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Reality vs. Fiction in the Fruit Business

T. W. Palmer, Victoria, B.C.

PERHAPS there has been no branch of horticulture so much boomed and advertised as fruit farming. By this I mean tree fruits, particularly apples. The public are gulled and misled in many cases (I don't say all, mind) by flowery written advertisements, highly drawn pictures of the imagination from the pen of a man who has probably never in his life seen an apple nearer its native state than in a grocery shop window. But—he has land to sell!

These advertisements do an enormous harm to the fruit industry at large, as they make the reader expect his fortune made in a few years at the business. The gulled one is persuaded to put his hard-earned money into some of these enterprises only to find his fortune does not come as soon as he was expecting. Thus disappointed and disgusted, he does not forget to let other people hear of it (usually with emendations) and in so doing does a lot of harm to some other man's really meritorious proposition.

Now, if this same man had been told in the first place in an honest and straightforward way, the real standing of the fruit industry, he would not have looked for a fortune lying in wait for him to pick up, but would have been contented with a reasonable thing; that is, a good thing, and some money put aside for a rainy day. In this way a good booster of the fruit industry would have been made, instead of a backbiter.

As an indication of how some of the literature of these land sharps is worded the following will give an idea of how the reader is led to expect an Eldorado, viz.:

"Do you wish peace and prosperity?"

"Your answer is 'Yes.'"

"If you are earning less than \$2,000 a year, would you like to double it?"

"Again your answer will be 'Yes.'"

—THEN—

"Our land is only (some small figure) per acre. Suppose as a working basis you buy only six acres of our land. Figure on one hundred trees to the acre; total, 600 trees. These will bear when from four to five years old. When eight years old you should get at a low estimate five boxes to the tree. This is, then, for six hundred trees at five boxes per tree, three thousand boxes of apples. These you should sell for one dollar and a half per box, making four thousand five hundred dollars for your season's apples. Does this look good to you?"

INFORMATION SUPPRESSED

So far so good, but—, what they don't tell you in their literature is, first, that your apples won't be all No. 1 apples; second, that there is a certain cost attached to the marketing of said apples; third, no allowances are made for off-seasons, bad prices, diseases, and so forth. That these things have to be found out by the grower is all the more

to be censured. When experience teaches these things to the farmer he is naturally disgusted at having his ideals hattered, when, had he been told in the first place he would have been prepared and on the look out to "beat the game."

THE TRUE SITUATION

I shall endeavor to give a rough estimate as to the real cost of marketing six acres of apples in full bearing eight year old trees, figuring on a full crop and no disease. I will tell of the different works that have to be done during the year before the crop, and also the labor involved in marketing the same. But it must be bore in mind that in no two districts is the cost the same, nor is it possible to give an exact estimate in any case. In this illustration it is based on marketing the fruit on Vancouver Island, in vicinity of Victoria.

First, then, is pruning. This will have to be done in the fall, after the sap is withdrawn, or in the spring before it has risen again. This may be done by the owner of the orchard, so that he need not deduct any money from the amount received at the end of the year, as it is part of his living.

After this the first spraying of the year has to be attended to. This is done by a mixture of lime, salt and sulphur. This is sold in handy form now by manufacturers in British Columbia at about six dollars for a thirty gallon barrel. This only needs diluting with water in pro-



The Ontario Fruit which carried off the Premier Honors Last Summer at the Convention of the International Apple Shippers Association held in Cleveland, Ohio. It competed against fruit from Oregon, Washington, Colorado and other states



Preparations for a Clean Crop in a Waterloo County Orchard
 -Photo furnished by F. C. Hart, U.S.A

portions of one gallon of spray to nine gallons of water to be ready for use. For an average six acre apple orchard it would require about four barrels of this spray, or twenty-four dollars. Being put on before the leaves are on the trees it takes much less of this preparation than is required when the foliage is on.

A SECOND SPRAYING

The next spraying is with commercial arsenate of lead. This is sold in kegs of different sizes at about eleven cents a pound. For the six acres the quantity required would be about forty pounds of this, which makes about thirteen hundred gallons of spray at a cost of about four dollars and a half. This spraying is to kill all codlin moth, apple worms, and so forth, and is applied directly the bloom falls. If a late hatch of these pests appear of course another spraying has to be done. But as I am figuring on a season fairly clear of pests we will cut out this second spraying of the trees with arsenate.

The third spraying will have to be made to insure the absence of all aphids (green), foliage pests, and so forth; for this Black Leaf Tobacco Spray is admirable. This spraying would cost probably thirty dollars to do as the trees are dense with foliage, and the spray itself is expensive.

Of course, it goes without saying that the orchard has to be properly plowed and cultivated, and kept cultivated. This would cost probably thirty-five dollars for the season.

Thinning the fruit is the next item. No up-to-date orchardist would expect

large fruit if no thinning was done, let alone the damage done to the trees by the weight of fruit breaking off the branches. This would cost perhaps about one hundred dollars, but this is almost impossible to determine, owing to the different things to be taken into consideration, namely the dexterity of the men employed, size of trees, size of crop, and so forth. This is figuring on a full crop.

Now, as the booster's advertisement says, figure your six acres as having one hundred trees per acre, or six hundred trees altogether, eight years old, and five boxes of apples from each tree (very good) and you arrive at three thousand boxes of apples. Of this, say, sixty per cent., or eighteen hundred boxes, are number ones; thirty per cent., or nine hundred boxes, number twos; and the balance, ten per cent., or three hundred boxes, culls. Your account would figure out something like the following:

RECEIPTS

1800 boxes No. 1 apples @ \$1.50..\$2700
 900 boxes No. 2 apples @ \$1.00.. 900
 300 boxes culls @ 40c 120

Your total.....\$3720

Now, for the part the land shark does not tell about, namely, the expenditure incurred before you receive this amount. (Also bear in mind that I have been figuring on a full crop and top prices, a combination that rarely happens). But to proceed:

COST OF PRODUCTION

	No. 1	No. 2	Culls
Packing, per box	06c	06c	Not packed
Picking, per box	03c	03c	03c
Hauling to market, per box	06c	06c	06c

Paper for packing, per box	04c	02c	No paper, Put in sack
The box itself, per box	14c	14c	06c
Wholesalers 10% com., per box	15c	10c	04c
Incidentals	02c	02c	00c
Total expense per box.	50c	43c	20c

Thus for the whole crop it works out as follows for expenses:

1800 boxes No. 1 apples at 50c	\$ 900
900 boxes No. 2 apples at 43c	387
300 boxes culls at 20c	60
Thinning \$100, Spraying \$80 and cultivating \$35	215
Total	\$1,562

Thus it figures this way:

Gross receipts	\$3,720
Cost of production	1,562
Bal. net	\$2,158

And this is an absolutely full season, and the prices figured in are very high. If two thousand dollars was cleared it would be good indeed.

Now, in finishing it would be well to say that if it is possible, it would be by far and away the best policy to let the man, ignorant as yet of fruit farming, know the business as it is, and that is, as a good honest, splendid health-giving means of making a livelihood, not a tremendous fortune, and to prohibit the use of the mails to all those ingenious frauds who are daily catching so many poor suckers!

Use of Soap in Spray Mixture

Prof. L. Caesar, O.A.C., Guelph, Ont.

A contributor in the February issue of The Canadian Horticulturist intimated that soap helped to make arsenate of lead spread and adhere better. There is just a little danger of those who are using lime-sulphur with arsenate of lead thinking that they can increase the value of the mixture by adding soap. If you get a chance to put some lime-sulphur in water in a glass vessel and add some dissolved soap to it, do so, and see what will take place. The soap at once changes the mixture and causes it to curdle, breaking down the compound. No one should use soap with lime-sulphur. It is very probable that soap can be used with the so-called soluble-sulphur, which is not a lime-sulphur, but a soda sulphur. It does not cause this to curdle, and so far as one can see without a chemical examination, does not alter its character.

At an experimental station in New Hampshire they have found that the method of treatment of an orchard which gives the best results is cultivation in the early part of the season. They sow crimson clover in midsummer, and turn that in early the following spring. That method has given good results.—W. F. Kyda, Simcoe, Ont.

Orchard Aphids and Their Control*

Prof. W. H. Brittain, B.S.A., Provincial Entomologist, Truro, N.S.

IN taking into consideration the most economical and effective method to control any insect, we cannot unfortunately, confine our attention to that pest alone, for many other factors intervene to influence our results. It frequently happens that the time to spray for some insect pest coincides with the time to spray for some fungous disease, so that it is often possible by combining various sprays, to make one operation take the place of two or even of three. This is true of the aphids in that the most important aphid sprays coincide with important sprays for other insect pests and fungus diseases, and it is important to remember at this point in considering how we can best reduce the cost of keeping the orchard free from pests. We must also remember that proper pruning, careful thinning, adequate cultivation, the judicious use of cover crops and fertilizers with thorough and timely spraying are all factors in the production of better fruit, and none must be neglected if our work is to prove profitable. In taking up this subject, I realize that you are already thoroughly acquainted with the appearance and life history of the different orchard aphids, and that you are only interested in hearing of some way to kill them. I will, therefore, only deal very briefly with the former side of the subject, confining my

*Extract from an address delivered at the annual convention last January of the Nova Scotia Fruit Growers' Association.

remarks very largely to control methods.

Three species of aphids are commonly found in orchards: First, Green Apple Aphid; second, Rosy Apple Aphid; third, Woolly Apple Aphid.

The first is by far the most common species in Nova Scotia. All of you are familiar with the small, oval black shiny eggs of this insect, found upon the twigs of the last year's growth during fall and winter. These eggs begin to hatch early in spring, and by the time the leaf buds are showing green most of the aphids have emerged. The time of hatching usually extends over a period of several weeks. The newly hatched aphids are all wingless females that give birth to young without the intervention of the males. A small percentage of the second generation give rise to winged females, which fly to other trees and establish colonies there. The aphids breed continuously throughout the season, some being winged and others, again, wingless. Toward fall true males and females are produced that pair in the ordinary way; the true females subsequently depositing their eggs upon the twigs.

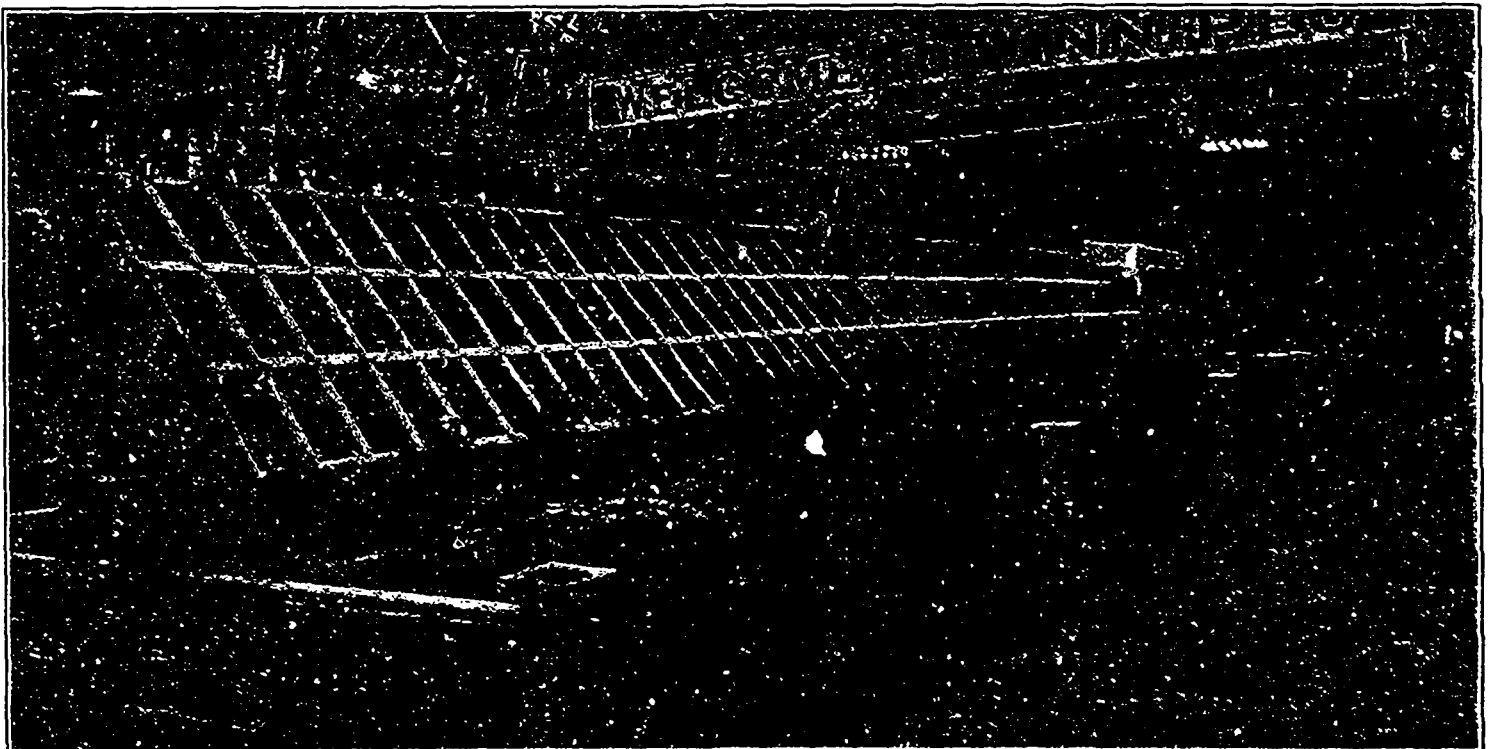
The life-history of the Rosy Aphid is similar to that of the green apple aphid. The eggs are laid on the apple, though not nearly so abundantly as in the case of the previous species. The newly hatched young are dark green in color, but later reddish and brownish forms are produced. During the summer th-

aphids migrate to some unknown food plant, returning in the fall to deposit their eggs.

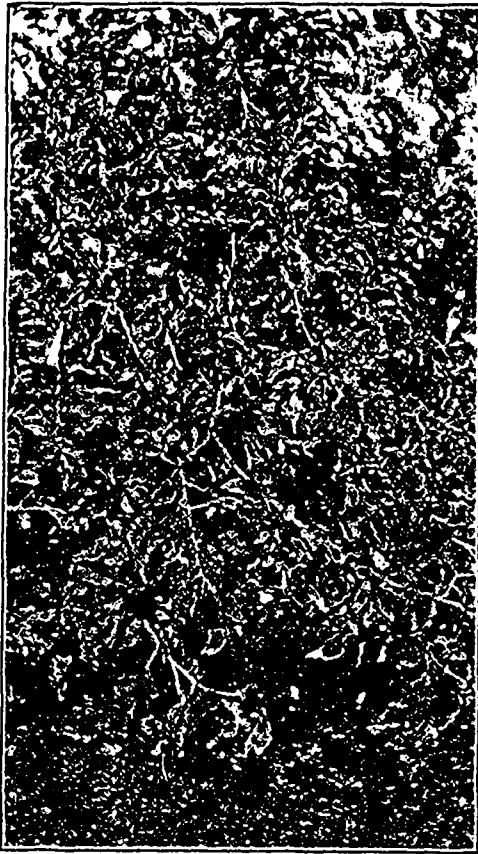
The Woolly Apple aphid is in some countries the worst pest of all, owing largely to the fact that it may attack both roots and tops. It is very different in its habits from the two preceding species, for whereas they are leaf eaters, this species feeds for the most part upon the tender bark of roots or stems. On the roots they form gall-like swellings, and may not be detected until the tree is seriously injured. The chief source of the lice found upon the trees in spring is those that migrate from the roots and those which have remained concealed upon the trunk of the tree in cracks and crevices of the bark. In spring and early summer they will be found abundant around wounds in the bark or upon stumps of limbs that have been cut back, or in similar locations. Later in the season they are found farther out on the branches, the small limbs, twigs, or leaves being often completely encrusted with the insects. The aphids have an irritating or poisonous effect upon the bark, their work causing open cankers upon the twigs. Small galls also result in some cases.

Probably the most valuable aphidicide that has been developed in recent years is a preparation of Nicotine Sulphate, called Black Leaf 40, manufactured by the Kentucky Tobacco Product Company of Louisville, Ky.

I do not wish to enter into the question of spraying for the apple scab, but if



The Exhibit of Ontario Fruit which carried off the First and Second Prizes in the class for Five Boxes, at the Canada Land and Apple Show, held in Winnipeg last October. This was the only Open Competition for Apples. British Columbia was Third



A Well Loaded Tree

Orchard of T. W. Palmer, Victoria, B.C.

you intend giving the first or dormant spray with lime and sulphur it is advisable under some conditions to defer that spray until the buds are bursting, adding the Black Leaf 40 to this spray. This combination is an excellent control for the aphids, besides the good it may do in controlling scab.

Black Leaf 40 may, moreover, with equally good results be added with the next application, i.e., just before the blossoms open and when the petals begin to show pink at the tips. This is probably the more important spray for aphids and scab as well. Lead arsenate for biting insects may likewise be added without impairing the value of the wash, as far as we have determined, for aphids or scab. If necessary the Black Leaf may again be added to the codling moth spray, applied just after the blossoms fall. In these sprays, Black Leaf 40 is used in the strength of one-third of a pint to forty gallons of the wash. When used alone a pound of good laundry soap should be added as well.

Soap must never be added to a spray containing lime-sulphur.

Another spray that has been in use for many years and has been used with success for all kinds of sucking insects is Kerosene Emulsion. It is made as follows: Soap, one-half pound; kerosene, two gallons; water, one gallon.

Dissolve the soap in hot water, add oil

and churn violently until a creamy emulsion is produced. This gives a stock solution that may be kept for some time. For use against aphids, dilute every three gallons of stock solution with ten gallons of water.

The disadvantages of kerosene emulsion are:

First, it cannot be used in combination with other insecticides or with fungicides; second, if a good emulsion is not secured the spray will be sure to burn the foliage. The oil will collect on the top of the mixture and some of the trees will receive a pure oil spray. I have seen so much damage done in this way that I am reluctant to urge the general use of kerosene emulsion.

There is another spray that is very popular with some orchardists. For use one pound is dissolved in five of water. It may be used with Black Leaf 40, but must not be added to lime-sulphur. There are several brands on the market, differing in cost and efficiency.

Quassia chips are often added to whale oil soap and improves it as an aphidicide. The following is the formula: Soap, three pounds; quassia chips, three pounds; water, forty gallons.

Soap sprays are usually fairly satisfactory and are easily prepared.

The soap or emulsion sprays can be used at the same time as has been recommended for Black Leaf 40. All woolly aphids is harder to kill owing to

its protective covering of wax, and accordingly the sprays must all be used somewhat stronger. It is usually most easily destroyed by a spray applied in the fall when the aphids are out on the terminal shoots.

Hardy Apples and Plums

August Dupuis, Director of Fruit Stations, Village de Aulnoies, Que.

The varieties of apples and plums here mentioned have been cultivated in the north-west part of the province of Quebec for twenty-five to fifty years with success. The severest winters have not injured them. I could add to this list several varieties which are doing well, but they have not been tested long enough by the orchardists and at the Experimental Station to warrant me in recommending them as yet for general plantation.

Nurserymen having agents to sell stock in Quebec province, east of Montreal, ought to offer to their customers only the varieties that have proved hardy and productive after several years of culture. The nurserymen having at heart the success of the fruit industry ought not to sell Baldwin, R. I. Greening, King, Newton, and Pippin trees in this northern part of Canada. All attempts to cultivate them have failed. Their wood does not mature, our season of growth being too short.

HARDY PLUMS FOR QUEBEC*										
	Vigor.	Hardiness.	Fruit.	Season.	Use.	Size.	Quality.	Cooking.	Shipping.	Dessert.
Bradshaw	75	75	75	Sept.	d.	vl	g	75	50	50
Coo's Golden D. ..	75	90	90	Sept.	d.c.	ml	g	75	90	15
Guell	80	75	90	End Sept.	d.	l	g	75	75	75
Grand Duke	75	75	90	Oct.	d.	vl	vg	90	75	90
Hudson River										
Quackeboss	90	90	90	Oct.	d.c.	vl	g	90	90	90
Imperial Gage .. .	80	75	75	Sept.	d.	m	vg	90	50	90 Extra for canning
Lombard	90	90	100	S. & Oct.	d.c.	ml	g	90	90	75 v. g. for canning
Mirabelle (native)..	75	90	90	Aug.	d.c.	sm	vg	90	90	90 v. g. for preserves
Moor's Aretio .. .	75	90	90	Sept.	d.c.	m	f	90	90	50
Pond's Seedling ..	75	75	75	Oct.	d.c.	vl	f	90	90	50 Varietioslm.
Agen	75	55	75	Oct.	d.	m	g	75	90	90 reported from Franco 1630
Reine Claude										
Montmorency .. .	90	90	90	Sept.	d.	ml	vg	90	90	90 and the most generally cultivated n
Damas bleu	75	90	90	Sept.	d.	s	vg	90	90	90 North-Eastern Quebec
Shipper's Pride ..	75	75	75	Sept.	d.c.	vl	f	75	90	90
Green Gage	75	75	75	Sept.	d.	m	vg	90	75	90
Washington	75	50	75	Sept.	d.	vl	g	90	75	90 on ownroot.

HARDY APPLES FOR QUEBEC*										
	Vigor.	Tree-Hardy.	Prolific.	Season.	Use.	Size.	Quality.	Cook.	Ship.	Dessert.
Astrachan	75	75	50	Sept.	d.c.	m	g	50	50	75
Y. Transparent ..	90	90	90	Aug.	d.c.	l	g	90	25	75
Peach of Montreal.	90	90	90	Sept.	d.	m	g	75	25	50
Duchesse	75	90	90	Sept. & Oct.	d.c.	l	f	75	90	50
E. Strawberry .. .	50	60	50	Sept.	d.	m	f	75	75	50
Alexander	75	90	60	Oct.	c.	vl	f	50	90	50
Longfield	75	90	75	Nov.	c.	m	f	50	90	50
St. Lawrence .. .	50	75	50	Oct.	d.	l	vg	50	90	90
Wolfe River	75	75	75	Nov.-Dec.	d.	vl	g	75	90	75
Wealthy	90	90	90	Dec.-Feb.	d.c.	l	g	75	90	75
Am. Gold. Russet..	75	75	75	Nov.-May	d.	m	g	25	90	75
Bethel	75	75	50	Nov.-Feb.	d.	ml	g	50	90	75
Fameuse (Snow) ..	90	90	90	Oct.-March	d.	m	vg	75	90	90
McIntosh Red .. .	90	90	90	Oct.-Feb.	d.	ml	vg	75	75	90
Rox. Russet	75	90	75	Oct.-May	d.	m	g	25	90	90
Scott's Winter .. .	75	75	75	Oct.-May	d.	m	g	25	90	75
Winter Arabka .. .	50	75	75	Nov.-Feb.	c.	l	f	75	90	50
Ben Davis	75	60	75	Nov.-May	c.	l	f	50	90	40

*In the foregoing tables, in the column headed "use" the letter "d." stands for dessert and the letter "c." for culinary. In the column for size "m" denotes a medium size, "l" a large size and "vl" a very large size. Under the heading quality "g" stands for good and "f" for fair.

Efficient Spraying Apparatus Required*

J. M. Robinson, B.S.A., Assistant for Horticulture, Kentville, N. S.

FRUIT growers are waking up to the fact that we need more efficient apparatus if we are to do our best work in spraying. Power sprayers are in use in a great many Nova Scotia orchards, and it is a great pity that some of these are not of the best type. A power sprayer should be able to force not less than one hundred and fifty gallons of spray through two lines of hose, with moderately coarse nozzles, in from twenty-five to thirty minutes in order that thorough and the most economical work may be done. One or two points outside of the sprayer might be discussed briefly with profit.

BAMBOOS

Any one visiting orchards in the Annapolis Valley is at once impressed with the enormous per cent. of scabbed fruit on the tops of our large and even moderate-sized trees. The reason for this is obvious when we look closely at the spraying apparatus used in the general orchard. Very few towers are used on outfits, and dependence for reaching the tops of the trees is placed entirely in the rod used. These rods are with few exceptions too short for the purpose. Long rods are not purchased by the wholesalers as they claim there is no sale for them.

No one can reach the tops of trees twenty-five feet in height with a pole ten feet long. This fact was brought strongly to my notice while thinning in the orchard of E. I. Loomer on July 22nd. Mr. Loomer, who is a thorough sprayer and gets results much above the average, was spraying. After the tree which I was thinning had been sprayed, I took the trouble of investigating the thoroughness of the work done. The lower part of the tree was drenched, but on examining the upper portion I found the leaves absolutely dry and without a sign of any spray. The rods used were ten feet long, while the tree was some twenty-three feet high, and though the spray seemed to be reaching its destination, the top of the tree, it failed to do so.

At the time of thinning even a careful observer from the ground would fail to detect scabbed fruit, but a high per cent. of spotted fruit, mostly from the top of the tree, was harvested. This state of things is not the exception, but the rule. One way of remedying this evil is to purchase longer bamboos or to get a tower arrangement so that we are sure that we reach the top of the trees from every side.

NOZZLES

In order to do thorough work and drive spray through dense foliage, it

seems necessary to have a spray of some coarseness. If too coarse, however, it does not spread, is wasteful, and there is great danger of skipping. It is therefore, advisable to use a whirlpool type of nozzle, with moderately coarse discs.

TANK FILLING

The cost of spraying depends to quite an extent on the time required to fill the tank. The first thing required for quick filling is an abundant water supply, and the second an outlet pipe or hose so that the water may be had quickly.

Mr. S. B. Chute, of Berwick, has an ideal plant, with four inch outlet for re-filling and a two hundred gallon spray tank that can be easily filled in three minutes. This means that the sprayer is working practically all the time, and this means reduced cost in spraying. Often where water in any quantity is obtainable the outfit is kept waiting for fifteen to twenty-five minutes to refill on account of too small an outlet. The cost of installing a lead sufficient to do the work in one-fifth of the time is not great and the money lost by not doing so is at times hard to estimate.

An old-fashioned dash churn is cheap and very effective for creaming arsenate of lead.

COST OF SPRAYING

The cost of spraying an acre of orchard will depend on the efficiency of equipment on the number of trees per acre and on the size of the trees. Roughly the cost of spraying an acre of forty medium-sized trees, taking eight gallons

per tree for each application, would be as follows:

The cost will embrace the cost of three hundred and twenty gallons of lime-sulphur testing 1.0085 specific gravity, using five pounds of Sherwin Williams lead to one hundred gallons of spray.

The cost of application will allow forty cents an hour for sprayer and gasoline, operating nozzles. The following figures would result:

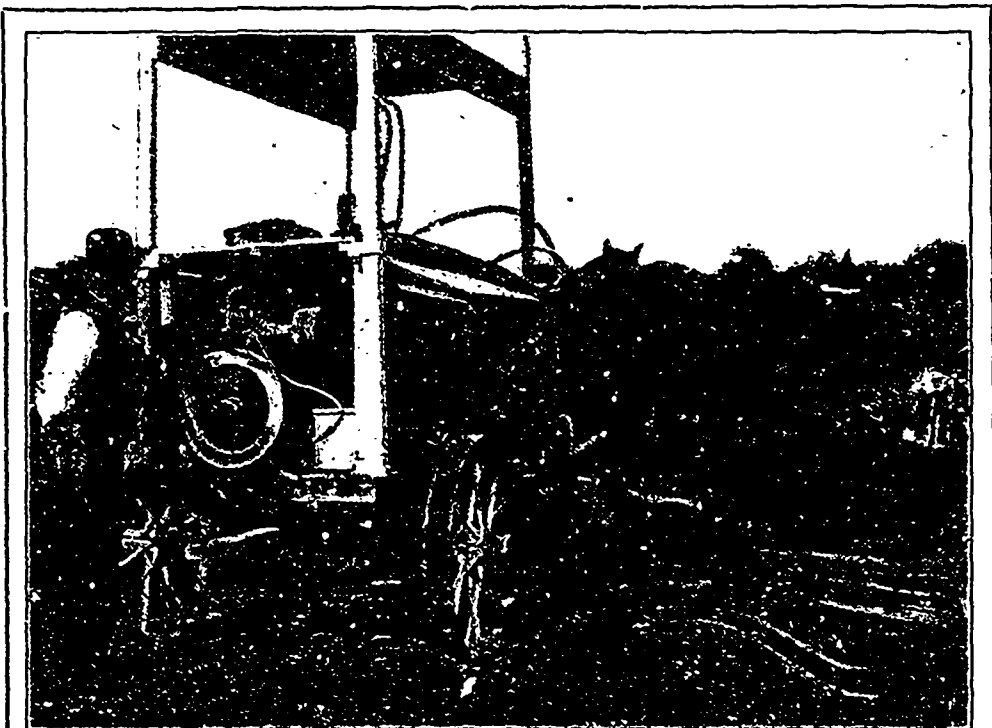
Lime-Sulphur 9.7 gals. at 17½c per gal.	\$1.70
Arsenate of lead, 16 lbs. at 10c.	1.60
Power outfit, 3 hrs., at \$1 per hr.	3.00

Total \$6.30

Each application per acre thus costs the grower either under or over this amount, according to whether his trees take under or over eight gallons per tree, according to whether he has more or less than forty trees to an acre, and according to whether his equipment will put on more or less than approximately one hundred gallons an hour or one thousand gallons a day.

This is, of course, a rough estimate. It is given only for the information of those having limited or no experience in spraying.

White grubs do a great deal of damage to strawberries. They are difficult to handle when they once get into the soil. It is wise to plant in soil that has not been in sod very long. The grub requires two years in the soil, and the second year it does the damage.—W. J. Kerr, Ottawa, Ont.



Filling the Tank with the Tank Filler

This is done by using the pressure from the spray hose. Orchard of Harris and Pearce, New Berlin, Ont.

*Extract from an address delivered at the last annual convention of the Nova Scotia Fruit Growers' Association.

Experimental Work with Shrubs and Flowers*

F. E. Buck, Experimental Farm, Ottawa

At the very beginning of the experimental farms system in Canada, the work of testing, recommending and in some cases distributing hardy and desirable ornamental trees, shrubs, and flowers was undertaken on a fairly extensive scale. The work was under the direct supervision of the late director, Dr. Saunders, and the present Dominion Horticulturist, Mr. W. T. Macoun, who was at that time curator of the Botanic Garden or Arboretum. In a young country like Canada, work of this character undertaken by the Federal Government on such a scale had an outstanding value. In the first place it allowed reliable information to be issued in the form of semi-popular bulletins, such as those of "Hardy Trees and Shrubs" and "Herbaceous Perennials Tested at Ottawa," very large editions of both these bulletins being now nearly exhausted; and in the second place the judicious distribution of such plants to the branch farms, public and other institutions, where they attracted the attention of the public, has meant that for some years past, and at the present more than ever before, the possibility of beautifying the individual home and making it a beauty spot has appealed to a large number of people who otherwise to-day might have homes as unattractive as those of many districts of the old world or the desolate homes of new settlers in our own land.

Countless shrubs have been tested and discarded. Others have proved of great value and the good results rewarding the efforts put into this line of work make it stand out surely as of large importance in encouraging the strivings after those things which develop the moral and ethical phases of our life.

This work is still going forward. Just now, to mention but one of its phases, we have under observation a number of new shrubs and varieties of well-known shrubs which were introduced a few years ago from China and other countries by E. H. Wilson, of the United States Department of Agriculture, as well as other shrubs both donated and purchased. We are also putting shrubs to the test with regard to their suitability for certain purposes around the home. This is a phase of work rather new with us.

HEDGE PLANTS

The test of plants for hedge purposes is being expanded and kept up-to-date. Nowhere in the world, as far as I am aware, is there such a complete and thorough test of plants suitable for hedge purposes as that which may be seen under way at Ottawa. About 100 different varieties of trees and shrubs are

used. Many of the hedges are over twenty years old, while others are only one or two. Most are in fine condition, and many are very handsome and attractive. Visitors from all parts of the world compliment the farm on this collection, and inquiries are very numer-



A Country Driveway, Humber Valley Park, Toronto

ous about plants for this purpose. A bulletin on the experiments will be published before long.

The following trees make almost perfect hedges:

All of the hardy birches, namely, *lutea*, *populifolia*, *nigra*, and *lenta*.

The larches, both the American and European.

And several other trees; while some trees that might be expected to do better when grown for hedge purposes are not successful; of these the elm, the Manitoba maple, and the Russian mulberry are examples.

It is always a source of disappointment to attempt growing any plant with the dual purpose in mind of a floral effect and a good hedge, because in pruning a plant to keep it to a hedge form the flower buds have to be sacrificed, consequently several of the most handsome shrubs make poor hedge plants. However, if a hedge with a distinctive character is required, any one of the following might be used:

Purple-leaved Barberry, Golden Ninebark, Red-leaved Rose, Cut-leaved Alder, Red-twigged Dogwood, American Beech, and the following evergreens: Douglas' Golden Arbor-Vitae, Silver-tipped Arbor-Vitae, Irish Juniper, and Swiss Stone Pine.

Ordinarily we score a plant as perfect for hedge purposes when it measures up to the following requirements: It must grow vigorously, but not too rapidly, otherwise it will require too much pruning. It must have an attractive appearance throughout most of the year and must regain that appearance quickly after pruning. It must permit being pruned to a symmetrical form and a form which will not hold the snow on the top in the winter. It must fill out well at the base when planted in single rows at eighteen inches apart in the row. It must not winter-kill in places, and must not suffer from attacks of insects or fungous diseases. These are the main points of a good hedge. At Ottawa we have many which meet these requirements.

WORK WITH PERENNIAL FLOWERS

A few words only on perennial flowers. Mr. Macoun's bulletin on "Herbaceous Perennials," published in 1898, shows at a glance the immense number of these important plants. This group has been eulogized of late as being responsible for most of the recent good work in Home Beautification.

Our most recent work with perennials has been to test them for their effect under certain conditions. All of the best of these flowers previously tested for other information, are now grown in a border twelve feet wide and four hundred and fifty feet long, prepared especially for the purpose in 1911. In this border the five or six great season groups of perennials are well represented. Such being the bulbs as: tulips, narcissi, and so forth, for the first effect in spring, then the irises, then the paeonies, after which come the great bulk of bloom which is followed by the phloxes for late summer effect, and the asters for autumn effects.

It should be mentioned here perhaps that there are certain times during the summer when the amount of bloom in a perennial border is very small. One of these periods is that which occurs just after the bulk of the early summer plants have bloomed. Since this is a time of the year when a large number of people are expecting the flowers to look at their best, we are just now working to find suitable flowers to fill in these gaps in the floral year.

Dahlias require good rich soil, good uniform moisture conditions, and plenty of sunlight, to do well. If the soil has not been sufficiently enriched, or the bed may be more shaded than it should be, or the ground become too dry, the bloom will be disappointing. The Dahlia requires moderately cool soil conditions to do best, and both the application of water and humus to the soil brings these conditions about.—Prof. W. S. Blair, Kentville, N.S.

*Extract from an address delivered before the Ontario Horticultural Association.

The Beeches—A Garden Beautiful

A. J. Elliot, Aylmer, Ont.

“THE Beeches” is the fitting title of the lovely home, on Grand Avenue, London, Ont., of Mr. R. W. Puddicombe, manager of the London Loan Society. A fine home it is.



Mr. Puddicombe's Garden, Looking North Toward the House

This was revealed during a visit when the grounds and garden were at their best. Embowered in grand old beeches, evergreens, and deciduous trees and shrubs, and draped in its summer suit of close-fitting Virginia Creeper and Ampelopsis Veitchii, the house reminded one of the southern colonial home because of its wide and hospitable, pillared verandah, garnished everywhere with boxes, pots and other receptacles for flowers. It might easily be passed by a person on the road without ever imagining that so large a home was so near.

As you enter the gate from the avenue the driveway describes a circle through the ancient forest, and returns to the gateway. Passing up a rather sharp elevation, and arriving at the top and passing the front elevation of the house on the left, you find the primeval and modern hand in hand in great beauty. The only connecting link between the two is a single rank of Scottish firs, planted by a former resident, which seem to stand on tiptoe to make themselves as tall and grand as the lordly beeches they are guarding.

At their feet stretches a large tennis court, level as a billiard table, closely shaven and well kept, surrounded by lawn, till cut off from the garden by a fine row of syringas, backed by a border of perennial plants. The driveway is left here, and walking across the small plateau, on which the house stands, the beauty of the place bursts upon you

THE ROSE GARDEN

The ground dips from your feet as rapidly as it rose at the entrance. On

this decline is situated the rose garden. At the bottom of this descent the lawn proper commences. It is embellished in the centre with a bed of magnificent paeonies. The lawn still rises till the full height of the ascent is reached on the top of which is planted a grand row of pampas grass. Then some eight feet more, and a row of spruce ends the scene. The general view is lovely.

Descending to the path at the bottom of the incline, and turning, the full beauty of the roses struck me forcibly. It was a glorious day in June when I first was there, and an ideal day for roses. There they stood, some five hundred bushes, all of strong and vigorous growth, fairly bending under the load of blossoms they bore, from the purest white through all the shades of pink, cream, and scarlet, to the darkest shades. It was a panorama of beauty. I could not see a bug, worm, or aphid in the garden. Questioning Mr. Puddicombe



The Middle of the Garden, Looking South

as to their absence, he told me that he had used tobacco water and hebeore, but his panacea for rose enemies was nothing more than the garden hose. The rich clay soil is where the rose luxuriates, and the only manure given is in the fall when strawy manure is put on deep for their protection and raked off in the spring, the fine humus left being dug in.

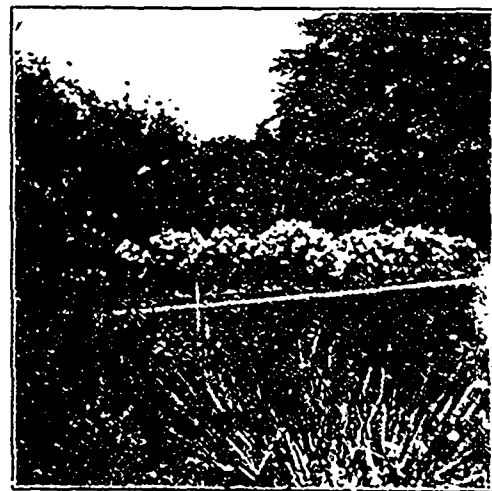
A good lesson might be learned by rose growers as to pruning. The severe winter two years ago froze about all the wood grown the previous year. Yet the following season the roses never blossomed finer nor were more prolific. Mr. Puddicombe's favorites are La France, Marvel de Lyons, Baroness Rothschild, Gen. Jacqueminot, Polonnaise, and Gen. Grant, all of which are well represented in his garden, besides a great many others.

Now, as the rose unfortunately gets through blossoming soon after the month of June is out, the beds would have rather a deserted look; so in the diamond centre bed, geraniums are planted, and the other beds are filled in with Japanese Pinks, Phlox Drummondii, asters, scabiosa, salvia, heliotrope, and on either side liberal perennial borders run the whole length of the enclosure, rioting in bloom. Here was found sweet rocket, the larkspurs, corn flowers, perennial phloxes, garden heliotrope, Sweet William, columbine, hollyhocks, paeonies, and many other flowers.

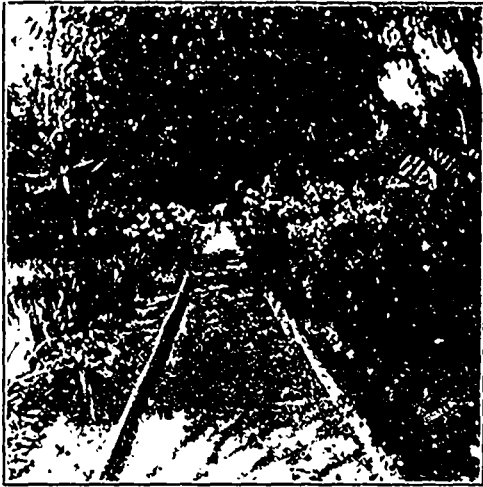
This enclosure is in its turn cut off from the vegetable garden by a lattice fence covered with clematis, entrance being gained through arched ways, where the paths command. Entering by the south path a surprise was experienced. Another lawn met the view. It was surrounded on three sides with perennial, and on the fourth by rows of currants and gooseberries, while a centre bed was a mass of splendid cannas.

North of this was the vegetable garden proper in which in profusion is grown in rows currants, gooseberries, beans, tomatoes, beets, carrots, peas, sweet peas, and asparagus, and all around this part, under the spruces that mark the line of property, are grown raspberries. Adjoining this section is the greenhouse, in which some fine chrysanthemums were showing good work for late fall blossoms.

I stated at the outset that the front was a mass of trees and shrubs. Mr. Puddicombe has spared neither expense nor trouble to gain his desired effect. He has the Mahonia Aquifolia, the seeds of which he got while on a visit to Heidelberg in Germany; the Retinospora, Barberry, Thunbergia, Juniper, Azaleas, and the Sciadopitys Verticillata, besides



The East End, Looking West



A Shady, Bordered Path

the more commonly known varieties of shrubs. He also grows successfully the Magnolia, which had just got through blooming before my visit. Cuddled up at the foot of this shrubbery is a fine row of Japanese anemones.

There are some three acres to this fine place, and it would be impossible for Mr. Puddicombe, who is a busy man, to attend to it. He has a man who has been with him for years, and between them they have made a success of The Beeches, and it is hard to know which takes the most interest in developments there—the proprietor or the gardener Jacques.

There is one magnificent beech, close to the house, that has a spread of over 70 feet, and during hot Sundays a nephew who frequently visits them holds the Church of England service under the leafy dome.

Planting New Shrubberies

John Gall, Inglewood, Ont.

Whether the proposed new shrubberies are to be on a large scale or otherwise, every effort should be made to prepare the soil well, to put in the most suitable kinds of shrubs, and to arrange them in the most attractive way. Even a very small shrubbery makes the home look more substantial and comfortable. Not only does the cultivator derive great interest from watching the growth of his shrubs, but in association with them he can, all the more effectively, arrange other subjects in his garden.

Very fine shrubs can be grown in quite poor soil if it is well treated. Many cultivators are under the impression that it is useless for them to attempt the growing of shrubs, or to form a shrubbery, because the rooting medium is different in regard to quality. Of course good rich soil helps matters considerably; but there is a large amount that is of poor quality, and those who have to grow shrubs in such, should make it

as suitable as possible before putting in their plants.

In preparing the ground, it is absolutely necessary to have it dug as deeply as possible, adding a good quantity of manure. This being done, it is always wise to mark out the stations, before commencing to plant. The need for a careful spreading out of the roots and

for firm planting must be insisted upon. After the operation is completed, water must be applied freely, so that it may sink deep down to the roots.

A few deciduous kinds of shrubs, judiciously mixed with the evergreen sorts, always add to the general appearance, and give additional interest to those of a non-flowering character.

March Work in Indoor Garden and Greenhouse

Henry Gibson, Staatsburg

With the advent of March the progressive amateur finds plenty to do to keep everything in good shape and prepare for Easter. Decorative foliage plants will be greatly improved in appearance by a good spraying with some such insecticide as Lemon Oil, Fir Tree Oil or Aphine. No matter how careful and attentive you may have been, either scale or mealy bug will have found an abode somewhere around the stem or foliage. A thorough going over with any of the insecticides mentioned when they are used according to directions accompanying them, will account for these pests and leave your plants in fine shape.

After the cleaning each plant should be unpotted or some new soil added as a top dressing. In the latter case, remove the old soil down to the active roots. This should be done very carefully with a piece of wood, so as not to injure the little rootlets. For a compost use good loam that has been enriched with thoroughly decayed barnyard manure and bone-meal. Give the tubs or pots plenty of drainage material in the bottom to allow the water to pass off freely.

As the sun gains more power to raise the temperature, more air should be given, and as the weather becomes brighter some means of preventing the direct rays of the sun from striking the plants will have to be devised. This can be accomplished by placing them in a somewhat shaded corner of the house, and in the greenhouse by whitewashing the glass of the section they occupy.

EASTER FLOWERS

If you are bringing along a few lilies for Easter these should be showing buds now. It takes on an average six weeks for these buds to develop without undue forcing, which leaves nothing to spare, as Easter falls on April 12th this year. Keep them well watered and the atmosphere moist, and you will have fine blooms for the holidays without much trouble. Liquid manure applied weekly until the buds begin to turn from green to white will be beneficial, but as soon as this happens it should be discontinued. Spraying or fumigating should be attended to regularly to prevent aphids from getting a hold on your plants.

Should any plants color so early as to be past their best by the holidays, place

them in a cool room. This treatment will retard their progress considerably.

Where it is intended to have Dutch bulbs in bloom for the holidays these should be attended to about the middle of the month. It takes very little over three weeks to flower tulips, narcissus and hyacinths, after being brought into the house. Avoid giving them a warm place. They do not need it and they will only become drawn up. The cooler you can grow them the sturdier they will be, and consequently they will keep better and longer. A few hot days will forward these subjects far ahead of all your expectations, but such possibilities should be guarded against by ample ventilation, and if in the greenhouse some shade on the glass. Do not forget to lay newspapers on the tulips on hot sunny days when the flowers are opening.

SOW PRIMULA SEED

The middle of March is a good time to sow seeds of primula that are wanted to furnish bloom next fall. Prepare seed boxes or pans with a mixture of loam, leaf mould and sand. Sift some of this mixture very fine for the top and on this sow the seeds. Place in a moist, close place, where a temperature of about sixty degrees at night can be obtained. Cover with glass and a sheet of newspaper until all the seeds germinate, which should be in two or three weeks. When sufficiently large to handle prick them off into flats, and keep well up to the light so as to ensure a sturdy growth



The South End of the Garden, Looking West

in a temperature of fifty degrees at night. As they begin to get crowded pot them off into small pots, using a compost of loam with the addition of sufficient leaf mould and sand to make it light and porous. To this should be added a fair sprinkling of pulverized sheep manure. Continue to pot them on as the roots show around the side of the pots.

It is not advisable to sow seeds of the baby Primrose (*Primula Malacoides*) at this time. *P. Malacoides* is a very desirable plant which should have a place in every amateur's collection. It makes a better Easter plant than it does a Christmas plant and to start seeds now would result in many losses by damping off before the plants could be carried through to another Easter. Damping off is about the only thing that can be urged against this primula, and this to a large extent can be overcome by sowing the seeds later. June first is soon enough to start the seeds.

CANNAS
Cannas are very popular bedding plants and they are becoming more so each year as the new and improved varieties are being tried out. Where a large bed is to be planted nothing will give more satisfaction than these plants. They are showy and bloom throughout the summer until frost cuts them down.

To make the best showing the roots should be started early enough to produce good strong stock by bedding out time next June. They should be started as early in March as possible. If there are any varieties you wish to add to your collection now is the time to get them.

Remove the clumps from the place where they have stood all winter, shake off all the old soil, and cut away the dried up stalks and roots. They should then be cut into small pieces, and if stock is plentiful, left with two or three "eyes" to each piece. If, however, you are short of stock they may be cut to one "eye," although by so doing weak plants are often produced.

Have a few boxes ready such as you would use for sowing seeds in but preferably a little deeper. Place an inch of soil in the bottom of these, on which put the divisions of the cannas closely together, cover with light sifted soil and water thoroughly.

Very often some of the clumps are found to have started into growth before being taken from the winter quarter. Where this happens the eyes should be sorted and those with growths on them should be placed in a box by themselves, and all the dormant eyes together. Have but one variety in a box and mark the name plainly on it. When all the pieces are boxed up and watered they should be placed in a warm position where some "bottom heat" is to be obtained.

Cannas will grow and do well in a tem-

perature of from fifty to sixty degrees, after they are once started, but to get the dormant eyes into an active condition bottom heat is indispensable. This is where a great many amateurs fail when attempting to grow cannas with such conditions as generally obtain in the dwelling house.

Arrange matters so as to have the boxes elevated above the radiator, the kitchen range, or even an oil stove, as was suggested for starting warm blooded seeds last month. Don't have the boxes get real hot but maintain a steady

brisk heat and your cannas will respond handsomely. If such an arrangement is impossible indoors, make up a mild hot-bed out doors, and start them in a sandy soil. When they have made a few inches of growth they should be potted into three and a half or four inch pots, and grown along until bedding time in a temperature of fifty to sixty degrees. It should always be borne in mind that cannas are sub-tropical plants and are easily injured by frost, therefore planting out should be delayed until all chance of frost is over.

The Tuberous Bedding Begonia

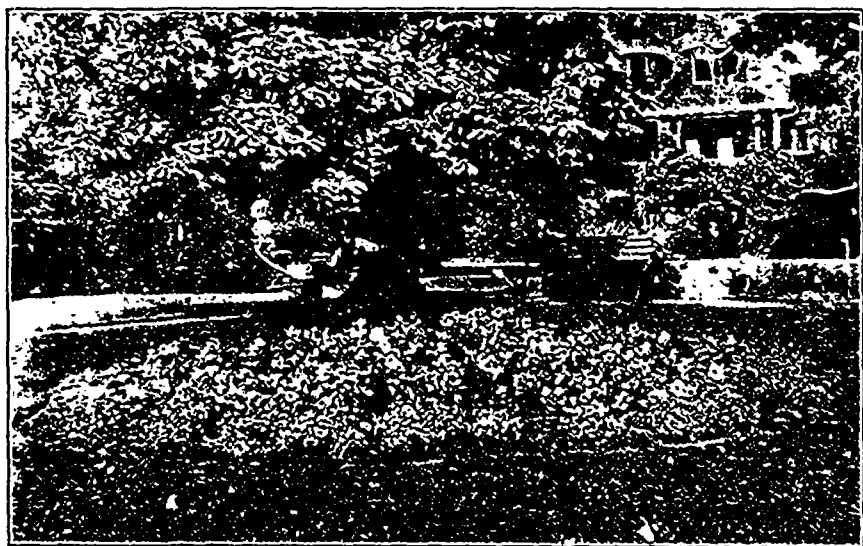
H. J. Moore, Queen Victoria Park, Niagara Falls, Ont.

WHERE the culture and requirements of the tuberous bedding begonia are understood the plant is very popular. The three outstanding essentials to successful cultivation are shade, moisture and a soil of light texture. These are as necessary as light and air to human beings. Who would not grow tuberous begonias, were such possible? Among the singles we find flowers five to seven inches in diameter, the colors ranging from pure white through all the shades to intense crimson, while the doubles, many of them resembling roses, are equally as varied in color, and as desirable. The frilled singles of recent introduction attract attention more quickly than the ordinary singles or doubles, and in many localities could be grown successfully. Less known, but equally beautiful, are the varieties *Bertiniana*, a tall vermilion single with pointed petals; *Count Zeppelin*, a dark orange double of dwarf habit; *Lafayette*, likewise of dwarf habit closely resembling *Count Zeppelin*; and *Worthiana*, a vermilion single, the

flowers somewhat resembling those of a fuschia.

For our beautiful tuberous bedding begonias, all of which are annual stemmed, we are indebted to the Andean species of South America, such as *B. Pearcei*, *Veitchii*, and probably *Davisii*, these being the first tuberous species introduced, and being readily crossed have proved worthy progenitors of our magnificent garden types.

It is not advisable to attempt to grow any tuberous variety on a large scale in localities where the temperature hovers around 85 or 90 degrees for weeks at a time, and foolish to attempt to grow any with a higher temperature, or where an abnormally dry atmosphere exists. If such be attempted doubles alone should be planted, as their closely arranged petals are more resistant to heat than the singles, whose petals do not afford protection to each other. An average summer temperature of 75, a humid atmosphere, and a light soil containing humus, retentive of moisture, are ideal conditions for promoting vigorous growth,



A Bed of Mixed Tuberous Begonias

These are not so effective as a bed of one variety.

—Photo by H. J. Moore.



The Ordinary Sweet Alyssum Grows Too Tall and Soon Smothers the Begonias. Grow Dwarf Varieties such as "Minimum," "Snow Carpet," or "Little Gem."
—Photo by H. J. Moore

and splendid flowers. Where the atmosphere is not sufficiently humid shade must be afforded, otherwise scorching will result. A surface mulch of well rotted stable manure or leaf soil is also advantageous.

Those who possess a greenhouse may propagate the plants annually by seeds, or by division of the largest tubers. Sow the seeds in January or early February, if desirous of obtaining plants to bed out in June. It is, however, preferable to sow in March or April, and grow the seedlings in pots during the first year. Disappointment will thus not accrue through failure of many to flower satisfactorily out of doors. By pot culture the first year the small tubers may be readily cared for, and after the growth decays they are not so liable to be lost which often happens when planted outside.

Prepare the seed pans by placing cracks in the bottom and on this a layer of fibrous material. Fill to within one inch of the top with finely sieved soil, composed of sand and leaf soil two parts, and hum one part. The mixture should also contain a small quantity of finely broken crocks and charcoal. Press down gently and upon this layer of soil sift through a very fine screen sufficient soil to fill to within one-half inch of the top. Do not leave the surface flat, but convex, so that water may pass to the sides of the pan, and so prevent damping of the seedlings, this damping being caused by the fungus "Pythium." Immerse the seed pans in water without disturbing the surface soil until the soil is thoroughly saturated. Sow the seed evenly and thinly. Do not cover with soil, place in a temperature of 65 degrees Fahrenheit, cover the pans with a piece of glass,

and shade from sunlight. Do not at any time water the seedlings overhead, but partly immerse the pans. The water will thus rise by capillary attraction and the seedlings remain undisturbed.

After germination, afford light (not direct sunlight) until the plants strengthen, and are large enough to handle, then plant singly one-half inch apart into larger pans. When about to crowd each other, pot off into two-inch pots, and finally, ere flower buds show, shift into four-inch pots. Afford occasional applications of Clay's fertilizer or guano, one-half ounce to a gallon of water. Dampen the floors, benches, and other surfaces to create humidity, and to prevent the attacks of red spider, but avoid spraying the plants during sunlight, otherwise scorching will result. Shade from intense sunlight at all times.

Propagate by division during the first week in April. Select large tubers which possess at least two crowns. A sharp knife is essential to sever the tubers directly between these, each portion will thus bear buds, without which they are useless. Expose the cut surface to air for some time until they cease "bleeding," after which dip them into slacked or powdered lime; this will act as an antiseptic, and also check the attacks of slugs, grubs, and other insects which prey upon them. Place the tubers on finely sieved leaf soil in flats, keep the soil moderately moist, spray them occasionally to encourage growth, and maintain a temperature of at least 60 degrees.

When two or three inches of growth has been made pot off into four-inch or five-inch pots, and when well rooted remove to a cold frame to inure to outdoor conditions. Air well during warm days, but close the frames on cold nights. By the first of June the plants will be sufficiently hardened to allow of the sashes being entirely removed, and after a week's exposure to outdoor temperatures, shaded, of course, from direct sunlight, they may be planted in their permanent position.

Tuberous begonias, when massed, are always effective, especially when the singles and doubles are separated, for in their distinctiveness lies their attraction. Effective even to a greater degree are they when arranged in beds of separate colors, the merits of each variety being thus readily seen. Also, when so arranged, it is possible to select and mark desirable kinds, and to eliminate weaklings. As the begonia reproduces itself tolerably true from seed isolation of the varieties it renders seed selection possible, there being little danger of the intervention of foreign pollen through nat-



Dark Tuberous Begonias and Alyssum Minimum in Queen Victoria Park
—Photo by H. J. Moore.

ural or insect agencies. All who desire to see the tuberous begonia at its best should plant a small bed with dark blood red singles or doubles, about ten inches apart, and between these plant alyssum minimum as a ground work. The snow-like carpet of the latter will bring out the color of the former in bold relief, the combination being magnificent. Begonia Bertini nana, B. Count Zeppelin, and B. Lafayette are likewise admired to a greater extent when treated in this manner than when planted pure.

When the stems commence to decay or when they are cut down by frost, lift the tubers with the remaining foliage, and if possible with a quantity of soil adhering to them. Pack them in shallow boxes, stems upward, place these on a greenhouse bench or in a shed near a window, so that light may have access to them

until the growth entirely decays. Remove all decayed stems to facilitate the drying of the tubers, otherwise they may become diseased. Carefully remove all soil and spread the tubers on a shelf for a day or so, and finally store them in layers, in boxes containing dry sand, two inches of sand or so between each layer of tubers.

Place the boxes away for the winter in a dry frost proof shed, cellar, or greenhouse, the latter being preferable. Aim to maintain an average temperature of 50 degrees, not allowing it to fall for any length of time below 40 degrees or to rise to 60 degrees. These winter temperatures are deleterious, inasmuch as the former will chill, and cause the tubers to decay, while the latter will influence growth to start at an unnatural and undesirable time.

soil. As soon as the roots have fairly well filled these, re-pot them into a two or three sized larger pot, a six-inch pot. This can be done usually about the first week in May, using good, rich, loamy potting soil. Place nearly an inch of broken flower pot or similar material for drainage in the bottom of the pot before potting.

One point in potting chrysanthemums, at any time, is that the soil must be packed very firm around the roots. Use a small piece of hardwood for this purpose. Water the plants well once as soon as potted. Shade them from hot sun for a few days. Keep the soil they are growing in well moist at all times. The soil should never become really dry. Spray the growth with water, especially on the under side of the foliage at least every few days, oftener if possible, in bright, sunny weather.

The cuttings are taken from the young growth that starts near to and around the base of the old flowering stem about March or April, or from the top growth of young plants. The stem of the cutting should be from two to four inches in length. The base of the cutting should be just below a node or point of the stem. Remove about half of the lower leaves, leaving three or four of the top leaves on. Leave the terminal point of growth intact.

The best material to root the cuttings in is clean, gritty sand, sand that will make good stone mortar. The sand should be well moistened and packed firmly in a flower pot, seed pan, or a shallow flat box, each having good drainage. Set the cuttings upright in the sand about one and one-half inches apart, inserting rather more than half the length of the main stem in the sand.

(To be continued)

Home Culture of Chrysanthemums

W. Hunt, Ont. Agri. College, Guelph, Ont.

THE chief reason why these popular autumn flowers are not more commonly grown by amateurs is because they are so liable to attacks of insect pests. Some twenty-five or thirty years ago the greater part of these plants grown by commercial florists were field grown. To-day one seldom if ever sees a field-grown plant; they are almost all grown under glass. The small pest called the Tarnish Plant Bug (*Lygus pratensis*) is mainly responsible for this. This is the same pest that is so destructive to the aster bloom, causing so many blooms to be imperfect in form, large gaps often being seen in the petals, spoiling the appearance of the flower. The buds and terminal points of growth of dahlias, too, are often spoiled by the same insect.

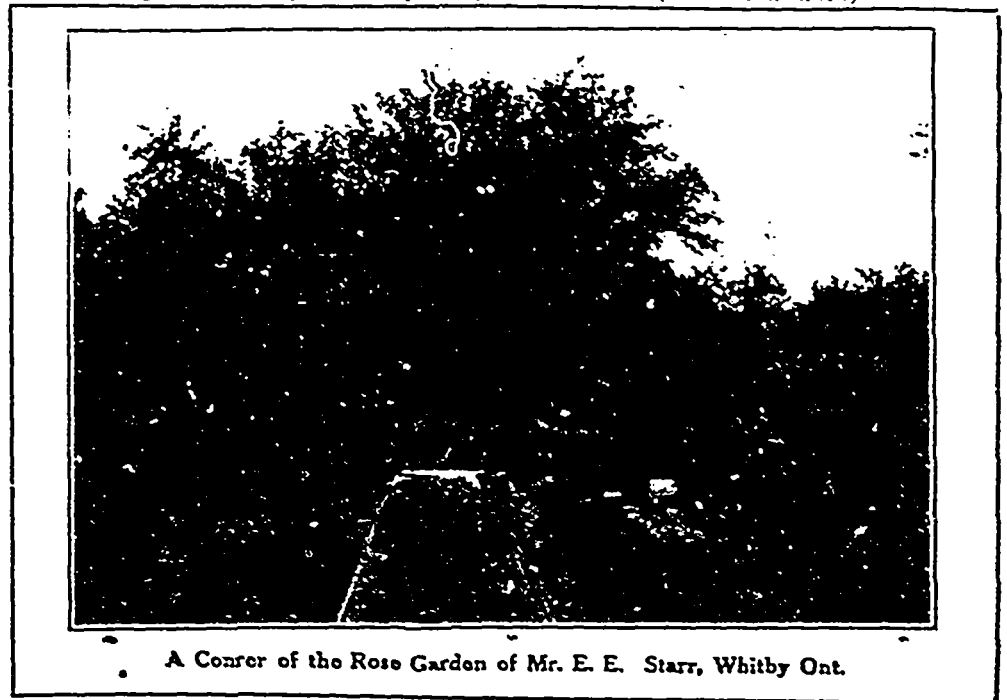
These pests are very common on many garden plants besides those named, especially on garden corn. They usually appear in June and continue their attacks all through the hot weather. As they apparently do very little harm to any of the economic plants in the garden, having a particular liking for the decorative plants only, they have not received much attention from entomologists, as there does not appear to be any really effective remedy found yet for them.

Another insect that attacks the chrysanthemum is the Black Aphis, a black and near relative of the Green Aphis, so common on house and garden plants. In very dry seasons the Red Spider (*Tetranychus telarius*) is troublesome, but it is not as injurious as the two first-named if the plants are given proper attention.

There are three methods by which chrysanthemums can be propagated, viz., from cuttings, divisions of the old

roots, and from seed. The best method for an amateur is by dividing up the old plants. This can be done every year or at least every second year, to prevent the plants becoming too large and cumbersome. Old plants that have been kept in a cool window or a light basement or cellar all the winter should be brought up into a cool, sunny window, away from fire heat in March.

When the young growth is about one or two inches in length, divide the plants with a large knife into small divisions or sections, each section having good roots and three or four shoots of top growth. Pot these sections into pots just large enough to hold the plant nicely, not too large, four-inch usually, in good potting soil, with about one part sand to eight or ten parts of potting



A Corner of the Rose Garden of Mr. E. E. Starr, Whitby Ont.

The Goal of Modern Vegetable Growing

L. A. Waitzinger, B.S.A., Echo Place, Ont.

THE growing of vegetables is recognized as increasing in importance year by year. By the use of vegetables we get the highest yield of human food from the soil, not entirely from the nutriment they contain, but mainly from the quality they possess of rendering more digestible the proteins and carbohydrates of other constituents of our food. The rapid growth of our cities and towns, which are mostly without big gardens, makes truck farming very profitable with good paying crops.

The providing of the vegetable grower with seeds is surrounded by many difficulties—witness the recently issued volume for 1913 of the Canadian Seed Growers' Association. One of the remedies for the improving of these conditions is the selection of seed. Of course the breeding of seeds for the improvement of crops is a very intricate and expensive work, e.g., the quantity of seed produced in relation to the area is often very small, this in part causes the expense. Again, foreign competition, climatic and technical difficulties, not to mention the great labor problem, make the vegetable seed raisers path one of many tribulations.

Seeds to produce improved crops can be raised in different ways. One of these is by mass selection, which means the selecting of the best plants and fruits from a crop and saving them for seed. The seed from these best plants are mixed and sown and the same process goes on from year to year. This method is defective inasmuch as a plant may be superior to its neighbors but only because it had specially good conditions of soil, light, water or protection, not because it has an inherited superiority.

INDIVIDUAL SELECTION

Individual selection is the selecting of single plants, saving the seed therefrom and planting the progeny under conditions which gives each plant the same advantages. The seed from the best plants is then saved and kept separate. The process goes on as long as the investigator likes. In mass selection you cannot guarantee that you have picked out the best, you only think so. In individual selection you are in a position to be sure. You can apply accurate tests to prove it. One is a hit or a miss; the other gets a bull's eye every time.

These methods are generally used in animal breeding. Ordinarily a sheep farmer will let his ram run with a number of ewes. The resulting lambs may be likened to the plants selected in the mass. When the same farmer wishes to produce something which shall do him credit he picks out a specially good ewe and his best ram and breeds from them.

The lamb or lambs may be likened to individual selection in plants in this case. The parentage is known and when the same thing goes on for generations the final results are infinitely superior to those obtained by the first method. When a farmer wishes to test his herd of cows for milk production he treats all exactly alike, gives them the same water, food and shelter. The product from each is noted separately and after deducting the expense of production, he soon finds which cows are profitable. This is individual selection for milk—similar to what should be done in plant life. If the farmer fed some of his cows well, housed them well, and ill-treated others, afterwards testing the results he would or could only guess which was best. He would not be sure. This is similar to mass selection in plants. People should get firmly fixed in their minds that plants are living organisms, as responsive to treatment as animals, as amendable to improvement under certain conditions. The same laws of heredity rule in the vegetable and animal kingdoms.

SIMPLIFYING THE WORK

In order that the important work of breeding plants for improved seed production may be encouraged, the question of simplifying the work should be considered. This can be materially helped by the reduction in the number of varieties of each kind of vegetable. It is far better that the breeder and grower should devote their energies to the individual improvement of the present old varieties rather than be perpetually crossing for new varieties. With what a flourish of trumpets is a new variety introduced; what a plethora of adjectives are used to describe it and in a few years it is as dead as Queen Anne. It is better that improvement should take place along scientific lines.

What is recommended is that certain districts should grow only one or at most two varieties of the kind which can be grown successfully in the district. Then the breeders can proceed with their work knowing that their efforts can be controlled. Varieties of proved merit should be taken in hand and improved and one name given to each variety. This is another point which should be considered by those anxious to simplify matters. We often find that many names are applied to the one variety. Instead of breeders and growers frittering away their time on hundreds of different varieties, the differences only discoverable under a microscope (and often not then) they should come together and breed one good variety to a state of excellence. Two advantages would accrue by a dis-

trict devoting its attention to only one variety. First from the commercial point of view the crops would command higher prices, because by the formation of small associations transit charges would be reduced to a minimum. The district would become identified with the particular kind of vegetable specialized in. Instances of how this system has revolutionized numerous districts could be cited.

It would benefit such a district to grow its own seeds for two or three years, by the methods of individual selection mentioned before. One or more men supported by the association, should be in charge of the breeding of the stock seed, and after the neighborhood generally had a pure line of a certain vegetable, new seed from another pure line could then be introduced and in some cases could be used for crossing purposes. By having the district restricted to one variety a greater chance of obtaining a pure line in a short time is present.

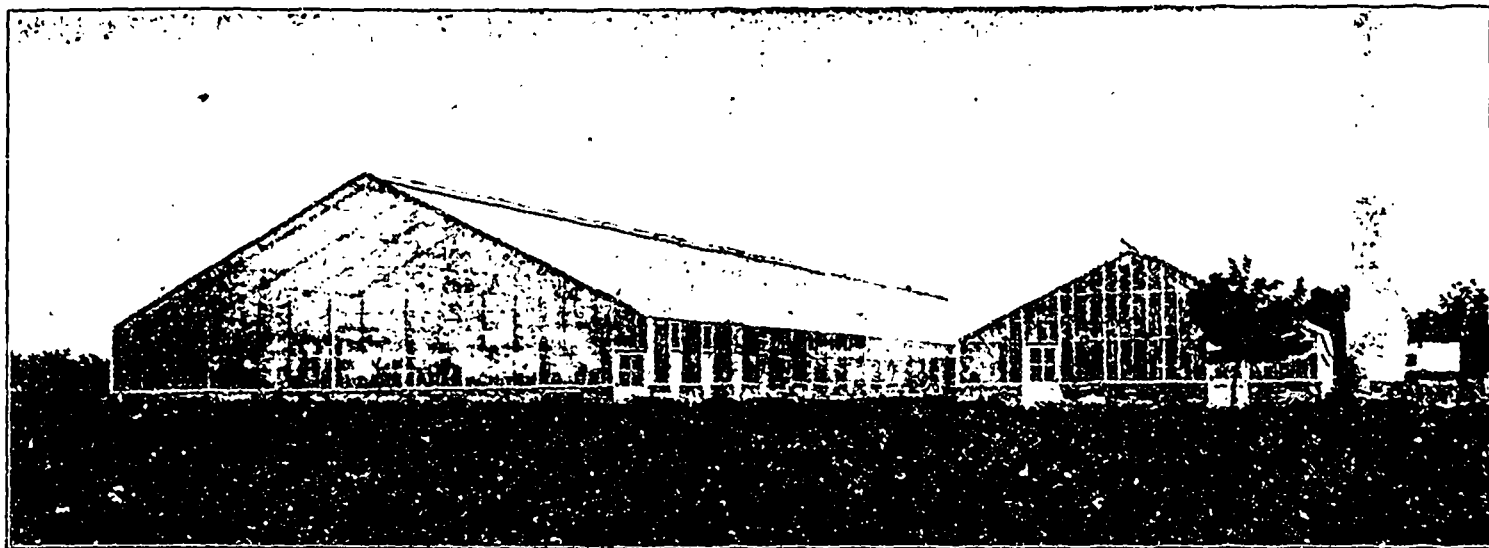
The difficulties of a pure line breeder of any vegetable are very evident in a district where many varieties of one kind are grown. Cross fertilization when it takes place without knowledge is work of no value.

But the difficulties in the way of having specially trained breeders in each district would perhaps be too great to overcome. It would be a good thing to have breeding stations established in a few well-chosen centres supported by the government if private enterprise was unable to cope with the problem. These stations would be in charge of men scientifically equipped in every way, whose duty it would be to raise pure bred stock seed. These stock seeds could be sent to their respective districts where the vegetable growers could establish multiplying plots. From the plots the seed could be supplied for two or three years—not for very much longer as deterioration might set in. Then fresh stock seed could be procured from the station and the district could proceed as described.

The Glass Culture of Tomatoes

R. H. Ellis, Leamington, Ont.

The tomato crop, an illustration of which appears on the front cover of this issue of *The Canadian Horticulturist*, was benched last August, started fruiting in October and finished in January. The plants were trained to a single stem. We used twine and tied them to an overhead wire for support. The plants were set twenty by twenty-four inches. We find that three pounds to the plant is a very good average for this season of the year. The growers who get less than that are more plentiful than those getting that, let alone more. The house shown is one of our sixty-five by two hundred foot houses. The photo wa-



Vegetable Growers are Rapidly Discarding the Old in Favor of the Modern Styles of Greenhouse Construction
These houses are the Lord & Burnham Construction, Toronto, Ont.

taken about the middle of November. It was a good average crop.

Some people would have you think that the growing of tomatoes under glass was just about like going into a mint and helping yourself to gold coin with no restriction. My opinion is that they will know more about it after they have had a little experience. I know several growers who have been getting some of that experience this past winter. Their gross receipts will not pay for the fuel consumed, let alone any of the other ex-

penses. It has been said by one inexperienced grower that he would be quite safe in saying that it would not cost more than ten cents a plant to produce a crop. Most winters it would cost that for fuel alone. It costs four to five cents a pound after the fruit is ripe, to pick and pack it, and deliver it at the express office, saying nothing of the abundance of work required to bring a crop up to that stage. There is good reason, therefore, for warning the would-be tomato grower under glass not to be misled.

Although the season was not as good as 1912 for high production, this shows an improvement on the 1912 crop. Here again is shown the importance of pedigree. The three best rows were from the most productive row of 1912. I do not expect to make much more improvement but by careful selection each year under the Canadian Seed Growers' Association rules I hope to keep the strain at least as good as it is now. In view of the satisfactory results obtained with the Irish Cobbler, I have commenced to select the Rochester Rose, Wee McGregor and Ashleaf Kidney potatoes on the same plan.

Results Obtained from Potato Seed Selection

W. E. Turner, Duval, Sask.

I COMMENCED during the fall of 1909, when harvesting my Irish cobbler potatoes, to select the best roots for planting the next year by digging carefully and keeping each root separate. I then went over the plot and picked out the most productive roots of uniform quality. These I stored in a large box in the cellar, to be planted in the spring of 1910 as a special seed plot.

I selected again from this special plot in the fall of 1910 in the same manner, but during the summer of 1911 I saw the annual report of the Canadian Seed Growers' Association and I found that the Association had a much better system of selection, so I sent for full particulars and rules and when digging in the fall of 1911, selected twenty-two of the most productive roots and stored each root separate in compartments in boxes.

In the spring of 1912 I selected a piece of land that was uniform throughout, being no manure, and planted whole, eight of the best potatoes of each of these roots in a separate row, numbering each row. Of course I expected to find some improvement, but I had no idea the improvement would be so great. When digging in 1912 I kept each row and root separate and then by counting the pota-

atoes found the most productive rows. The best row had an average of twenty-one potatoes per root, the worst row only thirteen per root. This is where the advantage of planting the product of each root in a separate row is found. One can see which row has the best pedigree. In this special seed plot there were eight roots with twenty-five or more potatoes per root, one root having twenty-nine. I selected again twenty-seven of the best roots from the most productive rows, keeping each root separate as before, and the remainder of this plot was put in a special bin for the improved seed plot of 1913.

The special seed plot of twenty-seven rows was planted as before. Eight of the best potatoes were planted whole per row. These were planted on land that had been cropped five times since it had been broken, so I sprinkled a quart of hen manure around each root just as they were coming through the surface. Although the season was too dry for the best results the most productive row averaged twenty-five potatoes per root, and the worst was eighteen per root.

In this special seed plot there were thirty-five roots with twenty-five or more potatoes per root, one root having forty.

Growing Ginseng in Ontario

Dr. H. F. MacKendrick, Salt, Ont.

A few years ago I commenced growing ginseng. The root is the part that brings the money, and at present the grade of roots grown in Canada are bringing the highest price in the open market, being much finer grained and firmer than those grown farther south.

Plant your seeds in September or October, and they will come up in the following spring. Put them in a well drained piece of garden, sandy loam, or any well drained good soil will do, and you will be surprised at the progress of your crop. By raising your own seeds and planting them, each three year old plant will produce about fifty seeds, a four year old about seventy-five seeds and a five year old plant about one hundred seeds, so that quick reproduction may be attained and sufficient seed for sowing purposes may be acquired. This fact if often brought forward as an argument against the growing of ginseng, but to prove the fallacy we have only to consider that it takes ten years to produce a crop of apples, which in past years have also required constant attention and its consequent expense.

The Canadian Horticulturist

COMBINED WITH
**THE CANADIAN HORTICULTURIST
 AND BEEKEEPER**

With which has been incorporated
 The Canadian Bee Journal.
 Published by The Horticultural
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 PETERBORO, ONTARIO

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1. The Canadian Horticulturist is published in two editions on the 25th day of the month preceding date of issue. The first edition is known as The Canadian Horticulturist. It is devoted exclusively to the horticultural interests of Canada. The second edition is known as The Canadian Horticulturist and Beekeeper. In this edition several pages of matter appearing in the first issue are replaced by an equal number of pages of matter relating to the bee-keeping interests of Canada.

2. Subscription price of The Canadian Horticulturist in Canada and Great Britain, 60 cents a year; two years, \$1.00, and of The Canadian Horticulturist and Beekeeper, \$1.00 a year. For United States and local subscriptions in Peterboro (not called for at the Post Office) 25 cents extra a year, including postage.

3. Remittances should be made by Post Office or Express Money Order, or registered Letter.

4. The Law is that subscribers to newspapers are held responsible until all arrearages are paid and their paper ordered to be discontinued.

5. Change of Address—When a change of address is ordered, both the old and the new addresses must be given.

6. Advertising rates, \$1.40 an Inch. Copy received up to the 20th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.

CIRCULATION STATEMENT

The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with December, 1911. The figures given are exclusive of samples and spoiled copies. Most months, including the sample copies, from 13,000 to 15,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

January, 1913	11,570	August, 1913	12,675
February, 1913	11,550	September, 1913	13,728
March, 1913	11,209	October, 1913	13,778
April, 1913	11,970	November, 1913	12,967
May, 1913	12,363	December, 1913	13,233
June, 1913	12,618		
July, 1913	12,626	Total	150,293

Average each issue in 1907, 8,877
 1913, 12,524

Sworn detailed statements will be mailed upon application.

OUR GUARANTEE

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

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

Communications should be addressed

THE CANADIAN HORTICULTURIST,
 PETERBORO, ONT.

EDITORIAL

SELLING FRUIT BY POST

The introduction into Canada, although as yet only on a very restricted scale, of the system of parcels post, adds interest to a postal arrangement now in force in New Zealand. In New Zealand the government has a post and telegraph department. The railways are publicly owned. The government has made arrangements by means of which lists of the different fruit growers' associations participating in the scheme are posted in the various post offices. The lists include the price lists for the various sized packages of fruit offered for sale.

The purchaser on paying four cents to the local post master, is supplied with a stamped coupon. Having decided with which association he will place his order, he writes the address of the fruit growers' association on the stamped side of the coupon; then on the lower portion of the reverse side he fills in his order. He then hands to the postmaster the coupon, together with a postal note for the amount of the purchase price of the fruit plus the necessary carrying charges, as set out in the regulations. Thus, he prepays for the fruit and the postal charges. The postmaster then forwards the order to the fruit growers' association, the four cents covering the charge for forwarding the order.

When the secretary of the association receives the order he forwards the fruit, and then fills in the top portion of the coupon and sends it into the post office from which it was delivered, where it is retained as a receipt for six months. Cases of fruit must be delivered by the vendor at a railway station or at a wharf served by a steamer having contract with the railway department. House to house delivery of the fruit is undertaken at places where the railway department has a cartage contract.

The post office acts as agent for the buyer only and therefore assumes no responsibility with reference to the quantity, quality or condition of the supplies, nor for any delays that may arise in execution. In sending fruit forward shippers are permitted to bulk the individual parcels that go to the same destination.

The New Zealand system has been in operation only a few months. Should it prove successful it ultimately may mean much to Canadian fruit growers.

THE JORDAN STATION

For years The Canadian Horticulturist has contended that the Jordan Harbor Experiment Station should be devoted principally to the advancement of the tender fruit and vegetable interests. Situated, as it is, in the heart of the only tender fruit district in Eastern Canada, it is largely a waste of time, opportunity, and money to conduct experiments at this station with the more hardy varieties of fruit, which might be conducted to even better advantage in other sections of the province.

The addition of a number of experienced fruit growers to the advisory board of the station has already tended to effect an improvement in the management of the station. We understand that it is their desire that the land at the station shall be reserved chiefly for plant breeding and variety experiments. If this is the case, the

provincial Minister of Agriculture may rest assured that if a move in this direction is decided upon it will meet with the hearty approval of all those most interested in the success of the station. Most of the experiments that have been conducted in apple culture might better be carried out at other points in the province. Ontario has an opportunity to make the Experiment Station at Jordan Harbor one of the most noted on the continent.

"BIG BUSINESS"

This is the age of "Big Business." In every line of industry we see mergers and combines being formed. Nor are such combinations unnatural. Centralization means economy; and economy means greater profits.

The fruit growing industry has not been exempt from the centralization idea. From small beginnings we have seen a large number of cooperative associations spring up in the various fruit growing sections of Canada. The tendency is towards still greater centralization. In Nova Scotia, upwards of thirty cooperative societies have combined to buy supplies and sell fruit through a central organization. In the Okanagan Valley, B.C., the various local fruit unions have formed a central selling agency. Within the past year twenty-four Fruit Growers' Associations in Ontario have organized a similar selling organization.

This is as it should be. In the Annapolis Valley previous to the formation of the "United Fruit Companies," the various associations were in competition with one another. Now all fruit is sold on the same basis and the growers' returns are increased. At the same time the consumer has not paid any more than formerly because the large number of agents and dealers who before handled the crop are not now necessary.

The formation of these central agencies has meant that each separate association could do away with its own selling department. As a result, greater economy and uniformity in methods have been possible. Fruit growing needs "Big Business" methods as much as do other of our important industries. The organization of central associations is in harmony with the trend of the times.

Elsewhere in this issue appears a reference to the splendid work that has been accomplished in the Dominion Capital by the officers of the Ottawa Flower Guild, including those two well-known enthusiasts, Messrs. R. B. Whyte and W. T. Macoun. The gratifying results that have attended the work of the Guild afford inspiration for the growing number of enthusiasts who are advancing similar work in other towns and cities throughout Canada. In Ottawa thousands of children have been led to take a deep interest in horticulture through the efforts of the Flower Guild. Similar methods followed in other cities should be attended with equal results. Societies that are thinking of conducting this work this year will be able to obtain much helpful information by writing to the officers of the Ottawa Flower Guild for particulars regarding their methods.

The strenuous opposition that has been raised to the efforts of the members of the Ontario Vegetable Growers' Association to cooperate in the purchasing of supplies has not dampened, apparently, the determination of the officers of the association to

proceed with this line of work. This is only what might be expected. Opposition of this character only tends to convince those who are at the back of such movements that it springs from selfish motives that are inimicable to their interests, and thereby is likely to lead them to put forth renewed efforts.

PUBLISHER'S DESK

Our front cover illustration this month shows the interior of one of the greenhouses of Mr. R. H. Ellis, Leamington, Ontario. Mr. Ellis is one of the most successful growers of early tomatoes in Ontario. The splendid crop shown in the illustration is an indication of his ability.

The April issue of The Canadian Horticulturist will be our Third Annual Spring Planting and Gardening Number. In April the gardening fever seizes most amateurs with its greatest force. This issue will be filled with articles that will give them just the information they are most likely to need at this season of the year. Our gardening numbers in 1912 and 1913 proved most popular. We anticipate that this year's number will please our readers even more. The front illustration will show a beautiful garden, the attractiveness of which is heightened by a well-arranged pergola. This will be the finest front cover of the kind we have ever published on The Canadian Horticulturist. Among the special articles the issue will contain one entitled "Orchids, the Goddesses of the Flower Family," by Mr. F. E. Buck, of the Central Experimental Farm, Ottawa. This article will be a description of the successful methods followed by ex-Mayor J. A. Ellis, M.L.A., of Ottawa, an amateur grower of orchids who has met with great success. An article on orchids written by Mr. Ellis, and published in The Canadian Horticulturist some time ago, attracted so much attention we have been led to obtain this special article as the result of a special request that we should do so.

"A Perennial Border at Small Cost," illustrated with a diagram, will be the title of a practical article by a young woman contributor in Quebec, whose record of practical experience should prove most helpful. Mr. Wm. Hunt, of Guelph, will write on "Planting Notes for the Spring-time," and Mr. J. McPherson Ross, of Toronto, on "Plans for This Year's Garden." One of the most successful rose growers in Canada is Mr. Jas. M. Bryson, gardener for Mr. Moore, the well-known rose enthusiast of Toronto. A feature of our April issue will be an article by Mr. Bryson on rose growing. The foregoing are only some of the interesting subjects that will be discussed in the garden section of our April issue.

In the vegetable department of the April issue of The Canadian Horticulturist two articles of special interest that will appear will be entitled "Progressive Vegetable Culture," by S. C. Johnson, B.S.A., who will give the results of a visit to the establishments of some of the large vegetable growers in the United States. A second article will be entitled "Irrigation and Its Practical Results." This will be a report of one of the best addresses delivered at the last annual convention of the Ontario

Vegetable Growers' Association by Mr. J. J. Davis of London, Ontario. The fruit department of the paper will as usual be strong. It will include an article by a prominent Nova Scotia grower, pointing out the necessity for Canadian fruit growers so perfecting their methods now that they will be ready for the greatly increased production of fruit that it is anticipated will take place during the next few years. Don't miss our April issue.

Last year the April issue of The Canadian Horticulturist made a record that remained unbroken throughout the year. This indicates that advertisers who desire to ensure their advertisements receiving the best positions and attention in our April issue should endeavor to have their copy reach us early. As the April issue will be a money-getter for the advertisers who take advantage of the opportunities it offers our advertisers are advised to have their copy reach us by the 10th to 15th of the month. After that date it will be more difficult for us to give them the service we would like.

SOCIETY NOTES

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

A Progressive Society*
Dr. F. E. Bennett, St. Thomas, Ont.

Back in the fall of 1910, when I was elected president of the St. Thomas Horticultural Society, I found a membership of one hundred and twenty-four, but not much work being done. Nothing had been done along the lines of public flower beds and little along educational lines. Realizing that something must be done if the society was to become a power in St. Thomas, I consented to accept the presidency only on condition that one hundred dollars be granted for the laying out of fifteen flower beds on the wide boulevard which parallels the Michigan Central tracks for over a mile. These flower beds cost us six dollars each, the flowers being bought of a local florist.

From the first the people of the city showed their appreciation of our work, with the result that when we canvassed for new members we secured three hundred and thirty-seven. In the following summer we revived the lawn and garden contests, one hundred and twenty-five members entering. Liberal prizes were offered, but we found that the number of classes was too limited, as, for instance, in the garden competitions, the working men's gardens coming in the same class as the gardens of those who could afford to employ gardeners to tend them.

Monthly flower shows were organized, starting with tulips and spring flowers, then peonies, then roses, and so on through the summer and fall, each class of flowers in its turn. Where did you hold these shows, you ask? We held them in store windows, and to this fact I largely attribute the big growth of the St. Thomas Society. Each succeeding show was an increasing success until with the last it was a problem to accommodate the entries. The shows were

*Extract from an address delivered at the last annual convention of the Ontario Horticultural Association.

always held on Saturdays, which being market day, and a kind of parade day, enabled large crowds of sightseers to see something of what the society was doing. The show windows were the objective of large crowds all day and especially in the evenings.

With the store windows exhibits the people can hardly help seeing the beautiful flowers and becoming first interested and then converted to the aims and objects of the Horticultural Society. We charge no fees for these shows, because the people who can afford to pay and would pay are those who already grow flowers and are already converted. The society furnishes receptacles for the flowers which become the property of the society.

Now there is always a big demand for these prize winning and show flowers, and much money could be made by selling them, but we have adopted in St. Thomas what we believe to be the better way, in that it has helped immensely in popularising the society and its work. We ask the pastors of all the churches to provide us with the names of any sick and aged people of whom they know, and early on Sunday morning autos are called into service and the bouquets distributed, each bearing a neat little card, tendering the compliments of the society to the recipient. Try this in your own town if you wish to make friends for your society.

Then, too, in this distribution of one of nature's finest gifts to man, "the stranger within our gates" is not forgotten, the poor foreigner in the hospital receiving a bouquet along with the rest. Nor are the old folks in the Home forgotten; some of the best are always saved for them, and I wish some of you could be with me and see the faces of the poor old ladies, "somebody's mothers" brighten as they gaze on and touch with almost reverent care, the flowers that remind them of days when fickle fortune smiled on them from some almost forgotten flower bed.

Another membership campaign is on, and from a membership of three hundred and thirty seven we have jumped to seven hundred and eight, with every prospect before the campaign of 1914 closes of over twelve hundred. Here are some of the many reasons given for joining the society: "We like the flower shows"; "We like the public flower beds"; "Everybody seems to be cleaning up"; "We value the premium you give"; etc., etc.

It has been customary to give each member a rose or shrub and a dozen bulbs, and The Canadian Horticulturist. This year sixteen optional premiums have been arranged. Last fall we gave away sixteen thousand bulbs and have imported ninety thousand more for our members at cost price; some of the options are one hundred and fifty bulbs, another is four of the best hybrid roses.

Vancouver

The members of the horticultural society assembled in the small Pender Hall on the evening of February 4th, to listen to Mr. D. D. England, special lecturer for the provincial government, deliver an address on "Lawns and how to make them." Mr. England spoke very interestingly on the subject of seeding, the proper time, the right kinds of seed to use under certain conditions, and also on the subject of watering lawns to the best advantage. Many questions were asked.

Cooperation in Marketing Apples*

S. C. Parker, Berwick, N.S., Past President N.S.F.G.A.

THE apple growing area in Nova Scotia is limited and always will be. For practical, commercial purposes the Annapolis Valley is the orchard area of Nova Scotia. This valley is about one hundred miles long and from two to ten miles in width, protected on the north and south by ranges of hills, called by courtesy mountains. This is where we grew two million barrels in 1911, and expect to grow five million barrels before 1920.

The beginning of apple growing in Nova Scotia was many years ago. The early Acadians had their apple trees, and small orchards were planted up and down the Valley from Annapolis to Windsor. There are trees now bearing apples that are known to be more than two hundred years old. Producing apples on a commercial basis, however, is of much more recent origin. About thirty years ago the increase was such that the growers began to look for markets away from home. The English market seemed the best opening and shipments were made from time to time to those markets. There were few local buyers, the business was too small to draw in outside capital and these early shipments were usually consigned. The farmer was not only grower but packer and consignor. Out of this method grew a system of cooperation. A number of growers would often be represented in the same carload and hundreds in the same cargo. In the meantime the English commission houses were catering to the growing trade and placing representatives in the orchard sections to solicit consignments. More than a score of English houses had their representatives in the Annapolis Valley. These had their agents and sub-agents at every station in the fruit district, and these subs had subs. Indeed, it recalled the old story of the parasites:

"The greater fleas had little fleas
Upon their backs to bite 'em;
The lesser fleas had smaller fleas,
And so ad infinitum."

Thus, there was an army of middlemen preying on the producer. These people would take charge of a consignment, no matter how small, combine them in carload lots, and forward to the English houses. The return commission, rebates and steals often gave them fifty cents a barrel on the farmers' crop; and when this crop ran into the hundreds of thousands of barrels it was a good business. This was a species of cooperation but under this system the middleman was getting rich and the producer often growing poorer.

METHOD OF ORGANIZATION

The question of cooperation had been talked about many times. Several attempts were made and failed, possibly because the proposed scheme was too ambitious. About seven years ago the first successful scheme was launched on a very modest scale. The Berwick Fruit Company, Limited, was organized, made up of six members with a nominal capital of \$10,000. In the first year this company handled about seven thousand barrels. It was a success from its inception. The second year the membership increased and eighteen thousand barrels were handled. The third year, although

the capital was increased, the stock was quickly taken up and it was found necessary to refuse any more members admission. That year the company packed and shipped thirty thousand barrels.

At the end of seven years they have a packing house one hundred and seventy-five by sixty feet, an evaporator and all facilities for handling seventy-five thousand barrels annually. Encouraged by the signal success of the Berwick Company new organizations sprang up. Three others were organized at Berwick and some thirty-five or forty operated in the Valley this season.

The organization is extremely simple. A general act was passed by the Provincial Legislature entitled: An Act to Encourage the Organization of Cooperative Fruit-Packing and Shipping Companies. This act provides that any three persons may organize for the purpose of packing, shipping, marketing, warehousing fruit or farm produce, buying and selling flour, feed, fertilizers, farming tools, making barrels or practically anything used on the farm.

The barrels used are often made by the farmer, usually in cooper shops near the farm. Every village has its cooper shop. The Nova Scotia barrel is crude in appearance but it is cheap and strong. I do not think we would consent to change it; it serves as a trade mark in markets where best known.

In the cooperatives there is no individual packing. The farmer picks his apples and delivers them in barrels to the packing house. There they lose their identity and become part of the company output. Each variety is averaged and the farmer is paid the price of his apples, less the packing charges.

After a few years' experience of the local companies it was felt that the time was ripe for the next step in cooperation. There were some twenty local companies at work, each independent of the other and competing with the same goods in the same markets. After a year of experimenting the local companies got together and organized a central company—the United Fruit Companies of Nova Scotia. In this central organization the local company is the unit, taking the same place in the larger organization that the individual does in the smaller. Each local unit must subscribe twenty per cent. of its capital stock to make up the capital of the central; and each local appoints a representative, usually the manager, on the board of directors of the central. All the apples packed by the local companies are marketed by the United Fruit Companies, and in this organization the fruit is also pooled, the local being paid the average price for the season on the output.

A LARGE ENTERPRISE

The most sanguine of the builders of this organization did not realize what a tremendous scheme they were floating. Neither did they expect the great machine would run without friction as it has done, and become in one year a power in the fruit market of the world. In 1912 and 1913, the first year of its operation, the United Fruit Companies handled three hundred and sixty-seven thousand barrels of apples, nearly one-half of the output of Nova Scotia. The price returned was very satisfactory, for instance:

Gravensteins netted, No. 1, \$2.07; No. 2, \$1.77; Duchess netted, No. 1, \$2.09; No. 2, \$1.99; Kings netted, No. 1, \$2.25; No. 3, \$2; Golden Russets netted, No. 1, \$3.05, No. 2, \$2.32.

The central office bought and distributed among the subsidiary companies: Eight hundred thousand pulphheads, seventy-one thousand pounds of grass seed, fifty-four thousand pounds vetches, five thousand eight hundred tons of fertilizer, eight hundred and thirty-five barrels lime sulphur, five hundred kegs nails, fourteen hundred barrels of flour, eight thousand bags feed, fifty-six thousand pounds of arsenate of lead.

It paid for the foregoing, spot cash, one hundred and fifty-three thousand dollars. It is estimated that on fertilizers alone we saved eighteen thousand dollars to the farmers in the companies, while those outside reaped a corresponding benefit, prices falling generally, three dollars a ton.

The United Fruit Companies have in addition to their office at Berwick, offices in London and Halifax. They employed a traveller during the fruit season, and an organizer and instructor during the entire year. Now, just a word in regard to the cost of this efficient organization. The total cost of the central association amounted to fourteen thousand six hundred and sixty-one dollars. In earning and saving for the year, the central made twenty-four thousand seven hundred and sixty-six dollars. Thus the entire expenses of the United Fruit Companies, including salaries, traveling, cable, telephone and telegraph, upkeep of offices in Berwick, Halifax and London, have been paid out of direct earnings and savings, all effected, and could only have been effected, by centralization. In addition, five thousand dollars were placed in reserve on capital account and more than five thousand dollars rebated to the subsidiary companies.

Just one concrete instance of how savings are effected by centralization. The Carters' Union in London have from time immemorial charged four pence per barrel, cartage. Our representative there last year found people who would do the same work for three pence. This one item saved the companies eight thousand dollars.

In conclusion I may say that the few years' experience in cooperation, have practically revolutionized the fruit business in Nova Scotia. Some thirty-five local companies are working this season, most of them in cooperation with the central. The people generally, are watching its progress carefully. The machine seems to be working perfectly, and if no serious errors are made a very few years will see the enormous apple business of the Annapolis Valley controlled by one organization—the United Fruit Companies of Nova Scotia.

Important Regulations

The following additional regulation under The Destructive Insect and Pest Act was passed by Order in Council, December 4th, 1913: Regulation 18—"The importation of all nursery stock, including trees, shrubs, plants, vines, grapes, scions, cuttings or buds, through the mail is prohibited, excepting greenhouse-grown florists' stock, cut flowers, herbaceous perennials, and bedding plants, which will be admitted, provided that a detailed statement of the contents is attached to such parcels." This regulation is to take effect on and after the first day of March, 1914.

*An address delivered before the annual convention of the Ontario Fruit Growers' Association, November, 1913.

FREEMAN'S BONE MEAL

BEST ON EARTH

MORE PHOSPHORIC ACID TO THE DOLLAR'S WORTH THAN IN ANY OTHER FERTILIZER

Send for Booklet on Fertilizers and Fertilizing with Guaranteed Analysis

WATCH FOR THE TRADE MARK.

The W. A. FREEMAN CO., Ltd
223 HUNTER ST. E., HAMILTON.

Vegetable Growers are Active

The annual meeting of the directors of the Ontario Vegetable Growers' Association was held in the office of the secretary, J. Lockie Wilson, Parliament Buildings, Toronto, on February 4th. Delegates from the different branches were present, and were enthusiastic over the work being done by the association.

The purchasing agent, Mr. W. J. Kerr, stated that the cooperative buying had been a financial success. He was perfectly satisfied with the work that had been accomplished during the year. The last bulletin issued to the members contains quotations on flower seeds, fertilizing and spraying materials, as well as on vegetable seeds.

It was decided to continue the vegetable field crop competitions in onions, tomatoes and celery.

A vegetable tying machine was on exhibition during the afternoon, and after the delegates had examined the work done by this machine, they passed the following resolution:

"That the Saxmeyer Vegetable Tyer exhibited and operated at our annual meeting is a labor saver and would be of material assistance to vegetable growers, and as these machines cost \$90 in the United States and the duty is \$26, we would respectfully recommend that the duty be removed from tying machines until such time as they are manufactured in this country."

There was a pleasant break in the routine of business when the delegates presented Mr. Thos. Delworth, of Weston, with a gold watch as a token of their appreciation of the practical interest he had taken in the work of the association. The secretary, J.

Douglas Gardens
OAKVILLE, ONT.

Early orders for the following Plants are specially recommended for the coming Spring season, viz.:

- Antirrhinum (Snapdragon), including pink, 10 for 60c.
- Aster, China, 6 vars., 10 for 25c, 100 for \$1.25.
- Geraniums, 5 vars., 10 for \$1.00.
- Salvia, 2 vars., 10 for 75c.
- Scabiosa, 10 for 60c.
- Stocks, 2 vars., 10 for 25c.
- Dahlias, plants only, 11 vars., 10 for \$1.25.
- Delphiniums, Gold Medal Hybrids, 10 for \$1.50.
- Aquilegia (Columbine), 2 vars., 10 for \$1.25.
- Iris, 22 vars., 10 for \$1.25 and up.

For descriptions, etc., of the above and of many other plants, see Spring Planting List sent free on application.

Above prices include carriage prepaid.

JOHN CAVERS

FLOWER POTS

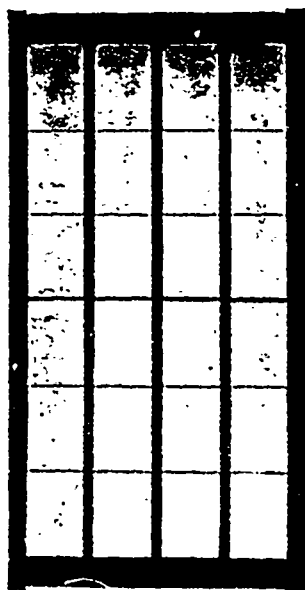


Large stock of all sizes for the Spring trade.

Send us your order NOW and receive your supply before the Spring rush.

THE FOSTER POTTERY CO., Ltd.
HAMILTON, ONT.

RED CYPRESS HOT BED SASH



Size 3 ft. 2 in. by 6 ft. for 4 rows of 8 in. butted glass.
Price, \$1.20 in Clear Cypress.

What a pleasure to have home-grown vegetables and flowers weeks ahead of the regular season. A hot bed fitted with our superior Hot Bed Sash will ensure this.

DURABLE

Our Hot Bed Sash are made of the very best material, put together to withstand the most severe usage, and are guaranteed to last for years.

All the joints are tight fitting, blind mortised and white leaded before being put together. A half-inch oak rod runs through the bars and into the stiles. A metal pin is driven into each of the bars and stiles through the rod. In this way each bar is held in the proper place and prevented from sagging.

Folder Sent on Request



Size 3 ft. by 6 ft. for 3 rows 10-in. lapped glass.
Price, \$1.15 in Clear Red Cypress.

BATTS LIMITED 374 Pacific Ave. **West Toronto**

This is the Book that will show you
how you can have a
**BEAUTIFUL OLD
ENGLISH GARDEN**

THE OLD ENGLISH GARDEN owes much of its charm to the beauty of its simple herbaceous plants.

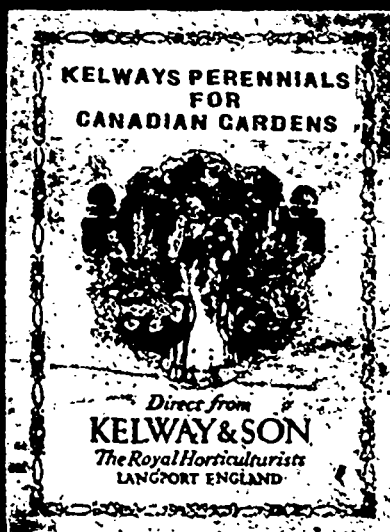
KELWAY'S COLOUR BORDERS of Paeonies, Delphiniums, Pyrethrums, Gailardias and the like will enable you to reproduce this picturesque effect under almost all conditions of soil and climate. Borders are planned to fill any space, and on receipt of dimensions, carefully selected plants are sent beautifully packed, labelled and numbered in order for planting.

The cost is \$6.00 for every 10 square yards.

Full particulars and illustrations are given in the Kelway Manual of Horticulture mailed Free on receipt of 60c, by

KELWAY & SON
LANPORT - SOMERSET
ENGLAND

Write for a copy of this useful book
It comes to you by return mail



Lockie Wilson, was also the recipient of a token of esteem of the representatives sent.

The following officers were re-elected by acclamation for 1914:

President, C. W. Baker, London; 1st vice-president, W. J. Kerr, Woodroffe; 2nd vice-president, F. F. Reeves, Humber Bay; secretary-treasurer and editor, J. Lockie Wilson, Toronto. Representative to Canadian National Exhibition, Thos. Delworth Weston, Representatives to Horticultural Exhibition, Messrs. J. W. Rush, F. F. Reeves, Thos. Delworth, and James Danbridge.

Annapolis Valley Notes

The annual meeting of the Nova Scotia Fruit Growers' Association is looked forward to by larger and larger numbers each year as something that no up-to-date fruit grower can afford to miss. This association held their fiftieth convention in January at Kentville, and had one member present, Mr. R. W. Starr, of Wolfville, who has been in attendance at every meeting since the Association was organized in 1863.

In no other place in Canada is apple scab quite so troublesome and hard to control as in the Annapolis Valley, and the fruit-growers gave the closest attention to Prof. L. Caesar of Guelph, in his address on the "Apple Scab and its Control." Many who had almost despaired in trying to grow clean apples, had their faith restored after listening to Prof. Caesar, and this coming season will use the spray pump more vigorously than ever. The time of application seems to be the vital factor, but thoroughness in applying and a good pump are also essential.

All winter apples bring record breaking prices, some good number three nettings as high as three dollars, and number ones from four to six dollars according to variety. Like the forty cent eggs, however, the big prices only come when there are few apples to ship.

The United Companies are just closing the most successful year since their organization, and have handled no less than sixty per cent. of the crop of the Valley during the present season. Their next forward step will be in the direction of some system of pre-cooling for fall varieties of apples at their various warehouses. Thousands of dollars were lost to the fruit-growers last autumn from the rapid ripening and decay of the softer varieties during the warm weather of the fall.—M.K.E.

Okanagan Valley North

Charles Webster, Armstrong, B.C.

The past season has proved that the "Okanagan United Growers" is thoroughly organized for its purpose—selling and buying cooperatively. It must be said of members in this northern part of the valley that they stood loyally by their association. Mistakes have perhaps been made. Opposition from a few established firms, who refused to sell their business, has been keen. This, however, does not alter the fact that the countries or districts where cooperation is established are the most prosperous. Another year of earnest endeavor should put the big concern on a thoroughly satisfactory footing.

We have a contribution to the high cost of living: Celery, for which Armstrong is justly famous throughout Western Canada, realized the growers here 2½ and 2¾ cents

NEW AND RARE SEEDS

Unique collection. Hundreds of varieties adapted for the Canadian climate. Perennial and perfectly hardy. Own sowing. Catalog free.

Perry's Hardy Plant Farm
ENFIELD, MIDDLESEX, ENG.

COMB FOUNDATION

Write for our prices before getting your wax made up. We can please you. Wax taken in exchange at market prices.

LEWIS MINOR, SMITHVILLE, ONT.



BUY CARNIOLANS IN CARNIOLA

Pure Carniolan Alpine Bees
Write in English for Booklet and Price List. Awarded 60 Honors.

Johann Strgar, - Wittnach
P.O. Wocheiner Feistritz
Upper-Carniola (Krain), Austria

Bees and Bee Supplies

Roots, Dadants, Ham & Nott's goods.
Honey, Wax, Poultry Supplies, Seeds, etc.

Write for a Catalogue

THE CHAS. E. HOPPER COMPANY
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FOR SALE

Swarms of young bees in packages. Replace winter losses and strengthen weak colonies with young, healthy Italians. 1/2-lb. packages, 90c. each; 1-lb. packages, \$1.25 each; 2-lb. packages, \$2.45 each. Untested Italian Queens, the three-banded hustlers, 75c. each. We guarantee safe arrival. Write for wholesale prices.

BROWN & BERRY

HAYNEVILLE - - ALABAMA

QUEENS

Bred from Doolittle's best Italian stock. It is to your advantage to book your order now. One dollar each.

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Safe arrival guaranteed

STRAWBERRIES

Your copy of our Strawberry Catalogue is now ready. A Post Card will bring it. It describes all the best varieties of Strawberries and Raspberries. Cultural directions and lots of other valuable information.

THE LAKE VIEW FRUIT FARM

H. L. McConnell & Son Grovesend, Ontario

First-Class Commercial Gardeners Wanted

A few good market garden properties for sale or rent. Locations good, prices and terms attractive. Cheap natural gas for greenhouse fuel. Write for details to

O. PATTERSON FARMER - Jeannette's Creek, Ontario

THE BEEKEEPERS' REVIEW

would like very much to enroll a goodly number of new subscribers for the year 1914. Listen! Besides the 3,000-colony series managed from one office, we will begin with the January number of the REVIEW a series of articles by a beekeeper "grey with experience" that we will call the Farmers' Series; or, How to Produce Comb Honey with Two Visits a Year. The editor of the REVIEW has looked into this system quite thoroughly, and believes that, with this method that will be described in the REVIEW during 1914, the busy man or farmer can harvest much more comb honey per colony, with about a fourth the work that is required with the ordinary system now in vogue. All progressive beekeepers should subscribe for two or three good bee journals. We are making a special low price on the REVIEW when clubbed with other bee journals.

Here is a (CLEANINGS, one year, \$1.00) Both, one year, for \$1.50
good one: (The REVIEW, one year, \$1.00)

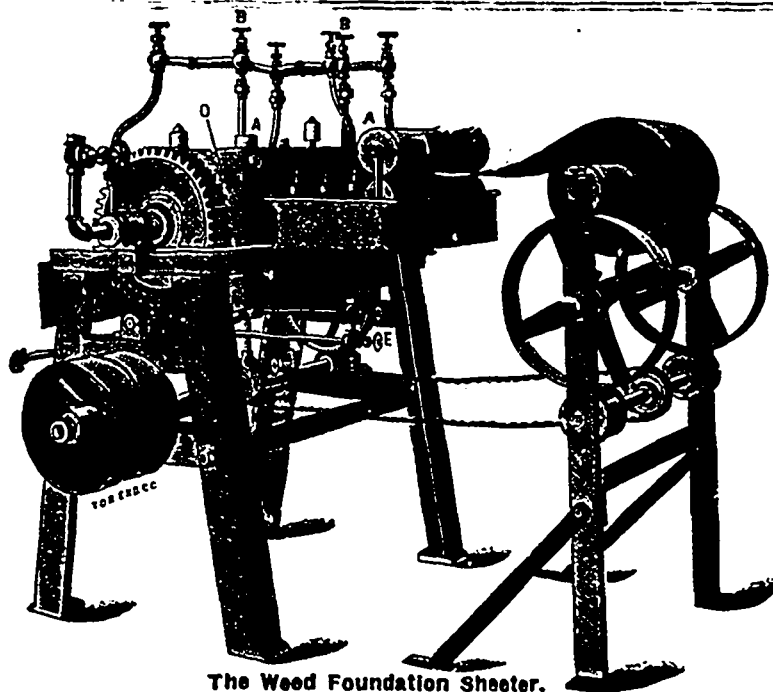
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Extra for Canadian postage: Cleanings, 30c; American Bee Journal, 10c.
All three listed above 40c.

To take advantage of this low price all remittances should be addressed-

THE BEEKEEPERS' REVIEW - - - NORTHSTAR, MICHIGAN

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The Weed Foundation Sheeter.

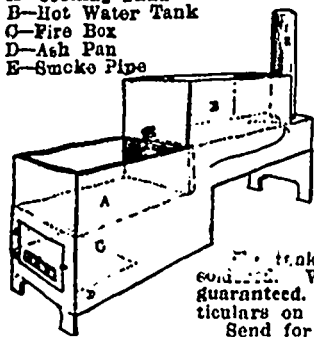
FOUNDATION made by this process excels all other in strength of texture. This combined in nice, straight uniform sheets, with good cell walls and thin base, gives it world-wide reputation for general excellence of quality. So much better than the ordinary, and costs no more—Try it.

Customers Wax made up by "Weed Patent Process"

Beeswax taken in payment of making at trade prices if desired

THE HAM & NOTT CO. Limited
BRANTFORD, ONTARIO

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



Make Your Own Spray

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

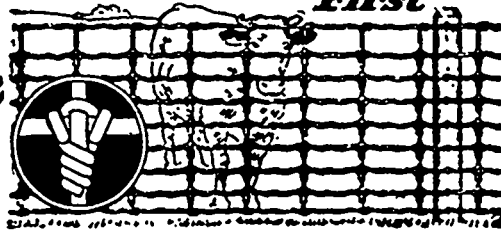
It is an easy matter to make home bolled lime sulphur. The chief essential is a proper spray cooker. We manufacture two kinds of cookers, one with a single tank, and one with a double tank. (See illustration.) They are designed especially for this purpose, and will give the greatest efficiency with the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

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

Send for pamphlet illustrating the finest pruning saw on the market

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

Frost Fence First



On Both Sides of the Fence

YOU can judge a FROST FENCE by both sides—the outside and the inside.

Outwardly, a FROST FENCE is a pleasing thing to see. It stands straight and strong, well made and even all along its length. The extra heavy galvanizing it receives, defies rust and weather and makes it look well year after year. Observation will prove to your complete satisfaction that

A Frost Fence is Good to Look At

when it is first put up and when it has been up for years.

Inwardly—and here's where it counts most—the quality of FROST FENCE is the quality of the best Number 9 Hard Steel Wire, for we use nothing else. By using a wire of smaller gauge here and there, we could produce a lighter and cheaper fence, but then it wouldn't be FROST FENCE as you know it and as Canada expects it.

Did you know that we get a long start over other fence firms by making our own wire? Only that way are we sure of the sterling quality and fault-free perfection of every foot of wire in FROST FENCE. We have a strong claim to your trade in the very fact that

We Make Our Own Wire

The lock we use is unique in fence-making. Notice how it is wrapped around both stays and laterals, with a doubly secure wrap. That lock is a big factor in FROST FENCE satisfaction.

The nearest FROST dealer can give you more facts and a practical demonstration. If you are not already acquainted let us introduce you.

Write us direct if you can't get FROST FENCE.

We may need an agent in your district.

52

Frost Wire Fence Co.

LIMITED

HAMILTON - ONTARIO

per pound, and was selling in Calgary for 15 cents a pound. Of course, handling, crating, and expressage has to be allowed for. Nevertheless, someone is getting more out of it than the producer. The public market, somewhat despised at present, I fear, may yet have to be called into service to reduce the cost to the consumer. Anyway, the producer and consumer must get closer together by their own efforts; those who stand between will not voluntarily reduce their charges.

The New Tariff Conditions

R. R. Sloan, Payfield, Ont.

Just what effect the change recently made in the tariff regulations of the United States will have on the Canadian fruit industry is hard to foretell. Sneaking from a producer's standpoint, I believe they will somewhat stimulate the prices of some of our Canadian fruit, more especially in Ontario.

There is always a certain amount of demand for such varieties of apples as Spies and Russets on the American market. Now the duty is somewhat lower, I think this demand will gradually increase.

When the crops are light in the States then we may look for a good market there, but when the American crop is heavy then we will have more difficulty selling in the United States markets. A few years ago we disposed of two crops of apples to a Chicago firm, but they found that the duty was too high to continue the business. We found Chicago to be a good market for Spies, Golden Russets, and Talman Sweet. Now the tariff has been lowered, this market may be again available. One thing we may be certain of it that if we grow good Ontario fruit of any kind, we need not fear the competition on any market.

Canning Apples

C. Smith, Highland Creek, Ont.

One of the problems before the apple growers is to increase the consumption of apples. One way to do this is to can apples after they have been peeled, cored, sliced thin, sweetened and baked about four hours. Prepared in this way they are delicious. They compare with apple sauce about the same as strawberries with prunes. They can be used in various ways.

With the use of modern machinery for peeling, coring, and slicing, they can be prepared much more economically than by the small consumer; the fact is the consumer will not take the time to prepare them.

The advantages over evaporated apples would be: they retain their flavor; they will keep indefinitely; they are not exposed to dust and dirt.

If the factories were located in producing centres it would solve the problem of transportation, cold storage and commission men and save the cost of barrels and packing. The grower would haul his apples to the factory as needed during the winter. I don't say that it would save all the cost of transportation, storage and commission, but they would be much more simple and less costly.

The factories now in operation would be able to keep their capital and employees busy the year around. The difference in the price now paid by the consumer and that received by the producer is too great. I advance this suggestion for the consideration of others better informed than myself.



**EVERY DAY IS RIPE GRAPE DAY
IF YOU HAVE
ONE OF OUR GREENHOUSES**

THINK of the pleasure of going into your glass-enclosed grape arbor and picking such fine big full clustered grapes as these! Then think of having a continuous supply of various varieties from Muskat of Alexandria to Gros Colcemans, from May Day to Christmas Day!

Not just grapes, mind you, but beautifully colored, meaty, winy flavored fruit, the finest that can be grown.

A three-compartment graperie will give you the extreme limit of crop extension.

A simple lean-to, cool graperie built against a wall, will force your crop along a month to six weeks, without any fuel expense whatever.

So you see graperies are not the luxury imagined.

If you can afford an automobile for instance, you surely can afford one of our graperies or greenhouses.

Wouldn't you like to know what a house like the one below costs?

And by the way—why not attach your greenhouse directly to your garage. It has several advantages, done that way.

Let us send you our printed matter particularly pertaining to greenhouse and garage link-ups.

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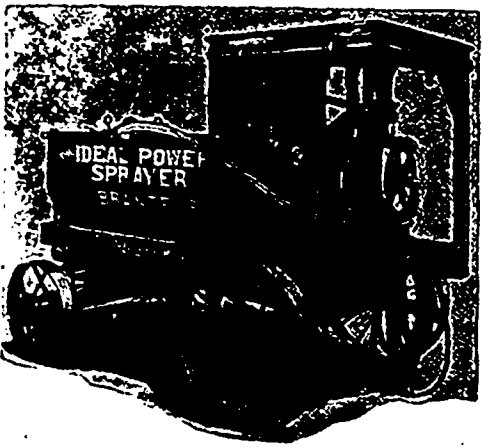


BEZZO'S FAMOUS PRIZE ASTERS
Prizes—New York State Fair, Canada National Exhibition and Berlin Horticultural Society. Price \$1.00 per hundred. Watch this space next month for list of varieties. Special prices to Horticultural Societies.
C. MORTIMER BEZZO - BERLIN, CANADA

COMING Annual Spring Gardening and Planting Number, out April 1st. (See Publisher's Desk).

Send your consignments of APPLES to the Home Country to
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COVENT GARDEN
LONDON, ENGLAND
who specialize in APPLES and PEARS during the Season. Personal attention, prompt account sales and remittance
Correspondence invited

THE BRANTFORD IDEAL POWER SPRAYER
CANNOT BE EXCELLED



We also manufacture complete lines of Gas and Gasoline Engines, Windmills, Tanks, Grain Grinders, Steel Saw Frames, Water Boxes, Pumps, etc.
Catalogues describing our different lines, sent on request:
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RENNIE'S I.X.L. TOMATO

**EXTREMELY EARLY,
WONDERFULLY
PROLIFIC**



A week earlier than the Earliana. More productive than the Chalk's Jewel. As large as the Plentiful. As solid as the New Globe. In fact, the world's leading extremely early Tomato.

In our field tests, I.X.L. Tomato proved to be a week to ten days earlier than the Spark's Earliana, with an abundance of fruit larger and more prolific than Chalk's Jewel; in fact, any number of specimens could be found as large as the Plentiful Tomato. The I.X.L. Tomato is without a single exception the leading extremely early Tomato. Do not experiment with it, but plant your entire early crop in I.X.L. Tomato. Your crop will net you big returns.

1. A beautiful, brilliant red color.
2. Vines are a perfect mass of large, smooth fruit, a single plant yielding 1 bushel.
3. Fruit is extremely early, enormously abundant, ripens all at once.
4. Vines compact and can be placed two feet apart in three-foot rows.
5. The largest growers tell us that we cannot say too much in favor of the I.X.L. Tomato.

Price: 1 lb. \$2.45, oz. 75c, 1/2 oz. 40c, pkt. 15c

OUR SPECIAL OFFER

We want every person who uses seeds to see our 1914 Seed Book and try this Splendid Early Tomato, and we will send a packet for 10c. with Seed Book. This book is full of new photographs of Vegetables, Fruits and Flowers. Send your address to-day.

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Progressive Jones, Says:

Harab Fertilizers Make Champion Crops

The success my friends have had with Harab Fertilizers has made me proud. Mr. A. Gilchrist, of Runnymede Road, Toronto, used Harab Fertilizers and raised Gladioli which won the Gold Medal Diploma at Toronto Exhibition. Another Harab user was a prize winner at the International Apple Growers' Association, Chicago. Mr. F. G. Bridge of St. James Park, London, used Harab Fertilizers for tomatoes, which grew to giant dimensions, eight of them weighing 8 lbs. 6 oz.

I am sure you will get champion results, too, if you will use Harab Fertilizers according to directions. The Harab Fertilizer booklet tells why these animal fertilizers are superior to other fertilizers. If you'll take my advice, you'll write for a copy right now.

Harab FERTILIZERS



*Yours for bumper crops
Progressive Jones*

The Harris Abattoir Co., Limited

Fertilizer Dept., Strachan Ave., TORONTO, Canada

Lime-Sulfur Injury

In discussing the prevention of lime-sulfur injury with reference only to that injury to fruit or foliage caused by the dissolved sulfur in the spray. Prof. V. I. Savro, of the Oregon Agricultural College, in a recent bulletin, writes as follows:

A fine mist spray would not be as injurious as a coarse or drenching spray. It is good horticulture, in fact, to apply only a light even coating of spray, where possible. Though this procedure can be followed in many parts of the country, however, it is difficult for some regions. In some of the fruit growing sections, a fine mist spray can be rarely used. Frequently the winds are strong enough to necessitate a coarse spray in order that the tree may be sprayed thoroughly. In such cases no choice remains; a coarse spray must necessarily be applied. Drenching, however, may be avoided by using care and judgment.

In cases of lime-sulfur injury induced by previous fungus infection, there is no question as to the proper procedure. It is much more advisable to destroy the leaves by means of the spray than to allow the fungus to become destructive.

The most simple method that presents itself of avoiding lime sulfur injury is to weaken the soluble sulfides by increased dilution. From our own experiences and those of several others we are led to believe that lime-sulfur properly made (i.e., boiled for not more than one hour) is not injurious at the strengths generally recommended. Home-boiled preparations are rarely injurious for this reason. On the other hand, we know of lime-sulfur factories that prolong boiling for three or four hours. This gives a concentrate that is more injurious (on account of the greater proportion of sulfides in solution) than a properly made concentrate testing the same specific gravity. It is rather difficult to recommend a practical method of deciding whether the concentrate is liable to be injurious or not, and the procedure to follow upon ascertaining this point. In general, a concentrate that has been boiled for not more than one hour, may be considered safe at the dilutions generally recommended (1 to 30, at 30 degrees B. for apples, 1 to 40 for pears). Again we wish to call attention to the fact that we are considering only that injury caused primarily by the sulfides in the spray. Our own experiments have shown, in one case, that injury followed an application of lime-sulfur diluted 1 to 75. This, however, was not strictly lime-sulfur injury, but injury due to other causes to be explained later.

Another method of avoiding lime-sulfur injury is by rendering the sulfides insoluble. This may be done by adding various substances to the spray that will break down, not necessarily all the sulfides in solution, but enough to render the remaining sulfides non-injurious. It may be argued, however, that in breaking down the polysulfides the insecticidal properties of the spray are impaired. In reply it may be noted that lime-sulfur is used during the growing season primarily as a fungicide, and its insecticidal value at the strength used upon foliage is questionable.

I have found The Canadian Horticulturist a gem as regards its relation to the fruit interests.—Ernest Flindall, Lovell Ont.



How Home Mixing Makes European Farmers Prosperous

They buy straight materials and mix them into balanced fertilizers containing two or three times as much

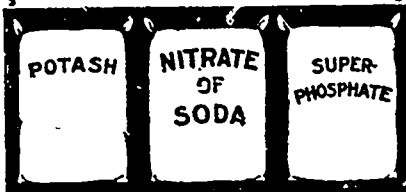
Nitrate of Soda

as high-priced American complete fertilizers contain. Your fertilizer should contain 4% of active nitrogen. Does it?

On land farmed for centuries, England raises 33 bushels of wheat per acre. We raise but 14. Europe imports 100% active Nitrate of Soda. You use dried blood, tankage only 60% to 70% active and you pay more for it.

"Home Mixing" is a book to help you increase your yields. Send your address to me on a postal card.

Dr. WM. S. MYERS
 Director Chilean Nitrate Propaganda
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Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums
 "Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 158 page FREE book on DEAFNESS, giving you full particulars and testimonials.
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Does all you could wish of a poultry fence and more. Built close enough to keep chickens in and strong enough to keep cattle out. Even small chicks cannot get between the close mesh of lateral and vertical wires. The heavy, hard steel top and bottom wires, together with intermediate laterals, will take care of a carelessly backed wagon, or an unruly animal and spring back into shape immediately. The wires are securely held together at every intersection by the PEERLESS Lock.

The Fence That Saves Expense
 It never needs repairs. It is the cheapest fence to erect because, owing to its exceptionally heavy top and bottom wires, but half the usual amount of lumber and posts are required.

Send for Literature
 and address of nearest agent. We also make a complete line of farm and ornamental fencing. Agents nearly everywhere. Agents wanted in unassigned territory.

Bauwell Hoxie Wire Fence Co., Ltd.
 Winnipeg, Manitoba Hamilton, Ontario

Big Ben

8,760 Hours On a Drop of Oil

7,000 Canadian dealers say that Big Ben does more efficient work for less pay than any other clock built. He's a regular glutton for good work.

In return for one little drop of oil Big Ben will work for you a full year. From "Boots on" to Lights out"—365 times—he'll guarantee to tell you the time o'day with on-the-dot accuracy. He has made the same guarantee over 3,000,000 times and made good every time. He'll make good for you. More than \$8,000,000 has passed over good dealers' counters for Big Ben and his brothers.

A Big Ben battalion, over 3,000 strong, leaves La Salle, Illinois every day. Every one of them feels proud of his triple nickel-plated coat of implement steel; his dominating seven-inch height; his large, bold figures and hands, and his big, easy-to-wind keys. No other clock can match their looks and ability to serve.

Things move with a will when timed with Big Ben. He'll wake you gradually by ringing every other half-minute for ten minutes or rouse you out in a hurry with one long musical ring. Suit yourself how he does it. You can shut him off short in the middle of his call, if you wish.

He is built in a life town for life wires. And his best work has been on the farm. Before-breakfast chores are started right on time when Big Ben time is set. He never overlaps. He runs on time, rings on time and stays on time.

If your dealer doesn't sell Big Ben, send a money order for \$3.00 to his makers—Waltham, La Salle, Illinois. He will come to your house by express duty charges prepaid.

Use the Available Kind of Fertilizer

For many crops all the *available* plant food that is needed is one grain to each pound of soil.

When such a small quantity of food must do all the work for your crop, it is exceedingly important that what you put into the soil in the form of fertilizer shall be *available*—that it shall have not only the right quantity, but the right quality and right crop value.

It has cost us forty years of experience to know how to mix the right kinds and the right quantities of ingredients for fertilizer.

Bowker's Fertilizers

accomplish also the more difficult task of getting the right blending, the right solubility into a mixture which will run readily and freely from the farmer's planter, and which will remain dry and drillable as well as efficient until used in the field. We make a brand to fit every crop need.

Write and tell us what your crops are, and we will send you our illustrated catalogue.

BOWKER FERTILIZER COMPANY
43 Chatham Street, Boston, Mass.

60 Trinity Place, New York. P. O. Box 806, Buffalo, N. Y.

British Columbia

Secretary W. J. Bonavia, of the Department of Agriculture, reports that the work of the Interior Fruit Pests Inspector, who has had a total staff of sixteen men under his direction was greatly increased last year by the outbreak of fire blight in the Okanagan and Boundary districts. This disease, which is so prevalent in the Pacific Coast States to the south, has been vigorously combated, and by the cooperation of orchardists, has been largely stamped out.

D. D. McLennon, of Fruitvale, a suburb of North Yakima, recently sold his forty-six acre orchard to H. J. Madill of Calgary for one hundred and fifteen thousand dollars. Mr. McLennon realized thirty thousand dollars from his crop last year.

At a meeting of the members of the provincial horticultural staff, held shortly before the first of the year, the opinion was freely expressed that the Canadian apple box will be discarded in the Okanagan district in favor of its American rival. The packing schools, which assemble in various parts of the province, will still retain the Canadian box for demonstration purposes during the coming season, except in the Okanagan Valley where the American box will be employed, although this year the American box may become the recognized standard throughout the province.

The Canadian box measures ten inches by eleven inches by twenty inches. It is longer, narrower, and shallower than the American box, which measures eighteen inches by eleven and a half inches by ten and a half inches. "As will be seen from these measurements the cubic capacity of the two boxes is practically identical," said Provincial Horticulturist R. M. Winslow, after the meeting, "so that the retailer will not suffer, provided that the box price remains the same. At the same time there will be an advantage to the trade in a slightly lesser cost in handling, while the standardization of these boxes, with the snooks used in packing other fruits, will slightly lower the cost to the packer. In addition to these slight gains, the American standard has the appearance of holding more apples, which will have some effect in the marketing of the fruit."

Bulletins

Recent bulletins include one on "Lettuce Drop," by the University of Florida Experiment Station, author O. F. Burger. Bulletin 217, of the Maine Agricultural Experiment Station, Orono, is entitled Woolly Aphis of the Apple. Commercial Peach Growing in Michigan is dealt with in special Bulletin 63 of the Michigan Agricultural College Experiment Station, East Lansing, Michigan. The authors are F. M. Barden and H. J. Eustace. The Connecticut Agricultural Experiment Station, New Haven, Connecticut, has issued Bulletin 179, dealing with Soy Beans.

"A Preliminary Report on the Pollination of the Sweet Cherry" is the title of Bulletin 116 of the Oregon Agricultural College Experiment Station, Corvallis, Oregon. The author is V. R. Gardner. Another bulletin just issued by the same station is entitled "An Investigation of Lime-Sulphur Injury: Its Causes and Prevention." The author is V. I. Savro.

E W I N G S

Try Something New In Your Garden Next Spring

Have you ever grown Asparagus—Pole Beans—Cress—Kohl Rabi—Salsify? Get the new Catalogue of

Ewing's Reliable Seeds

and study up some of these uncommon but delicious vegetables. Plant them along with some of your regular "stand-bys"—they'll add interest to your gardening and pleasurable variety to your meals.

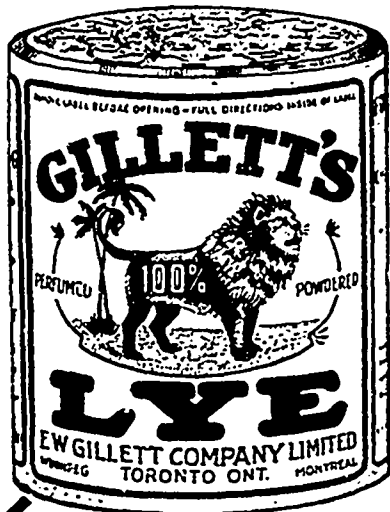
Ewing's Seed selections are strictly up-to-the-minute, and at the same time they are backed by a reputation of over 40 years of sterling satisfaction on Canadian farms and gardens.

Write at once for our Illustrated Catalogue, and if your Dealer hasn't Ewing's Seeds, buy Direct from us.

THE WILLIAM EWING CO., LIMITED,
Seed Merchants,
McGill Street, MONTREAL.

SEEDS





Spring Spraying

The first spray in the spring is the most important one, and the results obtained from the use of Gillett's Lye have demonstrated that there is nothing to equal it, especially when used properly before the buds begin to swell.

One can of Gillett's Lye dissolved in five gallons of water makes a proper solution for full grown trees, but a weaker solution, say, about one can of Gillett's Lye to about 10 gallons of water, is suitable for young trees and vines.

A strong solution used on trunks and limbs of the older trees will cleanse the bark of all moss and fungus growth and kill all insects. The earth should be well scraped back from the foot of the trees, and the trunk and limbs should be well sprayed, and in three or four days the bark will be perfectly clean and look bright. The earth around the trees should be well saturated, thus acting as a preventive and fertilizer as well. In a short time the tree will be vigorous and healthy.

If you have not received a copy of our spraying pamphlet, send name and address on postal card, and this valuable little book will be mailed you free of charge.

E. W. Gillett Company Limited

Winnipeg

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Montreal

500,000 FEET BELTING FOR SALE
Leather, Rubber Canvas, etc. 100,000 rods Wire Fencing, 40,000 lbs. Barb Wire at 2c. per lb., 300,000 ft. Iron Pipe, also 1,000 other bargains at 25% to 50% less than regular value. New lists just issued, sent free on request. Write immediately.
IMPERIAL MFG. & SUPPLY CO.
6 QUEEN ST. MONTREAL, QUE.
All kinds of Machinery Bought and Sold.

FREE LAND FOR THE SETTLER IN NEW ONTARIO

Millions of acres of virgin soil obtainable free and at a nominal cost are calling for cultivation.

Thousands of farmers have responded to the call of this fertile country and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you.

For full information as to terms, regulations, and settlers rates, write to

H. A. MACDONELL

Director of Colonization

Parliament Buildings, TORONTO

HON. JAS. S. DUFF

Minister of Agriculture
Parliament Bldgs., Toronto

ENGLISH HAND-MADE LACE

MADE BY THE COTTAGERS OF BUCKINGHAMSHIRE.

This is the old-fashioned lace made on the cushion, and was first introduced into England by the Flemish Refugees. It is still made by the village women in their quaint old way.

Our Laces were awarded the Gold Medal at the Festival of Empire and Imperial Exhibition, Crystal Palace, LONDON, ENGLAND, for general excellence of workmanship.

BUY some of this hand-made Pillow Lace, it lasts MANY times longer than machine made variety, and imparts an air of distinction to the possessor, at the same time supporting the village-lace-makers, bringing them little comforts otherwise unobtainable on an agricultural man's wage. Write for descriptive little treatise, entitled "The Pride of North Bucks," containing 200 striking examples of the lace makers' art, and is sent post free to any part of the world. Lace for every purpose can be obtained, and within reach of the most modest purse.

Collars, Fronts, Plaistons, Jabots, Yokes, Fichus, Berthes, Handkerchiefs, Stocks, Carisoles, Chemise Sets, Tea Cloths, Table Centres, D'Oylices, Mats, Medallions, Quaker and Peter Pan Sets, etc., from 25c., 60c., \$1.00, \$1.50, \$2.00, up to \$5.00 each. Over 200 designs in yard lace and insertion from 10c., 15c., 25c., 45c., up to \$2.00 per yard.

Every sale, however small, is a support to the industry.

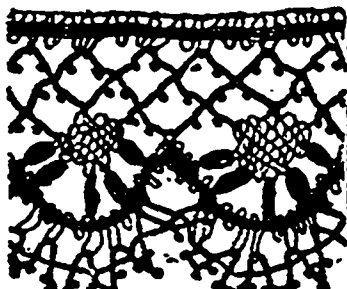


COLLAR—Pure Linen.
\$1.00.

DAINTY HANDKERCHIEF—No. 201—Lace 1 1/2 in. deep.



(1 1/2 in. deep.) STOCK—Wheel Design.
Price 25c. each. (Half above.)



No. 122—80c. per yard.

IRISH CROCHET.

Mrs. Armstrong having over 100 Irish peasant girls connected with her industry, some beautiful examples of Irish hand-made lace may be obtained. All work being sold direct from the lace-makers, both the workers and customers derive great advantage.

MRS. HORACE ARMSTRONG, OLNEY, BUCKS, ENGLAND

Beautify and Protect Your Property

Peerless Ornamental Fencing accomplishes two great purposes. It beautifies your premises by giving them that symmetrical, pleasing, orderly appearance, and it protects them by furnishing rigid, effective resistance against marauding animals, etc.

Peerless Ornamental Fencing

is made of strong, stiff, galvanized wire that will not sag. In addition to galvanizing, every strand is given a coating of zinc enamel paint, thus forming the best possible insurance against rust. Peerless ornamental fence is made in several styles. It's easy to erect and holds its shape for years.

Send for free catalog. If interested, ask about our farm and poultry fencing. Agents nearly everywhere. Agents wanted in open territory.

Sanwell Metal Wire Fence Co. Ltd.
Windsor, Ont.—Hamilton, Ont.



Items of Interest

At a farmers' club meeting held at Smithdale, Simcoe county, Ont., on January 6th, it was decided to organize a co-operative fruit growers' society on the lines of the Norfolk Fruit Growers' Association. A committee composed of F. E. Webster, Ben. Kerr, T. H. Conner, Dan. Carmichael, and Lockey Paterson were appointed to canvass apple growers not present, and to call a meeting for the purpose of framing by-laws, and other business.

In Oregon, fruit growers are required to maintain their orchards in good condition or stand the consequences. Recently every apple tree in a forty-four acre orchard near Portland—two thousand eight hundred in all—was cut down by the state fruit inspector and a force of men. The owner stood by protesting, but was unable to stop the destruction of his orchard. Neighbors claimed the trees had every disease known to apples. The owner was given a month in which to comply with the law requiring annual spraying. Failing to do so the trees were cut down and burned.

Messrs E. D. Smith & Son, Limited, of Winona, Ont., the well-known nurserymen, recently forwarded a shipment of a general assortment of the best varieties of American grape vines to one of the Government Experimental Stations in Australia, a shipment of apple trees to Madeira, Spain, and a general assortment of apple, pear, and plum trees and shade trees to Manchuria, China. These shipments were arranged and dug with the utmost care, and the Ontario Government Inspector, who examined the trees, expressed the opinion that he had never before seen nursery stock that had been packed so thoroughly or carefully.

The Canadian Trade Commissioner at Auckland, New Zealand, under date of December 22, 1913, reports as follows: "The Vancouver boats bring large quantities of apples, and your commissioner accompanied the inspector, who said they were a very fine lot. This business is capable of great expansion. Many boxes of United States apples arrive by each boat, so it is quite evident there is a large demand. The Canadian shipper does not appear able to transact business on a sufficiently extensive scale in this regard."

At a mass meeting of citizens of Armstrong held recently, the following resolution was passed:

"That this meeting is against Chinese or Orientals owning farm lands within the city of Armstrong, and in the municipality of Spallumchen, and requests owners of farm lands to bind themselves and their heirs and assigns for a period of five years not to sell to Chinese or Orientals nor to lease land to them within that period."

Recent Publications

Among the publications that have reached The Canadian Horticulturist recently is a book entitled "Every Day in My Garden," by Virginia E. Verplanck. It is beautifully bound and well illustrated, the illustrations including a number of colored plates. The book is intended to be a guide for work in the garden and home, during each month of the year, and is based mainly on the latitude of Eastern New York. The actual reading matter is short. The publishers are Wm. R. Jenkins Company, 6th Avenue and 48th Street, New York. Price \$2.50.

Sprayers

Sulfur Dusters

For Fighting Every Disease of Cultivated Plants

Knapsack, Pack Saddle or Horse Drawn Power Sprayers

Send for Catalogues and particulars to: **VERMOREL** Manufacturer, VILLEFRANCHE (Rhône), FRANCE



TO DESTROY APHIS, THRIPS, ETC.

Without Injury to Foliage

SPRAY WITH

"BLACK LEAF 40"

Sulphate of Nicotine

"Black Leaf 40" is highly recommended by experiment stations and spraying experts throughout the entire United States, also by Canadian experts.

Owing to the large dilution, neither foliage nor fruit is stained.

Black Leaf 40" is perfectly soluble in water; no clogging of nozzles.

PACKING:

In tins containing 10 lbs. each, 2 lbs. each, and ½ lb. each.

A 10-lb. tin makes 1,500 to 2,000 gallons for Pear Thrips, with addition of 3 per cent. distillate oil emulsion; or about 1,000 gallons for Green Aphis, Pear Psylla, Hop Louse, etc., or about 800 gallons for Black Aphis and Woolly Aphis.—with addition of 3 or 4 pounds of any good laundry soap to each 100 gallons of water. The smaller tins are diluted in relatively the same proportions as are the 10-lb. tins.

PRICES: In the United States, our prices for the respective sizes are as follows:

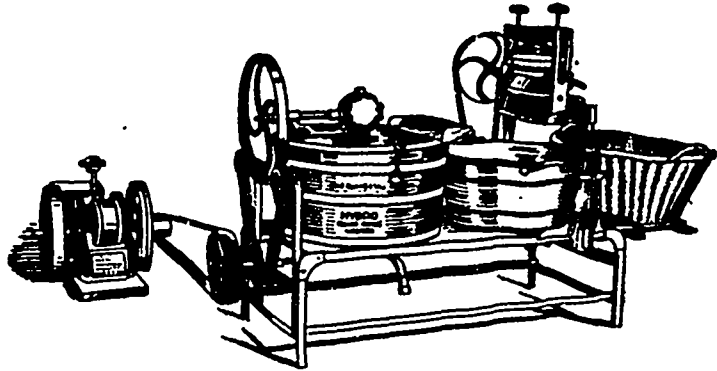
10-lb. tin, \$12.50; 2-lb. tin, \$3.00; ½-lb. tin, 85c.

IN CANADA, Dealers usually charge about 25% to 30% over the above prices because of the Canadian duty, etc. Consult your dealer about this.

THE KENTUCKY TOBACCO PRODUCT CO.

(Incorporated)
LOUISVILLE - KENTUCKY

Let the
Gas Engine
help your
wife to do
her washing



HAS it occurred to you that your other business partner—your good wife—is still using the out-of-date, back-aching methods of years ago—wearing herself out with the drudgery of the old-fashioned washday? If you have a gas engine on your farm you need a

Maxwell

**"HYDRO"
BENCH WASHER**

That little 1½ H.P. gas engine that works your churn and cream separator and operates your Pump Jack, Root Pulper and other small implements, will do the clothes washing and wringing for your wife—and do it quickly and satisfactorily. This Maxwell "Hydro" Power Bench Washer works equally well by gas power or by electricity, and can be driven by a one-

sixth H.P. motor. We make it in one, two and three tub machines, and the mechanism is as perfect as science can invent. One of these machines would be a genuine boon to your wife when washday comes round. Make her a present of one—and let your gas or electric power help her to do her part of the work and lighten the burden of washday!

Write to-day for further particulars of this Maxwell "Hydro" Power Bench Washer.

DAVID MAXWELL & SONS, DEPT. "H" ST. MARY'S, ONT.

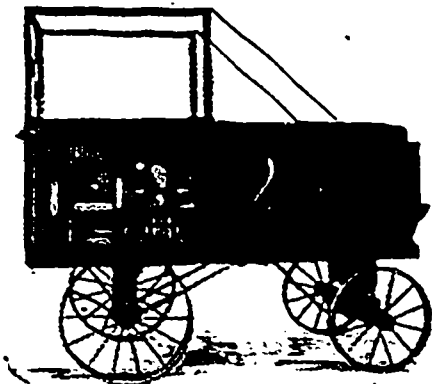
AT LAST

JUST THE OUTFIT YOU ARE LOOKING FOR

The Most Practical, Efficient and Simplest High Pressure POWER SPRAYING OUTFIT ever offered.

"GOES LIKE SIXTY"

Light Weight High Pressure Direct Geared No Racking Pump Jack



100% SERVICE

Engine can be used for other work all the year round. Truck makes a capital farm wagon. Sills of channel steel, with steel platform.

Price of Complete Outfit, Only \$230

This includes all accessories, Engine, Pump, Tank, Bamboo Extensions, Agitator, Hose, Nozzles, etc.

Do not buy a Sprayer until you have investigated the "Goes Like Sixty" Power Sprayer. Send for Sprayer Catalogue to-day.

GILSON MFG. CO. 244 YORK ST. GUELPH, ONT.

**Get One
Barrel
More
per Tree**



That's what a good sprayer will add to your fruit crop yearly.

Over 400,000 fruit growers and orchard-

ists are proving this fact every season with Goulds Sprayers. Because Goulds Sprayers apply the spray in such a uniform way that every leaf, every twig is saturated; every crevice is treated. The proper amount of solution is used and no more. This saving in mixture alone pays for a Goulds Sprayer over and over again. Made in 50 sizes and styles. Guaranteed to give absolute satisfaction.



are designed by engineers whose training and experience have worked out countless improvements. Don't fool with out-of-date sprayers. Their waste costs up many times what a Goulds Reliable Sprayer would have cost you first.

40-Page Book Free

Brimful of practical spray facts. Tells what mixtures to use, what amount and how to apply them, proper time to spray, how to conquer insects and fungous growths of all sorts. Sent Free. Write for it.



THE GOULDS MFG. CO.
17 W. Fall St., Seneca Falls, N.Y.
Largest Mfrs. of Pumps for Every Purpose



EVERY FARMER KNOWS

That fertilizers are an absolute necessity to successful farming. The only question that confronts him is getting the *right* fertilizer.

GUNNS SHUR-CROP FERTILIZERS

are prepared under the supervision of chemical experts—are backed by forty years' reputation, and are guaranteed to be in perfect condition chemically and mechanically. Gunns' fertilizers are finely ground, insuring an even, easy distribution. For users of our fertilizers we are ready at all times to analyze samples of soils and recommend the fertilizer best suited, making it up especially if necessary.

For fertilizer book and other information, write
GUNNS LIMITED, WEST TORONTO

Nova Scotia

The apple shipments from the Annapolis Valley for the last four months of 1913 were 105,532 barrels less than the corresponding four months of 1912, which were also about forty per cent. less than for the four corresponding months of 1911. This drop was caused by the weather conditions of the spring of 1912 being bad for the apple crop, and the spring of 1913 being still worse than for a number of years. The apple shipments from Halifax the last four months of 1913 were 354,397 barrels, against 459,929 barrels during the same period of 1912. The shipments for the month of December, 1913, were 69,974 barrels, against 91,147 barrels for December, 1912, showing a decline of 21,173 barrels.

While the quantity of apples grown in Nova Scotia has been declining for two years, the prices have so enhanced that it is considered by many that the past season will be more remunerative than for a number of years.

The cooperative movement started three years ago has given wonderful results, enabling the grower to obtain the best prices for his apples and potatoes at the least possible expense. The latter maintained throughout the heaviest shipments the record price of fifty cents a bushel to the grower, who also effected a great saving in the prices he had to pay for the seed and fertilizer he required.

The United States Markets

D. Johnson, Forest, Ont.

I had some experience last year in the United States markets, which was very unsatisfactory. Friends in Cleveland and Detroit advised us that they were paying two dollars fifty cents a bushel for peaches. We found this to be true, so in company with some neighbors we shipped to commission merchants in those cities five cars of peaches. I consider that we would have made two hundred dollars a car more had we sold these peaches in Canada, or that my neighbors and myself would have made one thousand dollars more had we not shipped the five cars across the line. The fruit was of the finest quality, carefully packed and shipped in good refrigerator cars. It appears to me that the American consumers are paying big prices for their peaches, but these big prices are not enjoyed by the producers.

Regarding apples, I had heard of the big prices for apples, and had hoped for a good market right at our door for our apples. Accordingly, as soon as the new tariff came into effect, I visited a number of the big United States cities with the intention of selling our pack to them. I found that I could not make a satisfactory sale there, so returned home and sold at a much better price to a western firm than we could get on the other side. In view of these facts I can only say that I do not expect much from the United States markets in future years when their prices were so much below our own last season in the midst of one of the shortest crops the United States has had for years.

Most of the standard varieties of fruit could be delivered to market in better condition and with less loss from decay if they were promptly cold stored after picking.—J. A. Ruddick, Dairy Cold Storage Commissioner.

FRIEND Sprayers



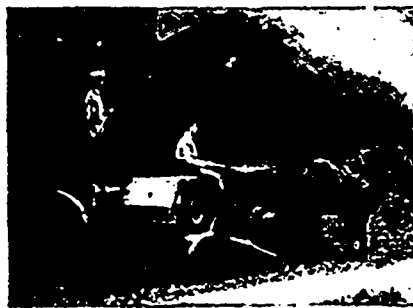
Western King

Mr. Fruit Grower
 You have heard of the celebrated

"Friend" Power Sprayer

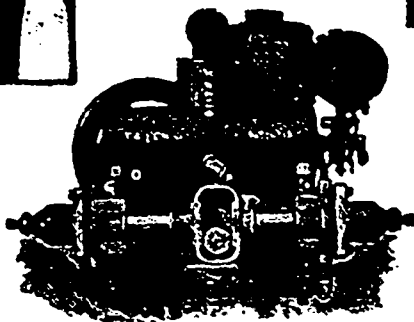
But you have not heard of the 1914 MODELS.

Western King and Queen



Western Queen

If you have a power sprayer, EXCHANGE engine and pump for our POWERFUL UNIT MOTOR-PUMP and PROPELLER AGITATOR, or sell it and buy a whole new outfit. "FRIEND" outfits are now made in many styles, TO SUIT YOUR TASTE, in-



The "Friend" Motor-Pump

cluding motor-pumps, & lifts on bed without trucks, and complete machines—built in large and small sizes. The SIMPLEST, MOST COMPACT, MOST POWERFUL and FINEST WORKING power sprayers ever produced. Many Westerns sold in Canada last year to growers who are STAUNGH FRIENDS this year.

WRITE FOR CATALOG TODAY, STATING REQUIREMENTS.

"FRIEND" MFG. CO., GASPORT, NEW YORK

EGGS

EXPRESS PREPAID—all the standard breeds of Chickens, Ducks, Geese and Turkeys. HIGH-CLASS STRAINS. Write today for catalog describing breeds—also poultry supplies. IT'S FREE.
J. H. RUTHERFORD, Box 62
Caledon East, Ontario



The Earliest Tomato Grown

Without exception D & F's O. K. Tomato yields an earlier crop than any other on the market.

Grown from single plant selections covering a period of five years. Fruit is exceptionally large, a beautiful red and full of strong healthy new blood.

D. & F's HIGH GRADE SEEDS

are used by successful Gardeners in every section of the Dominion.

25 FIRST PRIZES were awarded at the Montreal Horticultural Exhibition, Sept. 1913, to Mr. F. S. Watson, on products grown from D. & F's High-Grade Seeds.

Send to-day for our Seed Annual. It is a complete garden guide. We mail it free.

DUPUY & FERGUSON

33 St. Jacques-Cartier Square - Montreal

Rennie's Seeds Grow

the Finest Vegetables and the Best Flowers in the Land

Success in planting, whether it be in planting an entire garden, a bed of either simple or intricate design, or an extensive farm tract, depends upon many things, the principal one being the Quality of the Seeds.



Rennie's Seeds

are absolutely dependable — have been since 1870—44 years ago. Their reputation for uniform purity and fertility—a reputation that has always been strictly maintained—is YOUR assurance of success in planting.



Rennie's Catalogs are unusually comprehensive and mighty interesting and instructive. They contain innumerable hints and suggestions of great value on cultivation. And the descriptions are not exaggerated, but can in every case be relied upon.

Send us your name to-day and we will send you these instructive Catalogs as issued

WM. RENNIE CO., Limited

Cor. Adelaide and Jarvis Streets, **TORONTO**

Also at Montreal, Winnipeg and Vancouver

Glorious New Spencer Sweet Peas

RING WHITE—It attains perfection in every detail which goes to make up a Spencer Sweet Pea. It is the experts' ideal for perfect form. The improvement in form, size, vigor, waviness and purity stands eminently out when compared to other White Spencers, and calls for unstinted admiration. The number of four-blossomed sprays and the great length of stem will appeal strongly to those wishing a good White for decorative work. Packet, 20c.

"EMPRESS EUGENIE"—The color is a delicate tone of light gray flaked with light lavender. A vase or bunch gives a most charming effect. The flowers are of large size, beautifully waved and crimped. A vigorous grower and very free bloomer, throwing a large proportion of four-flowered sprays. Packet, 20c.

FREE—Our 112-page illustrated catalogue of Vegetable, Farm and Flower Seeds, Plants, Tools, Implements, Poultry Supplies, etc. Write for it.

ILLUMINATOR—A glorious orange-salmon Sweet Pea. In dull light the color appears to be a flat orange scarlet, but when in bright sunshine or artificial light, the color is completely changed, and it appears a bright salmon cerise, sparkling with orange. It introduces a new shade of color to Sweet Pea enthusiasts of rare beauty, and with its additional attributes of great vigor, sturdiness and symmetry, it is sure to captivate all who give it a place in their garden. Packet, 20c.

"WEDGEWOOD"—It is a true self and is appropriately named, as its color throughout is a unique shade of wedge-wood blue, a color so popular in China. It produces profusely flowers of good size, borne almost uniformly in four-flowered sprays, well placed, upon long stout stems. Of finest Spencer form, the standard and wings are well waved. Packet, 20c.

JOHN A. BRUCE & CO., Ltd., Hamilton, Ont.
SEED MERCHANTS ESTABLISHED 1850





SMALL FRUIT PLANTS

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

WM. FLEMING, Nurseryman, 496 - 4th Avenue W., OWEN SOUND, ONT.

Eastern Annapolis Valley

Eunice Buchanan

On January 16th a meeting was held in Berwick, attended by a director from each fruit company, to decide whether or not to put in a cold storage plant. It was concluded that the Central Office of the United Fruit Companies, Limited, should go ahead with a trial plant. As yet the location is not decided, but it will probably be near to a source of natural ice, supplying about seven hundred tons which would be required to run this proposed Cooper-Mason system size of cold storage plant. It is estimated that the cost will be less than fifteen cents a barrel, and that this will be the beginning of a series of cold storage plants through the Valley. Another fruit company has been organized at Hortonville and a warehouse is to be built there.

At the request of the United Fruit Companies a subsidy of five thousand dollars was granted by the Government for a steamship service to run from Annapolis Nova Scotia, to ports in England.

Yarmouth, to the west of us, closed its first annual seed fair on February 8th. In addition to growing wheat, oats, peabuckwheat, beans, beets, and potatoes, the Federal authorities are offering bonuses for raising cabbage and turnip seed in commercial quantities.

In addition to the seed fair, a short course in agriculture, with a staff of instructors from the Agricultural College, Truro, has also been held in Yarmouth. The attendance began with 122, and 50 more applications were received. Another short course of this description will be held in Bridge water.

The winter has gradually been growing more severe. On February 12th the thermometer dropped to twenty-two degrees below zero in Berwick, where it was said to have been the coldest day within the last thirty years.

As another good step in cooperation, our local paper, the Register, is devoting a large space each week to the doings of the United Fruit Companies, which is not their official organ.

Bulletins

Recent publications that have reached The Canadian Horticulturist include the following: "Plum Culture and District Lists of Plums Suitable for Canada, with Descriptions of Varieties," by W. T. Macoun, Dominion Horticulturist, Experimental Farm, Ottawa; "The Box Packing of Apples," by E. F. Palmer, B.S.A., being Bulletin Number 216 of the Ontario Department of Agriculture. This bulletin is well illustrated and contains much helpful information. "The San Jose and Oystershell Scale," by Prof. Caesar, B.S.A., being Bulletin Number 219 of the Ontario Department of Agriculture, Toronto.

The Utah Agriculture College has issued two bulletins, one Number 128, entitled "Blooming Periods and Yields of Fruit in Relation to Minimum Temperatures," by M. Ballantyne, Logan, Utah, and the other Bulletin Number 129, by E. D. Ball and W. M. Ball, of Logan, Utah, entitled, "Cecidology Moth Studies." "Success with Heat" is the title of a book by Robt. Joos. The book covers the subject of poultry raising with unusual fullness. It is published by Forbes & Company of Chicago and sells at \$1 00 a copy.

If you are a **MARKET GARDENER**

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POSITIVELY, ABSOLUTELY our seeds will give you satisfaction.

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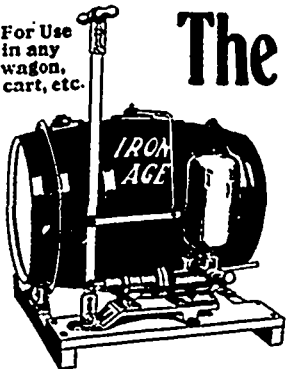
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For Use in any wagon, cart, etc.



No. 190. Horizontal. 50-Gallon

The Right Kind of Sprayer

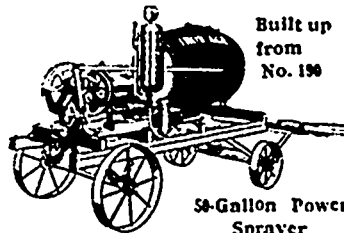
Means the one that just fits your purpose. You need to consider capacity, pump, engine, pressure, mixing, straining sediment, stability on hillsides, using your own wagon, engine or sprayer with balance of the outfit to fit what you already have. Get the right sprayer for YOUR work and you won't have any cause to be dissatisfied. We show here but three of the 70

IRON AGE

Bucket, Knapsack, Barrel, Power, and Traction Sprayers

They are built up in units so that you can buy what you need now and add to the outfit later if necessary. All have the best pumps in use on any sprayers—least slippage among eight of the best in a disinterested test. Solutions touch only brass or galvanized parts. Hemp packing, bronze ball valves, both easy to get at. Pumps outside. Power Sprayers are 50, 100, 150, or 250 gallons capacity. 200 pounds pressure with 6 or 8 nozzles.

Ask your local dealer about this line and write us for our new "Spray" book, spray information and copy of Iron Age Farm and Garden News.

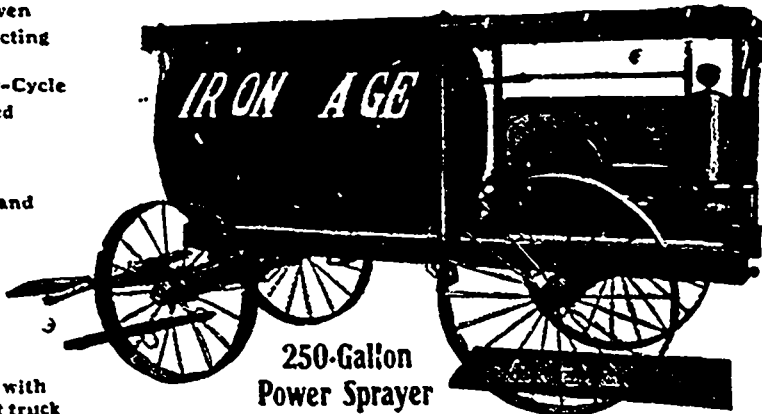


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50-Gallon Power Sprayer

The Bateman-Wilkinson Co. Ltd., 460 Symington Ave., West Toronto, Ont.

- Gear-Driven
- Double-Acting Pump
- 2-H. Four-Cycle
- Air-Cooled Engine
- Outside Sediment Chamber and Strainer



250-Gallon Power Sprayer

Furnished with or without truck

Parks, Gardens and Lawns Planned

Expert advice regarding varieties of trees, shrubs and plants. No stock for sale.
CHARLES ERNEST WOOLVERTON
 Landscape Gardener, GRIMSBY, Ont.

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KELWAY & SON
The Royal Horticulturists
 Langport, Somerset, England

A BETTER HOME LIGHT

Costs less than 1c. a night for 300 Candle Power light.

Here is a lamp that is truly a wonder. "The Faultless Lamp" makes its own gas from coal-oil - will produce 300 Candle Power of bright, white light at less than 1c. a night. Simple, strong, most beautiful portable lamp.



THE FAULTLESS LAMP

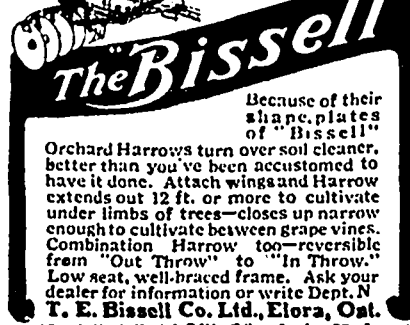
CANNOT EXPLODE. CAN BE ROLLED ON THE FLOOR WHILE BURNING. REQUIRES NO CLEANING.

Why sacrifice your eyes with a poor light when the saving of oil alone will pay for a "Faultless" in a short time.

Write for free booklet "M." showing how it works, and giving other valuable information.

MAC LAREN & CO.
 Drawer D. Merrickville, Ont.

"Turns the soil better"



Because of their shape, plates of "Bissell" Orchard Harrows turn over soil cleaner, better than you've been accustomed to have it done. Attach wings and Harrow extends out 12 ft. or more to cultivate under limbs of trees - closes up narrow enough to cultivate between grape vines. Combination Harrow too - reversible from "Out Throw" to "In Throw." Low seat, well-braced frame. Ask your dealer for information or write Dept. N. **T. E. Bissell Co. Ltd., Elora, Ont.**
JNO. DEERE PLOW CO., Ltd., 77 Jarvis St., Toronto - Selling Agents for Ontario and Quebec.

PAINT WITHOUT OIL

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much. Write to Mr. A. L. Rice, Manuf'g., 441 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

CENTRAL NURSERIES, ST. CATHARINES, ONT.

Have a Fine Assortment of

Trees, Vines, Plants, Ornamentals, Etc.

For Spring Planting

For Satisfaction, Plant St. Rigas, Himalaya and Ever Bearing Berries. Our prices are right and so are the trees. Send for priced catalogue if you have none, also your want list for special prices on Apple Trees. We can please you. Try Seed Potatoes, Lincoln, New. Look over our Price List. No Agents. Wanted, a Nurseryman

A. G. HULL & SON



Fertilizer "Actions" that "Speak Louder Than Words"

Every farmer desiring to increase his farm profits will be interested in this Department of Agriculture Report on the "Acro Profit" competition held in Wolland County last summer under the supervision of R. Austin, B.S.A., District Representative.

"Home Mixed"

Such as would be recommended by "Raw Materials" combined.
 Competitor - Roy Mackenzie Barron, Fonthill, Ont.

Crop: POTATOES
 Fertilizer Used on Acre: 600 pounds.
 100 lbs. Nitrate of Soda }
 300 lbs. Basic Slag } "Home Mixed"
 200 lbs. Potash }
 Also 8 loads of Manure.
 Yield: 135 Bushels.

Cost of Production: \$44.25
 (Including rent of land, labor, cost of fertilizer, etc.)

Net Profit from Acre: \$33.15
 (Average yield for Province, 1913-116 bushels. Marketable Potatoes valued at 60c per bush in each case.)

These results show that increased profits can be made by farmers who use Factory Mixed fertilizers, and particularly those who use

"Davies Factory Mixed" #2

As recommended by those who realize that "Results speak louder than Words."
 Competitor: Will Cryslor, Allanburg, Ont.

Crop: POTATOES
 Fertilizer used on Acre: 500 pounds.
 Davies 3-6-10 Potato Grower (Factory mixed)
 Also 6 loads of Manure.
 Yield: 296 Bushels.

Cost of Production: \$42.35
 (Including rent of land, labor, cost of fertilizer, etc.)

Net Profit from Acre: \$135.25

DAVIES SPECIAL MIXED FERTILIZERS

The results of this competition show that although 100 pounds more of the Home Mixed fertilizer and two extra loads of barn-yard Manure were used, that Factory Mixed fertilizer netted a profit of \$102.10 per acre more than the Home Mixed fertilizer.

You should give these facts your most serious consideration. Now is the time to take action. Go to your Fertilizer dealer to-day, arrange with him for the purchase of sufficient Davies' Special Mixed fertilizer to use on your farm crops this spring - 500 pounds per acre is a good average application.

Remember - Davies' FERTILIZERS - not only produced larger crops per acre, but do so economically and also improve the quality of the crop, securing for you a more profitable harvest in every way. Write for our free book, "Farm Davies' Way." "We have or want to have an Agent near You."

THE DAVIES COMPANY LIMITED

R. INNES, B.S.A., Manager, W. TORONTO, ONT.

More-Finer Fruit

USE the quickest, surest, most economical method of spraying: preventing disease, blight; killing bugs; assuring bumper crops of finest fruit. 300,000 farmers, gardeners have found

Brown's Auto Spray

most efficient - Style No. 1 shown here. Capacity 4 gallons. Easily carried over shoulder. Does more work than 3 ordinary sprayers. Patented Auto Pop Nozzle - throws any kind of spray - does not clog.

Better Vegetables, Bigger Crops

Just the size for small trees, fields up to 5 acres, poultry houses, etc. For large sprayers - Brown's

NON-CLOG ATOMIC NOZZLE

sprays any solution without clogging. Capacity, 40 lbs. size - hand - power. Write for Free Spraying Guide.

The E. C. Brown Co. 57 Jay St. Rochester, N. Y.

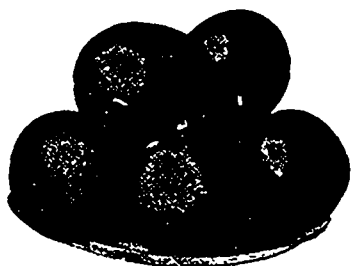


Vinegar Plants Cider Presses

We are the exclusive Canadian Agents for the Hydraulic Press Mfg. Co., Mount Gilead, Ohio. If you want a Cider Press of any kind or a Vinegar Plant, write us.

The Brown Boggs Co.

Limited
HAMILTON, CAN.



Choice Fruit

is the result of systematic cultivation, and spraying with

SHERWIN-WILLIAMS
NEW PROCESS
ARSENATE OF LEAD



THE SHERWIN-WILLIAMS Co.
of Canada, Limited
MANUFACTURERS OF INSECTICIDES
Offices and Warehouses:
Montreal, Toronto, Winnipeg, Calgary, Vancouver,
Halifax, N. S., London, Eng.

Northern Grown Trees

Apple, Pear, Plum, Cherry, Peach, Grapes, Small Fruits, Deciduous and Evergreen Ornamentals, Roses, Flowering Shrubs, Climbers, etc.

Catalogue Free: It tells the whole story.
J. H. WISSMER, Nurseryman, Port Elgin, Ont.

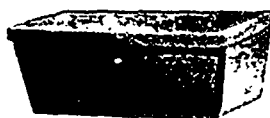
50,000

FIRST CLASS FRUIT TREES

Two year old, 3 to 5 ft. high. To introduce our stock will sell while they last at \$20.00 per 100, \$2.50 per 10. All varieties of Plums, Pears, Peaches, Cherries and Apples. Special prices to Associations.

W. P. POWE & SON - CAINSVILLE, ONT.

SUPERIOR Plant Boxes



PRICES RIGHT

Delivery in March and April. Order NOW to ensure prompt shipments.

Canada Wood Products Co.
ST. THOMAS - ONT.

Directors for Vineland

F. M. Clement, B.S.A., has been appointed director of the Provincial Government Experimental Station at Vineland, in succession to A. D. Harkness, who recently resigned. Mr. Clement is a graduate of the Ontario Agricultural College, where he specialized in horticulture. He afterwards acted as district representative for some years in Elgin county, distinguishing himself in the horticultural branch. Over a year ago he was appointed assistant in the horticultural department of Macdonald College, at Ste. Anne de Bellevue, which position he now holds. He will assume his new duties about the first of April.

Ontario Rose Society

The annual meeting of the Rose Society of Ontario was held in Toronto, February 16th, with E. T. Cook, vice-president of the Canadian Rose Society, in the chair. The officers' reports showed that the society had made encouraging progress. Not only had the membership been extended, but the financial position of the society had been placed on a sound basis by contributions, not only from members, but from others interested in rose growing in Ontario.

The president spoke of the enthusiasm of the members. Their efforts had shown their determination to make the rose the flower of Ontario. The society, he said, was rapidly attaining one of its greatest objects, which was to have as large a number of affiliated societies as possible. Mr. J. T. Moore, of Moore Park, he said, had helped the society greatly by his influence and financial support. It was seldom that any society had secured and retained so much real support as the Rose Society of Ontario had. Three large rose shows were planned to be held this year.

Ottawa Flower Guild

The Y.W.C.A. was filled with happy children, Saturday afternoon, February 14, bringing their bulbs and plants to the sixth bulb exhibition of the Ottawa Children's Flower Guild. The affair was entirely informal, and as cards had been sent only to the one hundred and twenty children to whom bulbs and plants had been given last November, a great many of the children were absent. The hall was crowded, many parents and friends being present. Mr. W. T. Macoun was judge. The result of the children's work was surprising to every one, the majority of the plants being fit for any florist's window. Mr. R. B. Whyte, the president, presided.

Mr. W. T. Macoun expressed his surprise at finding that the children under twelve years of age far surpassed the elder members of the Flower Guild. He had found it exceedingly hard work to decide which were the best plants, so keen was the competition, and therefore he had added seven extra prizes to those given by the committee. One plant taking a prize, to which Mr. Macoun drew attention, was planted in builders' sand, so that no one could offer the lack of good soil as an excuse for not growing bulbs. Mr. Macoun held up each prize plant for public inspection, giving the reasons for and against excellence and form. It was a delightfully instructive address.

Use The Owen Compressed Air Spraying System—Save Money

The Owen system embodies a central plant in which is installed an air compressor driven by a gasoline or steam engine. Two heavily galvanized, high pressure steel tanks are also provided complete with valves, fixtures, etc. The tanks are mounted on a suitable platform which can be placed on any ordinary farm wagon. When spraying, one tank is filled with about 200 lbs. of compressed air and the other with the spraying liquid. The tanks are filled at the central station at the same time.

The Owen Compressed Air Spraying System

Provides an even, steady pressure at all times. The spraying mixture is kept thoroughly agitated by an air agitator. One man with one set of tanks can thoroughly apply 1000 gallons of mixture per day. With two rigs, one man can apply 2000 gallons per day. There is no complicated machinery—no pump cylinders coming in contact with the liquid—no engine to be hauled around causing trouble. It's the most simple, most satisfactory spraying system ever devised.

When not used for spraying, the engine can be used for any other purpose and the compressor will furnish air for pneumatic water systems, etc.

Write today for Free Catalog

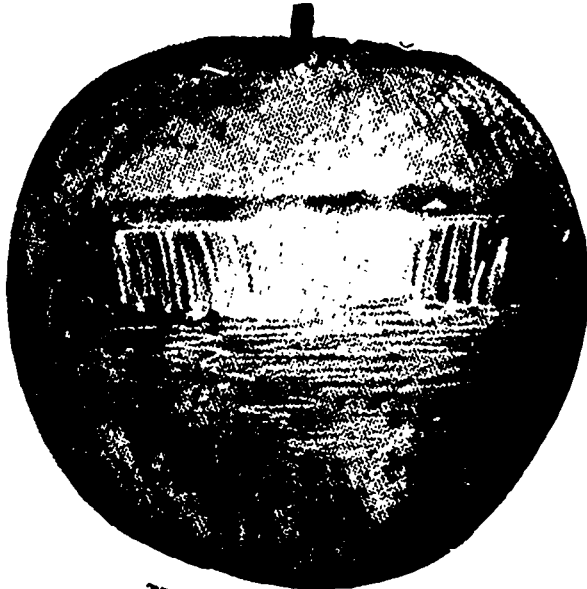
W. H. Owen Sprayer Co., Sandusky, Ohio



DON'T PAY FREIGHT ON WATER

USE NIAGARA SOLUBLE SULPHUR

The Sulphur Spray in powder form. Controls Scales quicker and better than Lime-Sulphur. A positive control for Apple Scab, Peach Curl and other fungus diseases.



TRADE MARK REGISTERED

It has the following advantages over Lime-Sulphur: Is cheaper, easier to handle, no leakage or loss, no sediment, keeps indefinitely, saves freight and storage.

100 lbs. of Soluble Sulphur will make more spray than a 600-lb. barrel of solution.

Remember Soluble Sulphur was used by over 500 growers in Ontario last year. It will be used by thousands this year. There is a reason for this. Soluble Sulphur does the work. Saves time and money and eliminates many of the objectionable features of spraying. This material can only be procured from us. Place your order early so as to be sure and be supplied.

If you have never used this great spray let us send you full particulars.

ARSENATE OF LEAD

The highest grade only. The kind that mixes easiest. Does not burn foliage. Contains the highest analysis of arsenic.

SWIFT'S is made up to a quality, not down to a price. It is always full weight, guaranteed. The best is always the cheapest.

NIAGARA LIME-SULPHUR

The pioneer and reliable solution. Highest in Beaumo test. Clear and uniform.

Write us for spraying supplies.

Wherever Fruit Excels Niagara Spray is used

Niagara Brand Spray Co., Ltd.

BURLINGTON - ONTARIO

FOR SALE

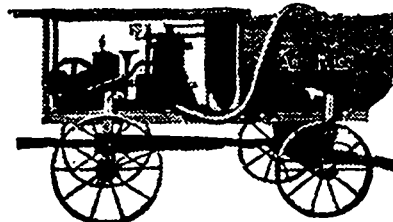
25 Acres of Choice, Early, Warm Land, specially adapted for the growing of Virginia Leaf Tobacco, and all early Fruits and Vegetables. Five acres in Peach and Cherry Trees about six years old. Buildings consist of Tobacco Barn, Stable and small house, and also a Hot House 20 ft. x 80 ft. This property is beautifully located, and only three quarters of a mile from the Leamington Post Office, a bargain at..... **\$12,000**

Apply to P.O. Box 504, Walkerville, Ont.

16 Acres beautifully located, choice early land Fruit Farm, situated on the Lake Front Road, near Leamington, Ont. Twelve acres in fruit trees from one to five years old, Peaches, Plums and Apples. Buildings consist of a new six room Bungalow, Stable and Packing House. Price..... **\$9,500**

Apply to P.C. Box 504, Walkerville, Ont.

SPRAY WITH AN ANTI-KLOG



They give the highest efficiency through long hard terms of service. There is an ANTI-KLOG of the right capacity for those who have much and those who have little spraying to do.

They spray better—spray better longer—and represent more downright sprayer value—than any other spraying devices manufactured.

Ease of operation, simplicity, strength and a number of other individual features appeal to every user. The ANTI-KLOG nozzels make it very difficult for any mixture to clog the outlet.

GUARANTEED FOR 5 YEARS

You are absolutely guaranteed when you buy an ANTI-KLOG, as each is sold under an unqualified guarantee of 5 years' service.

Send for our new free catalog and give your dealer's name. You should now make preparations for spring spraying.

ILLINOIS METALS COMPANY

2420 West 22nd Street - CHICAGO, ILL.

Strawberry Plants

FOR SALE

For 1914 we are offering strong, vigorous, well rooted stock of twelve standard varieties. Price List Free.

ONTARIO NURSERY CO., Wellington, Ont.

Mated pairs of Silver, black and patched foxes for sale.



Also options on 1914 puppies for summer delivery.

JOHN DOWNHAM, Box N, Strathroy, Ont.

HURST You Can Make Your Orchard Yield a Bigger Profit

Get my BIG FREE BOOK, "Why, How and When to Spray." Contains 74 illustrations of insects and fungus diseases and gives the remedy for each. A book that every farmer, truck- or fruit-grower should have. Also shows a complete line of sprayers 28 different styles—man-power—barrel—horse—and gasoline engine power for field and orchard.

10 Days FREE Trial—5 Year Guarantee

No Money in Advance—No Freight to Pay



Our liberal selling plan enables you to buy a HURST SPRAYER without any risk, and pay for it at your convenience. Write today and tell me what size sprayer you need or what you have to spray and get my great

Money Saving Offer and BIG FREE BOOK. It will save you money in buying a sprayer and increase your profits. Write at once. E. H. LAMLELL, General Manager,

THE H. L. HURST MFG. CO., 986 North Street, Canton, O.



Seeds with a Lineage

Lovers of gardens and grounds should know that at Raynes Park, London, England, Messrs. James Carter & Co. have the finest and most complete testing and trial grounds in the world.

Their equipment and the unique methods employed guarantee the quality of their seeds. For generations they have been cultivating, selecting and perfecting until Carters Tested Seeds have reached the highest percentage of purity and germination.

In England, where the art of gardening is most highly developed, Carters Seeds rank first. Ask any gardener with experience in Great Britain—he will know Carter.

In Canada, Carters Seeds have achieved a tremendous success, both on large estates and in smaller gardens.

We import these seeds direct from Raynes Park and carry a complete stock at our Toronto warehouse. We issue an American Catalogue, with all prices in American money. It includes selected varieties of Flower and Vegetable Seeds, with valuable directions for planting and cultivation.

A copy of this Catalogue will be mailed you FREE. Write for it to-day.

CARTERS TESTED SEEDS, INC.
133 A King Street, Toronto

Carters Tested Seeds

If you are interested in upkeep of Lawn, Tennis Courts or Golf Course, write for the "Practical Greenkeeper." Every Championship Golf Course in America is to-day using Carters Tested Grass Seeds.

Fruit Growers Convene

The annual meeting of the Northumbria and Durham Fruit Growers' Association was held in Cobourg recently. The feature of the convention was the attention that was devoted to matters connected with the proper marketing of fruit. Mr. D. Pauline, of Brandon, Manitoba, suggested that growers in the east should obtain a list of western buyers and send them a monthly statement of the number of barrels and the varieties of each that they have on hand. This would give a better and wider market and lead to more competition in buying. It was stated by Mr. Pauline that some sections have effected a marked improvement in their packing by requiring the packers to insert their names and addresses in each box or barrel of fruit packed by them.

Mr. P. J. Carey, Dominion Fruit Inspector, pointed out that west of Brandon the apple trade is confined almost exclusively to boxes. He was of the opinion that a much larger portion of the Ontario crop should be box packed.

The following officers were elected: President, F. B. Lovekin, Newcastle, Ont.; secretary, R. S. Duncan, Port Hope, Ont.; treasurer, Thos. Montague, Ont. Inspectors: W. J. Bragg, Bowmanville, Ont.; H. Gibson, Newcastle, Ont.; W. S. Draper, Perrytown; J. H. Hayden, Cobourg, Ont.; J. G. Wait, Wicklow, Ont.; J. E. Turpin, Colborne, Ont.; R. B. Scripture, Brighton, Ont.; W. H. Dempsey, Trenton.

South African Fruit Trade

Reporting from South Africa to the Department of Trade and Commerce, Trade Commissioner W. J. Egan, stationed in Cape Town, writes as follows in regard to Canadian apples shipped to that market last fall:

Opinion among the various dealers in reference to Canadian apples received in South Africa this year. Durban dealers report grading and packing of Nova Scotia fruit to be all right in every particular. They complain, however, that Nova Scotia Kings and Wagners on the whole were a great disappointment, as they were poor in color and in keeping qualities. The Ontario fruit, such as Ben Davies, King Russets, and Spies, left nothing to be desired.

Port Elizabeth dealers were well satisfied with the consignments to them, but stated that they did not receive all they had arranged for, one large dealer claiming that although he booked space early last March he failed to secure accommodation for his second shipment.

The apples which arrived in Cape Town were, with the exception of one lot of Golden Russets on the s.s. Benguela, in very good condition, but were not graded in all cases as they should be for export. The difference in grading of the apples received in Cape Town and other ports must be attributed to the fact that almost all the apples shipped to this port are purchased by local dealers who visit Canada annually, while the fruit to other ports is consigned by Canadian producers or dealers.

The South African market during October, November, and December is a splendid one for good Canadian apples, and it commands high prices. This office invites early correspondence this year with a view to the securing of space in cold storage chambers early in the season.

A FARMER'S GARDEN

IS without real serious meaning to many thousand farmers because they think it is too hard work or it is not convenient to work a horse. So many farmers fail to understand what truly wonderful possibilities there are in modern hand tools.

IRON AGE Wheel Hoes and Drills

(New made in Canada)

do all of the sowing, hoeing, cultivating, weeding, furrowing, ridging, etc., in any garden with better results, far less work and some real pleasure for the operator. 38 or more combinations at \$3.00 to \$15.00. Ask your dealer about them and write us for new booklet "Gardening with Modern Tools" also copy of our paper "Iron Age Farm and Garden News"—both are free.



The Dateman-Wilkinson Co., Limited
462 Symington Ave., Toronto, Ontario.

THIS WASHER MUST PAY FOR ITSELF.

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

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

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

You see I make Washing Machines—the "1000 Gravity" Washer.

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

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

Now, I know what our "1000 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1000 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

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

So, said I to myself, I will do with my "1000 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

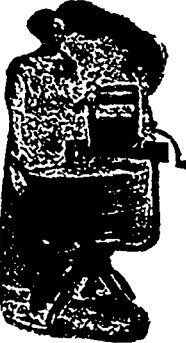
Let me send you a "1000 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1000 Gravity" Washer must be all that I say it is?

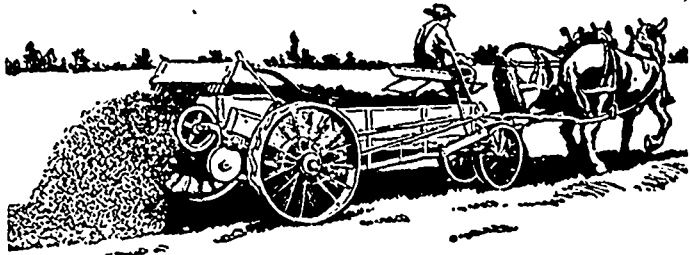
And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 60 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1000 Gravity" Washer that washes clothes in six minutes.

Address me personally:
K. F. MORRIS, Manager, 1900 Washer Co., 357 Yonge St., Toronto, Ont.



International Harvester Manure Spreaders



- THE I H C LINE
GRAIN AND HAY
MACHINES
Binders, Reapers
Headers, Mowers
Rakes, Stackers
Hay Loaders
Hay Presses
CORN MACHINES
Planters, Pickers
Binders, Cultivators
Ensilage Cutters
Shellers, Shredgers
TILLAGE
Combination,
Peg and Spring-Tooth,
and Disk Harrows
Cultivators
GENERAL LINE
Oil and Gas Engines
Oil Tractors
Manure Spreaders
Cream Separators
Farm Wagons
Motor Trucks
Thrashers
Grain Drills
Feed Grinders
Knife Grinders
Binder Twine

STEEL frame on steel wheels—that is the lasting basis on which International manure spreaders are built. All parts, including box, beater, spreading mechanism, apron, are built by experts, using best materials, from careful designs based on field tests.

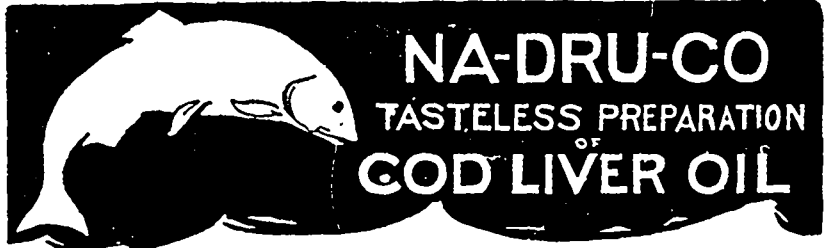
Every detail is strong and durable, built for long life and ease of draft. Among the features that will interest you are these: Simple protected beater driving mechanism, all of steel; load carried on rear axle, insuring traction; reversible gear and worm; low, easily loaded box, with ample clearance underneath; end gate, preventing clogging of beater while driving to the field; etc.

All styles are in the I H C spreader line, high and low, endless and reverse apron, and various sizes for small and large farms. Our catalogues will tell you more. Write for them and let us tell you also where you may see I H C manure spreaders.



International Harvester Company of Canada, Ltd

At Hamilton, Ont.; London, Ont.; Montreal, P. Q.; Ottawa, Ont.;
St. John, N. B.; Quebec, P. Q.



NA-DRU-CO TASTELESS PREPARATION OF GOD LIVER OIL

The Wonderful Spring Tonic

If you have had a hard winter, Na-Dru-Co Tasteless Preparation of Cod Liver Oil will help you to recuperate quickly and avoid the coughs and colds so prevalent during the changeable spring weather.

In this preparation the nutritive and curative properties of the best Norwegian Cod Liver Oil are combined with Hypophosphites, Cherry Bark and Malt Extract in a form that is really pleasant to take and easily digested even by the most delicate.

Thus the great objection to Cod Liver Oil is removed and every one who is run down or suffering from throat or lung troubles can take advantage of its unique medicinal and strengthening qualities.

Add to this the Tonic Hypophosphites, the healing Cherry Bark and the invigorating Malt Extract, and you have probably the finest food-tonic known.

Get a 50c. or \$1.00 bottle from your Druggist. 314

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SKIPPED HILLS RAISE NO POTATOES

Every hill you miss in planting means money lost out of your pocket. No machine can plant perfectly unless there is a hand correction of misses and double hills. 10 to 50 bushels more to acre, using

IRON AGE (Improved Robbins) Potato Planter

Now made in Canada

A piece in every space and one only. No pickets used—no injury to seed. Perfect placing of seed and uniform spacing. Can't you see that it must pay for itself? Write for booklet, "100 per cent potato planting." We make full line Potato Machines, Garden Tools, Sprayers, etc.

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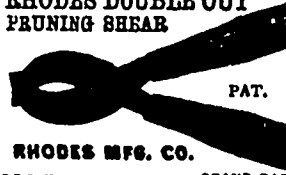


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Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

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FRUITLAND NURSERIES

are offering for sale a general assortment of first-class Fruit Trees, Bushes, Vines and Ornamental Shrubs, etc., at very low prices. Our catalogues are just out. It will pay you to send for one.

G. M. HILL, Box 42, FRUITLAND, ONT.


130-Egg Incubator and Brooder Both For **\$13.90**

If ordered together we send both machines for only \$13.90 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$13.90 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time.

Write us today. Don't delay.

WISCONSIN INCUBATOR CO., Box 316, Racine, Wis., U. S. A.

FREIGHT AND DUTY PAID

International Harvester Cream Separators



THE I H C LINE GRAIN AND HAY MACHINES
Reapers, Reapers Headers, Mowers Rakes, Stackers Hay Loaders Hay Presses

CORN MACHINES
Planters, Pickers Binders, Cultivators Ensilage Cutters Shellers, Shredders

TILLAGE
Combination, Peg and Spring-Tooth, and Disk Harrows Cultivators

GENERAL LINE
Oil and Gas Engines Oil Tractors Manure Spreaders Cream Separators Farm Wagons Motor Trucks Thrashers Grain Drills Feed Grinders Knife Grinders Binder Twine

A DAIRY farmer who does not use a cream separator is losing up to \$15 per cow per year. Complete your dairy equipment by the purchase of an International Harvester cream separator—Lily, Bluebell or Dairymaid. These separators skim closely—leaving barely a drop of cream in a gallon of milk—and they will do it for years.

These machines are furnished with pulleys for the use of power. Belted to a small I H C engine, you have the best outfit it is possible for you to buy. Note the low supply can on I H C separators, the height of the milk spout which allows a 10-gallon can to be used for the skim milk, the strong frame with open base which can be kept perfectly clean, and the dozen other features which make these I H C machines the best.

Your local dealer should have one of these machines on sale. If he has not, write us before you buy and we will tell you where you can see one; also send you an interesting book on separators.

International Harvester Company of Canada, Ltd
At Hamilton, Ont.; London, Ont.; Montreal, P. Q.; Ottawa, Ont.; St. John, N. B.; Quebec, P. Q.




British Columbia Fruit Growers' Convention

The 24th annual convention of the British Columbia Fruit Growers' Association was held in Victoria, B. C., during the last week in January. It was crowded with important discussions relating not only to provincial but to broader issues as well.

President W. C. Ricardo, in his presidential address, stated that the industry stands to-day in a stronger position than it did this time last year. He reviewed the work done in the past year, the success of Messrs Abriel and Foggo's interview with the Dominion authorities in regard to more rigid enforcement of the Sales and Inspection Act, the starting, by the aid of the Provincial Government, of eight local cooperative associations in the Okanagan with a central agency, which on the whole have worked together successfully, and he ended with a warning that "if there ever was a year in which the British Columbia growers should watch the cost of production and the grading of their product, it is this year of 1914, with the largest crop in the North-western States and our own Province ahead of us."

The transportation Committee's report referred to the growing popularity of express service over freight for fruit, and found the complaints of railway rates far fewer than in former years.

Messrs Foggo and Abriel strongly advocated in the advertising committee's report the need of advertising by the Province as a whole by the grower and by the shipper. They advocated joining with the Alberta Government in running an exhibition train through that province and possibly through Saskatchewan. J. Johnstone believed the best method was through the Provincial exhibits at the different fairs.

GRATIFYING REPORTS

The report of the executive and secretary noted that the fruit growers of the four North-western states of America had formed a "Deciduous Protective League" to do for their fruits what the Citrus Protective League had done for other fruits. The Provincial Government grant was increased from \$3,500 in 1912 to \$6,500 in 1913, and the total number of members showed an increase of one hundred and one, there being now six hundred and ninety-six all told. Hearty endorsement was made of the work of the British Columbia Entomological Society and the association was urged to support its executive in the support they had given to the National Fruit Growers' Association.

Fruit growers were urged to encourage the sentiment for inter-provincial trade and two delegates had already gone to the prairies to interview the governments and the grain growers.

Parcels post received the hearty support of the executive, who saw in it the prospect of wider distribution and greater facility in the shipping of consignments. They pointed out that for every railway station there were two post offices in Western Canada. They had recommended to the Postmaster-General a twenty-five-pound minimum.

IRRIGATION PROBLEMS

Hon. W. R. Ross, Minister of Lands, addressed the convention on "Public Irrigation Corporations" and the proposed legislation authorizing their formation. He reminded his audience that water had come to be looked on as one of the resources of the province, and one which could be conserved through wise use and careful administration. The need for this was not so ap

parent in former days, when bottom lands were sufficient for the settlers, and it was natural that it was not realized that the water problem was one that required technical training to solve. More recently contentions over conflicting water rights had become serious and widespread and had aroused public sentiment to demand legislation.

Prior to 1909 men believed that all they had to do was to record a notice to take water, and it was theirs for ever, no matter how little land they had to use it on or whether they made due development. They might even have subdivided or sold their water holdings.

Mr. Ross referred to the impossibility in many cases of the individual settler bringing water on to his land, whereas by the combination of fifty or one hundred this was made feasible. Education along these lines was necessary in the province. They had stores of experience to draw on in the United States.

To form a public irrigation company a petition signed by landowners representing fifty per cent. of the value of the lands to be incorporated would be necessary. Then after careful survey and investigation the whole matter would be laid before the people of the district affected and a vote taken.

OTHER SPEAKERS

Other addresses were delivered on Fruit Growing and Marketing in the Yakima Valley by W. P. Sawyer, The Methods of the North Pacific Fruit Distributors, by H. C. Sampson, secretary to that organization; by E. Robinson, on the North-western Fruit Exchange; and by R. Robertson, of the Okanagan United Growers, Ltd.

Mr. Robertson sketched the growth of the cooperative movement in the province.

SALES METHODS

Mr. Sampson, equipped with facts to his fingertips, told of the five hundred thousand acres planted with fruit in the North-western States, which will come into bearing in twelve years, and of the dispositions they were making to market the one hundred and twenty-five thousand carloads. He laid down the principle that the individual grower cannot sell his own crop. Both the selling and buying of fruit wholesale are a life study, and unless the seller is equipped with reports and knowledge equal to those in the buyer's possession he must come off second best. He told of the power of his company over railways, who in certain districts, where there was no competition, put on unfair rates, and of how quickly these climbed down when told that retaliation would take place in Washington or some place where competition did exist. He told of the amount recovered for the growers for fruit damaged or ruined by the railways, and that within a few weeks, and he outlined what he believed would be the future of the company's career of usefulness.

ASIATIC EXCLUSION

The last day's proceedings witnessed a decision at last arrived at on the Asiatic question. On such an important matter it was felt that any representations made to the Government should have the weight of the whole association behind them. The resolution ultimately passed petitions the Provincial Government to persuade the Dominion and Imperial Governments to total exclusion for the future of all Orientals from Canada, and that in the meantime relief should be given as far as possible to

BEES FOR SALE

For Sale — Early swarms at fall prices. 1/2 lb. bees \$1.00, 1 lb. bees \$1.50, f.o.b. here. Add price of Queen if wanted. Untested Italian Queens, 75c each, Tested Italian Queens, \$1.25 each. These are bred from best honey-gathering strain. No disease. Safe arrival and satisfaction I guarantee to any Express Office in Man., Ont. and Que., which has connection with Detroit, Mich. This is undoubtedly the best way for Northern honey-producers to increase and improve their stock. Delivery begins about April 5th. Capacity, 40 swarms per day. You will get your bees when wanted, or money back by return mail.

W. D. ACHORD, FITZPATRICK, ALA., U.S.A.



**Bee Supplies
Bees and Queens**

Improved Model Hives
Sections Comb Foundation
Italian Queens
Bees by the Pound Packages
Etc., Etc.

EVERYTHING for the BEEKEEPER

Catalogue Free

Highest Price paid for BEESWAX

F. W. JONES - BEDFORD, QUE.

MASSEY-HARRIS

Orchard Disc Harrow

This Disc Harrow has ten 16 inch discs. Extra discs and spools can be supplied for converting it into a twelve disc size.

The Harrow with ten discs cuts 5 ft. 6 in., and when the long Extension Frame is used, the machine measures 10 ft. 1 in. in width.

It is reversible—covers the roots or not, as you wish. The gangs are interchangeable in their position on the frame so as to throw the soil to or from the trees and vines.

It is adjustable to any depth, in the middle or at the ends, by means of gang hinges. Levers adjust each gang separately to any angle, regulating the amount of dirt thrown. In grape cultivation the Massey-Harris

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IMPLEMENTS FOR
THE FRUIT GROWER:
ORCHARD HARROWS
ORCHARD CULTIVATORS
SPRAY OUTFITS
VINEYARD PLOWS
SPRING TOOTH
HARROWS
GRAPE and BERR
HOES, Etc.**

cultivates all of the ground. A plow cannot do this. It is a good side-hill harrow. The steel frame is in one piece. Strong arches or yokes support the gangs; separate bearing boxes take up the friction.

We furnish as an extra attachment, a steel extension frame. With it the operator can cultivate under the trees, close to the trunks.

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MONTREAL MONCTON WINNIPEG REGINA SWIFT CURRENT
SASKATOON YORKTON CALGARY EDMONTON
Agencies Everywhere

BLACK CURRANTS

We have some excellent plants of the Black Naples variety, grown from the most productive patch in the district. Also some Lawton Blackberry plants.

Apply for prices.

J. E. HENRY & SON - WINONA, ONT.

TRADE MARK

WILKINSON PLOUGHS

U.S.S. Self Centre Steel Moldboards, highly tempered and guaranteed to clean in any soil. Steel beams, steel landsides and high carbon steel coulters. Clevises can be used either still or swing. Each plough is fitted especially with its own pair of handles, rock etc., long and heavy and thoroughly braced. The long body makes it a very steady running plough. Shares of all widths - specials for stony or clay land. The plough shown turns a beautiful furrow, with minimum draft and narrow furrow at finish. Ask for catalogue.

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461 Symington Ave. Ltd.
Toronto Canada

No. 3
Sod or
General
purpose
plough,
25 styles
to choose
from.



FOR SALE AND WANTED

Advertisements in this department inserted at rate of 3 cents a word for each insertion, each figure, sign or single letter to count as one word, minimum cost, 30 cents, strictly cash in advance.

ALL KINDS OF FARMS—Fruit farms a specialty.
—W. B. Calder, Grimsby.

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

RELIABLE HELP, SKILLED AND unskilled, supplied horticulturists and others. Canadian Employment Bureau, Proprietor member of B. G. A., London, England. 65% James St. South, Hamilton, Ont.

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

SALMON ARM. Shusway Lake, B.O. has the sweet fruit and dairy land in B.O. 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.O. Prices of land moderate, and terms to suit. Apply to F. O. Haydock, Salmon Arm, B.O.

WANTED—Young Man, single, with some experience, as bookkeeper, to begin about May 15th. Must be strictly temperate, industrious and willing to work hard in busy season. State age, experience and wages expected, with board supplied, in first letter. — Ewart McEvoy, Woodburn, Ont.

BEES wanted, up to 250 colonies. Particulars to Box 21, Pilsberville, Ont.

WANTED — Empty top story Hives (Langstroth); Extractor and Apisary equipment generally.—J. R. Black, Aurora, Ont.

BEES WANTED—Either with or without other equipment. Give full particulars to Wm. Weir, 34 Chester Ave., Riverdale, Toronto, Ont.

GLADIOLUS

AMERICA (pink), the leading commercial variety \$1.50 per 10; express charges collect. mailing size, \$1.20 prepaid FACONIC.

Groff's best pink. Twice the price of America.
H. P. VAN WAGNER
R. R. NO. 5 - HAMILTON, ONT.

Geraniums Geraniums

S. A. Nutt, John Doyle, Madame Barney, etc. 2 1/2 inch pots, at \$2.50 per hundred.

Madam Sallerot at \$2.00 per hundred.
JOHN GOLBY, Florist
West Main Street - GALT, Ont.

GLADIOLI

GROFF'S HYBRIDS are now more largely grown in the United States and Canada, than any other strain. They are in good demand in AUSTRALASIA, and English orders have nearly exhausted some varieties.

AMERICA (Groff's 119) stands easily at the head of commercial varieties.

PEACE, WAR, DAWN, BLUE JAY, LAVANDULA, PEACHBLOW, and others, will soon be found in all gladioli lists.

We try most of the European kinds, as they come out, but so far have found very few, that are likely to secure a permanent place.

CATALOGUES ON APPLICATION

CAMPBELL BROS.
SIMCOE, ONT.

Increase your PROFITS from orchard and garden



Neutral Arsenate of Lead

is safe, economical, and sure because it contains the maximum amount of arsenic which will combine completely with the lead. Write for descriptive folders and prices, before buying elsewhere.

THE CANADA PAINT CO. LIMITED

PAINT-VARNISH AND DRY COLOR
MAKERS—LUBRIC OIL CRUSHERS
MANUFACTURERS OF ANTI-CORROSION
WOOD PRESERVATIVE

what has become to white people an intolerable situation.

The following officers were elected: President, W. C. Ricardo, vice-president, Thos. Abrah, Nakusp, executive committee, R. M. Palmer, James Rooke, Grand Falls, F. D. Nicholson, W. S. Foggo; new directors, I. J. Thornton, A. J. Clarke, J. Reckie, Mr. Bulmer.

British Columbia

At a conference held in January the fruit growers of British Columbia and the United Farmers of Alberta considered a proposition to patronize one another and to handle each other's products. The British Columbia fruit growers were represented by W. S. Foggo, of Vernon, and Mr. Abriel of Nakusp, and the Alberta farmers by President Triggillus and Secretary Woodbridge, of the United Farmers of Alberta, and E. J. Fram, vice-president of the growers' association.

It was proposed that the Fruit Growers' Association of British Columbia and the Farmers' Association of Alberta should cooperate in marketing produce, and when the Alberta farmer wanted fruit he should purchase it from the British Columbia growers, and when the fruit growers wanted hay or grain they should secure it from the Alberta farmer.

Mr. J. E. Armstrong, M.P. for East Lambton, purposes obtaining legislation making it a criminal offence for employees of express companies to damage fruit by rough handling. Mr. Armstrong also proposes to amend the Fruit Marks' Act so as to make fruit inspectors cargo inspectors also at shipping points.

PRIZE DAHLIA ROOTS

15 for one dollar by mail prepaid, 15 larger roots one dollar by express, not prepaid. Low rate to Horticultural Societies who give Dahlias as premiums.

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Irish, Dutch and American. Hybrid Perpetual, Hybrid Teas and Climbing. Strong 2 year field-grown bushes that will bloom the first year - none better, none cheaper.

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Trees, Shrubs, Vines, Perennials

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(See Publisher's Desk)