

THE CANADIAN HORTICULTURIST

MAY, 1910
Vol. 33 No. 5

PETERBORO, ONTARIO

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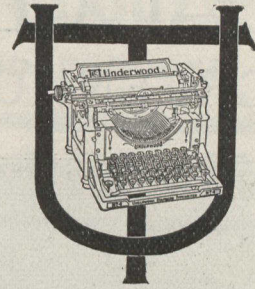
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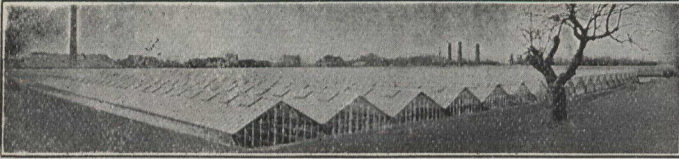
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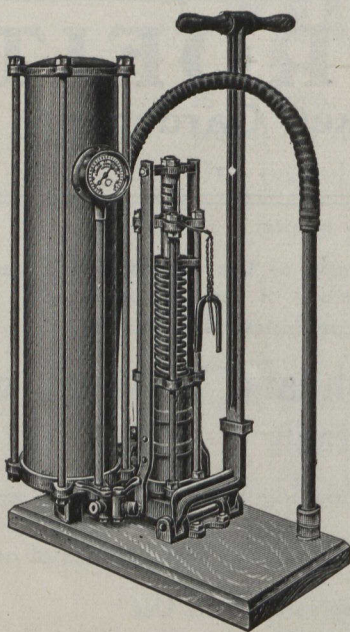
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 Photograph by G. H. E. Hudson, Kelowna.

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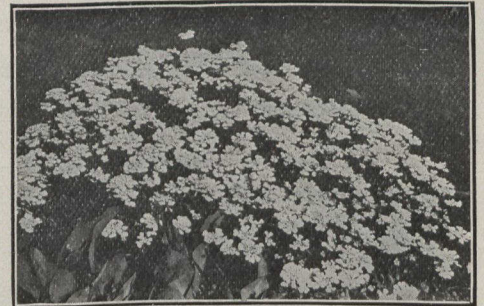
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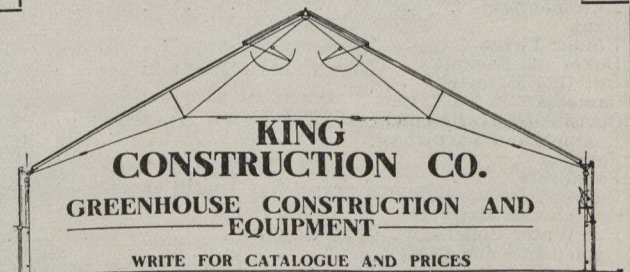
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Vol. XXXIII

MAY, 1910

No. 5

The Construction of Cold Storage Warehouses*

J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa

I AM in favor of making the cold storage of fruit a special business, as a rule. Large general cold stores at important centers should have provision for handling apples and other fruit, but in many cases it will be more economical and more satisfactory all round to have warehouses built and equipped for the handling of fruit only. Cold storage is required for fruit in localities where little or no other kind of produce will be offered. Non-freezing temperatures only are required and that chiefly during the coolest part of the summer and in the winter months. This permits of lighter insulation and lower refrigerating power than is necessary for general storage where freezing temperatures must be provided.

The period of fruit storage covers only a part of the year. A special fruit cold storage need be operated only when fruit is in storage.

CONSTRUCTION.

There are many different plans on which such a building may be constructed, and different materials may be used for insulation. I shall not attempt to describe all of them, but I shall endeavor to give some idea of the kind of a warehouse which would be suitable for a co-operative fruit association, because it is chiefly in connection with these organizations that I expect to see cold storage applied to the fruit trade in Ontario.

If the warehouse is to be on a railway siding, the ground floor should be on a level with the car floor, with a basement beneath, and as many floors above the ground floor as may be considered necessary. My preference would be, except in the case of very large warehouses, to have only a ground floor and basement with an attic for the storage of boxes, etc. Such a warehouse seventy-five by forty-five feet with a one-story addition for machine room and office, would be sufficient to store between 7,000 and 8,000 barrels of apples, or the equivalent of about 10,000 barrels if packed in boxes. Fig. 1 is a diagrammatic longitudinal section of such a warehouse.

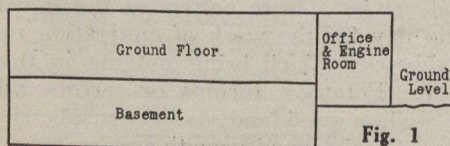


Fig. 1

The ceilings need not be over eight feet high to accommodate five tiers of barrels, which is high enough for piling.

The cheapest possible construction, consistent with reasonable efficiency, is the one which will be most popular. I cannot say that I agree with the policy which prompts the erection of more or less temporary buildings in connection with an industry so well established and with so much promise for the future as fruit growing, but as we are dealing with a condition rather than a theory, I am prepared to take things as I find them.

For the basement of this building, there is probably no cheaper or better material than concrete. The upper storey

Chaste and Beautiful

I am greatly pleased with the new dress of THE CANADIAN HORTICULTURIST. The cover design is one of singular adaptability and becoming beauty for a magazine devoted to horticultural pursuits. Nothing could be more chaste and beautiful. Congratulations!—Hugill Barr, Forest, Ont.

can be built of wood more cheaply than with other materials, because the structural parts can be combined with the insulation material in the most economical manner. Planer shavings make the best and by far the cheapest insulation, for wood construction. The empty air space, miscalled a dead air space, is an obsolete form of insulation. Absolutely dead air is, next to a vacuum, probably the best insulator known, but experience has taught us that air in wall spaces is not "dead," and that it circulates within the space and carries heat from one side to the other. Hence the practice of filling these spaces with some light non-conducting material like shavings, which confine the air on the same principle as the air is confined in the fur of animals, or in our clothing to prevent the passage of heat. Sawdust is sometimes used for filling spaces, but it should not be unless it can be kiln dried, because it normally

contains a great deal of moisture. It is always cut from green or water-soaked timber and this moisture destroys its insulating value and at the same time encourages the growth of moulds, which soon give rise to mustiness. Dryness is the first principle of successful insulation and must never be overlooked. Think of the difference between dry and wet clothing on a cold day.

Considering cost and efficiency, I would recommend the following combination for the walls of a building of this class. For the basement, a ten-inch concrete wall, water-proofed on the outside and finished on the inside with a one-inch air space, one course of matched lumber, a six-inch space filled with shavings and two courses of matched lumber with damp-proof paper between. For the upper storey, two by four inch studs covered on the outside with one course of matched lumber, two ply of damp-proof paper and either metallic or wood siding; a space of ten inches filled with shavings, finished on the inside with two courses of matched lumber with two ply of damp-proof paper. This inside sheathing would require an additional row of two by four inch studs, which should be placed zigzag with the outside row. The ceilings will be sufficiently insulated with the spaces between the joists filled with shavings.

A very important precaution in the construction of the concrete wall is to give it a coat of pitch or other waterproofing on the outside, especially below the surface of the ground.

A section of the wall and ceiling of this warehouse which we are trying to describe would have the following detail. (See Fig. 2, on next page).

The basement floor is an important detail of the construction and probably the most difficult part to insulate, because we have to contend with the moisture from the earth. Cold storage engineers are not agreed as to the best combination of materials for ground insulation. Wood in any form is unsuitable, owing to the tendency to absorb moisture, which destroys its insulating value and promotes decay. Shavings, then, are out of the question. Impregnated sheet cork, laid between two layers of concrete, or asphalt and concrete, are being used in some of the more expensive plants. I

*Part of an address delivered at the convention of the Ontario Fruit Growers' Association last November. It will be continued in next issue.

have recommended for cheaper construction, such as we are considering, a combination as follows:

First, a four-inch layer of concrete,

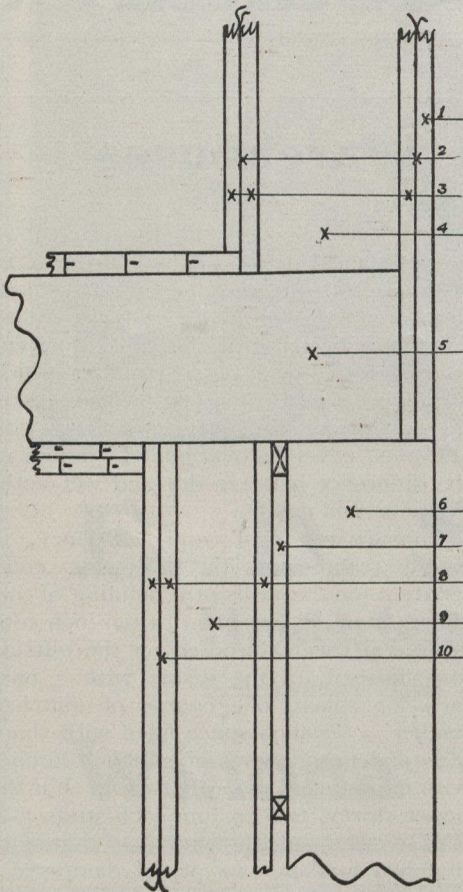


Fig 2, Section of Wall at Ceiling of Basement

1, Siding. 2, Damp-proof paper. 3, Matched lumber. 4, Ten-inch space filled with shavings. 5, Joist. 6, Ten-inch concrete wall. 7, One-inch air space. 8, Matched lumber. 9, Six-inch space filled with shavings. 10, Damp-proof paper.

then eight inches of clean, dry coal cinders, well rolled or rammed, a layer of tar paper and a finishing surface of two inches of concrete. A course of hollow brick (square tile) can be substituted for about one-half the depth of cinders. The tar paper is put over the cinders to prevent the wet concrete from filling the air spaces in the cinders. This combination will be improved by coating the first layer of concrete with roofing pitch to keep the earth moisture from the cinders. It is the cinders which provide the insulation. Concrete is a poor insulator. Fig. 3 gives a detail of such a floor.

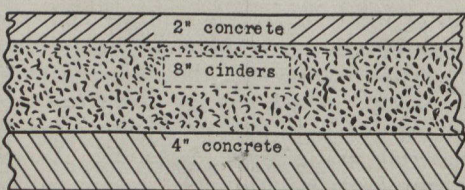


Fig. 3, Section of Floor

As for the arrangement of the rooms, much will depend on circumstances. In most cases, the basement would be as well in one room or two at the most. For the ground floor, which would be used for

cooling small lots during the active shipping season, the division as shown in Fig. 4 is only a suggestion.

A building such as I have described should be erected and equipped with refrigerating machinery at a cost, exclusive

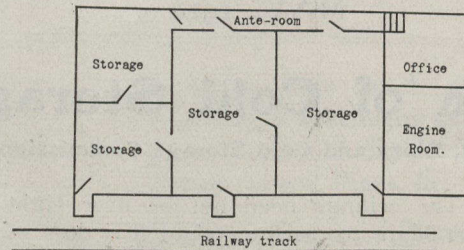


Fig. 4, Arrangement for Ground Floor

of site, of from \$1.50 to \$2.00 per barrel of capacity on a total of \$12,000 to \$15,000.

I shall not dwell any longer on this point, because I intend to have detailed working plans and specifications made and blue prints of these will be sent to anyone who applies to me for them.

Okanagan Valley Orcharding

"Cerasus," Kelowna, B. C.

Young orchards may be seen on "bench" land along the Okanagan valley, on which irrigation has not yet been laid. Annual rain and snow may not equal over ten to twelve inches precipitation; yet, on fair soil, if the cultivation is what is there termed thorough, fruit trees (until they have crops of fruit to mature) may be found flourishing.

It would pay those in the more humid eastern sections who grow about an occasional dry spell, to observe the plowing to catch the fall and spring rains and snow water, and the tireless discing and harrowing during the growing season as practiced here. While literally months of clear-skyed, long, hot, dry days roll by, model Okanagan orchards are at all times run without excessive irrigation and are weedless.

Italian Prune and Pond's Seedling plums have proved themselves hardy and highly profitable in some districts of British Columbia. Pond's, with its rare violet red color and British Columbia size, proves particularly attractive. Italian Prune and many other plums are much in favor on peach stocks, more so than in the east. Brown-rot (*Monilia*), in some parts unknown, is in general easily controlled in the comparatively dry atmosphere of the big fruit valleys.

What a pity more encouragement to box packing could not be given! Old price for well packed boxes is so little above the price of the same quantities when put in barrels that few undertake the former style of packing.—R. J. Messenger, Bridgetown, N. S.

Planting Raspberries

Chas. F. Sprott, Burnaby Lake, B. C.

To make the cultivation of the raspberry a profitable occupation, the fruit grower who is intending to grow this fruit for the market should be careful that the land he intends planting on is a deep, rich, moisture retaining soil. Land that will grow good crops of potatoes or corn will grow a profitable crop of raspberries. It is essential, also, that the land be thoroughly under-drained. The land should be plowed in the fall at least eight inches deep and well worked in the spring before planting is done. It should be fine and pliable.

When the land is in this stage it should be marked out—the rows being north and south, if possible, as the crops ripen easier. A good way to mark it out is to stretch a line across the field and with a marker lay off the field with rows six feet apart.

The marker can be made with a two by six-inch scantling having two pieces one by four nailed on at right angles on the flat side of the scantling, the points being six feet apart. Alongside these pieces, nail on two one by four by six feet on the edge of the two by six scantling with a cross piece nailed to them to draw by and brace these two pieces of one by four by six from the other side of the two by six scantling.

Pull the marker carefully up the line and return down, having the point in the last made line. Great care must be taken to keep these rows perfectly straight. Then plow up these rows, having the land side of the plow on this mark, and plow about five inches deep. When this is done, planting can commence, the plants being placed in the furrow thirty inches apart. The roots should be spread out and a little fine soil pulled into the furrow and pressed firmly around them. When all the planting is done, the remaining earth can be more quickly put into the furrow with a prong hoe, firming it around each plant.

The grower should be very careful to plant only strong, healthy suckers of those varieties which grow successfully in his neighborhood. To a large extent the success of the plantation depends on the quality of the plants that are planted. These should be cut down just above the ground the first season to stop them from fruiting, but just high enough to allow the man cultivating them to see them. The cultivator must be kept going through this patch to keep weeds from growing and to conserve moisture.

It is quite possible to grow some other crop in the centre of the six-foot rows and yet be able to cultivate, and it will help pay for the work of cultivating the raspberries which bring nothing in that year. Potatoes, turnips or carrots will do well on good land, and the raspberries should make good growth.

The Cost of Growing Grapes*

J. F. Carpenter, Fruitland, Ontario

LAST fall at the convention of the Ontario Fruit Growers' Association at Toronto figures were brought forward to show that grapes were being pro-

portioned to it its share of the loss entailed from the time the vineyard is planted until it bears enough to meet the expenses.

conditions? The only difference that can be made is in labor, fertilizing and spraying bills, and in no cases can it amount to more than one-third of the cost as figured in this table. By giving the vineyard this extra care, the average yield would be nearly doubled. When a grower has gone to the expense of starting a vineyard, orchard or small plantation and cared for it up to the time it should return him a profit, he should so handle it as to obtain the largest possible profit.

The manufacturer after establishing a plant finds he obtains much longer profits by running it at full capacity than half capacity. In both cases the interest on capitalization and depreciation in value of his plant will be the same. The grape grower's plant is represented in the cost of the land, planting, etc., and money expended in caring for the vineyard up to the time the returns meet the expenses. The cost of his plant will vary little whether he feeds and cares for it so as to bring full or average crops. This being the case, it will pay the fruit grower to run his vineyard, so to speak, at full capacity.

Great advancement has been made during the past few years in the organization and management of farmers' clubs, cooperative associations, and so forth. From these organizations we have examples of the results which business principles will bring when made use of by or-



One of the Many Productive Vineyards in the Famous Niagara District of Ontario

duced at a loss when sold at twelve cents a basket. A few of the growers present thought the figures were high, and no definite conclusion was arrived at. If the grower would estimate his cost in the same way as a manufacturer would make an estimate, he would be in a position to see where he could change his methods so as to increase his profits.

Why should the fruit grower not make use of the same business methods as the manufacturer? The latter in estimating the cost of production, figures in the cost of the raw material, labor, interest on capitalization and depreciation in value of plant and any other expenses which directly or indirectly influence the cost. He then sells his article at a price above that cost to insure himself a fair profit. What does the average fruit grower do? He sells his fruit for what he can get for it, seldom knowing what it has cost him to produce it. As for a fixation of the selling price, it is to be hoped that as co-operation becomes more widely spread, organization becomes more perfect and fruit growing is looked upon more as a business, that this question will be adjusted.

The table on this page is an estimate of the cost of growing grapes. This represents the cost of growing with the best of care in a full bearing vineyard. The cost would be increased slightly if we ap-

The expense figured here is above the average and as a result we would expect a yield about the average. How much difference is there between the cost as figured here and the cost under average

COST OF GROWING GRAPES—ONE ACRE

530 vines at 2½c	\$13 25
Cost of planting	5 00
“ posts, (170 at 12c; 22 at 16c).....	23 92
500 lbs. wire at 3c	15 00
Digging for and setting posts	13 32
Stretching wire	1 00
Wire tighteners	50
	<hr/>
	\$71 99
Cost without labor	\$52 67

Spraying for one acre:	
36 lbs. copper sulphate at 6c.....	\$2 16
36 lbs. lime at ½c.....	18
Poison for 9 bbls.	25
	<hr/>
	\$2 59
Fertilizer:	
12 lbs. nitrogen, at 17c	\$2 04
48 lbs. phosphoric acid at 6c	2 88
66 lbs. potash, at 5c.....	3 30
	<hr/>
	\$8 22

Implements for 20 acres:	
1 Furrow plow	\$10 00
2 Furrow plow	15 00
Disc harrow	25 00
Grape hoe	10 00
Hoes, forks, etc.	5 00
Harrow	10 00
Sprayer	125 00
Dray	125 00
Wagon	50 00
Odds and ends	10 00
	<hr/>
	\$385 00
For one acre	\$ 19 25

Interest on cost of land, 6 per cent. of \$125 ..	\$7 50
Labor	20 00
Spray materials	2 59
Fertilizers	8 22
Keep of horses	15 60
Interest on capital invested in vines, posts, and implements, 6 per cent. of (\$19.25 + \$71.99)	5 47
Interest on capital invested in horses, harness, barn, 6 per cent.	3 34
Depreciation in value, harness, horses, barn and implements, 10 per cent.	7 50
Depreciation in value, vines, trellis, etc., at 4 per cent.....	2 10
Taxes and insurance	1 00
	<hr/>
	\$73 32

3 Horses at \$150	\$450 00
1 Set single harness	25 00
1 Set double harness	40 00
Barn	600 00
	<hr/>
	\$1,115 00
For one acre	\$ 55 75

Suppose sale price of grapes is 12c:	
Picking	1 c
Baskets	3.6c
	<hr/>
	4.6c
Net price per basket = 12 - 4.6 = 7.4c.	
To give \$73.32 would require $\frac{73.32}{7.4}$ = 990 baskets.	

*The substance of an address delivered at the short course in fruit growing held at the Ontario Agricultural College last February.

ganized bodies of farmers and fruit growers. These organizations to be successful require at their head a man who understands these principles in respect to farming and fruit growing and knows



Apple Blossoms on Prince Edward Island

how to make use of them. If every fruit grower would educate himself along the same line with reference to his own business, it would not only be profitable to him but would increase greatly the success of the organization of which he may be a member. It will be a good thing for fruit growing in Ontario when every fruit grower does some figuring for himself.

An Experience with Cranberries

J. W. Ackerman, Delhi, Ont.

I started to experiment with cranberries in the spring of 1908. I have about seven acres of bog and on this there is about one acre of native plants that grow there naturally. I have been picking berries off these plants for several years. These plants are slowly spreading over the bog, but on account of the weeds their spread has been retarded.

Mr. A. McMeans of the Ontario Agricultural College heard of my cranberry bog, and wrote me in regard to it. He later came and saw me and had a look at the bog. He advised me to do some experimenting, and I decided to do so. I prepared a small piece of ground and planted it with Cape Cod plants which Mr. McMeans sent to me in the spring of 1908. They grew very nicely. Last spring I planted a quarter of an acre of Cape Cod and Wisconsin plants and they have done well.

When preparing the ground I first take the sod off, cutting it with straw knives. I cut about two and a half inches deep. The sod is wheeled off in a wheelbarrow. I then spade the ground and level it. My ground is laid out in lots about three rods wide, which is surrounded by a ditch about one foot deep. The ground is prepared in the fall.

I plant the plants about one foot apart each way. I allow ten or twelve vines to a hill. For planting I use a narrow piece of board pointed at one end. I lay the vine on the ground and place the pointed end of the board about the centre of the vine and push the vine into the ground, leaving about three or four inches of the top of the vines above the ground.

My bog floods naturally each winter. I have a dam at the head of my ditch. It is closed in the fall, and thus the water is held on the bog until the latter part of May or the first of June. My object in keeping the water until that season of the year is to keep the plants from starting to grow too soon, because if the plants start too early in the spring they come out in blossom too soon, and are liable to injury by frost. While the water is on them, they won't start to grow.

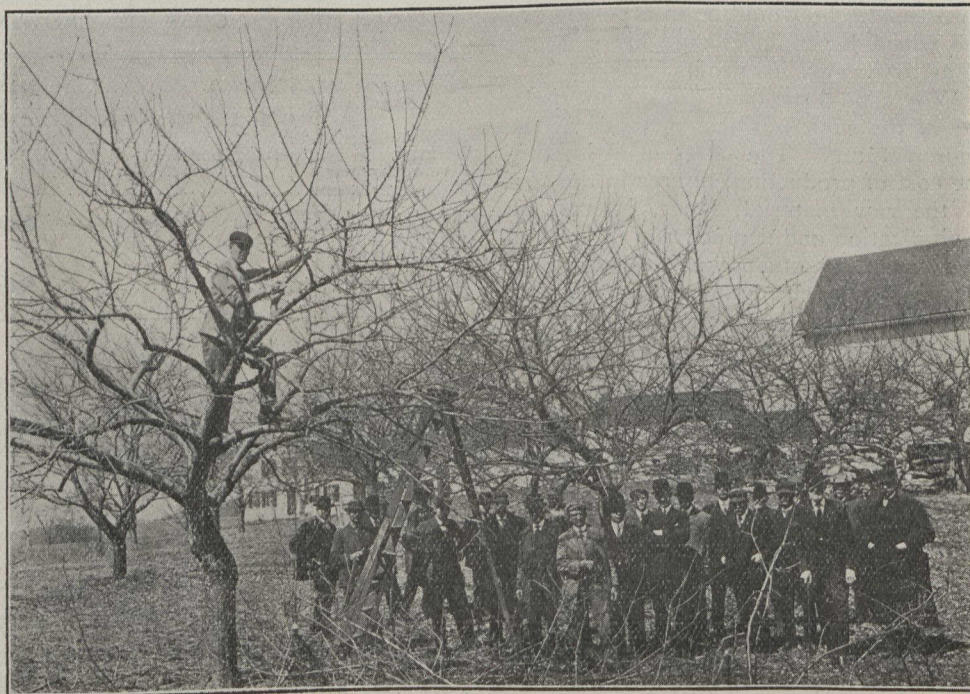
My experience with cranberries has been very short, but I believe that cranberries can be grown successfully in Ontario. Canada ought to be a good market for the berries, as thousands of bushels are shipped in from the United States. I have another quarter acre ready to plant next spring. I also planted a small piece of ground last fall, in order to compare fall planting with spring planting. In a later issue of THE CANADIAN HORTICULTURIST I will tell how the fall planting turns out.

Give commercial lime-sulphur a trial this year. It has come to stay.

Fungus on Maple

I am in trouble about a lovely maple tree. For the past three years we have noticed that its leaves turn red about August—much earlier than any of the other maple trees. The past two years a fungus has formed on the trunk of the tree and last fall it spread from the base of the tree up to its first branch. The leaves turned red very much earlier than they should, and they dropped off much earlier, leaving the tree gaunt and bare, while the others had not shed a leaf. I am afraid that I am going to lose it unless I can do something for it. It is in a place that I cannot very well spare it. Can anything be done to save it?—L. M., Cobourg, Ont.

It is difficult to diagnose the exact disease from the description given. I am of the opinion, however, that nothing can be done to save the tree at this stage since the fungus has got possession. From the fact that the fungus has appeared on the trunk, it seems likely that the tree was inoculated many years ago by the spores of this fungus probably gaining access through a wound. During all these years the fungus has been growing and spreading within the tree, and now it has sapped its vitality to such an extent that it ceases to perform its usual functions. As a rule, the formation of the fruiting body of the fungus on the trunk is one of the final stages of the disease. The tree will probably live but a short time, and the best thing to do is to cut down the tree before it becomes unsightly and before it has an opportunity to infect other trees by the annual crop of spores produced by the fruiting body on the trunk.—Prof. W. Lochhead.



Public Demonstrations in Orchards are Becoming a Valuable Factor in the Progress of Fruit Growing

The Connecticut Agricultural College has started several demonstration orchards in Connecticut, under the direction of Prof. C. D. Jarvis, and has given several public demonstrations. The illustration shows one of the latter. The chief aim of this work is to give the grower an idea of the best methods for reclaiming neglected apple orchards, for which New England is noted. The results so far have been very encouraging. The farmers in the respective neighborhoods are very enthusiastic in the work, and many of them have started the renovation of their orchards.

Rural England

Linus Woolverton, Grimsby, Ontario

TO the Canadian visitor, the country parts of old England are full of interest. The roads are perfect for cycling or for coaching and never deep with dust as ours so often are, so that pedestrians and carts may all follow the one track. Indeed they are too narrow to allow of a footpath, and in places it is with difficulty that an auto and a coach can pass each other between the hedges which border them.

During a recent visit the writer had the privilege of travelling through the counties of Hampshire, Dorsetshire, Devonshire, Somersetshire and Wiltshire, in part by rail and in part by coach. One thing particularly took his attention, the vast extent of country devoted to pasture. Instead of small farms of one or two hundred acres, each with its substantial farm house, and divided into orchard, garden, grain and pasture plots, we travelled hundreds of miles through meadows that looked as if they were never touched with plow or spade.

A beautiful country indeed, with its hills and vales of emerald green, subdivided into lots of all shapes and sizes by dark green hedges; but looking at it from the commercial viewpoint of a Canadian one cannot help thinking how much more it might yield and how many more lives it would support, if our system of small farms could be introduced, each owner making the most of his small estate.

After reading of the stately homes of England, one is naturally disappointed at seeing so little of them; in fact, in all our coaching tours in Devonshire we saw far fewer good houses than we

would see in any good farming district of Ontario. This is because the homes of the nobility, and even those of the country squires, are far removed from the public roads and screened from view by being situated in the midst of wooded parks.

Along the roadsides one often passes curious old-fashioned workmen's cottages with thatched roofs, often vine-clad and having fruit trees trained up the side. In their vicinity the ubiquitous buckthorn hedge is varied by a vine-clad stone wall, interesting because of its antiquity. Here and there the tourist passes through a whole village of such houses lining the sides of the road, themselves forming the walls of it and having their doors opening into the very street. Combe Martin is such a place, extending a mile and a half with its curious hedges.

The west coast of Devonshire is very rocky, with high cliffs and precipitous banks. In September, 1909, we spent a week at Ilfracombe, which is situated at the mouth of the Bristol channel. It is a fashionable watering place for Londoners, combining, as Charles Kingsley says, "The soft warmth of South Devon with the bracing freshness of the Welsh Mountains." On the rugged coast delightful walks have been made at immense cost by the art of man.

Another very curious seaside place some fifteen miles distant from Ilfracombe is Clovelly, which may be reached by steamer. It is described as the "quaintest and perhaps the most beautiful little village in all Devon. It consists of one main street or staircase,

with a few houses climbing on each side of the Combe. The houses, each standing on a higher or lower level than its neighbor, are all whitewashed, with gay



High Street, Clovelly, England

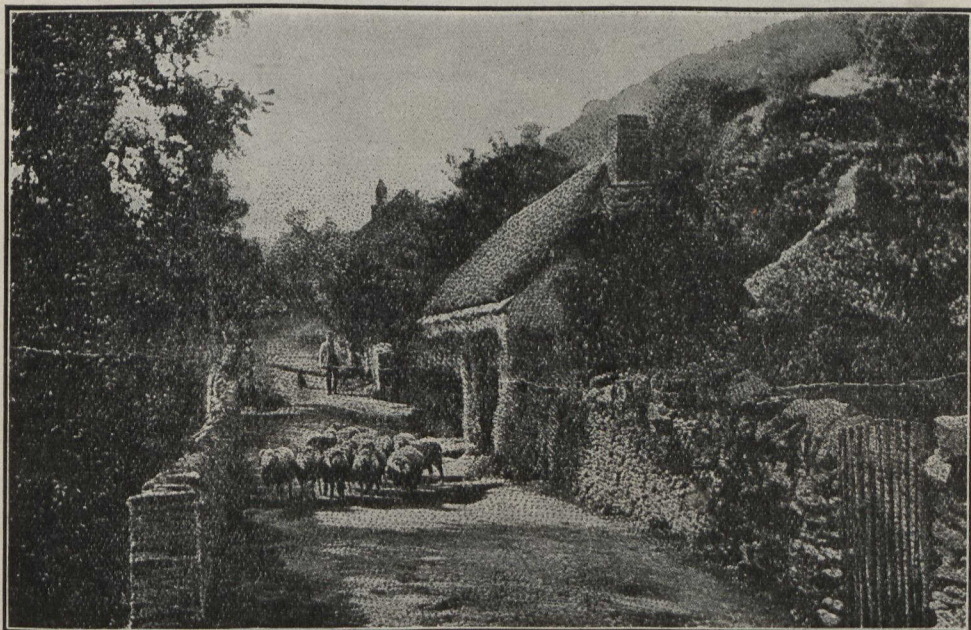
green doors and lattices, and the general effect is curiously foreign looking."

It was most surprising to us as Canadians to see every little dooryard in an English town closed in with a stone wall or iron gate and the little plot crowded every inch with blooming flowers. In especial prominence we noticed the fuchsia growing like a shrub in the open, and laden with crimson bloom; and the Thos. Hogg hydrangea—with us grown only in pots and tubs—there a hardy garden shrub, laden with huge tresses of beautiful pink.

The Popular Sweet Pea

A. V. Main, Almonte, Ont.

To get early bloom in sweet peas and to give the plants a good start prior to a dry spell, early sowing is advisable. An open position free from severe winds and where the sun will not be blazing on them constantly from rising to setting, is suitable. Poor, thin soil will not be satisfactory. Plant in fairly good garden soil. Dig out a trench the desired length, about the depth and width of a spade. In the bottom put about six inches of good manure. Throw the soil on to it and fill up the trench. Allow it to settle for two or three days. Draw out a drill two inches deep, down the middle of the pre-



A Picturesque Scene in Old England—A Devonshire Lane Near Lynton

pared trench. Sow the seed two inches apart, making a double row; thus, Cover the seed and rake off level.

Two mistakes in sweet pea culture are deep sowing and thick sowing. I never



A Little Girl's Vine-made Throne

An arbor made with vines, by Mr. W. A. Code of Ottawa, trained to form what he termed at the time "a throne" for his little daughter, who took great delight in playing "queen" in it. The climbers consisted of cucumber and morning glory vines, interspersed with asparagus beans, the latter combining utility with service. The print from the negative was not made square: this accounts for blank spaces at top corners.

practiced the system of sowing away down in a deep trench, filling up as growth advances. I let the roots do the work, and they will do it if the ground is treated correctly. It appears unnatural for sweet pea stems to have a foot of soil round their necks. After four inches of growth, draw some soil to them on either side. This will make a small drill on either side—an excellent provision for applying water.

Wire netting makes a good, permanent support. Give the plants assistance by entwining them around, running twine up and down where required. The best support is dead spruce branches sharpened at the butt end and put in on each side of the row with the inclination to meet at the top. Then use one cord to encompass the whole concern, and the work is done.

Watering will do much good, if it is done thoroughly to reach the roots and not a mere surface spray. When the blossoms first peep out is the time to use water. Use the scissors also, for the more you cut the more they bloom.

A good mixed package of seed from a reliable source is satisfactory. To those who grow these flowers more extensively, individual sorts grown separately give a double attraction for decorative purposes. Of the hundreds of varieties catalogued, the following comprise a suitable choice and have proved to be good growers in this locality: Lady Grisel Hamilton, Dorothy Eckford, King Edward VII., Queen Alexandra, Navy Blue, Blanch Burpee, Miss Wilmott,

Gladys Unwin, Hon. Mrs. E. Kenyon, America, Helen Lewis and Henry Eckford.

The Japanese Lilac

Prof. H. L. Hutt, O. A. C., Guelph

One of the most popular and generally grown shrubs in cultivation is the lilac. This is not a native of this country, but has been introduced from Europe and Asia. There are now nearly a dozen distinct species which have been brought to this country, and scores of varieties have been developed. In the last report of the horticulturist of the Central Experimental Farm, Ottawa, reference is made to a collection of 177 varieties in the arboretum at that place, and a list is given of twenty-five of the best, including single and double varieties ranging in color from pure white through pinks and reds to lilac and purple.

The Japanese lilac (*Syringa Japonica*) belongs to a species not so well known as most other varieties, yet is well worthy of a place in any collection. It is about the only one of the lilacs which may be said to form a real tree, as it sometimes attains a height of twenty-five or thirty feet. Although it comes from Japan, it is quite hardy in this country and is not affected by the mil-

dew to which the common varieties are more or less subject. It is of an erect habit of growth and does not branch out as freely as other varieties, hence does not make so good a specimen plant, but is best suited for background in the border, where its more or less naked branches may be hidden with foliage of other shrubs.

The bloom of the Japanese lilac is quite distinct from all others, being of a creamy yellow color and produced in large, loose panicles often a foot or more in length and nearly as much in breadth. It is also the latest of all varieties to bloom, being at its best usually about the first of July. With a good selection of varieties of the *Syringa vulgaris* type which usually begin to bloom about the 24th of May, followed by the *S. Josykeæa* and *S. Japonica*, a succession of bloom may be maintained throughout the whole month of June to the first week in July.

Annuals must make quick growth. Have the soil well prepared and rich. Supply plenty of moisture.

Although not specially beautiful in foliage, flower, or fruit, the wild cucumber is an excellent hardy vine for arbors and covering fences.



Among the Most Beautiful Subjects for Lawn and Park Planting are Many Species and Varieties of the Lilac

Lawn and Garden Hints for May

THE enthusiastic amateur will find lots to do in May. Many kinds of seeds and plants may be started in the open. Have the ground well prepared and enriched. Dig deeply, remove all stones and rubbish and pulverize the soil thoroughly. Before starting to plant or sow, have the plot or beds raked level. Be neat in all that you do. Owing to the earliness of the season this year, much of this work has been done already.

THE KITCHEN GARDEN

The soil for vegetables should be broken finely and to the depth of the spade. Work in a liberal application of barnyard manure, and wood ashes also, if they are available.

Onions, peas, spinach and other hardy vegetables may be planted as soon as the ground is fit. Leave cucumber, corn, squash and the tender kinds until all danger of frost is passed. Sow the seeds in moist or freshly stirred soil. Do not plant too deeply.

Sow radishes in good rich soil in order to have quick growth. For a succession, sow some seed every ten days or two weeks.

An excellent vegetable and one that is not much grown is salsify. Sow the seed early, and handle the same as parsnips.

Do not over-water plants in the hotbed and give plenty of ventilation.

THE FRUIT GARDEN

When the strawberries commence to grow, remove the mulch and place it between the rows. Should frost threaten at blossoming time, the mulch may be replaced over the plants until danger is past.

If your strawberry patch is more than two years old or if you have not yet grown this fruit, plant this month. Take strong plants from the old patch or purchase from the nurseryman. Have the rows at least three feet apart and place the plants about eighteen inches apart in the rows.

Plant currant, gooseberry, raspberry and blackberry bushes if there is room for them. Plant them about five feet apart.

THE FLOWER GARDEN

Flowers that have been started in the house should not be transplanted to the open ground without first being hardened-off. Gradually introduce the plants to the changed conditions by placing them outdoors each day for a few hours. Seedlings that are crowded in the boxes or in hotbeds should be transplanted to other boxes or to cold frames. Cannas, coleus, crotons, alternantheras and plants of similar nature should not be planted out until after the first of June.

When the ground is ready, sow seeds of nasturtiums, balsam and portulaca, sweet peas and other hardy annuals. Do not sow the seed thickly. Hardy annuals

should be thinned before they get crowded.

Gladioli may be planted towards the end of the month. Place the bulbs three or four inches deep and about six or eight inches apart in rows or clumps. Dahlias also may be planted late in May, but it is better to leave them until June.

Plant out perennials and biennials that were wintered in cold frames. Divide old clumps of perennials and when transplanting remove all weeds in order to save further trouble. Old perennial borders that are renovated in this manner will lose little in effect if the spaces are filled with annuals this year and until the permanent plants once more require the room.

Plan to cover with climbing plants, bare places on house, verandah, fences and out-buildings. Morning glories, sweet peas, nasturtiums, wild cucumbers and

work of making new lawns should be done thoroughly. Success depends largely upon the preparation and character of the soil.

The Best Dahlias

At the last convention of the Ontario Horticultural Association, the nomenclature committee presented lists of the best perennial phloxes, irises, gladioli and dahlias. For the benefit of lovers of the last named, the list of dahlias is herewith published:

SHOW DAHLIAS

- A. D. Livonia.—Quilled clear pink.
 Arabella.—Light sulphur shading to peach.
 Emily.—Solfonine with white markings.
 John Walker.—Pure white, like a large snowball.



Front View of Residence and Grounds of Judge Klein, Walkerton, Ontario

many other things are useful. One of the best vines is *Cobea scandens*. This may be started in the house from seed or the plants may be purchased from florists.

When the spring bulbs are done flowering, it is best if possible to allow the tops to wither and die before taking up the bulbs. If it is necessary to take them earlier, however, the bulbs should be lifted and heeled-in just below the ground in some place out of the way and left there until July.

ON THE LAWN

Repair bare spots on the lawn, either by seeding or sodding. Lawns that have become thin in the turf, should be well raked and sown with some good lawn mixture. A little nitrate of soda sprinkled on the lawn will stimulate the grass where the growth is weak.

As the lawn is a permanent fixture, the

Frank Smith.—Purplish maroon, topped white.

Glory de Lyon.—Creamy white, very large.

Leader.—Best dark rich purple.

Joseph White.—Rich velvety maroon, shaded to jet black.

Duchess of Cambridge.—White suffused pink edged and tipped purple.

Queen of Yellows.—Primrose yellow.

Mrs. Gladstone.—Delicate soft blush, grand form.

Prince Bismark.—Puce, short with purple, large.

Mrs. Browning.—Buttercup yellow, tipped snow white.

Mrs. Dexter.—Rich salmon, very large.

Red Hussar.—Intense scarlet crimson, very good.

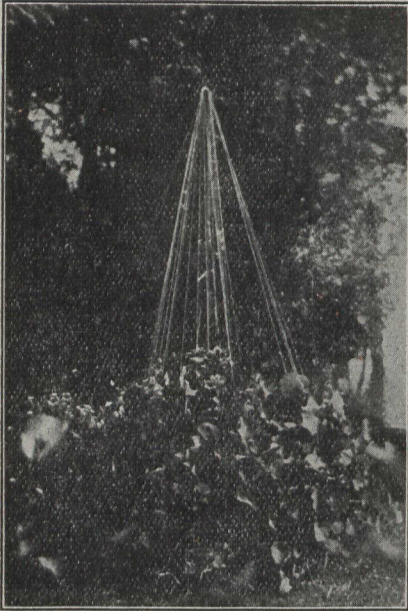
CACTUS DAHLIAS

Dreadnought.—Dark crimson ma-

roon, a large flower and one of the best darks.

J. H. Jackson.—Brilliant crimson maroon, free.

Floradora.—Rich crimson, one of the best.



An Idea for a Bed of Nasturtiums

Sow the seed around the edges of a circular bed. In centre of bed place a pole. From top of pole to edges of bed run strands of twine up which the vines will climb.

Kriemhilde.—Delicate pink, shading to white at the centre.

Winsome.—Creamy white, good size and form.

Flora.—Large white, grand for cutting.

Wathari.—Light sulphur yellow in the centre, shading to nearly white at the edges.

Mrs. H. J. Jones.—Bright claret, with cream colored edges, sometimes a self color.

Royalty.—Lavender, large and handsome.

Standard-bearer.—Rich, fiery scarlet.

General Buller.—Cardinal red, tipped with white.

Ruckert.—Blood red with darker shadings, grand.

Countess of Lonsdale.—Salmon pink and amber, standard variety.

Florence M. Stredwick.—A large pure white.

Prince of Yellows.—Rich canary yellow, large, fringed at the tips of the petals.

Rother.—Large bloom, bright garnet, one of the best.

DECORATIVE DAHLIAS

Grand Duke Alexis.—White, tinged with soft lavender, quilled.

Madam Van den Dale.—Soft rose, with deeper markings and shading to cream white in the centre.

Admiral Dewey.—Rich purple, free bloomer.

Black Beauty.—Deep velvety maroon, almost black.

Mrs. Roosevelt.—Delicate pink, large and good form.

Mrs. Winters.—Snow white, large, good form.

Oban.—Lavender, overlaid with silvery fawn.

Pearl.—Beautiful white, good for cutting.

Lemon Giant.—A large lemon yellow.

Sylvia.—Mauve pink, changing to white in the center, one of the best to cut some call it a show dahlia.

Wm. Agnew.—Dazzling red, one of the best.

Nymphæa.—Light shrimp pink, tinted lighter under the center, a beautiful flower.

POMPON DAHLIAS

Ailet's Imperial.—Creamy white, reddish tips.

Darkness.—Velvety maroon.

Elegante.—Soft pink, tipped deep pink.

Gold Hahnchen.—Primrose Yellow.

Kleine Domitea.—Orange buff.

Little Bessie.—Creamy white, quilled.

Little Herman.—Deep red, tipped white.

Little Prince.—Currant red, tipped white.

Snow-clad.—The best white.

SINGLE DAHLIAS

Crimson Century.—Velvety crimson.

Maroon Century.—Velvety maroon.

Pink Century.—Soft pink, large.

Claret Century.—Brilliant scarlet.

Lavender Century.—Lilac, light shadings.

Twentieth Century.—Rosy Crimson.

White Century.—Pure white.

Asparagus Beetles

Arthur Gibson, C.E.F., Ottawa

The common asparagus beetle has only once been recorded from the Ottawa district. This was a few years ago when a few of the larvae were collected at the Central Experimental Farm. These grubs are of a dark olive green color and slug-like in appearance. The beetle is a slender blue-black insect about one quarter of an inch long, with six white blotches on the back and a red border to the neck and wing-covers.

The other asparagus beetle, viz., the twelve-spotted asparagus beetle, often occurs with the above. It is slightly larger and of a uniform reddish orange color, with twelve black spots upon the wing-covers. The grubs of this beetle are of a dirty yellowish color. Those of the common asparagus beetle feed upon the foliage, as do those of the twelve-spotted asparagus beetle, but the latter destroy chiefly the berries or seed capsules.

The remedies recommended are to dust the infested plants every three or four days with fresh air-slaked lime, which adheres to the slimy bodies of the grubs and kills them.

Paris green and flour, or Paris green with slaked lime, dusted on the plants will destroy both larvae and beetles. If poultry are allowed to run among the beds it will be found that they will devour a great many of these insects, particularly when they first appear in spring. When it is noticed that the berries are being attacked, the whole plants should be cut down and burned.



These Grounds Won First Prize Two Years in Succession in a Horticultural Society Competition

The large vine on the verandah is a *Clematis paniculata* and the one at the end is a Hall's honeysuckle. In the corners on each side of the front steps are tuberose begonias. The window boxes contain mostly geraniums, petunias and foliage plants with hanging vines of vincas; there is a canna on each side and a caladium in the centre. The whole effect is very pleasing, but unfortunately just before the photograph was taken, the tree in the foreground on the street was bent over by a storm. Residence of Mr. N. B. Vrooman, Walkerville, Ont., a member of the horticultural society of that town.

Planting and Managing Onions

A. C. Dart, Grimsby, Ontario

ONIONS succeed best in an open situation in rich loam, but good crops may also be obtained from soils of very different texture and quality with the aid of suitable manures. Plenty of farm yard manure should be worked into the ground as deep as possible in the autumn and left roughly during the winter.

In the spring as soon as the soil is dry, so that its lumps will crumble rather than stick together, it should be well worked. It cannot be worked too much for onions.

Salt, soot and lime worked into the soil before sowing are useful as manure and also for preventing the attacks of the onion maggot and other insects. A good fertilizer for onions, applied at the following rate per acre, is: Sulphate of potash, 200 pounds; basic slag, 500 pounds; nitrate of soda, 300 pounds. Work the basic slag into the ground in the fall, the sulphate of potash before

Thinning should take place early. A small two-inch hoe is useful for this purpose.

In order to have extra fine onions, sow the seed in boxes in February or early in March and place in a greenhouse or hotbed. Prick off as soon as ready in flats, or when large quantities are wanted, prick off in hotbeds. Keep them near the glass and sprinkle them overhead on all fine days. When hardening off, plant out in well prepared ground. Select a dull day for planting.

Selecting good reliable seed is of great importance in onion culture. Good English varieties are Leamington Giant, Cranston, Excelsior and Somerset Hero; the best Canadian varieties are Giant Prizetaker, Selected Yellow Danvers, Large Red Wethersfield and Southport Yellow Globe.

For preventing the onion maggot, use salt, soot and lime forked into the soil

be taken to cut the potato so as to get as much of the fibre running from the eye to the centre as possible. Through this fibre the eye will get its sustenance until sufficient growth has been made to take care of itself.

In planting, the potatoes should not be exposed to the sun for any length of time, or blanks will be numerous. After the ground has been put in good order, shallow cultivation is best. The ground cannot be kept too clean, neither can it be worked too often, even until the vines are nearly covering the rows.

Starting Seedlings

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

The tendency is to crowd plants in the seed flat by thick seeding, and this too often is followed by giving the pricked off plants about half the space they should have. Plants in the thickly-seeded flat become spindly at the start and make at best rangy and undesirable stock. Plants from thin seeding are (providing proper temperature and light is given) stocky, short-stemmed and can remain in the flat a longer period without injury before transplanting. Overcrowded seedlings are much more difficult to handle, and are not nearly so satisfactory.

It is wise to maintain a temperature of forty-five to fifty-five degrees for cool-season vegetables such as cabbage, lettuce, etc., and fifty-five to sixty-five degrees for warm-season vegetables such as tomatoes. During a bright day with the full benefit of the sunlight the temperature may go much higher than this and not cause drawing of the plant, but on dark days and at night the temperature should be kept down, otherwise spindly and weak plants will be obtained. I prefer a forty-five-degree night temperature for cabbage and a fifty-five-degree for tomatoes, rather than higher. It takes longer to develop plants at a low temperature, but the quality of the plants and their root development more than offset this objection.

Cabbage and cauliflower should be spaced two inches apart for early stock, and closer planting may be followed for later stock that it may not be necessary to carry so long in the flat. Place celery one and one-half inches apart.

Tomatoes should first be pricked off into flats two inches apart and two weeks later put into flats four inches apart or single plants into the three-and-one-half-inch pots. I believe three-and-one-half-inch earthenware flower pots which cost about seventy-five cents per 100 are the most economical for handling tomatoes for the early crop. These pots can be used year after year. It requires about seven to eight weeks to develop a good tomato or cabbage plant



Sowing Onion Seed—A Well-Prepared Seed Bed is Necessary for Uniformity in Catch

sowing in the spring and the nitrate of soda during the growing season preferably in two applications, at an interval of ten days to two weeks.

The ground should be made as level as possible before sowing. The precise time cannot be stated, as it greatly depends upon the state of the weather and the nature of the soil, but the first opportunity should be seized when the soil is workable for sowing.

Sow in drills twelve inches apart. The seed cannot be too near the surface, as long as it is covered. If the soil is light, it should be rolled with a roller of greater or less weight according to the nature of the soil.

As soon as the seedlings are up, hoeing will be necessary to keep down weeds, and to keep the surface soil stirred. Although the growth of the young plants may be promoted by shallow stirring, the deep loosening of the soil so beneficial for many crops is not desirable for onions.

before sowing. Charcoal is sometimes used for preventing canker. Sulphur spraying during the growing season will keep mildew in check. Good cultivation is the best preventive for all diseases.

Potato Culture

John N. Watts, Portsmouth, Ont.

To get the largest crop of any variety of potatoes one must first get the land in proper condition. Do not plow when the ground is so wet that the furrow shines. Roll and harrow until the ground is well pulverized. Work in plenty of manure, but never put it in the furrow in which the potatoes are to be planted.

When the ground is ready, draw the furrow, and cut the potatoes so as to have at least one good eye to the cut. The seed end should be cut off first. A good eye is one that has not sprouted. Suckers may form around the eye, but will be weak.

To get the strongest stalk, care must

for setting outside, the last week of which the plants should be set outside without protection to harden-off, providing, of course, in the case of tender plants that they are not allowed to freeze.

The hardening-off of plants—getting them used to outside conditions—is very important. The check a plant sustains from being removed from warm quarters to field conditions is great and can be avoided by gradually hardening-off.

Managing the Asparagus Bed

A. V. Main, Almonte, Ont.

I prefer to disturb the asparagus bed in the fall rather than in spring, especially a belated spring when the growths peep up almost before the snow is gone. About the last work in the garden in fall, when the asparagus growths are yellow and the sap returned to the crowns, cut close over and burn. Remove a couple of inches of soil or more from the surface. This takes away sour soil and insect eggs. Apply a dressing of well-spent manure and soil mixed and over this, six inches of strawy manure or leaves with branches to keep it down. This provides the winter garment.

At the end of April, weather favorable, remove the straw and tidy the bed. Keep it within the limits by the spade on each side. Slightly fork over the surface; a spade should never be used, for the roots have ransacked the soil in all directions.

With the approach of mild weather, give a dressing of salt—about one pound to each ten square feet at intervals, say May 15, May 30 and June 15.

We generally cut about May 10 and continue until June 20. Short, stubby stalks about six inches long are the best, measuring three-quarters of an inch to one inch at the base. Cut these as far below the surface as possible. Tie in a bunch and cut the ends even.

Allow a fair proportion of growths to come up to strengthen the crowns for the succeeding season.

Seed can be saved in the fall when red, sown in spring in drills two inches deep and thinned to six inches, allowing them to remain two years prior to planting.

The asparagus is valuable not only as a vegetable, but also as green material for decorating flower vases, and so on. It adds a charm to cut blooms. The side growths are best. No harm is caused by the cutting.

If we had never seen any weeds, the necessity for cultivation of soil would not be nearly so apparent to the majority of gardeners. It is now a well known fact, however, that frequent cultivation is needed to keep the soil moist, even if weeds never appear. The drier the soil and weather, the greater need for surface cultivation.

How to Grow Good Celery

F. W. Hack, Norwood, Manitoba

WHEN the time approaches for planting celery in the field, the plants should be gradually hardened by exposure to the weather. Celery plants when properly hardened will be unharmed by a moderate frost, and may be planted out from the middle of May to the beginning of June. The land should be well cultivated and finely pulverized.

If possible, dull or rainy weather should be chosen for planting. The plant bed should be well watered before removing the plants and care must be taken to avoid injuring the roots. Shallow pans are convenient for handling the plants, and in hot, dry weather a little water in the pans will prevent wilting. If the weather is dull and the soil is moist, it will not be necessary to water the plants when set out; but if it is hot and dry, a good watering should be given and as soon as the ground is dry the surface should be stirred to prevent baking. Watering the young plants is apt to pack the soil too tightly around their roots and should not be done unless necessary.

Celery should be planted in rows three to five feet wide and four to six inches apart in the row. The width between the rows is to give room for cultivation and for soil to earth up with; four feet will be found the most convenient.

Some growers plant in double rows. This is not advisable, except in very rich soil and where water can be artificially supplied.

The old method of growing celery in trenches is not now generally used. The labor of preparing the trenches and the increased difficulty of cultivation renders this method unprofitable commercially. Where level culture is practiced, the rows should be slightly furrowed, so that the celery when planted should be a few inches below the level of the land. This will start an upright growth.

Frequent shallow cultivation should be given from the time of planting throughout the growing period. The surface should be well stirred twice a week during dry weather and after a rain as soon as the ground is dry. When the roots of the celery begin to spread, cultivation should be shallow near the plants.

When the plants have been out two or three weeks they must be gone over carefully by hand, the soil around and between them loosened and all weeds removed. The plants must never be allowed to spread over the surface of the ground, and enough soil must be drawn up around them to secure an upright, compact growth. This process should be repeated as growth continues. Do not let any soil fall into the hearts.

When the plants are nearly full grown

the earth should be drawn up to half the height of the plant, and one week later nearly to the top of the leaves. The blanching process will take from ten to thirty days, according to variety.

Celery that is intended for storing should be planted a little later and not moulded up so much. It will keep better if not quite fully matured when dug, and if green will blanch in storage.

Growing Peppers

E. E. Adams, Leamington, Ont.

There is no trouble in growing peppers, as they grow about as well as cabbage or any other plant. Seed is sown in flats in the greenhouse on or about March 1, and strong bottom heat is maintained until seed is well up. When in the fourth leaf, the plants are pricked out to flats and given a space of about two inches square, and are grown in these flats until taken to the field for setting. Be sure and keep the soil moist, as peppers appear to require a large amount of moisture; if seed is not kept moist, or if kept too wet, it will not sprout properly, and sometimes will decay.

In preparing the field soil for the crop, I use about ten two-horse loads of well-rotted manure per acre, either plowed in or harrowed in after the ground is plowed, according to whether the manure is fine or coarse. The ground is marked out in rows three feet apart, and the plants are set about twenty inches apart in the row. Good and frequent cultivation is given by a one-horse hoe or a twelve-tooth cultivator to keep the top soil very fine and to hold moisture.

About ten days after planting, a dressing of 100 pounds per acre of nitrate of soda is sown broadcast and worked into the soil, and sometimes, if we are not too much rushed with work, the soda is put around each plant in place of broadcast. The latter is the much better plan if possible to get it done, as the plant then gets all the nitrogen very soon after being put on. Another application of the same quantity is given about three weeks later, and this is sown broadcast. The first of June is our usual time for planting in the field. Anyone should be able to grow peppers successfully with very little trouble.

Stir the ground frequently around onions, especially after every rain.

The need of co-operation in marketing and shipping fruit seems to be getting well into the minds of most of our orchardists in Nova Scotia. The producers are too much at the mercy of the agents of steamship lines and English brokers.

QUESTION AND ANSWER DEPARTMENT

Sickly Cherry Tree

Is a white English cherry tree about six years old worth preserving? It has gum oozing from cracks in several places.—L.H.W., Toronto

While it is likely that the tree will continue to get more sickly and will eventually die, it may live for a number of years, and if the space is not needed, it might be left until it shows that it will not recover.

St. Lawrence Apple

In my orchard, I have two rows of St. Lawrence trees which are not bearing. They are about 20 years old, strong and healthy, over eight to nine inches in diameter, and in good, well fertilized soil. They have Wealthy, Duchess and Red Astrachan and other varieties all around them, all of which bear abundantly. But the St. Lawrence simply puts on a great growth of wood and bears no fruit. I would like to know if my experience is unique and if any of your readers could tell what to do to get fruit from them. My orchard is situated at Al-botsford, Que., about 45 or 50 miles east of Montreal.—S. P. R., Montreal.

The St. Lawrence apple is not, as a rule, a good bearer, and that is one reason why it is not more grown. Our experience here confirms this. Under some conditions, however, the St. Lawrence bears well every other year. It is naturally a strong growing tree and in order to get it to fruit better we should suggest that the growth be checked, if possible. If the ground is being cultivated, we would suggest leaving it in sod. Some summer pruning might also be done in order to check the growth. The case in question seems to be an extreme one, but, as stated before, the St. Lawrence is a naturally shy bearer.—W. T. Macoun.

Setting out an Orchard

1. What distance apart would you plant standard apple trees?

2. Would it be advisable to plant a row of cherry trees between rows of apples; also to plant raspberries along row of apple trees, so as to get a crop of small fruit while apples are growing?

3. In cropping the land would corn or turnips be better than potatoes for hoe crop? Have been told that potatoes were hardest on trees.

4. Is potash fertilizer good to use around young trees? My ground will be plowed out of clover sod this spring.—W. H. C., Scarborough, Ont.

1. Standard apple trees usually are planted from thirty-five to forty feet apart.

2. Cherries may be planted between the rows and raspberries also, provided that soil fertilization and cultivation are well looked after. Remove these fillers as soon as the apple trees require the space, say, in ten or twelve years.

3. Any of these crops may be grown in the orchard the first three or four years.

4. Potash is a necessary element. Its use depends upon nature of soil. Forty bushels of unleached hard-wood ashes to the acre probably would improve the clover sod.

Keeping Mushroom Spawn

Is mushroom spawn any good if kept over from one season to another?—E.R.W., Fort William, Ont.

Mushroom spawn will keep for a number of years in a cool, dry place. Dryness is an essential.

Acid Soil—Strawberries

1. What test can be made by fruit growers to ascertain whether a soil is sour or not?

2. Does new land, lately covered by fir and birch, require fertilizing?

3. How many crops should a strawberry patch yield? In planting a new patch should new plants be purchased?—M. C. M., Salmon Arm., B.C.

1. Get a piece of blue litmus paper from a druggist. Select a place in the orchard where the soil is moist and insert the paper. If paper remains blue, the soil is alkaline; if it turns red, the soil is sour or acid. This simply determines the fact but not the degree.

2. The quality and luxuriance of the crop grown on this soil will tell whether or not it needs fertilizing. Virgin soils vary in fertility like other soils. It is probable that the soil referred to is rich enough to start with.

3. As a rule, one crop from a commercial plantation is enough. Fertility of soil, freedom from weeds, nature of plant growth and fruit yield will tell whether or not the patch may be fruited more than once. When starting a new patch use strong, well-grown young plants, whether dug from the old patch or purchased. If you have a satisfactory variety, best results probably will be had by using plants grown on your own place.

Trouble with Dahlias

I have been trying to grow a few dahlias in the back yard, but without much success. The soil was originally clay, but has been well manured and dug so that it is now quite friable. The roots have been slow in growing and the buds have, after forming, failed to develop. I have had good results with all other flowers, and would be glad to have any suggestions you can give. Does this soil need some other treatment? Does it retard a plant to cut out a branch?—D.A.G., Toronto.

Dahlias should be made to grow fairly rapidly. Keep the surface soil well stirred. Water occasionally, soak the

ground when you do it, and cultivate the next morning. Do not use barnyard manure too liberally. Better use, late in the season, bone meal four parts and nitrate of soda one part, or liquid manure. Commence to feed as soon as the plants show flower buds. Often the buds are attacked by the dahlia "bug." It is not very troublesome in cool, moist seasons. In any season, the later dahlias are started the greater the chance of freedom from this pest. It is difficult to control; try spraying with soapsuds. Removing a branch will stimulate growth rather than retard it. Some growers leave only one stalk; this is pinched back when two or three pairs of leaves appear, in order to cause the plant to branch. Others allow two shoots to grow and no more; the remaining ones are removed as soon as they appear.

Plants Identified

1. Kindly tell me the name of a plant about six or seven feet high which is covered some distance down the stem with tassel-like red flowers. A sample is enclosed. This was picked just before frost.

2. What is the botanical name of the maple tree from which the leaf is gathered which you will find in the package with the other enclosure. Is this the species that has the brightest foliage when frost comes? If this leaf cannot be identified, please give the name of the maple that has the most brilliant foliage in the fall.

3. What is the correct name of a creeping plant commonly known as "creeping Charlie?"

4. By what name do florists know a plant often called "patience"?—Mrs. P. E. H., Toronto.

1. This plant is princess feather or kiss-me-over-the-garden-gate (*Polygonum orientale*).

2. The maple leaf enclosed appears to be a leaf of the red maple (*Acer rubrum*) though it is almost impossible to be sure about the determination from only one leaf. The red maple (*Acer rubrum*) is the maple which shows the most brilliant colors in the fall, especially in early fall. The hard, or sugar maple, however, also becomes very brilliantly foliated in the fall.

3. The correct name for the plant known as creeping Charlie is ground ivy, or gill-over-the-ground (*Nepeta Glechoma*). This is a nasty little weed in lawns.

4. The plant which is known to many florists as Patiens is the plant *Impatiens*, which is, through some mistake, often called Patience. The name of the plant of this genus grown in cultivation is *Impatiens Sultani*. There is another plant belonging to the Dock family, which is also called patiens, but this, we think, cannot be the plant you refer to.

The Canadian Horticulturist

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PETERBORO, ONTARIO



The Only Horticultural Magazine in the Dominion

OFFICIAL ORGAN OF BRITISH COLUMBIA, ONTARIO
QUEBEC, NEW BRUNSWICK AND PRINCE EDWARD
ISLAND FRUIT GROWERS' ASSOCIATIONS

H. BRONSON COWAN, Managing Director
A. B. CUTTING, B.S.A., Editor

1. The Canadian Horticulturist is published on the 25th day of the month preceding date of issue.

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3. Remittances should be made by Post Office or Express Money Order, or Registered Letter. Postage Stamps accepted for amounts less than \$1.00.

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

5. Advertising Rates quoted on application. Copy received up to the 18th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.

6. Articles and Illustrations for publication will be thankfully received by the editor.

CIRCULATION STATEMENT.

Since the subscription price of The Canadian Horticulturist was reduced from \$1.00 to 60 cents a year, the circulation has grown rapidly. The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with Dec., 1909. The figures given are exclusive of samples and spoiled copies, and of papers sent to advertisers. Some months, including the sample copies, from 10,000 to 12,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruit, flowers or vegetables.

January, 1909.....	9,456	January, 1910.....	8,925
February, 1909.....	9,310	February, 1910.....	8,967
March, 1909.....	9,405	March, 1910.....	9,178
April, 1909.....	9,482	April, 1910.....	9,410
May, 1909.....	9,172		
June, 1909.....	8,891		
July, 1909.....	8,447		
August, 1909.....	8,570		
September, 1909.....	8,605		
October, 1909.....	8,675		
November, 1909.....	8,750		
December, 1909.....	8,875		

Total for the year .107,638

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

Sworn detailed statements will be mailed upon application.

Our Protective Policy

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

Communications should be addressed:

THE CANADIAN HORTICULTURIST,
PETERBORO, ONTARIO.

EDITORIAL

SPARE THE WILD FLOWERS

The lure of the woods and the growing interest in nature study may prove to be a menace to our wild flowers. Many persons unconsciously do great injury to nature in their desire to acquire benefit. Many nature seekers gather great bundles of flowers that are destined to wither and die. There should be a personal, and possibly a legal, restraint to prevent this unwarranted destruction.

Nature can best be studied and appreciated in her secluded haunts and not by robbing her of her plants and flowers. Indiscriminate and lavish collecting will exterminate many species of our native flora. Annuals and biennials suffer more than perennials. Specimens of some of the latter may be transferred with advantage to our gardens, but the collectors, even for this purpose, should not dig everything in sight and destroy a dozen plants for each one to be transplanted. We should gather wild flowers and plants with discretion. Reckless collecting is folly.

THE BROWN-TAIL MOTH

Although the brown-tail moth has not yet made any permanent appearance in any state or province on this continent outside of New England, it is almost certain to become established throughout the whole country if stringent preventive measures are not taken. Splendid work has been done in Nova Scotia to control it there and the Dominion entomologist and staff have taken means to prevent its introduction into all the provinces on nursery stock imported from France. In spite of these precautions, however, the pest is almost sure to become established sooner or later. It is practically impossible to inspect all the importations of nursery stock and the moth, being a strong, swift flyer, may be expected some time to gain entrance from the eastern states. The annual report of the Secretary for Agriculture for Nova Scotia states that large numbers of moths have been carried by winds from Massachusetts to Nova Scotia.

The brown-tail moth is a serious enemy to orchards, parks and forest plantations. Were it to become established in Canada, the greatest danger will be in private and public grounds in towns and cities, and in forests, as these are seldom sprayed and special methods of control will have to be adopted. In orchards, spraying in spring is one remedy although strong applications of poison are necessary, particularly in the control of full-grown larvae. A more practical means of control is to collect and destroy the hibernating nests. These are easily seen in winter at the ends of twigs.

Not only is the brown-tail moth a serious enemy of trees but it is dangerous to human health. Injury to man comes through hairs carried by the wind and dropped on hands or face, or by inhalation. Hairs are said also to collect on clothing hanging on the line and are thereby transferred to the wearers. The hairs are barbed and are covered with a poisonous secretion. They readily pierce the skin, causing an irritating rash and when in the throat cause trouble of a serious nature. Cases of death due to these hairs have been reported.

Citizens in all parts of our country can aid in preventing the establishment of the pest by sending to the Dominion Entomolo-

gist, Central Experimental Farm, Ottawa, any suspicious leaf clusters encircled by webs that they may see in winter or early spring. The moth itself is easily identified, being pure white (except that occasionally there may be a few black spots on the forewing of the male) with a tuft of brownish hairs at the tip of the abdomen, from which it gets its name.

Vigilance on the part of the authorities and thorough inspection of nursery stock, not only from abroad but also from the United States, are necessary in order that the first of these insects to appear in any locality may be detected and destroyed. There is danger also from nursery stock, originating in France and consigned to the United States, being re-shipped to Canada. There are many sources of infestation. No dependence can be placed on the inspection systems of European countries. If importations from infested areas cannot all be inspected at our nurseries it would be advisable to have them inspected at the ports of entry.

ADVERTISING VEGETABLES

Judicious advertising in newspapers is a good investment for market gardeners. It is a business advantage over other fellows who take chances in selling their products. A gardener may have a good trade without advertising but he can double and treble it by the use of printer's ink. If you think that people do not read the advertisements in the papers and that you would not get results, place the following "ad" in one of your local papers every day for one week: "Crisp Red Radishes—Five large bunches for ten cents—Delivered to every one who mentions this advertisement with name of paper to me—Offer open for one week, commencing May 9, 1910." Although the price is low the publicity will well repay you and you will learn something about the value of newspaper advertising.

Never sell anything that is not first-class. If you have any inferior products on your wagon, explain the situation to your customers and charge much less than the usual price. Have your vegetables graded; if in packages, have them just as good at the bottom as at the top. If a customer finds a spoiled specimen, give him his money back. Always give good measure and have all vegetables clean. Grow good stuff, market it in an attractive way, advertise these facts in the local press and you will secure new customers every day. It pays to advertise.

Fruit growers should keep a few hives of bees in their orchards in order to assure cross-pollination of the blossoms. Pollen is transferred from flower to flower by wind and insects. In some seasons, bees are the most important agents. A few colonies in the orchard will aid in getting better crops.

Some parts of British Columbia still grow apples unmolested by codling moth. The mountain-girt valleys are particularly adapted for repelling insect invasions. If the growers in such districts realize what is good for their pockets they will maintain a stern, unremitting watch for the first sign of this moth, which will come as surely as it has come to nearly every apple district on this continent. Prompt, concerted action whenever the moth appears will be worth thousands of dollars to the growers.

One of our subscribers in the Okanagan Valley, B.C., asks the following question: "Can any of THE CANADIAN HORTICULTURIST readers give the facts about how and just when the late Charles Arnold of Paris raised the Ontario apple? There seems to be a

dearth of information about this horticulturist although he left us such a fine apple." A biographical sketch of Mr. Arnold appeared in an appendix to the 1906 report of the Ontario Fruit Growers' Association but not much information is given about the origin of the Ontario apple. Can any of our readers answer the question?

PUBLISHERS' DESK

The illustration on the cover of this issue shows cherry trees in blossom in an orchard at Kelowna, B. C. High class photographs showing fruit and garden scenes in all the provinces are wanted for publication. The best of them will be used on the front cover and others that are good will be published on the inside pages. Send the best photographs that you have. If you want them returned, write the word "return" on the back of them and also your name and address.

The annual meeting of the Horticultural Publishing Company, Limited was held in Toronto, March 29, 1910. The financial statement for the year ending December 31, 1909, showed a considerable improvement as compared with that of the previous year. The company anticipates that the year 1910 will be the most successful in its history. The following officers were elected: Pres., W. H. Bunting, St. Catharines; vice-pres., J. H. Dunlop, Toronto; sec-treas. and managing director, H. B. Cowan, Peterboro; directors, A. W. Peart, Burlington; Harold Jones, Maitland; Hermann Simmers and P. W. Hodgetts, Toronto.

The April issue of THE CANADIAN HORTICULTURIST was another record breaker from an advertising standpoint. In spite of the fact that over two pages of advertising reached us too late for insertion, the value of the advertising carried again broke all records. This shows that the record made by the March issue was not just an "accident." Advertisers spend their money where they find they get results. Are you using THE CANADIAN HORTICULTURIST? If not, give it a trial. You will find that it reaches people who will buy your goods and who will pay for them. Last forms for June close May 20th.

Almost every month we are obliged to disappoint some of our advertisers whose copy does not reach us in time for insertion. The interests of our readers and advertisers demand that the paper shall be out on time, and it is not fair to keep 80 or 90 advertisers and 10,000 readers waiting because two or three advertisers are late in sending us their copy. Then, too, it is necessary that we fix the size of the next month's issue a week or ten days before it comes out. This limits the space that we can devote to advertising, and it frequently occurs that copy reaches us before the last form goes to press, but there is no room for it and we have to leave it out; or, copy reaches us when there are only two or three pages open, and we have to place the advertisement on one of these pages, whereas it might be much better displayed in another part of the paper if received earlier.

Will our advertisers bear the above in mind when sending copy each month, and let us have same early? It will assist us, and also be to the advertisers' own best interests. All our pages, with the exception of the cover, are open till the 12th of the month. Positions on the middle sixteen pages are not available after that date.

Selection of Nursery Stock

"Every fruit grower should be able to tell at a glance what age a tree is when it comes to him from the nursery," said Prof. J. W. Crow, when discussing the above subject at the short course in fruit growing at Guelph. "Every tree has on it marks which show plainly how old the tree is. The terminal bud of a branch is always protected during winter by a number of scales. In the spring the buds continue the growth of the tree and the scales drop off, but the scars remain and form a distinct ring around the limb or trunk, marking each year's growth quite plainly unless removed by cutting. Thus a tree one-year-old will show no ring of scars; a two-year-old tree will show one ring of scars at the junction of the one and two-year-old wood; a three-year-old tree will show two rings; and so on."

At the beginning of the second year the nurseryman cuts back his apple trees and trims them to the desired height to form the head. If he sells the tree at two years old well and good; if not, he may let it grow but more likely he will cut it back again to keep the head from getting too big. This means that he will remove practically all the last year's growth. Thus a year can be added to the age of the tree for every time the knife has been applied. The marks of the knife are always evident. A tree that has stood continuously in the nursery row for three to five years, as not unfrequently happens with certain varieties or when trade is slow, does not transplant with such certainty of success as does a one or two-year-old tree.

One-year-old, well grown apple trees are preferable for planting. In the first place they must be sturdy stock in order to attain the right size in a year. Then it is much easier to head a one-year-old tree low down than it is a two or three-year-old. These older trees are usually headed about three feet from the ground which is too high. A low-headed tree is preferable because the limbs tend to a more upright habit of growth, sun-scald is almost entirely confined to high, open-headed trees; it is much more economical to prune, spray and pick the fruit from such trees.

Before planting a considerable number of trees it will pay well, if convenient, to visit the nursery and choose your own stock. Choose one-year-old trees not less than 30 inches high. If you insist on having one-year-old trees you will get them. They will probably cost a little more because they have to be dug by hand as there will not be more than 50 per cent. of the trees in the nursery row fit for your purpose. Do not buy poor one-year-olds, as it is necessary with these to cut them off nearly at the ground in order to stimulate strong growth after they are planted.

Peach trees are nearly all sold at one year old. It does not pay to buy big No. 1 stock. Medium-sized No. 2 is better, as it transplants with greater safety and makes a better tree for low heading. If possible, buy peach trees with all their branches on them. Thus you will be able to head your tree just where you like. This will probably mean giving the nurseryman instructions a year ahead but it will pay.

It is good practice to grow your own nursery stock. Grow your seedlings or procure them from a nursery. Plant them in the spring in rows and cultivate as you would potatoes. In July bud these with buds taken from the very best bearing trees of the very best varieties in your locality. A very little practice will make any intelligent man a competent hand at budding as the process is simple. If you do not care to grow your own stock, buy trees that will make good

stock for grafting, such as Tolman or Mc-Mahon; after these have been set two or three years top graft with scions from the very best bearing trees of the desired variety to be found in your locality. There is as much individuality in a tree as there is in a dairy cow. Select your trees as you would select your dairy cows by breeding from the very best individuals you can find. The nurseryman cannot do this as he must select his scions wherever he can get them; but the fruit grower can easily mark the trees in his own or his neighbor's orchard that are giving extra big returns and can secure scions from these trees.—D.S.

Re Failure in Asters

The article in the April issue of THE CANADIAN HORTICULTURIST, in which Mr. G. A. Chase of Toronto tells about having trouble with asters, has resulted in various remedial suggestions being offered by readers of this magazine. The following was received from Mrs. R. J. Ella Baines, Toronto:

"In your April issue, page 90, Mr. Chase writes concerning an unknown cause of failure in his asters. As he has already hunted for root aphid and in his examination of the plants would have seen any other insect visible to the naked eye, may it not be that eel worm is the cause? These eel worms are an acknowledged enemy of the aster. They are microscopic; therefore not easily detected, and unfortunately they live in the soil.

"Mr. Pearson, in his work upon plant pests, says of these worms: 'They live in the soil and first attack the roots of a plant, afterward living in the tissues. A bad attack can always be determined by an examination of the rootlets, which will be found to be knotty, or bearing small wart-like excrescences.'

"A plant so affected is considered incurable. The cure must be applied to the soil itself, in order to prevent further mischief. Would it not, then, be better this year to disinfect the soil in which the plants are to be placed? This can now be so easily and completely done by the use of Cooper's Apterite. It was recommended to me last year by a horticulturist from Ireland and seems to be absolutely successful as a soil disinfectant, acting without any injurious effects, rather as a fertilizer. I have obtained mine this year from Messrs. Cooper's agency in Toronto, 152 Bay street. Perhaps Mr. Chase would care to try it."

The trouble with Mr. Chase's asters and the suggestion that it may be due to eel worms was brought to the attention of Mr. L. Caesar, demonstrator in fungous diseases, O. A. C., Guelph, who replied as follows:

"I am inclined to believe that Mr. Chase is quite right about the trouble being due to a fungous, or else bacterial, disease attacking the stem near the ground where it evidently interferes with the flow of sap from the roots. I have seen one case of a similar disease to that to which Mr. Chase refers. Without examining plants, as in Mr. Chase's case, one does not care to recommend any special treatment. The treatment that he has been giving—that is, endeavoring to change the soil—would naturally appeal to one as the most intelligent under the circumstances. It is not likely there is any disease in the seed; otherwise, everybody who had this kind of seed would have the same trouble. As for the eel worms, so far as I know they are not at present a troublesome pest in Ontario."

From Mr. C. M. Bezzo of Berlin, Ont., comes a suggestion that may help to solve the problem. It is as follows:

"I believe the disease to be what is commonly called 'stem-rot.' It is a fungous

disease, which frequently has its inception in the seed bed, although not manifesting itself until the plant is ready to bloom, where it is found wilted and dying. The preventive is frequent stirring and drying of the surface soil about the plant at all stages of its growth, particularly during the early stages, and the avoidance of low damp and sour soil. Plants started in a hotbed are more liable to attack than those started in a cold frame or in the open ground. I do not think the best results can be obtained from asters started under such pampering conditions as hotbeds."

Lime-sulphur vs. Bordeaux

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

It is interesting to learn what is being done in other parts of our Dominion, so I have read with pleasure the instalments of Mr. L. Caesar's articles in THE CANADIAN HORTICULTURIST. We have apparently, however, advanced further than Ontario in the practical use of lime-sulphur spray, as, with us, Bordeaux is superseded by it with great success, and to the great simplification of the spraying process.

In fighting the apple scab, the first thing necessary is either to remove or bury the dead leaves from the infected trees. This should be done just before growth starts in the spring, as it is at this time that the fungus, which has spent the winter on the decaying leaves, starts into active life, and produces its spores in profusion. Hence, the first cultivation should be given at this time, and, as an additional precaution, not only should the tree, but also the soil, be well sprayed with the lime-sulphur.

In using the ready-made spray, supplied by the manufacturers, we find it advisable to dilute with hot water, and at the same time to add about 10 lbs. of quicklime

to each 40 gallons of the diluted spray. This lime should be stirred in the spray, which should be used with the lime in suspension. The advantages of this added lime are twofold, for it not only adds to the efficiency of the spray, but it also indicates most clearly to the sprayer whether or not he has covered all portions of the tree. It offers also a mechanical obstruction to scale insects.

Bordeaux is troublesome to mix, and, if weather conditions become unfavorable (wet) it is liable to seriously injure the foliage and cause russetting of the fruit, whereby it is rendered unsaleable. This never occurs with lime-sulphur. As a fungicide, it is perfectly efficient, and as a solvent of the different gummy secretions by which insects attack their eggs to the trees it is unrivalled except by lye, (which should never be used in an orchard since it renders arsenical salts soluble). It also kills all soft bodied insects with which it comes in contact, and, as it can be combined with arsenate of lead, the whole spraying process can be much simplified.

Mr. Caesar says in his article: "It is almost certain that a soluble substance like commercial lime-sulphur would wash off more rapidly than Bordeaux." He has lost sight of the fact that the lime-sulphur is not a stable compound, and that half its efficiency is due to this fact, as it is the slow evolution of sulphuretted hydrogen gas, as the substance oxidises by exposure to the air, that kills the fungous growths, quite as much as its causticity does. Once the spray has had time to dry on the trees, subsequent rains will hardly remove it at all, as I have proved by experience.

Do you want a free book on "Amateur Fruit Growing?" See page 126.

Co-operative Buying of Supplies

At the short course in fruit growing at Guelph, Mr. P. W. Hodgetts, Toronto, brought out the importance of the co-operative buying of supplies for orcharding, by the following figures that show something of the quantities of spraying materials used by the co-operative spraying associations of Ontario: In 1909, these societies sprayed 5,700 acres and consumed:—bluestone, 52,000 lbs.; sulphur, 200,000 lbs.; lime, 32,000 lbs.; Paris green, 915 lbs.; arsenate of lead, 8,200 lbs.; white arsenic, 2,200 lbs. This represents only a small quantity of the supplies used by fruit growers in their business.

The St. Catharines Cold Storage and Forwarding Company bought nearly \$40,000 worth of supplies last year, including spray materials, packages, paper, hooks and covers, grape posts, wire, fertilizers, ladders, spraying machinery, etc. In spraying materials they bought 107,520 lbs. of sulphur; 2,500 bushels of lime; 4,080 gals. of commercial lime-sulphur; 6,000 lbs. of arsenate of lead; 200 lbs. of white arsenic; 300 lbs. of soda ash; 100 lbs. of Paris green, 800 lbs. of Bordeaux paste; and 12,600 lbs. of granulated bluestone.

As a rule, local merchants throughout the province do not deal in these articles. The result is that only a few druggists carry these goods and are thus able to charge exorbitant prices.

Nursery stock is another matter wherein co-operative buying is doing much good. Local agents charge altogether too much and, worse still, supply a poor quality of stock often untrue to name.

There are some difficulties to be overcome in co-operative buying. Managers and members of local societies must learn the value of business principles. They must learn to

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- 3rd. The price is right. We charge a reasonable price for the Best.

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provide a ready means of paying for supplies and to order early so that materials shall arrive at their places in good time. The older associations of the province whose credit is well established carry the accounts until fall and then deduct these from the sales of fruit. The younger local associations must grapple with this question and either provide working capital or make good their credit.

About four or five years ago a few far-sighted managers of co-operative associations formed a central association. At first all this association endeavored to do was to aid the 30 odd societies of the province in the matter of selling their fruit, by supplying them with weekly reports, during the growing season of the world's fruit crop with especial reference to the province, prospects in regard to prices and, in some cases, made sales for the smaller societies. In 1908, the central organization took up buying supplies. At once the question of a warehouse arose. This has been overcome by making one of the large associations a wholesale depot for the rest. This association buys in carload lots when the price is right and stores until wanted by the other associations.

There are still many things to work out. The central association, which is known as the Co-operative Fruit Growers' of Ontario, looks forward to becoming incorporated and building a storehouse. Success is plainly in sight.—D.S.

"Apple Growing in New England" is the title of bulletin No. 61 by C. D. Jarvis, Agricultural Experimental Station, Storrs, Conn. The history, status and future of the apple industry in those states are discussed. Much practical information is given also on the renovation of old orchards.

Lime-Sulphur Wash

An exceedingly valuable bulletin on the lime-sulphur wash has just been issued by the Ontario Department of Agriculture. The authors are H. L. Fulmer and L. Caesar, both of the Ontario Agricultural College, Guelph, where most of the experiments that are dealt with in the bulletin were conducted. An introduction is written by Prof. R. Harcourt.

A chemical study of this spray mixture is recorded by Mr. Fulmer. Home-made and commercial washes are dealt with fully, and some important conclusions are drawn. A practical and popular treatment of the subject is given by Mr. Caesar. Space in this issue does not allow the publication of extracts. A complete copy of the bulletin may be had on request to the Department of Agriculture, Toronto. Ask for bulletin No. 177.

Landscape Architecture

That the need for civic improvement is becoming recognized in Canada to a greater degree than ever is evidenced by the action of a number of cities in Ontario. These places have planned extensive improvements in their park systems, water fronts, river banks, residential districts and factory and business locations. Welland is the latest to contemplate this kind of work. A recent issue of the *Welland Telegraph* contains an excellent outline for commencing operations. The article is written by Mr. C. Ernest Woolverton, Grimsby, Ont., the well-known landscape architect, and is worthy of reproduction in the local papers of many other towns and cities.

The survey of the Welland situation was made by Mr. Woolverton, who has reported also on plans for London, Kingston, Wood-

stock, Barrie and other places. Mr. Woolverton has studied under a noted landscape architect in Boston, Mass., and while there assisted in improvement plans for Philadelphia, Pa., Munising, Mich., Wilkes-Barre, Pa., and other cities in the United States. He has superintended also landscape work on many private estates in Ontario. Mr. Woolverton's suggestions for improvement in Welland should be adopted by that hustling town. Most other towns and cities in the province would do well to look into this matter of civic improvement.

About Pruning

"Pruning," a paper read at a meeting of the Quebec Pomological Society by Mr. R. A. Rousseau, a graduating student of La Trappe, contained much valuable information. He thought more pruning should be done although he did not advocate severe pruning. It should be done in a moderate way every year and in this way do away with the necessity of doing severe pruning. He favored March pruning and did not think it necessary or advisable to do June pruning.

There are many reasons in favor of pruning at this season, but there did not appear to be any good reasons advanced for June pruning. Mr. J. M. Fisk thought June pruning the best and stated that the best results with him had been with pruning done during June. It would seem that March pruning is more suitable for the developing of more vigorous wood growth, but that June pruning can be followed to great advantage in bringing unfruitful trees in to bearing.

A new branch of the Imperial Bank of Canada has recently been opened at Nashville, Ont.

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Spraying Increases Profits

"If you neglect to spray your fruit you will not have success; spraying is the link between success and failure in fruit growing," were Mr. Farrand's initial words in the address he gave on "Spraying for Insects and Diseases" at the meetings of the Niagara Peninsula Fruit Growers' Association in March.

Different formulae had to be used in different emergencies. A mixture of four pounds of lime to six pounds of blue vitrol to 40 gallons of water, had proven a general remedy for many diseases. Black rot in grapes was prevented only by Bordeaux. The lime and sulphur mixture was efficient for San Jose scale and other fungous diseases. The peach has a tender foliage and the strong mixtures that plum, pear and apple foliage withstand, should be used with great care if put over the former trees.

Proper spraying is one of the preventives of fungous and insect pests if done at the proper time. A delay of a day or two may cause a loss of money. Results were obtained in proportion to the spraying done. "Put your mixtures on liberally," was the speaker's advice.

Different processes and utensils for the work were touched on. "There were men," said Mr. Farrand, "who believed that good results could be obtained by hand spraying, but this was not successful as tests had proven." The method took up an enormous amount of time; in fact, a power outfit would do the work three times over in the time it took a hand pump. The gasoline engine was, in his opinion, a satisfactory solution to the labor saving problem.—J. A. S.

Fruit growers, amateur and commercial, will find valuable information in book advertised on this page.

"Amateur Fruit Growing"

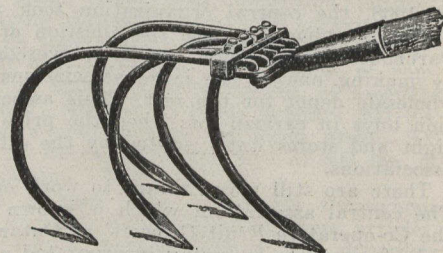
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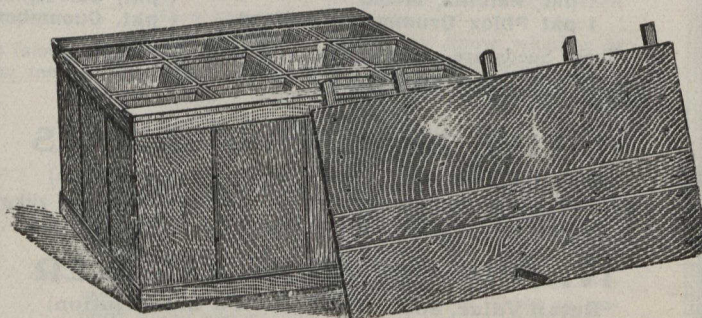
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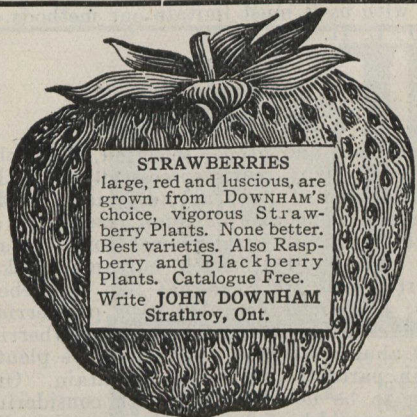
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Tomato Variety Tests

G. W. Bycroft, Byron, Ont.

The seed committee of the London branch of the Ontario Vegetable Growers' Association decided last year to grow five varieties of tomatoes under exactly similar conditions to determine which would be the most profitable to grow for the factory. The following varieties were selected: Pride of Canada, Royal Red, Clark's Jewel, Earliana and Plentiful. The first four varieties were sown on April 10 and Plentiful on March 10. Twenty plants of each were set out in the field in rows on June 10. Cut worms destroyed some of the plants. The number of plants left of each variety, date and weight of ripe tomatoes picked were recorded in tabulated form.

At last picking Earliana was practically denuded of fruit. Very few green ones were left on the vines. Most of the crop was gathered from Plentiful and Clark's Jewel, but the bulk of tomatoes was still left on Royal Red and Pride of Canada. The tests will be continued this year.

From the Agricultural Experiment Station at Lafayette, Indiana, we have received bulletin No. 138 on the San Jose scale. A description of this pest is given and suggestions on its control. The bulletin contains also reports of experiments with many commercial preparations that are on the market as remedies for this pest.



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NOTES FROM THE PROVINCES

British Columbia

At the convention of the British Columbia Fruit Growers' Association held at Victoria last February Mr. Rublee, a wholesale fruit dealer of Winnipeg, gave an interesting address on the marketing of fruit. He said that up to the present British Columbia had been able to consume its own fruit, but now that the production was increasing so rapidly, we must look for outside markets. The prairie provinces also have grown and, not being much at fruit production, are desirous of dealing with us. A great deal of the British Columbia fruit marketed in these provinces has been poor and poorly packed, which has naturally injured its success. Much of the fruit has looked unattractive and has arrived in poor condition. What is wanted for these markets is a standard pack of standard size and quality, and until this is attained, prices will not reach their maximum. Prunes have either been slack packed, causing bruises; or too tightly packed, whereby they are crushed. Instruction in packing is all that is needed to remedy this.

The operation of packing requires attention. The fruit must be in exactly the right stage, neither too ripe nor too green, to produce the best results. As to shipping cars, many carloads are ruined before leaving the siding. For instance, strawberries have been loaded without ice, with the result that on arrival at their destination every crate has been condemned and destroyed.

Always load with least possible handling and see that each crate is properly packed, stripped for ventilation and firmly braced. Fruit should be properly cooled and iced and then if the car is not over-filled, and if a space of at least two feet be left at the top for ventilation and a space in the centre between the doors, the fruit should reach its destination in good condition.

Mr. Rublee believed the transportation companies to be civil and considerate, giving good care and attention to the consignments in his experience. A higher charge for transportation is made for the more perishable fruits than for those which will stand the journey better. It is impossible to safely ship 20,000 pounds of strawberries in one

carload, 15,000 pounds, or even less, being about the limit. Mr. Rublee is not in favor of auctioning fruit as a means of selling it unless it is necessary to dispose of it quickly.

Mr. Brydon did not agree with Mr. Rublee's estimate of the transportation companies and quoted some of his experiences, which were not so fortunate in meeting with the prompt transportation attention the case demanded. He had been present at a meeting between the railway company and the fruit growers. Fortunately he had expected no satisfaction and got exactly what he expected. All their protests were shelved, the government officials sitting beside those of the railway company and coinciding with them. Mr. Johnston did not quite agree with this speaker, as he met Mr. Stout, who promised all kinds of facilities; result, no rebates; but the price of \$2.25 per crate was realized for strawberries.

Mr. Rublee was asked how British Columbia fruit contrasted with Ontario and said, in reply, that there was no comparison as to packing, the Ontario fruit being very inferior, and that if Ontario desires to compete with us it must imitate our methods.—
W. J. L. H.

Manitoba

T. Albert Scholes, Killarney

With care and proper selection, Manitoba may raise many fruits successfully. In the neighborhood of Killarney, especially in the valleys of Long and Pembina rivers and at Turtle Mountain, wild plums (some of fair size and quality), black currants, saskatoons (which are somewhat like huckleberries), high-bush cranberries, pin-berries, choke cherries and good-sized strawberries grow abundantly and raspberries are plentiful in parts of the Turtle Mountain. One thing to be noticed and worth considering by the would-be grower of fruit is that the slope facing north is where the luxuriant covering of trees, fruit bushes, wild pea vines, hawthorns, hop-vines, hazel-nuts, and so forth, are to be found, while the south slope does not even grow good grass unless in some hollows.

The home-keeper that desires success must, therefore, try to have his fruit bushes and trees sheltered from the hot glare of the morning sun. Let the shelter be either a hill, a building, a south-shelter belt of trees or even a woodpile. It is not the severe frost of our winter that kills, but the night frosts and hot suns of April and early part of May.

Around and in my own garden, I planted seeds of the Manitoba maple and cuttings of willow about 14 years ago, and have since then grown ash trees from seed. The trees now give shelter from the south and east and also from the strong west winds.

I grow with success, without laying them down in the fall, four varieties of red raspberry, the hardiest of which are the Turner and the Herbert, and one yellow raspberry, Golden Queen. The Shaffer (purple) and the Hilborn and Cumberland black raspberries need to be bent over a little mound of earth and covered with earth or coarse manure in the fall and left covered until the second week in May. I have not had any success in producing a properly ripened blackberry from Mersereau, Ever-bearing Tree or Rathburn blackberries. Cultivated strawberries do well without other covering than snow and the dead leaves from the surrounding willow and apple trees.

The different varieties of red and white currants and American gooseberries do well with mulching. I have not had good success with black currants.

About 10 years ago, I received from the Ottawa Experimental Farm, some seeds of

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An Amberol Record in an Edison Phonograph is the most perfect reproduction of a song or a piece of instrumental music that you have ever heard.

But do not accept our statement. Go and hear it. There is a dealer near you. Hear the Edison Phonograph and compare it with other instruments before you decide. We will leave it to your judgment as to whether you can buy anything for the price that will give you so much real, genuine fun and pleasure as the Edison Phonograph.

Edison Phonographs	\$16.50 to \$162.50	Edison Amberol Records (twice as long)	.65
Edison Standard Records	.40	Edison Grand Opera Records	.85

There are Edison dealers everywhere. Go to the nearest and hear the Edison Phonograph play both Edison Standard and Amberol Records. Get complete catalogs from your dealer or from us.

NATIONAL PHONOGRAPH COMPANY, 100 Lakeside Avenue, Orange, N. J., U.S.A.

the wild Siberian crab and some small first-year seedlings of cross-bred trees. These have grown well and have proved perfectly hardy, not killing back an inch. Some of the Siberian crabs are very small but they make excellent jelly and the trees are very ornamental in the blossoming season. Among the cross-bred trees the best are Aurora, Charles and Northern Queen, the last named of which bore 12 ripe apples the next year after it was planted—a six-inch seedling—and has borne heavily since. The Transcendant crab does well and bears larger fruit than the cross-bred trees.

My standard apple trees have not yet borne nor my Cheney and Surprise plum trees though the latter have blossomed. The Okabena and Hiberna standard apple trees are, I believe, perfectly hardy and yield good-sized, well-flavored fruit.

On most Manitoba farms, there has been little done in the way of making a shelter belt of trees. Until something in this line is done, money invested in fruit bushes and fruit trees is put where it may not be found.

Where there is a shelter, fruit growing may be engaged in with both profit and pleasure.

After plants are in, good and frequent cultivation will be required to give success. Currant and gooseberry plants will require watching to prevent the worm getting ahead of the owner. The other fruits do not, with the possible exception of the plum, seem to have many enemies in Manitoba.

Prince Edward Island

J. A. Moore

Very little happens here in the fruit growing line. People are not organized and do not meet together to discuss horticultural matters. The institutes have not as yet interested their members in this most profitable industry.

It is quite possible to take \$200 from an acre of orchard on P. E. Island. I know a man who did it last year. What other branch of farm work does this? And why do not more people try it faithfully? The trouble seems to be the want of a market,

and yet we do not begin to grow enough to warrant a buyer coming to us.

Co-operation in planting is as much needed right now as co-operation in marketing. It is large quantities of one or two varieties in one community that is wanted; and it is not hard for communities to decide on the varieties that suit them best.

Quite a large number of Baxters are to be set out this spring. This is one of the most beautiful looking apples, but it needs to be sprayed, and if our people are going to grow apples for market they must spray. The Baxter is an annual bearer and is very hardy, and with good storage the fruit will keep through till spring.

Annapolis Valley West, N. S.

R. J. Messenger

The returns from the fruit shipping season just over have not been most pleasing. Apples kept a very moderate to low price for the whole season, and there does not seem to have been any reason why the prices



LET THE EXPERIENCE OF THE MAJORITY OF FARMERS BE YOUR GUIDE IN BUYING TWINE

THE time has come to order your binder twine for the 1910 harvest. Twine dealers are placing orders for their season's stock. The mills are running. Now is the time for you to decide the twine question. It is something that requires careful consideration. The success of your harvest will depend on the uninterrupted work of your binder, for no binder can work well if you use a cheap grade of binder twine.

It is our aim to have every farmer who uses I H C twine go through the 1910 harvest season without a break in the field. We have much more at stake than merely selling twine. Your interests and ours are the same.

We know that the raw materials from which I H C twines are spun have the quantity and quality of fibre that insure greater strength than is found in any other twine. They are evenly spun—smooth running—do not tangle in the twine box—work well in the knotter, insuring perfect binding and perfect tying. They insure your being able to work your binder through the entire harvest season with greatest speed and economy and are therefore practical profit insurance.

Those who buy cheap twine will certainly have trouble—delays due to tangles, knots and breaks will mean the loss of valuable time—and every delay at harvest time will cut down your profits.

There is a sure way to avoid this. Let the experience of the past be your guide in purchasing your twine. The verdict of the majority of the farmers of this country is a safe guide. Their decision should have more weight with you than the statement of any twine manufacturer. These farmers know. They have the same problems confronting them that you have. They have no axe to grind. They do not sell twine. They are only interested in results.

I H C Brand of Sisal—Standard Sisal Manila or Pure Manila

Are the twines used by the majority of the farmers of this country. They have been proved to give the best results. Eighty-five to 90 per cent of the farmers use Sisal. It is smooth running and works at steady tension without kinking or tangling in the twine box—insuring perfect binding and perfect tying. Its only equal is the really high grade Manila twines such as bear the I H C trade-mark.

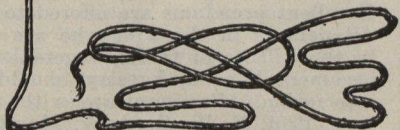
Your interests and ours are identical on this twine proposition. We have more at stake than selling twine. We are vitally interested in the successful operation of hundreds of thousands of binders. On their successful operation depends our success—and we know they cannot operate successfully with poor twine. No binder made can. For this reason we have given the twine problem careful study. When we say "Stick to Sisal or high grade Manila bearing the I H C trade-mark"—we do so because we know them to be the highest standard of excellence in binder twine.

But we don't ask you to do as we say. We want you to be the judge. But your judgment to be right should be based on facts—not on the statement of any twine man. And the fact is—that the majority of the farmers of this country use I H C twine. Sisal or Standard (which is made from pure Sisal) comes 500 feet to the pound; high grade Manila, 600 feet to the pound; Pure Manila, 650 feet. See your local I H C dealer at once and let him know how much you will need. If you want more facts on binder twine, write the International Harvester Company of America at nearest branch house for information.

CANADIAN BRANCHES—Brandon, Calgary, Edmonton, Hamilton, London, Montreal, Ottawa, Regina, Saskatoon, St. John, Winnipeg, Yorkton.

International Harvester Company of America Chicago USA

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Garden Freshness of "SALADA"



Fresh and fragrant from the gardens of the finest tea-producing country in the world. Ask your grocer for a package to-day — you'll like it.



Canadian Made

No doubt you will agree that if quality and price are equal every Canadian should buy Canadian made goods in preference to any others.

Not only is it patriotic—it's sound common sense. The money spent for Canadian goods goes to build up Canadian industries and prosperity, and makes it easier for every Canadian to earn a good living.

On the other hand, money spent for foreign made goods goes out of the country to pay foreigners—not to benefit Canadians.

NA-DRU-CO

Toilet and Medicinal Preparations are compounded in Canada from the purest ingredients which money can buy. The National Drug and Chemical Company of Canada returns to Canadians in employees' salaries, dividends and other expense disbursements, close to **One Million Dollars a year**. In addition to this we spend millions every year in Canada for raw materials, tins, bottles, labels, boxes and other supplies, giving employment to hundreds of Canadian tinsmiths, glass workers, paper makers, printers, lithographers, box makers, and others.

So even if NA-DRU-CO goods were only "just as good" as those imported from other countries, you would be following a sensible and patriotic course in buying them.

As a matter of fact, though, NA-DRU-CO Toilet and Medicinal Preparations are better than those imported. Try NA-DRU-CO Talcum Powder, NA-DRU-CO Greaseless Toilet Cream, NA-DRU-CO Tasteless Cod Liver Oil Compound or any other NA-DRU-CO preparation, and see for yourself.

You risk nothing in making the test, for if the NA-DRU-CO article does not entirely satisfy you, return it and your druggist will refund your money.

National Drug and Chemical Company of Canada, Limited.

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Winnipeg, Regina, Calgary, Nelson, Vancouver, Victoria.

12

of last season should not have been repeated. Whether the fault lies with the methods on this side of the water or the other is hard to tell. It certainly seems as if we were being handled to make the apple speculators and English brokers wealthy. Prices for hard fruit have kept under \$2 net except in the case of Spys and Golden Russets.

The spraying season with its new methods, mixtures and perplexities is at hand again. It would almost seem as if the old reliable Bordeaux were losing its popularity and lime-sulphur were to take its place. Of this mixture, public opinion seems to be divided as to the greater efficiency of the home-boiled or the commercially prepared. Two brands of the latter are on the market, and we hope that the prepared may prove as efficient at least as the home-boiled, for the trouble and discomfort of making the latter is certainly against its use.

The horticultural experiment station has at last been purchased, the choice being a farm about one-half mile from Kentville. The difficulty now seems to be to get a director. Qualified horticulturists seem to be scarce.

Good Ontario Apples

THE CANADIAN HORTICULTURIST recently received the following interesting letter from a British Columbia subscriber, evidently once a resident of Ontario:

"The article on page 73, March issue, 'Ontario vs. British Columbia,' has ruffled me up sufficiently to make me write a few lines to you. I hope you can find room and that they will do good. We never see anything about Ontario fruit in our local British Columbia papers, but in the same strain; same with the prairie papers; and though I read Ontario papers whenever I can, am forced to say, almost same with Ontario papers. Can the fruit grower be clubbed into careful methods? Why not tell him how some up-to-date Ontario grower (and there are a few of them) has raised his percentage of No. 1 apples by spraying, has sold at top price on account of good grading and packing and how much more a consignment of boxed apples netted than an equal bulk of barrelled apples? Some of these co-operative fruit shippers associations, of which I understand there are now a lot in Ontario, must be marketing their output at figures which would look well in print.

"Your growers there should get more optimistic about those toothsome Ontario apples and their possibilities; also they should get the box idea for their choice fruit as soon as they can; there is money in it. I think I noticed a firm in Burlington advertising boxed apples sent to Great Britain; if requested, money refunded if unsatisfactory. A few more such enterprising concerns would put Ontario's apple reputation in the ascendancy."

The Kaslo District (B. C.) Horticultural and Fruit Growers' Association will hold a Kootenay Lake Apple Show during the third week of October, 1910. Prizes will be awarded for plates, single boxes, three-box exhibits and five-box exhibits. The secretary of the show is Mr. W. Johnson, Kaslo, B. C.

The Manitoba Horticultural and Forestry Association is planning for a banner year. Excellent premiums are offered to members. All persons in the west who are interested in the culture of fruits, vegetables, flowers, ornamentals or in forestry, should join this association. Communicate with the secretary, Prof. F. W. Brodrick, Manitoba Agricultural College, Winnipeg.

Annapolis Valley East, N. S.

Eunice Watts, A. R. H. S.

In Nova Scotia, the brown-tail moth seems to be gaining headway; from Digby and Annapolis come reports of infested orchards; on one tree 83 nests were found, containing about three hundred insects each. At Port Williams and Welsford other nests have been found, but the department of agriculture is taking active steps to suppress the moth, and wish to have all cases reported to them. Doctor Gordon Hewitt, Dominion Entomologist, is assisting in the provinces' campaign against the pest.

The call for fruit trees is greater than ever, and the local supply is not equal to the demand; consequently, large quantities of nursery stock are being imported. Orchards are being extended with amazing rapidity. Nova Scotian missionaries are preaching fruit growing and agriculture on the other side of the Atlantic, and the result is that well-to-do immigrants are buying good farms in the valley.

So far, spring has been exceptionally early and peas were planted in the middle of March, while potatoes went in at the beginning of April.

Work on the new railway through the northern part of the Annapolis Valley has begun and the value of farms in Kings County will naturally increase.

Arrangements have been made for the Hants, Kings, and Annapolis Exhibition to take place at Windsor on October 5, 6 and 7, 1910.

Under the auspices of the King's County Farmers' Association, Mr. W. H. Woodworth, assisted by Mr. McRae of Ottawa, have been touring the country in the interests of better agriculture. Mr. Woodworth usually spoke upon fruit growing, general orcharding and commercial fertilizers. At Berwick the afternoon and evening meetings were well attended. At the latter meeting the Berwick Brass Band kindly furnished music, and Miss Eunice Watts gave an address on "Dwarf Fruit Trees." Mr. McRae, who has travelled extensively, said that Nova Scotians did not appreciate their own country enough and that they got their living too easily; and, comparing the fruit farms of the Annapolis Valley with those celebrated fruit regions in the west, he could not see where the westerner had any advantage over the Nova Scotian. If the real estate men would write up our province as they did those of the west, we would not know our own farms.

Montreal

E. H. Wartman, Dominion Fruit Inspector

While attending orchard meetings in the county of Huntingdon, Que., for one week last month, many things struck me while driving from one township to another as being of great importance. First, to know to what extent maple sugar and syrup are made. One said he made 700 gallons in one season. It is quite a common thing for one person to tap from 2000 to 3000 trees. These trees are of the largest and healthiest type. One firm had his posters all over the country wanting to buy 60,000 gallons of pure maple syrup. I think it was available at around 80 cents a gallon.

Apple orchards you would see planted among the rocks and at a glance you would think it all rock. One would wonder where the trees could get rooted. Some have thrown wagon loads of earth among the rocks so as to be able to plant their trees which have done well, bearing heavy crops. One farm, I am told, has seven miles of stone fence. I saw several miles from the main road. Wherever soil is found between these rocks it is of good quality and pro-

NURSERY STOCK

Norway Spruce and Evergreens

5 Cents up

Flowering Shrubs, Shade, Fruit, Ornamental Trees, Rose Bushes, Plants.

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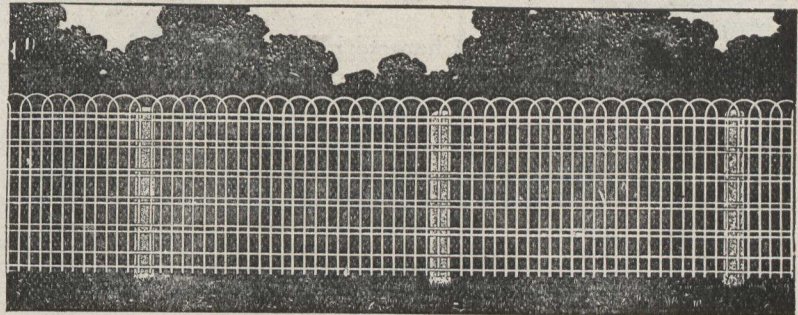
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We can save you money on your Strawberry Plants. First-class, vigorous, well-rooted stock. Fresh dug, true to name, well-tested varieties, grown from selected mother plants including Williams, Dunlop, Excelsior, Parsons' Beauty and Good Luck.

Prices \$2.50 to \$4.00 per 1000

Our 1910 price list tells all about them. Send for it to-day

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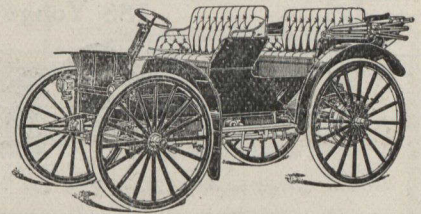
I H C AUTO BUGGIES
For Business and Pleasure

YOU will find the I H C Auto Buggy the ideal vehicle for your use. It is the most simple car to operate, can be used by your wife or children with perfect safety—and when you want to make a hurried trip to town or to your neighbors—it is always ready.

The cost of oil and gasoline to operate an I H C Buggy is less than the cost of keeping one horse. It can be used when you would not dare to take a horse out and it never gets tired.

With an I H C Auto Buggy you can travel from one to twenty miles an hour over hills, through mud, snow—over any roads.

When you buy, get the car that has proved to be most—



Practical—Economical—Serviceable—

The one with the High Wheels and Solid Tires. You will find it the easiest riding and you will never have "tire troubles." A large wheel rolls over a bump or rut. A small wheel jumps over it. With solid tires you will never be delayed by punctures or blow-outs and you will save many dollars through not having to repair and replace worn-out tires. Solid tires are easiest on the roads. They do not flatten out and loosen dirt and gravel like inflated tires do.

There are many other advantages of the I H C Buggies that you ought to know about. They have full elliptic springs (36 in. long by 1 3/8 in. wide) and a long base, insuring easy-riding qualities. The International Auto-Wagon has the same features of construction as the Auto Buggy and is a thoroughly reliable car for light delivery wagon purposes.

Ask your dealer to tell you all the facts, or, if your prefer write the International Harvester Company of America at nearest branch house for further information. Do it now—it's the first step toward obtaining the most satisfactory, money-saving conveyance for business or pleasure.

CANADIAN BRANCHES: Brandon, Calgary, Edmonton, Hamilton, London, Montreal, Ottawa, Regina, Saskatoon, St. John, Winnipeg, Yorkton.

INTERNATIONAL HARVESTER COMPANY OF AMERICA CHICAGO USA
(Incorporated)



duces heavy crops of potatoes, which sell at 18 cents a bag of 80 pounds.

I stopped at the home of Mr. Parkham,

Cherry Lodge. His orchard is about 50 acres in extent, with many varieties, which are mostly Fameuse type. This would be a

grand sight in picking time, as all the trees are of a healthy kind that would produce the best fruit. One old veteran tree near the house has been traced back over 100 years, and it is a remarkable tree in many ways. Generally trees of this age are delimbed and poorly balanced at the tops, but the top of this tree is a beautiful shape. It has a capacity of 10 barrels, which are said to look like the Spy apple. They are good keepers. Its girth one foot above ground is over eight feet. Cherry trees, pear trees and plum trees are of the healthiest kinds. People in this section are beginning to find out that the fruit crop is worthy of their best attention. I am looking for great things in apple production in this county during the next 10 years.

Winnipeg Geo Batho

It is a little hard to know where we are at horticulturally just at the moment of writing. Up till three days ago we had an exceptionally fine spring, and on April 13 the maples and elms had nicely come into flower, just a little better than a month ahead of what they were a year ago. Trees and shrubs generally were rapidly opening their leaf buds. But alas for our too sanguine expectations! The mercury has gone down to 16 above zero this morning (April 16), and we are having a disagreeable snow storm. It is quite likely that the seed crop will be lost on the more advanced of the forest trees, but it seems hardly likely that the fruit crop would be killed. If the buds are not already far enough along to receive damage, the setback will be of much benefit, as it will reduce the chances of destruction a little later on.

The Western Horticultural Society has been successful in getting through legislation changing its name to the Manitoba Horticultural and Forestry Association. In keeping with the latter part of its name, the Association has within the past two weeks had given under its auspices an illustrated lecture on the forests of Canada by Mr. Abram Knechtel of the Forestry Branch, Ottawa. Mr. Knechtel has been on a lecturing tour through the west. His colored lantern slides are exceedingly good.

The newly organized Winnipeg Horticultural Society is holding some good meetings, and promises to do much good in the city.

Renew your subscription now.

BEZZO'S FAMOUS ASTERS

Mikado, Purity, Daybreak, Lavender Gem, Vick's Branching Rose, White and Pink, Semple's Pink. The aristocrats of the Aster family.

PLANTS—Separate Colors, 15c. per dozen; Mixed Colors, 50c. per hundred, postpaid to any part of Canada. Please send remittance with order
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Rubber Stamps BRASS STENCILS, Etc.

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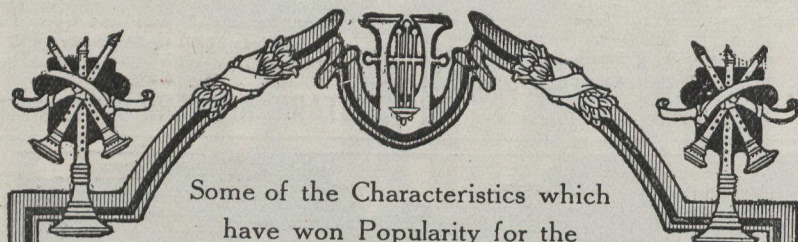
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ROSES, Shrubs and Climbers

I have these in large quantity and in fine condition, and rather than plant out will sell at a price to move them. Also most varieties of fruit trees.

Write for quick sale prices.

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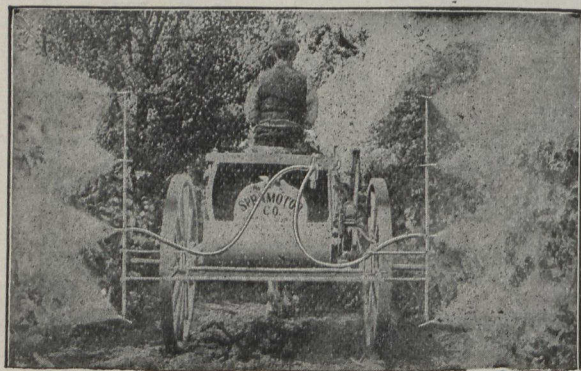
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Its Beautiful Singing Tone
Its Evenness of Scale
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Its Beauty of Design and
Its capacity to withstand hard usage
without becoming "Tinny."

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

Booklet Number Six contains the voluntary testimony of many of Canada's prominent musicians who have purchased Gourlay Pianos. Write for it.

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This picture shows the
Horse Power Spramotor spraying vineyard.

If stand pipe hits a post it folds back behind rig and rights itself, each side independently. Has auto. control for height, width and direction of nozzles. 12-gallon air chamber, nozzle protector.

The **Horse Power**

Spramotor can be rigged for potatoes, orchard or weed destruction. Send for free particulars and free Treatise on Crop Diseases. **Agents Wanted.**

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LIME-SULPHUR HYDROMETER**

As recommended by Prof. Stewart of Pa. State College of Agriculture and by the Ont. College of Agriculture; with Baume and Specific Gravity Scales. \$1.50 Postpaid.

PARKE & PARKE, Druggists - Hamilton

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For Spring Planting

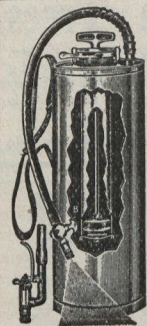
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AUTOMATIC
COMPRESSED-AIR
SPRAYER**

BEST HAND-SPRAYER MADE AT THE PRICE
READ THE FOLLOWING:

Winona, Ont.

"The Sprayer that I purchased from you last spring is a most valuable little machine. I have no hesitation in recommending it to anyone who requires an inexpensive and reliable spray pump. It is excellent, and I do not know of any other hand machine for the price that could do better work."

E. D. Smith, Ex-M.P.,
President Ont. Fruit Growers' Ass'n.

Apply to your dealer or drop us a card for Descriptive Circular.

CAVERS BROS., Manufacturers, Galt, Ont.

Summer Spraying For Peaches

Prof. John P. Stewart, State College, Pa.

For brown-rot, scab and curculio:

(1) When the calyces (or shucks) are shedding, lead arsenate, lime and water (2 2-40).

(2) About one month after petals drop. Use either (a) lead arsenate and self-boiled lime-sulphur, 2-8-8-40. Or (b) lime-sulphur solution, about 1.003, and arsenate of lime at the rate of about 1 pint to 40 gallons. (See Pa. Expt. Sta. Bul. 92 or 99 for preparation and dilution of materials in (b). Lead arsenate and lime, two pounds of each, may be substituted for the arsenite of lime, making the addition of the arsenical as late as possible).

(3) About one month before fruit ripens. Either (a) self-boiled lime-sulphur, 8-8-40; or (b) lime-sulphur solution, about 1.003.

Note.—Treatments 2b and 3b are experimental as yet, but are promising and desirable for their economy, convenience and freedom from stain on the fruit. 3b, for example, may prove to be usable up to two weeks before fruit-ripening. The solutions should be known to be free from salt or other harmful foreign materials. The main spraying should be done as indicated in 2a and 3a, with accompanying tests of the alternative treatment under similar conditions, for possible future use.

References.—For making self-boiled lime-sulphur, see Bulletin 174 or Circular 27 of the Bureau of Plant Industry, Washington, D. C. For making and diluting concentrated lime-sulphur, see Penn. Expt. Sta. Bul. 92 or 99.

The Best Seed Values.—Graham Bros., seedsmen, of Ottawa, are offering some splendid values in their 1910 spring catalogue. Among their special collections noted is a 50c collection of choice varieties of the standard flower seeds, worth ordinarily 90c. This collection alone will enable you to have a fine garden this year. Another special collection is 15 varieties of choice sweet peas for \$1.00. Graham Bros. also handle "Central Farm Lawn Grass," which is especially suitable for the Canadian climate.



The Real Canadian Girl

will never waste her money on imported table salt. She knows that right here in Canada, we have the best table salt in the world—

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The real Canadian girl, and her mother and grandmother too, know that Windsor Salt is unequalled for purity, flavor and brilliant, sparkling appearance.

WINDSOR Table SALT

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HURST SPRAYERS ON FREE TRIAL

**NO-MONEY-IN-ADVANCE.
PAY AFTER IT HAS PAID
FOR ITSELF.**

LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till you sell your crop, then you can pay us out of the "extra profit." We pay freight. Wholesale dealers' prices.



Man-Power Potato & Orchard Sprayer.
Sprays "anything"—potatoes or truck, 4 rows at a time. Also first-class tree sprayer. Vapor spray prevents blight, bugs, scab and rot from cutting your crop in half. High pressure from big wheel. Pushes easy. Spray arms adjust to any width or height of row. Cheap in price, light, strong and durable. **GUARANTEED FOR 5 FULL YEARS.** Needn't send-a-cent to get it "on trial." You can get one free if you are first in your locality. Write now.



Horse-Power Potato & Orchard Sprayer.
For big growers. Most powerful machine made. 60 to 100 gallon tank for one or two horses. Steel axle. One-piece-heavy-angle-iron frame, cypress wood tank with adjustable round iron hoops. Metal wheels. "Adjustable" spray arms and nozzles. Brass ball-valves, plunger, strainer, etc. Big pump gives vapor spray. **Warranted for 5 years.** Try this machine at our expense with "your money in your pocket." See free offer below. Write today.



Fitz-All Barrel Sprayer.
Fits any barrel or tank. High pressure, perfect agitation, easy to operate. Brass ball-valves, plunger, strainer, etc. Automatic strainer. No "cup leathers or rubber" about any of our sprayers. Furnished plain, mounted on barrel, or on wheels as shown. 5 year guarantee. It don't cost you "a cent" to try it in your orchard. Get one free. See below. Write today.

FREE—Get a sprayer FREE.—After you have tried the sprayer and are satisfied that it is just as we recommend it, send us a list of the names of your Neighbors and we will write them and quote them price and have them call and see your machine work, and for every Fitz-ALL Sprayer we sell from your list we will credit you with \$2.00 or send you check if you have paid cash.
For every Man-Power Potato & Orchard Sprayer we sell we will credit you with \$3.50 or send check.
For every Horse-Power Potato & Orchard Sprayer we sell will credit you \$8.50 or send check.
We do all corresponding and selling. All you need do is show the sprayer. Many have paid for their sprayers in this way. This offer is good for only the first order in each locality. Don't delay. Send the coupon or post card NOW.
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COUPON—Fill out and send today. This Coupon will not appear again.
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Send me your Catalog, Spraying Guide, and "special offer" on the sprayer marked with an X below.
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AGENTS OR SALESMEN WANTED for the best selling article on the market for farmers or fruit growers; big profits.—The Collins Mfg. Co., Toronto.

PIPE FOR SALE.—All sizes for steam, hot water heating, posts, green house construction work, etc., very cheap. Send for price list, stating your needs.—Imperial Waste and Metal Co., 7 Queen Street, Montreal.

FRUIT LANDS

FRUIT FARM WANTED for rent. Might purchase later.—Box S. Canadian Horticulturist.

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

OKANAGAN FRUIT LANDS grow prize-winning fruits, commanding top prices. Ten acres irrigated land assure independence and delightful home. Low prices; easy terms. Illustrated booklet.—Panton & Emsley, Vancouver, British Columbia.

FORT GEORGE, BRITISH COLUMBIA, Grand Trunk Pacific Railway terminal. Centre richest farming area. Banks, business establishments, already purchasers—lots \$150 up; ¼ cash. Farm lands also.—Northern Development Co., Vancouver, B. C.

BRITISH COLUMBIA FARM LANDS.—80,000 acres on Grand Trunk Pacific Railway. Fort George District—retail or en bloc. Rich soil, ideal climate, easy terms.—The Mercantile Trust Co., Ltd., Vancouver, B. C.

BRITISH COLUMBIA—Fort George lands—50,000 acres fertile wheat and mixed farming lands. Send for photographs and surveyors' reports.—The Wright Investment Co., Dominion Trust Building, Vancouver, B. C., Canada.

IF YOU WANT to buy a good fruit farm, read the advertisements in this column. If you have a fruit farm you wish to sell, tell our readers about it in The Canadian Horticulturist.

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

GROW APPLES AND GROW RICH — 10 acres in British Columbia's finest fruit growing district will support a family in comfort. Prize fruit, enormous crops, high prices, big profits—\$200 to \$500 per acre. Established settlement, no isolation, plenty good neighbors, best transportation, good markets, grand scenery, hunting, fishing, shooting; school, church, stores, post office, hotel; daily trains. Splendid climate; fine summers, mild winters; high winds and low temperatures unknown. Prices right. Easy terms. Proofs, plans, particulars.—Fruitvale Limited, Land Dept., Nelson, B. C.

USE FOSTER'S POTS

THEY ARE THE BEST ON THE MARKET



WE MANUFACTURE
STANDARD POTS
FERN PANS
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SAUCERS AND
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Canada's Leading Pot Manufacturers

The FOSTER POTTERY CO., Limited

Main St. West, Hamilton, Ont.

Mention The Canadian Horticulturist when writing

COMING EVENTS

Under this heading, notices of forthcoming exhibitions and meetings of horticultural importance will be published. Send the information as long in advance as possible.

- Calgary, Alberta Provincial..June 30-July 7
- Charlottetown, P. E. I. Provincial.....Sept. 20-24.
- Halifax, N. S., Provincial...Sept. 28-Oct. 6.
- London, Eng., Royal Horticultural Show (for colonial-grown fruit and vegetables).....Dec. 1-3.
- London, Ont., Western Fair....Sept. 9-17.
- New Westminster, B. C., Provincial.....Oct. 4-8.
- Ottawa, Central Canada.....Sept. 9-17
- Regina, Sask., Provincial.....Aug. 2-5.
- Sherbrooke, Quebec Pomological Society (Summer Meeting)Aug. 30-Sept. 1.
- Sherbrooke, Que., Great Eastern.....Aug. 27-Sept. 3.
- St. John, N. B., Dominion Exhibition....Sept. 5-15.
- Toronto, Canadian National.....Aug. 27-Sept 12.
- Toronto, Ontario Horticultural...Nov. 15-19.
- VancouverAug 15-20.
- Victoria, B. C.Sept. 27-Oct. 1.
- Winnipeg, Industrial July 13-23.

The American Civic Association will hold its second annual conference on city planning at Rochester, N. Y., on May 2 to 4. An excellent program has been arranged.

Get some of your spring seeds and plants free of cost. See THE CANADIAN HORTICULTURIST Premium Collections on another page of this issue. The offer is open only until May 15.

Early last month Mr. E. D. Smith, ex-M.P., Winona, Ont., appeared before the board of railway commissioners at Ottawa and discussed express rates on fruits to Winnipeg and the maritime provinces. He asked for lower rates on fruit to Montreal to encourage the export trade. Mr. Smith was convinced that a profitable trade in peaches could be worked up with the English firms if lower rates to Montreal were obtainable.

Potato Culture.—An interesting and valuable work on "Potato Culture" is issued by the Aspinwall Mfg. Co. It includes articles on the preparation of the soil, selection of seed, how deep to plant, distance apart to plant, harvesting the crop, profits per acre. A free copy of this book may be secured by writing to the above company at Guelph, Ont., or at Jackson, Mich., and mentioning this paper. If you request it, they will also mail you a copy of their latest catalog.

Spraying outfits that have caused considerable favorable comment among practical farmers and fruit growers are the I. H. C.

Famous line. Besides their wonderfully efficient spraying qualities, the engine can easily be detached and used for regular farm work. This feature alone has induced thousands of farmers to decide on an I. H. C. spraying outfit. Ask the local International agent about the I. H. C. Famous line of spraying outfits, or drop a line direct to the International Harvester Company of America, Chicago, U. S. A., for catalog and any definite information you desire.

EASTLAKE STEEL SHINGLES
WRITE FOR PRICES
METALLIC ROOFING CO. LIMITED
TORONTO, CANADA.

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.
J. H. WISMER, Nurseryman. Port Elgin, Ontario

KODAKS
Sixty-four page Illustrated Catalogue showing the scores of styles and sizes, free at the dealers, or by mail.
CANADIAN KODAK CO. LIMITED
TORONTO, CANADA
Anybody can Kodak

'The "BACON" Seed Drills and Cultivators
The only Rear-Wheel Driven Seed Drill on the market. The feed in the "Bacon" handles seed without bruising or breaking, and seeds evenly to the last seed. Machine instantly converted from a regular seed sower into a hill dropper. Feed Cut prevents waste of seed when turning rows.
For sowing Sugar Beets, Parsnips, Radishes, Carrots, Onions, etc., the 1908 model of the "Bacon" is unequalled for strength, lightness, easy running and good work. Write for our complete catalogues.
THE EUREKA PLANTER CO. Limited
Woodstock, Ont. 2

O.K. Canadian 4 Row Sprayer
Sprays 4 rows while you drive, no hand pumping to do. Wheels and nozzles adjustable for wide and narrow rows. Can be adjusted to spray vines 6 inches to 2½ feet high. Can be furnished with Broad Cast vineyard and tree spraying attachments
Write for particulars.
Canadian Potato Machinery Co., Ltd. 124 STONE ROAD, GALT, ONT.

To Amend Fruit Marks Act

At a meeting of fruit growers that was held at Goderich, Ontario, on March 30, it was unanimously resolved that a committee, there appointed, be instructed to interview the Dominion member for West Huron, Mr. E. N. Lewis, M.P., with a view to soliciting his influence in having the Inspection and Sales Act amended along the following lines:

"1. That a certain size should be definitely stated in the Act for each variety of apple, and also for each grade No. 1.

"2. That the inspection of a car of apples by a legally-appointed government inspector in the first place should suffice, and result in the issuance of a certificate rendering all further inspection anywhere unnecessary, provided he finds apples all right and conforming to grade marked on barrel."

[Note.—It is quite possible that if the fruit men of the country would take 25 or 30 of the principal varieties and agree upon a size that would be a "medium" and "small" for each variety (which could be easily done), this amendment might be an improvement. It would certainly make the Fruit Marks Act definite where now it is a matter of personal interpretation of the meaning of the words, "medium," "nearly medium" and "small."

The suggestion that one inspection should suffice is not workable. Even were it possible to inspect all shipments at the starting points, which it is not, as an army of inspectors would be required, the issuance of a certificate guaranteeing against further inspection, would afford opportunities for tampering with the grade marks by dishonest shippers.

The inspection at the point of shipment

and the issuance of a certificate is liable to very grave abuses. It would be necessary for the Departmental officers to take possession of the fruit as soon as it was examined and retain possession until it could be delivered. Otherwise, there would be every probability of the grade marks being changed or other fruit substituted. Besides this, under the present system of packing the apples in the orchard, a carload consists of the work of many different packers without any common supervision or control. This would make it very difficult to pronounce upon a car so as to be able to issue a certificate guaranteeing every barrel.—
Editor.]

The nomenclature committee of the Ontario Horticultural Association plans to present to the next convention of that association lists of four flowers on lines similar to the lists presented at the last convention. A list of 18 cannas will be compiled and described by Mr. Roderick Cameron, superintendent of parks, Toronto; 12 lilies, Mr. W. T. Macoun, horticulturist, Central Experimental Farm, Ottawa; 20 peonies, J. Cavers, Oakville, Ont.; 30 roses, Prof. H. L. Hutt and Mr Wm. Hunt of the Ontario Agricultural College.

The Ontario Agricultural and Experimental Union is doing valuable work this year with schools. A free distribution of seeds and forest tree seedlings is being made to schools having school gardens. The direction of the work is in the hands of Prof. S. B. McCreedy, O. A. C., Guelph. School boards and teachers should communicate with the professor for further information. This work deserves great encouragement.

China ASTER Plants

From Best Seed

Queen of the Market, white, early
Queen of the Market, pink, early

15c per dozen; 40c per hundred, postpaid

Lavender Gem, early
Royal Purple, medium early
Vick's Branching, white, late
Crego, a fine late pink

15c per dozen; 50c per hundred, postpaid

Packed to go safely anywhere in Canada
East of Rockies by Mail

May be planted with good results until 15th June
Not less than 25 of one variety at 100 rates
Orders received now will be filled in latter part of
May and in early June

Please send Postal Note with order

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Electric Insect Exterminator

The only practical dry powder sprayer—no water required. With this sprayer, one pound of Paris Green will cover an acre of potato plants. Our patented device regulates the quantity of powder and prevents waste. Machine works up, down and sideways, so every part of the plant is reached and every bug killed. Children can keep out trouble, when you have the Electric Insect Exterminator.

Illustrated catalogue of Sprayers, Seeders, Planters, Drills, Wagon Boxes, etc., sent free on application. The Eureka Planter Co., Limited, Woodstock, Ont.

Peerless Jr. Poultry Fence

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

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.

Saves Expense



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
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WINNIPEG, MAN. HAMILTON, ONT.

Fertilize Your Lands



DO YOU KNOW

THAT WORN-OUT LANDS MAY BE MADE PRODUCTIVE AND PROFITABLE BY THE JUDICIOUS USE OF THE RIGHT KIND OF FERTILIZER?

NOW IF YOU HAVE A PIECE OF LAND THAT WONT GROW ANYTHING BUT WEEDS, TALK WITH US ABOUT IT AND LET US SUGGEST

THE RIGHT FERTILIZER

WE FEEL VERY SURE THAT WE CAN SHOW YOU HOW TO USE FERTILIZERS WITHOUT GREAT EXPENSE SO YOUR LAND WILL PAY

CONSULT US FREELY IT IS OUR BUSINESS TO KNOW ENQUIRIES FREELY ANSWERED AGENTS WANTED FOR TERRITORY NOT TAKEN UP THE W.A. FREEMAN CO. LIMITED HAMILTON ONTARIO

AGENTS WANTED FOR LYTLE'S

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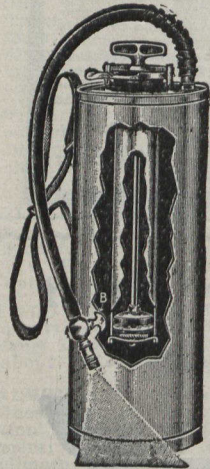
In 10, 50, and 100 lb. Kegs

**WEED-KILLERS
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Full Particulars on Application

BOUNDARY CHEMICAL CO., LTD.
Cranmer St., LIVERPOOL, ENG.

SPRAY



For More and Better Fruits and Vegetables

No careful, experienced gardener omits a good sprayer from his equipment. The garden and field crops, fruits and vines must be protected from the ravages of insects and plant diseases.

Keep Things Growing

—follow the example of practically all the Government and State Experiment Stations, and 300,000 Gardeners, Farmers and Fruit Growers, and use one of

Brown's Hand or Power Auto-Sprays

AUTO-SPRAY No. 1

Handpower, capacity, 4 gallons; is just the thing for all-round work for small orchards or field crops up to 6 acres. Fitted with the Auto-Pop Nozzle, this Sprayer does more work and does it better than three ordinary sprayers. It is the best machine obtainable for whitewashing and disinfecting poultry-houses and stables.

OUR TRACTION POWER outfits, for large orchard work, are superior to all other power sprayers because most simple, dependable and sustaining greatest pressure. No expert or experienced help is needed to operate them. Power costs nothing. Fitted with Non-Clog Automatic Nozzle.

Write for Free Book and Valuable Spraying Guide

Let us send you our book and the spraying guide, compiled by Prof. Slingerland, of Cornell University College of Agriculture. Let us prove that we are headquarters for the sprayer that will produce the most profitable results for you.

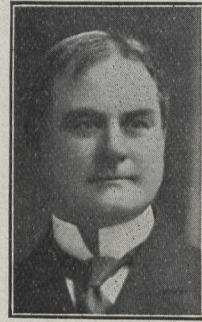
**EVERY AUTO-
SPRAY IS
GUARANTEED
TO SATISFY**



The E. C. BROWN CO.
57 JAY ST., - ROCHESTER, N.Y.

Ontario Horticultural Exhibition

The annual meeting of the officers of Ontario Horticultural Exhibition was held in Toronto on March 30. The treasurer, Mr.



President Frankland

J. H. Dunlop of Toronto, reported that the last exhibition had been a success financially and that there was a balance of \$90 on hand. It was decided to hold the next exhibition in the St. Lawrence Arena, Toronto, during the week of November 14, 1910. The prize list will include \$1,225 in prizes for fruit, \$1,500 for flowers and \$425 for vegetables and \$300 for honey, a total of \$3,450.

The election of officers resulted as follows: Pres., H. R. Frankland, Toronto; 1st vice-pres., W. Couse, Streetsville; 2nd vice-pres., Thos. Manton, Eglinton; sec., P. W. Hodgetts, Toronto; treas., J. H. Dunlop, Toronto. The executive committee consists of the officers and Messrs. R. W. King, E. F. Collins, H. G. Sibbald, W. Jay and T. Delworth. The chairmen and secretaries of the various committees were appointed as follows: Floral—Chairman, W. Jay; sec., E. F. Collins. Honey—Chairman, H. G. Sibbald; sec., P. W. Hodgetts. Fruit—Chairman, W. H. Bunting; sec., P. W. Hodgetts. Vegetables—Chairman, T. Delworth; sec., F. F. Reeves. The chairmen of the sub-committees will be members of the executive committee.

Mothers' Day

Two years ago a movement was started in Philadelphia to observe the second Sunday in May each year as "Mothers' Day." The idea was taken up with enthusiasm and the movement spread throughout a large part of the United States. It reached Canada last year and was celebrated in London, Ont. This year the idea has spread throughout our land, and it is expected that "Mothers' Day" will be observed in many places in Canada on Sunday, May 8.

The object of the movement is to set apart one day each year for honoring with special fervour and sentiment "the best mother that ever lived"—your mother. To show such honor and sentiment in a material way, the plan is to induce all persons to send boxes of flowers to their mothers and to wear a white flower in her memory. A white flower is the emblem, especially carnations. The sick in hospitals, unfortunates everywhere and the aged also should not be forgotten.

EUREKA Glass Tank Sprayer



Solution tank is a quart Crown glass jar. If broken, it can be easily replaced

for a few cents. Solution tubes are brass. None of the liquid used can be drawn back into the pump chamber, thus the chamber and valves are uninjured.

This is the easiest operated and the most effective small sprayer on the market. Inquire of your hardware dealer.

Write for our complete catalogue of Sprayers and Garden Tools.

THE EUREKA PLANTER CO. LIMITED

Woodstock - Ont. 6

A New Straw Hat For A Trifle

That's all it costs to make your last year's hat fashionable and bright as new, with

Anchor Straw Hat Enamel

—not a watery dye or stain— but genuine enamel that colors and waterproofs the straw. With this unique preparation, you can have your straw hat to match your summer costume.

In all popular colors, from champagne to black.

Your dealer has Anchor Straw Hat Enamel or will get it for you or send to

**BRANDRAM-HENDERSON,
LIMITED.**

MONTREAL, HALIFAX, ST. JOHN,
TORONTO, WINNIPEG. 52

The "Bissell" Garden Disk Harrow cuts clean and stays down to its work. You can close it up small enough to pass between vines and berry bushes—extend it out to go under limbs of fruit trees. A reversible Harrow. Can be used as "In-throw" or "Out-throw." Adjustable pole and shafts allow it to be used with single horse or team. High or low seat—strong, well-braced, light draught. Write Dept. N for particulars or inquire of nearest agent.

T. E. Bissell Co. Ltd.
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**"The
Bissell"** 

A New or Kendall's Horse Spavin Cure?



Warren, Ont.
Feb. 11th.

"I had a horse that had a Spavin for a long time and I had tried nearly every kind of medicine when a neighbor told me to use Kendall's Spavin Cure, which I did and it acted wonderfully."

M. ROSENTHAL,

Kendall's Spavin Cure is no untried experiment, but is the world's standard remedy for all Swellings, Soft Bunches and Lameness in horse and man.

Used the world over for 40 years.

Every farmer, stockman, expressman, livery proprietor and horse owner generally should keep it always on hand.

\$1. a bottle—6 for \$5. Ask your dealer for free copy of our book "A Treatise On The Horse"—or write us

**DR. B. J. KENDALL CO. 56
Enosburg Falls, - Vermont.**

A Wonderful Washer



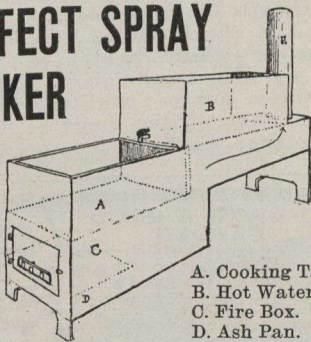
Momentum Balance, Wheel working on ball bearing, keeps the "Champion" Washing going with very little effort.

A new idea in washing Machines. "Favorite" Churn means easy churning. 8 sizes.

If your dealer does not handle them, write us for booklets and name of dealer near you who does.

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

PERFECT SPRAY COOKER



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

Furnace made of heavy sheet steel—large fire door—large ash pit and door. Notice double tanks, one for boiling water, the other for cooking spray—heated by one fire—very economical on fuel. Tanks made of heavy galvanized steel.

THE STEEL TROUGH & MACHINE CO. TWEEED, ONT. LIMITED

SEED POTATOES

EXTRA FIRST EARLY Victor.

FIRST EARLY.

Express, Early Rose, and Bovee.

SECOND EARLY

Duchess of Cornwall, and Ideal.

MAIN CROP

Windsor Castle, Eldorado, Delaware, Rural New Yorker, Carman No. 3, Goodfellow, Sir Walter Raleigh, Up-to-Date.

All from seed imported last season, from England, Scotland and United States.

LOW PRICES. Address

W. P. NILES

SEEDSMAN - WELLINGTON, ONT.

Eradication of Dandelions

Dandelions have become quite a source of annoyance, especially to city and suburban residents. Lawns have become so infested with these pests that they have lost their beauty and attractiveness. Tests were made by the Wisconsin Agricultural Experiment station, (Bull. No. 179) to determine if it is feasible to eradicate these pests by the use of the iron sulphate solution. For this test the solution was made by using one-fifth iron sulphate and four-fifths water by weight. Dandelions were sprayed in the morning after the dew had disappeared and the day promised fair. On the lawns the hand sprayer or sprinkling can with fine nozzle was used, and the field sprayer was used on large grass plots.

The first spraying test seemed to eradicate the larger portion of the dandelion in the lawns. The more persistent plants that revived after the spraying were sprinkled with dry iron sulphate in the evening three days after the lawns were sprayed. This application killed nearly all the remaining plants. The spraying had no detrimental effect upon the lawn grass. It was discolored to some extent, but soon regained its natural color and was as vigorous as ever. Since the iron sulphate solution will discolor cement walks and light colored clothing, care should be exercised in its use.

The field tests for the eradication of dandelions were not so successful as the lawn tests, owing, probably, to the fact that a dense growth of grass prevented the plants in the field from receiving the proper amount of the spray. Where the field sprayer was used the plants did not receive as liberal application of solution as did the plants on the lawn that were treated with hand sprayer or sprinkling can. The field dandelions were prevented from blossoming and seeding, and part of the plants were killed by the treatment.

Fruit growers who are thinking of buying an automobile should consider a number of points carefully. You need a car that you cannot only drive yourself, but one that you can safely trust to any member of the family. An excessively high powered machine must of necessity stand idle a great part of the time because there is no one capable of driving it. At the same time you need a car that has plenty of power for every possible need, that is, thoroughly reliable, that has made a record for itself in every-day use, and that is high class in style and construction. It will pay you to see the local International dealers and ask them about the I. H. C. auto buggy, or write a post card direct to the International Harvester Company of America, Chicago, U. S. A., and ask for a copy of their interesting catalog.



BUILT IN SIZES FOR ONE, TWO AND THREE HORSES



This is a cut of the **Soramotor Nozzle**, fig. 56, made to apply Lime-Sulphur mixture and whitewash.

In brass or aluminum with brass or steel removable discs.

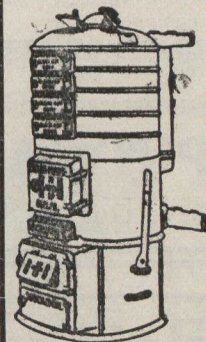
It has large liquid ways which prevent clogging. Gives the most perfect form of spray.

It has no equal. Guaranteed. Price, by mail, \$1.00. Send for Free Treatise on Crop Diseases.

HEARD SPRAMOTOR CO.
1397 King St., London

TAYLOR-FORBES

"SOVEREIGN" HOT WATER BOILER



'Sovereign' Hot Water Boiler

FOR HOMES AND HOT HOUSES

This is the Boiler with the **LARGER FIRST SECTION**

and several other Coal Saving, Heat Increasing improvements not found in any other make of Boiler.

Our new booklet will interest you; "The Dictionary of Heating."

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**A HOUSE, BARN
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Send us your List of Rough or Dressed Lumber, Lath, Doors, Sash or anything you may require in Woodwork for Building Construction and we will quote you promptly.

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Capital Paid-up. . . 5,000,000.00

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**Branches and Agencies throughout
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Drafts, Money Orders and Letters of Credit
issued available in any part of the world
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Savings Department—Interest allowed on deposits from date of deposit.

New Brunswick

By "Robin Hood"

Mr. A. G. Turney, the provincial horticulturist, has to date visited nine of the illustration orchards. On these visits general meetings have been held and the orchards pruned. In addition to this work, three large meetings have been held in the best apple sections of Albert county, at which practical demonstrations of trimming up old orchards, spraying, pruning young trees and selecting nursery stock were held. These meetings were all well attended, and the intention of the people to take hold of fruit-growing is evidenced in the placing of several spraying outfits.

According to Mr. J. C. Gilman of Fredericton, the past winter was not a hard one on fruit. The present outlook is favorable for a good crop of apples and berries. For the district around Shediac, Mr. H. B. Steeves reports that fruit trees and bushes came through the winter well and fruit buds are plentiful enough for good crops.

The Prince Edward Island Co-operative Fruit Co. has received returns for the shipment of Ben Davis apples sent to Great Britain in March. Although some of the apples arrived in bad condition, the net return to the growers is about \$2 a barrel.

In March the fruit dealers of Winnipeg petitioned the Dominion government to abrogate the tariff on fruits during certain months of the year. Contra-petitions were sent to Ottawa by the fruit growers of Ontario and in the House of Commons various members called attention to the injustice of the Winnipeg request. The Hon. Mr. Fielding, finance minister, stated in the House that nothing would be done this session to alter the tariff.

ASPINWALL

MACHINES are designed for Great Efficiency, Economy and Speed

Light of Draft. Strong and Simple in construction.

Double Cylinder, High-Pressure

FOUR ROW SPRAYER insures protection to your Potatoes, Strawberries, Beans, Cabbage, etc. and when equipped with

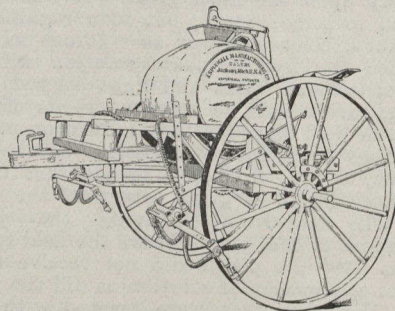
ORCHARD and BROADCAST ATTACHMENTS also assures you a good fruit crop and grain fields free of all pests.

Write for our Special Sprayer Circular A 3.

ASPINWALL MFG. CO.

Canadian Factory, Guelph, Ont.

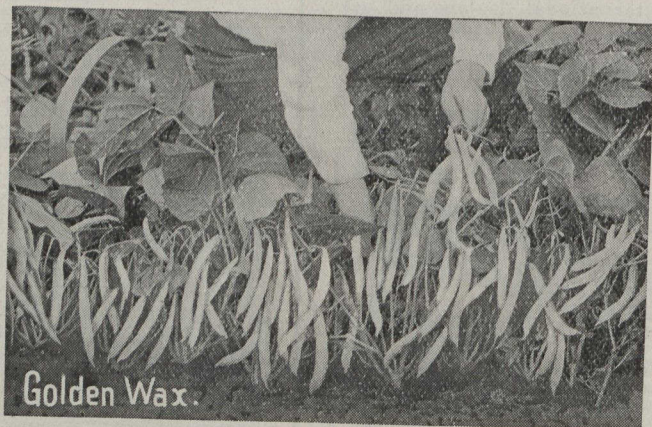
Jackson, Michigan



Steele, Briggs Quality Seeds

Ours, the largest seed business in Canada has been built up on selling only the Highest Quality Seeds, etc.

All our seeds are grown by experts. They are critically tested and none but fresh, pure and clean seeds of the highest germination are placed in the packages bearing our name.



Golden Wax.

Our seeds are sold by thousands of dealers in all parts of Canada. "Look for the Steel Briggs Box"

Steele, Briggs Seed Co., Limited

TORONTO, HAMILTON AND WINNIPEG

TO GROW A GOOD GARDEN

good cultivation is absolutely necessary, but it can't be done with poor tools. Here's an **Iron Age Tool** especially made for garden work. It not only does good work, but it is easy to operate. The boys and girls can do the gardening and produce big crops, if you'll equip them with **Iron Age Tools**. Send to day for our **Free** catalog.

SAVE HIRED HELP

Only One of Many Iron Age Tools

No. 1 Double or Single Wheel Hoe

IRON AGE



BATEMAN MFG. CO., Box 516-G GRENLOCH, N. J.

For Spraying

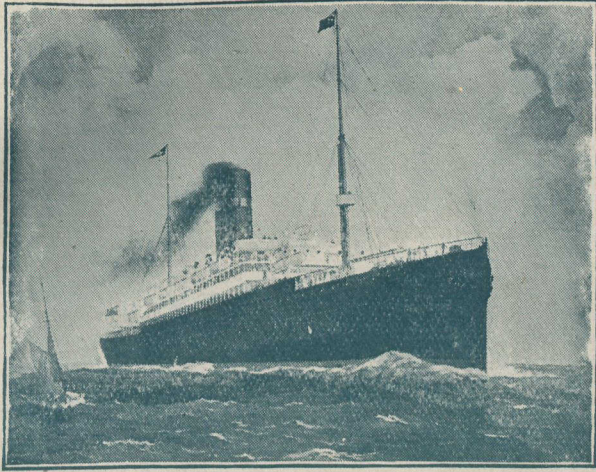
Fruit Trees, Shrubs, Bushes and Plants, there's nothing to equal



EUREKA

COMPRESSED AIR, FOUNTAIN SPRAYER

Requires but one pumping to empty entire contents of tank. Automatic lever valve stops flow of liquid while going from one plant to another. Easy, light, compact; tested to stand 5 times the pressure required to expel liquid. Two nozzles, with hose attachment for spraying small trees. Write for catalogue. 1 THE EUREKA PLANTER CO. Limited, - Woodstock, Ont.



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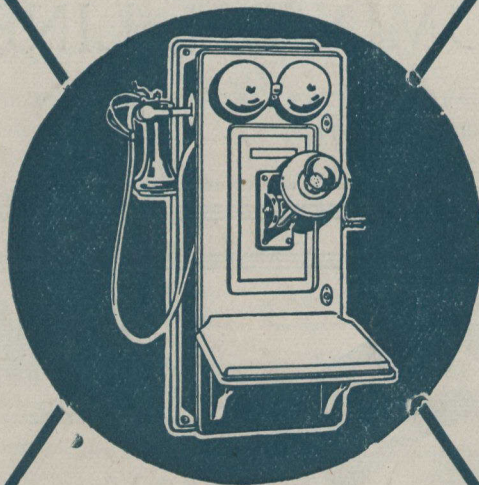
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