

THE CANADIAN HORTICULTURIST

MAY - 1911
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PETERBORO, ONTARIO

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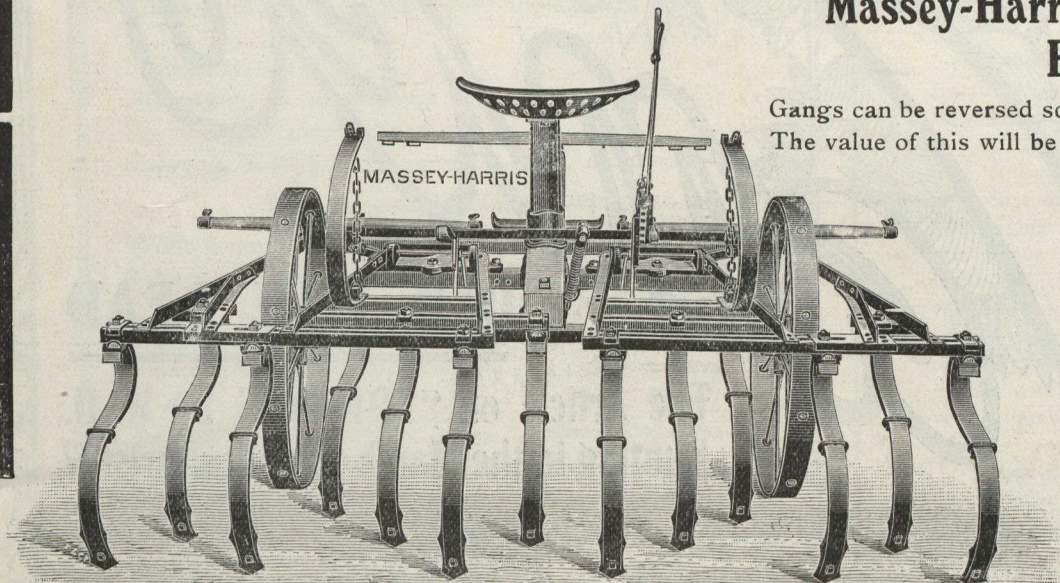
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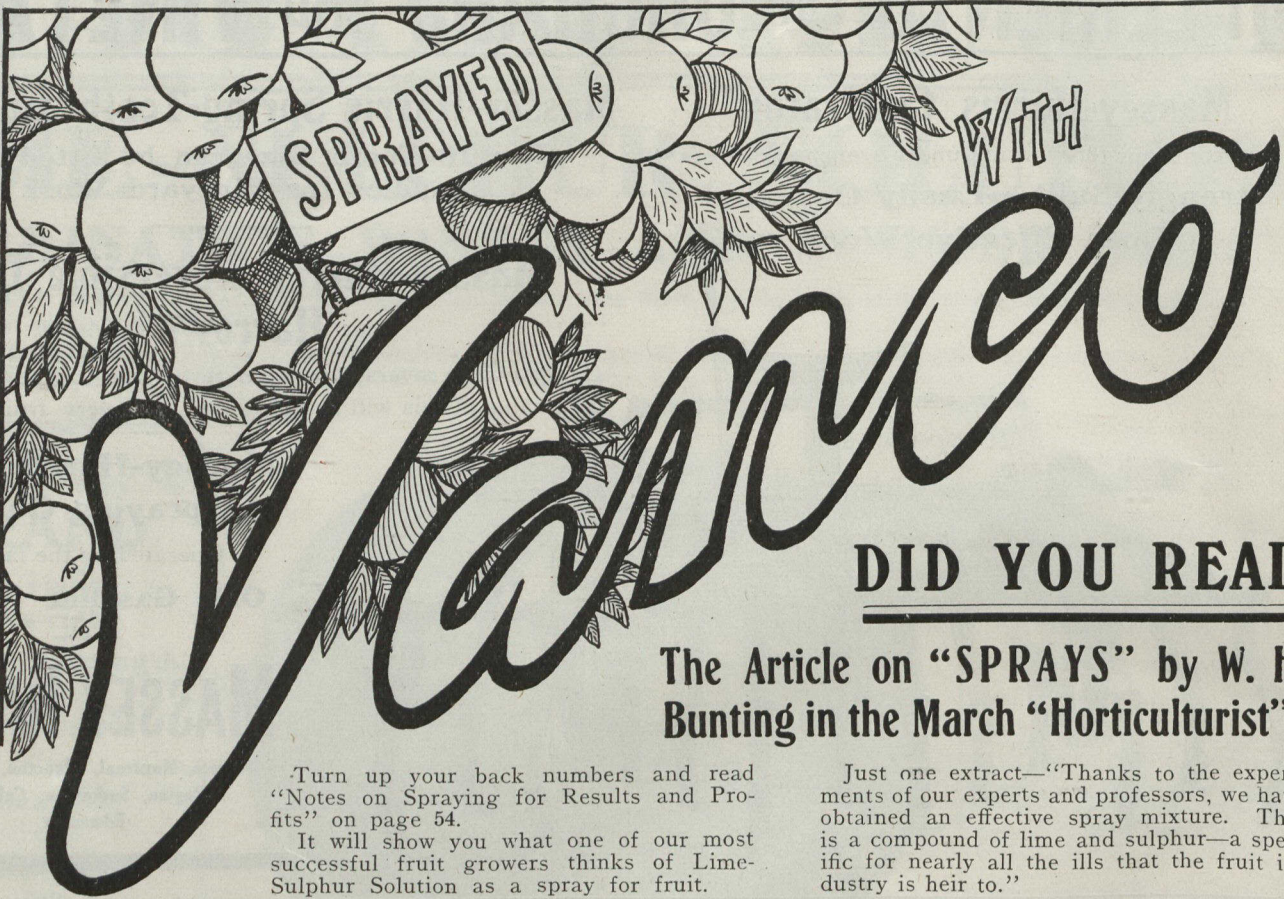
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The Canadian Horticulturist

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TALKS ON ADVERTISING

By the Advertising Manager

No. 8

THE SILENT SALESMAN

Sixteen months ago a nursery firm placed a one inch advertisement in the columns of The Canadian Horticulturist, the first advertising in its columns they had done. This small advertisement was continued for a few months, then increased in size to a half column. Six months ago these people commenced using a quarter page, and have found this advertising sufficiently profitable to recently reserve this space for a year. In a recent letter to The Canadian Horticulturist they say: "We did no canvassing, and had only this one advertisement running, yet succeeded in doing four times the business of 1910. The old customers and their friends, together with new customers, secured through the advertisement, took it all."

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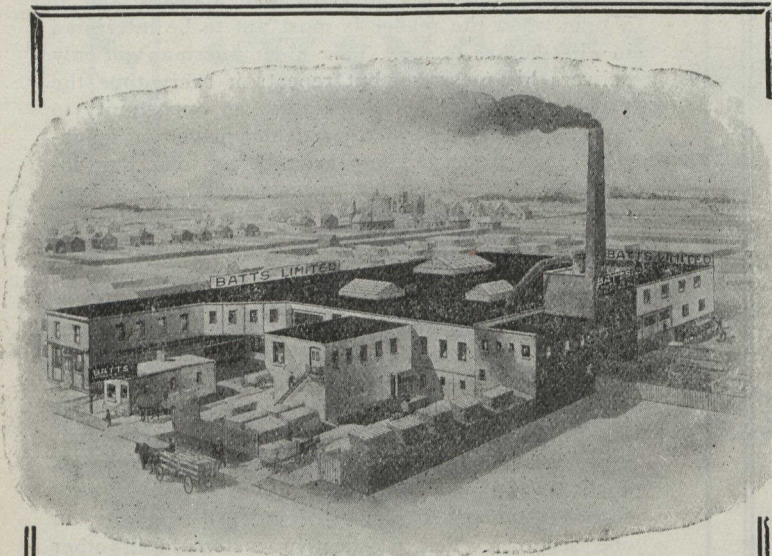
Now is a splendid time for nurserymen to put their silent salesmen to work to sell next year's nursery stock. Are you sold right out of this year's crop? What better proof can buyers need that your stock is satisfactory? Is the new stock in your nursery doing well? Tell your prospective customers about it, and show them illustrations of the growing stock. Have you a number of satisfied customers in one section? Tell prospective customers in other sections about it. There are many interesting things about your growing nursery stock that will interest the people who intend buying such stock in the near future. Why not let your silent salesman tell some of these interesting things through the columns of The Canadian Horticulturist.

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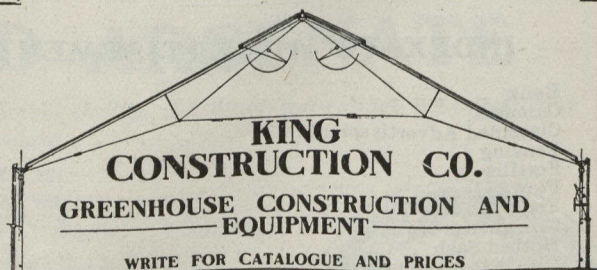
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The Canadian Horticulturist

Vol. XXXIV

MAY, 1911

No. 5

Pollination of Apple Blossoms

Prof. J. W. Crow, O.A.C., Guelph

Mr. George E. Sanders, B.S.A., carried on some most interesting investigations in the College orchard in 1905 and 1906. Mr. Sanders defines two distinct conditions which have to do with imperfect setting of fruit. The first is self-sterility, which means that an individual or a variety is incapable of fertilizing its own blossoms even though perfect pollination may take place. The self-sterile varieties when planted in isolated situations or in large blocks do not bear well. The same varieties when planted in mixed orchards may yield abundantly. Some varieties have invariably proven self-sterile, while others consistently prove completely or partially self-sterile. Self-sterile varieties bear as much pollen as self-fertile ones, and the pollen is as good for fertilizing other varieties as is the pollen from a self-fertile sort. The remedy for self-sterility is mixed planting with any variety which bears an abundant supply of pollen and blooms at the same date as the self-sterile variety.

IMPERFECT FERTILIZATION

This condition may arise even in the case of varieties which are capable of fertilizing their own blossoms, and of course, may also arise in connection with self-sterile fruits even when efficient pollinizers are close by. The indications of imperfect pollination are small, mis-shapen fruits. On examination, one-sided apples usually prove to be fertilized only on one side, possessing a small number of well developed seeds. As a rule, cross-pollenized fruit is found to be larger than that self-fertilized. It was noted that imperfectly fertilized fruits are more likely to be attacked by scab on the side on which the seed does not develop than on the fertilized side. Also, it was noted that imperfectly fertilized fruit drops more readily than perfectly fertilized fruit. Thinning of the fruit on the tree causes imperfectly fertilized fruit to stay on better and grow larger than it otherwise would. This is simply because the individual fruits are better nourished than they would be if they were all left on the tree.

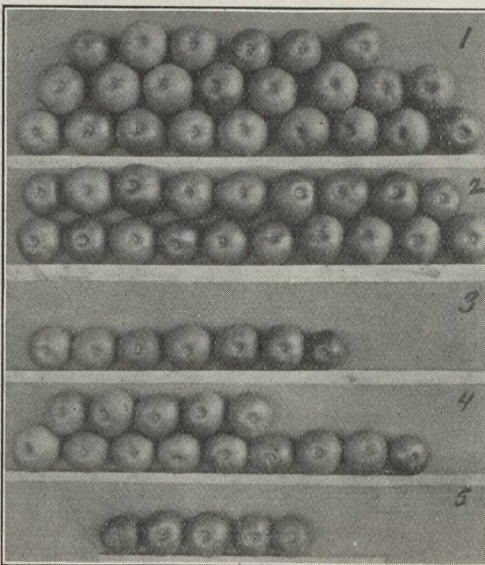
BEEES THE REMEDY

The remedy for imperfect fertilization is the introduction of bees, as it has been clearly proven that insects perform practically all of the work of transferring pollen in the case of tree fruits. The inter-planting of varieties which bear

abundant supplies of pollen is also useful as an additional means of securing more perfect fertilization.

The above is a brief summary of Mr. Sander's conclusions. These have, I believe, been verified by other investigators and experience also points out the necessity of securing perfect pollination.

With regard to the question whether frost is likely to be more injurious in cases where pollination is delayed through wet weather and lack of insects, I can only say that in seasons such as last spring, when frosts were commonly experienced, the injuries were more serious



Results of Imperfect Fertilization

The above shows the necessity of perfect pollination. Photograph furnished by Prof. Crow, O.A.C.

with those varieties or in those districts where trees were in full bloom. Where fertilization was sufficiently far advanced that fruit could be said to have "set," the fruit remained on the tree and matured, although in many cases apples were disfigured by injuries due to frost experienced in the early stage. With this fact in mind, it would certainly be correct to state that the keeping of bees in orchards is desirable for the purpose of bringing about fertilization at as early a period as possible. Bees, are of course, necessary before pollination can take place at all.

EFFECT OF PERFECT POLLINATION

The accompanying illustration shows the results of work done by the writer

in following up Mr. Sanders' investigation. Five lots of fifty apple blossoms each were made use of. From one lot (No. 5) four pistils were removed; from the second lot (No. 4) three pistils were removed; from another lot (No. 3) three, and from a fourth lot (No. 2) one pistil was removed. One lot of fifty blossoms was left in normal condition with five pistils, or rather the entire five sections of the pistil in their natural condition. Pollination was performed at the same time and under the same conditions in the case of all five lots of blossoms. The accompanying photograph shows the quantity of fruit produced in each case. It will be noted at once that the largest number of apples was produced by the normal blossoms and the decrease in productiveness is almost in direct proportion to the number of sections of the pistil removed. On examination, however, it was found that the largest number of good seeds per apple was in the case of lot No. 3. It is not well, of course, to draw conclusions hastily, but in so far as this one experiment can be made use of as pointing towards any definite result, it would seem to indicate that a surplus of pollen has the effect of producing fruit regardless of the actual degree of fertilization which may take place. This may or may not be correct, and I wish simply to suggest the question for further investigation. You will note that lots Nos. 1 and 2 have reached considerably larger size than lots Nos. 3 and 4 and 5, and the inference is plain, of course, that thorough pollination influences very materially the size of the fruit. It was also noted in connection with this investigation that the apples of lots No. 1 and 2 were decidedly better in color than those of lots 3, 4 and 5.

In planting I trim off all damaged roots and a few of the longest ones, and cut the stalk down to eighteen inches, leaving four to five good buds to start the head of the tree. I prune regularly, thin out the branches so as to let in lots of daylight, and keep the tree down, so that the fruit can be easily picked. I picked one hundred baskets from eight trees, and could reach every peach from the ground. I cultivate with some hoed crop until such time as the trees need the ground.—L. H. Robinson, Leamington, Ont.

Orchard Cultivation*

W. Dreher, Macdonald College

Stop cultivating and sow a cover crop before the season's growth stops in mid-summer. From that time trees begin to get ready for the winter by ripening their wood, consequently all work tending to promote growth must stop so as to allow the trees sufficient time to mature properly. By means of cover crops the roots will be protected from frost. The ground will better hold the snow and allow its water to penetrate instead of washing off the surface soil in spring rains. These requirements, together with that of checking the growth of the trees in summer, are fulfilled by sowing a crop about the middle or end of July, which by winter will cover the ground, forming a mulch of vegetable matter. Besides these advantages it benefits the trees by improving the physical condition of the soil and enriching it in plant food when plowed under to form humus early in spring.

WHAT KIND OF COVER CROPS

It remains to be determined what crop to sow after cultivation has ceased. This is a local question, and the fruit grower will have to use his own judgment for the choice. The experimental farms, however, have experimented with a number of crops, and can tell the advantages that each will give in certain soils and under given climatic conditions. From these the grower can choose those he thinks will answer the purpose best. He can also do that from his own field crops of which he possesses knowledge and with which he has had experience. Clovers, peas, vetch, oats, rye, buckwheat, or rape may be used. The clovers, peas or vetch are to be preferred as they enrich the soil in nitrogen. Crimson clover at the rate of twenty-five pounds per acre or vetch at the rate of one and a half bushels per acre give two of the best cover crops. These are sown broadcast and harrowed in at the last cultivation early in July.

TILLAGE VS. SOD

It might at first glance appear that it does not pay to give the orchard that attention which involves all the afore described operations and that satisfactory results can be obtained by allowing the trees to grow in sod. While some growers in special conditions have received fairly good returns from such orchards, the general experiments point to the fact that tillage gives the best results. Just in what particular points it gives better results can be best illustrated by quoting an experiment conducted near Rochester, N.Y., by Mr. W. D. Auchter in an orchard of nine and a half acres of Baldwin trees.

The orchard was divided into two plots, of which one was left in sod, the

other tilled and seeded with an annual cover crop. The trees in both plots received as nearly as possible identical treatment as to pruning, spraying, fertilizing and all other orchard operations except the system of culture.

The results after five years are summarized as follows:

The average yield on the sod plat was for the five years 72.9 barrels per acre; for the tilled plat 109.2 barrels; difference in favor of tilled plat of 36.3 barrels.

Actual count showed 434 apples per barrel on the sod land, weighing 5.01 ozs. each, and 309 apples per barrel on the tilled plat, weighing 7.04 ozs. each. The advantage of tillage over the sod mulch in the matter of uniformity of

trees and crops is marked. The trees in sod showed abnormalities in foliage, branches, roots and particularly in fruit bearing and in fruit characters.

Among a number of other differences in favor of the tilled plat was the dark rich green color of foliage of the trees in the latter, indicating that they were in the best of health. On the other hand the yellow color of the leaves of the sod trees told at once that something was amiss.

The average cost per acre for the two methods, not including harvesting, was \$17.92 for the sod and \$24.47 for tillage, giving a difference of \$6.55 in favor of the sod. The average net income per acre for the sod was \$71.52, for the tilled plat \$110.43, a difference of \$38.91 in favor of tillage, an increase of 54 per cent. for tillage over the sod mulch method of management.



A Typical Unpruned Tree. Fig. 1.

Training Neglected Suckers on Apple Trees

A. McNeill, Ottawa

An apple tree that has been pruned back severely, and in consequence has developed a rank growth of suckers which have not been properly pruned and trained as they developed, forms after three or four years a very serious problem in pruning. Merely to thin out the suckers will not do, because those that are left have long naked shanks with the new growth and bearing wood if any has developed, many feet in the air.

Perhaps the best general advice that can be given is to thin the suckers, and make grafts close back to the large wood on those that it is desirable to use as the foundation for the new head. In no other way can we be sure of getting the bearing wood low down and close to the heavy supporting wood. When the grafts

have made a growth of one year they should be cut back as previously described and the remainder of the suckers may then be cut away altogether, and the growth from the grafts will take their place.

It is quite possible, too, if the suckers are not too large, the new growth if cut back severely, will develop dormant buds, and a new top can then be developed from these, care being taken to prune back the new growth, and thus not repeat the error that one is striving to correct.

Whether the method by grafting or trusting to dormant buds would be the better, can only be determined by actually seeing the tree. But, speaking generally, it can be advised that if the suckers have grown to a diameter of three-quar-

* Extract from an address delivered before the Quebec Pomological Society.

ters of an inch or over, grafting would be the surest method. If less than three-quarters of an inch, it is quite likely if cut back to within six or eight inches of the larger wood, this stub would develop new wood.

Pruning Trees

Much interest is being manifested in the Georgian Bay district in the better care of their orchards. This interest has been caused largely by the great success that attended the work of the demonstration orchards under the supervision of Mr. J. F. Metcalfe, representative of the Department of Agriculture in this section last year. This year the Georgian Bay Fruit Growers, Limited, and an English syndicate, of which Mr. Metcalfe is manager, are buying up and renting orchards, and the farmers are waking up to the fact that their orchards are worth taking care of.

The illustrations represent a sample of the work done at Clarksburg by Mr. C. Penrose, and his crew of pruners, for the English syndicate. Figure No. 1 is a typical unpruned tree; Figure No. 2, shows the same tree properly pruned. As will be noticed, in thinning out the tree care has been taken to take as few large limbs out as possible. The small wood has been thinned out around the outside,



The Tree Shown on the Opposite Page After Having Been Properly Pruned. Fig. 2.

and the centre opened up so that the tree could be sprayed, and the sun get in to color the fruit. Great care was taken not to break off the fruit spurs and the outside wood was all shortened back from six inches to a foot.—G. F. M.

tle insects are hatching out, which is usually about the first of June. Lime-sulphur at this strength is sure death to the young oyster shell bark lice. In some cases, a fourth spray about two weeks after the blossoms fall, is advisable in preventing infection of scab, but in the majority of cases the three mentioned sprays are found to be sufficient.

Orcharding in the Oshawa District

Elmer Lick, Manager Oshawa Fruit Growers, Limited

Pruning is one of the most important operations in the orchard in spring. March is usually the month in which most of this work is done, chiefly for the reason that the orchardist has more time at his disposal at that season, but where this has not been attended to earlier the old adage applies here, "Better late than never," and this work can be continued through to June with no injury to the trees, but, on the contrary, with great improvement to the fruit.

In this district there is very much more interest exhibited in pruning than ever before. Many of the old orchards have been allowed to grow too high. These have been cut back in order that suckers may grow out from the main limbs and be trained into new bearing wood. Prune to get the head as large as the distance between the trees, but no larger, and then by annual heading in, keep them down to this size. Clean out the top and outside and keep the centre full of bearing wood. In dehorning large trees do not take out more than one-quarter of the top in any one year, otherwise the balance between the roots and the branches may be destroyed. Paint all cuts with the white lead and linseed oil, using no turpentine.

SPRAYING

Spraying has been proved to be an absolute necessity if we are to produce good fruit, and lime-sulphur is the most con-

venient and effective method of combating fungus diseases and insect pests. In this district the majority of farmers and fruit growers are using commercial brands of lime-sulphur. For the dormant spray, use one of the mixture to ten of water; no injury will be done to a tree until after the leaves are about a half inch long, although it is more effective in combatting the blister mite, if applied just as the buds are beginning to burst.

I do not think that in this district we can do without a second spray, as the strong dormant spray could not in average seasons be applied later than May first, while the second spray for blight should come on about May 10 or 15. I use this spray at a strength of one of lime-sulphur to thirty-five of water, and mix two to two and one-half pounds of arsenate of lead to the forty gallon barrel. This prevents early infection of the scab fungus and poisons any leaf eating insects which may be hatching out. The third spray should be of the same strength and applied just as the blossoms are falling. Plenty of power should be used and the spray driven well into the calyx of the flower. I am satisfied that three sprayings a year for three years will entirely control the oyster shell bark lice. If, however, they are very numerous, the quickest method is to apply a spray of the dilute lime-sulphur, one to thirty or thirty-five of water, just when the lit-

CULTIVATION

The orchard should be plowed as early in the spring as the land can be worked, and then cultivated every ten days or two weeks until about the first of July, when the cover crop should be sown. I do not practise cultivation close to the trees but leave from one to three feet around the trunk in sod, as I believe this sod is a protection to the tree and a preventive of collar rots. An additional reason is that it takes money to cultivate close to the trees, and as the feeding roots are some distance from the trunk of the tree, it is absolutely of no use except as an aid to the appearance of the orchard, and when a man is in the business from the dollars and cents standpoint he cannot afford to spend much money on appearances.

COVER CROP

Almost any crop may be used as a cover crop. Clover has the advantage of adding the expensive nitrogen from the atmosphere in addition to its value as a humus former. I prefer buckwheat, for the reason that it is a sure catch, the seed is cheap, and it will hold the snow and leaves better than a shorter growing crop like clover.

I firmly believe that twitch grass has as many good points as an orchard cover crop as any other plant, although I would hardly advise sowing it for this purpose. No seed is required, for as soon as the cultivator is stopped it comes in of itself, makes a good growth in the

fall, which makes a dense mat of vegetation, which keeps the apples clean. In order to obtain high-class apples and especially of such varieties as Snows, Macintosh Red, Duchess, Spy, it is absolutely necessary to thin them. It is of no use to grow culls and the fruit grower might as well pick the fruit off through the summer as to let it go until fall. In short in order to obtain good apples it is necessary to prune and spray thoroughly, plow early in the season, cultivate regularly until the first of July, then seed to cover crop, and thin out the apples.

OSHAWA FRUIT GROWERS, LIMITED

The above association, of which I am secretary, has had a very successful season, last year having shipped 7,500 barrels of apples, of which the farmers received for the apples alone an average of \$2.69 for No. 1, and \$1.75 for No. 2. These high prices were largely due, in addition to the efficient work done by the secretary and manager, to the thorough work in spraying as done by the members of the Association. This success has had its effect upon adjoining farmers as many of those who a few years ago would not think of spraying, are waking up to its necessity, and buying spray pumps and material. Up to the present the Association has sold one hundred and fifty barrels of Niagara lime-sulphur, three tons of arsenate of lead, seventy-five bags of sulphur and thirty spray pumps to its members.

Pruning at Planting Time

J. H. Here, B. S. A., Whitby

In this district many of our best growers have an erroneous idea of letting the young trees grow a couple of years without pruning. In planting, trees should be selected that have the head formed from two to two and one-half feet above the ground; the new growth should be cut off from six to eight inches from the trunk, and the trees thoroughly cultivated for five or six feet from the trunk during the summer.

In order to prove the benefit of pruning the trees at the time of planting, an experiment was conducted, in which part of the trees were planted just as they came from the nursery while the limbs of the others were cut back to six or eight inches from the trunk. On the unpruned trees there was almost no growth of wood, the leaves were small and had a dried up appearance and were only about one-half the usual size. The trees appeared to suffer greatly from drought, and did not look healthy. In fact, the owner feared that he would lose them entirely, and the greater number of them were pruned about the middle of August. This seemed to revive the trees to a considerable extent as they put forth new growth. This growth, however, was very soft, not ripening up well and it is doubtful if it will stand the winter.



A Well cared for Orchard in the Grimsby Fruit District

The trees which were cut back made a vigorous growth of fifteen to eighteen inches, did not appear to suffer from drought and went into winter quarters with the wood well ripened up. From one-half to one-third the growth should be taken off each year in order to make a good stout vigorous foundation for the trees.

Spraying in British Columbia

W. J. L. Hamilton, South Salt Spring, B.C.

The spring season is on us again with all the work it entails. Disagreeable work, too, for of all unpleasant things to handle, lime-sulphur spray of winter strength (one to ten) is the worst. Hence it is well to see that it is effectively done, so as not to require repeating.

Before spraying the trees should be thoroughly pruned, and the prunings, together with as many leaves as possible, should at once be raked up and burned, whereby a great deal of scab and other fungous infection, together with many insect enemies, and their eggs, are destroyed. Then each tree should be sprayed from four different points, the spray being first directed against the small twigs, and then against the branches and stem. No portion of the tree, however small, should escape a thorough dose of spray, and then the ground under the tree should receive its share, to kill fungous spores.

After the trees are all thoroughly sprayed, the orchard will take care of itself until spring when the spraying should be repeated just before growth commences.

The ground should then be thoroughly disked and a few days afterwards re-

disked crossways. From this on until time for the summer growth to ripen, constant cultivation should be given, the different summer sprays being used from time to time as directed.

In using the ready manufactured lime-sulphur spray it should be used with nine or ten times its bulk of water, and this spray is rendered much more efficient, and at the same time more visible, if twelve pounds of quick lime are added to, and well stirred up in each barrel of forty gallons of mixed spray.

A really efficient pump and nozzle are imperative, for the spray should not be applied as a douche, but as a very fine, misty spray, with force enough to penetrate everywhere.

Buy a Spray Pump

Even if you have no more than a dozen trees it will pay you to buy a spray pump. The barrel spray pump is what the average small fruit grower needs. It will be cheaper to buy the pump and then mount it on a good molasses or vinegar barrel, than to buy one already mounted. Any man handy with tools can easily mount the pump on the barrel himself.

It is poor economy to select a cheap pump. Get one with all the working parts made of brass, for if made of iron they corrode rapidly with the spray material. A pump with the working parts made of brass will cost more in the beginning, but will be cheaper in the end.

Any time after the leaves have fallen and before the sap begins to flow, pruning may be done. By making the pruning an annual task the labor is lightened and its efficiency increased.

What Amateurs Can Do in May

BEFORE good work can be done in any occupation proper tools must be provided. One can garden quite satisfactorily with a garden fork, spade, rake, hoe and trowel. A wheelbarrow will also be needed. A few other conveniences that are necessary are a garden line that can be bought for fifty cents, a pair of pruning shears can be obtained for seventy-five cents. A hand weeder and a few feet of hose will also be required.

When digging a plot of ground, always begin at one end and work backwards; thus you will always have firm footing on the unbroken surface. When digging work in the manure or fertilizer at the same time.

IN THE FLOWER GARDEN

Seed sowing and transplanting will be the first work in the flower garden. Plants that have sprung from seeds sown earlier in the house should not be transplanted from the house to the open ground without first going through a process of hardening-off. This is done by gradually introducing the plants to the changed conditions of outdoor life by exposing them for a few hours a day at first to outside influences. One of the best places to harden tender plants is a cold frame. This hardening can, however, be accomplished by setting the plants outside where they can either be lifted inside again or protected until they become accustomed to the changed conditions.

Nasturtium, balsam and portulaca seed can usually be sown outside with success about the second or third week in May. Sweet peas can be sown early in May. Do not sow seeds where the plants will be shaded by trees. If possible have the rows running north and south. The soil should be dug over deeply and a liberal amount of well rotted stable manure worked in sufficiently deep so that it will not touch the seed. Plant the seed in benches at first, covering with only one or two inches of soil. More soil can be raked in as the plants grow. If the soil is of a clayey nature do not plant the seeds as deeply as if it is more sandy.

Corms or bulbs of gladioli can be planted towards the end of May and even earlier in some localities. Plant the bulbs three or four inches deep and about six or eight inches apart, and either in clumps or rows. The ground should be thoroughly prepared before planting. Dahlias can also be planted towards the end of the month. Canna roots should not be planted until after the middle of June.

Cobea scandens is one of the best annual climbers for covering trellis work, fences or rockeries. Sow a few seeds at once and keep them in the window or hotbed. About three seeds in a

three or four inch pot will be sufficient. It is better not to repot before planting out as they do not transplant readily if separated. Use rather light, sandy soil and keep the soil in the pots moist and they will be ready to transplant outside early in June. Plant the whole pot of plants together, whether there be one or two or three plants in the pot.

If it is necessary to move spring flowering bulbs when they have passed their usefulness to make room for other plants, the bulbs should be dug up and heeled in just below the ground in some out of the way place and left there until July. The bulbs should then be lifted and kept in a cool, dry shed until they are required again for fall planting.

Secure and plant some new perennials in the herbaceous border. This class of plants are easily grown and will provide a succession of bloom the greater part of the season.

LAWN MAKING

Repair the bare patches on the lawn by seeding or sodding. Soil from excavations and cellars should be removed and replaced with a rich loam. If the lawn is uneven or has never been properly levelled, dig it deeply all over. Work the surface thoroughly, filling all the hollows by raking, and then roll thoroughly.

Before sowing the seed have the surface as fine and smooth as possible. The creation of a good permanent sod depends as much upon the preparation of the soil as on anything else.

Kentucky blue grass is the mainstay of a durable greensward, but the best plan is to buy a ready mixed lawngrass seed from a reliable seed dealer. Sow liberally and evenly, then rake and roll. Great care should be given to all the details, as a lawn is the basis of the whole scheme of decorative gardening.

THE VEGETABLE GARDEN

The soil should be thoroughly worked and a liberal application of well rotted stable manure made at the same time. Onions, peas, spinach and other hardy vegetables may be planted as soon as the ground is fit for them. Seeds of tender plants, such as cucumbers, corn and squash, should not be planted until all danger of frost is past. Soak seeds of beet, carrot, parsnip and beans over night, when they will come up a few days earlier. Care should be taken not to plant the seeds too deeply in the spring. If frost threatens, young seedlings should be covered with paper, leaves, or soil. The cover should be removed as soon as the danger is past.

Radishes will thrive in any good soil, but to be crisp and tender, should be grown quickly. Sow every ten days or two weeks to provide a continuous supply. Good varieties are Scarlet White-tipped Turnip and French Breakfast.

A delicious plant for home growing is salsify or vegetable oyster. Sow the seed as early as possible. Handle the crop the same as parsnips. Sandwich Island is a good variety.

Lettuce should be sown early in May.



Palm House in Allan Gardens

This is a view of the cascade in the palm house in Allan Gardens, Toronto, but it conveys a poor idea of the pretty effect produced by the falling water among the tropical foliage and flowers. The Garden is bound to become a favorite place for visitors, already large crowds of people have visited it and are asking to have the extension put in so as to provide more space for promenading. There is at present a fine display of Azaleas, Begonias, Cineraria Hybrid and Sheida, Cyclamen, Schizanthus, Genistas and Primulas, Kewensis and Sinensis, also Orchids, Cattleya Trianae, Sophronitis Grandiflora, and Nephentes Amesiana, also a fine collection of Stove plants, well worth seeing. The house is open the following hours: 9 till 6, week days: 1 till 5, Sundays.

Among the best varieties are Big Boston and Black-seeded Simpson. Two of the best onions are Yellow Globe Danvers and Red Wethersfield. A good parsnip is Holland Crown. For early squash plant the White Bush Scallop; for later varieties in the order given, grow Summer Crook Neck and Hubbard.

Keep the surface soil stirred and cultivate the soil around all growing crops. It will kill the weeds as soon as they sprout, saves moisture, and assists plant growth in many ways.

AMONG THE FRUITS

Remove the mulch from the old strawberry bed and leave it between the rows. It will help to save the moisture, protect the fruit from the earth and make the work of picking much pleasanter. If your garden does not contain strawberries start a patch this spring. These

fruits are easily grown and deserve a prominent place in every amateur's garden. Plant in rows three feet apart, with plants fifteen to eighteen inches apart in the rows. If the garden does not already contain them, plant currant and gooseberry bushes five feet apart. Raspberries and blackberries also deserve a place; if space is lacking they can be trained up against the fence.

PRUNING ROSES

The best time to prune roses is just as the buds are starting. Cut out all dead and weak branches. Head back the remaining branches to within a few inches of the old wood. Remove all dead and weak wood from your climbing roses. Cut back the remaining branches to about five feet, unless you wish the bush to cover the screen or fence more quickly. By shortening each year a more compact climber is secured.

Spring and Summer Bedding Plants

E. F. Collins, Toronto

FIRST and foremost, every gardener should consider color arrangements, in fact, it is really the chief point to study. Cheap plants and bulbs well arranged as to color are always pleasing to the eye of even the poorest critic, while the best of material forming poor combination of color, is mean to look at, and a meaner advertisement of the taste and ability of the person planning the display. We sometimes hear complaints as to the short life of such plants as tulips and hyacinths. This is true in some seasons when they are slow to open. I have found that by planting combinations of bulbs and plants that this objection is partially overcome. Let us take a bed of red or pink tulips when they are out of the ground about six inches. Plant white daisies between them. If there is not room just plant the daisies as an edging to the bed.

A mass of blue and white hyacinths looks well edged with the different blue shades of pansies, or a bed of any of the single narcissi, such as Golden Spur, Emperor, Empress, or bi-color Victoria looks splendid with a groundwork of all the dark shades of pansies. Plant the pink and red shades of daisies as a background for white hyacinths or tulips. It is surprising what a beautiful display can be made with a few plants by a little forethought and good judgment.

After the bulbs are over, if you want to change the bed, the bulbs can be lifted, and stocks, balsam, or any upright growing plants set between the pansies or daisies. If they are kept well supplied with water and the seed pods kept off they will flower until frost.

SUMMER BEDDING PLANTS

The arrangement of summer bedding plants is even of more importance with regard to the color arrangement and the

point of view the plants will be seen from. I find all pink shades look best when seen with a background of trees and when looking away from the sun. Other white or light color combinations also look best in the same position and in partial shade. Reds, bronzes, yellows, and all rich, bright colors appear at their best when seen looking towards the sun. It will be seen that it is of much importance which side of the walk or the location in the pleasure grounds that the different colors are placed.

SCREENING OF FENCES AND BUILDINGS

All fences and buildings should, if possible, be grouped together with tall plants and tropical foliage, with bright splashes of colors here and there. These colors

should be kept close to the grass in front and not come next to the structure itself.

Carpet bedding may be placed on terraces or in the angles of the paths or near gateways. Vases or any other artificial work must never be placed in a patch of lawn by itself.

Arrangement of Lawn and Flowers

R. E. Rowe, Brantford

Running down the west side of the lawn shown in the illustration is a wood fence, which divides my lot from the neighboring one, and against which was planted half way along assorted sweet peas, which grew and flowered in great profusion, almost covering the fence. From where the sweet peas left off petunias began, assorted colors, which continued to the end of that side of the fence, the whole making a very striking and pleasing border.

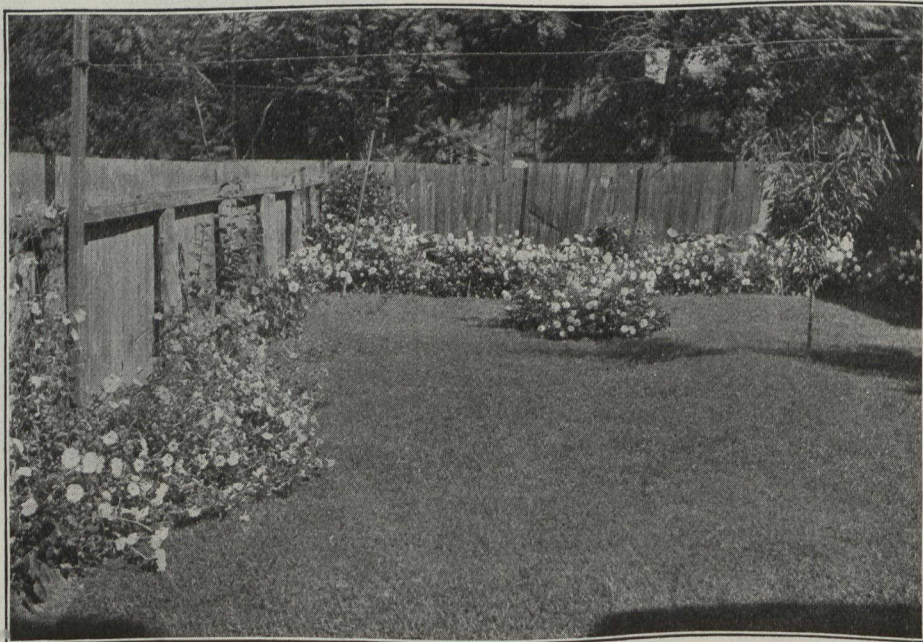
On the north the lawn was bordered by a deep row of various colored asters, and behind which was a row of dahlias, the whole hiding from the casual observer's eye a beautiful bed of tomatoes.

On the east side, which is partly bordered by a brick building, verbenas and nasturtiums grew and made a very effective border.

In the centre of the lawn, in a small diamond bed, was a profusion of red geraniums, which stood out in striking contrast to the green of the lawn. Close up against the side of the house were several perpetual blooming rose bushes.

In closing, I might mention that I obtained first prize for the best kept lawn in this ward in the year 1909.

Repair the lawn and re-seed if necessary. Dig out dock, dandelion and perennial weeds.



First Prize Lawn

The property of Mr. R. E. Rowe, Brantford, Ont. See above article by Mr. Rowe.

The China Aster and Gladiolus

John Cavers, Oakville

THE China Aster, which, by the way, is not an aster, is one of the flowering plants that has been greatly improved in the past ten years; and its popularity has kept pace with the improvement of the plant. This improvement has been brought about chiefly by the selection of the best plants for seed-producing purposes. There is perhaps no flowering annual so dependent on the quality of the seed for success in its growth as the China Aster. Quality in the seed and continuous growth are the two chief factors in China aster cultivation. The best soil is a strong loam; the best location is a sunny exposure; and one of the best fertilizers is wood ashes.

The chief improvement that has been made in the China Aster in late years is in the form and size of the bloom—not only in circumference but in depth also. The tendency appears to be towards a more ball-like form. This tendency, if persisted in, will have the effect of giving a larger proportion of blooms without the yellow centre, which is the bane of aster growers for cut-flower purposes. Another tendency is to bring the later varieties in earlier in the season. The terminal buds of aster plants should always be removed, and the number of the lateral buds should be reduced to eight or twelve, if large blooms be desired.

The China Aster plant, if it is well rooted and is carefully packed, is one that carries well, and no serious check in its growth takes place even when several days are required for its journey. It is known that these plants have been successfully shipped from Ontario to points in Cape Breton on the east and in Saskatchewan on the west. The plants are inexpensive, and they are well calculated not only to give immediate pleasure, but to further that finer taste for floral beauty that is a growing asset in our national life.

THE GLADIOLUS

The culture of the Gladiolus is apparently on the eve of a great expansion. Many acres are now devoted to its cultivation and increase, but the supply is not equal to the demand. And this demand is based on substantial reasons. The simple planting and easy culture of the corms, the annual reproduction and increase of these corms, the size, beauty of form, and gorgeous coloring of the blooms, the absolute freedom from injury by insects and almost immunity from disease are surely good reasons for its popularity.

Good corn or potato ground will suit the gladiolus. It should have a sunny exposure, and if a plentiful supply of moisture can be given when the buds are well advanced good results will follow.

The corms may be planted in rows and grown like vegetables—the rows a foot apart and the corms four or five inches in the row—or they may be planted in groups or beds, the corms five or six inches apart. They may be planted any time in May or June and at intervals of ten days if a succession of bloom be desired. For late planting only large corms should be used; small corms should be planted early. If the soil be light the corms should be planted four to six inches deep, the large corms deeper than the smaller sizes; if the soil be heavy, planting at three or four inches will give better results than deeper planting. A frequent stirring of the surface soil will repay for the time and labor, but it must be shallow working, for the roots are near the surface. A steel rake shortened to about eight inches is a good tool for this purpose, if the corms are planted in rows.

There is a feature about the culture of the Gladiolus that has not been given much attention either in the United States or in this country, but which is

eties must be separated from the later ones for planting in the sections of country referred to.

The Gladiolus is one of the plants that make a flourishing growth in these newer sections, and it is well calculated to brighten the homes of the pioneers; but only early varieties should be sent there. If the Gladiolus is to take its legitimate place in the gardens of this country dealers must give attention to the season of blooming of the varieties sent into the more northerly portions.

Work in a Calgary Garden*

W. R. Reader, Calgary

Annuals I have grown include *Ageratum*, sown under glass middle of April, *Antirrhinum* or Snapdragon, Tom Thumb, the ordinary tall variety, and Queen of the North. The two former varieties were not satisfactory, flowering too late to be of much service. Queen of the North is a white intermediate strain, and was most satisfactory, flowering very early, and continuing a mass of bloom till destroyed by frost. It grows about nine inches high, and makes a good second-row plant, but is a little too tall as an edging plant. *Anchusa* succeeded well sown directly in



Artistic Grounds of Judge Klein, Walkerton, Ontario

A silver spruce and cut leaved weeping maple cedar hedge may be seen in the foreground and a spruce hedge in the rear.

especially important in our country, viz., the time of blooming of the different varieties. There is a range of six weeks or more between the very early and the very late sorts. In newer Ontario and in the Northwest Provinces, the early frosts which usually occur in the end of August or early in September will cut off many varieties before they have bloomed. It is cruel treatment on the part of dealers to send corms into these sections of the country that will only be a disappointment to the growers. There are early varieties that will give abundant bloom before the time of these early frosts, but these early var-

the open the first week in May. It is one of the purest blue annuals we have; height, 18 inches. *Bellis Perennis*, the common English double daisy, though only a perennial, is like the Snapdragon, for all practical purposes, an annual in this country. This I did not find very satisfactory. It seemed to suffer badly from the heat and lack of atmospheric moisture, and the flowers became very poor and open-eyed as the season advanced. It might be more satisfactory, perhaps, if planted in shade. The common Marigold succeeded from sowings

*Extract from a paper read before the Calgary Horticultural Society.

made in the open, but this annual is not, to my mind, worth growing when there are so many better things. The annual Marguerite Carnations, though not so desirable, perhaps, as the perennial species, produced an abundance of exquisitely scented flowers in many shades of color.

Annual Chrysanthemums proved valuable both as bedders and for the window boxes. They were, however, somewhat rank and weedy, and possibly would have been more satisfactory in poorer soil. Clarkia I sowed in the open, but for some unknown reason this failed to come. This year I am sowing under glass. *Coreopsis tinctoria* grew luxuriantly, but did not flower till late in the season, though sown inside in March. *Coreopsis Drummondii*, however, under the same treatment produced a profusion of its rich, golden yellow flowers during the whole of the summer months, and was exceptionally useful for cutting. *Collinsia bicolor*, an annual with lilac and white pea-shaped flowers, was very satisfactory from sowings made in the open. I tried *Convolvulus* or "Morning Glory," but the blossoms faded almost immediately on opening, owing to the bright sunshine.

The Indian and Japanese Pinks were a great success, and are, in my opinion, worthy of more general culture here than they at present receive. They vary in color from pure white to richest crimson, while many are beautifully laced and striped. They remain in full beauty over a long period. They are not so quickly affected by dryness at the root, as are many other annuals. The Californian Poppy succeeds in almost every garden. I grew a variety last year called "Rosy Queen," the flowers of which exhibited two very pleasing shades of pink.

EDGING PLANTS

The variety of Golden Feather known as Sutton's Golden Ball made an excellent edging plant. This variety has an exceedingly compact habit, with finely cut moss-like foliage, its great recommendation being that it does not require pinching. *Jacoea* proved a really beautiful free-flowering annual, producing dense heads of double flowers in white, rose, purple, and crimson shades for a long period. It succeeded in both sunny and shady situations. The African Marigolds grew vigorously and flowered profusely. I found a small single flowered kind, known as "Legion of Honor," very useful as an edging plant. *Malva rosea* was excellent as a dot plant, growing into a compact bush 2 feet high and covered with large pink flowers. The white Tobacco Plants were very miserable looking objects during the daytime, the flowers closing, and the plant putting on a drooping, dejected and woe-begone appearance generally. This was compensated for, how-

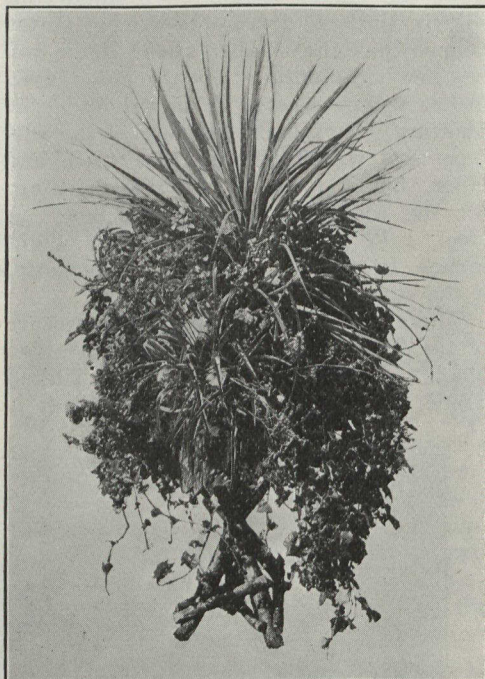
ever, by the delicious fragrance they diffused during the evening and night. I tried *Nemesia*, a well known and popular annual in England, but it did not prove very satisfactory.

I think I need say nothing about pansies, for everybody that has a garden knows how well they succeed here.

Success in Vase Filling

Fred. W. Adams, Toronto

A good compost, with lots of fibre, makes an ideal soil, and the rougher it is packed in the bottom of the vase the better. The best centre piece is Dra-



caena indivisa. Use a size that will throw its leaves well above the rest of the plants. Le Cid and Mme. Barney geraniums have been found to be the most profuse bloomers. Never use but the one variety in a vase, no matter what quality is required. For use around the centre the following are useful; *Achyranthes lindenii*, coleus fuchsias, abutilons and Marguerites, and anthuricum (Var.). For trailers or creepers around the edge we use Var. Vincas, Ivy geraniums, double Petunias, Fuchsia, "Trailing Queen," *Mesembryanthemums* (dew plants), Var. *Tradescantia*, *Lobelia*, *Alyssum* and German Ivy. As much as possible use propagated plants in preference to seedlings, and above all strive for a "riot of color." A vase that has a green appearance is a poor seller, and anything but attractive.

If your garden soil is heavy clay, cold and late, you can lighten it greatly by adding ashes or sand. Coal ashes, though of very little fertilizing value, will aid greatly in this respect. A dressing of lime, five to ten pounds to the square yard, will also lighten up heavy lands.

Growing Sweet Peas

Mrs. H. C. Nicholson, St. Catharines

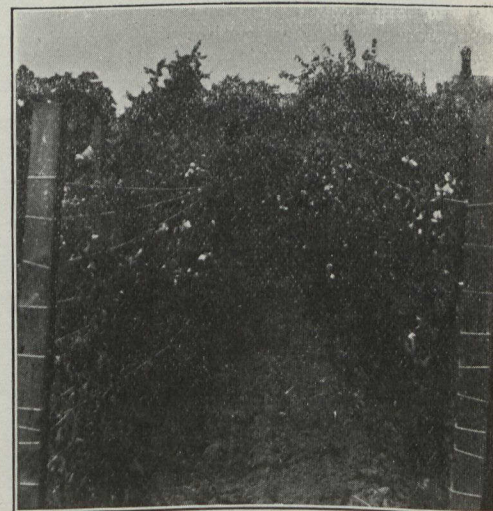
The sweet peas shown in the accompanying illustration were grown as follows: First, I manured the ground well, and then harrowed it thoroughly. I then took some well rotted manure and forked it in where the rows were to be planted. I worked it over and over to the depth of over one foot, so that I had the soil perfectly pulverized. I then made shallow trenches, about four inches deep, planted the seed about three inches apart, zig-zag, which made two rows, and as they grew I drew the soil up to them till the soil was level. I then drove two by two inch stakes at each end and the middle, and corded from stake to stake.

At intervals of two weeks I gave three sowings of nitrate of soda broadcast between the rows.

Instead of spraying water over the top of the peas, I thought that I would try another method of watering. I had five rows, thirty feet long, four feet apart between the rows. I then made a ditch between each row, and turned the hose into each ditch, and filled full of water. I found that way kept the soil cool, and the water seeped through to the roots easily. The peas grew well. You can see the luxuriance by the photo. Why I had peas galore, the finest that I ever had. A few days before our July exhibition, I covered them with cotton, for the sun scalds the bloom badly here, which spoils them for show purposes.

I may say that I always grow the Spencer type of sweet peas, as I think they have the most delicate colors and the largest blooms. They generally have three and four blossoms on strong stiff stems.

Plants for spring blooming should be generously fed with liquid manure and top dressings of fine bone meal.



Sweet Peas

Grown by Mrs. H. C. Nicholson, St. Catharines

The Care of Lawns

J. T. Rose, Brantford

In the first place, I will take it for granted that your ground is in good condition in regard to drainage. If you have any low spots be sure and build them up by cutting the sod into strips and then rolling them back to the proper level. Your next move is to get some good, rich soil and fill up the opening made until it will be a little higher than the surrounding ground, as it will settle.

For fertilizer, take very rotten horse or cow manure and apply to the depth of an inch or more. Every few days take a rake and stir or spread the manure about so that it will not bleach the grass. When you find the grass getting long and white remove the most of the manure, but do not be afraid of leaving some on, as the grass will soon eat it up.

Some seasons I only apply rich loam, to which I have added some bone meal and wood ashes. This I scatter over the lawn so that you can just see the grass. Every few days I take an iron rake and work it through the grass. I keep my lawn cut very close all season, as I find it grows more compact and has a deep green color. Apply plenty of water and use the lawn mower constantly until the frost comes, so that there will be no brown grass in the spring to spoil the appearance of the lawn.

If you are just starting to fix up your lawn around your new home, by all means secure some good rich top soil, and after spreading it apply some well rotted manure and have it ploughed or dug in—for like everything else, you must have a good foundation to start on. Then level off and sow your lawn seed. When it has grown to the length of say two or three inches, I would start and cut it with the lawn mower to make it stool out.

Fertilizers for the Garden

G. M. Frederick, Peterboro

Fertilizers are being used in increasing amounts each year, and have given good results in spite of the large amount of low grade goods sold the gardener and fruit grower. A good standard formula, useful for all vegetables and flowers, is a 5-7-10 goods, which means five per cent. of nitrogen, seven of phosphoric acid, and ten of potash.

If it is thought better to mix the materials at home a mixture of five parts acid phosphate, five parts bone meal, three parts sulphate of potash, two parts tankage can be used with good results. This should be applied at the rate of from half a ton to a ton to the acre. Work the fertilizer thoroughly into the surface soil at the opening of the season, then make several applications of

nitrate of soda at intervals of two or three weeks.

Nitrate of soda can be sown broadcast at the rate of from seventy-five to an hundred and twenty-five pounds to the acre. There is usually very little danger of burning the foliage; but as the leaves of some plants are tender it is safer to scatter along the rows or around the plants.

Where early fruit or vegetables are desired use acid phosphate and potash, with no bone meal, tankage, or stable manure. Bone meal is too slow, and the tankage and manure will decay and provide nitrogen later in the season, thus inducing growth of stock and leaf at the time the plant should ripen up. Apply one liberal dressing of the soluble nitrate of soda early in the season to force the growth of stalk and leaf. Af-

ter this time the mineral fertilizer, potash and phosphoric acid in the soil will mature the crop. By this method a gardener may place his vegetables on the market a week or two ahead of his competitors. Good judgment is necessary to get the best results, as if too much nitrate is applied or an application is made too late in the season, the plant will run too much to stock and leaf and the ripening of the fruit and vegetables will be deferred.

The above fertilizers can be used with good advantage on flowers, increasing the vigor of the plant and deepening the color of the blossoms. On all foliage plants use nitrate of soda liberally. Where wood ashes can be obtained conveniently use from ten to fifteen pounds in place of each pound of potash advised.



A Beautiful Display of Roses

In the garden of W. J. Smith, Toronto

What to Grow and How to Grow It*

A. G. Wolley Dod, Calgary

AS soon as the cabbage and cauliflower plants have grown about four or five inches high, the soil around the roots should be carefully loosened with a kitchen fork, and then they should be pulled up and transplanted again in the frame, about four or five inches apart, care being taken, however, to see that the soil is good and damp before doing so, as if too dry it will all fall away from the roots. Make a hole with a blunt stick and press each plant firmly into the soil slightly deeper than it was before, and give a good soaking of water. You may find that all your plants will not be ready to transplant at the same time, as some will be bigger than others, but pull out the biggest all the time so as not to let them get too crowded or they will grow weak and spindly. Cabbages in this way will

very rarely wilt when finally put out in the garden, if the same care is used in having the soil around the roots good and moist. If the weather is very hot when doing this transplanting it is a good plan to whitewash the glass, so that the sun will not wilt the plants. A handful of lime mixed with a little glue or size in a basin is enough for this, and it is best to whitewash inside the glass, as if done on the outside it will get washed off in heavy rains.

Your radishes should be fit for use in about three weeks time but the lettuce will be longer before it is ready to use. If your frame is big enough, sow some more radish seed at intervals of a fortnight, as then you will have a succession for the table.

When your celery plants are big enough, prick them out in the frame about four or five inches apart, or they

*Extract from a paper read before the Calgary Horticultural Society.

may be pricked out in shallow boxes, and when they are ready to transplant outside dig a trench about a foot or eighteen inches deep, leave the soil in the bottom loose, put about three inches of well-rotted manure in the bottom, and tread down firm, and cover this with about three inches of soil. Now transplant your celery and apply plenty of water. As the plants grow, draw the soil around the stalks, taking care not to cover the tips of the leaves; when doing this hold the tops well together with one hand and draw the soil well around the plants with a small hoe or other suitable instrument, continue this operation at intervals as long as they continue to grow, banking up the plants after the trench is filled. Some people plant their celery on the flat, but by planting in a trench and banking up in this way one will find that the celery is much more crisp and tender. I find a good way to do the final planting out, is to get an old baking tin and lift each plant separately with a kitchen fork, with as much soil adhering to the roots as possible, place carefully in the tin, and carry to where they are to be planted. The ground to be planted should have been previously marked out and holes dug with a trowel about eighteen inches apart.

TRANSPLANTING CABBAGE

In planting out your cabbages, if possible choose a dull day, and press them firmly down again, slightly lower than before, and leaving a small hollow around the stem so that the water will drain down to the root. After planting give a soaking of water, even if it is raining at the time. The time to transplant cabbage and cauliflowers is from the 24th May to the middle of June. As soon as the cabbages have been planted out, plant a few seeds of cucumber in different parts of the frame, and shut the frame up or very nearly so, as in the first stage of growth cucumbers want plenty of heat, and never let them get too dry. As soon as the plants have made two or three leaves, thin them out to not more than two plants together, but it does not matter if the seeds have not all come up as one in a place and four in a frame is quite enough. If you have chosen a good frame variety, such as Telegraph, you should have all the cucumbers you will require after they begin to bear. Those, however, who have room for a separate frame from the start, will obtain cucumbers much earlier by sowing in April.

To obtain cucumbers it is necessary to propagate the flowers, or the young cucumbers will not start. I have often been told by people that their cucumbers vines have plenty of flowers, but that they never can get any cucumbers. This is owing to the fact that they produce two distinct kind of flowers, one which will never produce a cucumber at all and the other which will grow into a cucumber if

properly propagated. The flowers are easily distinguished, as one grows on a thin stalk, and the other grows out of the end of a very small cucumber.

In order to make these latter grow, get a small camel's hair brush and insert it in the flower with a long stalk, and twist it around. This will collect all the pollen. Now insert the brush in the centre of the flower with a small cucumber on it, and twist it around again. The pollen from the first flower will adhere to the second, and a few days later it will begin to grow. These flowers should be gone over every day as they soon die if not propagated. One will often find that the first flowers that come out are the barren ones, and sometimes these continue for a week or more before any of the others appear.

I always like to make my frame in two distinct sections, as I use one for vegetables and one for starting a few flower seeds. By making your frame in sections in this way you can keep the flower side closed more or less according to the weather, whereas the cabbage side will require as much ventilation as possible or the plants will become too spindly. These flower plants will want transplanting in

is enabled to sow them so much earlier. I should recommend a few seeds of the following, the choice of the variety being left to the grower: Aster, Dianthus, Lobelia, Pansy, Snapdragon, Ribiscus, Tobacco-Plant, Petunia, Phlox, Stocks, Verbena, Zinnia.

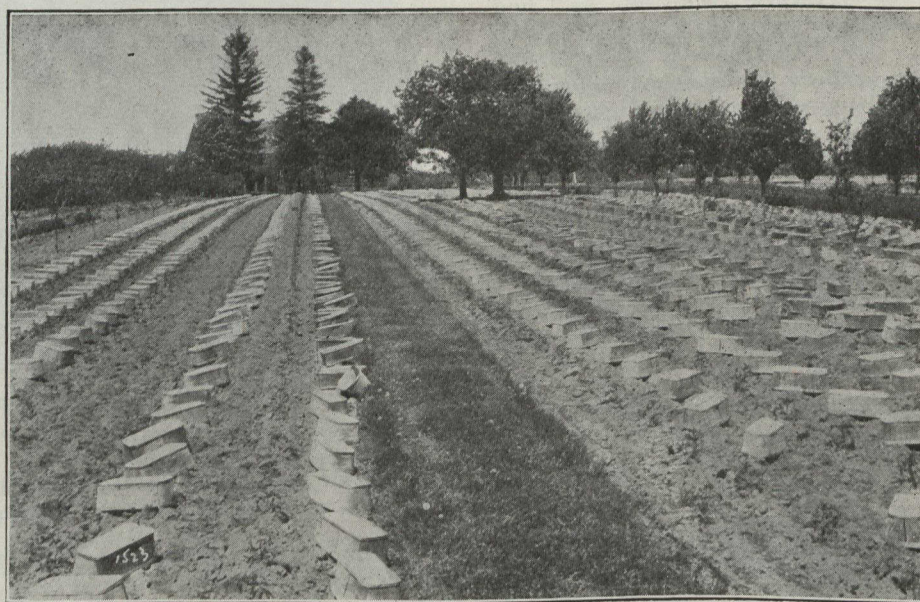
These should all be started in a frame. There are of course many others, but these are all favorites and comparatively hardy, the last in the list being perhaps the most tender. These will all require plenty of room when transplanted to give the plants an opportunity of spreading. The Lobelia, however, is the exception in this case, as being an edging plant it can be planted fairly close together.

Intensive Gardening

H. F. Kennedy, Lyons, Ont.

(Continued from last issue)

The third point then is constant cultivation and attention to growing plants. Now, a word about arrangement of plants and successive plantings. Remember, no theories but practical experience. During the first week in July I dug the potatoes and the balance of the potato ground was worked up and enriched. On



Young Tomato Plants

Grown by Mr. Pearce Smith, Grimsby, Ont.

the frame in the same way as the cabbages in order that they may make stronger plants for finally planting in the garden. This section of the frame may also be used as a cucumber frame after the plants are all transplanted.

FLOWERS FOR BEDDING

We now come to the question of what to grow in the way of flowers for bedding out. Of course a great deal will depend upon the tastes of the individual grower. There are a great many annuals that must have an early start in moderate heat, as if sown in the open border they take too long before they reach the flowering stage, and by utilizing a frame one

this strip of ground I sowed turnips and winter radishes, resulting in an excellent crop of both.

In another part of the garden I planted early in April, lettuce, radishes and spinach. These were used up by the first of June. Then in the same ground I planted Golden Bantam sweet corn, which yielded excellent ears about the end of August. Around the fence which encloses the garden I have a row of strawberries, which yield us all the fruit we require, both for table use and also for canning. Besides these, I have cucumbers growing up on trellises like grapevines, thus taking up scarcely any room

in the garden. I also find room for a few choice tomato vines, wonderberries, peanuts for the children, a couple of hills of musk melons, a few summer squash (bush squash take up no more room than a tomato vine), a few lima beans, some growing on poles eight feet high, others on bushes (the Fordhook strain) and some garden wax beans besides.

I always sow some lettuce seed in the row, along with the parsnips and vegetable oysters and parsley. These latter are slow in coming up, and often the weeds get the start of them. The lettuce germinates quickly and shows the row so you can get after the weeds long before the other seeds are up. The lettuce grows rapidly and can be pulled and used before the room is needed by the other

vegetables. I always find room for a few rows of carrots, beets and mangels for my hens. Here and there along the rows I plant a cabbage or cauliflower which seem to do extra well and get along very peaceably with their neighbors.

Besides all this, last year I had a beautiful bed of crocuses, tulips and narcissi, regular spring beauties, and later on a magnificent hedge of sweet peas, and a bed of exquisite asters, with here and there another flower of rare beauty.

All this goes to show that even on a very small plot of ground, with careful planning, a good selection of seed, and constant cultivation, an abundance of the useful as well as the beautiful can be grown.

Eighty-Two Varieties of Vegetables on a Small Lot*

Geo. Baldwin, Toronto

HAVING hardened off your plants, start at the top end of your garden by planting according to your plan, either the plant which you have raised in the hotbed or the seeds which did not require raising in heat. If the ground be very dry, give each cabbage and tomato plant a half pint of water, and shade from the sun for a day or two until they get acclimatized.

Plant the seeds of your squash, marrows and garden cucumbers in hills that have already been prepared, three feet apart each way, by digging out the hole about fifteen inches and putting in well rotted manure, covering same over to the depth of four inches, leaving the mound about one and a half inches higher than the level of the ground. Press your seeds in edgeways about one-half inch deep and firm down, and scattering a few radish seeds in each hill for the insects to feed on, otherwise they would eat off the young leaves of squash or melons.

PREPARING THE CELERY BED

The celery bed should be prepared in the following manner: Mark off with string the size of the bed required. In this instance three feet six inches wide by twenty-one feet long. Trench north and south and shovel out all the earth to a depth of six inches, throwing earth along each side of the trench. On top of these ridges is an ideal spot for radishes, provided you keep them moist. Then fill up to level of earth again, with good rotten manure, digging it in deep and mixing it up thoroughly. Then throw up two inches of fine sifted soil on top of this, leaving your trench four inches deep, planting your three kinds of celery in rows nine inches apart and six inches apart in rows, leaving twelve inches on each outside of rows.

*(Continued from last issue)

mation compared with the work that follows to make a success of the crop. Get your hoe sharpened, repair the hose and all garden tools, and I will give further directions for caring for the garden in the next issue of THE CANADIAN HORTICULTURIST.

Onion Culture

To grow onions from seed for profit you should have good ground—a sandy loam with loam predominating. It should be made rich by a heavy coat of manure, or plowing under a crop of red clover. Keep the ground well worked with cultivator or disc the rest of the season, so as to kill all grass roots and foul weeds.

In the fall or early spring cover the ground again with a fair covering of well rotted manure. As early as possible in the spring plow very shallow or work the manure in with disc or cultivator. By so doing you will preserve moisture.

PREPARING THE SEED BED

Prepare your seed bed by using a heavy roller, harrow well, then use the plank scraper or light roller. I prefer the scraper as it gives a nice mellow, smooth seed bed. In choosing seed, select nothing but No. 1 seed, even if the price is somewhat higher, for you will receive better results. Yellow Globe and Danvers are the favorites for market, although there is a growing demand for red onions.

Do not sow until the ground is thoroughly warmed up. Sow in drills from twelve to fourteen inches apart, as that is sufficient space to work in.

CULTIVATION

When the onions make their appearance use the hand harrow; by it you break the crust that sometimes forms, and you allow the air to work through the ground, and it also kills a great number of small weeds.—A Grower.



Intensive Cultivation

Growing potatoes between the rows of trees on the fruit ranch of Cooper Bros., Grand Forks, B. C.

The Canadian Horticulturist

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**The Only Horticultural Magazine
in the Dominion**

OFFICIAL ORGAN OF THE ONTARIO, QUEBEC, NEW
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FRUIT GROWERS' ASSOCIATIONS

H. BRONSON COWAN, Managing Director

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6. Advertising Rates quoted on application. Copy received up to the 15th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.
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, 1910. 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, 1910	8,925
February, 1910	8,967
March, 1910	9,178
April, 1910	9,410
May, 1910	9,505
June, 1910	9,723
July, 1910	9,300
August, 1910	8,832
September, 1910	8,776
October, 1910	8,784
November, 1910	8,747
December, 1910	8,662
Total	108,809

Average each issue in 1907, 6,627
" " " " 1908, 8,695
" " " " 1909, 8,970
" " " " 1910, 9,067

Sworn detailed statements will be mailed upon application.

OUR PROTECTIVE POLICY

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

Communications should be addressed.

THE CANADIAN HORTICULTURIST,
PETERBORO, ONTARIO.

EDITORIAL

MOTHERS' DAY

Three years ago a movement was started in Philadelphia to observe the second Sunday in May each year as Mothers' Day. The movement was taken up with much enthusiasm through the United States and rapidly spread all over the country, but as yet it has received but little support in Canada. The object is to set apart one day in each year for the special honoring of your Mother. To show such honor and sentiment in a material way the plan is to induce all persons to send boxes of flowers to their mothers as presents and to wear flowers as a token of respect. No special flower is needed although the white carnation has probably been the most popular one.

The Horticultural Societies can aid this work by inducing the Mayors of their town to issue proclamations that the second Sunday in May will be kept as Mother's day. The clergymen of all denominations should be interviewed and asked to preach sermons on this subject on that day. The Women's clubs and fraternal societies should also be appealed to for aid in this work.

IMPROVE THE COUNTRY HOME

In our last issue Mr. W. T. Macoun, Dominion Horticulturist, made an eloquent plea for the better observance of Arbour Day and compares the appearances of the town and city home with the country home much to the disadvantage of the country. He gives the chief credit for the improved appearance of the town homes to the horticultural societies.

To us the remedy for this state of affairs is very simple, just extend the horticultural societies out through the country when the same agents that have worked improvements in the town homes will do the same for the country home. Through the liberal premiums offered one year a vine is planted, another, an ornamental shrub. The next year flower seed, bulbs and rose bushes are obtained. These plants together with the plain and simple instructions given in THE CANADIAN HORTICULTURIST which is furnished free to members by the majority of the Horticultural Societies have worked wonders in the changed appearance of the town home and will do the same in the country if the membership is extended to include all country districts.

RENTING ONTARIO ORCHARDS

Several companies composed of English capitalists have rented a large number of orchards in Ontario for terms varying from seven to ten years. On the whole this new departure will probably be a benefit to the fruit industry as the education which will be given by having a number of orchards properly pruned, sprayed and cultivated in a district will be of great value to the community.

Orcharding, owing to the great increase of insect pests and fungus diseases has of late years become a business by itself. Where a farmer has not sufficient executive ability to manage two businesses he had better let one go. In many cases he would be better off to rent the farm and attend to his orchard himself but if he wishes to keep the farm in his own hands it is certainly a wise move for him to rent his orchard, for a neglected orchard will not

produce as large a revenue per acre as a well worked farm.

But it seems a penny wise and pound foolish policy for men to rent out good orchards of from six to ten acres because as they say they would have to buy spraying outfits and hire another man to do the work. Counting time lost by going to and from work and from unfavorable weather it is a safe statement that the farmer could care for his orchard for one half the money it will cost the apple companies. If the companies can pay two and three dollars a day for men to prune the trees and give the owner from three and a half to four and a half dollars per day for cultivating, surely it would pay the farmer to keep the orchard in his own control and hire the men himself when he would have them on the farm ready to take hold of farm work when needed.

If the farmer will not care for his orchard properly he had better take the first chance that he can to rent as in this case he will receive a revenue each year and have the orchard given back to him at the end of seven to ten years in a much better producing state than when he rented it.

PROTECT THE BIRDS

Birds are of great value to the fruit grower, as they live almost entirely on insects, and thus keep them in check and prevent great loss. A few birds cause some damage to fruit and other crops, but the injury is trifling when compared with the good that is done.

It is a great mistake to sacrifice a hundred birds for the damage that one may do. Any man who grows fruit or vegetables, or even has a kitchen garden, should have a common knowledge of the habits of birds. If a blackbird is seen in a grain field it does not necessarily follow that he is doing harm. Woodpeckers are often shot in orchards when a careful investigation would show that they are destroying injurious insects.

There are many instances where birds have been killed for destroying fruit when an examination of their stomachs has shown that they were eating more injurious insects than fruit. Even though some birds may eat a little fruit it is a small part of their diet. During the breeding season they live and rear their young almost exclusively on insect food.

Birds are the most valuable asset of the orchard or the farm. Protect them.

THE VALUE OF SPRAYING

The demonstration orchards conducted by the Department of Agriculture last year proved beyond the shadow of a doubt the value of pruning and spraying of orchards. One of the most striking illustrations of the gain produced by spraying was in the orchard of Mr. John Osborne, Dunedin.

This orchard had never produced over fifty dollars worth of apples but by the expenditure of forty-eight dollars and thirty cents in pruning, spraying and cultivating the orchard, and paying seventy-five cents a barrel for picking and packing, the apples sold for two hundred and thirty-two dollars and ninety-seven cents, nearly five times the highest amount that was ever received for the orchard in previous years.

Surely after evidence such as this every fruitgrower and farmer will invest in a spray pump and see that his orchard has proper attention. Not only is spraying necessary for the best results, but it must be reinforced by proper pruning, thorough cultivation and some system of co-operative disposal of the fruit.

GARDENING FOR CHILDREN

Children are always greatly interested in seeing things grow, especially if it is some plant or animal that they can take full care of. Interest the children in the work of improving their school grounds. As far as possible let each child have a garden for himself. Nothing will make a child like school more than beautiful school surroundings, especially if he has had something to do with the making of them.

The influence of this work will be far-reaching. The children will make better citizens and later in life when they have homes of their own, the results of this early training will be seen in beautiful flowers, well arranged lawns and tasteful homes. Resolve this spring to have the school grounds in your district the best in the vicinity and the grounds around your own home even better.

ESSAY COMPETITION

In another column will be found particulars of the essay competition conducted by the Ontario Horticultural Association. This competition has been rendered possible by the generosity of Messrs Herman Simmers, Toronto, and Mr. R. B. Whyte, Ottawa, who have each donated \$25.00 to be given in prizes and medals for the four best essays on "My Favorite Garden Flower and How I Grew it." Such liberal prizes should bring out a great number of essays, and those who do not win prizes will be well repaid for the work involved by the pleasure obtained from writing down all the work done in the garden, which will act as a record for future years.

THE VALUE OF BEES

Articles in this and previous issues have shown the great value of bees in an orchard. The transfer of pollen is due almost entirely to insects, and of these bees are the most important.

Even under the most favorable circumstances great numbers are required to do this work in localities largely devoted to fruit growing. During wet, cloudy, or other unfavorable conditions of weather, the bees do not travel far from the hive, and if the nearest bees are several miles away, very little good will be obtained from the bees, and a large proportion of the bloom will be unfertilized and either drop or form mis-shapen or cull fruit.

The fruit grower who has hives in his orchard will profit most in unfavorable weather and will have the most perfect fruit. In addition to the gain in the yield and quality of the fruit, there is an added profit from the honey produced, which is always saleable. It pays to keep bees.

TREE PLANTERS

While in many ways we think that we are ahead of our cousins to the South, still in some respects we might profit by their example, one of which is in copying the organization of boys, called The Tree Planters of America, which has been started in the United States to promote systematic tree planting in profitless pastures, nooks, ravines, on useless or worn out plots, or partly denuded forest areas, and in every place where the soil is not yielding a reasonable contribution to the general welfare.

Canada has thousands of just such places, many of them near towns and villages. A little time spent in planting trees would change unsightly dump grounds and weed patches into beautiful groves. Let us have a lodge of the tree planters of Canada in every town and village and at every country school.

PUBLISHER'S DESK

The illustration on the cover of this issue shows a peach orchard in bloom in the vicinity of St. Catharines, Ontario, the noted fruit and truck district, which the citizens proudly call the Garden of Ontario. We are indebted to the courtesy of the Grand Trunk Railway Co., for the privilege of using this photograph.

We should be pleased to receive good sharp and distinct photographs showing fruit or garden scenes for publication in THE CANADIAN HORTICULTURIST, the best of these to be used on the front cover, the others that would make good reproductions to be used on the inside pages. Send us the best photographs you have. If you wish them returned write the word return on the back of the photograph together with your name and address.

Many new subscribers commence receiving THE CANADIAN HORTICULTURIST with this number. We extend to them a hearty greeting, and our only regret is that we were unable to commence all of these subscriptions with our Garden Number. We printed what we thought was an ample supply of copies of this number but the demand was so great that the issue was practically exhausted within a few days after it was off the press. The subscriptions still continue to come in at a rate to keep our circulation department busy. A large number of our readers are taking advantage of the splendid premiums offered for the securing of new subscriptions. Have you secured one of these premiums? We are unable to give a full list and descriptions of them in this issue but will mail you a premium list by return mail if you write for it. It includes two splendid climbing roses, a collection of flower and garden seeds, and several collections of flowering bulbs which are sent free of cost to persons who secure new subscriptions to THE CANADIAN HORTICULTURIST at 60 cents for each subscription. This is an exceptional offer. Time is passing and you should take advantage of it quickly. Write for our premium list and while you are waiting for it show your copy to your friends and get them to subscribe. They will readily do so when they see the good things it contains. Be sure and get a premium.

In this issue we are inaugurating a new department, which we have called "Society Notes." This will be devoted to short pithy reports from the officers of the different Horticultural Societies, throughout Canada. We want to make THE CANADIAN HORTICULTURIST more truly fully the organ of the Horticultural Societies, and with this end in view would be pleased to have the Secretaries send us brief notes of what they have found to be of the greatest benefit to them in their work. Let us have particulars of how you manage your lawn competitions. Do you give the school children seeds and plants and later give prizes for the best cared for gardens? Do you take an interest in the establishment of gardens in the school grounds? What influence has the Society had in beautifying the town generally, such as the proper care of parks and cemeteries and school grounds and the planting of vines around churches, public buildings and factories.

We would suggest as a topic for the June Horticulturist that you write on "The Benefit that the Horticultural Society Has Been in Beautifying our Town." Make your letters short and to the point.

SOCIETY NOTES

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

Peterboro

Peterboro is in the midst of an energetic campaign to increase their membership. Mr. Frank Wise, the Supt. of Little Lake Cemetery, the genial Secretary, has taken a great interest in the matter and is working for three times the present membership before the end of next month. The Society has made great use of a publicity campaign in the local papers, who are very friendly and will publish anything written up with regard to the improvement and beautification of The Electric City. As a means of obtaining this object they have books of tickets printed which will be given to a large corps of canvassers who will call on practically every citizen. In this matter Mr. Wise has enlisted the assistance of a committee of interested ladies, who will take charge of the membership campaign. A set of attractive window cards explaining the object have been printed and placed in the windows of all the business houses. The society is making a special offer of plants and bulbs to members who join before the end of May, as every member obtained now adds just that much more to the Government grant next year. They have adopted as their slogan "Beautify Peterboro," and would ask the Societies in other places to watch them grow.

Guelph

Mr. Jas. Anderson, the president reports that they have had a very successful season. They have over 150 members which is an increase over last year but as Guelph has a population of about fourteen thousand there is room for a still larger increase the present year when the membership will probably be more than doubled.

The society is doing a good work in giving prizes for the best lawns as well as kitchen gardens including the production of fruit and vegetables.

It also gives prizes for school children's lawns and gardens and where they do their own work supply them with seeds, geraniums and other plants in pots. The society also filled window boxes for the windows of the City Hall, the Post Office and other public buildings.

The members of the Horticultural Society are furnished with THE CANADIAN HORTICULTURIST as well as a valuable list of plant, bulb and seed premiums.

Thornbury

Mr. Geo. Wright, the energetic Secretary of the Thornbury Horticultural Society, has instituted a new department which might be copied by a number of other societies. For a very small fee he sees that the collections for the membership tickets are made and that the plants and vines chosen as options are promptly delivered when received. Before this owing to carelessness or lack of time these plants were frequently allowed to remain on hand for days or even weeks so that when the member eventually called for them they were badly dried up and often gave very poor satisfaction. By the present system, they are planted immediately. The members are better satisfied and are more likely to renew their membership tickets the next year.

Barrie

Mr. Geo. Vickers, Pres. of Barrie Society, although busy with the cares of a large store at Easter time had time for a short description of the benefits conferred upon the town of Barrie by the Horticultural Society. He promised to write an article on the place THE CANADIAN HORTICULTURIST should occupy as the official organ of the Societies in the Province.

Whitby

Mr. H. W. Wilcox, Sec. of the Whitby Horticultural Society reports that the interest in their work is steadily growing. Since he has resided in the town he has seen much improvement in the homes and surroundings of the people and much of the credit for the improvement can be given to the Horticultural Society. Last year vines were given to the factories, schools and churches which in a few years will add greatly to their appearance.

Perth

We are in receipt of a printed copy of the report of the convention of the Ontario Horticultural Association as given to the Perth Horticultural Society by its delegate the Rev. A. H. Scott, M.A. This is a method of presenting reports which might be followed by other Horticultural societies.

Frequently valuable reports of meetings prepared by delegates after an expenditure of considerable time and trouble, are practically wasted, owing to unfavorable weather or other competing meetings causing a small attendance at the meeting when the report is presented. Thus very few obtain any benefit from the report. By having the reports printed all the members can be made familiar with the contents of the report.

When societies are willing to incur an expense of ten or twenty dollars or more sending delegates to a convention some effective method of distributing their report should be adopted even if it does cost a few dollars more. The annual government report cannot take the place of a special report by local delegates.

Essay Competition

Through the generosity of Mr. Hermann Simmers of the firm of J. A. Simmers, Limited, of Toronto, who was the first to make the suggestion, and Mr. R. B. Whyte of Ottawa, the President of the Ontario Horticultural Association, each of whom has donated \$25.00, it is proposed to offer prizes for the best essays submitted for competition through the Horticultural Societies on the subject of "My Favorite Garden Flower and How I Grow it." In connection with the proposed competition the following rules have been decided upon:—

1st.—That the essays shall not exceed one thousand words in length.

2nd.—That they shall be written by members of Horticultural Societies, or their sons and daughters who are twenty-one years of age or less.

3rd.—That the essays shall be written on one side of the page only and forwarded through the Secretary of the local Horticultural Society to H. B. Cowan, THE CANADIAN HORTICULTURIST, Peterboro, Ontario, not later than August 15th, 1911.

4th.—That the local Horticultural Societies shall have the privileges of reading the paper submitted through it at any of their regular meetings prior to August 10th, 1911.

5th.—That four cash prizes shall be offered as follows, \$10, \$7, \$5 and \$3. In addition to the four cash prizes four medals will be given to the four winners.

Beekeeping for Fruit Growers

Geo. W. Tebbs, Hespeler, Ont.

The question has often been asked, "Will it pay to buy bees simply for the benefit to be derived from fertilization of the flowers, and where it is not intended either for lack of time, or because of lack of interest to properly care for them?" I would reply at the outset that it is bad for the bees. They deserve better treatment at our hands, for no other little creature gives such abundant appreciation of, say, ordinary care than do our little pets, the honey bees.

As an apiarist "crank," of course, I am strong on proper attention for them, and see no reason why the people who simply want to use them for fertilizing blossoms should not raise instead bumble bees, or some of the many types of flies, which would not prove to be so determined in their efforts to make one see and feel the point of interference with their business.

Let our fruitgrowers note that the "season" is often controlled not so much by the presence of frost or not, as by the fact that dull, blossoming days, when little or no cross fertilization takes place by the aid of nature's carriers, the bees.

I would go just a step further and say to the man who wants to get the very best from his orchard, that bees are not only helpful, but are indispensable. Don't spray your trees when in full blossom and so kill your best friends. Besides, it is a criminal offence in this province. But if you keep bees take care of them, and your wife will say that jars of fruit and jars of honey look very nice on her pantry shelves, side by side.

Send fruit crop prospects for publication.

ANNOUNCEMENT



WE DESIRE TO THANK OUR MANY CUSTOMERS FOR THE SPLENDID SUPPORT THEY HAVE GIVEN US THIS SEASON, AND TRUST THAT THE NURSERY STOCK WE HAVE SUPPLIED PROVES SATISFACTORY. LAST YEAR WE DID BUT A SMALL BUSINESS, AND DISTRIBUTED OUR TREES AMONG THE MOST CRITICAL BUYERS IN THE COUNTRY. THIS YEAR THESE PEOPLE CAME BACK TO US,—THEIR FRIENDS BOUGHT **PEDIGREED TREES** TOO. TO-DAY WE HAVE THE BEST CONNECTION IN CANADA. WE STRIVE TO GROW PERFECT TREES. OUR YOUNG STOCK HAS COME THROUGH THE WINTER IN FINE CONDITION, AND WE SHALL HAVE A LARGE STOCK ON HAND FOR FALL TRADE.

AUBURN NURSERIES
QUEENSTON, ONT.

GRASSELLI ARSENATE OF LEAD

Arsenate of Lead is being used more and more in the fruit centres of the province of Ontario. The question that interests every fruit grower is this:

Is there Difference in Arsenates of Lead?

Yes. There is a big difference.

Let us suggest some points which we believe every grower should consider before placing an order for Arsenate of Lead:

1st. You wish an Arsenate of Lead that will not burn the foliage

2nd. It is desirable that an Arsenate of Lead mix readily, yet retain its adhesive qualities.

3rd. An Arsenate of Lead should contain the proper killing power.

Grasselli Arsenate of Lead contains no free acids or adulterant ingredients, contains a very low per cent. soluble Arsenic, and we have yet to learn of a case where it has burned the foliage, even though it may have been used double strength. It will mix readily and has a reputation for **adhesiveness** and **high killing power**.

Grasselli Arsenate of Lead has been used in the Niagara, Oshawa, Picton, Wellington and other districts for the past several seasons, and with every success.

Write us for prices.

For Sale by **ROBERT THOMPSON, President**
St. Catharines Cold Storage and Forwarding Co.
St. Catharines, Ontario

THE GRASSELLI CHEMICAL COMPANY
CLEVELAND, OHIO

The Gladiolus

Campbell Bros., Simcoe, Ont.

In drawing up plans for planting the garden, space should be provided for gladioli, ever increasing in popularity. This is largely due to the work of the hybridist in improving the quality of the flower, and lowering the cost at which good varieties or strains can be procured. For table decoration during its season, nothing equals the gladiolus, and it possesses the additional merit that large quantities of bloom can be gathered from a small piece of ground. Canada formerly imported all her corms, but now a good many acres are grown in this country, largely for export.

PLANTING

They may be planted quite early, as soon as the soil is dry; the earlier they are planted the earlier they will bloom, and the corms will have a longer season to mature. They may be planted in succession up to June, thus prolonging the season.

Mature corms should be planted not less than 4 inches deep, and on light soils; some plant 5 or 6, the effect of this being to give support to the stem and lessen the danger from wind storms. Always plant in full exposure to the sun; they do not thrive in the shade. They do fairly well in any kind of soil, but prefer a rich, sandy loam.

As with all garden crops, fertility is best maintained by working into the soil well decayed stable manure during the fall. Commercial growers plant quite thickly, ten to thirty to the foot, but where fine spikes are wanted, they should be given more room by planting in a row, say three to six inches apart.

SUMMER CULTURE

Summer culture consists simply in keeping the soil well stirred, and in continued dry weather artificial watering must sometimes be resorted to, as they are impatient of hot, dry weather. The spikes should be cut when the first flower opens and placed in water. By shortening the stem and renewing the water daily, the spikes will last a week or more.

Dig the corms in October, or as soon as the plant is ripened up, dry a little and store in trays in a frost proof cellar. They can be cleaned up any time during the winter, and prepared for planting in spring.

New Regulations Regarding the Destructive Insects and Pests Act

The number of ports at which nursery stock may be imported has been increased and the time limit extended in a number of instances.

The amended regulations governing the importation of nursery stock under the act to prevent the introduction of insects, pests and diseases destructive to vegetation provide that nursery stock, which is not exempted entering Canada, shall be imported only through the ports and during the periods mentioned below.

Vancouver, B.C., from 1st October to 1st May; Niagara Falls, Ont., from 1st October to 15th May; Winnipeg, Man., and St. John, N.B., from 15th March to 15th May, and from 7th October to 7th December; Windsor, Ont., and St. Johns, Que., from 15th March to 15th May, and from 26th September to 7th December. At these

MAY

Is the busiest month of the year with Garden-makers. We shall be glad to help these busy men and women by sending, carriage prepaid.

Asters: Queen of the Market, White and Pink at 40c per 100; Lavender Gem, Royal Purple, Branching White and Crego Pink at 50c per 100.

Balsams at 60c for 10. Antirrhinum (Snapdragon) Arctotis Grandis (African Daisy) Salvia, Scabiosa, and Stocks at 75c for 10.

Gladiolus (Groff's Hybrids) 10 for 25c; 25 for 55c; 100 for \$2.15.

Knipliofia (Flame Flower) Var. Pfizeri, each 20c; 10 for \$1.50.

Yucca var. Filamentosa, each 25c.

Shasta Daisies, blooms 4 to 4 1/2 inches across, 25c each.

Please send postal note with order.

John Cavers, Douglas Gardens
OAKVILLE, ONTARIO

STRAWBERRY PLANTS

For
Choicest Plants
of
Well Selected Varieties
at
Reasonable Prices
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Prompt Delivery
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WELLINGTON, ONT.

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Fine for the youngsters and a source of enjoyment for the grown-ups too. Just the thing for your lawn or garden.

Inexpensive and certainly a pleasurable possession,—helps you to get the best of a summer's outdoor comfort

Made in three sizes at three prices. Built solid and strong in neat design and handsome finish.

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The Stratford Mfg. Co., Limited
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SURE GROWTH COMPOST

makes poor land fertile, and keeps fertile land most productive. Supplied by

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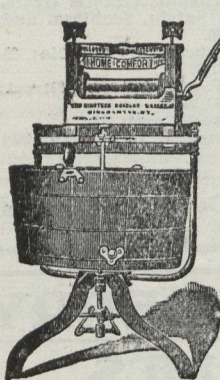
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This is the greatest washer the world has ever known. So easy to run that it's almost fun to work it. Makes clothes spot-



lessly clean in double quick time. Six minutes finishes a tubful.

Any woman can have a **1900 GRAVITY WASHER** On 30 days' free trial.

Don't send money. If you are responsible, you can try it first. Let us pay the freight. See the wonders it performs. Thousands being used. Every user delighted. They write us bushels of letters telling how it saves work and worry. Let the 1900 Washer pay for itself. Just send us 50 cents each week out of the money it saves you. Write to-day for our Free Washer Book. It explains the "easy payment plan." Tell us your nearest freight station. Address me personally—
C. H. D. BACH, Manager, The 1900 Washer Co., 357 Yonge Street Toronto, Ontario. The above offer is not good in Toronto, Winnipeg or Montreal and Suburbs—Special arrangements made for these districts.

HANDY GARDEN TOOL

Here's a practical tool for the farmer or gardener—our No. 6 Combined Double and Single Wheel Hoe, Hill and Drill Seeder. Four tools for the price of one. It plants in hills or continuous rows, covers the seed, rolls the soil, marks the next row, hoes, weeds and cultivates. Simple, easy to operate, and does a day's work in 60 minutes.



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For 75 years we have made dependable tools of quality for the farmer, trucker and town gardeners. We make 33 garden tools at \$2.50 to \$12.00 each.

Write to-day for Anniversary Catalog describing our entire line including potato planters, cultivators, sprayers, diggers, orchard and other tools.

BATEMAN M'FG CO.
No. 5162 GRENLOCH, N. J.



Stocks carried at many convenient points. Ask for address of nearest Canadian agency.

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THEY ARE THE BEST ON THE MARKET



WE MANUFACTURE
STANDARD POTS
FERN PANS
AZALEA POTS
HANGING BASKETS
SAUCERS AND
STRAIGHT PANS

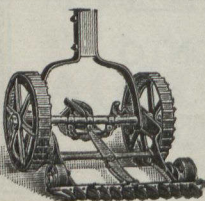
Canada's Leading Pot Manufacturers

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Main St. West, Hamilton, 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.

CLIPPER LAWN MOWER Co.
Dixon, Illinois



points of entry the importations shall be fumigated. Importations by mail shall be subject to the same regulations.

All nursery stock originating in Japan or in any part of the States of Vermont, New Hampshire, Maine, Massachusetts Connecticut and Rhode Island, shall after fumigation, be subject to inspection as provided by the regulations of the Destructive Insects and Pests Act.

Nursery stock not exempt under the following regulations and originating in Europe, shall be imported only through the ports and during the periods mentioned above with the addition of the ports of Halifax, N.S., Sherbrooke, P.Q., and Montreal, P.Q., through which ports such European stock may enter from September 15th to May 15th.

In the case of nursery stock from Europe, Japan or the states of Vermont, New Hampshire, Maine, Massachusetts, Connecticut or Rhode Island passing through the ports of Vancouver or Winnipeg, the inspection is made at the port and not at the destination as is the case with stock passing through the eastern ports.

The following vegetation and florists' stock is exempt from fumigation and may be imported at any season of the year and through any port without inspection:—

Greenhouse grown plants, including roses in foliage which have been grown in pots up to three inches in diameter. A certificate that the plants have been grown under glass must accompany the invoice and shall be signed by the consignor.

Herbaceous perennials, herbaceous bedding plants, cottonwood or Necklace Poplar (*Populus deltoides*) when shipped from and grown in Dakota or Minnesota.

The port by which it is intended that the nursery stock shall enter must be clearly stated on each package. All persons importing nursery stock, except such stock as is exempt from fumigation and inspection under the above regulations, shall give notice to the Dominion Entomologist, Experimental Farm, Ottawa, within five days of despatching the order for the same and they shall again notify the Dominion Entomologist on the arrival of the shipment in Canada.

The full text of the Act may be found in issue of THE CANADIAN HORTICULTURIST for July, 1910.

Items of Interest

There is not much doing here as good fruit is scarce. Home grown fruit nicely packed brings good prices to those fortunate enough to have it. Alexanders bring one dollar per box. Baxter one dollar fifty cents in Charlottetown from our own merchants. Alexanders keep well here and pack nicely. The Baxter is specially good in flavor this year.—J. A. Moore, Hazelbrook, P.E.I.

There has recently been organized in Tilsonburg a Fruit Growers' Association with a membership of about fifteen which number is likely to be largely increased in the near future. We are fortunate in securing for president, Mr. A. L. Scott, a gentleman of great influence in the community and one who has had large experience in municipal matters.

He has recently purchased a farm and intends to plant 40 acres to fruit, apples, cherries and peaches. We are also fortunate in securing for Secretary Treasurer a graduate of Guelph Agricultural College in the person of Mr. George Elliot.—R. H. McDowell, Tilsonburg.

Quality Butter

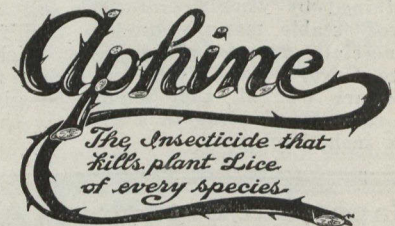
That's the kind you make with Maxwell's "Favorite" Churn.—



Hand & Foot Levers with Roller Bearings

Maxwell's "Favorite" is used all over the world—in Denmark, the butter country of the world—in the United States, in spite of high tariffs—and in every Section of Canada. Our Agricultural Colleges and Govt. Inspectors recommend it, because it is the finest butter-maker in the world.

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DAVID MAXWELL & SONS,
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You can depend on it for positive results, without fear of failure or dissatisfaction.

It destroys green, black and white fly, red spider, thrip, mealy bug, brown and white scale without the slightest injury to the tenderest flower or foliage.

FUNGINE

An infallible remedy for mildew, rust and other fungus diseases. A clean, safe and easily applied spraying material, particularly adapted for the greenhouse. —FOR SALE BY—

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Send for Descriptive Circular.

Manufactured by APHINE MANUFACTURING CO., Madison, N. J., U. S. A.

J. W. CROSS Old Grammar School WISBECH, ENGLAND

Wholesale Fruit, Bulb and Seed Potato Specialist FOR

FRUIT TREES of all description, Gooseberry, Currants, Strawberries, Raspberry Canes, etc.

BULBS—Daffodils, Narcissus, Tulips, etc., English grown.

SEEDS of all descriptions, including all the best varieties in Potatoes.

NURSERY STOCK, such as Privet, Quick for hedges, Herbaceous Plants, etc., etc.

CHRYSANTHEMUMS, all best varieties in stock. State requirements, special quotation will be given

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Every seed you sow tries to reproduce its ancestors, in size, shape and flavor. But examine the seed as closely as you will, you cannot tell whether these parent plants were good or bad. You have to trust your seedsman for it.

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For over forty years we have been selling Field, Flower and Garden Seeds here in Canada, so people have had plenty of chance to prove Ewing's "Reliable" Seeds.

The result is that last year we sold far more than ever before. Could you ask for a better proof of quality?

Don't take chances! Get the seeds you know will turn out right—Ewing's Reliable. Send now for our Illustrated Catalogue, and if your dealer hasn't Ewing's order direct from us.

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All out-doors invites your Kodak

Every day there are pictures right at home that are worth the taking—pictures of the family that will always be cherished, pictures of stock and crops and buildings that will always be of interest and value.

And when you are away from home there are pictures that are not only of interest but of value too; pictures that mean dollars and cents to you. Every progressive farmer to-day is a student of the methods of those who are making the biggest successes in agriculture. A Kodak makes the most effective note book.

Our Catalogue explains how simple picture taking is by the Kodak method and how inexpensive. It's free at the Kodak dealers, or by mail.

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BEZZO'S FAMOUS PRIZE ASTERS

Prize at New York State Fair, September, 1910

Vick's Violet King, Mikado White, Mikado (Rochester) Pink, Vick's Early Branching, Rose and White, 20c per dozen, \$1.00 per hundred.

Vick's Branching Pink, White, Rose, Lavender, Semple's Pink, Royal Purple, Daybreak and Purity, truly the aristocrats of the aster family; 15c per doz., 75c per hundred; packed and labeled separately in wet moss. All plants sent by express and guaranteed to arrive in good condition. Express prepaid on orders over \$2.00. Remit by money order.

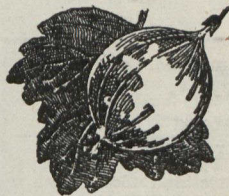
C. MORTIMER BEZZO,

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SMALL FRUIT PLANTS

Gooseberries, Josselyn, Red Jacket, Downing, Pearl, Houghton.—Currants, Perfection, Ruby, Cherry, White Grape, Lee's Prolific, Champion, Black Naples, Victoria.—Raspberries, Herbert, Cuthbert, Marlboro, Brinckle's Orange, Golden Queen, Strawberry-Raspberry.—Garden Roots, Asparagus, Rhubarb, Perennial Celery, Write for Catalogue.

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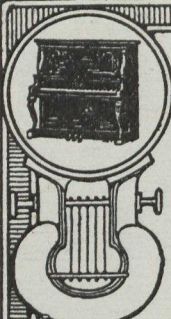
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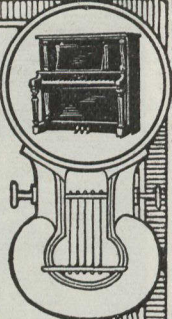
A start cannot be made too early. We have everything that is hardy and attractive—Shade and Ornamental Trees, Vines, Roses, Paeonies, Flowering Shrubs, Perennial and Bedding Plants, Fruit Trees and Bushes, etc., all grown at our Nursery. Send for our free catalogue.

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To own a Gourlay Piano is to be proud of your piano. If you are a musician, the sympathetic bond between you will be strong indeed, for a Gourlay piano responds to every mood of the player. There is a crispness and delicacy of tone for the daintiest improvisation and a richness and volume for the most exacting bravura passages.

If you are not a player, but a lover of music, the pleasure of your friends' enthusiasm will more than repay you for the amount of your investment, to say nothing of the extra years of service over an ordinary piano. Write for Catalogue and prices.

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You Can't Grow Crops without Nitrogen

You've got to give it to them in some way, and the
Quickest—Cheapest—Cleanest
way is to use

Nitrate of Soda

Because: The Nitrate will act at once. It is the form of nitrogen the plant may take up without previous or delayed soil nitration. All its nitrogen is available. It is pure plant food. It is as clean to handle as sand.

It will pay you to top dress your meadow with 100 lbs. per acre, and to add some Nitrate of Soda to your complete fertilizer.

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CULTIVATE OFTEN

and you hold the moisture in the ground. Cultivate shallow or deep as the crop needs it and you release the forgotten or unknown soil properties which are needed to make the crop grow properly. We have been making farm tools for 75 years and think we have as good a line of Riding Cultivators as you need to choose from.



IRON AGE RIDING CULTIVATORS

are long-lived machines—adjustable for rows 28 to 50 inches, while in motion—teeth adjustable for depth and angle—pivot or fixed wheel, one row or two—high or low wheels—work well on hillsides—farm close and true. A complete line. Our Anniversary Catalog will show you—also, potato machinery, garden wheel hoes and drills, etc. Address

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Stocks carried at many convenient points. Ask for address of nearest Canadian Agency.

LOOK, READ, ACT!

Stock Guaranteed No. 1

Roses two year, strong, H. P. Moss and Climbing, 12c; Flowering Shrubs, large assortment, 5c, 10c and 15c; Dutch Pipe and large flowering Clematis, all colors, at 30c; Perfection Currant, strong, two years, \$10; other currants, \$6 per 100; Cherry, Pear, Plum and Spy Apples, 30c; other apples 25c; Cuthbert Raspberries \$7 per thousand; Peach trees at 20c; Hon-eyesuckles, 15c; Boston Ivy, 15c; Wistaria 20c; German Iris 10c; Paeonies, all colors, 15c; Lilies, 10c; Tree Roses, Hardy Rhododendrons and Azaleas, Blue Spruce. Write your wants. All must go.

A. W. GRAHAM

ST. THOMAS - - ONT.

PROVINCIAL NOTES

Eastern Annapolis Valley

E. W. Buchanan

The weather in Nova Scotia during the past winter has been the most severe ever remembered, but so far March has been fine and frosty with brilliant sun. The apple orchards look promising; the wood ripened well last season and now there are to be seen a fine lot of fruit buds.

When we left Scotland in February, the trees there were exceptionally advanced, the white buds on the pears were almost ready to burst into blossom, while rhododendrons, primroses, crocus and snow drops were in full bloom. Vegetation was just as forward in England where the winter has been unusually mild, however, if a spring frost occurs it will do a lot of damage in the Old Country which may indirectly affect Canadian fruit returns next fall.

Nursery stock, home grown and imported, is now being root-grafted. While in France we walked over several of the famous Orleans nurseries (there are two hundred of them which supply the world with root stocks of various kinds). Owing to the rains and floods, the quantity and in some instances the quality of these stocks is not so great or so good as other years and it is hard to supply the demand, owing to this scarcity; this too will probably affect the Canadian orchardist.

Money in Apples in P. E. I.

I know a man who stated in public last December that he had harvested a barrel a tree from Wealthys seven years planted and it is not impossible for others to do likewise. These trees can be set out 16 by 20 feet or closer, making 162 trees to the acre. At a barrel a tree and \$3.00 per barrel this would give \$456.00 per acre. Of course this is an exceptional case but just cut it in two and for your five acre orchard you have a revenue of \$1140.00 in seven year's time.

Is this not worth trying for? Cultivation, fertilization and thinning the fruit will do it. Then the work is very light compared with other farm work.

NO LIMIT TO THE MARKET

Some one may say that if every one started this work the market would be glutted. The same was said when we started the cheese industry. Why we have not half enough apples on Prince Edward Island to attract a buyer to come here. The City of Glasgow, Scotland, consumed last year more apples than we will produce for export in the next five years. And just think of the markets opening up in Western Canada. No, no, the market will not be glutted. I hope I have been able to present some points in fruit growing that will lead you to give this phase of agriculture more attention.

I do not say that we are getting all out of our orchard that we could have got with better care. I am forced to admit that I have not at all times practised what I preach, but I am fully persuaded that the orchard will give more returns for the time and money expended than any department of farming unless it is strawberries and these could be grown between the trees.

But growing good fruit is only one part of the business, we must have a market for the fruit. The old way of knocking the

SWIFTS' ARSENATE of LEAD

The acknowledged standard in Canada and United States.

The aim of all manufacturers has been to reach the standard of **SWIFT'S**.

More **SWIFT'S ARSENATE OF LEAD** is made and sold than that of all other manufacturers combined.

THERE IS A REASON. SWIFT'S ARSENATE OF LEAD carries the highest analysis of Arsenic oxide. It is free from impurities. It mixes readily with water. It sticks and lasts. It positively will not burn foliage.

SWIFT'S ARSENATE OF LEAD is used by nearly every Fruit Growers Association in Ontario, and by the Department of Agriculture.

SWIFT'S ARSENATE OF LEAD combined with **NIAGARA LIME-SULPHUR** is the spray that gave such wonderful results in this province last year.

All sized packages. Reasonable prices. We can make immediate shipments. **ORDER NOW.**

Niagara Brand Spray Co., Limited, - Burlington, Ont.

DAN PATCH



DAN PATCH 1:55



CRESCEUS 2:02 1/4



DIRECTUM 2:05 1/2



ARION 2:07 1/4

EATS IT EVERY DAY

3 FEEDS FOR ONE CENT

MAILED FREE
BEAUTIFUL SIX COLOR PICTURE OF
DAN PATCH 1:55
and **MINOR HEIR 1:58**
(SIZE 22x28 INCHES)

AS LIFELIKE AS IF YOU SAW THEM ON THE TRACK HITCHED TO SULKIES GOING A FAST MILE

You must name This Paper and state how much live stock you own.

WRITE TO US FOR THIS PICTURE

INTERNATIONAL STOCK FOOD CO., Ltd., TORONTO, CAN.

M. W. Savage, sole owner of "International Stock Food," and also of "International Stock Food Farm," positively Guarantees that His World Famous Champion Stallions, Dan Patch 1:55, Minor Heir 1:58, Hedgewood Boy 2:01, Geo. Gano 2:02 1/4, and his brood mares and colts eat it every day. You are specially invited to visit this Great Harness Horse Breeding Farm ten miles from Minneapolis, and see the practical results of the every day use of the greatest purely vegetable animal tonic ever used on a farm. It is constantly used and strongly endorsed by over Two Millions of the most up-to-date Stockmen and Horse Breeders of the world.



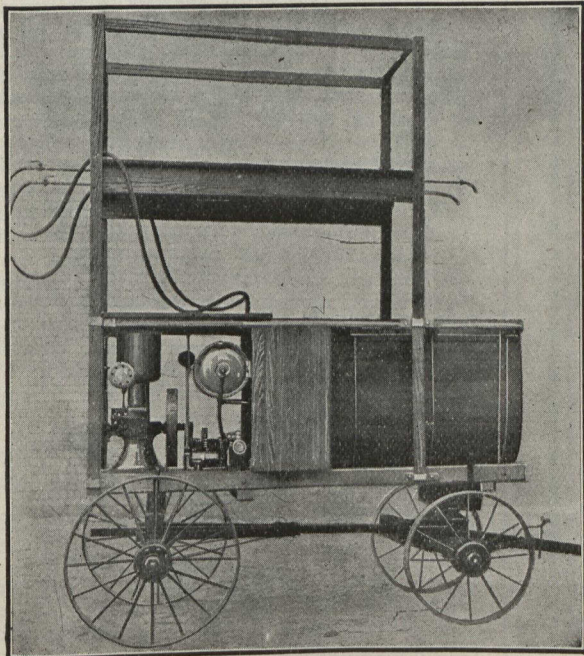
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THE GREAT ANIMAL TONIC

Is sold by over 100,000 dealers on a spot cash guarantee that its use will cost you nothing unless you get paying results. If it ever fails your money will be promptly refunded. International Stock Food is a strongly concentrated medicinal preparation composed of roots, herbs, seeds, barks, etc., and is equally good for horses, colts, cows, calves, hogs, pigs, sheep, goats, etc. It is fed in small amounts mixed with grain and purifies the blood, tones up and strengthens the system and greatly aids digestion and assimilation, so that each animal obtains more nutrition from all food taken. It is not amount of grain fed but the amount assimilated or taken into the system that fattens or keeps your stock in good condition, and as International Stock Food increases assimilation it will save you money. It will make you more money than you can possibly make without its use. I also cures and prevents many forms of disease, and is absolutely harmless, even if taken into the human system. International Stock Food is endorsed by over two million farmers who have used it for years. The editor of your farm paper will tell you we do exactly as we agree, and as reference we give you the Traders Bank of Canada.

PROVED ITS INVALUABLE WORTH.

The International Stock Food Co., Toronto, Ont.—Gentlemen: I feel in honor bound to offer you my testimonial in favor of your Stock Food. I have used it faithfully this summer and proved its invaluable worth. It made my pigs grow, the results were simply marvelous. I would not be without it for anything. My horses got a very nasty distemper cough in the spring, but the food cleaned it completely out of their system and they went through the Spring work fine and came out of it rolling fat. Please duplicate my last order. Mrs. Coe requests me to tell you that your Poultry Food is excellent, that feeding your Poultry Food doubles the quantity of eggs, in fact, it could not be better for egg production and keeping the fowl healthy.—Yours sincerely (sgd.) A. F. R. COE.

SEE OUR DEALERS, or WRITE US with regard to our FREE TRIAL OFFER



This Model C. Spramotor was awarded four Gold Medals, two at National Horticultural Congress, one at Dominion Exhibition, St. John, and one at Provincial Exhibition, Halifax, N.S., 1909-1910. "There are reasons."

Mr. J. O. Harris, of Ingersoll, who is using 4 Power Spramotors for eight years, writes about the latest Model C.

"I have used your Model C. Spramotor, 1910 Gasoline Power Sprayer almost every hour of fine weather during the past four weeks, with the exception of four days.

"We have had no break-downs, practically no delays. It works perfectly, and so far has given the very best satisfaction in use in every way. It is all you claim it to be."

We have been manufacturing Spramotors for 15 years for spraying purposes only. "That is the reason." Particulars free.

AGENTS WANTED
HEARD SPRAMOTOR CO.
1386 King Street
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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

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Stratford Mfg. Co.

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STRATFORD, CANADA

Makers of Ladders for every conceivable purpose

Spray and Make Your Crop a Success

You can practically determine in advance the amount of perfect fruit or vegetables if you spray regularly with

ELECTRO Arsenate of Lead

(in Powdered Form)

Its (guaranteed) 32½-33% arsenic oxide—twice the strength of other brands—kills all leaf-eating insects at once, but the newest foliage will not be harmed because Electro contains less than ½ of 1% water-soluble arsenic. Electro is the only successful dry arsenate of lead because it is the only one in amorphous (non-crystalline) form. Mixes instantly with water and remains long in suspension; or can be used as a dust. Rains cannot wash it off.

Tests by Conn. and N. J. Agri. Exper. Stations prove its value—send for these.

Write, too, for our folders on Electro Arsenate of Lead and on Lime-Sulphur Solution—of greatest interest and value to all orchardists and truck growers.

If your dealer cannot supply, write us for prices, proofs and name of nearest distributor.

THE VREELAND CHEMICAL CO.,
46 Church Street, New York

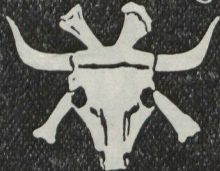


A fence of this kind only 16 to 23c. per running foot. Shipped in rolls. Anyone can put it on the posts without special tools. We were the originators of this fence. Have sold hundreds of miles for enclosing parks, lawns, gardens, cemeteries, churches, station grounds, etc., etc. Supplied in any lengths desired, and painted either white or green. Also, Farm Fences and Gates, Netting, Baskets, Mats, Fence Tools, etc., etc. Ask for our 1911 catalog, the most complete fence catalog ever published.

THE PAGE WIRE FENCE CO., LTD., Walkerville, Ont.

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The largest fence and gate manufacturers in Canada. 506

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WHY ARE YOU IMPORTING PHOSPHATE AND AMMONIA WHICH IS A BY-PRODUCT OF YOUR FARMS OF WHICH YOU ARE EXPORTING MANY THOUSAND TONS ANNUALLY, BONES AND WHICH CONTAIN LARGE QUANTITIES OF PHOSPHORIC ACID AND AMMONIA.

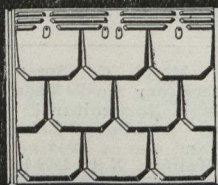
KINDLY ANSWER THE ABOVE

PURE BONE MEAL IS THE CHEAPEST FERTILIZER.

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

THE W.A. FREEMAN CO. LIMITED
HAMILTON, CANADA.

"EASTLAKE"



STEEL SHINGLES

FIRE, LIGHTNING, RUST AND STORM PROOF

SIMCOE, ONT., April 9th, 1903
"We have handled your 'Eastlake' Shingles for nearly a quarter of a century. They have been on the Court House, Free Library, and other public buildings of this town for 18 years. We have used very large quantities during the past 25 years, and they have always given first-class satisfaction, and have never required any repairs."
(Signed) MADDEN BROS.
Tinsmiths and Hardware Merchants.

Write for Booklet.

The Metallic Roofing Co.
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TORONTO & WINNIPEG

2459

Agents wanted in Some Localities

apples off the trees, putting them in bags and peddling them about town won't do. I will show you a more excellent way. Hand-pick the fruit before it is too ripe, have it neatly packed in boxes or barrels—I prefer the boxes—and ship it to the best market. Boxes cost about twelve cents each, barrels almost forty cents and three boxes will bring more money than one barrel.

Lots of people would buy a box of apples, who would hardly think of buying a barrel at a time. I believe, too, that it would pay to wrap—in paper specially made for the purpose—our fancy apples. That is medium sized red apples, such as Fameuse, Wealthy or McIntosh Red, and of the early apples the Crimson Beauty.—J. A. Moore, P.E.I.

Cranberries in Nova Scotia

A. Kelsall, Wilmott, N. S.

Probably one of the most interesting features of the Short Course in agriculture at the Nova Scotia Agricultural College was Mr. Bishop's lecture dealing with cranberry culture. Any bog or meadow land can be made to grow cranberries, the one and only essential point being that it must be free from standing water for at least one foot below the surface. The sod or turf should be removed. This is usually done by hand, at a cost of from fifty to one hundred dollars per acre. Sand should then be hauled on to the land and spread over it to a depth of four or five inches. The fine red sand so common in Nova Scotia is not recommended as it is impregnated with iron, and greatly favors the growth of fire moss. A rather coarse and gravelly sand is found to be best, the common white sand being excellent. The plants are set in rows about eighteen inches apart and pressed in with a dibber, generally about the last of May or the first of June.

Barn manure is of no use in cranberry culture, but on very poor soil an application of six hundred pounds of a potato fertilizer to the acre is often beneficial. The bog must be weeded by hand, a rather laborious, and sometimes an expensive, proceeding. The vines commence to bear the third year from planting, but it is not until the fifth year that they are in a prime bearing condition.

At intervals of a few years the bog must be resanded to a depth of about one inch in order to keep down the fire moss.

INJURIOUS INSECTS

There are three insects which are injurious to the cranberry—the fire worm, the span moth, and the berry worm—all of which can be kept under control by means of arsenical sprays. About fifty barrels per acre is an average crop, and from five to seven dollars per barrel is an average price. The principal market at present is Montreal. Shipments have been made to England and elsewhere with success. There is a continual demand for cranberries, and the market is practically unlimited. Cranberries are stored in boxes holding about a bushel, in a dark, well ventilated place, which need not be as cool as that desired for apples. The yearly expenditure on an acre of bog is, according to Mr. Bishop, about as follows:

Weeding	\$10 00
Sanding	15 00
Picking, marketing, and extras	35 00
Total	\$60 00

It will be readily seen that if the berries fetch \$250, cranberry culture is, as Mr. Bishop considers it, an extremely profitable occupation.

Gulf Islands B. C.

W. J. Hamilton, South Salt Spring, B. C.

There are two horticultural lines which should prove great money makers in our district of British Columbia. (Gulf Islands). The first is the growing of hardy bulbs.

For purely ornamental, not commercial purposes, I have round my horse at least 50,000 bulbs of common hardy varieties, such as snowdrop, scilla, chionodoxa, crocus, hyacinth, daffodil and narcissus, tulip, gladiolus, etc., whilst anemone, iris, lilies of sorts, lily of the valley and other quasi-bulbous plants grow like weeds. All these multiply most freely with little care, large numbers growing through the grass where they look their best. We have much light well drained sandy loam, and I believe that anyone who gave to this line the care and attention it requires could make this business most remunerative.

The other line, which as the profits in it are long delayed, might well be combined with bulb culture is the growing of holly berries for the Christmas market. Buyers from the American side come to Victoria every year and clean up what holly they can get, paying high and yearly increasing prices for it. It is true it takes many years for holly to bear profitably, but might not shelter belts of it be planted round the bulb fields to protect the bulbs from the sea breezes? The holly trees would thus serve a useful purpose whilst they were growing to a learing age.

Montreal

E. H. Wartman, Dominion Fruit Inspector

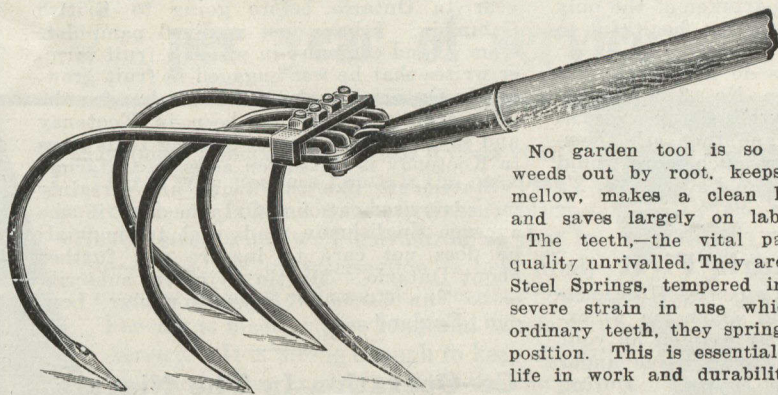
During my inspection season in Ontario from December 5th to March 18th, principally in county of Northumberland, although the quantity of apples stored was small compared with other years, yet shippers packed slowly, lengthening out season. Good, well packed apples brought long prices all through the season. One thing that was quite evident in most of the packing houses visited were that apples of the most inferior quality were stored. Even quite a percentage of windfalls were put in storage, and these conditions, of course, made a large per centage in shrinkage.

It appears to me that in March, when temperatures in cellars cannot be controlled and apples rotting fast, the air is thoroughly polluted in the barrels to the detriment of all, and when repacked at a temperature of 40 degrees F. we could not look for good results for future keeping. Choice apples of winter varieties packed in October and November and kept at a temperature of 31 to 33 degrees F. will not require repacking in February and March, but in some cases may require a cushion pad to replace natural shrinkage. In my experience I have found only one per cent. of apples handled as above rotten in April.

Prices of apples being very high, the orange and banana trade is booming. Think of \$1.25 being asked me for a 11 quart basket of poor Spy apples, or over \$12 per barrel. In 1886 I bought far better Spy apples for 50c. per barrel by taking a two hundred and fifty barrel lot 1's and 2's. It seems to be a very poor year for our most coveted apple, the Spy. The Stark seemed to be generally good when the Spy failed.

The Ben Davis apple seems to be a favorite, even to the reptile kingdom. A good sized specimen of this variety was given to me, which a garter snake of about fifteen inches in length had hollowed out and curled inside the cavity and died there. The snake had been in some way headed up in a barrel in the orchard and after

THE "BUCO" CULTIVATOR



Handle
4½ Feet
long

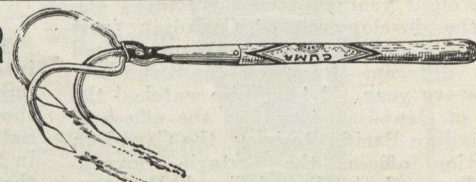
No garden tool is so useful. Cleans weeds out by root, keeps soil fine and mellow, makes a clean healthy garden and saves largely on labor.

The teeth,—the vital parts,—are of a quality unrivalled. They are all high grade Steel Springs, tempered in oil. After a severe strain in use which would ruin ordinary teeth, they spring right back to position. This is essential to get proper life in work and durability.

The 'GUMA' CULTIVATOR

Length over all 18 inches.

Similar in quality to the "Buco" The greatest little Tool in the world for flower beds and fine work. Sold by Hardware and Seed Trade. If your dealers cannot supply you, write us direct



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NEW GLASGOW, N.S.

**Defy lightning
as well as storms**

You can defy lightning, so far as it affects your buildings, when you roof with Preston Shingles. For with them you get a GUARANTEE against harm to any building they cover from the thunderbolt. And they protect you against all kinds of weather as well.

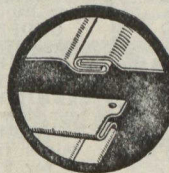
YET these better-galvanized (therefore longer-lived) metal shingles cost you not a cent more per hundred square feet than you must pay for the ordinary kind. And even that ordinary kind is worth far more

**PRESTON
SAFE-LOCK
SHINGLES**

than wood shingles—or slate—or the (so-called) patent roofings.

You should be well-advised about roofings

Allow us to send you a book that tells the mere truth about every sort of roofing material there is. It is free. You would gladly pay for it if you know what it would save you—in money, bother and time. But it's yours for the asking.



Please ask for that book. Do it now. It tells, among other things, why the all-square lock means bigger roof value. Write and

Ask Questions!

A. Dalph Manager
Metal Shingle and Siding Co., Limited
Olive St. Factory, Preston, Ont., and Montreal.

five weeks had elapsed was turned out on a table for repacking. The part of the apple surrounding the hole of the snake apple was in sound condition and bright in color. The snake had partaken of the only food available, which was not healthful to one of his kind.

I hope fruit exporters do not think it a profitable thing to ship No. 3 apples to England. Let them average up returns for the past ten years and then ask themselves the question, How much more would I have received for my No. 1's and No. 2's if I had shipped no No. 3's?

Will See Ontario First

To the Editor, THE CANADIAN HORTICULTURIST,—I hope you will allow me to express to you personally my opinion on your leading article in the January issue under the heading, "Insult to Injury." During the last eight years I have very closely followed the development of Canadian fruit growing. I have read the literature issued by the different Provincial governments nearly every year. I have also watched the display of Canadian fruit at the offices of the Canadian Pacific Railway, the Canadian Emigration offices, the Ontario Government office and the Grand Trunk Railway. I think Ontario is just as well up-to-date as British Columbia as regards the advertisement and display of fruit.

The only reason why so many English settlers go directly to British Columbia is in my opinion the climate. For the Englishman seems to be afraid of the snow and cold weather as you have it in Ontario, while in British Columbia he happens to find a climate more like the South of England has.

Further, the Province of British Columbia has many Land Companies offering land in small lots of five and ten acres, while Ontario has none as far as I know. So the average Englishman thinks there is a certain difficulty of acquiring land in Ontario. Then some of the literature on fruit growing in British Columbia says that there are no insects and pests which are usually met in older districts as Ontario and the United States. I have lately received a lot of information on fruit growing in Nova Scotia, Ontario and British Columbia and I must admit, that I would prefer British Columbia to any other part of Canada.

I am not quite sure whether I shall come cut this spring or next year, but I shall certainly not pass Ontario without having a good look in. My intention is to work one year in Ontario before going to British Columbia. I have just received pamphlets from a land company in which a fruit farmer writes that he was engaged in fruit growing in Ontario nearly all his life but for the last seven years he has been in Kootenay and says that one acre of bearing fruit trees in Kootenay is worth ten acres in Ontario.

Statements like the above are certainly no advertisement for Ontario and if the average Englishman reads such testimonials he does not care to inquire any further about Ontario.—Martin Winkler, subscriber to THE CANADIAN HORTICULTURIST, London, England.

Co-Operation In The Niagara District

Mr. F. G. Pattison, of Winona, is greatly interested in the development of the fruit industry and very favorable to fruit inspection. He says that the townships of Saltfield and Grimsby are the best inspected in the province. This is due to the fact that the growers uphold the council in this work as they realize that it is their only salvation from the little peach and yellows as well as scale. The inspectors for these townships are the best paid of any in the province. There are three for each township while other townships have only one or in many cases none. He thinks that it is a weakness to have them appointed by the Council and that they should be provincial appointments. Mr. Pattison is enthusiastically in favor of the adoption of a system of co-operative selling for the entire Niagara District. He says that the large dealers who were formerly against this method are beginning to realize that it is the only way in which they can keep a uniform price, a steady market and prevent gluts. A combination of 25 men would do it. He does not expect a general combination of the Cooperative Association and large dealers as yet. But some style of a Beard composed of one man from each concern to meet weekly to set prices to keep outside dealers from coming, in shipping out inferior goods, then cutting prices and thus demoralizing the trade. They could thus keep up quality

of fruit, prevent the shipping of green grapes and plan a better distribution, so that gluts would not occur in one market while another would have no fruit. As evidence of the middleman's profit he cited a case that while attending a fruit meeting in Toronto he placed some grapes in a fruit stand at thirty-five cents per basket when the same grapes could be bought in Grimsby for twelve and a half cents to fourteen cents and two cents would pay the freight. In this case the grower received very little more than thirty per cent. of the consumer's dollar.

Oyster Shell Bark Louse

Lime sulphur has not been as successful in the subjection of the oyster shell bark louse as the advocates of its use had desired. From experiments conducted at the Experimental Farm, Ottawa, Prof. Macoun would advise the addition of twenty pounds of lime to the barrel of lime sulphur as mixed ready for application. He reports that the use of this mixture has been very successful in controlling the oyster shell bark louse during the past season. The caustic nature of the lime dissolves the glutinous matter of the scale and allows the lime sulphur to work under the scale and kill the insect.

Enforce the Fruit Marks Act

The only remedy that I can see for the betterment of this industry is the strict enforcement of the Fruit Marks Act, and this can only be done right at the point of shipment and by educating our fruit packers what apples are to be packed. By the enforcement of this Act at the point of shipment the buyer will soon find it not policy to buy unsprayed orchards. As long as the grower can sell his apples at ordinary prices without spraying it is certain that he will not take much care of his orchard. The summary in a few words is the enforcement of the "Fruit Marks Act" at the point of shipment by competent inspectors, who can also act as instructors.—Jas. E. Johnson, Simcoe.

Fresh peaches are to be exported from the Delaware and Georgia orchards to England as the result of the successful experiments made from the Niagara district.



BRUCE'S FLOWERING BULBS

GLADIOLUS

CHOICE MIXED, 10 for 25c; 25 for 60c; \$2.00 per 100, post paid.
 GROFF'S HYBRID SEEDLINGS, MIXED, 10 for 30c; 25 for 60c; \$2.00 per 100, post paid.
 BRUCE'S WHITE AND LIGHT SHADES, 10 for 40c; 25 for 90c; \$3.50 per 100, post paid.
 CHILDSI, MIXED, 10 for 50c; 25 for \$1.00; \$3.75 per 100, post paid.
 BRUCE'S SUPERB MIXED, made up by ourselves from all varieties, the best, 10 for 60c; 25 for \$1.25; \$4.50 per 100, post paid.
 GROFF'S WORLD'S FAIR COLLECTION, Novelties in all colors, grand, 12c each, 10 for \$1.00; 25 for \$2.25, post paid.
 NEW GRAND NAMED VARIETIES, almost any color, 18 sorts, 20c each; 18 for \$2.75, post paid.

DAHLIAS

Splendid Named Sorts, all colors, Show, Cactus, and Pompon Varieties, 22c each; \$2.20 per doz., post paid. Ordinary varieties, mixed, 12c each; \$1.20 per doz., post paid.

TUBEROSE

The Pearl, double white flowers, each 5c; per doz., 40c; per 100 \$2.50, post paid.
 Single Orange Scented, beautiful orange-like blossoms each 5c; doz. 50c; 100 \$5.50, post paid.

LILIES

Auratum, Lancif, Album and Rubrum, Elegans, Pardalinum, Tigrinum, Umbellatum, Tenuifolium and Wallacei, each 20c; per doz., \$1.80, post paid.

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JOHN A. BRUCE & CO., SEED MERCHANTS **HAMILTON, ONT.**
 ESTABLISHED 1850
 LIMITED

POULTRY

Growthy Chicks at a Minimum Cost

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

Good growthy chickens ready for the market in late summer or early fall can be raised at a minimum cost when fed from hoppers and allowed to range in the orchard. My chickens have the run of my orchard, which is kept well cultivated so that there is lots of green food provided such as a chicken can eat. I sow a little clover for them. Since the orchard is cultivated, say once a week, the soil is in splendid shape for the chickens to dig and scratch and thus secure much animal food. The different young weeds and clover that keep popping up makes the ideal green food for them.

The chickens also do a world of good in the orchard. It is most interesting to watch them in the early morning out under the trees. Codling worms, canker worms, and so forth, which let themselves down to the ground by means of their silken ropes, are quickly snatched up and converted into chicken. The shade which the trees provide is a necessity of chick life in hot weather; hence it is an all round benefit to have them in the orchard.

My chicks are fed wheat screenings and cracked corn, all they want, as they take it from the hoppers. They are watered from a barrel, the water from which drops slowly into a drinking pan beneath. A mash feed of ground oats and corn mixed with sour skim-milk, is fed once a day. Sweet milk should never be given, as it propagates disease so readily. Buttermilk is even better than sour milk, and may be fed liberally to great advantage.

If fruit growers generally will feed their chicks in this way, they will raise the best chickens they ever did. Their chickens will be much better than they have been, and they will have such chickens as they will get off to market early—chickens that will not need crate fattening, and there will be but little labor in raising them.

Grit is Essential for Poultry

E. F. Eaton, Colchester Co., N.S.

The grit in the food of the hen performs the same function in preparing the food for the assimilation as do teeth in the case of other farm animals. In the gizzard of the fowl, the strong muscles in the walls keep the food and the grit grinding continually against each other, and in this way coarse food is rendered fine and put in the proper condition for assimilation. Without grit, bowel trouble is sure to result in fowl as the food will not be digested.

Very fine grit should form the first food of the young chicken. As soon as the chicken is taken from the incubator, it should be given a chance to pick at grit so that it will have the means whereby it can make use of its food. Failure to observe this rule is a most frequent cause of loss in the brooding of young chicks.

Fine sand, oyster shells, broken crockery, and mortar from old walls are all desirable forms of grit. Old mortar serves a double purpose of supplying grit, and the lime to make the shell of the egg. If lime in some form is not fed, soft-shelled eggs result. Where hens have free range in the

Peerless Fences cost the least per year of service

THE longer a fence lasts the less it costs you. That is why Peerless Fence is the cheapest you can buy. It is made right in the first place. Heavy steel wire, well galvanized so that it cannot rust. Each intersection is held firmly together by the Peerless lock. Peerless Poultry Fencing is made to give long and satisfactory service. It is strong enough to keep the cattle out and close enough to keep the chickens in. It requires few posts, because it stands stiff and taut. Peerless Lawn Fence will add to the appearance of any property. It is attractive and strong—will last for years.

I have compared some of your Peerless Fencing that I put up the first year with other fences put up the same year and I find that Peerless Fencing shows no sign of rust, and the galvanizing looks as good as when erected, and I think you have been successful in turning out a good fence.
—Mack Lillis, Glenburnie.

Comparing your fence with other makes it is not hard to tell which is the best. There is no sign of rust on the first Peerless Fencing I put up here, and there are some other makes that were put up about the same time that are rusted in spots now. Where I have sold fencing once I can go back and sell to them again.
—G. A. Pestapiece, Oxford Mills.

We manufacture a full line of farm and ornamental fencing and gates.

THE BANWELL HOXIE WIRE FENCE CO., Ltd.

Dept O, Winnipeg, Manitoba

Hamilton, Ontario

57 BUSHELS MORE POTATOES PER ACRE

WHERE PLANTED WITH

IRON AGE

(Improved Robbins)

Potato Planter

Average results obtained in a careful, thorough test against a "picker" planter by Maine State Experimental Station, in 1910. Ask us quick for the proof—we will send you **nov** bona fide copy of their report in Bulletin No. 188, which will be ready about March 15th. Shows exact results. Also, comparison of level culture, high and moderate ridging. 100 per cent. perfect planting is what you want—no doubles, no misses, no injury to seed. Address

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Stocks carried at many convenient points. Ask for address of nearest Canadian agency



Strawberry Plants

40 leading varieties sold at prices you can afford to pay. Catalogue free. It will pay you to secure it before you order your plants. 100 plants sent post paid to any address in Canada for \$1.00

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STRATHROY, - - ONTARIO.

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STRAWBERRY PLANTS

Reliable and tested varieties, strong and well rooted plants, carefully packed. True to label. Including Williams, Senator Dunlap, Glen Mary, Sample, New York, Clyde, Cobalt.

WRITE FOR CIRCULAR AND PRICES

J. E. McCOMBS
Pelham Corners - Ontario

summer no provision need be made for supplying grit, but it should be constantly in front of them when housed for winter. I have found that the most convenient way to feed them is by means of a small feeding hopper, divided into two compartments. In one keep oyster shells, and in the other old mortar pounded fine.

Variety Strain in Cabbages

From bulletin No. 96 of the Agricultural Experiment Station, State College, Pa., the following extracts are taken:

"Faithfulness to name and type, is perhaps of greater importance than any other phase of the seed question. At the same time it is a factor about which there is probably the least known. Unless seed, purchased for a certain variety, produces plants reasonably true to the general conception of that variety, even though all cultural conditions be perfect, a satisfactory crop will be very uncertain.

"The fact that varieties of plants vary in character to a greater or less degree has long been known, but comparatively little experimental work has been done to determine the extent of these varieties or to show their importance in the production of profitable crops.

"In order that some definite information may be secured on this question, a number of experiments were instituted by the Department of Horticulture to determine the influence of varietal variations as related to the production of cabbage and other vegetables.

"The experiments with cabbage include strain tests of four varieties, viz.: Jersey Wakefield, Charleston Wakefield, Early Spring and Early Summer. In the present bulletin we shall consider only the results

of strain tests of the variety Jersey Wakefield. The work has been in progress two years, and the present report is submitted as a bulletin of progress rather than a report of completed experiments, and while the figures given should not be considered as conclusive, yet they may be regarded as a fair criterion of the variations as they are found to exist within this variety and of the relative importance which they bear to profitable crop production."

The results of the experiments are summarized as follows:

"1. The experiments with twenty-five strains of Jersey Wakefield cabbage, covering a period of two years, indicate that marked variations occur within the variety.

"2. These variations have a direct bearing upon profitable crop production. There are great differences in earliness, yields, form and solidity of heads, and each of these factors is important in determining profits for the season.

"3. The degree of vigor of the young plants in the seed bed is of no value in indicating the size or character of the resultant crop.

"4. The percentage of germination of some strains was much too low, and it is important for seedsmen to give this matter closer attention.

"5. The wide variations and lack of uniformity in this variety show the importance of exercising the utmost care and skill in producing and selecting cabbage seed.

"6. While the results of the two years' tests show wide variations in strains of Jersey Wakefield cabbage, the investigations will be continued several years to determine more definitely the full importance and significance of such differences."

Fertilizers for Asparagus

The Maryland Experiment Station, conducted experiments with fertilizers on asparagus in order to test the following fertilizers applied in different quantities and times of application.

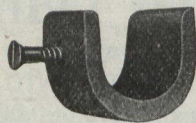
1. Commercial fertilizer versus barnyard manure.
2. Different sources of potash.
3. Light and heavy applications of kaint.
4. Heavy applications of nitrate of soda in spring.
5. Heavy applications of salt.
6. Manure in different amounts with and without commercial fertilizer.
7. Different times of applying manures and fertilizers.

During the six seasons of this experiment, from 1905 to 1910 inclusive, the manure and fertilizer were applied broadcast according to the outline above. As soon as the spring applications were made, two furrows were plowed from each side over the rows and a harrow was run crosswise and then lengthwise of the rows to level the ground so as to produce green shoots instead of white ones. Once during the cutting season this same treatment was given, and then again when the fertilizer and manure were applied after the cutting season. In 1909 and 1910 a double disc cultivator was used instead of the plow and only one harrowing was necessary to level the ground.

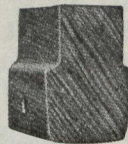
SUMMARY OF EXPERIMENT

Kaint at the rate of 2,000 pounds per acre applied in mid-summer gave the highest net gain per acre of any of the plots.

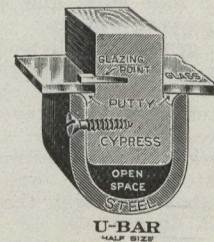
Dissolved rock 400 pounds, kaint 400 pounds and nitrate of soda 200 pounds per



Galvanized steel U-Bar. Every two feet it is screwed to core.



Cypress core which is chemically treated against decay.



The U-Bar complete. This is half-size.

PERHAPS EVEN YET

You haven't an absolutely clear idea of just how the U-Bar is made—what it actually consists of—so we have taken it apart, showing the steel U-Bar shell; and right beside it is the cypress sash bar core.

The shell after drilling, cutting and bending for curve at the eave, is galvanized with our special hot process. The core is chemically treated with an absolute preservative, then it is pressed tightly into the steel core and held

securely at alternative points on opposite sides by strong countersunk screws. This gives a combination of sash bar and rafter in one, having wonderful strength, while still being so small as to cast the least possible shade. For durability it makes a greenhouse that you can plainly see is bound to have an extra long life because of the careful protection of all vital parts. It's not only the best growing house but it's the most attractive. If you would know more, send for our new catalog.

U-BAR GREENHOUSES

PIERSON
DESIGNERS AND BUILDERS



U-BAR CO.
1 MADISON AVE., NEW YORK

Canadian Office, 10 Phillips Place, Montreal

acre applied in early spring gave the next best net returns.

Kainit at the rate of 500 pounds per acre in mid-summer gave the third best returns.

Muriate of potash gave better results than sulphate of potash.

Nitrate of soda alone in early spring reduced the yield.

Dissolved rock alone in mid-summer was not beneficial.

Salt seemed to increase the yield slightly but had no effect in keeping down the weeds.

Manure is too expensive to apply year after year. In seven manure plots only two produced any profit.

Dissolved rock 400 pounds, kainit 400 pounds, and nitrate of soda 200 pounds per acre used in early spring gave a profit of \$352.76, while the same fertilizer plus 10 tons of fresh manure in early spring yielded more asparagus but the profit was only \$68.36, the high cost of manure making the difference in profit.

Manure and fertilizer combinations are desirable in moderate amounts, but are too expensive in the heavy applications made in this experiment.

The best time to apply manure or fertilizer is not settled by these tests, but leaving out the two kainit plots the early spring applications were followed by the heaviest yields.

In arriving at these figures fresh manure was valued at \$2.00 per ton, rotted manure at \$3.00 per ton, kainit at \$10.00, sulphate of potash at \$45.00, muriate of potash at \$42.00, nitrate of soda at \$45.00, dissolved rock at \$12.00 and salt at \$8.00 per ton. The price of asparagus is averaged at eight cents per pound for the six years.

See our premium offer in this issue.

Niagara Fruit Growers' Association

(Continued from last issue)

Mr. W. T. Macoun, Dominion Horticulturist, Ottawa, described the varieties of strawberries and raspberries that have proven hardy and most productive in various sections. Strawberries should be planted on land that could hold the moisture, but was still loose and rich. He thought that irrigation of strawberries and other small fruits in dry seasons would be adopted in the Niagara District. Barnyard manure well worked in was the best fertilizer. The plants should be covered in winter, marsh grass makes a good cover, while cat straw came next. On the Dominion farm they raked it off, cultivated the ground and replaced the covering. To overcome rust, spray just before blossoming and after the crop was on. It was best to grow varieties that kept up the size to the end of the picking season. He also delivered an address on the best varieties of apples, pears and plums for commercial plantings.

Mr. Elijah Rogers stated that early varieties of peaches in Connecticut ripened at almost the same time as those in the Niagara District. Elberta is their standard yellow peach. There is more money made out of this variety than any other. Late cultivation, however, has a tendency to cause it to drop from the tree. Their best late varieties are Iron Mountain and Foxes Seedling. Late Crawford is a shy bearer with them. They are not as sure of a crop of peaches in Connecticut as the Niagara District, as they can depend on only about two crops out of every five years.

In Connecticut they plant Wagner, Wealthy, McIntosh Red, Gravenstein, Duchess,

Williams Red, and Baldwin. The apple trees are grown with the peach trees, one apple tree to three peach trees. He uses Bordeaux for the bitter rot, but has found no remedy for the Baldwin spot. He uses a fertilizer liberally, chiefly potash and phosphoric acid, as he depends on red clover to supply the nitrogen.

SOW COVER CROP EARLY

He plows the orchards early in the spring and sows the clover the latter part of April or first week in May. He sprays every apple tree, young and old, with lime sulphur and the peach trees with the lime sulphur early and with the self-boiled lime sulphur in the summer for peach rot.

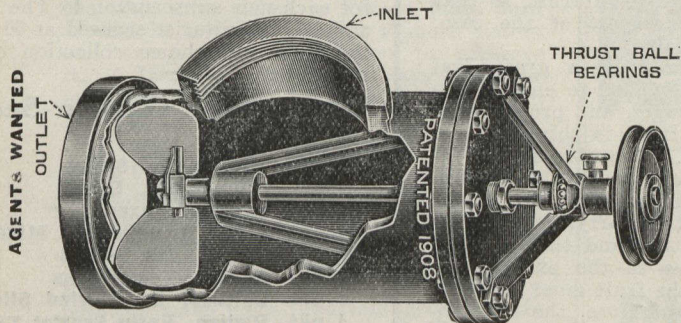
The fruit growers in the Niagara Peninsula are preparing to spray to even a greater extent than in previous years. Those who are fortunate enough to have cared for their apple orchards in past years are enthusiastic over the future outlook of the apple industry. In fact, many feel that with proper care apples will pay better than peaches.

A deal has practically been consummated by which Woodstock, Ont., secures a branch of the big pickling firm of Libby, McNeil & Libby, of Chicago. A representative who was in the Woodstock district states that his canvas among the farmers resulted in contracts for about two hundred acres of cucumbers for the proposed factory which it is estimated will employ about seventy-five hands.

I enjoy reading THE CANADIAN HORTICULTURIST exceedingly, having been a constant reader of it for years. It is very helpful to anyone interested in horticultural pursuits.—Mrs. W. D. Swazye, St. Catharines.

THE 'Ideal' Hot Water Circulator

The 'IDEAL' is the simplest and most efficient circulator on the market, requiring less power to operate than any other.



Sectional Cut of Improved Circulator No. 6

Some Advantages of the "Ideal" Circulator

- (1) Improves to perfection the circulation in hot water plants that are defective.
- (2) Enables present hot water systems to be extended to a very large extent without increasing the size of the pipes or the height of the circulating head.
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- (4) Owing to the reduced size of the main piping required, it considerably reduces the first cost of installation.
- (5) Gives an even temperature in the pipes throughout the system.
- (6) Reduces the amount of radiating pipes required.
- (7) Enables smaller piping to be used.
- (8) Piping may be placed below boiler level as well as above.
- (9) Effects a large economy in cost of fuel.
- (10) Requires a very small amount of power to operate (1-10 of one horse power is sufficient for 5,000 sq. feet of heating surface.)
- (11) Can be used as an auxiliary to gravity system and does not impede the flow of same at times when forced circulation is not required.

For Prices and Further Information, write to

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AGENTS WANTED

Make More Dollars From Your Apple Orchard

Everything in connection with the growing of apples, from the planting of the tree to the harvesting and selling of the fruit is covered in the new book.

THE CANADIAN APPLE GROWERS' GUIDE

By L. Woolverton, M. A.

The information in this book is invaluable to every person who has an apple orchard. It will give you just such information as will help you to make your apple orchard produce more dollars for you. It is a Canadian book and deals with Canadian conditions. Below is a brief review of its contents.

Part 1.—A Complete Guide to the Planting, Culture, Harvesting and Marketing of Apples.

Part 2.—Descriptions of Varieties of Apples, which are grown in the various Provinces of the Dominion of Canada, made by the author from personal study of both the trees and the fruit with full size photogravures of the fruits themselves made under his personal supervision.

Part 3.—Varieties of Apples recommended for Planting in the various sections of the different Provinces of the Dominion.

The price is \$2.00.

We make a special offer of the book and a year's subscription to The Canadian Horticulturist.

Both For \$2.00

Either new or renewal subscriptions. Write now while this offer is open.

The Canadian Horticulturist
PETERBORO, - - ONTARIO

Special Li-Sulphur (Baume O-42 S. G. 1,000-1,400) combined scale. Regular \$1. Men- SPRAYOMETER

tion this advertisement, send 80c. and we will send one postpaid.

PARKE & PARKE HAMILTON

FOR SALE AND WANTED

Advertisements in this department inserted at rate of two cents a word for each insertion, each figure, sign or single letter to count as one word, minimum cost, 25 cents, strictly cash in advance.

READ BEZZOS' Famous Prize Aster advertisement on page 125.

HARDWOOD ASHES—Best Fertilizer in use.—George Stevens, Peterborough, Ont.

WANTED—Persons to grow mushrooms for us in waste space in gardens, yards, sheds or cellars, \$15 to \$30 per week. Send for illustrated booklet and full particulars.—Montreal Supply Co'y, Montreal.

FARMS FOR SALE

FRUIT FARMS sold and exchanged. List with us for quick sale. See us if you are thinking of buying a fruit farm.—F. J. Watson & Co., 1275 Queen Street W., Toronto, Ont.

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

H. W. DAWSON—Ninety Colborne St., Toronto. A GOOD FARM—Hundred acres, County of Kent, brick house, two barns, cheap at thirty-five hundred.

NINETY ACRES COUNTY HALTON—Twenty miles from Toronto. House, bank barn, orchard, seven thousand five hundred.

UP TO DATE FARM—Hundred acres, County of Peel, Seven Thousand.

IF GOING TO ALBERTA, Saskatchewan or Manitoba I have farms both improved and unimproved. It will pay you to see me.

FRUIT, STOCK, GRAIN or Dairy Farms to suit you in Old Ontario. Consult me.

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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.

BRITISH COLUMBIA fruit growing. Send one dollar for two hundred page beautifully illustrated cloth bound book, entitled "Fruit Ranching in British Columbia," written by T. J. Bealby, a competent and well known authority on the subject. British Columbia Fruit, Molson's Bank Bldgs., Suite 1 Vancouver, B.C.

IF YOU WOULD LIKE to purchase a site for a home and fruit farm on good, suitable soil situated in the most favorable and dependable climate in Canada, get Louth-Clinton Peach Area free information and ground floor prices for properties in the coming locality for most profitable fruit growing. Don't miss present bargains—forty thousand mansion and farm for only thirty thousand, a fifty acres for ten thousand; others large and small. Enquire about them. State what you want. W. H. Brand, Jordan Station, Ont.

YOU CAN TALK to the members of 10,000 homes for a few cents by placing your advertisement in this column. If you have anything to sell, or want to sell or buy a fruit farm try it. It will pay you.

PREMIUM OFFERS

Show your friends this number. Get them to subscribe, and earn a valuable premium.

Leasing Orchards

Some idea of the extent of the operations of the company that is leasing orchards throughout Ontario and part of Quebec may be gained from the fact that already it has 14,000 trees, representing about 4,500 acres of orchard, under lease. Upwards of 1,000 acres of additional land is being purchased outright. Most of the orchards have been leased for periods of ten years. The majority of them are located in the counties of Prince Edward, Grey and Huron, although operations are being conducted in some eighteen counties all told. Interests have been secured also in two of the largest orchards in the province of Quebec. Mr. I. F. Metcalf, formerly the district representative of the Department of Agriculture at Collingwood, is in charge of the operations. The company has appointed representatives in the different districts. Mr. J. E. Anderson, of Melville, being its representative in the county of Prince Edward. Mr. Anderson has at work under his direction several parties of three or four men, each in charge of a foreman. These parties report, both to Mr. Anderson and to the head office in Toronto. They have charge of the pruning and spraying operations in the orchards as well as of all of the work required to maintain the orchards in a good thrifty condition.

Methods of Packing Compared

White & Co., Commission Merchants, Toronto, Ont.

It is difficult to make a comparison of the methods of packing Canadian and California fruits, as the existing conditions are very different.

Our Canadian fruit is intended mostly for immediate consumption, and the packages used are suitable for the purpose intended, they not being called upon to stand any long distance or delayed shipping.

A great improvement has taken place in the packing of Canadian fruits during the past year or two. Shippers have become aware that the public are willing to pay for a well packed package of fruit, so that aside from the moral aspect of the case, it is financially profitable.

With the California fruit a great deal more trouble has to be taken to ensure uniform and proper packages, and proper loading of cars, as the fruit is shipped from 5,000 to 8,000 miles. Nevertheless it invariably opens up at its destination in perfect condition. The shippers are exactly informed as to the carrying qualities of the different varieties, and they in turn inform the pickers as to the exact stage of ripeness at which the fruit must be taken from the trees. Furthermore, the cars are iced thoroughly in transit and kept in sound condition.

We are not noticing so much waste this season in California fruit as we have in previous years, owing to the fact that the United States Government has established pre-cooling stations at most of the large shipping points, i.e., they have a large refrigerator shed into which the cars are run after loading, and all the vegetable heat is extracted from the fruit inside each of the cars. The temperature is brought down to about 40 degrees, and the ice bunkers are filled. Cars prepared in this way do not require continual icing in transit. The result of this test is that such stations are being established as fast as the apparatus can be installed in the various sections.

While this system would be of no use to Ontario shippers using Ontario markets, it would be of vast benefit to them in shipping to the northwest or to the far east.

Speak Quick!

Your opportunity to secure one of the splendid premiums offered by The Canadian Horticulturist for the securing of new subscriptions, will soon be past. We can only hold this offer open a few weeks longer, as the planting season will soon be over. See some of your friends to-day. Secure a new subscription to The Canadian Horticulturist at 60 cents, which will entitle you to the choice of the following splendid premiums mailed to your address free of all cost.

One Climbing Rose

(Thousand Beauties).

This is the rose which Mr. W. G. MacKendrick of Toronto, the noted rose grower, places at the head of the list of climbing roses. It blooms profusely from the beginning of June to the last of July. The flowers are borne in clusters of from ten to fifteen blooms each, and show tints of bright rose, carmine, white and yellow, all in the same cluster. It is a strong rapid grower, free from mildew or disease of any kind, and is very hardy.

A number of subscribers who have secured one of these roses state that they are delighted with them. The plants are strong and vigorous, with exceptionally fine roots. They would cost much more than the price of a year's subscription to The Canadian Horticulturist were you to buy them. But you can secure one FREE by taking advantage of this offer. Nothing could be more beautiful than a well trained climbing rose. Be sure and get one.

To those who prefer seeds, we offer for each new subscription to The Canadian Horticulturist secured at 60 cts., the following choice collection of 14 packets of

Flower and Garden Seeds

- 1 pkt. Asters, Mixed
- 1 pkt. Mignonette, Sweet
- 1 pkt. Nasturtium, Dwarf
- 1 pkt. Petunia, Mixed
- 1 pkt. Phlox Drummond, Mixed
- 1 pkt. Sweet Peas, Mixed
- 1 pkt. Stocks, Ten Weeks
- 1 pkt. Lettuce, Cr. Curled Silesian
- 1 pkt. Radish, Early Scarlet Turnip
- 1 pkt. Beet, Extra Early Blood
- 1 pkt. Carrot, Chantenay
- 1 pkt. Cucumber, Imp. Long Green
- 1 pkt. Onion, Danvers
- 1 pkt. Tomato, Early Ruby

Two new subscriptions will entitle you to both premiums. See some of your friends and tell them about the good things The Canadian Horticulturist contains on gardening and fruit growing. They will be glad to subscribe. Send the names to us with 60 cents for each new subscription and your premiums will be promptly sent you. Extra copies of The Canadian Horticulturist for samples free.

THE CANADIAN HORTICULTURIST
PETERBORO - ONTARIO

The cause of rot in fruit is chiefly due to vegetable heat which causes fermentation, and if this heat can be extracted from the fruit, and the fruit can be kept in the proper temperature, it will carry to its destination in perfect condition.

We have heard a great many complimentary things said about Canadian fruit growers by Americans engaged in the fruit business while they have been passing through Canada. They mention especially the Niagara peninsula, which they say is not surpassed by any fruit district on the continent, both as to the country itself and the condition of the farms. We feel that the fruit business is only in its infancy in this country, and that there is sufficient territory for vast expansion, both in growing and selling, sufficient to make it one of the chief industries of this Province.

C. P. R. Supplies Seeds

Over one hundred thousand packages of flower seeds were sent out this spring to the agents, section men, and other employees of the company.

The steady expansion of this department is due to the love for flower culture and the keen desire to beautify their surroundings, which has been inculcated into the Canadian Pacific Railway employees. Prizes were given for the best gardens last year, and the competition was very close. These prizes will be given again this year, and in addition prizes will be given for the best photographs of gardens along the railway.

First Apple Tree on the Pacific

The oldest apple tree in the Pacific northwest, planted 85 years ago, by the early officers of the Hudson's Bay Co., from seeds carried in their pockets from England, has been discovered by A. A. Quarnberg, district horticultural inspector, and positively identified. The tree is in front of the chief commissary's office in the southeast part of this reservation.

Col. McGunnegele, commanding officer of this post, upon learning of the history of the tree, gave orders to have a fence built around it, a tablet bearing a short history and every precaution taken to preserve it. Inspector Quarnberg says the tree may live to be 100 years old.

Mr. Thos. Delworth, president of the Ontario Vegetable Growers' Association, who investigated the results of the vegetable growing experiments conducted this year in New Ontario, has reported that while he is not able to say that tomatoes and onions will do well in New Ontario, he never saw potatoes make more luxuriant growth. He found the land particularly well adapted for potatoes. He noted a vine which grew six feet eight inches in height and potatoes weighing four pounds, two ounces. On one farm from eleven sets of potatoes there were harvested seventy-four pounds. Mr. Delworth believes that New Ontario should grow more of the potatoes required by old Ontario and now largely supplied by New Brunswick growers.

Flavelle, Limited, Lindsay, have leased a number of orchards in that vicinity, and have purchased a large power sprayer. This course was forced upon them by their inability to obtain high grade apples. They decided that they would either have to go out of the apple business or assume complete control of the orchards.

Seeds and plants free. Read our Premium Offer.

**"COLLINS"
HAND SPRAYERS**



"Crown"

We show here two of our specialties. The **CROWN SPRAYER** is adapted for spraying small fruits, vegetable crops, shrubs, disinfectants and fly oils. Reservoir is ordinary Crown fruit jar and can be readily replaced if broken. Tubes are of brass and top of zinc. Nothing about it to rust. Material and workmanship guaranteed.

Our **IMPROVED AUTOMATIC COMPRESSED AIR SPRAYER** is just the thing for spraying fruits, flowers and vegetables, especially potatoes. Holds three Imperial gallons. Will run for fully ten minutes with one charging. Very strongly built, no danger of blow-outs or bursts. Tank of galvanized iron or brass. Pump and coupling of solid brass. A great feature is the improved coupling, **CONTROLLED BY US**. It does the four operations—takes cap off, puts cap on, carries pump from place to place, and does the pumping. Nozzle adjustable for fine spray or single long distance stream of 35 or 40 feet. With special Bordeaux Nozzle will spray whitewash and cold water paint.

We handle many other lines of sprayers. Write us for full list and prices if your dealer cannot supply you. We guarantee satisfaction.

The Collins Mfg. Co.
413 Symington Ave. - Toronto



"Improved Automatic"



SEEDS

ABSOLUTELY RELIABLE

Not Like the Ordinary Kind
Our Catalogue Mailed Free


MONTREAL PARKS LAWN GRASS

A Perfect Lawn
In Six Weeks

Per lb. 35c. Postpaid 40c

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BEEKEEPERS

DON'T continue on in the old way, but make your bees pay well by using the best Hives, Sections, Comb Foundation, Smokers, etc., etc.

Full Colonies of Italian Bees, also Queens a specialty.

Prompt Service and Careful Attention.
Illustrated Catalogue Free.
Highest price paid for Beeswax.

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JERUSALEM ARTICHOKES
TO SELL

The Delivery is going to be made through May to June 5th Price \$1 25 a bushel (50 lbs.); 25c a bushel with order, balance payable after delivery. Express or freight at the buyer's expense.

FOR FARMERS' CLUBS

\$1.00 a bushel, 25c a bushel with order; \$10 allowed on 100 bushel orders. President or Secretary of Farmer's Club will sign order. Apply to

MARCOTTE & GOSSELIN
Producers
ST. ROCHE DE RICHELIEU, QUEBEC

THIS IS A CUT OF THE
Spramotor Nozzle



Fig. 56, made to apply Lime-Sulphur mixture and whitewash.
In brass or aluminum with brass or steel removable discs. It has large liquid ways which prevent clogging. Gives the most perfect form of spray.
It has no equal. Guaranteed. Price by mail, \$1.00. Send for free Treatise on Crop Diseases.

HEARD SPRAMOTOR CO.

1397 King Street, London, Canada



**IMPROVED AUTOMATIC
COMPRESSED AIR
SPRAYER**

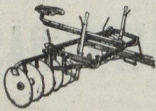
BEST HAND SPRAYER MADE AT THE PRICE

READ THE FOLLOWING:
Winona, Ont.

"The Sprayer that I purchased from you last spring is a most valuable little machine. I have no hesitation in recommending it to anyone who requires an inexpensive and reliable spray pump. It is excellent, and I do not know of any other hand machine for the price that could do better work."
E. D. Smith, Ex-M.P.,
President Ont. Fruit Growers' Ass'n.

Drop us a card for Descriptive Circular and special rates.

CAVERS BROS. MANUFACTURERS, GALT, ONT.
Mention The Canadian Horticulturist.



Try the BISSELL in your orchard and see what a real orchard disc harrow will do. Stays right down to its work. Has a lever for each gang, so that one

gang can be adjusted to cultivate more than the other when required. Attach wings and it extends over 12 feet wide. Reversible—In-throw to Out-throw. Call on local dealer or write Department N for Catalogue.

The Bissell ORCHARD DISC
T. E. BISSELL CO. LIMITED
ELORA ONT.

The confidence felt by farmers and gardeners in Ferry's Seeds to-day would have been impossible to feel in any seeds two score of years ago. We have made a science of seed growing.

FERRY'S SEEDS
always do exactly what you expect of them. For sale everywhere. FERRY'S 1911 SEED ANNUAL Free on request.
D. M. FERRY & CO., Windsor, Ont.

Flowers for the Home

Housewives are interested in various things, but many of them are now reading catalogues preparatory to garden work. Those who are wise do not overlook the beautiful things. Vegetables are necessary; but we should mingle flowers in the right places in our gardens.

Plant self-seeding varieties near the kitchen windows and do not forget that the petunias, verbenas, phlox and portulacca, or rose moss, multiply by the million and are no trouble except to thin them out. Another favorite of ours is alyssum, always snowy and fragrant, ready to grace one's table or lay with loving hand on the casket of some dear one. Plant petunias against the walls and bank them around as covers for the unsightly places. They require no attention and grow in place of weeds if only planted.

For something different one can fill a half barrel with good rich soil, one-third of it taken from the cowyard. In the centre plant a castor bean, surround it with scarlet petunias and edge with alyssum. Do not forget the windowbox. The "guidman" will put it up if he is asked. If one has geraniums give them this place, if not, plant old-fashioned dwarf nasturtiums. Attention will have to be given to both boxes and barrel as to watering them, and care used as to the amount each one receives.

Credit Where Credit is Due

Mr. W. J. Kerr in the Ottawa Citizen holds up several Canadians as having done more in the introduction of new and valuable varieties than the far famed Burbank. He says that Canadians have spent thousands of dollars for his worthless novelties and doubts if any of his productions are of value in this country.

Mr. R. B. Whyte of Ottawa in his Herbert raspberry has given fruit growers a variety that for twenty years has outstripped everything in the raspberry family as a yielder while very few varieties can compare with it in quality.

Mr. Whyte has also introduced two other valuable productions. A seedling gooseberry and a seedling Gladiolus, both of which promise to be of great value.

Another Canadian, H. H. Groff, of Simcoe has produced by hybridization and selection of varieties the finest gladiolus in the world. The originator of the McIntosh Red apple has given the world something of greater value than Burbank ever produced.

Mr. W. T. Macoun, Dominion horticulturist by hybridization has produced varieties which will prove of immense value to the people in the northern sections of our country.

The Director of the Experimental Farms, Dr. Saunders, has given us many seedlings and cross bred fruits and grains which are proving to be of much value to the Great Canadian West.

Mr. Kerr would like to see such men get credit for their efforts instead of a whole continent lauding a man like Burbank for the introduction of a lot of things that have not made good.

Intensive Cultivation

Intensive Cultivation simply means the thorough cultivation of small areas instead of the slip shod methods of half cultivating large farms. By this system the smaller the acreage the greater the product per acre. The sandy lands of Surrey and other parts of England some years ago were un-saleable at £5 per acre. Laid out into five

acre lots under intensive farming they now bring an annual rent of £3 to £5 per acre.

One hundred and seventy bushels of potatoes is a usual crop on an ordinary farm, requiring 6 acres to raise 1,000 bushels; under intensive farming, the same quantity can be obtained from two acres. When applied to fruit culture the difference is still more striking.—Enoch Thompson, Toronto.

New Fruit Growers' Association

The United Counties have formed what is known as the Northumberland and Durham Apple Growers Association and have affiliated with the Canadian Fruit Growers Association and I fully expect you will receive from two to three hundred subscriptions in this way. I am pleased to see you are paying more attention to fruit in your paper. While flowers and shrubs are very important and no one loves them any more than I do, still a vast amount of this country's wealth is in the fruit and we must all do our utmost to cultivate and care for the same to the best advantage. The farmers are just beginning to realize this fact and are very eager to obtain all the information on this subject that they can get. So it's up to you to furnish them timely information on fruit growing.—J. G. Wait, Wicklow.

Fertilizer on Tomatoes

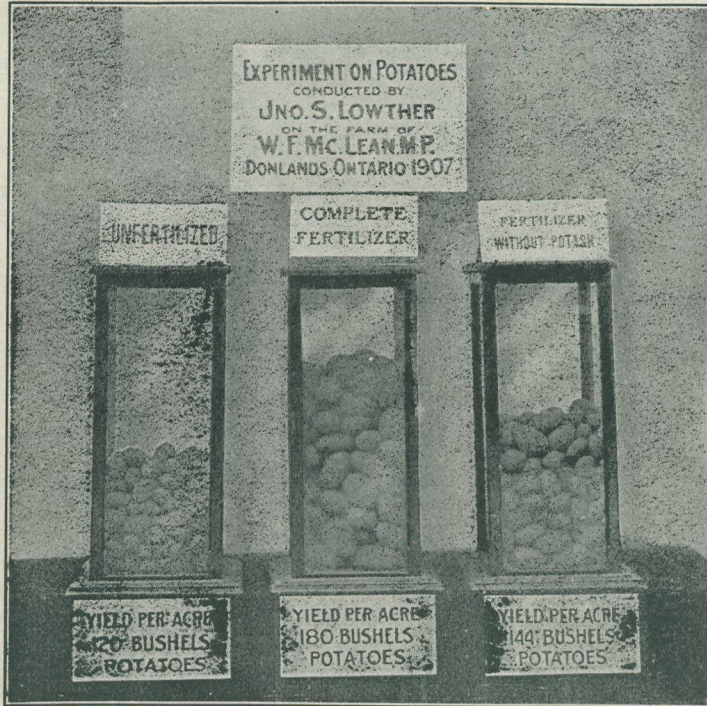
One year we divided an acre of ground into six plots, using a different grade of fertilizer on each of the five plots, while on the sixth plot we did not use any. The plot on which we used a goods containing 2.4 per cent. nitrogen, 8 per cent. potash, and 8 per cent. available phosphoric acid showed the most profitable yield, over three times greater than the non-fertilized plot. The following year we tried 1,000 pounds on an experimental acre, drilling 500 pounds each way, two weeks before the setting of the plants. The plants were set five feet apart each way, using 1,800 plants to the acre, and we secured 500 bushels—J. A. Ellis at Conner Convention.

Growing Early Tomatoes

We do not wait until all danger of frost is past before setting in the field. If we did the other fellow would get on the market first, and as soon as the ground warms up enough to sprout corn, about May first here, we begin setting. But we keep an eye on the weather report and on the thermometer, and if we think frost likely we get out the big hoes and cover over the plants with soil. It does not do the injury to cover in this way that one might suspect, unless the plants are in the blooming stage, while oftentimes one gains two weeks by having the plants developing a root system underground, although the air may be somewhat chill and the tops do not appear to grow much.—W. A. Withrow.

The Himalaya Berry

The Himalaya Berry which has been much advertised in Eastern Canada in recent years is an Asiatic form of the European Bramble. It is more like a dewberry than a blackberry though the two are closely related. The fruit is of medium size, black and of good quality, but too soft for distant shipment. The plant is productive in California and other Western States, where the winters are mild, but it is too tender for Eastern Canada, and we should not advise anyone to spend money in procuring plants.—W. T. Macoun, Dominion Horticulturist, Ottawa.



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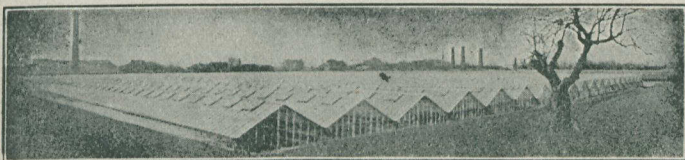
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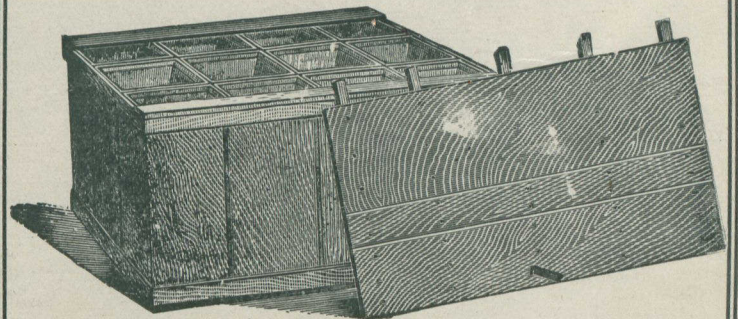
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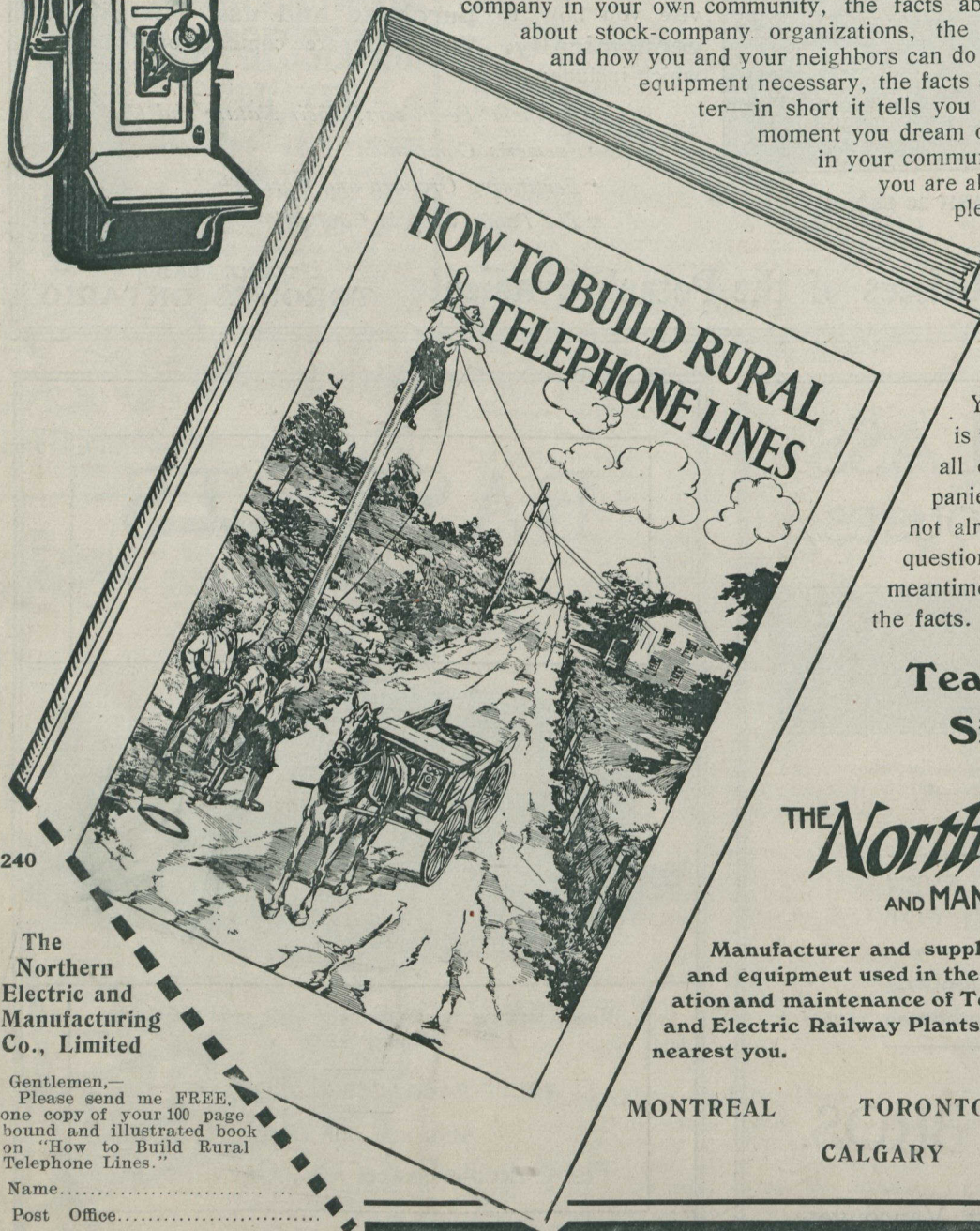
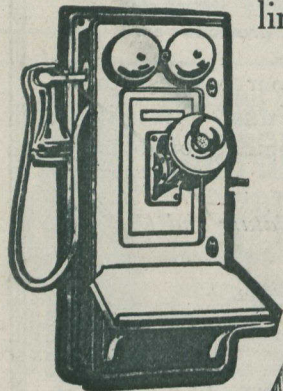
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