

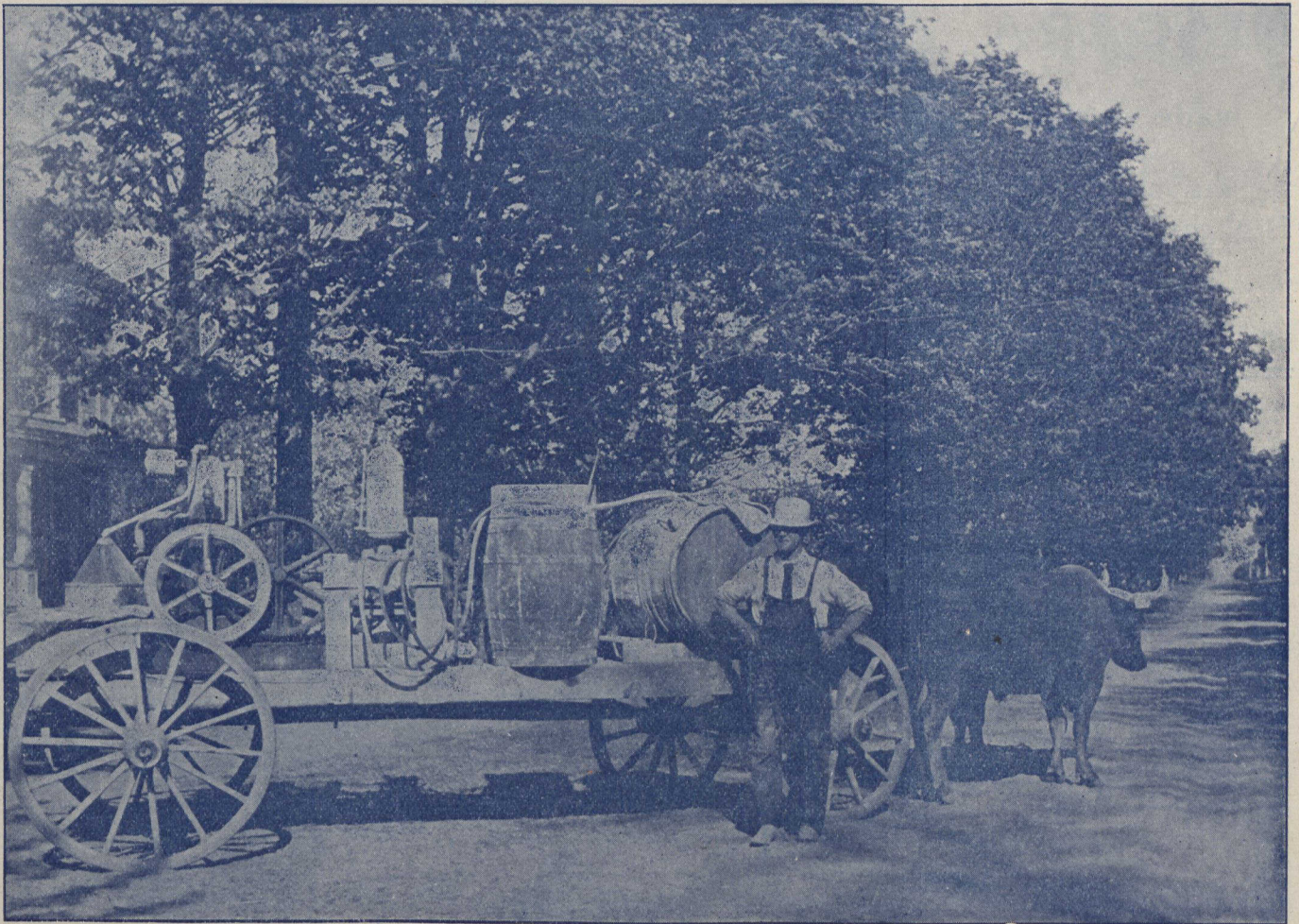
# THE CANADIAN HORTICULTURIST

Belburn Miss  
170 Glasgow St  
Apr 11

FEBRUARY, 1911  
Vol. 34 No. 2

PETERBORO, ONTARIO

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FOR FRUITGROWERS, MARKET GARDENERS & AMATEUR HORTICULTURISTS  
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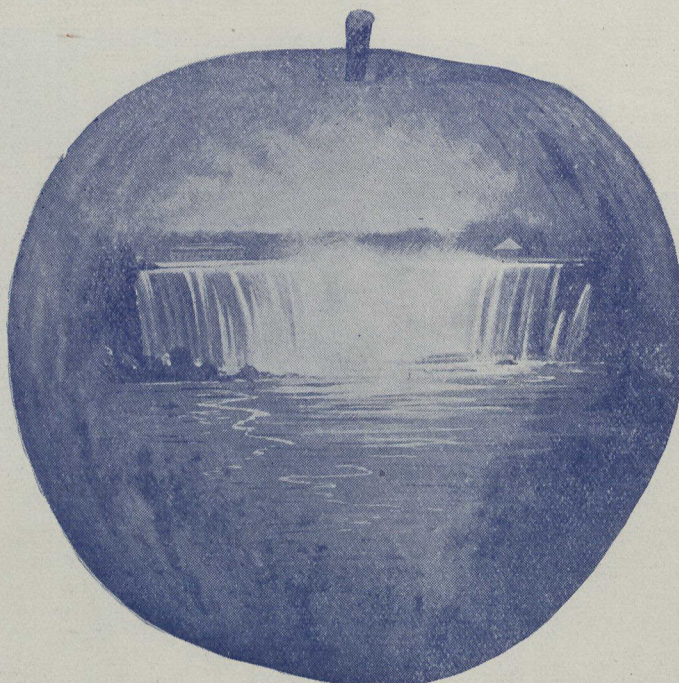
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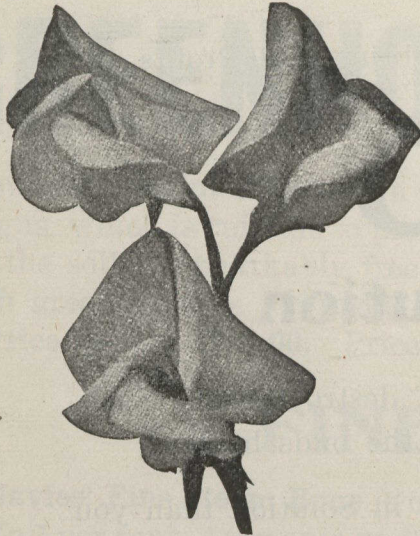
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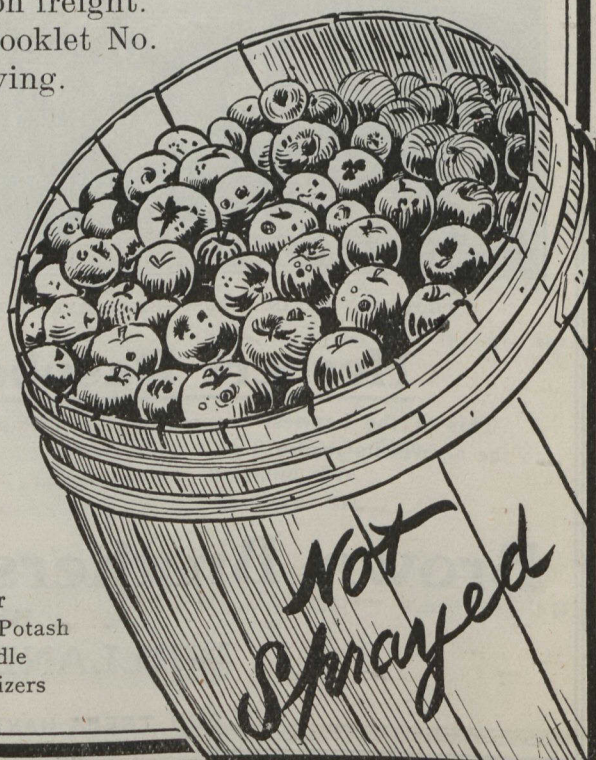
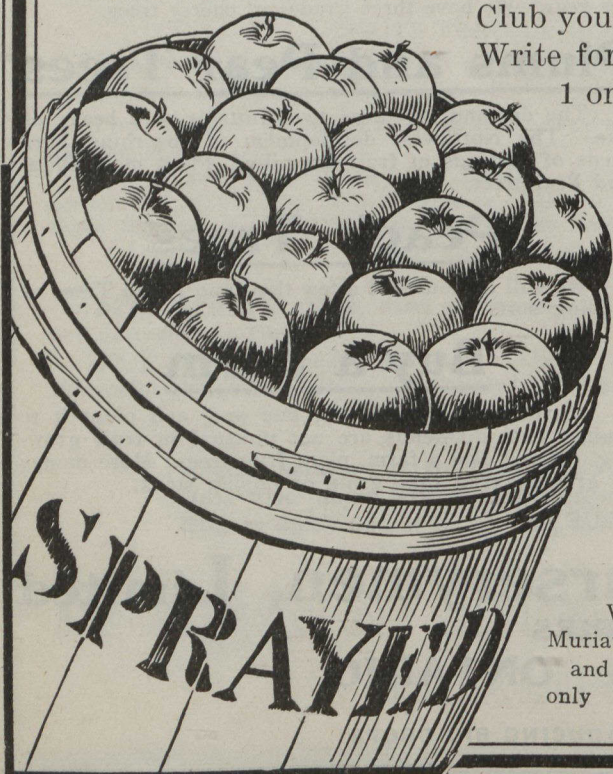
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Specify Quantities when asking for prices.

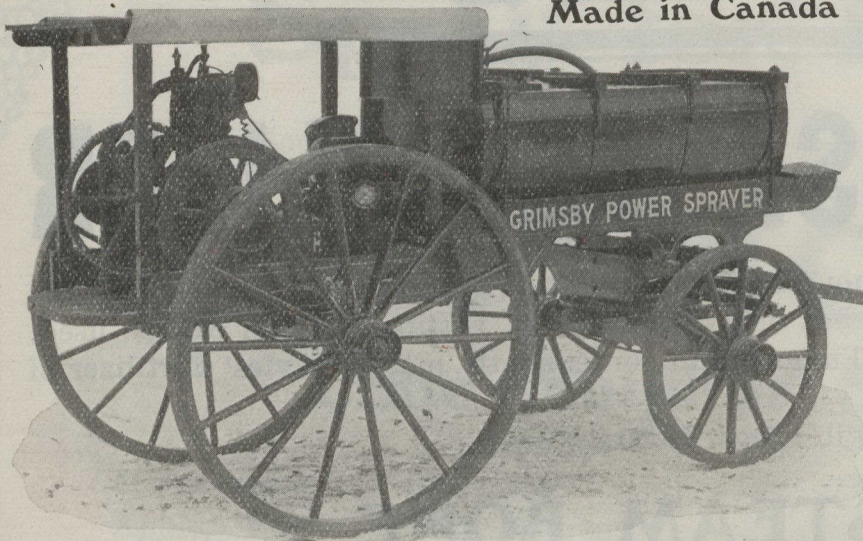
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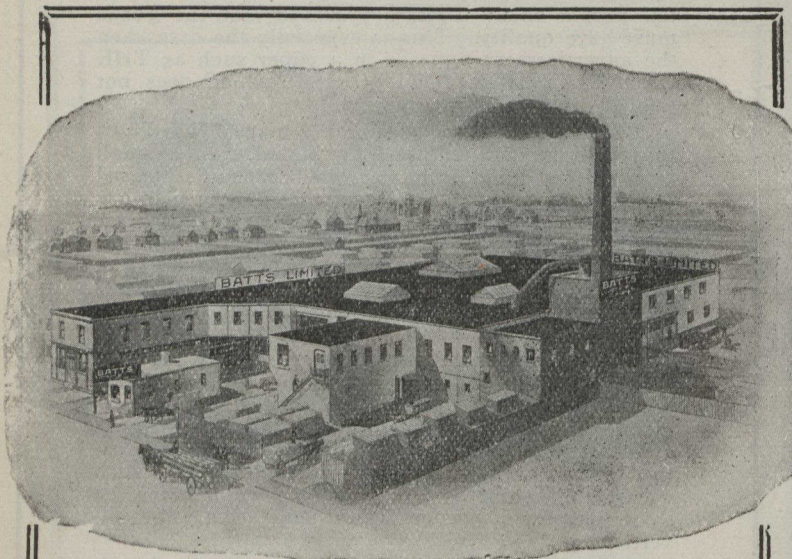
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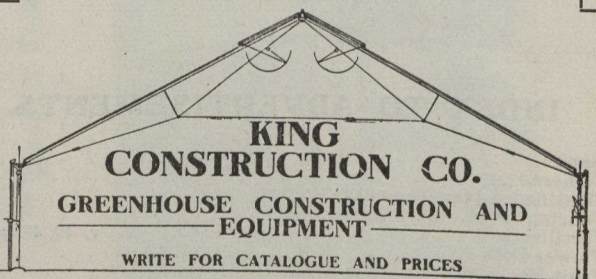
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# The Canadian Horticulturist

Vol. XXXIV

FEBRUARY, 1911

No. 2

## Large Profits from Spraying Old Orchards

**D**URING the past season some of the finest apples ever produced in Ontario, were grown in the district about Burlington. An editor of The Canadian Horticulturist who visited this section recently, found that the growers have awakened to the fact that it pays to take care of their apple orchards. A great interest has been taken in spraying. The growers have learned how and when to spray, and the proper materials to use. The results these growers have obtained have been a great incentive to others, and each year many new growers are following their example.

Messrs. Porter Bros. of Appleby, decided last spring to take care of their orchard in an approved manner. They had been spraying for some years with Bordeaux, but in an indifferent way and their results were anything but satisfactory. Their crop of apples for several years had been very poor, and it was with difficulty that they could find a purchaser at any price. Last spring they started at their orchard early. They pruned and scraped their trees. They plowed early, and applied about half of a ton per acre of commercial fertilizer. They discarded their old hand pump and purchased a gasoline power sprayer. They used commercial Lime-Sulphur, diluted at one to eleven for the dormant spray, and commercial Lime-Sulphur, diluted at one to thirty-five, with Arsenate of Lead added, for their summer sprays. Messrs. Porter sprayed very thoroughly. They had gone to considerable expense purchasing fertilizer and

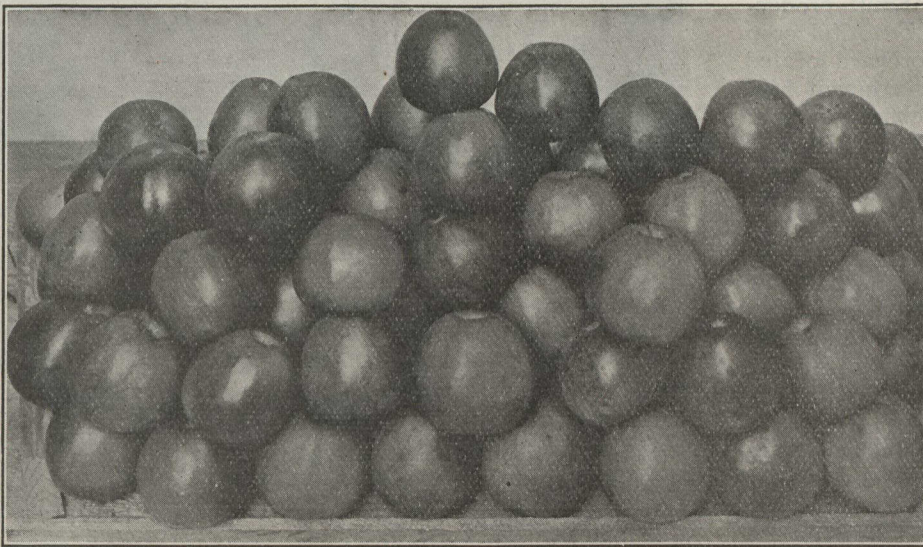
power outfit, and they concluded that if the job was worth doing at all it was worth doing right. They applied their spray at the proper time, and never stinted the quantity. The results were very gratifying to them. They produced the largest and best crop they had ever grown. Their varieties consisted of Spys,

trees. They were besieged with apple buyers and succeeded in disposing of their crop at a price double the best they had ever received before. Messrs. Porter claim that as an investment, this spraying proved the best they ever made.

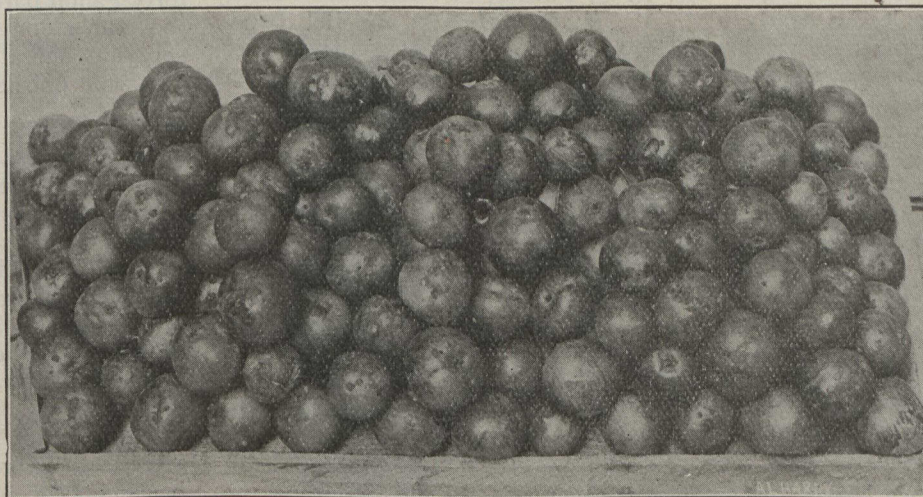
In the orchard of Long Bros, situated one mile east of Burlington on the bank of Lake Ontario, probably even better results were obtained. This orchard had never been sprayed. It had the reputation of growing the worst spotted apples of any orchard in the district. When other orchards near it would grow reasonably fair fruit, the apples in this orchard were always spotted. This was accounted for by some because of its close proximity to the lake. Last year Long Bros. decided to spray. As they had had no experience themselves, nor any equipment to do the work, they engaged a man with a power outfit, who had been successful himself. This orchard was sprayed very thoroughly, twice with Lime-Sulphur and Arsenate of Lead.

Probably no orchard ever received in two applications a greater drenching. It had nearly all the diseases that apple orchards were affected with, namely, San Jose Scale, Oyster Shell Bark Louse, Bud Moth, Codling Moth and Apple Scab, so great care was taken in the spraying. It was the intention to make an object lesson of this orchard, as some growers in that district thought it impossible to make good fruit grow there.

The total cost to Messrs. Long Bros. for Lime-Sulphur, Arsenate of Lead and labor, was \$95.88. The results obtained



Northern Spy Apples taken from lower limbs in Ray Clark's orchard, Woodville, N. S., having been carefully sprayed with Niagara Lime-Sulphur



Apples taken from the tops of the same trees, being too high to reach with the spray

pick before, and this year they were really a sight to behold. Not one spotted or blemished apple could be found on the

were really marvellous. Their orchard was visited by hundreds of fruit growers and was generally pronounced as the best they had ever seen. It consisted of less than six acres, and was sold to an apple buyer for \$1375.00 on the trees, and he reports it was a profitable investment for him. Thus Messrs. Long, with an investment of \$95.88, realized in one year a return of \$1375.00. This amount represents over three times more than was ever realized from the orchard in any previous year. As a test case, in this orchard, one single tree that was situated among berry bushes, was left unsprayed, with the result that the fruit was totally unfit for even the evaporator.

#### A NOTED ORCHARD

Messrs. J. C. and M. C. Smith produced last year a large and beautiful crop of apples. It was in their orchard located in Burlington that the government held the fruit meeting on September 7th that was fully reported in the October issue of *The Canadian Horticulturist*. This meeting was attended by prominent fruit growers from all parts of Ontario. This orchard consists of three hundred trees. At the time of the meeting considerable discussion was heard as to the probable quantity of apples in the orchard and the probable percentage of No. 1's. At the time of the meeting Messrs. Smith were offered \$2500.00 for their crop, which was refused. This orchard packed out over 1050 barrels, and for which over \$3500.00 was realized. Apple Scab and Codling Moth were almost entirely controlled. The only No. 3's that were in the orchard were those marked by hail.

This orchard is over fifty years old and the trees large and hard to handle. The most approved care is given the orchard in the way of pruning, cultivation, fertilizing and spraying. Probably no orchard in Ontario receives more thorough spraying than this one, and it is this thorough spraying that produces apples so nearly perfection. This orchard was sprayed four times with a power sprayer at a pressure of one hundred and eighty to two hundred pounds. At each application it received about three thousand gallons of spray. This orchard has had this systematic care for the last four years, and has produced on an average of one thousand barrels per year. The soil in this orchard is very light sand.

Messrs. Smith have another orchard situated close to the Mountain on hard clay land. This orchard they have had for two years only, and have succeeded in producing two beautiful crops. The crop this year consisted of over fifteen hundred barrels, over twelve hundred of which were Northern Spys. The same care and attention was paid and the same high results were obtained. This orchard had been neglected for fifteen years, and the way in which it responded to treat-



Orchard owned by Mr. J. C. Smith, Burlington, Ont., where Spraying has Paid

This orchard was thoroughly sprayed last year with lime-sulphur and produced exceptionally fine fruit. It is mentioned in the accompanying article.

ment was remarkable. Probably the most beautiful Spys that were ever grown in Ontario were in this orchard this past year.

#### OTHER GROWERS SUCCESSFUL

Many more instances could be given of results obtained in this section. The above orchards are mentioned only because they had previously been neglected and are quoted to show what can be done in one year. The old fruit growers in the district who have for years been taking care of their orchards, were again rewarded with good crops of good fruit. Particular mention should be made of Mr. A. W. Peart, Mr. H. T. Foster, Mr. Smith Freeman, Mr. W. F. W. Fisher, Mr. R. C. Fowler, Mr. Leeman Wilson, Mr. W. H. Easterbrook, and Bell Bros.

The only good apples in the district were found in orchards that had been thoroughly sprayed. It has been demonstrated that spraying pays. There have been many doubters in this section about this question, but it is very hard to find any of them now. It is generally predicted that spraying will be almost universal this year. The growers in this section are using commercial Lime-Sulphur and Arsenate of Lead. They claim their results are most satisfactory.

There is probably no section in Ontario where growers have had so many obstacles to overcome as here. This is the recognized home of the Codling Moth. In the valley between the mountain and the lake this pest has flourished to perfection. Here they also have San Jose Scale, Oyster Shell Bark Louse, Blister Mite, Bud Moth, Aphis, and about every pest known to affect the apple. That they have suc-

ceeded in controlling these pests, is creditable to them, and should be an object lesson to fruit growers in other parts of Ontario. Fruit growing has received a great stimulus in this district, and Halton county may be reckoned on in the future as a producer of good apples. Several new Fruit Growers' Associations have been formed in the vicinity, and their intention is to grow apples for profit.

#### Experience in Spraying

Hamilton Fleming, Grimsby, Ont.

I have always used the home-made lime and sulphur mixture in almost equal proportions, and applied while warm. My spraying outfit consists of an ordinary forty gallon barrel with hand pump, hose rod and a double nozzle. I commenced spraying operations last year on March 31st, and finished April 11th.

#### RESULTS

In an orchard of one thousand one hundred peach trees, I applied twenty-four barrels of spray at a cost of ninety cents a barrel. The trees were sprayed *very* thoroughly. The direction of the wind was carefully watched. The lime in the mixture made it possible to see where branches had been missed, and so made a final touching up an easy task.

I had very little curl-leaf, except on fifty "Triumph" trees, which, however, yielded an average of nine eleven quart baskets per tree. No thinning was necessary. From eight hundred trees in bearing, I marketed seven thousand two hundred quart baskets, chiefly "selects" or No. 1. My trees appear clean and in a healthy condition.

## Intensive Fruit Growing

A. W. Peart, Burlington, Ont.

THE general practice in orcharding is to have a larger acreage than is properly cared for. In order to make a fair margin of profit in producing pork, beef, milk, or dairy product, careful, systematic attention must be given to the essential details. The same applies to growing fruit.

When a person has a plantation larger than his capacity to care for it, there is a loss of money in the land occupied by the trees, and in the trees themselves not working up to their normal level. It may not be wide of the mark to say that in this Province fruit trees are not giving more than half results. There are, of course, many exceptions to this. Some orchards of apples, pears, plums, cherries and peaches are managed on a business basis; but there is room for a wide extension of the intensive system. There is no good reason why an average apple orchard of working age and ten acres in extent, should not give in ten years 5,000 barrels of apples worth \$8,000 to \$10,000.

### ESSENTIALS

An intensive system seems to involve at least the following factors:

First—The selection of a proper natural soil for the kind of fruit. Apples appears to be the most profitable when planted on sandy, gravelly and light clay loams; pears on clay loams; cherries on high, sharp, gritty, gravelly soils; while plums are similar in their wants to apples.

Second—Planting the right varieties. In setting out a young orchard one should select those varieties of known merit in the district where he lives, and then not more than five or six standard sorts to cover the season, thus avoiding congestion in harvesting the fruit.

Third—Cultivation. When trees are properly planted it is important to give them a good start. If you want to make a good man you must begin when he is a baby. There is a wonderful analogy between the animal and the vegetable worlds. Cultivation should be frequent until about the first of August to preserve the moisture and keep down weeds, grasses and so forth, which also abstract water. Your tree will then make a good healthy growth. Throughout the life of an orchard in most cases cultivation should be an annual portion of the care.

Fourth—Pruning This begins with planting. The head should be formed of three or four main branches, and never of two. Thence on, thin judiciously each year with a tendency towards severity. Too many are afraid of hurting a tree. There is practically no danger of injuring our orchards. The branches of

young trees growing too strong should be cut back year after year, and old trees going too high should be dehorned according to circumstances.

Fifth—Fertilizing. This requires careful, discriminating judgment. If the requisite food is not in the soil then it should be applied. Speaking generally, stable manure is good for trees in all stages of their life, especially on clay soils, when growth is usually slow but productivity light. Green crops ploughed under are also economical, granulating the soil and retaining moisture. On lighter lands, wood ashes, potash and phosphoric acid in some form may occasionally be used to advantage.

Sixth.—Spraying. With the coming of increasingly large numbers of injurious insects and fungi, spraying has reached the stage of necessity. This, in late years, has been shown beyond a peradventure.

Seventh—Picking. Fruit should be picked carefully to avoid bruises and consequent depreciation. Careless men should not be sent to an orchard. By the use of suitable extension ladders instead of the old long ones, a man can pick more apples in a day from a tree of standard size.

Eighth—Marketing. The selling side of the fruit business is of as great importance as the producing end. Only in recent years have growers begun to realize the necessity and advantage of eliminating as far as possible the intermediaries between them and the consumer, and thus increasing profits. Slowly but steadily cooperative associations are being organized in various portions of the Province. These are giving their members a distinctly increased margin for their fruit, and at the same time stimu-

lating the "intensive" system in the management of their plantations.

The attitude of a grower should be that of a doctor towards his patient. What is wrong with this tree or orchard? It is not giving results. Study its symptoms, diagnose the case, then apply the proper remedy.

### In The Orchard

Feed the winter birds in the orchard. They will destroy thousands of injurious insects, and thus reward you next summer.

Prune out egg masses of tent caterpillars, scrape off loose bark from the trunks and large limbs of trees with a dull hoe. Destroy cocoons of fall web worms and other hibernating insects. While the ground is still frozen clear all rubbish off the garden spot and give it a dressing of stable manure, which is to be spaded in later when the frost is out of the ground.

The Maine Experimental Station pruned, sprayed, and dug around an old apple tree eighty years old, and last year it yielded twelve barrels of fruit. Unless your orchard is over eighty years of age it is not too late to save it by thorough pruning, grafting, fertilizing, and good care.

In pruning, do not take out more than one-third of the whole top in one year. To do so would throw the trees out of balance and cause an excessive growth of water sprouts. Give the tree light by cutting out fair sized secondary branches and leave the small laterals.

One year wood should be cut to a bud. Older wood to a branch. Stubs left on are not only unsightly, but are good footholds for insects and germs.

If the fruit grower has from ten to twenty acres of fruit he will need some make of a gasoline power spray outfit, which will be found more economical.



A Modern (Hardie) Power Sprayer at Work in a Western Orchard—Note the Advantage of Low Trees

## A Home-made Soluble Oil for the San Jose Scale

C. D. Jarvis, B.S.A., Storrs, Conn.

Of all the remedies thus far proposed the lime-sulphur wash is the most popular for the San Jose Scale, and the most generally used. That there is a general demand for something more convenient is evident from the activity of the various experiment station workers in proposing new remedies. Hydrocyanic acid gas, whale oil soap, kerosene emulsion, undiluted crude petroleum, kerosene water (a mechanical mixture of kerosene and water), and the kerosene-limoid (K-L) mixture have all been exploited in their turn. They all had their weak points and limitations. Very few are now in use, and these only in restricted areas.

In considering the relative merits of "soluble oil" and the lime-sulphur wash for the treatment of the San Jose Scale, many important factors must be taken into consideration. Under ordinary conditions, the oil spray is more efficient, is as free from injurious effects upon the tree, decidedly cheaper, decidedly more convenient, and less destructive to spraying equipment. In view of the absence of coloring matter it is especially valuable around home grounds or roadsides and in parks. The various commercial preparations, such as Scalecide, Kill-O-Scale, Sure-Kill and Target Brand Scale Destroyer, are very convenient for the man with a few trees to spray. In view of a "soluble oil" prepared according to the formula herewith recommended, being offered for sale by several firms at a much lower figure, the cost of these preparations may ultimately be reduced. The chief advantage of the lime-sulphur wash over oil sprays consists in its influence in controlling the leaf curl, and its invigorating effect on the tree. Where leaf curl is present, an occasional application, once in two or three years is recommended.

### THE EMULSIFIER

The value of crude petroleum as an insecticide has long been known. In its undiluted condition it is injurious to vegetation, yet under very favorable conditions, it may be used on dormant trees for the destruction of San Jose Scale. Not only is the undiluted petroleum unsafe, but it is decidedly too expensive. By means of mechanical contrivances or "emulsion pumps," attempts have been made to supply oil in a diluted condition. Such contrivances were a partial success, but were not reliable and their use has been practically discontinued. Chemical reagents must therefore be depended upon to bring the oil into such a condition that it may readily be diluted with water. The combination of chemicals used to bring about this condition is termed the emulsifier; the resultant oil after it has been acted upon by the emulsifier

is termed the "soluble oil," and the diluted "soluble oil" is called the emulsion or spray mixture. The formula for making the emulsifier is as follows: Carbolic acid (liquid crude 100%) two quarts; fish oil (Menhaden), two and a half quarts, caustic potash (granulated), one pound. Heat to 300 degrees F., remove from fire and immediately add: Kerosene, three and a half quarts, water five and a half quarts.

This formula is sufficient to make slightly more than three gallons of the emulsifier, fifteen gallons of the complete "soluble oil," or two hundred and forty gallons of the emulsion ready for spraying.

The carbolic acid, fish oil and caustic potash should be deposited in the kettle before the fire is started. The mixture should be slowly stirred for a few minutes after the fire is lighted, or until the potash is dissolved, at which time the cover should be placed on the kettle to prevent loss from steaming and evaporation.

The cooking is best done in an iron

kettle. The ordinary caldron kettle commonly used on the farm for making soft soap will answer the purpose. A large kettle is not necessary for, as may be seen from the above formula, slightly over one gallon of the cooked mixture (carbolic acid and fish oil) is sufficient to make two hundred and forty gallons of spray mixture. The kettle should be supplied with a close fitting cover, through which has been bored a small hole to accommodate a perforated stopper, by which the thermometer is held in place. A thermometer about eighteen inches long and graduated from two hundred degrees to three hundred and ten degrees Fah., will be most suitable. The graduated portion should be restricted to the upper end so as to project above the cover. Any good thermometer graduated to about three hundred and ten degrees Fah. will answer the purpose. If not long enough to reach the liquid in the kettle, it may be lowered through the hole in the cover by means of a string. The kettle should not be more than half filled to al-



A Seedling Peach as Grown in a Toronto Garden

Mr. Roderick Cameron, Toronto, sends the following history of the peach shown in our illustration. Mrs. R. L. Brereton, Toronto, saved the pit from the finest peach in a basket bought at the Chicago Exhibition. The fruit is different in taste and appearance to any Mr. Cameron has ever seen although he is an authority on the subject. In color it is between a yellow and white, medium in size, ripens after the yellow St. John and is a free stone. Mrs. Brereton was so well pleased with her success in growing this peach that she continued planting and now has trees all around her City lot, which all bear the finest fruit. All the peach seeds have produced fruit as good and almost identical with the parents while the trees are productive. As a rule it is only one out of a hundred seedlings that turn out to be worth growing. Mr. Cameron then asks, can it be possible that peach trees grown from peach stones planted where the tree is to stand are hardier, deeper rooted and longer lived than a tree transplanted from the nursery. He thinks that this would be an interesting matter for the experimental station to decide.

low for foaming, and in view of the hot mixture being somewhat inflammable, the fire should not be allowed to blaze above the edge of the kettle.

When the temperature approaches two hundred and sixty degrees Fah., the cooking requires close attention, and if the mixture foams up near the top of the kettle, it may be advisable to subdue the fire for a time, or until the temperature reaches two hundred and seventy degrees when the foaming ceases. Under no circumstances should the cooking be done in or near a building, unless of course, a steam coil or jacketed kettle is used. If steam to a pressure of about sixty pounds is available, a jacketed kettle will be found most convenient. The operation of cooking whether done over a fire or by steam should not require more than thirty minutes.

When the required temperature is reached the kettle should immediately be removed from the fire, or the fire quickly subdued by means of sand or dry soil. The hot mixture should be transferred to a larger vessel and the kerosene immediately added then the water. Serious results may occur if the water is added before the kerosene. Both the kerosene and water should be poured in slowly while the whole is being stirred.

The emulsifier when properly made and at the ordinary temperature is quite liquid, somewhat stringy, and when held in a glass to the light, of a clear, reddish-brown color. It remains in good condition indefinitely—a sample at the end of eighteen months was found to just as efficient as at the beginning. In view of its keeping quality it may be made up during rough weather or slack seasons.

#### THE "SOLUBLE OIL"

Although the "soluble oil" remains in good condition for a long time, it seems advisable to delay its preparation till spraying time. It is readily made up without the application of heat. After thoroughly stirring up the emulsifier, the ingredients are simply brought together in the following order: Emulsifier, eight parts; crude petroleum, twenty-three parts; rosin oil, four parts; water, one part (more if necessary).

When the ingredients are brought together in the above proportions they should be vigorously stirred. With large batches, a garden hoe may be conveniently used for this purpose. At first the mixture when stirred will appear thin and sound harsh, but soon becomes thicker and smoother. When this condition is attained the soluble oil is complete. A test may be conveniently made by pouring a few drops in a glass of water. A white or milk-like emulsion should be the result.

In view of the variable character of crude petroleum the proportion suggested occasionally fails to produce a soluble



Winter Pruning at the Coldstream Ranch, B.C.

(Photo sent by Mr. R. T. Boies).

oil. As a rule, a slight increase in the proportion of water will produce the desired effect. The quantity which may be used depends greatly upon the quality of the crude petroleum and to some extent upon the efficiency of the emulsifier. With a well-made emulsifier and a good quality of crude petroleum, as many as forty-five parts of the latter have been used with excellent results. The emulsifier and the rosin oil being the more expensive items in the production of a soluble oil, it is important that they be made to carry as much crude petroleum as possible. In other words the cost per gallon of soluble oil is reduced by increasing the proportion of crude petroleum.

#### DIRECTIONS FOR USE

The amount of spray material required per tree varies from one quart for young trees to five or six gallons for large apple trees. For every 1000 gallons of emulsion or spray mixture, approximately the following quantities are required:

Carbolic acid, two and one-quarter gallons.

Fish oil, two and three-quarters gallons.

Caustic potash, five pounds.

Kerosene, three and three-quarters gallons.

Crude petroleum, forty gallons.

Rosin oil, seven gallons.

One gallon of "soluble oil" to fifteen of water is recommended, although a weaker solution, one to nineteen, has produced good results. If the "soluble oil" has been standing long after being made, it should be thoroughly stirred before using. When satisfied that it will readily mix with water, three gallons may be poured into a fifty-gallon spray barrel which is afterwards filled with water. This will give approximately the proper proportion.

It is extremely important that clean utensils be used. A barrel in which Bordeaux mixture has been used, is unsafe

for oil emulsion unless very thoroughly cleansed. The small amount of copper sulphate which clings to the inside of the barrel is enough to cause a separation of the oil and water. Lime and sulphur have a similar influence, but this mixture acts more slowly. Neither arsenate of lead nor Paris green has shown any such tendency.

The use of the agitator is not essential. An occasional stirring with a dasher of some kind will answer the purpose.

#### APPLY THOROUGHLY

Thoroughness of application is of utmost importance; every portion of the tree must be covered with a film of oil. In the case of badly infested orchards, two applications are recommended, one in the fall and the other in the spring. As a regular practice, however, one thorough application a year should keep the insect in check. With the use of a fine nozzle and abundant power, more thorough and more economical work may be done. Many insects hibernate under bud-scales and among plant hairs, and will escape the spray unless it is applied with sufficient force through a fine nozzle. It is more difficult to detect faulty work on the part of the operator with oil than with lime and sulphur, and for this reason, the spraying should be delegated to trusty men. With large apple trees, one man should spray from the ground to cover the lower parts of the branches and another from a tower on a wagon to spray the upper surfaces of the lower branches.

If a rain should occur within twenty-four hours after spraying, or before the water in the emulsion has evaporated, a second application may be necessary. After the water has evaporated, the oil is unaffected by the rain and will remain until it also has evaporated.

#### TIME TO SPRAY

Like the lime-sulphur wash, oil emulsion at regular strength must be applied



**An Ontario Orchard with a Mile of Apple Trees**

But few people have a true conception of the extent of the apple orchards in the leading fruit districts of Ontario. The orchard here shown is owned by W. H. Gibson, of Newcastle, Durham County, and comprises some seventy-five acres. There are thousands of acres of fine orchard land in this district that should be properly advertised and thus settlers be attracted. The National Apple Show in Ontario next year will help to do this.

Let all Ontario take hold.

while the trees are dormant. The insects that live over winter are those of the last brood, which are horn just before the leaves drop in the fall. At first their scaly covering is very thin and is not firmly attached to the bark. From this it would seem that the insect is more susceptible to treatment in the fall. However, so far as killing the insect is concerned, equally good results have followed spring application. It is evident that badly infected trees suffer from the presence of the

scale during the winter months, at least during the fall and early in the spring before the spraying is commenced. In view of this fact and because of its greater convenience fall spraying is recommended. It must not be understood, however, that this is the only time, for it may be successfully done any day from the time the leaves drop in the fall until the buds commence to swell in the spring, providing the temperature is above the freezing point.

## Fertilizers for Fruit Growers\*

Prof. R. Harcourt, O. A. C., Guelph, Ont.

**A**RTIFICIAL fertilizers will give their best results only when used along with farmyard manure. We should never think of entirely replacing stable manures with fertilizers; rather, they should be used in conjunction with it. Furthermore, the full results of fertilizers can be obtained only when they are used in conjunction with the very best of cultivation; consequently, the presence of humus and thorough cultivation should always be associated with the use of fertilizers.

So far as I am aware, very few continued experiments with fertilizers have been carried out on the fruit crops in this country. Numerous experiments have been conducted in the United States and in Germany. The German investigators seem to have fairly well established the fact that the mineral constituents re-

quired per acre for the full development of fruit trees do not materially differ from that required for root and vegetable crops. Repeated extensive experiments have also proven that hoed crops, such as potatoes and sugar beets, make a better use of farmyard manure than fruits. Experiments carried out at the Diemitz Experiment Station and at Stassfurt in Germany seem to clearly indicate that in the case of core fruits, and especially with apples, that fertilizers containing the three essential mineral constituents, nitrogen, potash and phosphoric acid, can be used with profit, and that potash affects the results more than any other one constituent, nitrogen being assigned the second place and phosphoric acid the third.

It has been repeatedly noticed that when potash was not supplied, even though light dressings of stable manure were made every three or four years, the

trees assumed an appearance of those grown under adverse conditions on poor soil; i.e., the growth of wood is arrested and the leaves are small and have an unhealthy color and are covered with yellow spots. After the fruit is matured, there is some growth of wood, and the next spring there is put forth an abundance of blossom, of which, however, few develop, owing to the lack of proper nourishment.

In spite of the fact that there is an abundance of phosphoric acid and nitrogen in the soil, most of the fruit falls off during the summer, and, in consequence, the yield when potash is not supplied will be very little greater than when no fertilizer is used. However, these conditions are not general; some varieties show a marked ability to thrive under unfavorable conditions, particularly in the fact that they are able to throw off the superfluous fruit which the tree is not capable of fully ripening. Lack of nitrogen in the soil has been shown to have a somewhat similar effect upon the development of the fruit, although not so pronounced, while the absence of phosphoric acid is even less noticeable. At Stassfurt, in Germany, in an experiment in which we are given the yields for eleven consecutive years from an orchard, we find that the total fertilizers used on the complete fertilizer plot during this period were worth \$166.60. The increase due to the use of these fertilizers was worth \$1,190.50, leaving a handsome profit for the use of the fertilizers.

Where the potash was omitted the results were very much decreased. German experiments have also fully demonstrated that the use of fertilizers has a very marked influence upon the yield of plums. Their results in general seemed to indicate that the yield of stone fruits is more influenced by phosphatic nitrogenous manures than the core fruits. It is possible that this is due to the fact that stone fruits have a larger kernel which is rich in phosphoric acid, and as the proportion of kernel to fruit is much larger in stone fruits than in core fruits, the former have the greater need for phosphoric acid. These results have been fully confirmed by fertilizer experiments on peaches reported from the New Jersey Experiment Station.

**Spraying Pays.**—Last season sprayed orchards in nearly every case had very much better fruit than those that had not been sprayed. The cultivated orchards also had more and better fruit than those in sod. We find the growers who have large orchards, and make it their business to look after the fruit, are getting it. Those who simply sell what the trees produce without any care or attention, will soon have to market their apples at the evaporator.—R. J. Graham, Belleville, Ont.

\*Extract from an address delivered at the annual convention in November of the Ontario Fruit Growers' Association.

## Dormant Plants in Winter

William Hunt, Ontario Agricultural College, Guelph

**P**LANTS that are taking their winter rest in a dormant or partially dormant state must not be neglected, if good results are to be obtained from them next summer. The old adage, "Out of sight, out of mind," is too often applicable to this class of plants during winter. The different kinds of plants that are usually kept dormant in winter can be divided into two classes, viz., fibrous-rooted

ing dust dry or the atmosphere becoming too hot and dry, conditions that are not desirable for resting plants successfully.

### BULBOUS AND FLESHY ROOTED PLANTS

Tuberous-rooted begonias, amaryllis, gloxinias, fancy caladiums, tigridias, and achimenes, can be allowed to dry out at the roots to a greater extent than can the fibrous-rooted plants named. These should not, however, be kept in a dust dry condition for too long a period. If the pots with the bulbous-rooted plants named are stood away in a temperature ranging from 35 degrees to 45 degrees in a fairly moist cellar or room, they will require very little if any water during the winter, and then only a sprinkling once or twice so as to moisten about an inch of the soil. A better plan still is to sprinkle the outside of the pots well every week or two as required.

The gloxinia and caladium roots require a little more moisture, and a slightly higher temperature than that mentioned, as these are liable to suffer from dry rot if the soil they are in is allowed to become too dry and powdery. Gladioli corms will require no water if they are kept in a cool, not too dry, place. Covering the corms of gladioli with quite dry sand, sawdust, or soil will help to preserve them better than water, if the atmosphere is too dry where they are kept. Canna roots should not be allowed to become very dry, or the temperature where they are kept to drop below 40 degrees or 45 degrees. Dahlia roots can be kept very well in a cool, moist place at a temperature only a few degrees above freezing point.

In addition to the plants before mentioned there are one or two more easily grown plants that can be kept over winter in a partially dormant or resting state. The *Imantophyllum* or *Clivias*, and the *Agapanthus umbellatum* (African Lily), and several varieties of the *Funkia* or Day Lily can be kept very well in a cool room, basement, or cellar in a temperature of about 35 degrees to 40 degrees. These should not be allowed to dry out too much, as they are moisture-loving plants. The soil should always be kept barely moist. The three last-named species make splendid specimen plants for outdoor decorative purposes in summer time, when grown in large pots or tubs.

The two main factors to be considered in resting are temperature and moisture. The temperature should be as low as can safely be given above freezing point to keep them dormant without injuring them. A moist atmosphere and not too much water at the roots, just sufficient to sustain the life of the plants,

and not to sodden the soil to induce rot or decay in the root system, are the conditions that will best suit dormant or partially dormant plants in winter.

### Timely Suggestions

Spring will soon be with us. Have you made due preparations for it? Have you all the extras ready, such as labels, stakes, seed baskets?

Send for the seed catalogues advertised in *THE CANADIAN HORTICULTURIST*. Make up your list of seeds and other necessities, and order them in good time. Unless you order early you may be disappointed in finding that just the things you want most have been sold out.

Make hot beds during February. Use good stable manure, breaking it up finely and treading it down firmly.

During February thin and head back ornamental trees and shrubs. All transplanted stock that was moved last fall should be headed back before growth begins. Flowering shrubs that bloom on the new wood can be pruned back hard now to make an abundance of bloom for the spring.

Nothing is easier to grow than the common petunias. In the last twenty-five years plant breeders have so improved them that their small red and white blooms have given place to an almost inexhaustible variety of wonderfully beautiful flowers. If seed is sown in January and the plants grown in a night temperature of not less than forty-five or fifty degrees, strong plants will be had for use during the summer as porch or window box material. Bulbs that were bedded in the cellar can be brought into light now and by bringing them in at different times a succession of bloom can be had until outdoor flowers begin.



Dormant Fuchsia Plant in Pot in January

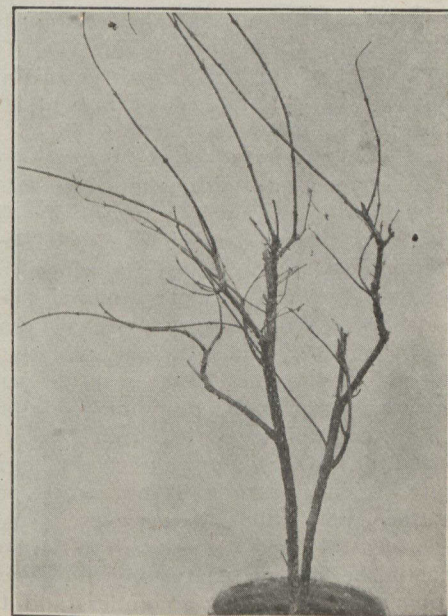
Note dead leaves on plant. Plant in good dormant condition.—Fig 1.

and bulbous or fleshy-rooted plants, each requiring somewhat different treatment.

### FIBROUS-ROOTED PLANTS

Plants such as fuchsias, abutilons (Flowering Maple), pot hydrangeas, roses in pots, Japanese Hibiscus, *Aloysia citriodora* (Lemon-scented Verbena), and even pot geraniums, and similar plants of a shrubby, deciduous or semi-deciduous nature, must not be allowed to dry out too severely at the roots. The roots of these plants, being of a fibrous nature, will not bear the drying out process that many of the more fleshy-rooted or bulbous-rooted plants will.

The soil in the pots of the fibrous-rooted plants should be kept barely moist, but not soddened with water or allowed to go to the other extreme and become dust dry. A cool temperature of about 35 degrees to 45 degrees suits these plants very well. The stems or growth also should be sprinkled with water about every week or two to prevent the growth from becoming dry and shriveled. A fairly moist, cool cellar, basement or room, or a cool window, will suit these plants very well. It does not matter if the leaves all drop off, as this alone will not hurt them, unless this condition is induced by the soil becom-



Dormant Fuchsia Plant Entirely Bare of Foliage

The young growth shows slight bud development. Plant in good dormant condition.—Fig 2.

## Gardening as a Profession for Women\*

Emilia Houlton, Calgary, Alberta

**W**OMEN can be clever in different ways—some by intuition, some by education, and some by a sublime audacity. Natural gifts are divided among us in a curious manner. For instance, a woman may have a great love for flowers, yet be totally unsuccessful in growing them. Again, while having a keen artistic eye for their beauty as she sees them growing, may have no sense as to the artistic grouping of them, if she should be required to lay out her own garden. Hence we see at once how necessitous it is to make sure that we have the necessary combination of natural gifts in order to be successful in whatever profession we may take up. Some people would have us believe that women cannot be successful as gardeners, though why they think so it is hard to say. There is no doubt that one of the chief drawbacks to the pursuit of gardening by women has its root in the expression: "To dig I am ashamed." A visitor arrives and finds the lady of the house doing her own gardening. Generally speaking, an apology is offered, as if there could be anything ignoble in doing one's own digging, or any work needing to be done in the garden.

A woman surely looks as well with a hoe, or rake, or knife, scissors, nails and shreds, nailing fruit, roses or other flowers against a wall, as at lawn tennis, or any other of those innocent games in which she is expected to take part. In fact, the very usefulness of the labor adds a fresh charm to those who undertake it, and Tennyson's "Gardener's Daughter" could never have looked half so fascinating had she not been training and making fast that rose shoot round the window. To the true gardener, the earth is as sweet as a nut, and she feels not the slightest repulsion in handling it. The very smell of the fresh earth is an antidote to disease, and most healthful to those who dig it or stir it up.

### SOME HARD WORK, TOO.

In connection with the relation of women to gardening as a means of a living; very extravagant views exist. There are many who would have us believe that the work consists only of gathering fruits and flowers, dressing vases, arranging plants and such-like pleasant operations. Let us then assure ourselves that such work only represents the sunny side of a serious occupation. We must be prepared for the real hard work at the beginning, scientific study as our work progresses, and watchful care ever. To be a successful gardener a love for the subject is the first necessity, and a sufficient knowledge of botany to understand the

peculiar properties of the organs of a flower.

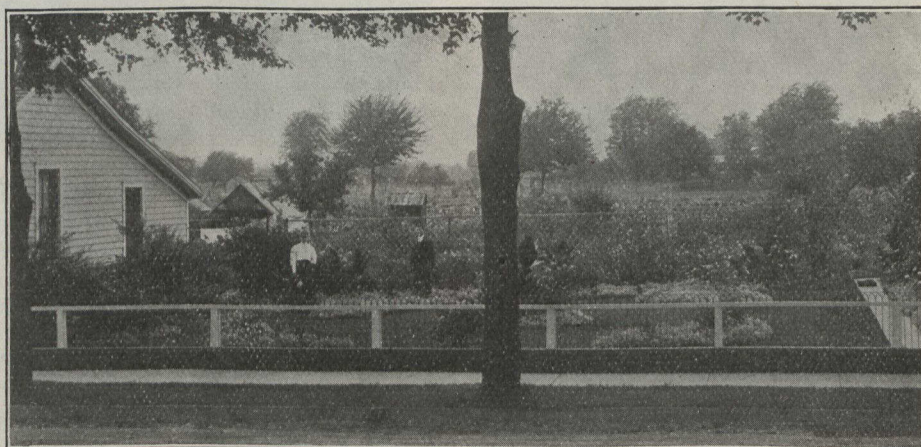
### SOME SPECIAL LINES.

One department of gardening where a woman can always be more successful than a man, because of her more patient nature, is in the improvement of a particular flower or vegetable, to do which she must find out what has been done with it by the trade growers, procure seeds of the most approved types, and work for an ideal, maybe enlarging the bloom, making it bloom more freely, or creating a new color, and, in the case of vegetables, procuring earlier, larger or finer flavored produce. Then again, for woman's deft fingers is the taking up of

getic, intelligent woman, other possibilities of adding to the income in connection with her garden would occur, such as keeping bees and poultry. It may not sound very feasible at first, perhaps. A man would say, how about keeping the varieties of flowers distinct? To a woman gardener that would be easy, as she would keep her choice blooms covered with a fine gauze to protect them from the bees, and the poultry would be kept in wire runs, say between the rows of small fruit trees, allowing space sufficient to prevent the birds reaching the fruit, the poultry manure being beneficial to the trees.

### PHYSICALLY BENEFICIAL.

However, let us return to the question in hand—"Gardening as a Profession for Women." Surely everyone will admit



A Well Arranged Artistic Small Garden that Promotes Health and Gives Pleasure

such work as cross-fertilization, and of hybridising plants.

I know of one lady in England whose sweet peas have not been raised by haphazard methods, but with a fixed idea, and a well considered purpose. The fine form of the blooms, sometimes with double standards, and the refined texture of the petals from outdoor pickings, the daintiness and the purity in the colors, the delicacy of the tints and markings, all show great enterprise on the part of the grower. There are very many annual plants that could be taken in hand in a similar manner, but the work is too delicate, and the patience needed too great for the generality of men.

### MAKING A GOOD LIVING.

Most professions open to women, which are suitable to them both as women and workers, are, generally speaking, overcrowded, so that the desirability of breaking fresh ground is very apparent. It is not a wild idea of my own conception, but one which is drawn from the facts that many women today, both in the old country and also in Canada, are getting a good living from the profession of gardening. Let us be quite clear in our minds that while a good living can be made, such a thing as a big fortune is a remote possibility. To the ener-

that the fresh air and sunshine which environ those at work in the garden is equally beneficial to women as it is to men. Admittedly certain work is hard in connection with the preparation of the soil in spring. The woman who is making gardening her profession must hire some help; therefore, man and machinery can be brought to her aid for the heavier work.

### ADAPTED TO THE WORK.

In floriculture woman is certainly at her best. Her innate refined taste for coloring, her natural artistic sense of arrangement, combined with the gift of love for all that is most beautiful in nature, peculiarly fits her for this niche in the professions. Flowers need very careful handling, gentle fingers are required when picking out the faded leaves or withered pruning or grafting. How suited, then, for these arts are women. Some men will say—How will women stand the rainy and cold days? My answer is this—She would do as the gardeners do today. Wet days she would employ herself with work needing attention in the greenhouse or potting shed; on cold days she would clothe herself warmer and work harder, and so keep herself warm.

It is not my purpose in this paper to

\*The substance of an address read by Mrs. Houlton at a meeting of the Calgary Horticultural Society.



suggest that women should hire themselves as men do, to work for others by the month, but rather to show how easily a woman with the ordinary business capacity and the natural gifts necessary for the success of horticulture can enter a good profession, and be entirely her own mistress. In these days when women go to college, and have agricultural colleges open to them, there is nothing whatever to hinder women from competing with the sterner sex, and becoming experts in this profession.

The highest salary a woman sten-

ographer or teacher hopes to attain does not exceed \$100 a month, and it is not too much to say that a good woman in business for herself as a horticulturist should at the least make \$150 to \$200 per month, as in addition to her regular business she would soon be in great demand for designing flower beds, and advising as to the laying out of grounds generally, and for which part of her artistic work she can demand a fair remuneration, for brain work certainly demands higher wages than mere manual labor.

branches pruned back and the plants generally trimmed to a compact shape as a foundation for the spring growth. Unless very much root bound so that watering becomes difficult, it is better to wait until March for repotting with this class of plants, as there is danger in starting them too soon.

The daffodils should be at their best from now on. These bulbs should be saved if one has a garden. Just leave them in the pots or pans after they have flowered. Gradually withdraw water. When dry put them aside in a cool place until fall, when remove bulbs and plant in the garden. They bloom the following spring.

Primroses of the Chinese type are now in the height of their flowering period. Don't allow water on the foliage or in the crown of the plant, but apply water to soil near the edge of the pot. A temperature of 50 degrees and good light, no sunshine, adds to the richness and color of both their foliage and bloom.

#### THE RUBBER PLANT

Should you have a large rubber plant which is getting too large for your room or which is becoming one sided, this is a good season to prune it. As this is a plant that loses sap when cut to such an extent as to injure the plant, you must make a few preparations before removing the branches. Have a little melted paraffin wax ready, just hot enough so that you can put your finger into it, and a very sharp knife. Cut off the branch just above and close to an eye or joint of leaf. Apply immediately the wax, smoothing it down over the wood with your fingers, putting it on until the sap flow is stopped. A few days later, if it looks badly, it can be removed with a knife. After the operation the plant

## Our House Plants in February

H. E. Gould, Sussex, N. B.

**P**LANT life, like the human, during February seems to feel the approach of spring. The lengthening days, the brighter sunshine, all speak of the new growth and life to come; and a little extra care becomes necessary as regards our plant friends. They require a little more water on the soil and much more on the foliage than during the past few months, and some hardier sorts will even begin to call for pot room.

The palm during the darker months has about stood still. The tips of the lower leaves have browned a little. Clip these to a point, following the natural outline of the leaves, yet removing as little of the sound leaf as possible. Wash the foliage more frequently, once a week at least, using plenty of Castile soap in the water. (Don't use a cheap soap.) If your palm is in a jardiniere scrub the inside of the dish thoroughly with washing soda. Let it air out well in the sunshine before replacing the palm. This treatment should be accorded to all your jardinieres and other earthen receptacles holding potted plants, about twice a year, and more especially in February. Look to the drainage of your plants. See that there are no worms in the soil to cause that stagnant, wet condition so fatal to plant growth.

Stir the surface of the soil in your palm pot with a sharp stick, using care not to break roots, which are, however, in the case of this plant practically near the bottom of the pot. If you find that there are any signs of roots appearing through the drainage the plant had better be repotted. Use a pot one size larger only. Pack the soil about the old ball of roots with a thin flat stick. Do not disturb the lower portion of the old ball of roots as you are very apt to break the tap root, a serious injury to a palm.

#### CARE OF FERNS

Your ferns, such as the small table sorts, *Pteris cristata*, *Polystichum*, or Hollyferns are beginning to look pretty shabby, especially those on the dining table. If they are very dry and forlorn looking it is a thankless task to try to

resuscitate them; but if there are a few leaves with other new ones showing themselves, wash off some of the old soil in warm water and remove the very bottom roots (in pot-bound plants these are usually dead), and repot in fresh soil in as nearly the original sized pot as possible. Keep in a shady window and water sparingly until new growth appears. Spray the tops as often as you can.

Your sword ferns must be watched for insects. The scale and mealy bug multiply rapidly from now on. Any good scalecide, as advertised by seedsmen, is of value; or an old tooth brush, Castile soap, and some spare time will soon clean a plant. Cut off the runners that appear over the edge of the pot. They only sap the plant and do not add to its appearance. Remove all unsightly leaves and shower the plant as often as possible.

#### SOFT WOODED PLANTS

Geraniums, heliotropes, fuchsias and soft wooded house plants should be overhauled during this month, straggling



*Incarnata Grandiflora* Begonias as Grown by an Amateur

These begonias were grown by Mrs. W. D. Swazie, St. Catharines. These beautiful plants bloom for three to three and a half months every winter.

should be kept a little on the dry side until signs of new shoots appear usually close to the wounds.

#### THE RED SPIDER

All plants liable to the attacks of red spider, such as palms, rubber plants, roses, calla lilies, etc., should receive

more and more frequent sprayings on the under side of the leaves as the sunshine gets stronger. An old throat atomizer is a splendid thing for this purpose. With it plants can be well sprayed close to lace curtains without the curtains being damaged.

Pillar and Ard's Rover, two lovely crimson, the former strongly perfumed, the latter perhaps the handsomer, but not so sweet, and Mrs. W. Grant, an exquisite glowing pink, tea scented.

#### IRIS IN WATER

There is a charming wild garden, which well repays a visit, and below it is the water garden, consisting of a rather sluggish stream, which widens here and there into pools on which water lilies float lazily, great golden-hearted flowers of many lovely tints. Clumps of Japanese Iris (*Iris laevigata*, syn. *Kaempferi*), *Sagittaria* and many other water-side plants grew, partly in and partly out of the water, as their habit is when they are allowed to do as they please. As one looked up the stream, a fine clump of firs, with a magnificently colored Colorado Blue Spruce in the foreground and a *Gunnera* with its colossal leaves bending over the water, made a picture well worth a journey to see. A wide perennial border and many charming little bits of shrubbery, trial beds of phlox, sweet peas and a particularly fine lot of the various species of campanulas made a two days' visit all too short.

#### STUDENTS AT KEW

Not the least interesting part of one's stay is the coming in contact now and again, as one wanders around, with the students. Two of these with whom I fraternized were charming young men, enthusiastic botanists and lovers of flowers. They were most gentlemanly, and gave me any help or information I

## Some Gardens and Gardeners in the Old Land

Miss M. E. Blacklock, Toronto, Ont.

THE next garden to be visited was Anne Hathaway's at Shottery, where dear, old-fashioned things such as Madonna Lilies, hollyhocks and other old-time favorites, still grow in artistic confusion, as they are supposed to have grown when Shakespeare was making love to her. And then Shakespeare's garden, where representatives of all the flowers he mentions in his writings are to be seen. To be frank, I must say that they do not look as if they were tended by a hand that loved them, but perhaps I am mistaken.

#### KEW GARDENS

Kew is the objective point of gardeners, and, in truth, it is a delightful place. The rock garden there lies in a little valley with sloping banks of rocks so placed as to give all varieties of exposure, and filled in with soil with requisite characteristics for the particular plant it contains. Everything one ever heard or read of in Alpines one finds there, sooner or later.

My first visit was on the 27th of May. The lilacs were nearly over, but the hawthorns were in perfection, a small weeping one (*Crataegus oxyacanthoides*, var. *flore puniceo*), a lovely single deep rose, was a perfect fountain of bloom. *Wistaria* draped an arbor-like building with its long racemes of mauve flowers. Irises, great beds of them, were just beginning to bloom and the rock garden was entrancing. Notes were made of everything in bloom, to get an idea as to how the succession was kept up.

Another visit a week later, on the 3rd of June, found rhododendrons the great attraction. Large beds, each of one variety only, made wonderful masses of color, the one named "Mrs. William Agnew," an exquisite pale pink, with edges of petals deepening into rose and no hint of magenta about it, seemed the most beautiful and was quite as effective in the distance as it was close to.

#### A FORMAL GARDEN

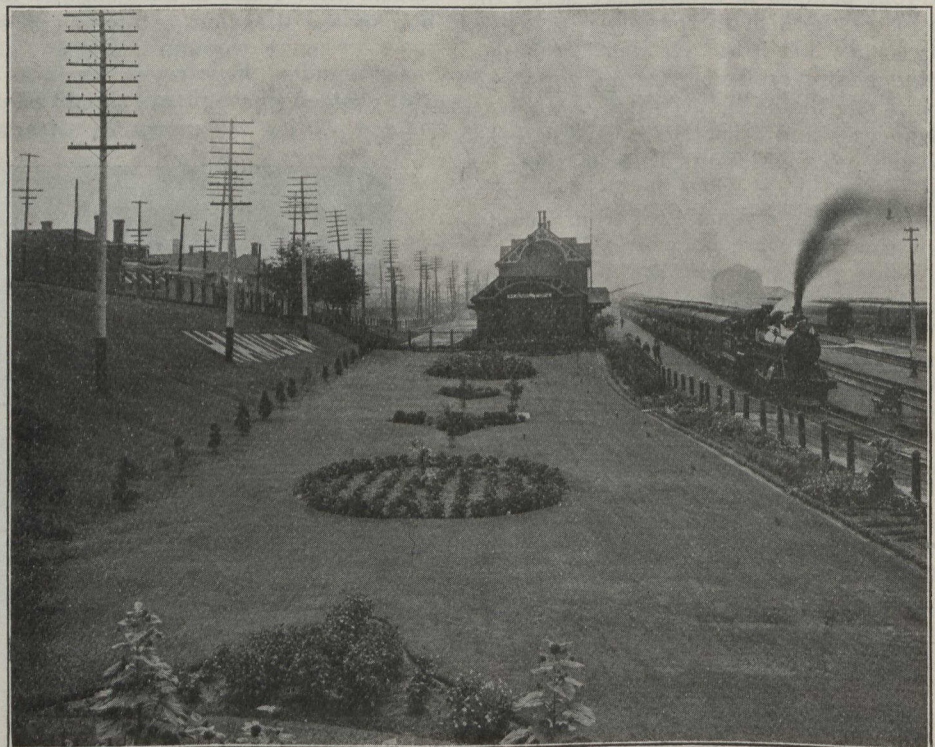
The formal beds were arranged rather more tastefully than usual. For instance, a bed of tall mauve tulips grew out of a mass of blue forget-me-nots. Another of brilliant crimson tulips had a white saxifrage (*Saxifraga Wallacei*) as a carpet, and so on. Later in the season, a bed of *Statice latifolia*, blooming over some small pink flowered bedding plant—what it was has slipped my memory—

had a pretty veil-like effect. Kew is the spot to straighten out one's difficulties in nomenclature, though even Kew is not quite infallible. The Botanic Garden, however, is a very interesting spot and one can spend many hours there profitably studying the different species of one's pet plants.

#### ROSES AT WISLEY

The Royal Horticultural Society's Gardens at Wisley are delightful. They should be seen in early spring when the Japanese Primroses (*Primula Sieboldii*) are out. They grow there like weeds, down by the water garden and in the damp ground beyond it, where they are shaded by trees and shrubs. These grounds are laid out naturally and are very attractive.

On each side of a broad driveway, as you enter, there are wide beds of roses, backed by climbing varieties trained to poles, placed tripod fashion. It was mid July when I was there and there was a splendid show of bloom. Three of the showiest of the climbing ones were Ard's



The Lawn and Flower Beds at the Grand Trunk Station, Hamilton, Ont.

Gradually Canadians are beginning to pay more attention to the improvement of our public places. In this movement our two leading railway companies are taking a prominent part. Imagine what this station would be like were it not for this garden spot. The planting of trees along the street to the left would effect a marked improvement by shutting off the view from passing trains of the cheap buildings there to be seen.

wanted, willingly. Both happened to be Scotch. The younger of the two was a brilliant scholar and had just carried off the gold medal, and I forget how many scholarships. I had lodgings where he boarded, and his thirst for information regarding our Canadian Flora was wonderful. His ambition lay Kew-wards, and there is little doubt he will make a name for himself, if he does not ruin his health by overstudy.

#### HAMPTON COURT

The big border at Hampton Court is well worth seeing. It is a long, straight border, very wide and a blaze of flowers, chiefly perennials, but annuals are used to fill up odd spaces, probably where bulbs have been in the earlier part of the season. Amongst these a rich, crimson Wistaria was the most brilliant thing there, though some very rich colors in Potentillas were very fine. To the left of this border were large beds of various showy things. One of Delphiniums made a grand mass of blue against the green background of the trees. There was also a very fine bed of pæonies, just as their prime. It was the 21st of June.

The trip from Hampton Court down the Thames by boat to Richmond is most enjoyable. On each shore are picturesque house boats, cottages and handsome residences, with beautiful grounds coming to the water's edge, and as the little steamer goes obligingly slowly, one has



First Prize Asters, from Mr. Robinson's Garden

Here were grown the first prize Mikado pink asters shown at the exhibition of the Barrie Horticultural Society, a number of which measured seven inches in diameter.

ample time to enjoy the ever-changing view.

(To be continued.)

## Success With Asters

Mrs. A. C., Barrie, Ont.

**I**N The Canadian Horticulturist of April, 1910, there was an interesting letter from Mr. G. A. Chase, of Toronto, in which he gave part of his experience with asters. It was so much like my own former attempts that I determined that at some future time I would give my experience also, in the hope that it might be helpful to someone.

Like Mr. Chase I petted and worked with my plants each year, hoping that I should have better success, and trying everything I ever heard of in the way of cultivation, fertilizers, and different varieties of seed. Sometimes I bought plants from the greenhouse. At the end of seven years of patient work and hope deferred, I could not say that I had ever grown a perfect aster. That was three years ago that spring.

One year we were very busy and I had not time to prepare a flower bed. As I had purchased a full collection, Truflant's Pæony Perfection, twelve colors, and felt like giving them a trial, I sowed them in drills between the rows of Dutch sets, intending to transplant them when they were ready into the flower bed. They were never moved. The onions were bunched as soon as they were

ready. They got only one weeding, and then the weeds were nearly as tall as the onions. A lot of the asters were pulled up with the weeds and were set in again.

The ground had been dug the same day that the seeds were sown, and had not been touched the fall previous. It was rather damp, and part of it was under a large apple tree. Some common stable manure had been dug in. No other fertilizer was used. The bed was not watered once during the season—but such asters! Gorgeous was no name for them. Colors of the richest reds, purple black, pure white, rose pink, like sheaves of roses. Each plant was an armful in itself, and they continued blooming till their dear heads were capped with snow. We took two prizes with them that year, and I was so tickled it nearly took my breath away. No worshipper at any shrine could have been more devout than I at my bed of bloom.

#### ANOTHER SUCCESS

The following spring I sent across the line and bought a collection of twelve varieties, mixed colors of each variety. We sowed them in the open, where we had dug up an old strawberry bed, and

did not manure them at all, and only gave them a douche of soapsuds every week, and these were, if possible, finer in every way than those of the year before. There were so many varieties—varying from the tiny Jewel or Ball to the feathery Ostrich Plumes. When our exhibit was ready for the exhibition, we counted thirty-three varieties and colors. We captured two prizes with them. This year the plants were as healthy as could be under much the same treatment, but a new enemy, a fly of some kind, destroyed the bloom before we found the remedy.

Perhaps some will think that I am advocating neglect and carelessness. Not so, for nothing gives as much in return for so little attention as flowers of all kinds. I do think, however, that in the case of asters, and some other hardy flowers, one can easily be too attentive. I do not consider it wise to work too deeply around the roots after the flowers bloom. A mulch would be much better, and they need lots of ventilation, but not hot winds, which leave the roots exposed. A little kerosene in the weekly wash of soapy water will kill most of the aster enemies.

Cold frames and hot beds will be wanted very soon. No garden is too small for a cold frame. Lettuce, radishes, parsley, beets, carrots, beans, can all be helped along as early crops, by being grown in a cold frame.

## Tomato Growing Under Glass\*

Prof. W. S. Blair, Macdonald College, Que.

THE growing of tomatoes under glass or "Forcing tomatoes," as it is termed, has been carried on in an experimental way on a commercial basis during the past four years at Macdonald College. The object is to secure information as to its value as a commercial greenhouse crop.

The seed is started in flats. As soon as the true leaf appears, or in about three weeks' time, the plants are transplanted into other flats, spacing the plants three by three inches apart. Here they remain for another two or three weeks, when they are potted into three and one-half inch pots, where they remain until planted into permanent quarters. The plants as a general rule may be carried in the pots for three to four weeks. The plants should not remain in these pots too long or they will become pot-bound and get stunted. If it is necessary to carry the plants longer before benching it is advisable to shift them into a larger pot.

It requires from four to five months to bring a forced tomato plant into bearing. Seed started the first of July will give good plants for benching in six weeks' time, whereas seed started the first of November will give equally good plants only in ten weeks' time. It requires a month longer to develop a plant during winter for benching.

One house was planted with Livingston Globe tomatoes grown as follows: Seed sown July 4th, transplanted to flats July 15, potted into three and one-half inch pots August 1st, planted permanently August 24th, first ripe fruit harvested November 11th.

The plants were set 18 inches by 18 inches apart, with a space of two and one-half feet apart between every fourth row running lengthwise of the house. The yield was 1.65 lbs. per square foot of bench soil. The tomatoes netted twenty cents per pound, giving thirty-three cents per square foot of bench soil occupied by the plants. The same bench was planted January 19th from seed sown November 6th. Transplanted into flats November 26th, transplanted into three and one-half inch pots December 15th, and benched January 19th. The first fruit was picked April 27th, and the last was picked June 21st. The plants were spaced 18 inches by 18 inches apart similar to the early planting. The yield per square foot was 1.42 lbs., which netted eighteen cents per pound, or 25.56 cents per square foot of bench area. This gave a total of 58.56 cents per square

foot of bench area from July 4th, 1909, to June 21st, 1910.

One house from seed sown November 9th, transplanted into flats November 30th, potted into three and one-half inch pots December 29th, and planted February 1st, produced ripe fruit April 10th. The plants were spaced fifteen inches apart and produced four pounds per plant, equal to 3.1 pounds per square foot, which at fifteen cents per pound would equal forty-six and one-half cents per square foot for bench space from February 1st to end of season.

### WHEN TO START THE SEED

Experiments conducted at various times would seem to indicate that the seed for a profitable fall crop should be started the first of July and for the spring crop the latter part of October or early in November. It would seem necessary to get the fruit well set by the middle of November for the fall crop for after that date with the short days it is extremely difficult to secure a satisfactory blossom cluster and the flowers do not set fruit well even if carefully pollinated.

Plants started early in November should be ready to bench early in January as soon as the July started crop is finished. In this way two crops are taken from the bench in one season. The yields shown here are not as large as may be expected, under average greenhouse conditions for the reason that various tests were being conducted, and the yields are an average of the yield from different plots. Four pounds per square foot of bench area can be safely figured on for the season. In very few cases have we gone below that yield. The yield will vary from three to five pounds per plant according to the season. Greenhouse tomatoes can be easily disposed of at fifteen cents per pound for the season, which would net the growers sixty cents per square foot.

The cost of heating is much greater than for lettuce. The houses have to be maintained at a temperature of about sixty to sixty-two degrees at night and ten degrees higher during dull days.

### SINGLE STEM SYSTEM

Tomatoes are usually trained to a single stem. This represents considerable work, as all lateral growths have to be pinched off as they start out at the base of the leaves. If it is desired to train to two stems one of the first lateral branches are allowed to grow and it is treated the same as the other branch, all lateral growth being removed as it forms. As already stated, 18 inches by 18 inches apart seems to be a satisfactory distance, providing a two and one-half foot space runs lengthwise of the house between every fourth and fifth

row. Rows two feet apart east and west and eighteen inches north and south serve well in a greenhouse where no such space is given.

The plants must be supported. For this purpose horizontal wires may be run along lengthwise of the house at the base of the plant and another placed directly over this six feet or seven feet higher. Between these, strong cord such as binder twine, may be run perpendicular, one string to each plant and the plant tied to it with raffia. Care should be taken to wrap raffia once around the string to prevent slipping and place it under the leaf so as to support the plant as well when carrying a weight of fruit. No. 10 galvanized wire may be used in place of string, and it is much better, but the first cost is greater. These seven and one-half feet long cost about one and one-half cents each. It is necessary to have small wire along the top to support these wires, one end being stuck in the ground by the plant and the other fastened to the upper wire. For the smaller upper support wires No. 18 galvanized wire is best.

If attention is given to the pollination of the tomato there will be a much less number of small, medium-sized and rough tomatoes. The most satisfactory way with us is to fasten a rabbit's tail to the end of a stick and brush the plants with it, going from flower to flower. The pollen catches on the fine hair, and if the brush is kept clean by occasional washing good work can be done.

### THE POLLEN

Should there be a succession of sunny days and during approaching spring the pollen may distribute sufficiently by tapping the vine with a padded stick or shaking the plant. The pollen is discharged most freely in a hot, dry atmosphere, therefore, to keep the house at a high temperature during the day favors the bursting of the pollen sacks even in cloudy weather. The best time for pollinating is between eleven and twelve o'clock. The pollen is not discharged from the anthers until after the yellow petals have fully expanded and commenced to wither slightly. When pollen falls upon one side of the stigma a one-sided tomato results. The amount of pollen supplied to the stigma within certain limits determines to a very great extent the size and smoothness of the tomato.

Tomatoes will not do at a low temperature. Satisfactory plants cannot be grown in a lettuce house temperature. If plants are to be started some provision must be made for this part of the house to run at 60 degrees at least.

High, warm, sandy soil and nearness to a large body of water to prevent late spring frosts, is necessary to grow tomatoes and cucumbers for the early market.—W. W. Hilborn, Leamington, Ont.

\* Extract from a paper read at the recent second annual convention of the Province of Quebec Vegetable Growers' Association. Further information about these experiments was published in the Canadian Horticulturist for August, 1910.



Growing Tomatoes in the Greenhouse at McDonald College  
(See article on page 36.)

## Insects That Attack Vegetables

L. Caesar, B. S. A., O. A. C., Guelph, Ont.

**R**OOT maggots are almost a cause of despair to vegetable growers and to entomologists. About one hundred different kinds of remedies have been carefully tried against them, and only a few of these found valuable, in fact I know of no really satisfactory and economical remedy for these insects. There are three different kinds of root-maggots, though they all look very much alike. The first, *Pegomya brassicae*, attacks cabbage, cauliflower, turnips, radishes and certain closely allied wild plants like hedge mustard and cress. The second, *Pegomya capetorum*, attacks onions, and the third, *Pegomya fusciceps*, attacks chiefly the roots of corn and beans. This last species is seldom very troublesome, so we shall not discuss it.

The adults of the root-maggots are flies very like house flies. The life history is briefly as follows: The flies emerge from the soil in spring, lay their little, white, elongated eggs on the ground around the base of the plants, or sometimes on the stem itself. In four or five days the eggs hatch and the tiny white maggots at once attack the neighboring roots. When full grown the maggots cease to feed and change to a brownish pupal condition in the soil close to where they feed. After a few days adult two-winged flies emerge from these cases, and lay eggs for a second brood. These adult flies resemble the house-fly but are smaller and more slender. In some cases there seems to be a third brood. The winter is spent by the cabbage root-maggot in the pupal stage in the soil, and by the onion root-

maggot in the adult stage. The species that attacks the cabbage and closely allied plants seldom does much damage after the end of June, whereas the onion root maggot continues to be destructive all the season.

A means of control is the destruction of weeds like mustard, cress and shepherd's purse, which belong to the same family as the cabbage and radish, and some of which are host plants for the insects.

Another means is the use of carbolic emulsion or of white hellebore. The carbolic emulsion is made as follows. Boil one quart of soft soap or one pound hard soap in one gallon of water. When boiling add one-half pint of crude carbolic acid. Boil for a few minutes longer and stir thoroughly until well emulsified. The emulsion can then be stored away and will keep for several days. When using, it should be diluted by adding fifty gallons of water to each gallon of the emulsion, and sprayed directly upon the growing plants and around the roots once every week from the time they appear above the ground or the cabbages are set out until about the end of June. Onions may require later treatment.

The hellebore concoction is made and applied as follows: Steep two ounces of good fresh white hellebore in one quart of water for one hour, then dilute with water to make one gallon of the decoction. Apply with a watering can with the rose or knob removed a few days after the plants are set out; five days later apply again, and again in five days after this,

and a couple of times afterwards at an interval of a week until the plants have got thoroughly established. About one teacupful should be poured around the base of each cabbage plant. In clay soil especially, it may be necessary to remove a little earth first from around the stem to prevent the liquid running off.

Each of these remedies has given good results but only when thoroughly done. Great care must be taken to do them early enough to prevent the maggots from getting a good start, for if this once happens no known remedy can be relied upon to destroy them. The hellebore decoction is gaining in popularity of late years compared with the other, and I have met several men who have had good results from it. Either of these remedies can be used for onions as well as for cabbages or radishes.

## Tomatoes for the Factory

The Indiana Experiment Station at Purdue has issued a bulletin, No. 144, on growing tomatoes for the canning factory. It may be summed up in the following five points:

1. It is necessary that greater care be exercised in the growing of the young plants. Millions of inferior plants are now set. They may be the result of poor seed or unskilful growing. In any case, they cut down the yield and profit from the crop.

2. Prepare the ground more thoroughly, and give more time, labor and money to drainage and fertilizing. Thousands of farmers are failing in growing tomatoes because they do not realize the soil and cultural requirements of the plant.

3. Cultivate constantly and thoroughly. It is probable that neglect of cultivation is responsible for a greater proportion of unprofitable tomato yields than any other single factor entering into the production of the crop.

4. Handle vines carefully during the picking season. In many tomato fields it was observed that careless picking and rough treatment of the plants so cut down the total saleable product that the cash returns barely paid for the expense of growing and marketing.

5. Plant smaller areas and practice more intensive methods of culture.

Within certain limits, vegetable growing pays in proportion to the amount of manure added to the soil.—George Syme, Jr., Carleton West, Ont.

The green cabbage worm makes inroads on the cabbage and cauliflower plants, but it is easily kept in check, either by hellebore or paris green. The best plan is to mix these ingredients with land plaster or lime and dust a little in the heart of each plant. The hellebore is most satisfactory.

# The Canadian Horticulturist

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H. BRONSON COWAN, Managing Director

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The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with December, 1910. The figures given are exclusive of samples and spoiled copies. Most months, including the sample copies, from 11,000 to 12,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

January, 1910	8,925
February, 1910	8,967
March, 1910	9,178
April, 1910	9,410
May, 1910	9,505
June, 1910	9,723
July, 1910	9,300
August, 1910	8,832
September, 1910	8,776
October, 1910	8,784
November, 1910	8,747
December, 1910	8,662

108,809

Average each issue in 1907, 6,627
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Sworn detailed statements will be mailed upon application.

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## EDITORIAL

### MONEY FROM SPRAYING

For some months past experienced representatives in Ontario of British capitalists have been leasing neglected orchards at a fair rental and for a period of years from fruit growers who have not appreciated the change that is coming over the apple situation in Ontario or the earning powers of their orchards. The parties interested in this movement propose leasing some 6,000 acres of these neglected orchards. Their intention is to introduce modern methods in their management, and their expectation is that they will obtain a liberal profit on their outlay. The success that has met pioneers in this movement, such as Mr. Joseph Tweddle, of Fruitland, is an encouraging omen of success.

Such a movement will have very far-reaching effects. Aside from the fact that several thousand acres of orchard in Ontario are likely to be increased to many times their present value, the value of the educational effect on the owners of the orchards when they see other men making money out of a part of their farms they had considered not worth attention, together with the influence on owners of neighboring orchards, can hardly be estimated. Each orchard will become a centre of influence working for the advancement of the fruit industry of Ontario.

But why should owners of orchards leave it for someone else to come along and make profits out of their orchards when they themselves might just as well do so? Practically every good sized apple orchard in Ontario might be a regular gold mine for its owner if properly handled. This has been amply proven in the case of scores of orchards during the past few years. Many orchards which had been condemned by their owners as worthless, and in some cases were actually being dug out, have been made to return a yearly profit exceeding what the owner would have originally considered a good price for both land and orchard. There are hundreds of orchards in Ontario and in others of the older provinces where equally good results may be obtained.

The first step necessary is to buy a spraying machine and prepare to use it this spring. In the case of owners of small orchards three or four can often club together and buy one machine. The time to consider the make and size of machine is right now. In a few weeks factories will be running overtime, dealers will be unable to secure the machines fast enough to fill their orders, and there will be a general rush that it is well to avoid. Decide upon the make of machine that will suit your purpose, and then buy it and use it. The results will follow.

### DEMONSTRATION ORCHARDS

The British Columbia Government is establishing some twenty demonstration orchards. The methods might well be studied by the Agricultural Departments of the other provinces.

The object of this work is to demonstrate the results to be obtained by means of proper methods of culture for the first five years. The government will bear the cost of plowing, preparing and planting

the trees and furnish the stock free f.o.b. at destination. The owner will bear all cost of spraying and cultivation and agrees to follow the instructions given by the Department and allow the orchard to be used for public demonstration at any time. The agreement is to be binding for five years. After that time it can be terminated at any time by either party giving six months' notice.

The government of British Columbia is doing more to develop the fruit interests of the province than is being done by any other provincial government. The Chief of the Horticultural Division has under him four assistants who each devote special attention to the requirements of the fruit interests in specified districts of the province. With such an organization and by means of its demonstration orchards, box packing schools, spraying regulations and in other ways, including the sending of a market commissioner during the shipping season to the markets of Western Canada, it is doing invaluable service for its fruit growers. Fruit growers in the east should make their influence felt and insist that their governments shall do more for them. The best way in which they can do this is to tell their governments exactly what they want. They should not only ask for aid, but they should specify the form they would like that aid to take.

### OUR HORTICULTURAL SOCIETIES

The reports published elsewhere in this issue of the work accomplished last year by a number of the horticultural societies of Ontario illustrate clearly the elevating and beneficial effect these organizations have where ever they exist. As we leave the pioneer days behind us the need as well as the opportunities for such work become more and more apparent.

The separation of the horticultural from the agricultural societies has worked out to the distinct advantage of the former. Instead of confining their efforts mainly to the holding of an annual exhibition in connection with the fall exhibition of their local agricultural society, as was done formerly by a number of societies, these societies have broadened out in their work and have thereby increased their usefulness. Directors of societies will do well to look over carefully the reports referred to with the object of gaining suggestions for new lines of endeavor.

There are special avenues of work that as yet have not been followed as they might have been. Much can be done to reduce the bill board nuisance. Even if our towns have not the power to regulate this matter, much might be done to form a strong local sentiment against the erection of such offences to good taste and in many cases good morals as well.

Much more can be done to beautify school grounds. Many schools still stand on bleak lots unadorned by either a tree, shrub plant or flower. Brought up among such surroundings children cannot be expected to love a taste for the beautiful when they are older.

Towns and villages cannot have too many breathing places for their citizens. Horticultural societies should urge the improvement of present parks where possible and also the purchase of points of vantage such as, triangles, hills or ravines that may be obtained at a reasonable figure. How often has a triangle between streets, a hill, ravine or other waste place which could have been bought for a reasonable amount been sold for the erection of some mill or factory

and thus the town has lost the opportunity of having another play ground for the benefit of its people. These are only a few suggestions, the details of which can be worked out to suit the local conditions of any town or village. A number of societies have accomplished work of this character. More might.

## THE NATIONAL APPLE SHOW

The directors of the Ontario Fruit Growers Association have decided not to attempt to hold a national apple show for the east next fall. The intention is to hold the show in the fall of 1912. In some ways it is disappointing that the show will not be held this year. British Columbia made a success of its show with less than a year's effort. On the other hand the people of the east are not as familiar with the holding of these monster events as are the people of the west, and therefore, may require more time to organize properly.

The delay means that more will be expected of the show when it does take place. For this reason preliminary organization work should be started forthwith. Otherwise, much of what it is hoped to gain by the delay will not materialize. If the event is to be made a credit and a benefit to the east it must be conducted on very broad lines. This means that time for preparation must be used carefully and wisely.

From now on every fruit grower in Ontario and Quebec should keep the holding of this great show before him and plan his work accordingly. He should study to see what he can do to aid it and what benefit can be made to him and to his section. Our readers are invited to suggest through *THE CANADIAN HORTICULTURIST* ways and means of making this in every sense of the term a National Apple Show.

## RETURNS FROM ORCHARDS

A recent bulletin issued by Cornell University shows that there are a million apple trees in Niagara County, N.Y., which produce a net income of \$100 per acre. Though this is not a large yield, still it is away ahead of any apple county in Canada. But few Canadian apple growers clear \$1,000 out of a ten acre apple orchard every year. More could and should. The average, including that of the good, bad and indifferent fruit grower, is much less.

In Niagara county an average of forty trees per acre would mean that there are 25,000 acres which at \$100 per acre would mean the tidy sum of \$2,500,000 revenue that this county produces from its apple orchards. These results are due to the careful attention Niagara county fruit growers give their orchards. Corresponding efforts by our Canadian apple growers would produce corresponding results in our best apple districts.

At the last regular monthly meeting of the Toronto branch of the Ontario Vegetable Growers' Association, the contract for plant baskets and boxes for the season was awarded to Wm. Rennie & Sons; that for bundling twine and Paris green to Steele Briggs and that for bushel boxes to Barchard & Co. It was decided to hold an At Home in the early part of February. The annual report of F. F. Reeves to J. Lockie Wilson, showed a membership of 217 members and a thriving condition of affairs.

It pays to advertize. Try it.



## PUBLISHER'S DESK

### Our Cover Illustration

Our frontispiece represents what will be a novel scene to many of our readers, as in most parts of Canada the lowly ox has been released from the bondage of the yoke. An up-to-date spraying outfit drawn by oxen will look to a western man like the meeting of the old and the new. In Nova Scotia, however, there is a constant demand for well trained ox teams for use in the lumber trade so that orchardists can always dispose of matured oxen at high prices. One advantage of working oxen in an orchard is that there are no whiffletrees to injure the bark and tools can be used much closer and with more safety than with horses. It will be noted that the yolk is so attached that the oxen pull by the forehead and not by the shoulder as is the practice with Ontario oxen. Experiments have shown that by this method the team can develop greater strength than where the shoulder yolk or a collar is used. The oxen and spray outfit belong to Mr. S. C. Parker, Berwick, N.S., Secretary

## Divergent Views About the Tariff on Fruit

The reciprocity or freer trade negotiations that have been in progress between Canada and the United States, led during January to the subject being discussed by various organizations representing the fruit interests in different parts of Canada. There is a wide diversity of opinion on the subject. When the monster deputa-

of the Nova Scotia Fruit Growers' Association.

### Special Issues

As far as possible we aim to make the contents of each issue of *THE CANADIAN HORTICULTURIST* timely and to the point. In this issue special attention has been devoted to spraying. Next month the same subject will be dealt with again and prominence will be given to orchard planting and kindred topics. The April issue will be our "Garden Annual." In this number interesting and instructive articles and illustrations pertaining to the flower garden will be emphasized.

We feel that there are many hundreds and possibly several thousand readers of *THE CANADIAN HORTICULTURIST* who could write entertaining and helpful articles for the benefit of their brother and sister growers if they but would. Why do you not do it? What we desire are letters from our readers and sharp, clear photographs when possible, giving the results of their personal experiences in their gardens and orchards. Will you not send us yours? We may not be able to use all the material we receive but we will at least use the best of it and thus aid many beginners and even older hands as well, to do better.

convention viewed with alarm the movement of the grain-growers of the prairies for reciprocity in natural products with the United States, and asking on the contrary that the duties on fruit entering Canada should be raised so as to make them equal to the duties now levied on fruit entering the United States.

#### ONTARIO FRUIT GROWERS

At a meeting of the directors of the Ontario Fruit Growers Association held in Toronto about the middle of January the question was discussed for the better part of two days. Opinions were much divided. The apple men wanted a lower duty while the small fruit and peach growers were satisfied to let the tariff remain as it is, the United States duty being only half that of Canada.

In the end the grape growers agreed to a reduction of one cent of their two cent a pound duty in order to aid the apple men in obtaining a reduction in the United States duty of seventy-five cents a barrel to one more on an equality with the Canadian one of forty cents a barrel.

#### RESOLUTIONS PASSED

The following resolutions were adopted:

Moved by J. E. Johnston, Simcoe; seconded by W. H. Gibson, Newcastle, that the existing tariff on apples between the United States and Canada is unfair, and we the Fruit Growers' Association of Ontario respectfully ask that our Canadian representatives will endeavor in reciprocal trade negotiations to have the United States tariff on apples lowered to forty cents a barrel or less.

Moved by W. H. Bunting, St. Catharines; seconded by Harold Jones, Maitland: That with regard to tender fruits we would call the attention of the Government to the fact that whereas, under present tariff conditions the industry has prospered, population has greatly increased in these districts, large areas of unproductive land has been brought under a high state of cultivation, many allied interests have been established and placed on a firm basis; an extensive transportation system has

### The Best Results

"I have received a greater percentage of orders through requests for catalogues, which have come directly through my advertisement in *THE CANADIAN HORTICULTURIST*, than I have my advertisement in any other paper. I was obliged to reduce my advertising space during October, as I was almost sold out of my selected Hyacinths, as well as many varieties of Tulips, although I had a large stock of both. I attribute this largely to my advertisement in the *THE CANADIAN HORTICULTURIST*."—Robert T. Pinkerton, Montreal.

ten of farmers waited on the Dominion Government in Ottawa in December, a request was made for freer trade with the United States in fruit. This request was presented by representatives of the Nova Scotia and New Brunswick Fruit Growers Association and by a leading officer of the Ontario Cooperative Apple Growers Association. The request was made more particularly as it applied to apples but covered all varieties of fruit and was presented in spite of a telegram of protest received from growers in the Niagara District who feared that freer trade in fruit might work injury to the Canadian growers of tender fruit.

#### BRITISH COLUMBIA VIEWS

Early in January the Central Farmers Institute of British Columbia met in convention in Victoria with forty delegates present from all parts of British Columbia. A resolution was passed stating that the

been developed, which has had for its object the distribution of these products all over Canada,—we firmly believe that any change in these conditions would result in very great injury to an industry that if not disturbed will be of the greatest importance to Canada as a whole. We would therefore request that no change be made in the present customs tariff on tender fruits.

A committee composed of Messrs. W. H. Bunting and R. Thompson of St. Catharines; Jas. E. Johnson, Simcoe; D. Johnson, Forest; and Harold Jones, Maitland, was appointed to go to Ottawa and make known the views of the fruit growers on the tariff.

#### NIAGARA GROWERS APPROVE

At the annual meeting of the Niagara Peninsula Fruit Growers' Association held a few days later the matter was again discussed. Resolutions were passed practically approving the foregoing resolutions.

#### THE PRAIRIE VIEWS

From the prairie provinces a long memorial was sent to the government signed by all the wholesale fruit jobbers, at all points west of the Great Lakes as far as Calgary and by all the wholesale fruit jobbers of Winnipeg: They claim that the present tariff of thirty per cent. on both fruit and vegetables is simply a tax on the prairie consumers as climatic conditions are such that their part of Canada can never hope to produce sufficient fruit and tender vegetables for their own consumption. They also say that reciprocity would be a benefit to the producers of fruit and vegetables in British Columbia, Ontario and the Maritime provinces as it would afford them free access to the unlimited markets of the United States.

### Fruit Matters Discussed

The directors of the Ontario Fruit Growers' Association met in Toronto in January and organized for the year.

The following officers were elected: President, D. Johnston, Forest; vice-president, J. W. Smith, Winona; secy.-treas., Percy W. Hodgetts, Toronto.

#### NATIONAL APPLE SHOW

The directors were in favor of holding a national apple show in Ontario, but felt that there was not time to make the necessary arrangements for the holding of such a show this year. The general opinion was that such a show should be held in the fall of 1912, and that in the meantime arrangements to that end should be made. The following resolution was passed: Moved by H. Jones, seconded by Adam Brown—In view of the fact that this Association thinks that it would add largely to the value of a prospective National Apple Show to be held in Toronto to have the county councils of the fruit growing sections of the province vote grants towards the expenses in connection therewith, and to negotiate with the city of Toronto to provide a suitable building for the same, be it resolved that in the fall of 1911 the Ontario Horticultural Exhibition make a special effort to induce the counties to make large representative exhibits in commercial packages of their fruit products which will tend to increase the interest of both growers and counties for a National Apple Show in the near future, and further, that we as an Association encourage the growers in making individual exhibits of packages and display in fruits by offering large prizes for five, ten, and one hundred box lots; also that the Association again duplicate any grant made by any

county up to the sum of fifty dollars for special displays and pay necessary transportation charges on such exhibits.

#### FREIGHT CHARGES

The transportation committee was instructed to take up the unfair discrimination in freight charges from Winnipeg to points further west and north, and if necessary to take such action as might be needed to bring it before the Railway Commission.

#### FRUIT INSPECTION

Another important subject of discussion was the inspection of apples at point of shipment, when if they were not up to standard the inspector could go to the orchards and notify the shippers of the fact. This system has been tried to a limited extent in the Niagara District with satisfactory results. Mr. James E. Johnston was appointed to confer with the Dominion Government on this point.

### Niagara Fruit Growers Convene

The annual meeting of the Niagara Peninsula Fruit Growers' Association was held at Grimsby, Ont., January 12th, and was followed later by a meeting of the directors in St. Catharines.

The recent decision of the Railway Commission to the effect that express companies must revise their schedule of rates was hailed with delight when explained by Past President Bunting, who produced the full text of the judgment, stating that it was a complete victory for the growers, as every item presented by them in the form of complaint had been substantiated by the board. He had written to General Managers Stout of the Dominion Express Company and Bryce of the Canadian, suggesting that they meet the growers and shippers with a view to reaching an agree-

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Remember, you do not have to pay for the stock till it is delivered. Send today for our large illustrated catalogue and make your selections now.

Are you interested in improving the appearance of your home grounds? Our Landscape Architect Department is prepared to offer suggestions and to draw up plans free of charge. Write for our illustrated booklet "**More Beautiful Homes and How to Get Them.**"

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ment upon the new schedule before submitting it to the Commission. Both had agreed. Later it was reported at the St. Catharines meeting that Mr. Bryce had refused to meet the growers. In a letter to Mr. E. D. Smith he claimed that the Railway Commission's ruling that a new tariff must be prepared applied merely to business going to the Northwest.

The directors unanimously empowered the committee on freight rates to expend any necessary sum of money in its fight for better rates from the Canadian and Dominion Express Companies.

#### OFFICERS ELECTED

The following officers were elected: President, J. W. Smith, Winona; first vice-president, Robert Thompson, St. Catharines; second vice-president, W. B. Bridgeman, Winona; third vice-president, G. Brown, Fonthill; fourth vice-president, Frederick Hamilton, Louth; secretary-treasurer, Carl E. Fisher.

Mr. Robert Thompson referred to the recent fruit growers' meeting in Rochester, where it was freely admitted that Canada and Ontario have the only desirable mode of packing. This was different to statements made at Rochester some years ago, when the Rochester men had found such fault that the Ontario growers had to defend the Fruit Marks Act, which was then in its infancy.

Mr. Thompson stated that at the convention it had been demonstrated that a mixture of arsenate and lead with lime and sulphur would render the spray considerably more effective. Hydrometers are being manufactured so that the proper strength of the spray can be gauged.

The financial statement showed receipts for the year of \$580.14, and a balance of \$273.59.

### Standard Fruit Boxes

The British Columbia Fruit Growers at their meeting, held recently in Victoria, approved the following sizes for fruit boxes: Apple boxes, 20x11x10 inches; pear boxes, 18½x11x8½ inches; plum boxes, four basket crate, 15¾x15¾x4¼ inches; peach boxes, 18½x11¾x4½ inches; crab apple boxes same as pear boxes.

These recommendations will be forwarded to the Dominion Fruit Growers' Association which meets at Ottawa next December, with a request that they be approved and sent to the Dominion minister of agriculture with a suggestion that they be legalized. There is now no legalized standard size for fruit boxes in Canada except apple boxes for export.

The apple box endorsed is the same as that set forth in the Fruit Marks Act as required to be used when apples are packed "for export only."

### Ontario Delegates to Washington

Rev. A. H. Scott, of Perth, writes THE CANADIAN HORTICULTURIST that he and secretary J. Lockie Wilson, of Toronto, who composed the delegation to the American Civic Association from the Ontario Horticultural Association together with Mr. Jas. Wilson, Park Commissioner of Toronto, were given a fine reception in Washington and held up the Canadian end of Civic improvements. Mr. Lockie Wilson gave an address on Ontario Horticultural Societies and met the requirements of the occasion well.

The convention lasted three days and passed in review some forty subjects. An amalgamation of the American Civic Association and the International Conference

of the Society for judicial settlement of International disputes for an evening session was a feature of the Convention. Andrew Carnegie was particularly kind to the Canadian delegates.

The headquarters of the Civic Association and the International Arbitral delegates was the New Willard Hotel where the Canadian delegation had their home. The Canadians bore home with them a vice-presidency as a token of esteem from their United States cousins.

### Weights of Vegetables

Deputations from the Ontario and Quebec Vegetable Growers Associations waited on Sir Richard Cartwright, Minister of Trade and Commerce, in Ottawa recently and asked that standard weights per bag for vegetables should be established as follows, thus doing away with the lack of uniformity now prevalent: Potatoes, 80 pounds; onions, 75; turnips, 70; artichokes, 75; beets, 70; carrots, 70; parsnips, 60.

Sir Richard replied that he was in sympathy with the changes asked and gave the delegation to understand that at the next session of Parliament the requests they made would be adjusted as far as possible.

### Ontario Boxed Apples

An evidence of the success that is attending the efforts of Ontario Fruit Growers to ship apples in boxes to Great Britain is furnished by a report received by Mr. W. W. Moore, Chief of the Market Division of the Department of Agriculture, Ottawa, on a shipment sent to Glasgow by Mr. R. C. Fowler, of Burlington, Ont. This report reads as follows:

"The box shipment by R. C. Fowler contained some very choice fruit, and ship-

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We still have a nice stock of **SPY** and **WEALTHY APPLES**, also Hyslop Crabs—the sorts demanded.

Our Line of **CHERRIES** is particularly fine this season. The trees are large, smooth and straight, well supplied with fibrous roots. They are all **PEDIGREED**.

In **PLUMS** we have a splendid lot of yearlings as well as two year olds. The yearlings are large enough for the most critical buyer and heavily rooted.

Our **ROSES** and **EVERGREENS** contain the best varieties. We have a thrifty lot of eighteen inch **NORWAY SPRUCE** at \$10.00 per 100.

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## SMALL FRUITS

**STRAWBERRIES.**—I have the following new varieties, which are very promising: Gill, Goree, Golden Gate, Fendall, Evening Star, and Battenburg. \$1.00 per hundred, \$1.25 by mail. And also the following recent introductions, which are coming to the front as standards:

**3 W'S.**—A variety of the same season as Senator Dunlap, fully as large a berry, and a much larger plant; will probably excel it in many soils.

**CHIPMAN.**—Of the same season, or a little earlier, very large berry, healthy foliage, strong runner maker; will run the other two very close.

**MEADE.**—A reliable mid-season variety, very healthy foliage, large, round, firm berry, with a very fine full flavor.

**NETTIE.**—An old variety, but still the latest; should be grown with a late staminate. In soils and locations suitable to late berries, this variety should be profitable.

Also the old reliables—Senator Dunlap, William Belt, Parson's Beauty, Sample, Uncle Jim, Steven's Champion, and many others 60 cents per hundred, \$4.00 per thousand. \$1.00 per hundred by mail.

**RASPBERRIES.**—Eaton and Herbert, new varieties. 60 cents dozen, \$3.00 per hundred express. King, Marlboro', Loudon, Baumforth Seedlings, and Cumberland Blackcap. 50 cents a dozen, \$2.00 per hundred.

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## What the Horticultural Societies are Doing

During 1910 the Horticultural Societies of Ontario enjoyed a successful and prosperous year. Owing to lack of space it is impossible to publish as full a report of each society's work as we would like, but from the following short reports will be seen the wide scope of work the societies undertook, and in some instances the work already planned for the ensuing year:

### STIRLING

The work of the Society was the beautifying of the Park received from the Corporation. During 1911 the Society anticipates building a wall about the lower corner and levelling the whole park. A prize was offered for the best kept lawn in the village. The secretary for the coming year is Mr. G. G. Thrasher.

### SPRINGFIELD

In the spring seeds were distributed among the children and potatoes and seeds among the adults. At the Fall Exhibition prizes were offered for the results of these seeds. Prizes were given for the best kept lawn and garden among the members in the village, as well as other prizes for the country members. Mr. V. H. Chute was again elected secretary for the coming year.

### BRANTFORD

Last year was the second during which the society held a lawn competition. Al-

ready this year many have signified their intention of entering their lawns for the 1911 competition. R. W. Brocks, secretary.

### SMITHS FALLS SOCIETY

Mr. Wm. Keith, secretary, reports that in addition to the premiums to members, THE CANADIAN HORTICULTURIST being one, the Society provided seeds to the school children and prizes were awarded for the successful competitors. Lawns were judged and the results published. Other work undertaken by the Society was the beautifying of the grounds around public buildings, and the reclaiming of eleven acres of waste ground into a park. Through the courtesy of Prof. H. L. Hutt, of the O.A.C., the ground was laid out by a landscape artist, and the transformation was so great that the council and public appreciated the work and contributed generously.

### LINDSAY

Plants, bulbs and literature were distributed. The society gave general information to a number of people by aiding them in their difficulties with plants and trees. The society also kept an eye on the town improvement in the shape of better care to shade trees, and preventing short cuts across corners of lawns where there were no fences. The motto of the society is to

## DOUGLAS GARDENS

OAKVILLE, ONT.

February is the month for planning garden work. Fall—as well as spring planting, should now be carefully planned. For spring planting, seeds, bedding plants, the half hardy bulbs and some of the Herbaceous Perennials should now be secured. The hardy bulbs, such as Tulips and Daffodils, and most of the hardy Perennials should be planted in the fall.

Our China Aster ad. will appear here next month.

Our Gladiolus announcement will be made here in the April number.

Please send post card with name and address for our Spring—(issued 1st February) and Fall—(issued 1st August) Planting Lists

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## Trees For The Lawn

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No matter where you live or what kind of soil you have, Kellogg's Way will more than double your profits growing Big Red Strawberries right between your rows of young fruit trees, if you have no other place. You can do it easily. Let us tell you how—we've got it all explained in a nut shell—in our handsomely illustrated 64-page book entitled

### "Great Crops of Strawberries and How to Grow Them"

It explains why the Kellogg Way of growing big crops of Strawberries is the sure and easy way. Tells how to prepare your soil; what varieties to set; how to care for the plants to get best results; how to market the fruit. Many fruit growers are now making a net profit of \$500 to \$800 per acre each year while waiting for young trees to come into bearing. Besides all this, the cultivating of the plants produces a healthy and more vigorous growth in the trees. Just what the trees require. Whether you have ever thought of growing strawberries or not, it is just the book that should be read by

### Every Fruit Grower and Farmer

What others are doing you can do right in your own soil. C. Harder, Twin Falls, Idaho, is making as high as \$1000 per acre each season growing strawberries between the rows of his young trees. Why don't you? It will more than double your income.

### Kellogg's Thoroughbred Plants

The only strain of plants that are propagated from mother plants of high fruiting power. That's why the Kellogg Strain of Thoroughbreds is so productive and bears such enormous crops of big red berries. They have a record of 15,000 quarts per acre. Large yields are often reported grown in young orchards. If you want to make some easy money, get our 1911 book. IT'S FREE.

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"Keep on Trying." Mr. F. J. Frampton is the secretary.

WALKERTON

The society held a free lecture by Prof. H. L. Hutt on beautifying lawns and grounds around residences and public buildings. A distribution of bulbs, plants and shrubs was made. In addition, the members had the privilege of ordering anything outside of the selections offered at wholesale prices, and also received THE CANADIAN HORTICULTURIST at the expense of the Society. A free flower show was held. Prizes of window plants, annuals, and bulbs were offered. The latter were to be distributed in the fall for hanging baskets and window boxes. The flowers afterward were sold by auction, and the proceeds, plus \$10.65 donated by the society, was given to the County Hospital for the purchase of the hanging baskets and window boxes. Mr. Jas. Fulton is secretary.

ELMIRA

Flower beds were started in different places by the society, and also by the council. Mr. Wm. Hunt, of the O.A.C., has consented to give a lecture on "In What Way We Can Improve Public Places Along Horticultural Lines," which will no doubt help to boom the society, put extra vim into the work, and increase the membership. C. Percy Ruppel, secretary.

OAKVILLE

Mr. R. F. Sanderson, secretary, reports that the society undertook the work of planting an oval shaped flower bed twenty-seven feet long and thirteen feet wide on the Town Hall grounds. In the centre were cannas, next salvias, then filled in with pink geraniums, with a border of silver-leaved geraniums. During 1911 the society intends to extend this kind of work as excellent results were received. The premiums included THE CANADIAN HORTICULTURIST and a distribution of plants. Flower seeds were also distributed among the school children.

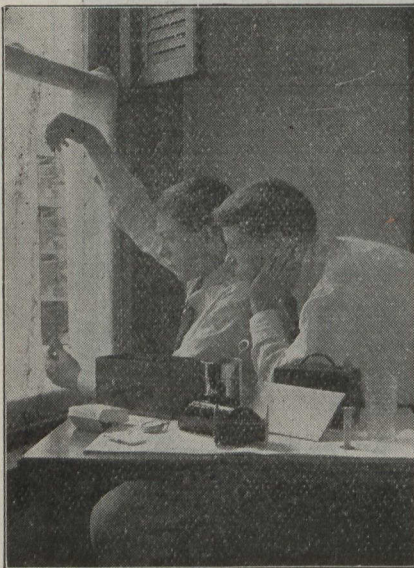
KINGSTON

The work of the society is confined principally to holding an annual exhibition. Last year a high class concert was held each evening of the exhibition, which proved a great attraction. The exhibits were so arranged that the people could promenade and inspect the many exhibits of fruit, vegetables, flowers, etc., and at the same time enjoy the musical programme. The problem of encouraging the citizens to beautify their homes was taken up by the directors for the first time. The city was divided into two sections and prizes were offered in each section for the best kept lawn and most attractive front. This year every effort will be put forth to increase this branch of work and the competition will be thrown open to all citizens, whether members or not, and in this way a friendly rivalry be created, which will extend all over the city.

BERLIN

The organization meeting of the Berlin Horticultural Society last month was attended by a large number of members and others interested in the work which will be undertaken by the society during the year. Those in attendance, on the invitation of the chairman, handed in their names and the necessary fee, and thus at the meeting had a voice in the organization proceedings. Those present were enthusiastic over the prospects of the society in Berlin, and the large number of ladies present was a significant feature, pointing to the fact that the society will have the assistance and hearty cooperation of the ladies of Berlin.

At a subsequent meeting of the Board,



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Special collections for Horticultural Societies, now largely called for.

Also Paeonies, Cannas, Dahlias and general nursery stock.

WRITE FOR CATALOGUE

**Campbell Bros. Simcoe, Ont.**

the following officers were elected: President, S. J. Williams; vice-president, H. L. Janzen; and secretary-treasurer, Geo. Dekleinhaus.

**MILTON**

One of the new societies of Ontario which is doing good work is the Milton Horticultural Society, which was organized about a year and a half ago. The members were encouraged to improve their home surroundings and much was done in the way of civic improvement. A Toronto gentleman who was formerly a resident of Milton, recently donated three valuable sterling silver cups for competition among the members each year. This feature helped greatly in arousing the interest of the members and in encouraging them to put forth their best efforts to improve their

homes and to make the society a success. The membership is increasing rapidly, and the officers anticipate a successful year.

**BARRIE**

The Barrie society last year ranked tenth among the societies of the provinces and second among the societies in towns. A feature which has done much to build up the society has been the interest taken by the business men of the town, many of whom contributed cash prizes for competition. The good work has consisted of civic improvement and improving public grounds. Encouragement has been given towards the construction of lawns and boulevards by the members. A grand challenge cup was donated to the society for competition each year among the members.

**Spray Mixture**

**Bordeaux Mixture.**—The old formula four-four-fifty is made by taking four pounds of copper sulphate or blue vitriol, four pounds of stone lime, water fifty gallons. Dissolve the copper sulphate by suspending in a cheese cloth bag in a pail of water. Use a wooden pail, as the copper sulphate has a corrosive effect on iron or tin. Pour the solution into a barrel or tank used for spraying, half filled with water.

Slake the lime by the addition of a small quantity of water. When slaked add several gallons of water and stir. Pour the milk of lime thus made into the dilute copper sulphate, straining through a brass wire strainer of about thirty inches to the



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Just address a postal to Dept. No. 3 saying "Send me your Mid-Winter Sale Catalogue."

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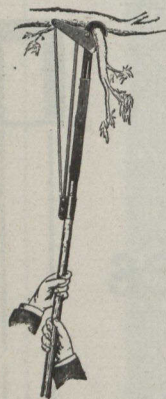
TORONTO

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always do exactly what you expect of them. For sale everywhere. **FERRY'S 1911 SEED ANNUAL** Free on request.

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Have you the Kansas Pruning Knife Improved? If not, you should have, to be up to date on Tree Surgery. Fast, easy, perfect work, saves time, and that's money to a successful fruit grower.

Made in Guelph and sold everywhere. Drop us a line for circular, name of nearest agent or for agency. We like to answer inquiries.

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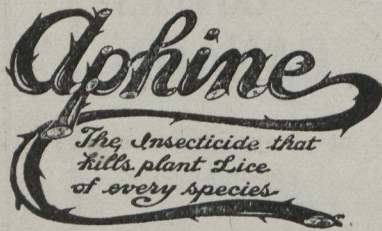
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**STANDARD POTS**  
**FERN PANS**  
**AZALEA POTS**  
**HANGING BASKETS**  
**SAUCERS AND**  
**STRAIGHT PANS**

Canada's Leading Pot Manufacturers

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*The Insecticide that kills plant Lice of every species*

Messrs. Hall and Robinson, of Montreal, state: "APHINE is superior and much cheaper than any other insecticide we have ever used."

Messrs. P. McKenna and Sons, of Montreal, say: "We use APHINE in preference to any other insecticide. One advantage being that it is free from the disagreeable odors of tobacco products."

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mesh. Then add sufficient water to make fifty gallons and stir thoroughly, when the mixture is ready to use. This mixture should be made fresh and any left over for any time should be thrown out. Care should be taken never to pour the strong solutions together, but always dilute with a quantity of water before mixing.

This is the standard application for apple trees and for peach and such other trees as have foliage injured by the regular bordeaux. The above should be diluted with an equal quantity of water.

#### STOCK SOLUTION

A solution of copper sulphate containing one pound of sulphate to a gallon of water may be made and if no lime is added allowed to stand indefinitely in a covered vessel. From two to four gallons, according to the strength desired, is taken for each fifty gallons.

#### SELF BOILED LIME AND SULPHUR

Stone lime ten pounds, sulphur ten pounds, water fifty gallons. Put lime and sulphur together in barrel or tub and add enough water to slake the lime, stir thoroughly and add more water to prevent the mixture becoming sticky. As soon as the lime is well slaked dilute immediately with cold water, and strain through a twenty mesh sieve.

#### LIME SULPHUR

Stone lime fifteen to twenty pounds, sulphur fifteen pounds, water fifty gallons. Slake the lime in a small quantity of hot water, gradually adding and thoroughly stirring in the sulphur. Dilute mixture with twelve gallons of water and boil in an iron kettle or cook by steam in a covered tank or barrel for one hour. Fill the vessel with water to the required fifty gallons. Strain through a fine mesh strainer and apply hot.

#### KEROSENE EMULSION

Laundry soap chipped half pound, kerosene (coal oil) two gallons, water one gallon. Dissolve the soap in the full amount of water by boiling. Remove from the fire, and add the kerosene. Stir the mixture violently by driving it through a force pump back in to the vessel until it becomes a creamy mass that will not separate. For use dilute one part of the emulsion with ten of water.

#### CONCENTRATED LIME SULPHUR

In making fifty gallons take sixty pounds stone lime, one hundred and twenty-five pounds sulphur, fifty gallons of total product at finish. Put ten gallons of water in kettle and start the fire. After the slaking is well started add the dry sulphur and mix thoroughly, adding enough water to maintain a thin paste which requires about five gallons. After slaking and mixing bring to fifty gallons and boil, adding water from time to time to keep up the volume. The time of boiling should be until the sulphur granules are thoroughly dissolved. In general a period of forty to sixty minutes of actual boiling should be sufficient to put the sulphur into solution.

The finished product may be immediately poured or strained into a barrel or setting tank. The solution should be stored in air-tight barrels or kept from the air by means of a thin film of oil. This should be diluted, one part of the concentrated mixture to forty of water for summer spraying, and one part to nine or ten for spraying in the dormant stage.

#### INSECTICIDES

From two to three pounds of arsenate of lead should be added to each fifty gallons of lime-sulphur. When Bordeaux Mixture is used Paris Green should be added at the rate of from a quarter to half a pound to fifty gallons of the mixture.

### At Last The Perfect Washer



Our "Champion" is easily the champion of all washing machines.

All cogs and machinery covered. Lever and High Speed Balance Wheel operating together simply cut the work of washing to the lowest possible point.

Don't think of buying a washing machine until you have seen the "Champion". If your dealer can't show it, write us for booklet. 76

DAVID MAXWELL & SONS. - ST. MARY'S, ONT.



## BLACK KNIGHT

### STOVE POLISH

"Black Knight" Stove Polish was made for women—made to save them work, worry and weariness.

"Black Knight" is the easy-to-shine Stove Polish. Just a few light rubs, with cloth or brush, brings a brilliantly black polish that lasts.

It's ready to use—no mixing—no soiling hands—no dirty work—and cheaper than any other because it goes farther and you get a bigger can for 10c.

Get "Black Knight" at your dealer's—or send 10c. for a large can free postpaid.

**THE F. F. DALLEY CO. LIMITED,**  
Hamilton, Ont. 19

Makers of the famous "2 in 1" Shoe Polish.



**The Duty on Vegetables**

M. T. Delworth, Weston, president of the Ontario Vegetable Growers' Association, informs us that contrary to published reports, that the representatives of the Ontario and Quebec Associations, who waited on the Dominion Government in Ottawa recently, were of one mind on all matters. Arrangements had been made to meet Sir Richard Cartwright regarding the standardization of weights of bags of a number of varieties of vegetables. The interview had been granted for that special purpose. The government not having been informed that the tariff question would be brought up, the Ontario men did not think it fair to ask the government to consider the matter on short notice.

A private conference was held by the Quebec and Ontario growers. The unanimous opinion was that the vegetable growers were satisfied with the present duty of from thirty to thirty-five per cent., but they wished it changed from an ad valorem duty to a specific duty. When vegetables are scarce and therefore high in price the Associations do not wish to force up the price by a high duty which is the effect of an ad valorem duty. When there are plenty of vegetables in the United States they do not want to have the Canadian markets glutted with cheap vegetables. The vegetable growers want the duty to be the same whether the price is high or low or the supply is scarce or plentiful. Mr. Delworth is satisfied that the changes asked for in the weights of vegetables as mentioned elsewhere in this issue will be granted.

The western jobbers and produce men have sent a memorial to the Dominion Government in which they express the view that instead of being an assistance to the Canadian producer the duty is nothing less than a tax on the consumer. When vegetables are imported they cannot be procured in Canada. When vegetables are plentiful the duty is no benefit as the home producer can grow them just as cheaply as United States growers with the additional advantage of having no heavy freight charges to pay.

Reciprocity in vegetables or even a low rate of duty would enable western people to procure at all times of the year a supply of vegetables at a reasonable cost while it would open the United States market to the Canadian producer,—a boon of almost inestimable value.

**Montreal**

E. H. Wartman, Dominion Fruit Inspector

Okanagan Valley, B.C., and North Yakima, Wash., U.S.A., have been shipping quite large quantities of fruit via this port to England. For packing and large bright fruit this stock has aroused the admiration of the public. Ten cars of the Yakima apples have gone forward on one steamer from here; about 6,400 boxes, beautifully packed, each apple wrapped in soft paper. The boxes have handsome colored fruit labels on their ends, which make the packages very attractive. A number of cars were sold here, price generally \$2.50 per case, which would be \$7.50 per barrel. I bought a few specimens at 60 cents per dozen, and got the worth of my money admiring them. When we see this beautiful fruit going forward all fancy quality and compare it with Ontario No. 3's, I consider it is an advertisement for and against these provinces.

Our barrels that went forward last season were probably seventy per cent. eight-hoop, which is the barrel after all.

## Planet Jr.

**Guaranteed Implements**

Backed by over 35 years' experience of a practical farmer and manufacturer. You run no risk when you get a Planet Jr. and you will be surprised at how much more and better work you can do with less labor. Planet Jrs are light and strong, and last a life-time.

**No. 25 Planet Jr Combined Hill and Drill Seeder, Double-Wheel Hoe, Cultivator and Plow** opens the furrow, sows seed in drills or hills, covers, rolls, marks out next row in one operation. Also has perfect cultivating attachments.

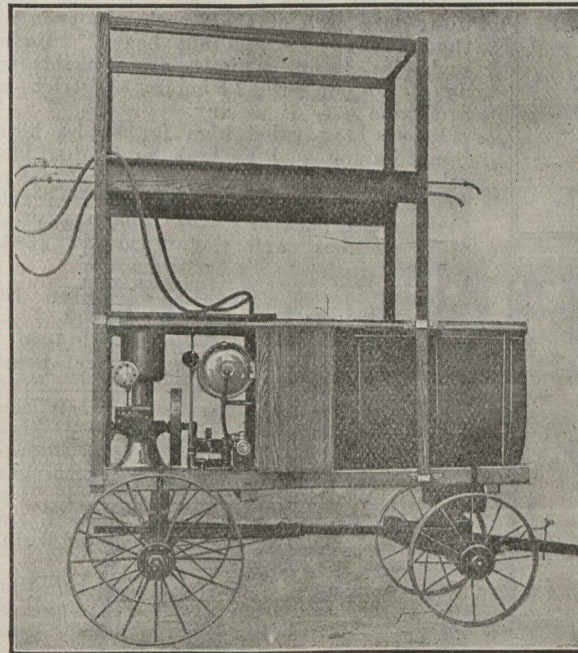
**No. 16 Planet Jr Single Wheel-Hoe, Cultivator, Rake and Plow** is a most useful adjustable garden tool. Keeps ground in thorough condition all through season. The new pressed steel frame makes the tool practically indestructible.

**No. 16 Single Wheel Hoe**

**Write today for 1911 illustrated catalogue of all Planet Jr implements. Free and postpaid.**

**S L Allen & Co**  
Box 1106 G Philadelphia Pa





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

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

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

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

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

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You will need some form of nitrogen.

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The cheapest, most available form of nitrogen.

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Most Satisfactory Source of Nitrogen.

It is already in the condition it must be to be taken up by the plant. 100% of its nitrogen is available. There is no waste. It is pure plant food. Easy to apply. Let us quote you prices.

**CHEMICAL LABORATORIES, Ltd.**

148 VAN HORN STREET

TORONTO, CANADA

### Niagara District Notes

By "Weary Worm," Winona

This District is beginning to come into its own and is beginning to be known throughout the world for what it really is, as the finest fruit valley for producing the non-tropical fruits in North America.

The Campbell's Early grape did well last year, some exceedingly fine bunches, weighing a pound and over, having been produced. This variety does best on a good loam, and requires to be liberally fed. I had the pleasure of visiting the following fine fruit farms: Messrs. J. Burgess, Niagara; W. Armstrong and Fischer & Sons, Queenston; and W. H. Bunting, St. Catharines. All these gentlemen had very fine crops of peaches, running from 15 000 baskets up to 35,000, of excellent quality and beautiful color. In addition Mr. Bunting had a very heavy crop of apples and very free from worms.

In orchards that had been well cared for, apples were a medium crop of—upon the whole—excellent quality, but of very poor quality and quantity in unsprayed orchards. An encouraging feature is that mere growers are giving their apple orchards good care than ever before, and that they are well pleased with the results.

Apples have proved themselves money-makers for most of those who took good up-to-date care of their orchards, even although the crop was not heavy. Under such circumstances apples are probably today—even in the Niagara District—as profitable a fruit as any.

Prices have ruled high for apples here. Spies having sold as high as \$5 per barrel and other winter varieties for \$3.50 to \$4 f.c.b. One of the co-operatives sold their entire pack of "ones" and "twos" at \$1.50 per box, and their "threes" at \$2 per barrel.

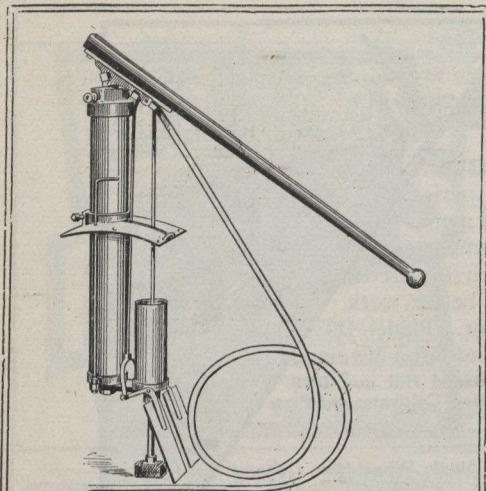
In the neighborhood of Hamilton the apple crop was pretty good. Messrs. J. C. and M. C. Smith, Burlington, shipped a carload early in November to Carl Bros., Chicago, at \$4.50 per barrel f.o.b. From Dundas, a town 5 miles west of Hamilton, a car of apples was shipped to Regina, and—more curious still—a car was shipped to Vancouver, B.C. Inspector Furminger, of St. Catharines, had detained two carloads of apples at Grimsly Station, and had them repacked, the grading not being good enough to suit him.

The farm near Vineland, called the Martin Farm, has been recently bought by Mr. J. W. Smith, of Winona, price \$21,000.

By command of R. H. Lewis, Provincial Inspector of Yellows, Little Peach, etc., a number of trees in the District were taken out recently.

The annual meeting of the American Pomological Society will be held at Tampa, Florida, Feb. 9, 10, and 11th. The meeting of the Society for Horticultural Science, the official society of the horticulturists of the Colleges of Agriculture and experiment stations of the United States and Canada, will meet at the same place on Feb. 9th. Low railway rates have been given and an excellent program is offered. Those interested may secure a copy of the programme by writing to Prof. John Craig, Cornell University, Ithaca, N.Y.

The Central Farmers' Institute of British Columbia has passed a resolution asking that the duty on fruit entering Canada be raised so as to make it equal to the duties now levied on fruit entering the United States.



### Here is the Spray Pump

that requires no repairs to the piston; works easier than any others; has relief valve to drain the air chamber, and many other novel and useful features.

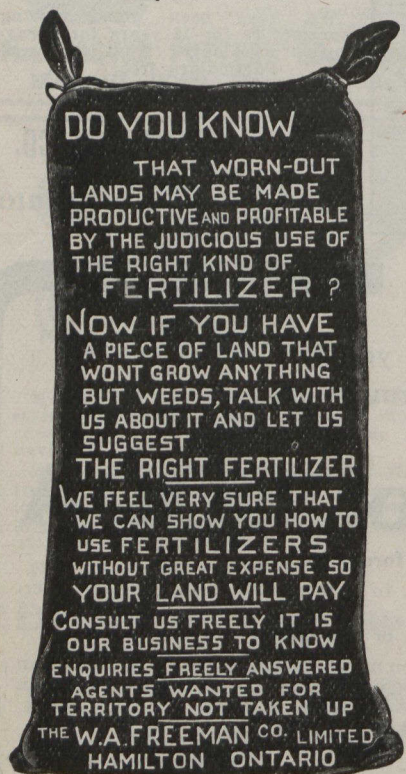
Write for further information about "The Perfect Spray Pumps" to the manufacturer.

**R. B. Westhaver**

MAHONE BAY, N.S.

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 Will make your home attractive and inviting at a small cost. Beautiful fixtures giving a pure white brilliant light superior to gas or electricity at one half the cost. Can be installed anywhere in the home, store, church, etc. Easy to operate—thousands in daily use. Write our nearest office for Booklet 'C'  
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## Rubber Stamps BRASS STENCILS, Etc.

ALL KINDS—ALL PURPOSES

**W. E. IRONS 113 BAY ST. TORONTO**

After being a resident of Okanagan, B. C. for 17 years, I am prepared to give full information regarding purchasing fruit lands, prices, conditions, etc. My information guaranteed accurate. My fee is \$1 in advance.

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Box 104,

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## Northern Grown Trees

Apple, Pear, Plum, Cherry, Peach, Grapes, Small Fruits Deciduous and Evergreen Ornamentals, Roses, Flowering Shrubs, Climbers, etc. Specialties: Mammoth Dewberry and Wismer's Dessert Apple. Catalogue Free: It tells the whole story.

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## TREES! TREES!

Fruit and Ornamental, Perpetual and Climbing Roses, Beautiful Hardy Flowering Shrubs  
**Herbert Raspberry Perfection Currant**  
 Descriptive Catalogue and Price List Free

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For Sale, 1 to 300 Bushels

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## DAHLIAS

All the best and newest varieties. Many new ones imported this year. Write for illustrated catalogue. Ready now.

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## STRAWBERRY PLANTS

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

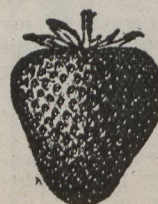
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## STRAWBERRY PLANTS

Barrymore, Heritage, Gill, Goree, Paul Jones, Wooster, Diamond, Joe, Good Luck, Chas. Newman, King Edward, St. Louis Ozark, Taft, Orem, Fairdale Giant, Bountiful, Chipman, Three W's, and all the old reliable varieties. Price list sent free on application.

**E. B. STEVENSON, Maple Bank**

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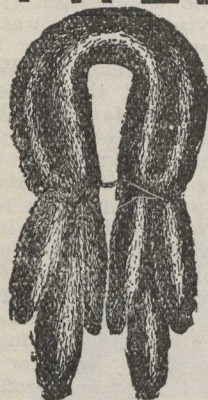
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This dainty Lady's Watch has warranted Swiss Works, is stem wind, and stem set, has solid silver nickel case, fancy dial and gold hands. The case is beautifully enamelled with roses, buds and leaves, in natural colors, and we will give it to you for selling only 36 packets of our beautiful cards. Take your choice and write to-day. Address

COLONIAL ART CO., Office X 2, TORONTO, ONT.

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Death to All Insect Pests**

when you spray with the stick-longest, kill-quickest, safest and most economical of all insecticides—

**ELECTRO Arsenate of Lead**

(in Powdered Form)

It is the only dry Arsenate of Lead in an amorphous (non-crystalline) form, hence the only one that mixes **instantly with water** in such a finely divided state that every drop of spray is equally strong in arsenic. It cannot be washed off by rain. Is death to insects months after application, yet it is harmless to the newest, tenderest foliage.

Electro is guaranteed to contain 33% arsenic oxide, or 50% more than other brands, as proved by Connecticut and New Jersey Agricultural Experiment Station tests. Write us for them.

If your dealer can't supply Electro, don't accept substitutes, but send to us for prices and proofs from successful fruit growers. We'll supply Electro in paste form if you prefer it. Use Electro Lime Sulphur for San José scale and sucking insects.

THE VEELAND CHEMICAL CO.  
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**FOR WINTER SPRAYING**

VI Fluid is the Best and Cheapest

One gallon makes 100.

5 Gallon Can \$10.00.

We pay the freight.

Send cash with order.

**Remember Clean Trees Mean Big Crops**

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**COMPRESSED AIR  
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TIME, LABOR, MONEY SAVERS

Especially adapted to hilly country

W. H. OWEN SPRAYER CO., Sandusky, Ohio

**Planet Jr.**

The greatest labor-savers and time-savers ever invented for the farm and garden! A Planet Jr does the work of 3 to 6 men; and does it better. Makes you independent of indifferent help. Made by a practical farmer who knows the every-day need of other farmers. Thirty-five years' experience. Fully guaranteed.



**No. 4 Planet Jr Combined Seeder and Wheel-Hoe** saves time, labor, seed and money. Almost all useful garden implements in one. Adjustable in a minute to sow all garden seeds, hoe, cultivate, weed, or plow. Pays for itself quickly, even in small gardens.

**No. 8 Planet Jr Horse-Hoe and Cultivator** will do more things in more ways than any other horse-hoe made. Plows to or from the row. A splendid furrower, coverer, hiller, and horse-hoe, and unequaled as a cultivator.

The 1911 Planet Jr catalogue is free. It illustrates and describes 55 different implements for the farm and garden.

Write for it today.

S L Allen & Co  
Box 1109 G. Philadelphia Pa



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## NOTES FROM THE PROVINCES

### Prince Edward Island Fruit Growers' Meeting

J. A. Moore, Hazelwood, P. E. I.

The annual meeting of the Prince Edward Island Fruit Growers' Association was in every way a success. The attendance was better than usual, and although this has been a poor year for apple growing, a splendid display was on the tables. The packing in barrels and boxes was splendidly done. The fruit compared very favorably with that shown from Ontario and British Columbia. One thing though, is evident—we cannot grow Ben Davis

with either of these provinces.

We are just now in an unsettled state of mind. The Spy, Baldwin, and King are tabooed. There is a feeling against Ben Davis, and our minds are not fully made up as to which varieties to put in their place. Stark, Baxter, Pewaukee, and Wagner each have their champions, but personally I believe there will soon be a better apple than any of these. I do not think we grow enough Yellow Belle Fleur here. The excellent lime-sulphur solution and its efficacy in preventing scab and the must-be-adopted system of thinning on the tree would make this variety a splendid

winter apple for us. The fine flavor would create a market for it. Our apple par excellence, the one most suited for our province, is the Wealthy. I remember some years ago hearing one now high in authority, say when the Wealthy was being praised that "it would be all right if we wanted to produce vinegar." It was refreshing to hear him say this year that "we want nothing better than the Wealthy, and if I had planted them when I started I would be worth far more than I am now." This man's trees seven years out produced this year a barrel per tree, and were worth three dollars fifty cents per barrel, one hundred and thirty trees to an acre. Is not this pretty good? But it has been done. And while few can hope to have the success of this splendid fruit-grower, yet I think hundreds might try the venture, for be it known that as yet we do not begin to grow apples enough to attract buyers to our land. No surer way, no quicker way, and no more profitable way could be devised to double our population in the next fifteen years than for each of our farmers to plant and protect five acres of fruit trees.

### British Columbia

Mr. Thomas Cunningham, provincial fruit inspector, is distributing 5,000 circulars printed on calico, so that they will not wash off with the rain. These are to be posted in conspicuous places in all districts where fruit is grown so that the province should be fairly covered. The posters state that in order to prevent the spread of insect pests and diseases injurious to fruit trees and fruit, it is found to be imperatively necessary to prune and thoroughly spray all orchards.

If the owners or persons in possession of infected and diseased fruit trees neglect to apply the necessary measures for cleansing them the orchard will be quarantined or the trees must be destroyed at the expense of the owners as provided by the British Columbia Horticultural Act and amendments thereto. All burnings, debris and other rubbish must be burned up at the time of pruning.

The Dominion government has greatly enlarged its fumigation plant in Vancouver. The immense increase in the quantity of stock passing through the station each season made this enlargement necessary in order that the work of inspection and fumigation might be done expeditiously.

Preparations are advancing rapidly for the location of the demonstration orchards provided for by the appropriation of \$10,000 included in the provincial estimates last session. It is intended that these orchards shall afford practical object lessons in the management of orchards. Two of the orchards will be located on Vancouver Island, four on the lower mainland, one probably in the Delta, one in Chilliwack, and two in the Dewdney ridge.

The second orchards district will comprise Shuswap, Armstrong, Nicola, Salmon Arm and Penneys (Wallachin), two orchards going to the constituency of Yale and two to that of Kamloops. Either three or four orchards are proposed for the third official district, which is to include Vernon, Kelowna, Summerland, Penticton and Keremeos. The fourth district is Kootenay and the Boundary county, East and N. E. Kootenay. It is expected that two orchards will be awarded to the Slocan district, one being given on Arrow and one on Slocan Lake, with one on the Kootenay Lake in the vicinity of Nelson, one at or near Cranbrook, one at Windermere, one at Rossland and another at Midway.

## BAXTER The King of Late Fall and Early Winter Apples

Cut shows the Pyramid of **BAXTER** Apples that advertised CANADA at the National Apple Show at Spokane.

50 Apples that weighed 64 pounds. They were grown in British Columbia.

**BAXTER** is a variety of comparatively early maturity. It bears well. The Fruit is handsomer than King, and outsells it.

The tree is much hardier, and is a splendid grower.

**WE OFFER** splendid grown trees for Spring Delivery.

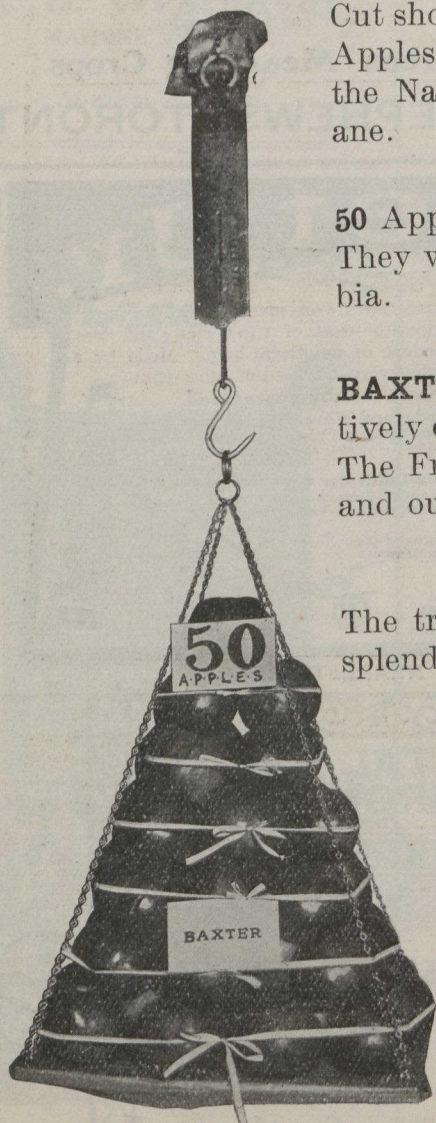
**WRITE FOR PRICES**

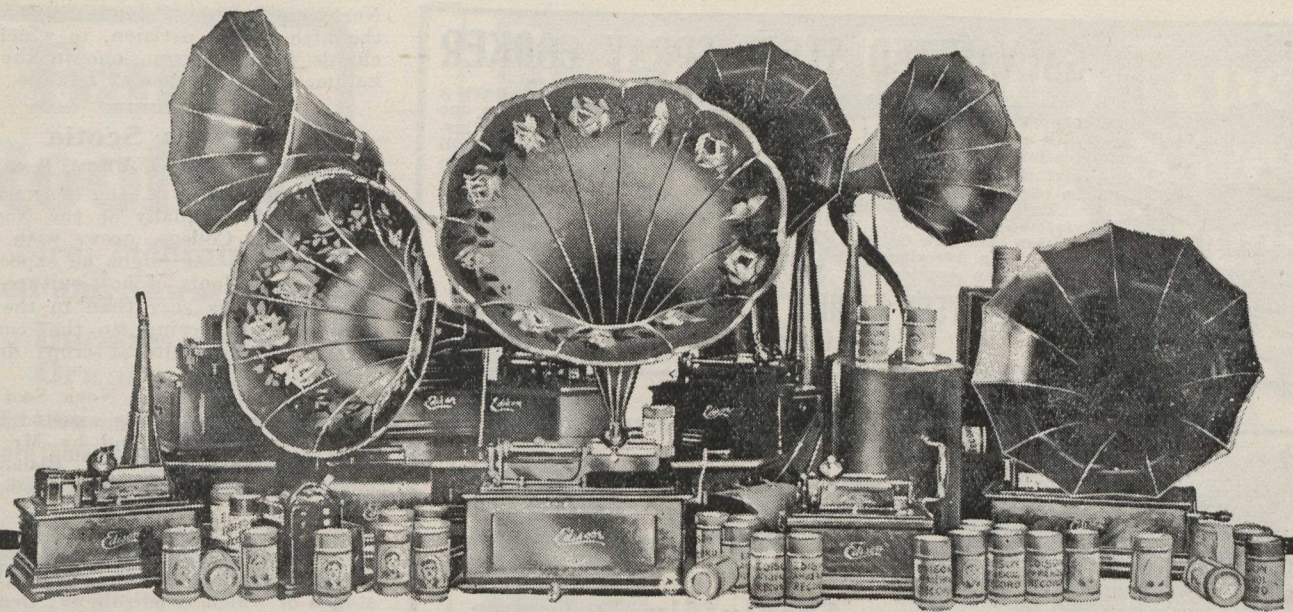
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The Fonthill Nurseries

**Toronto, - Ontario**





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**Yes, FREE.** Shipped posi- **EDISONS**  
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**Just Take Your Choice** **You Don't Have**  
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Get any of the outfits shown above—your choice of records too. **Simply get the phonograph and the records and use them free just as though they were your own.** Entertain yourself, your family and your friends too, if you wish, with everything, from the catchiest, newest popular songs, side-splitting minstrels and vaudeville monologues to the famous grand operas, **Amberola** and other records sung by the world's greatest artists. Hear all this to perfection on the Edison Phonograph. After you have had all this entertainment absolutely free, then you may simply send the outfit right back to us **at our expense.** Now, if one of your friends wishes to buy such an outfit tell him that he can get the rock-bottom price, and, if he wishes, on payments as low as **\$2 a month without interest.** But that's not what we ask of you. We just want to send you your choice of the latest style Edison Phonograph **free**—your choice of records too, all **free**—then we will convince you of the magnificent superiority of the new style Edison. It will cost us a little in express charges to get the phonograph back from you—that is true—but we'll feel amply repaid for that, knowing that we have made you a friend and a walking advertisement of the new style Edison Phonograph.

**Send Coupon for the New Edison Books FREE Today**



**FREE COUPON**

Get our handsome Free Edison Catalog and list of over 1500 records so you can select just the machine and the songs, recitations, etc., you want to hear on this ultra generous offer. Remember, there is absolutely **no obligation** on your part. All you need to do is to return the outfit at our expense when you are through with it. If you enjoy good music, and the finest and most varied entertainment that it is possible to imagine, or if you want to give your family and friends a treat such as they could not possibly get through any other means, then you should certainly send the Free coupon today. Don't wait—your name and address on a postal will do but the coupon is handier. No letter necessary. Be certain to write while the offer lasts. Better write today.

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 Dept. 5152, 355 Portage Ave., Winnipeg  
 Without obligations on me, please send me your great Edison Catalogs, and also full explanations of your Free Offer on my choice of a new style Edison Phonograph.

Name .....

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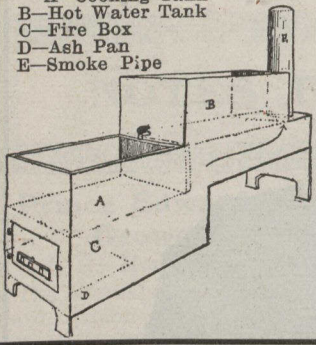
**F. K. Babson, EDISON PHONOGRAPH DISTRIBUTERS**

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U. S. OFFICE, EDISON BLDG., CHICAGO, ILL.

No letter necessary. Just sign and mail Free Coupon Now

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



## GALVANIZED STEEL SPRAY COOKER

It is easy to make home boiled lime sulphur if you have a proper spray cooker. We manufacture two kinds of cookers, one with a single tank and one with a double tank, as shown in illustration. They are designed especially for this purpose, and will give the greatest efficiency with the greatest saving of fuel. Can be used for either wood or soft coal.

The tanks are made of heavily galvanized steel, thoroughly rivetted and soldered. Will not leak. They are built to give satisfaction, and are GUARANTEED.

Made in five sizes, capacity 30 to 75 gals. Prices and full particulars on application. Write us to-day.

THE STEEL TROUGH & MACHINE CO., LTD.  
TWEED, ONT.

Northern British Columbia will constitute the fifth official division, to which two orchards will be given, one in the Kitsumkalum, and the other at Lakelse.

## Nova Scotia

By A. Kelsall, Wilmot, N. S.

The popularity of the Farmers' Short Course, held annually at the Nova Scotia Agricultural College, grows with each succeeding year. As might be expected, however, the students of horticulture were less in number this year than in the few preceding years, owing to the comparative failure of horticultural crops during the past season.

Professor Shaw, the Nova Scotian horticulturist, was most ably assisted by Mr. A. McNeil, of Ottawa, and by Mr. Johnson, Mr. Messenger, and Mr. Bishop, prominent horticulturists of the Annapolis Valley.

### PLANTING

Professor Shaw introduced a discussion on the planting of an orchard, the substance of which is as follows: Orchard land in Nova Scotia in a condition ready to plough costs from ten dollars to ninety dollars per acre, the average price being probably thirty dollars to forty dollars. Usually no returns are obtained until the orchard has been out from seven to nine years, though no regular substantial returns are made until the twelfth year from planting. If no barn manure is available and the orchardist relies entirely on commercial fertilizer to supply the necessary plant food, the total cost of growing an acre of orchard until it is six years old is two hundred and forty dollars. The apples obtained during the next six years that is until the orchard is twelve years old, will pay for the entire expenditure on the orchard until that time. An acre of orchard in prime condition is worth from five hundred dollars to one thousand dollars per acre. Surely the growing of an orchard in Nova Scotia is one of the best financial propositions of the present time.

Any land in Nova Scotia which is deep and well drained, and will grow ordinary farm crops, will grow apples. Many orchardists prefer a gravelly loam, and prefer the site to be higher than the surrounding land. Probably this is on account of the superior natural drainage of such soils. The desirable slope of an orchard site depends a great deal on the locality. A northern slope will retard the blossoming and consequently lessen the danger of injury through late spring frosts. A southern slope will produce earlier maturing apples of a better color; while an eastern slope is generally protected from the prevailing western winds.

The year 1910, in spite of the light apple crop, has had advantages as well as disadvantages in that many more people are becoming interested in spraying and the better care of their orchards. —R. R. Sloan, Proctor's Hill, Ont.

While probably 99 per cent. of the spraying done in Nova Scotia has been with Bordeaux; in the spring of 1911 probably 90 per cent. will be with lime sulphur.—S.C.P.

## British Columbia Fruit Growers Association

At the annual meeting of the British Columbia Fruit-growers Association held in Victoria, January 6th and 7th, the chief



## NEW COLORED FREESIAS

The most interesting novelty offered this year. No such colors have as yet been seen in the Sweet Scented Freesias, ranging, as they do from pink, red, lilac, violet to yellow and orange; will flower seven months after sowing

# SEEDS

Absolutely Reliable  
NOT LIKE THE ORDINARY KIND

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Don't place your order until you have secured a copy

OUR CATALOGUE contains 10 pages of novelties and invaluable cultural directions

## DUPUY & FERGUSON

38 Jacques Cartier Square  
MONTREAL

## Got 98 Apples Out of Every 100 Free From Worm Cuts

In an orchard of 3,000 trees, the percentage of apples injured by codling moth was only  $\frac{1}{2}$  of 1%. The Rose Cliff Fruit Farm, of Wanesboro, Va., also reported that when the

# ELECTRO Arsenate of Lead

reached the apples in proper time, not a single worm escaped.

Orchardists and truck growers can depend absolutely upon Electro Arsenate of Lead to protect trees and plants against all insect pests.

Our Electro process makes the only successful powdered arsenate of lead because no other is in amorphous (non-crystalline) form.

It is the most economical arsenate of lead—no water to pay freight on—can be used as a dust or will dissolve instantly in water at any time—age cannot weaken it—rains cannot wash it off—has 50% more arsenic oxide than any other brand, yet it is harmless to most tender foliage as it contains less than  $\frac{1}{2}$  of 1% arsenic.

SEND FOR INTERESTING AND VALUABLE FOLDERS on Electro Arsenate of Lead and on Electro Lime-Sulphur (certain death to San Jose scale); also for report of tests from N.J. and Conn. Agri. Exper. Stations.

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

# Barn Roofing

**Fire, Lightning  
Rust and Storm Proof**

**Durable and  
Ornamental**

Let us know the size of any roof  
you are thinking of covering and we  
will make you an interesting offer.

**Metallic Roofing Co.**  
Limited  
MANUFACTURERS  
TORONTO and WINNIPEG  
45A

# STRAWBERRY PLANTS

For  
Choicest Plants  
of  
Well Selected Varieties  
at  
Reasonable Prices  
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Prompt Delivery  
order from

**ONTARIO NURSERIES**  
WELLINGTON, ONT.  
LIST FREE

## Plant Some Evergreens

What will improve your lawn and home surroundings like a few fine evergreens or an evergreen hedge? This year our supply of evergreens is exceptionally fine. Our stock includes 8,000 to 10,000 American Arbor Vitae, ranging in sizes from 1 to 5 ft.; 90,000 to 100,000 Norway and White Spruce, 1 to 6 ft.; Alcocks Spruce in quantity, 4 to 6 ft.; Picea Engelmannii, Picea pungens, Douglas Spruce, and Koster's Blue Spruce, ranging in height from 6 to 24 inches; and a large and healthy stock of American, Scotch and White Pine from 2 to 4 feet.

All home grown, healthy, transplanted stock. Prices on application. Write us.

**POINTE CLAIRE NURSERY, POINTE CLAIRE**  
Address P.O. Box 165, Montreal  
or  
GEO. MILNE, Manager, Pointe Claire, Que.

## The Canadian Florist

Do you own or look after a greenhouse or conservatory? You will be interested in The Canadian Florist, the only Canadian paper published for professional florists and gardeners. Any florist or private gardener desiring to see a copy of The Canadian Florist may receive one free

**THE CANADIAN FLORIST**  
PETERBORO - - - - - ONTARIO

# Peerless Jr. Poultry Fence

**Close enough  
to keep chickens in.  
Strong enough  
to keep the cattle out.**



**Saves  
Expense**



PEERLESS JUNIOR Poultry Fence will do all you wish of a poultry fence and will do much more. It is built close enough to keep the chickens in, but it is also built strong, rigid and springy. Those 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 perfect shape again. It is the most handsome and most effective poultry fence on the market. At every intersection the wires are firmly held together by the never-slip PEERLESS Lock.

**The Fence That Saves Expense**

because it never needs repairs. It is the cheapest to put up, too. It is stretched up like a field fence. More than half the price can be saved in posts and lumber alone, as required by some other poultry fences. Write to-day for our printed matter. It tells you how to get your full money's worth in fences. We build fences for every purpose.

**BANWELL HOXIE WIRE FENCE CO., Limited**  
Dept. O  
WINNIPEG, MAN. HAMILTON, ONT.

COMPLIMENTS OF THE SPRAYING SEASON  
—At the Rate of—

# 500 1911 MODEL "FRIEND" POWER SPRAYERS

A New Tank Filler, at 35 gal. per minute. **No PUMP.**  
A New Nozzle for the high pressure "Drive Spray" Crank.  
A New Friend Hand Pump, detachable valves.  
A New Factory to handle the new business.

**WHAT ARE YOUR NEEDS?**

**There's a SECRET at the Arrow Point**




Thousands of Up-To-Date Fruit Growers are saying, "FRIEND NOZZLES ARE SUPERIOR." Why is this?

SIMPLY because they GET THERE. An IMITATION indicates that somewhere there is an ORIGINAL. Look on the NOZZLE you use and see if you can find the MAKER'S NAME and the word "PATENTED." The "FRIEND" is the ORIGINAL large Nozzle doing away with the cluster. "FRIEND" Nozzles have no HORNS, no HOOKS, nothing to catch, drip or clog. They make the finest MIST-LIKE Spray, driving it farther into the trees than the cluster.

The "ANGLE" sprays up under the leaves and down into the CALYX. The "REGULAR" is for ordinary work. State which is wanted. Satisfaction guaranteed or money refunded. Price, \$1.00 each, postpaid

**"FRIEND" MFG. CO.**  
Gasport, Niagara County . . . New York

"Friend" Nozzles mailed from Canadian Nozzle Branch—No Duty

Be Sure

Not Sorry

When you buy seeds you are investing not the price of the seeds only, but the value of the land for a year and the season's work as well. That makes it most important that you should buy

# EWING'S Reliable Seeds

That is the first and perhaps the most important step towards a good crop. Ewing's Seeds are clean, vigorous, healthy, true to type, and sure to grow if they get any kind of a chance. For over forty years they have been making Canadian farms and gardens famous.

Write for our handsome Illustrated Catalogue, and if your dealer hasn't Ewing's Seeds buy from us direct

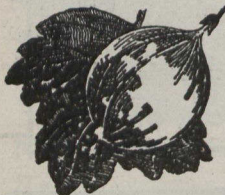
**WM. EWING & CO., Seedsmen**  
MCGILL ST., MONTREAL. 12



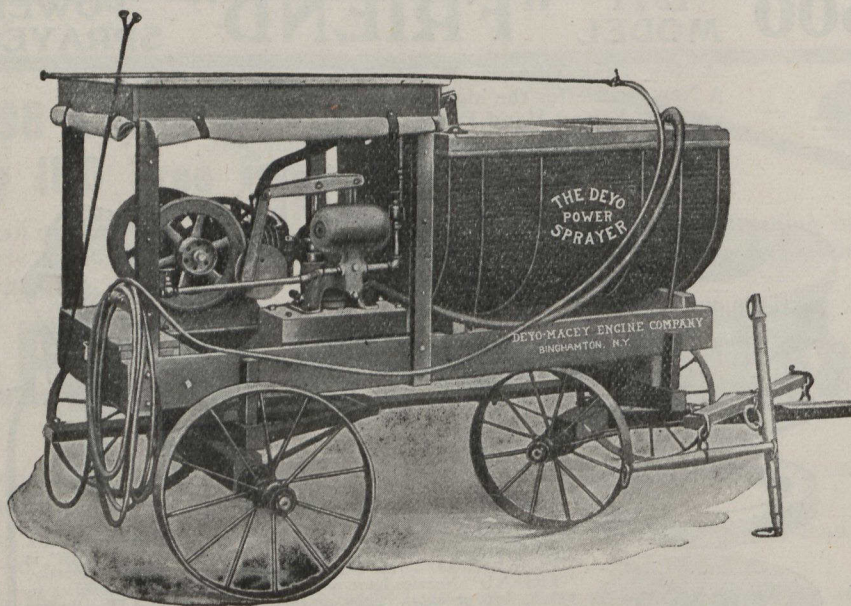
## SMALL FRUIT PLANTS

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

**WM. FLEMING, Nurseryman, Box 54, Owen Sound, Ontario**



## 1911 DEYO POWER SPRAYERS



Buy the Original, and save trouble and expense. Others have copied. You can spray properly with our two plunger detachable pump connected to either our 2 or 3 H. P. air-cooled engine. It will give you the proper pressure, and will add to your bank account at harvest time. Pulley furnished with each engine. In one minute's time you can disconnect engine from pump, and the engine may be used for other work. Ten years of success. The users are our reference. Write for Catalogue 10.

**DEYO-MACEY ENGINE CO., - Binghamton, N.Y.**

CANADIAN REPRESENTATIVES—St. Catharines Cold Storage and Forwarding Co., St. Catharines, Ontario.

matters discussed were, the buying of supplies for members, the labor supply, standardization of packages, reciprocity, markets and transportation. It was decided to supply the members with spray ingredients, paper boxes and other necessary materials at cost. It was decided to send crop reports by wire to all affiliated societies.

The committee on labor reported that they feared that the labor necessary to work the orchards could not be obtained in the Province. A resolution was passed asking the Government to encourage emigration from the British Isles, to establish a bureau of labor and set aside a receiving farm for the training of immigrants.

The convention went on record as being opposed to reciprocity in fruit and passed a resolution to be forwarded to the Dominion Government requesting that the duty on fruit coming into Canada be revised to equal the duty imposed by the United States on fruit imported from Canada.

J. C. Metcalfe, Markets' Commissioner, showed the poor results that were obtained from shipping fruit on consignment and urged the organization of the growers for their own protection and to secure an even distribution of their products in the inherent markets. He emphasized the importance of a good reputation which could only be established by the shipment of good fruit, honestly packed. Strong objection was taken to the dumping of United States fruit in Canadian markets.

W. C. Bowles, General Freight Agent of the C.P.R., and R. Helme, Superintendent of the Dominion Express Office were on hand to answer the complaints of the fruit shippers about high freight and express charges, as well as about icing cars, delays in transit and rough handling. Messrs. Bowles and Helme in reply promised to do all in their power to relieve the grievance of the shippers.

It was decided to appoint a transportation committee to consider complaints and study systems of transportation with the view of suggesting methods by which the freight and express service could be improved.

The officers elected were: President, R. H. Augur, Summerland; vice-presidents, W. C. Ricardo, Vernon; R. W. Palmer, Kamloops and W. S. Summers, Gordon Head; sec-treas., R. M. Winslow, Victoria.

### Niagara Fruit Growers Protest

A meeting of fruit growers from all parts of the Niagara district was held in St. Catharines Jan. 27 to protest against the proposed tariff changes. Resolutions were passed showing that the placing of fruit and vegetables on the free list would work great hardship to the growers, causing loss and depreciation of land values.

It was decided to organize a deputation to go to Ottawa to petition the Government for a reconsideration of the fruit tariff. An effort will be made to have a deputation of a thousand men.

### Sweeping Changes in the Tariff

The chief feature of the proposed tariff agreement with the United States is the placing of all natural products, the principal of which are cattle, horses, dairy products, fish, vegetables, fresh and dried fruit on the free list. If this proposed change is ratified by both governments it will cause some drastic changes in the fruit and vegetable industry.

#### APPLES AND GRAPES

The British Columbia apple growers will be disappointed. They have been bitterly opposed to any change in the tariff, fearing

# Make YOUR Orchard Carry You Into the "Bank-Account" Class

YOU can, and your neighbor can, just the same as thousands of others have done, in Canada and in the States. If your orchard is old and run-down, you can make it pay handsomely by pruning and cultivating, and spraying with a **DEMING SPRAY PUMP**; if you're planting out new trees this spring, it's all the more important that you commence to "Deming-Spray" them right away, so as to keep them healthy, just as they come from the nursery. Be sure you get a

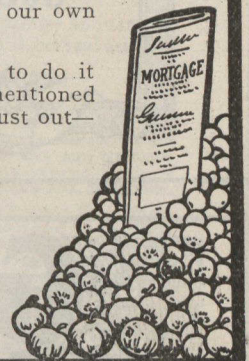
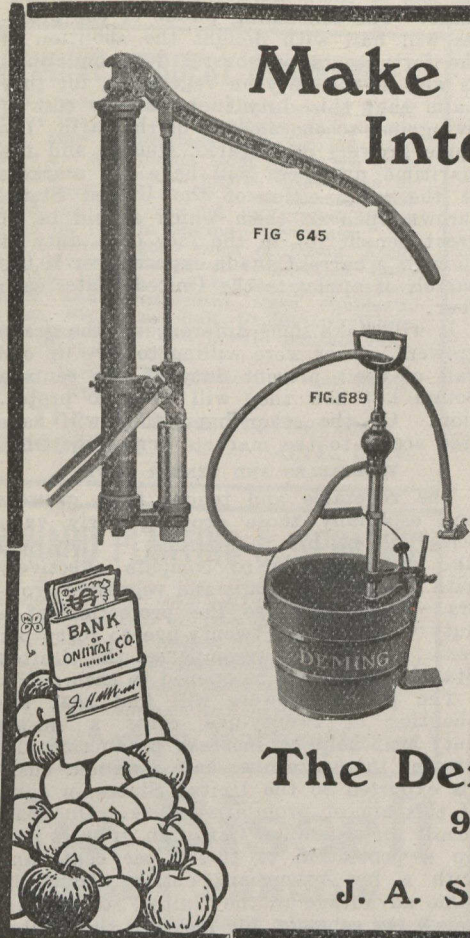
## Deming Spray Pump

when you order, though; it may cost a little more, but it will pay you dozens of times over in the long run. A cheaper outfit will probably have working parts made of iron, which spraying solutions quickly corrode and ruin. Deming outfits have brass working parts and last for many years without special attention. They work more easily and develop higher pressure than others, because they have large air-chambers and are made so as to prevent unnecessary friction. Deming nozzles, seven styles in all, are famous for their good work—of our own design, made by special machinery.

Whatever spraying you have to do, there's a Deming outfit to do it for you. More than 20 styles, hand and power. See our agent, mentioned below, or write us direct for handsome catalogue, with prices. Just out—free on request.

**The Deming Company** Manufacturers of Pumps for all Uses  
975 Depot Street, Salem, Ohio.

J. A. SIMMERS, Agent, TORONTO, ONT.



# Cleared, Irrigated and Planted Fruit Land At \$150 Per Acre

Is the greatest bargain in British Columbia Fruit Land ever offered. A strong Company acts as trustees for your money, and guarantees that we will carry out our promises. The owners of the land receive no money until they have done just what they say they will do.

Ten acres of this land will make you independent for life. You can remain at your present occupation until the trees are matured and your orchard will support you and your family in affluence.

Whatshan Valley is one of the most delightful spots in British Columbia, with a wonderful mild climate, superb scenery, good Fishing and hunting and everything else that goes to make life worth living.

If you wish to take advantage of this **Apple Orchard Opportunity of a lifetime** let us hear from you at once, as we are offering only a few orchards at this low price in order to open the valley and advertise the rest of our lands. We can satisfy you on every point.

## BEATON & VEZINA

305 ENDERTON BLD'G.  
WINNIPEG, MAN.

SOME OF THE CHARACTERISTICS  
WHICH HAVE WON POPULARITY FOR THE

## Gourlay Piano

ARE

**ITS BEAUTIFUL SINGING TONE**  
**ITS EVENNESS OF SCALE**  
**ITS RESPONSIVENESS OF ACTION**  
**ITS BEAUTY OF DESIGN, and**  
**ITS CAPACITY TO WITHSTAND HARD**  
**USAGE WITHOUT BECOMING "TINNY."**

The Gourlay Piano is supreme in all those qualities which are the desire of musicians and music lovers.

**GOURLAY, WINTER & LEEMING**  
 188 Yonge Street, Toronto

the loss of their market east of the mountains. The consuming public of the prairies will hail with delight the abolition of the forty cents per barrel duty on apples as well as the duty on vegetables, for they claim that this duty increases the cost of living just to the amount of the tariff. The apple growers of Ontario, Quebec and the maritime provinces will have the markets of the large cities of the United States thrown open to them which should be of great benefit for in the face of a duty of 75 cents a barrel Canada exports over 19,000 barrels of apples to the United States each year.

It will make some difference to the grape growers. They were willing to give up one half of their present duty of two cents a pound but now they will have no protection. On the other hand they will have free access to the markets across the line.

**VEGETABLES AND TENDER FRUIT**

The vegetable and tender fruit growers and especially those growing early varieties will be hit the hardest. They will find it impossible to compete effectively with the southern fruit and vegetable growers. They will lose the protection of a duty varying from twenty-five to forty per cent., but as a recompense the United States market will be opened to them.

The potato growers will find that the abolition of twenty-five cents a bushel duty will help to increase production. At present there are over half a million bushels exported to the United States in spite of this almost prohibitive duty. On practically all vegetables Canadian growers give up a protection of thirty per cent. and with a few exceptions obtain about the same advantage in the United States markets. On cabbage, for instance the United States duty is two cents per head. On onions the duty is forty cents a bushel. The abolition of such high duties should lead at certain seasons to an increase of shipments of these vegetables.

**DRIED FRUITS**

In dried fruits the duty of two cents a pound is taken off shipments across the line. This reduction should stimulate the export of dried fruits to the great cities of the United States, for at present 733,000 pounds of evaporated apples are sent across the line each year in the face of this high protection. Canada gives up a duty of twenty-five per cent., but as we are a fruit exporting country the reduction of this duty will not affect us adversely.

**CANNED GOODS**

In canned vegetables the duty is reduced to one and a quarter cents per pound. This is only a slight reduction of which Canada makes one quarter of a cent per pound and the United States from one and a half to two and a half cents per pound. In canned fruits the Canadian duty is cut one and a half cents per pound, the United States dropping one-half a cent, leaving the duty on both sides at one-half a cent per pound.

**NURSERY STOCK**

On nursery stock in general the duty is reduced to two and a half cents each, a reduction of one-half a cent a tree, for Canada. The United States present duty varies from two dollars per thousand to twenty-five per cent. On grapevines, raspberries, gooseberries and currant bushes the duty is reduced to seventeen per cent., a reduction of two and a half cents by Canada and seven and a half by the United States.

**THE PROPOSED TARIFF**

The present Canadian and United States duties together with the proposed duty if any on the principal commodities affected

# GOULDS RELIABLE SPRAYERS



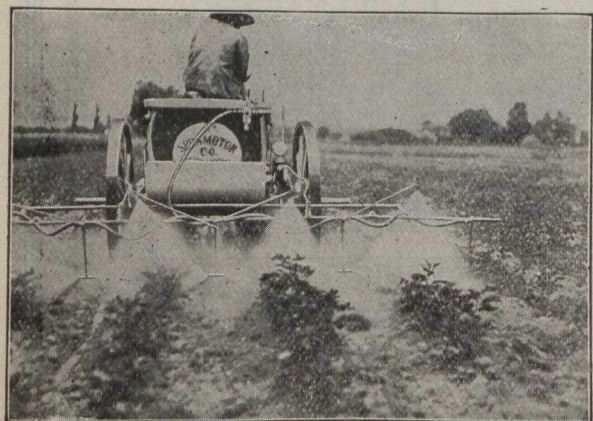
Only thorough work with the best machinery will accomplish the best paying results from spraying. You must spray if you would have perfect fruit, and it doesn't pay to bother with a cheap outfit. It means no end of trouble and it's too risky—you have too much at stake.

Goulds Sprayers have proved their superiority by years of service. We make the sprayer best suited to your conditions. It will last for years because all working parts are made of bronze to resist the action of chemicals. "You can depend on a Goulds" to work when ever and as long as you require.

*Send for Our Booklet:*  
**"How to Spray—When to Spray—What Sprayers to Use"**

It discusses the matter thoroughly. It gives valuable spraying formulas and tells how and when to use them.

**THE GOULDS MFG. CO., 17 W. Fall St., Seneca Falls, N. Y.**  
 We Make both Hand and Power Pumps for Every Service



Look at the H. P. Spramotor spraying an acre of potatoes in 15 minutes. There are three nozzles to a row and four rows, two spraying from the sides and one from the top. Adjustable as to height and width up to 40 inch rows. Absolutely non-clogging nozzles. 12 gallon air tank, automatic and hand controlled. 125 lbs. pressure guaranteed with 12 nozzles open. Has agitator clean-cut pressure relief into tank, and nozzle protector, all under control of driver from seat. For 1 or 2 horses Fitted for orchards, vineyards and grain. Write for booklet.

**HEARD SPRAMOTOR CO.**  
 1398 King St., London, Can.



**GENUINE HERBERT RASPBERRIES**

We have the genuine thing, grown direct from the Originator's plants, and we are the only nurserymen in existence that ever got any plants from him. We offer strong well rooted plants, either one or two years, at \$1.00 per dozen by mail, post paid, or \$5.00 per 100 by express. You take no risk in buying our plants.

We have a good stock of Eaton, King, and other varieties of raspberries, Dewberries, Iceberg Blackberries, strawberries, fruit and ornamental trees shubbery, roses, etc., Also Buff Orpington, White Wyandotte and Buff Cochin Bantam fowl, and Yorkshire pigs.

For further information, re our hardy stock, write

**The Ottawa Nurseries**  
WOODROFFE, - - ONT., CAN.

**ORCHARD PLANTING & SPRAYING**

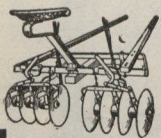
Our March number will be particularly strong in all departments. Orchard Planting and Spraying are subjects that will receive special attention.

It will be a good issue in which to advertise Nursery Stock and Spraying Machines and Supplies. It will pay you to reserve space early. Write Now.

ADVERTISING DEPARTMENT

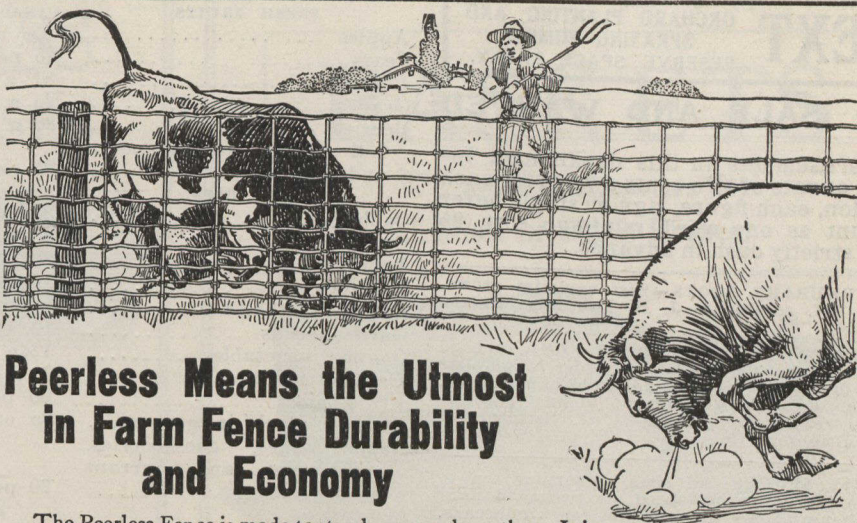
**The Canadian Horticulturist**

**The Bissell**  
**GARDEN HARROW**



By adding wings to the Bissell Garden Disc harrow it extends over 10 ft. wide. With wings detached it is 4 feet wide. Adjustable—single horse, or light two-horse harrow. Low or high seat. Reversible—In-throw to Out-throw. Cuts clean, even furrow and is a strong durable Harrow. Call on local dealer or write Dept. N. for catalogue.

T. E. Bissell Co. Ltd., Elora, Ont.



**Peerless Means the Utmost in Farm Fence Durability and Economy**

The Peerless Fence is made to stand wear and weather. It is made of carefully selected, fully galvanized, spring steel wire. Stays springy and strong, always taut, never sags. Put a Peerless Fence around your farm and you'll get real service.

**Read what users have to say about the Peerless:—**

Concerning the quality and galvanizing of your fence, I think it perfect. I have compared it with other makes and every person where I put up your fence is well pleased with it and will not have any other fence on the place. I was at a farmer's not long ago and he stated that he was going to have three hundred rods of it in the Spring. I put up ninety rods for his neighbor four years ago and there is no sign of rust or slackness yet. The wire in your fence is tempered so as to suit the cold and warm weather and I have never had to go back to tighten one rod of fence that I have put up yet. I could mention different makes of fence, from firms well known, that their fences have rusted badly inside of three years. The Peerless is the farmers' favorite around here. —P. FOGAL, Cedar Valley.

I have been comparing some of the Peerless Fencing that I put up the first year I sold fence and every wire is just as bright as ever, while some other makes put up about the same time have from one to three rusty horizontal wires running through it. I have always found the wire in Peerless Fencing first class. —EZRA FOX, Kingsville.

In regard to the durability of the Peerless Fence for the length of time it is up, I find on examination by myself and the parties I have put it up for, it surpasses any other wire fence for not rusting. Also the people I have dealt with give the Peerless Fence the preference before any other and if they were buying again would buy no other. —W. H. Van ALSTYNE, Atkinson.

Peerless Fencing is the best galvanized fence and when put up properly is the best fence on the market today. I have some Peerless Fence, put up some four or five years ago, which is as bright as ever and tight, standing O. K. —HOWARD BRUSH, Pitts Ferry.

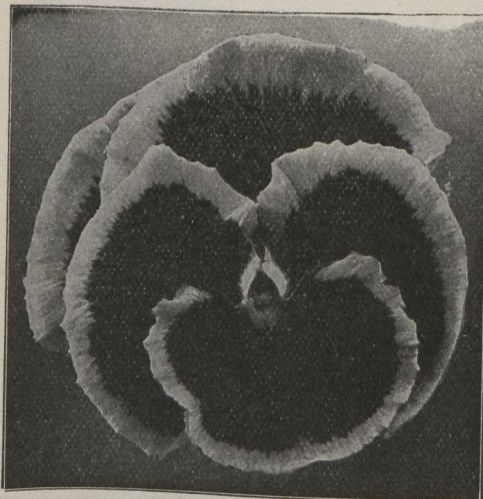
Farmers speak well of your fence and I know of no fence that looks better for the years that it has been erected than the Peerless. I have never heard a farmer say that the Peerless showed any sign of rust yet. —GEO. DAVIS, Clinton.

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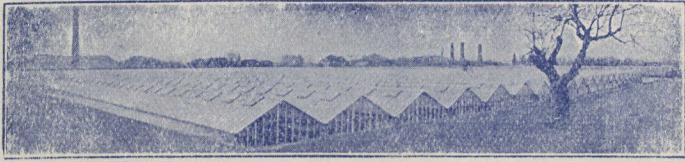
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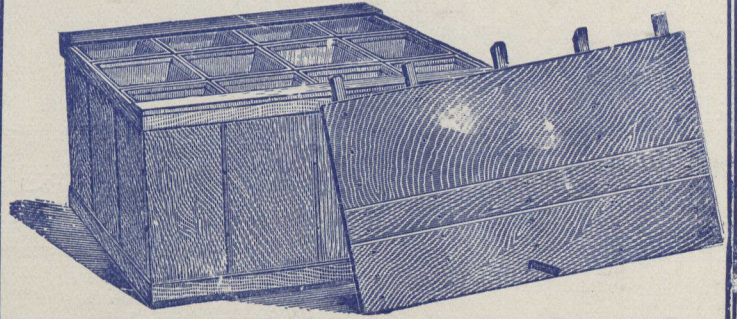
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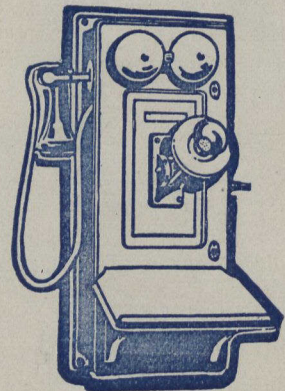
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