancouver" or "To Invite Canada to Good Roads Conference to be Held in London, June, 1913." The provincial government of Quebec has guaranteed the municipalities of the province of Quebec the sum of ten million dollars to be expended on her highways. At the annual meeting of the Canadian Forestry Convention, a resolution was adopted favoring a national highway from the Atlantic to the Pacific.

Thus we see that the good roads movement is becoming world-wide. The only wonder is that all civilized countries, especially those on this continent did not wake up to its importance earlier. I regret, however, that in the movement we hear nothing about beautifying our highways; nothing about beautiful roads or shady avenues. No sane man would spend money grading, terracing, or building driveways in his home grounds and stop there; for the scheme would not, could not, be complete nor its object attained without the planting of trees and shrub for ornamentation.

Our city governments nowadays do sooner open up new streets than they lay pipes and wires, build proper sidewalks and plant shade trees. Park Boards and horticultural societies are doing a bit of work, and doing it well, for the cities and towns, but why is the work of beautifying not extended into the country? The expense could not stand in the way because it would not be heavy, for young seedlings could be procured if necessary, and at a low rate from nurserymen. Then, too, trees protect a road and reduce the expense of its upkeep. In short, to my mind the beautifying of the country roads would do its share towards not only arresting the growth of the cities at the expense of the country, but would actually in time do its part in reversing that movement and bringing city people back to the country. Good roads are an absolute necessity, a municipal, provincial, and national asset. They are an index to the progressive or unprogressive spirit of a community for "by their roads ye shall know them," for a well-made road is not a good road unless it is a shady highway as well. It is therefore a duty we owe to the country and to posterity to see to it that those having the authority to make our road laws or road expenditure, make ample provision for beautifying them as well. But why wait for this, for it is, after all, largely a matter for individual effort. A few leading spirits in each locality can start the movement and the rest must fall in line, if only to save their self-respect.

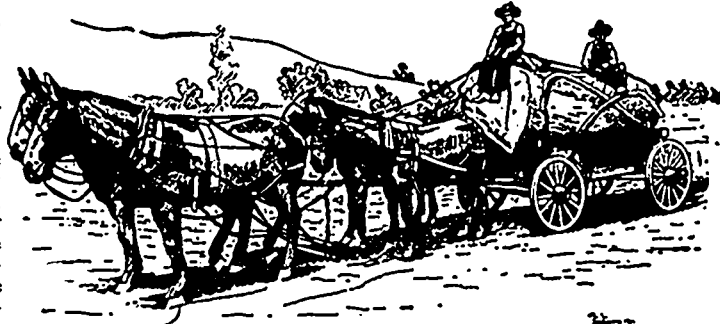
## Finish This Story

A WORKMAN in an IHC wagon factory was explaining the various stages of wagon construction to an interested visitor. He picked up two pieces of long leaf yellow pine, which to all appearances were sawed from the same board, and asked the visitor to notice the difference in the weight of the two pieces. The lighter piece, he explained, was kiln-dried. The heavier piece was air-dried and more thoroughly seasoned. It had retained the resinous sap which adds strength and toughness, while in the kiln-dried piece of lumber this sap had been drawn out by the too rapid application of heat.

### Every Stick of Lumber Used in IHC Wagons is Carefully Selected, Air-Dried Stock

Here was something to think about. The visitor asked for a test as to the relative strength of the two pieces of wood. The air-dried piece held up under nearly double the weight under which the kiln-dried piece of lumber broke. The workman explained how the comparative life of air-dried and kiln-dried lumber has about as great a difference.

To the eye there was no difference between these two pieces of lumber, but when put to



the test there was a vast difference. So it is throughout the construction of IHC wagons—Petrolia, and Chatham. They are built for real strength, light draft, and satisfactory service.

After seeing the care used in the construction of every part of an IHC wagon, the visitor asked: "Why don't you let people know of the great care used in selecting material and in constructing IHC wagons?"

This is what we have been trying to do, but we cannot tell it all in one short advertisement. IHC local agents handle the wagons best suited to your work. See them for literature and full information, or write the nearest branch house.

**International Harvester Company of Canada, Ltd**  
EASTERN BRANCH HOUSES

At Hamilton, Ont.; London, Ont.; Montreal, P. Q.;  
Ottawa, Ont.; St. John, N. B.; Quebec, P. Q.  
Built at Chatham and Petrolia, Ont.



Why Don't  
You Plant

# EWING'S

## Reliable Seeds

What's the use of giving your land, your time and your work for a season for anything less than the *best* crops? Ewing's Reliable Seeds have proved, for more than forty seasons, favorable and unfavorable, that they will produce the highest crops of the best quality. Ask your neighbors who plant Ewing's Seeds all about them. Plant them yourself this spring and get the full reward for your work. Your dealer should have Ewing's Reliable Seeds, but if he hasn't, write for our illustrated catalogue and order from us direct.

Wm. Ewing & Co., Seedsmen  
23 McGill St., Montreal.



### SPECIAL GUARANTEED Lime-Sulphur Hydrometer

Both specific gravity and Beaume readings; submitted to Mr. Caesar A. C., Guelph, and reported "quite satisfactory."

Sent Postpaid on receipt of 80 cts.

**PARKE & PARKE** Wholesale Druggists  
HAMILTON, ONT.

### BEZZO'S FAMOUS PRIZE ASTERS

Prizes at New York State Fair 1910-11; Berlin Horticultural Society 1911-12; Canadian National Exhibition, Toronto 1912.

Vick's Violet King, Rose King, Royal White, Royal Lavender, Royal Purple, Vick's Rochester, a lavender pink, Vick's Overloss Pink, Salmon Pink, small flower but very pretty; Improved Hohenzollern in white or rose; Improved Congo Pink; Late Branching White, Rose, Pink, Lavender; Early Branching White, Rose, Crimson, Lavender, Queen of the Market (very early) in white or pink. These are very truly the aristocrats of the Aster family. All plants sent by express (unless otherwise arranged) and guaranteed to arrive in good condition. Price \$1.00 per hundred, packed and labelled separately in wet moss. Express prepaid on orders of \$2.00 and over. Special prices to Horticultural Societies. All plants cold-frame (not hot-bed) grown, and with favorable weather will be ready last week in May.

**C. MORTIMER BEZZO, BERLIN, ONTARIO**

# Big Chicks



with robust constitutions, full of vigor, are not secured by careless methods of management. Worth-while chickens are the kind that have developed steadily from the day they tumbled out of the shell.

- Pratt's Baby Chick Food** to save them and give the vigorous start. Use
- Pratt's White Diarrhea Remedy** to prevent death from bowel troubles. Give
- Pratt's Poultry Regulator** to keep them well, with hearty appetites and perfect digestion. Dust them frequently with
- Pratt's Powdered Lice Killer** to insure freedom from troublesome vermin.

That's the whole story. Easy, isn't it!  
 "Your money back if it fails."  
 Our products are sold by dealers everywhere, or  
**PRATT FOOD COMPANY OF CANADA LIMITED, TORONTO, ONT**

**Prices:**  
 Chick Food, 25c up  
 White Diar. Rem., 25c, 50c  
 Regulator, 25c, 50c, \$1  
 Lice Killer, 25c, 50c

Pratt's 164-page Poultry Book, 10c by mail.

## The Cooperative Purchasing of Supplies \*

W. J. Kerr, Woodroff, Ont.

The subject of cooperation is engaging the attention of persons, corporations, and nations. The vegetable growers throughout America are forming many cooperative associations. Large corporations and companies are cooperating with each other to lessen the cost of production and teach each other the best and most profitable methods. Nations are cooperating with each other for their mutual protection and welfare. Yet we know but a small part of the benefits to be derived from such banding together.

The market gardeners of the Ottawa district a few years ago were struggling along in a kind of a way. A few were making a little money. Nearly all were more or less suspicious of each other. None of them were enjoying life or making the success they might. Finally a branch of the Ontario Vegetable Growers' Association was formed, but the spirit of cooperation did not seem to get hold of the members for the first four years, and in the meantime the branch came very near dying. In the winter of 1911 our association bought a car of berry boxes, baskets, and other supplies, and it also bought in Denmark a few seeds, as a trial. This venture proved successful, and resulted in a saving of about two hundred dollars for our members or the car of baskets alone. The seed purchased direct from the grower in Denmark cost us only about half what we had been in the habit of paying, and the quality was much superior to anything we had ever had before.

This cooperative purchasing of supplies built up our branch. It created a spirit of mutual confidence that has been of untold benefit to us. Our branch has taken on new life, our members have increased, our finances have increased, and we will have a nice little surplus at the end of the year. I consider the purchase of supplies, cooperatively, by our association has been the chief factor in working this wonderful change.

To give you an idea of the saving we have made in the cost of seeds, I will quote from this season's prices as offered by two of the largest growers of seeds in the world. One quotes Nantes carrot seed at thirty cents a pound, lettuce at from twenty-five to thirty cents a pound, and a few other lines equally low. Another, one of the largest growers in the world sold us last year, Snowball cauliflower at sixty-two cents an ounce, Chanteny carrot at one dollar ten cents a pound, Danish winter cabbage at seventy-five cents a pound, Glory of Enkhuizen cabbage at seventy-five cents a pound, lettuce at forty to fifty cents a pound, Moss Curled parsley at thirty-four cents a pound, Hollow Cross parsnips at fourteen cents a pound, and many other lines equally low. True, the seeds bought in the United States were at much lower in price than we can buy them at home, but we bought from the grower and got fresh goods, pure and true to type, and of high germination. I estimate that by cooperative purchase of all our supplies, the members of the Ottawa branch can save in original cost over \$1,000, and can make from their extra crop, due to high quality seed, several thousand dollars more on the average each year.

\*Extract from a paper read at the last annual convention of the Ontario Vegetable Growers' Association.



## International Stock Food Is Equally Good for Cows—Horses—Pigs

This great tonic is for all live stock—to make cows give more milk—to keep the working horses in prime condition—to fatten pigs and keep the "winter" pigs strong and vigorous.  
 We guarantee that it will make your colts, calves, pigs, sheeps and lambs grow rapidly, and keep them healthy and thriving all the time.  
 Tell us the number of head of stock you own and we will send you a copy of our \$1.00 Stock Book—Free.

Here's another farmer who tells it pays to feed International Stock Food—  
 "Rockport, West Va., N.P., Jan. 12, 1913.  
 "INTERNATIONAL STOCK FOOD is all O.K. I average a package every two months for my stock—having three horses, four cows, two calves, four steers and sheep. Careful tests show that my milking cows have given 20 per cent. more milk since feeding International Stock Food. It is also good for calves."  
 BEVERLY TOWER.

International Stock Food, Poultry Food, and Veterinary preparations are for sale by dealers everywhere. If you cannot obtain our goods in your town write us direct. (31)  
**INTERNATIONAL STOCK FOOD CO., LIMITED . . . . . Toronto**

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No. 76 Pivot-wheel Riding Cultivator, Plow, Furrower, and Ridger

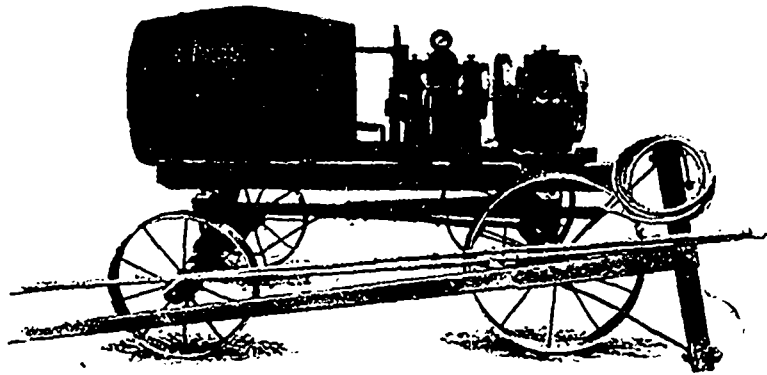
Planet Jr is a wonder in cultivating corn, potatoes, and similar crops. It is light in draft, simple and strong in construction, and comfortable to ride upon. Either regular or spring-trip standards may be used. Can be equipped with roller-bearings, spring-trip standards, and discs. It works rows 28 to 44 inches, and cultivates corn until 5 feet high.



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WHAT fruit growers are looking for High Grade Sprayer, with a perfect working, easy starting, two and a half horse power Engine. Ample power always. High pressure Pump which can always maintain 200 lbs. on the gauge. Equipped with hose guaranteed by the makers to stand 600 pounds pressure. Rotary Agitator, with iron propellers.

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**Our COG LEVER HAND PUMPS  
SAVE 40 per cent. of your labor**

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THIS PLANT FOOD IS ALL FROM OUR CANADIAN SOILS AND SHOULD ALL GO BACK SEND FOR PRICES, ETC.

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HAMILTON CANADA**



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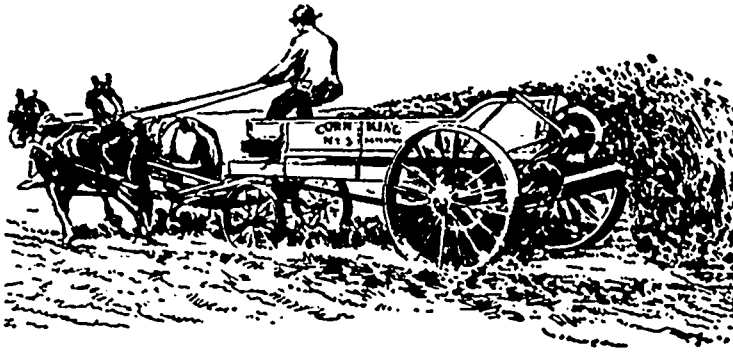
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## Your Soil Is Alive

**T**O all intents and purposes, soil is alive. It breathes, works, rests; it drinks, and, most important of all, it feeds. It responds to good or bad treatment. It pays its debts, and pays with interest many times compounded. Being alive, to work it must be fed. During the non-growing seasons certain chemical changes take place which make the fertility in the soil available for the next season's crop. But this process adds no plant food to the soil. Unless plant food is added to soil on which crops are grown, unless the soil is fed, in time it starves. There is one best way to feed your soil. Stable manure, which contains all the essentials of plant life, should be spread evenly and in the proper quantity with an

## I H C Manure Spreader

I H C manure spreaders—*Corn King* or *Cloverleaf*—are made in all styles and sizes. Sizes run from small, narrow machines for orchard and vineyard spreading, to machines of capacity for large farms. The rear axle is placed well under the box, where it carries over 70 per cent of the load, insuring plenty of tractive power at all times. Beaters are of large diameter to prevent winding. The teeth that cut and pulverize the manure are square and chisel pointed. The apron drive controls the load, insuring even spreading whether the machine is working up or down hill, or on the level. I H C spreaders have a rear axle differential, enabling them to spread evenly when turning corners.

The I H C local agent will show you all their good points, and will help you decide on the one that will do your work best. Get literature and full information from him, or, write the nearest branch house.



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## Strawberry Plants

After more than twenty years' experience in growing strawberries, I have found the Williams and Parson's Beauty the most productive and the best for the market. I am prepared to offer for early spring delivery, 500,000 plants of last year's growth of those two varieties. Also 250,000 plants of the following splendid kinds:

**|| FOUNTAIN  
WOLVERTON  
MICHEL'S EARLY  
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LATE GIANT**

Price for any of these varieties, \$5.00 per 1,000, or 75c per 100.

I have the best varieties of Red and Black Raspberries at \$10 per 1,000; \$1.50 per 100.

IF INTERESTED WRITE ME

**WILLIAM WALKER, Box 15, Port Burwell, Ont.**

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Send for List of

### WESTLAND'S HARDY PLANTS

**PAEONIES, PHLOX, IRIS, Etc.,**

*In many Beautiful and  
New Varieties.*

**ROSES, LILACS, SYRINGAS,  
MAGNOLIAS, Etc.**

**MALCOLM WESTLAND**  
TAMBLING CORNER, - LONDON, ONT.

## Marketing B. C. Fruit

(Continued from page 103)

and its enforcement, British Columbia growers are discriminated against in favour of their foreign competitor.

Twelfth. Canning, preserving, and otherwise preparing fruit and vegetables, are as yet developed to a very limited extent in this province. In California twenty-eight million dollars' worth of fruit by-products are produced annually.

The foregoing are among the principal conditions which depressed prices last year. The fruit growers of the province expect you to deal with the situation, and recommend and follow up means of securing our markets.

### FUTURE PROSPECTS

It seems pertinent for us to consider what will in all likelihood be the situation in future years. There is a general assumption that in 1913 apple and other fruit crops will be larger than in 1912.

People point to the increased acreage and the growth of the trees for proof. They forget the law of action and reaction which is always at work. The British Columbia fruit industry has always been specially subject to it. There was the large crop of eighteen hundred and ninety-eight followed by a small one in nineteen hundred and nine; a big crop in nineteen hundred and ten, with a small crop in nineteen hundred and eleven, and a bumper crop in nineteen hundred and twelve. The Okanagan shipped five hundred car loads of apples last year. In nineteen hundred and thirteen under normal conditions the crop will likely be less. Other districts and other crops under normal conditions will likely be the same. This is equally true of the country as a whole.

Practically all fruit districts had good crops last year. Many places will have a normal or average crop. The north-western States are not likely to have more than fifteen thousand cars of apples. In nineteen hundred and nine they had six thousand; in nineteen hundred and ten, fifteen thousand; in nineteen eleven, ten thousand; in nineteen hundred and twelve, twenty thousand cars are estimated.

Plums and prunes are almost certain to be a light crop in the north-western States next year; there is, generally speaking, a great need for concern about nineteen thirteen prices. Our present organizations will, however, require extension of staff and finances, to be effective.

### NORMAL PRICES PREDICTED

Nineteen hundred and thirteen will be a year of at least normal prices. In meeting the situation generally, we may expect a margin of some eighteen months to make plans for our next difficult season.

The acreage in the north-western States promises in the near future some real competition. Figures collected over the territory show that in Oregon, Washington, Idaho, Montana, and British Columbia there are some three hundred and twenty thousand acres of what promises to be fairly successful orchards, of which one ninety per cent. are in apples. Of this figure under thirty thousand acres are in British Columbia. It is true, of course, that it is generally accepted that only twenty-five per cent. of apples planted will arrive at commercial bearing. At present time only eight per cent. of the entire amount is in bearing, producing about twenty-five thousand car loads a year.

In nineteen fourteen we may expect between forty and forty-five thousand car loads of fruit in this territory, and the crop

## The Importance of this Reason Book

Before talking about the Reason Booklet itself, let us first ask you a question or two:

When you buy anything of importance involving the expenditure of several hundreds or thousands of dollars, do you rely entirely on your own individual information, and go right out and buy it? Of course you don't.

In making your final decision, are you not strongly influenced by the opinions of someone who has already bought—and is satisfied?

Doesn't the fact that this or that person, company or institution of prominence has put their stamp of approval on it, by putting their money into it, carry a good deal of weight with you?

This being so, then naturally enough you will buy a greenhouse much the same way.

Suppose, for instance, you want to know thoroughly about the U-Bar Greenhouse, and have been wondering if there are any houses in your vicinity you could see; wouldn't a booklet giving you the names of all U-Bar owners and the character and extent of the greenhouse they own, be of interest and assistance to you?

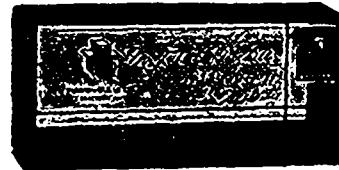
Let us suppose still further, that you want to confirm your decision to buy a U-Bar house by seeing who some of the others are who arrived at the same decision and built; wouldn't a booklet grouping such names in a readily get-at-able way be just the thing you want?

That's why we made just such a booklet.

It's called "Reasons."



The reasons themselves are told in 93 words, right at the start—the rest is given over to a unique and interesting arrangement of the locations and owners of U-Bar houses built in the last few years. Send for this Booklet. With it we will mail you our Catalog and a section of the U-Bar itself—so you can see exactly what the U-Bar is.



The U-Bar itself is mailed to you in a green box like this.

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Bloom from June till Frost

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We have cold storage facilities and can store your apples till a favorable price can be realized, thus protecting your interests. Write or wire us to-day.

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**STRAWBERRY PLANTS FOR SALE**  
 Amanda, Paul Jones, Len, King Edward, Charles L., Norwood, Argout, Ekey, Mascot, Meteor, Twilley and all the old standards.—Herbert Raspberry and Asparagus Plants.—Send for Price List.  
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**SPECIAL GUARANTEED Lime=Sulphur Hydrometer**  
 Both specific gravity and Beaume readings; submitted to Mr. Caesar O. A. C., Guelph, and reported "quite satisfactory."  
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*Installing Power Evaporators a Specialty*  
 When you see our **Ontario Sprayer** or **Improved Pacific Apple Parer**  
 in operation you will become their lasting friend. They stand out in a class by themselves.  
*Write for our valuable illustrated catalogue on Spraying and Evaporating.*  
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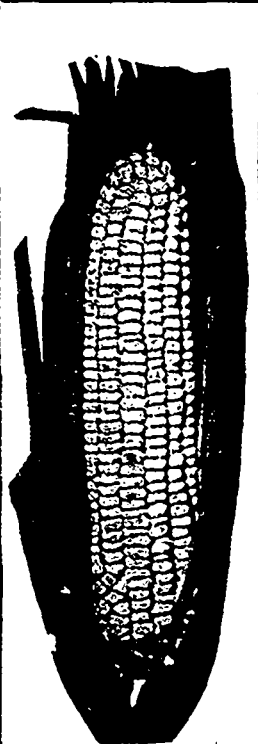
of apples may easily run to forty-two thousand cars.  
 This is equal to twenty-six million four hundred and sixty thousand boxes, or eighth million barrels, practically one-third of the entire average crop of the United States for the last seven years. If these crop predictions are correct, there is ample need for protection for us in our markets.  
 Economic conditions have changed. The cost of labor has increased greatly in the last five years; and so have the costs of other items of production. The exclusion of Orientals has had much to do with this. Our labor and the other items in the cost of production are higher than they are in the State of Washington. Another economic condition which affects the situation is the defective organization of our competitors. Their marketing associations were in poorer shape in nineteen hundred and twelve than in previous years, and this, in the face of large crops, inadequate holding and storing facilities, the absence of by-product factories, and unsatisfactory financial conditions.

**Okanagan Valley North, B.C.**  
 Chas. Webster Armstrong, B.C.  
 Armstrong district will be keenly alert for codling worms this summer. A few were discovered last season in one or two orchards. The Provincial Fruit Pest Inspector wisely quarantined those orchards, picked and destroyed the heavy crop of fruit, but doing away it is believed with means of propagation. One of the Fruit Pest Inspectors' staff is now in the district with an efficient power sprayer to give advice and assistance on all spraying matters, especially to watch for codling worms and completely exterminate them if any are found. This is prompt, commendable action; may the programme be carried to completion. The orchard men of this district will give every assistance for they

**STRAWBERRY PLANTS**  
 Seventeen years experience growing Strawberry for Market and Selling Plants.  
*Write for list of Varieties and Prices.*  
**S. H. RITTENHOUSE, Jordan Harbor, Ont.**

**Southern Farm Facts**  
 Land at \$10 an acre up  
 Alfalfa makes 4 to 6 tons per acre; Corn 100 to 100 bu. All hay crops yield heavily. Beef and Pork produced at 3 to 4 cents per lb.—Apples pay \$100 to \$500 an acre; Truck crops \$100 to \$400; other yields in proportion.  
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 Mobile & Ohio R.R. or Ga. So. & Fla. Ry will help you find a home in this land of opportunity. Book lets and other facts—free.  
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 Prize Winning Collection  
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**15 for \$1** Post Paid  
 Larger Roots by Express not Prepaid.  
 Both Equally Good.  
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**OUR BEST LIST IN TEN YEARS**

**RENNIE'S XXX VEGETABLE SEEDS**

These are extra choice, and are without exception the VERY HIGHEST IN GERMINATION and the VERY FINEST TYPES of their respective kinds that it is possible to procure on this or any other continent.

	POSTPAID,	1 LB.	1/2 LB.	OZ.	PKT.
BEAN, Bush Butter .....	.35				.10
BEAN, Bush Green Pod .....	.35				.10
BEET, Globe .....	2.00	.75	.25	.10	.10
CABBAGE, Early Summer .....	3.50	1.00	.30	.10	.10
CABBAGE, Autumn Winter Drumhead ..	3.50	1.00	.30	.10	.10
CARROT, Table .....	2.75	.75	.25	.10	.10
CAULIFLOWER, Snowball .....		12.00	3.50	.25	.10
CELERY, Golden Self-Blanching .....			3.75	.25	.10
CORN, Early Sweet Table .....	.40				.10
CUCUMBER, Table .....	1.90	.60	.25	.10	.10
LETTUCE, Solid Head .....		.75	.25	.10	.10
MUSK MELON, Golden Green Flesh .....		.90	.35	.10	.10
WATER MELON, Earliest Sweet Table ..		.60	.20	.10	.10
ONION, Connecticut Yellow Globe .....	2.50	.75	.25	.10	.10
ONION, Connecticut Large Red .....	2.50	.75	.25	.10	.10
PEAS, Earliest Table Marrow .....	.40	.15	.10	.10	.10
PEAS, Melting Marrow .....	.40	.15	.10	.10	.10
PARSNIP, Evergreen Curled Table .....	2.00	.75	.25	.10	.10
PARSNIP, Guernsey .....	1.50	.60	.20	.10	.10
RADISH, Scarlet Round White Tipped ..	1.50	.50	.20	.10	.10
RADISH, Scarlet Oval .....	1.50	.50	.20	.10	.10
SQUASH, Autumn Winter Green Hubbard ..	1.75	.60	.20	.10	.10
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**WM. RENNIE CO. LIMITED**  
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know that it is to their own best interests to do so. There are orchards here twenty-five to thirty years old that have never borne a wormy apple, and every effort will be used to extend this effort. If this pest is not eradicated thoroughly and promptly all Okanagan valley will be doomed to summer spraying annually, in order to raise wormless apples. This at least has been the result elsewhere. The great fruit valleys of Washington and Oregon are now spraying regularly to keep down the percentage of wormy fruit. We purpose having Okanagan continue to be the valley of wormless apples.

Some of our growers may doubt the wisdom of making this crisis public. The Government, however, can never supervise every apple tree. It is necessary that the growers themselves be broadly awake, and do everything they can to help. There is little use locking the door after the horse is stolen. What would the State of California have saved had pear blight when it appeared in San Joaquin valley been promptly grappled with and exterminated? What would southwestern Ontario have been to the good had the real gravity of the situation been realized when San Jose scale was first noticed three years ago, and had they faced the situation as Pres. Parker, of the Nova Scotia Fruit Growers' Association says in the January Canadian Horticulturist, the growers of the Annapolis valley are facing the infection of San Jose scale that threatens them? It may be of interest at this time to recall that San Jose scale once was present in the Okanagan valley; at Kelowna. Prompt action of the provincial government and the owner of the infected orchard eradicated the scale, and Kelowna and the whole valley has since enjoyed years of immunity. May it be so with codling moth!

I like The Canadian Horticulturist very much, especially the notes and articles on perennials and flower gardens.—Annie M. Thompson, Queensboro, Ont.

### Strawberry Plants

Sample, Dunlap, Splendid, Pocomoke

We have large quantities of Extra Strong Plants. It will pay you to write us for prices.

JAS. E. JOHNSON & BROS., - SIMCOE, ONT.

## THE STRATFORD EXTENSION LADDER

It is the safest and best on the market. Fitted with automatic hooks that lock at every rung and unlock between the rungs

It is **LIGHT, STRONG EASILY OPERATED AND DURABLE**

IF interested write for Catalogue F

THE **Stratford Mfg. Co.**

Limited

**STRATFORD, CANADA**

Makers of Ladders for every conceivable purpose



## Ward Spray Pumps

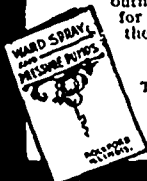
When the time comes to spray, you MUST do it then or never. A few days or a week's delay may mean the loss of hundreds or even thousands of dollars. You absolutely cannot afford to take chances on a spray pump that may get out of order just at the critical time. You want the strongest, surest, most reliable pump you can get even if it does cost a few dollars more than the other kind. The name Ward on a spray pump is the mark of absolute reliability and highest efficiency. Honestly built of the best materials. Capable of high pressure to give a fine mist spray. All working parts made of brass, insuring long life to the outfit. Perfectly constructed to handle all kinds of mixtures and work right under any and all reasonable conditions.

**TYPES FOR EVERY NEED**—Barrel outfits, double action hand pumps and power outfits of various capacities. We can supply pumps only, or outfit complete ready for use, including tank, wagon and accessories. In the Ward line you'll find the very pump that best meets your needs.

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The buying of a spray pump is too important a proposition to go into blindly. Know which is best before you buy. Drop us a line now for our free book which gives complete information about Ward Pumps and is a valuable guide to profitable spraying.

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## FLOWERING BULBS GLADIOLUS

These are most effective in the garden, the colors are magnificent and they are easily grown. We offer:

Choice Mixed—10 for 30c.; 25 for 65c.; \$2.25 per 100—postpaid.

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Bruce's White and Light Shades—10 for 50c.; 25 for \$1.00; \$3.50 per 100—postpaid.

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Bruce's Superb Mixed, made up by ourselves from all varieties—the best—10 for 60c.; 25 for \$1.35; \$5.00 per 100—postpaid.

Named Varieties, any color (see catalogue) 10c. to 50c. each—postpaid.

## DAHLIAS

Splendid named sorts, all colors, 22c. each; \$2.20 per doz.—postpaid.

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## Sulfur Dusters

For Fighting Every Disease of Cultivated Plants

Knapsack, Pack Saddle or Horse Drawn Power Sprayers

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## MAKE MONEY AND SAVE MONEY

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# GRAHAM'S SEEDS

The Quality will insure Heavy Crops.  
Our Prices will save you Considerable Money.

Send for our Catalogue. Send for our Unexcelled Collection of FLOWER SEEDS for 50c. Send for our 50c.

Collection of Specialties in VEGETABLE SEEDS. Results will delight you.

High Grade Seed Corn, Oats, Wheat, Clovers and Grasses, etc.

Graham's Royal Exhibition Sweet Peas, lb. \$1.00, oz. 10c.

Graham's Royal Exhibition Asters, pkt. 10c.

Graham's Royal Exhibition Pansy, pkt. 25c.

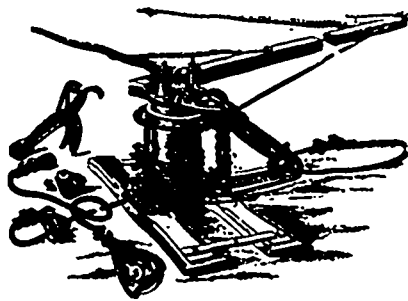
Graham's Royal Exhibition Nasturtium, oz. 15c., pkt. 5c.

## GRAHAM BROS.

301 QUEEN ST.

OTTAWA

Between Bank and Lyon Sts.



## How many acres can you stump this Fall?

This depends upon how soon you get a Swenson's Malleable Stump-puller. They are made in five sizes, so write for Catalogue "H" and find out what size you want. Every machine guaranteed, and a stock on hand for prompt shipment. Write today, telling us the size and kind of your stumps.

CANADIAN SWENSONS LIMITED - Lindsay, Ontario

Send your consignments of APPLES to the Home Country to

**Ridley Houlding & Co.**  
COVENT GARDEN  
LONDON, ENGLAND

who specialize in APPLES and PEARS during the Season. Personal attention, prompt account sales and remittance

Correspondence invited

## GLADIOLI

AMERICA—First size, 25 for \$1.00; one half inch, 60 for \$1.00.

LACONIC (Goff's)—One of the best (Half Price) 15 for \$1.00.

## DAHLIAS

Cut Flower Varieties

Madame H. Cayeux—The best Pink Cactus Dahlia 50c. (limited).

Write for Circular

H. P. Van Wagner, R. R. 5, Hamilton, Ont.

## BRIGHTEN UP

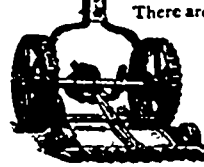
your home with the wonderful White Flame Burner. Makes your old lamps and lanterns give a brilliant soft white light better than electricity or gas. Saves eyesight and makes reading or sewing a pleasure. No mantle to break. Reliable and economical. Satisfaction guaranteed. Delights every user. Complete Sample mailed to any address for 3c. or 3 for \$1.00. Money back if not satisfactory. Mail orders promptly filled.



BRIGHT LIGHT CO., Merrickville, Ont.

## THE CLIPPER

There are three things that destroy your lawns—Dandelions, Buck Plantain, and Crab Grass. In one season the Clipper will drive them all out. Your dealer should have them—if he has not, drop us a line and we will send circulars and prices. CLIPPER LAWN MOWER CO. Box 10 Dixco, Ill.



## Items of Interest

A deputation from the British Columbia Fruit Growers' Association, consisting of President Agur and Secretary Winslow, waited on the Dominion Government recently and asked that the Canadian duty on apples be raised from thirteen to twenty-five cents, the same rate as applied by the United States. They pointed out that the western states are flooding the British Columbia markets, and asked that it be made compulsory to label fruit.

A ruling issued by the Railway Commission on March seventh ordered the railways to re-establish the arrangement formerly in effect, whereby apples were carried to concentration points for storage, inspection, or completion into carloads and reshipment, at a reduction of one-third from the local tariff rates to these concentration points.

At a meeting held recently in Toronto of the creditors of the National Land Fruit and Packing Company, which went into liquidation last December, it was decided to make an effort to continue in operation. The company has an authorized capitalization of \$1,215,000.00, and a paid up capital of about \$300,000.00. There are about 900 shareholders all told.

The liabilities outside of shareholders amount to about \$140,000.00, with only small assets. The company has options on a large number of orchards and it is hoped that if these can be worked this year it may yet be possible to continue the company in operation.

## Recent Publications

Recent books and bulletins to reach The Canadian Horticulturist, include the following:

Modern Strawberry Growing, by Albert E. Wilkinson. This is a practical manual of strawberry growing, giving details as to varieties, planting, cultivation, soils and similar topics. As the last strawberry book was issued some twenty years ago this book should fill a need. Published by Doubleday, Page & Co., Garden City, N.Y.

Cooperation in New England is a book of over two hundred pages issued by The Russell Sage Foundation. It is by James Ford, Instructor in Social Ethics, Harvard University. It deals with cooperative associations of working men and farmers. Price \$1.50, postpaid; published by Survey Associates, Inc., New York.

## Catalogues

Recent catalogues to reach The Canadian Horticulturist, include The Burbank Seed Book, issued by The Luther Burbank Company, San Francisco, Cal.; Bruce's Seeds, issued by John A. Bruce & Company, Limited, Hamilton; Perry's Illustrated Catalogue of Hardy Ferns, Enfield, Middlesex, Eng.; and Dreer's Wholesale Price List, issued by Henry A. Dreer, 711 Chestnut St., Philadelphia Pa.

Canada and Sea Power, by Christopher West, published by McLelland & Goodchild, Toronto. This is a valuable and interesting book dealing with the political relations of Canada to Great Britain, and to the other Dominions of the Empire, particularly as they relate to the cost of navies, the economics of war, and the need for a curtailment in naval and military expenditures.

The Winter Injury to Fruit Buds, of The Apple and The Pear, is the title of Bulletin No. 91, issued by The Montana Agricultural College, Bozeman, Montana.

## STRAWBERRY PLANTS

We have a very nice lot of the Celebrated WILLIAMS Strawberry for delivery this Spring, in Large or Small Quantities at Reasonable Rates.

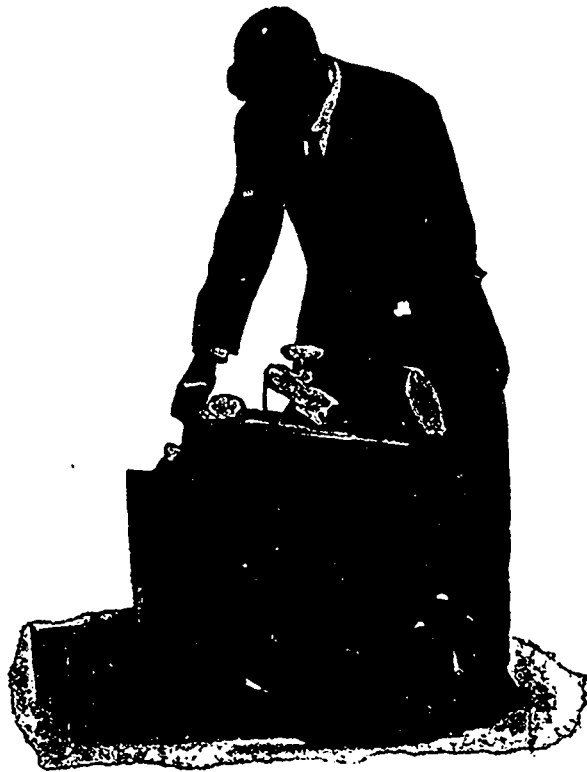
CORRESPONDENCE SOLICITED

WM. H. BUNTING, The Carleton Fruit Farm, ST. CATHARINES, Ont.

# TELEPHONES

and

# TELEPHONE INFORMATION



**TELEPHONES THAT  
GIVE THE  
BEST SERVICE  
FOR  
THE LONGEST TIME  
WITH  
LEAST TROUBLE**

**Write and ask for our  
No. 3 BULLETIN  
which tells  
HOW LINES ARE  
BUILT**

**The above shows our method of shipping tele-  
phones—each telephone in a separate case  
and ready to go on the wall**

There are between five and six hundred local independent telephone systems in Ontario alone, and many others in the other provinces.

The number of the systems is being steadily increased, many of the new Ontario systems being built by municipalities, the Ontario Telephone Act making it comparatively easy for rural municipalities to get into the telephone business.

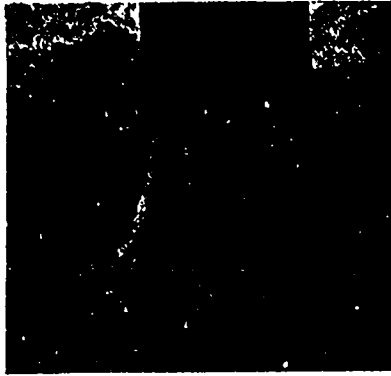
We have assisted the majority of these local systems in their work of organization and preparation of plans, estimates, etc. Our experience with so many local systems, both companies and municipalities, enables us to give exactly the information required if you are thinking of a local telephone system.

The telephone business is our exclusive business. The independent local and municipal systems in the East, and the Government-owned systems in the West are our only customers, so that we are specially equipped to look after their wants and directly interested in their success.

We are manufacturing the highest class of telephone equipment on the market and we guarantee it. We are supplying the great majority of the local and municipal systems with their telephones and requirements from poles and wire to telephones and switchboards. It has been the quality of our telephones, combined with the prompt service we are enabled to give on account of our facilities, that has made our success.

If you are operating telephone lines or are considering building a system we can assist you.

**Canadian Independent Telephone Co.**  
18-20 DUNCAN STREET, TORONTO **LIMITED**



A Grand Old Toronto Oak Saved by the Davey Experts

### Your Own Trees

May be unsound without showing it. Have them examined without charge this spring by a Davey expert. Representatives available everywhere. Many trees apparently in good condition are slowly dying from hidden disease or weaknesses.

Even if you think all is well be on the safe side by asking for the inspection.

Serious defects develop from small beginnings—now is the time to protect your trees.

A prominent Montrealeur wrote to us: "You saved a lot of my big trees which money could not buy."

Tell us how many trees you have and what kind.

ADDRESS DEPT. H.

### The Canadian Davey Tree Expert Co.

707 New Birks Building  
Montreal, - Canada

### Northern Grown Trees

Apple, Pear, Plum, Cherry, Peach, Grapes, Small Fruits, Ornaments, Evergreens, Roses, Flowering Shrubs, Climbers, Etc. Everything in the Nursery line. Catalogue free. Send list of your wants for prices.

**J. A. Wismer,** Nurseryman, Port Elgin, Ont.

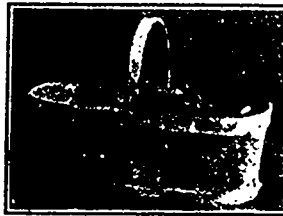
### INCUBATORS AND BROODERS—COMBINED The Philo System

We get the largest percentage of hatch of any machine on the market. We can beat the hen all to pieces. Free Catalog. Address  
**THE CYCLE HATCHER CO., G. M. COLLINS, MGR.**  
415 Symington Ave., Toronto, Ont.

### Carter's Seed Book

One of the most up-to-date seed and flower catalogues which has reached us this year is that of James Carter & Co., of London, England, who are seed growers to His Majesty King George. It is a volume of nearly three hundred pages, replete with splendidly executed illustrations of vegetables, flowers, and garden scenes, and a number of finely colored plates of exhibition displays, and one showing Carter's Japanese Garden complete. It may be obtained upon request from The Patterson Wylde Co., of Toronto, who are the sole Canadian agents.

### Peerless Climax Fruit Baskets



### Heaviest, Strongest and Best

In the market. Especially suitable for long distance shipping. Last year the demand exceeded the supply

Therefore Order Early

### Canadian Woodenware Products Co.

ST. THOMAS, ONT.



### BULBS

EXTRA GOOD STOCK

- POSTPAID
- Begonias, Single,—White, Yellow, Pink, Crimson, Scarlet... Doz. 50c
  - Begonias, Double,—White, Yellow, Pink, Crimson, Scarlet Doz. 75c
  - Lilies, Auratum, Extra large bulbs, 15c each ..... Doz. \$1.50
  - Lilies, Tigrinum, 5c each .. Doz. 50c
  - Lilies, Speciosum Album, 5c each ..... Doz. 50c
  - Lilies, Speciosum Rubrum, 15c each ..... Doz. \$1.50
  - Lilies, Speciosum Roseum, 15c each ..... Doz. \$1.50
  - Gladioli, Our best mixture, ... .. per 100 \$2.50
  - Gladioli, Canadian Mixture ..... per 100 \$2.00
  - Dahlias, Pot grown roots. Five new and very fine Cactus Dahlias, Maroon, White Pink, Yellow, Crimson Violet. Named, 15c each. Set of five for ..... 60c
  - Paeonies, Large roots of best varieties, in White, Red, Pink, or Rose. .... Each 20c
  - Boston Ivy Roots, Three year strong plants ..... Each 20c
  - Madeira Vine, 3 for 10c .... Doz. 35c
  - Iris or Flowering Flag, Double mixed, 15c each ..... Doz. \$1.50

### Geo. Keith & Sons

SEED MERCHANTS SINCE 1866  
124 King St. East, Toronto

### STRAWBERRY PLANTS FOR SALE

For Spring delivery, we are offering choice well rooted plants of twelve standard varieties. Prices right. Lists free.  
ONTARIO NURSERY CO., WELLINGTON, Ont.

### DAHLIA BULBS FOR SALE

Giving up Business.  
All Varieties of Dahlia Bulbs offered for sale being the best that money could obtain.  
Send for Price List.  
**J. T. PAYNE, Campbell St., Strathroy, Ont.**

### Strawberry Bed Nets For Sale

Only used one season, in perfect condition, Waterproof. Prices are quoted, delivered (Express paid) any Station in Canada.  
One "Forest" Net, Size 38 x 33 ft. \$9.00 | Price for One "Forest" Net, Size 58 x 18 ft. \$6.50 | both \$14  
**J. C. HODGSON, 475 ROSLYN AVE., WESTMOUNT, QUE.**

### IMPORT YOUR BULBS

Direct from  
**HOLLAND**  
Save 100 to 400%.  
Get our Import List at Once  
**Morgan Supply House**  
LONDON

Mention the Canadian Horticulturist in writing to advertisers.

### Ploughs—Wilkinson

TRADE MARK REGISTERED  
U. S. S. Soft Centre Steel Moldboards, highly tempered and guaranteed to clean in any soil. Steel beams, steel landsides and high carbon steel coulters. Clevises can be used either stiff or swing. Each plough is fitted especially with its own pair of handles—rock elm, pine and heavy and is strongly tested. The long body makes it a very steady running plough. Shares of all widths—specials for stony or clay land. The plough always turns a beautiful furrow, with minimum draft and narrow furrow at finish. Ask for catalogue  
The Bateman-Wilkinson Co., Limited  
461 Campbell Ave., Toronto, Canada.  
No. 3  
Send or  
General  
Purpose  
Plough,  
21 styles  
to choose  
from.



TRADE MARK

# Seeds that Grow Good Crops

McDONALD'S TESTED SEEDS are strong, vigorous and true to name. We make sure they inherit these qualities before sending them out. Thousands of the most careful farmers and Gardeners of Canada have come to regard our trade mark as the surest possible guarantee of quality in seeds.

Write for our finely illustrated catalogue. Mailed Free. It tells all about the seeds, which by simple crop-producing merit, have gained and retained the confidence of critical Canadian growers.

**Kenneth McDonald & Sons LIMITED**  
Ottawa, Ontario.



## FLOWER POTS

Hanging Baskets and Fern Pans  
FOR THE SPRING TRADE

We make the "Standard" Pot, the best Pot in the world—uniform, best of clay, well burned, in every respect superior to all others.

All our pots have rim on shoulder, thus allowing them to be placed together perfectly and preventing breakage in shipping and handling.

Place your Spring Order NOW. A complete line and large stock of all sizes kept on hand to ensure prompt shipment.

Send for NEW CATALOG and PRICE LIST.

**The Foster Pottery Co.**  
HAMILTON - ONTARIO  
Main Street West

## MAX STOLPE

Landscape Architect

Superintendent Royal Gardening Institute  
Saxony - Germany  
Holder of Gold and Silver Medals

Artistic Plans. Sketches furnished for all kinds of LANDSCAPE CONSTRUCTION WORK.

Ornamental Trees, Shrubs, Conifers, Hardy Perennials, etc.

ASK FOR PRICE LIST

Main Str. East - HAMILTON, Ont.  
Phone 148



### Progressive Jones Says: "Get More Barrels And More Baskets"

I tell you, friend, that you can make your trees yield you more barrels and baskets of luscious fruit by enriching the soil with the profit-making

# Harab FERTILIZERS

I know fruit growers who are many dollars richer from using Harab Fertilizers last year. I know of some who won prizes for their fruit—one being a prize winner at International Apple Growers' Association at Chicago. These prize winners attribute their success to Harab Fertilizers.

Now, friend, if Harab Fertilizers have done so well for other fruit growers, vegetable growers and farmers, isn't it reasonable to expect they will do as well for you? Isn't it worth while trying them for at least half your orchard? Then make a careful count and see how many more barrels and baskets of big, sound fruit you get from the fertilized trees than you do from the unfertilized. If the results don't warrant you using Harab Fertilizers on your whole orchard next year, well, I'll be surprised, very surprised. But I'll bet the surprise will be on the other foot, when you see how many more dollars a small investment in Harab Fertilizers will bring you.

There's an interesting booklet, describing the 14 different Harab Fertilizers—each for a particular purpose. The Harris Abbatoir Co. promise me they will send my friends copies without charge. Just write them for a copy to-day.



*Yours for more fruit profits*  
*Progressive Jones*

The Harris Abbatoir Co., Ltd., Toronto  
12

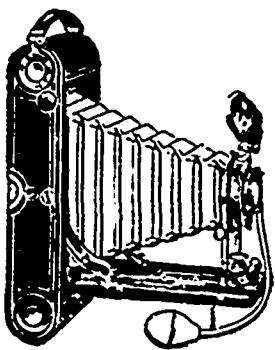


## SMALL FRUIT PLANTS

Gooseberries, Josselyn! Josselyn!! Red Jacket, Downing, Pearl, Houghton. —Currants, Perfection! Perfection!! Ruby, Cherry, White Grape, Lee's Prolific, Champion, Black Naples, Victoria. —Raspberries, Herbert! Herbert!! Herbert!!! Cuthbert, Marlboro, Brinckle's Orange, Golden Queen, Strawberry-Raspberry. —Garden Roots, Asparagus, Rhubarb. Write for Catalogue.  
WM. FLEMING, Nurseryman, Box 54, Owen Sound, Ontario

### There's a Reason Why

it's worth while being represented in The Canadian Horticulturist. Every advertisement is guaranteed reliable. No others accepted. We want you in our May Number. Last forms close April 25th.



### KODAK on the Farm

There's a practical common sense use for the Kodak on every well regulated farm. It's rapidly becoming a necessity to the business farmer. Pictures of stock and poultry to be sent to prospective customers, pictures of crops at certain stages of their growth as a matter of valuable record, pictures of fat or lean cattle and hogs and horses as a record of certain methods of feeding, pictures of buildings that are to be re-modelled, pictures of desirable features in other people's buildings—you can use all these to advantage in your business.

And you can make good pictures with a Kodak or with a Brownie and can successfully do the developing and printing. No dark room, no fragile glass plates. Nothing complicated.

Ask your dealer to show you the goods and give you a catalogue or write us and we will mail catalogue without charge, and give you the address of your nearest Kodak dealer.

**CANADIAN KODAK CO., Ltd.**  
TORONTO

## Ruff's Special Tomato Manure

A high concentrate of Acid Phosphate, Sulphates of Potash, Iron and Ammonia. One application of 3 ozs. per sq. yard will ensure a superb crop of tomatoes.

It builds up a more robust, dark foliaged plant for developing the fruit. There is an entire absence of superfluous growth.

Ruff's Special puts the value into the basket instead of into a coarse plant, heavy with foliage and lacking fruit.

TRY IT AND SEE

#### Prices:

5 lbs.	-	60c
10 "	-	\$1.00
25 "	-	\$2.25
50 "	-	\$3.50
100 "	-	\$6.00

Express paid on 5-lb. orders in Ontario. The rest are F.O.R. for cash with order.

**A. H. RUFF**  
Forest Hill Road, Deer Park  
TORONTO, ONT.

### A Rose Society for Ontario

A society to be devoted absolutely to the rose was formed recently, and it is to be known as the Rose Society of Ontario, because in time, with the aid of a network of branches, with their headquarters in Toronto, it is hoped to reach every part of Ontario in which the growing of the rose is conspicuous. The meeting was largely attended, and much enthusiasm was shown. A strong list of patrons has been got together, but it is not yet complete. It will not be published until it is.

The officers are: Hon. president, J. T. Moore, that enthusiastic rosarian, who in his retirement after a long and busy life, has given himself up to the cultivation of the queen of all flowers; president, E. T. Cook, F.R.H.S. (Eng.), vice-president of the National Rose Society, etc., and well known as the author of many standard books on flower life; vice-presidents, Mrs. Allen Baines, Mrs. Patterson, Mrs. Hartley Dewart and Miss Coleman; with Miss Armour as hon. secretary, and Miss Francis, treasurer.

The society is to be worked on sound principles. It is to be thoroughly cosmopolitan, and it is the intention of the Council to institute lectures of a thoroughly practical character, issue books and pamphlets dealing with the rose, and a system of "Questions and Answers," so as to give each member as much personal advice as possible. It is hoped in time there will be a library available for the members and a room or rooms of their own.

A feature of the society's work will be exhibitions. Several practical men have been enrolled to form a sub-committee. These assembled recently to draw up a suitable schedule of prizes and rules to govern the show. Amongst their number may be named Mr. T. Manton, of Eglinton, Mr. John H. Dunlop, Toronto, Mr. E. F. Collins, Toronto, and Mr. Brayson, who has the management of Mr. Moore's beautiful and comprehensive collection of roses at Moore Park. No effort will be spared on the part of the officers and their friends to make this one of the most important horticultural societies in the Dominion. The annual subscription is only fifty cents, and should be paid to Miss A. Mour, 103 Avenue Road, Toronto. The society deserves support.—E. T. Cook.

### Dynamite in the Orchard

Frank Stanley, Port Union, Ont

I put in 500 trees last year with dynamite, and feel very well satisfied with the progress the trees made, as well as with the fact that only one per cent. died. I will continue to use dynamite for the further tree planting that I shall do this year. There is much less labor, and I believe that greater accuracy in the location of the trees can be made by using it than by digging the holes.

The cost of planting trees with this explosive is a trifling matter, when one considers the very great advantage of using it. I would continue to use it the cost were three times as much.

There is absolutely no danger unless the person goes out of his way deliberately. In our work last season we did not have the slightest approach to danger in the handling of the trees. In the cultivation of old orchards I consider dynamite is beneficial, and I purpose continuing its use for this purpose also.

Have you read our "absolute guarantee" on the editorial page? It protects you.

## THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse was not all right, and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machine for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. First, I won't wait for people to ask me. I'll offer first, and I'll make good my offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves you. It will save its whole cost in a few months in wear and tear on the clothes alone. And the it will save 50 to 75 cents a week over that of a washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 50 cents a week, send me 50 cents a week 'till paid for. If it takes that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

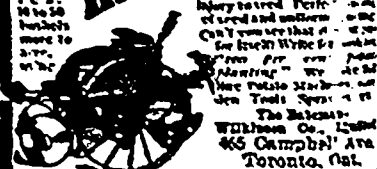
Address me personally:

A. C. MORRIS, Manager, 1900 Washer Co., 357 Yonge St., Toronto, Can.

### SKIPPED HILLS RAISE NO POTATOES

Every hill you miss in planting means money lost out of your pocket. No machine can plant perfectly unless there is a hand correction of raises and double rows.

**IRON AGE** (Improved) Potato Planter



The Balance Wheel Co., Ltd., 465 Campbell Ave., Toronto, Ont.

**FOR SALE AND WANTED**

Advertisements in this department inserted at rate of two cents a word for each insertion, by figure, sign or single letter to count as one word. Minimum cost, 25 cents, strictly cash in advance. Where advertisers desire enquiries addressed to a box number, 10 cents extra must be added.

**AD Bezzo's Famous Prize Aster Advertisement on page 114.**

**KINDS OF FARMS**—Fruit farms a specialty. T. B. Calder, Grimsby.

**SAMPLE ENGINES** at special prices. 1½, 3½ and 4½ H.P. sizes. They have been only slightly used. They will be adjusted and in perfect condition and just like new before leaving our factory. Prices and further particulars on request.—The Page Wire Fence Co., Ltd., Walkerville, Ont.

**THE CANADIAN APPLE GROWERS' GUIDE.** Price, \$1.50 postpaid. Address Dept. "A," The Canadian Horticulturist, Peterboro, Ontario.

**NIAGARA DISTRICT FRUIT FARMS.**—Before buying it will pay you to consult me. I make a specialty of fruit and grain farms.—Melvin Gayman & Co., St. Catharines.

**ASK DAWSON.** He knows. **IF YOU WANT** to sell a farm consult me. **IF YOU WANT** to buy a farm consult me. I HAVE some of the best Fruit, Stock, Grain and Dairy Farms on my list at right prices. H. W. Dawson, Ninety Colborne St., Toronto.

**FRUIT MAN,** 30, with 12 years' experience shipping and packing choice fruits, etc., in France, Germany and Canada, seeks position with reliable firm. Well up in book keeping and office routine, etc. Replies to Eccles, Jeannotte, Ont

(Continued on page xviii.)

**GOOD SEEDS FOR GOOD CROPS**



Reliable Merchants everywhere sell  
**STEELE, BRIGGS' SEEDS**

Look for them—accept no other.

**Steele, Briggs'** are the best grown. No matter what you need in Seeds, this name stands for highest quality.

Behind every packet is the strongest seed reputation in Canada.

Thousands of successful growers everywhere use **Steele, Briggs' Seeds** year after year because they are sure of what they are buying. We retain control of our packets and supply them fresh each season.

Look for this box at your local store. If your local dealer cannot supply you, send in your order direct.

**STEELE, BRIGGS SEED CO. Limited**  
TORONTO, ONT. HAMILTON, ONT. WINNIPEG, MAN.



**GRASSELLI**  
**Lime Sulphur Solution**  
**Arsenate of Lead**

It takes a number of years experience to attain greatest efficiency in any line of business.

This is especially true in the making of spray chemicals.

To assure yourself of the best, money can buy, you will favorably consider Arsenate of Lead and Lime Sulphur Solution bearing the brand—

**"GRASSELLI."**

**The Grasselli Chemical Co., Limited**

Head Office and Works:  
**HAMILTON**

Sales Offices and Warehouses:  
**TORONTO and MONTREAL**



**SALMON ARM.** Shuswap Lake, B.C. has the finest fruit and dairy land in B.C. No irrigation necessary; mild winters, moderate summers, no blizzards, or high winds, delightful climate, enormous yields of fruit, vegetables and hay good fishing, fine boating amidst the most beautiful scenery, and the Salmon Arm fruit has realized 25 cents per box more than other fruit in B.C. Prices of land moderate, and terms to suit. Apply to F. C. Haydock, Salmon Arm, B.C.

**FOR SALE**—500,000 feet all kinds and sizes. Now and second hand. Also 500,000 feet iron pipe. All sizes, good as new, for water, steam-heating, greenhouses, construction, fencing posts, etc. Also enormous stock of wire fencing, gates, pulleys, cable, rails, new roofing, saws, vices, forges, all at 25 per cent to 75 per cent less than regular value. Catalogue on request.—Imperial Waste & Metal Co., 6 Queen Street, Montreal, Que.

Have you had any good photographs of your home grounds, an especially fine shrub, your vegetable garden or your orchard? We are always glad to get good photographs of this kind.

I am very glad to see that The Canadian Horticulturist is growing both in the value of reading matter and the increased number of subscriptions.—Chas. J. Fox, South London, Ont.

Perhaps you have a friend who grows fruit or flowers and who has not seen THE CANADIAN HORTICULTURIST. Pass your copy along to him or send us his name and we will send him a free copy.

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