

THE CANADIAN HORTICULTURIST

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PETERBORO, ONTARIO

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THE ONLY HORTICULTURAL MAGAZINE IN CANADA
FOR FRUITGROWERS, MARKET GARDENERS & AMATEUR HORTICULTURISTS
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ARTIFICIAL FERTILIZERS ; Their Nature and Use

By **B. Leslie Emslie, F. C. S., C. D. A.**

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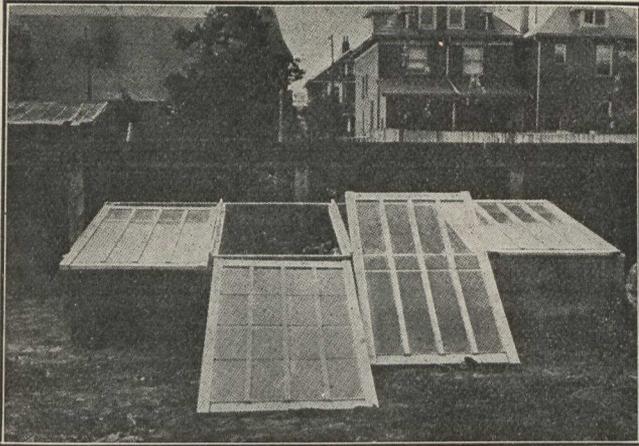
Some soils, also, which analysed high in phosphoric acid, were found to respond readily to an artificial application of an available phosphatic fertilizer.

Now, while a general chemical analysis will show the total amounts of plant food in the soil, it does not indicate what proportions are available to the plant, so that the quickest way to find out the manurial requirements of a soil is to conduct fertilizer tests on the farm."

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ready to plant out as soon as the weather permits. Have a hot bed one season and you would not be without it for ten times its cost.

for the test shown in the illustration. The Sash was not damaged in any way and scarcely sagged under the heavy weight.



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A

Containing one packet each of the following most beautiful and useful flowers: Nasturtiums, dwarf mixed; Pansy, Giant Orchid flowered; Mixed Sweet Peas; Candytuft, Mignonette, Aster Mxd.; California Poppy, Marigold, Balsam, Morning Glory. If bought separately at regular prices would cost 70 cents, but will be mailed to you for 25 cents.

B

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C

Contains 10 separate packets of the Largest, Best and most Distinct Grandiflora Sweet Peas; worth 60 cents, for 25 cents.



D

Contains six Giant Orchid flowered Spencer Sweet Peas, in six separate packets; worth 80 cents for 25 cents.

E

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F

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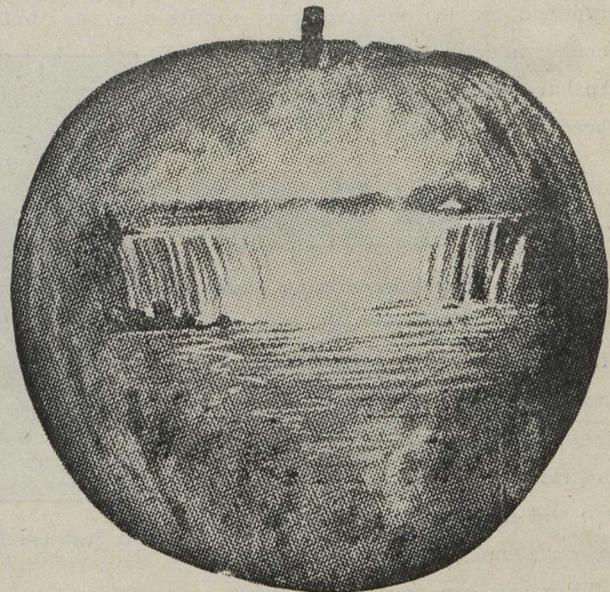
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It will not burn foliage. This is the highest grade of Arsenate of Lead in the world.

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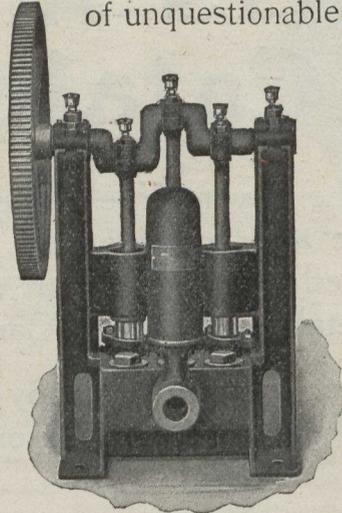
The latest improvement in Spraying. First Prize in the Agricultural Show in Paris last spring. One man can easily spray over trees up to 20 feet high. Light, strong, the structure being articulated, will lay horizontally for transportation. The tank will hold 45 gallons of mixture.

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The Last Word in High-Class, High Pressure Spraying Outfits

The Gilson Spraying Outfits are not make-shift botches, hastily designed by amateurs and thrown together. On the contrary, both pump and engine of Gilson outfits are the result of many years' experience by the foremost experts. This enables the fruit grower to secure at last what he has been seeking for years—a really correctly designed high-class outfit of unquestionable efficiency, and covered by an absolute guarantee.

The engine is specially designed for the pump. It is direct connected. No jack required. This makes the most compact as well as the lightest outfit, safety and durability considered.



The Triplex (3 cylinder) Pump carries smoothly any desired pressure up to 300 lbs. It is compact, close-coupled, strong. Absolutely guaranteed to be of the highest efficiency.



Don't let false economy lead you to buy a cheap or poorly constructed outfit. Our outfits may cost more than some others, but you will get full value many times over in satisfaction, comfort, and swelling profits year after year.

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5 Climbing Roses, value \$2.50.

- 1 Crimson Rambler.
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- 1 Lady Gay, delicate pink.
- 1 Veilchenblau, blue Rambler.
- 1 Tausendschon, rosy carmine.

5 Baby Ramblers, value \$1.25.

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- 1 White Pet, White Baby Rambler.
- 1 Mrs. W. Outbush, Baby Dor. Perkins.
- 1 Perle des Rouges, Velvety Crimson.
- 1 Mosella, clear Yellow.

5 Hybrid Tea Roses, value \$1.25.

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- 1 Kaiserin Victoria, white.
- 1 Madame Testout, silvery rose.
- 1 Mamon Cochet, pink.
- 1 Le Progress, Golden Yellow.

5 Hybrid Perpetual Roses, value \$1.25

- 1 Frau Karl Druschkki, white.
- 1 General Jacqueminot, brilliant red.
- 1 Magna Charta, bright pink.
- 1 Ulrich Brunner, cherry red.
- 1 Julius Margottin, glossy pink.

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- 1 Deutzia, Pride of Rochester.
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- 1 Spirea Van Houttii.

The above splendid collection delivered to you direct from our Nurseries at less than a third of Tree Agent's prices. Catalogue on application.

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are alike to

Rex Customers

It is wise to adopt the best methods and Fruit Growers are entitled to the best money results if they use the most efficient methods. Wenatchee, Wash., with about the area of Prince Edward County, Ont., this year shipped **4539 Carloads** of Fancy Apples. There is a good reason—there is a man size **Rex Spray Factory** at Wenatchee in full working order. More **Rex Spray** is used in the districts where fancy fruit is grown, than all the other brands combined. Rex Sprays have set the standard of merit and quality and have maintained this standard through thick and thin and always made profits for the user of Rex Sprays. Northwestern apples have to stand a freight rate of \$1.25 per hundred weight (about \$2.25 per barrel) and still compete with eastern apples, and land values are all above \$1000 per acre. Our largest Rex Factory is in Ontario and we are prepared to give the best service and the Rex excellence in Ontario. We will make "Frost Proof" shipments **now** and have a guarantee of quality and permanency for you and **you can command** the element of success.

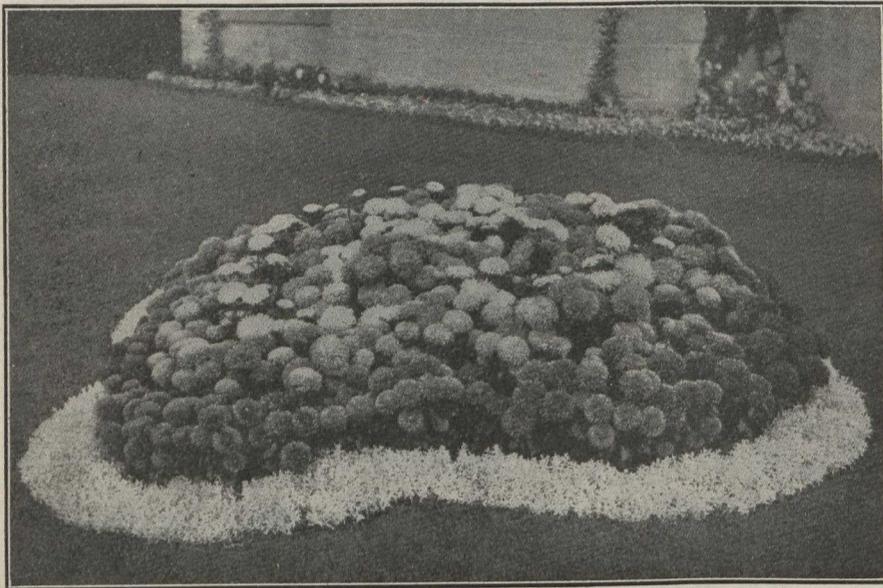
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BRIGHTON, ONTARIO, CANADA

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Select from the following List of Flower Seeds, 3 pkts., 15c; 12 for 50c. Postpaid.

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|--|-----------------------|
| Aster (Red, White, Blue or Mixed) | Petunia |
| Alyssum | Larkspur |
| Balsam | Morning Glory |
| Carnation | Marigold |
| Candytuft | Mignonette |
| Cosmos | Nicotiana |
| Daisy | Poppy |
| Hollyhock | Pansy |
| | Portulacca |
| | Sweet Peas |
| | Summer Cypress |
| | Salvia |
| | Verbena |
| | Zinnia |

Oz. pkts. any of the following, 15c each. Postpaid.

Morning Glory, Scarlet Runner Beans, Sweet Peas, Nasturtiums Tall, Nasturtiums Dwarf. Oz. pkts. any of the following, 35c each.

Alyssum, Candytuft, Poppy, Mignonette. Lawn Grasses, 30c per lb. Postpaid.

VEGETABLES:

| | | | |
|--|-----------|---------------|---------|
| Keith's Selected Salsify..... | 10c | Pkt. Postpaid | " 25c |
| " " Spinach | 5c | lb. | 60c |
| " " Spinach Beet | pkt. 10c, | oz. | 20c |
| " " Squash (for Winter) | 10c | " | 15c |
| " " Squash (for Summer) | 10c | " | 15c |
| " " Early Tomato | 10c | " | 25c |
| " " Turnip | 5c | " | 10c |
| Herbs, Dill, Thyme, Marjoram, Sage, Summer Savory, | | pkt. | 5c |
| Dutch Set Onions | | | 20c lb. |

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Canna—Red, Crimson, Pink, Yellow, Cream, 10c each.
 Tuberos-Rooted Begonias (Single), Yellow, Rose, Scarlet, Crimson, White and Orange, each 5c, doz. 50c.
 Tuberos-Rooted Begonias (Double), in separate colors as above, each 10c, doz. 85c.
 Caladium (Large Bulbs), each 15c.
 Gladioli, our best mixture,—Doz. 35c., per 100 \$2.50.
 Gladioli, good mixture—Doz. 25c., per 100 \$2.00.
Liliums, Auratum, Rubrum, Album, 20c each.
 Or One Each of the above for 50c, postpaid.

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Nitrate of Soda—No garden should be without it—
 10 lbs. and up to 50 at 5c lb. 100 lbs. or over at 3½c lb.
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Sulphate of Potash—
 10 lbs. and up to 50 at 5c lb. 100 lbs. or over at 4c lb.
Acid Phosphate—
 10 lbs. and up to 50 at 3c lb. 100 lbs. or over at 2½c lb.

| VEGETABLES: | | Pkt. | Postpaid |
|----------------------------------|-------|------|----------|
| Keith's Selected Wax Beans..... | 2 oz. | 10c | lb. 25c |
| " " Green Beans | 2 oz. | 10c | " 25c |
| " " Early Beet | .5c | oz. | 15c |
| " " Main Crop Beet | .5c | " | 15c |
| " " Early Cabbage | 10c | " | 25c |
| " " Late Cabbage | 10c | " | 25c |
| " " Carrot | 10c | " | 25c |
| " " Cauliflower | 25c | " | \$3.00 |
| " " Celery, Self-Blanching | 10c | " | \$1.00 |
| " " Early Corn | 2 oz. | 10c | lb. 25c |
| " " Late Corn | 2 oz. | 10c | " 25c |
| " " Cucumber | 10c | oz. | 15c |
| " " Cress | .5c | " | 15c |
| " " Egg Plant | 10c | " | 50c |
| " " Endive | .5c | " | 25c |
| " " Corn Salad | .5c | " | 25c |
| " " Kale | .5c | " | 25c |
| " " Kohl Rabi | .5c | " | 25c |
| " " Leek | 10c | " | 25c |
| " " Lettuce, (curled) | 10c | " | 25c |
| " " Lettuce (head) | 10c | " | 25c |
| " " Musk Melon | 10c | " | 25c |
| " " Onion, yellow | 10c | " | 20c |
| " " Onion, pickling | 10c | " | 20c |
| " " Early Peas | 2 oz. | 10c | lb. 50c |
| " " Medium Peas | 2 oz. | 10c | " 30c |
| " " Late Peas | 2 oz. | 10c | " 25c |
| " " Parsley | 10c | oz. | 15c |
| " " Pepper | 10c | " | 50c |
| " " Parsnip | 10c | " | 15c |
| " " Radish (round red) | 10c | " | 15c |
| " " Radish (long white) | 10c | " | 15c |

KEITH'S SELECTED SEEDS ARE SOLD DIRECT ONLY

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TORONTO, ONT.**

The Canadian Horticulturist

Contents for March

Delegates to the Dominion Fruit Conference,
Ottawa—Cover

Fruit and Fruit Growing

- Fertilizers for the Fruit Grower *A. Bonar Balfour* 57
- A Useful Bush Sleigh 58
- Refrigeration in Relation to Fruit Growing
J. A. Ruddick 59
- What Tests of Commercial Fertilizer Have Shown
R. Harcourt 60

Flowers and Flower Growing

- Canadian Gardens, (Article No. 3)
Miss M. E. Blacklock 61
- Vines for all Purposes *F. E. Buck* 63
- The Seed Catalogues *A. J. Elliott* 66
- Planning the Garden *E. I. Mepsted* 66
- Plants and Flowers for Shady Places *Wm. Hunt* 67

Vegetables

- Fertilizing and Starting the Celery Crop *A. McInnes* 68
- Hotbeds—Their Construction and Use *E.M. Straight* 68
- Fertilizers for Potatoes 69

General

- Editorials 70
- Publisher's Desk 71
- Society Notes 71
- The Third Dominion Fruit Conference 72
- Provincial Notes 80

INDEX TO ADVERTISEMENTS.

| | |
|---|--|
| Bank | xii |
| Cameras | xi |
| Classified Advertisements | xviii |
| Clubbing Offer | xv |
| Commission Merchants | 83 |
| Cream Separators | xv |
| Explosives | 81 |
| Fencing | 74, 84 |
| Fertilizers | ii, viii, ix, 73, 77, 80, xi, xiii, xv, xix |
| Flower Pots | 78 |
| Fruit Evaporators | 84 |
| Fruit Farms. | 76, xviii |
| Gasoline Engines | 80 |
| Greenhouse Material | x, 72, xix |
| Hot Bed Sash | iii |
| Implements and Tools | 74, 76, 84 |
| Incubators, | 76 |
| Iron Pipe | 84 |
| Ladders | 75 |
| Lamps | xviii |
| Manure Spreaders | 75 |
| Nursery Stock | ii, vi, ix, x, 72, 73, 75, 78, 83, xi, xiii, xv |
| Pruning Tools | 75, xi |
| Seeds, Bulbs and Plants | iv, v, viii, 73, 74, 76, 79, 81, 83, xii, xiii, xv, xvi, xvii, xviii |
| Spray Cookers | 75 |
| Spraying Preparations | iv, vii, 77, 79, xiii |
| Spraying Machines and Accessories, v, vi, 82, 84, xi, xii, xiii, xv, xvii | |
| Telephones | 76, xx |
| Toilet Preparations | 78 |
| Tree Protectors | x |
| Typewriters | xvii |

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Use damp, lumpy, acid Ammonia Fertilizers when you can buy Ammonia cheaper in

Cyanamid

and get your soil limed at the same time for nothing?

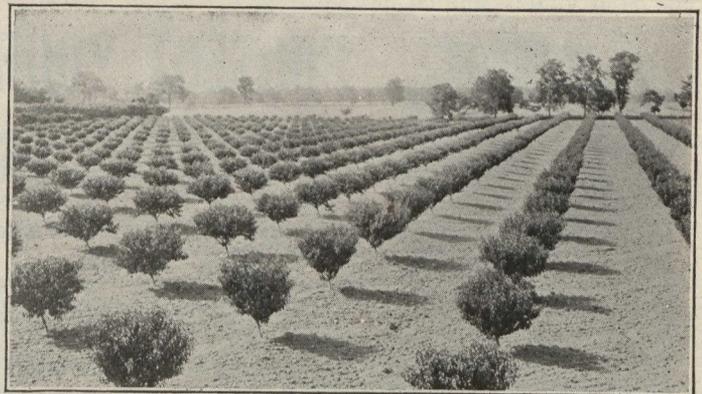
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The trees were the best rooted we ever saw and every one of them grew — Howard G. Fisher.

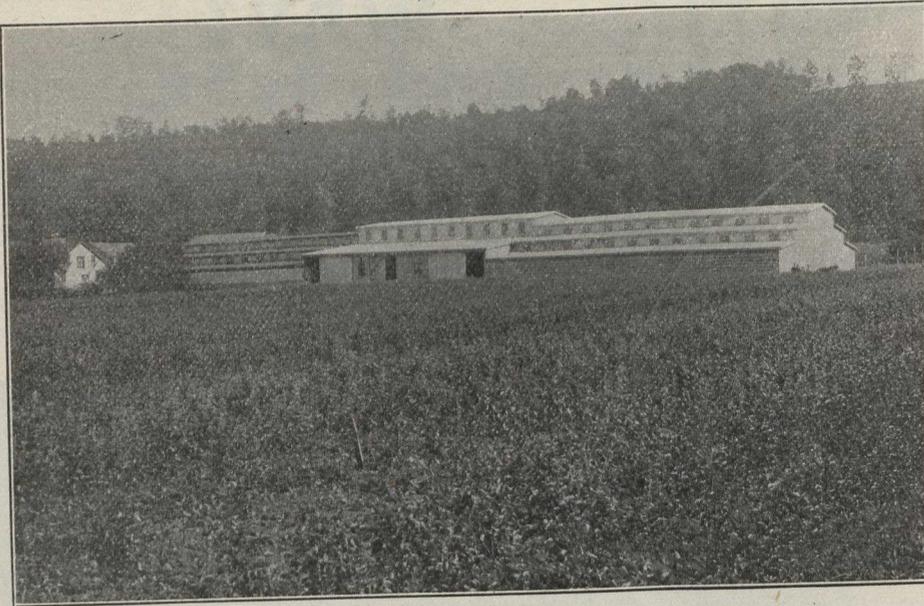
Auburn Nurseries Pedigreed Peaches

2 Years Old. Grown by G. E. Fisher & Sons
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These are the kind of trees to buy. No storage stock about these, but the thrifty, healthy, sturdy kind that stand in the nursery row all winter, and are fresh and bright in the spring, and reach you in fit condition to start right into business. We still have a good stock of Peach, Cherry, Pear and Plum, Yearling Apple and Quince.

AUBURN NURSERIES
QUEENSTON, ONT.

EARLY PLANTING OFTEN SPELLS SUCCESS



Packing Sheds, Helderleigh Nurseries

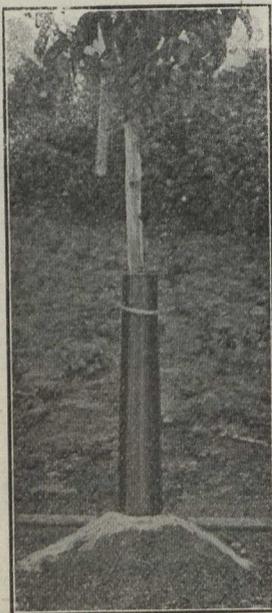
THOSE planters who have had to wait weeks in the spring after their ground was fit to plant, realize what it means to get Trees from the Nursery **EARLY**.

The sheds shown in the illustration have a space of 30,000 square feet. No rain, bad weather, or wind to stop packing or injure the stock by exposure.

In addition to the sheds shown in the illustration, another shed 100 x 100 is being erected to take care of increased business of the coming season.

If you have not placed your order for Trees, consider the advisability of placing it with a firm that can give you the very best stock **EARLY**. This very important feature may mean **success** or **failure** in your planting. I have every facility for packing with care and dispatch and solicit your patronage.

E. D. Smith Helderleigh Nurseries **Winona, Ont.**



Tree Protected by Wooden Veneer and banked up with earth to prevent entrance of pests at bottom.

PROTECT YOUR TREES

Against Rabbits, Mice and other Vermin

Many young orchards are greatly injured each year by these pests. Wrap the trunks with

WOODEN VENEERS

and damage will be prevented. These veneers will protect also against sun-scald.

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MODERN AND PERMANENT

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



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Mention The Canadian Horticulturist when writing.

The Canadian Horticulturist

Vol. XXXV

MARCH, 1912

No. 3

Fertilizers For The Fruit Grower

A. Bonar Balfour, Pilrig Fruit Farm, Port Dalhousie.

THE maintenance of soil fertility is a problem confronting every fruit grower, which must be worked out by each individually according to the character of his soil and climatic conditions. Just as there is no royal road to success, so there is no one treatment suited to all conditions and all soils, like a patent medicine proclaimed to be a cure for all ills. It is true that the same general principles apply, though in their specific application they must be enlarged or modified to meet the varying requirements of the soil and plants that are to be benefited.

POINTS TO CONSIDER

In the application of fertilizing material to our soil we must bear in mind that it is not only the mere supplying of a plant constituent supposed to be lacking in the same, but also the influence that such material may have on the soil and its properties, and on the nature and growth of the plants to be benefited. For instance, we are commonly offered potash salts on our market in three forms, the high grade sulphate, and the lower grades of muriate and kainit. The muriate and kainit both contain chlorine, and the chlorides have a deleterious influence on certain plants, being very soluble, however, and soon washed away, their deleterious effects may in a measure

be circumvented by applying these fertilizers some time before planting; but this we cannot do in the case of our orchards. I do not mean to say that the chlorides are harmful to our trees and bush fruits, but it is as well to take this into consideration in the purchase of a potash fertilizer. It may be a better economy to purchase the more expensive sulphate, the combined sulphur of which is beneficial, to the purchasing of the somewhat cheaper chlorides, the effects of which are doubtful.

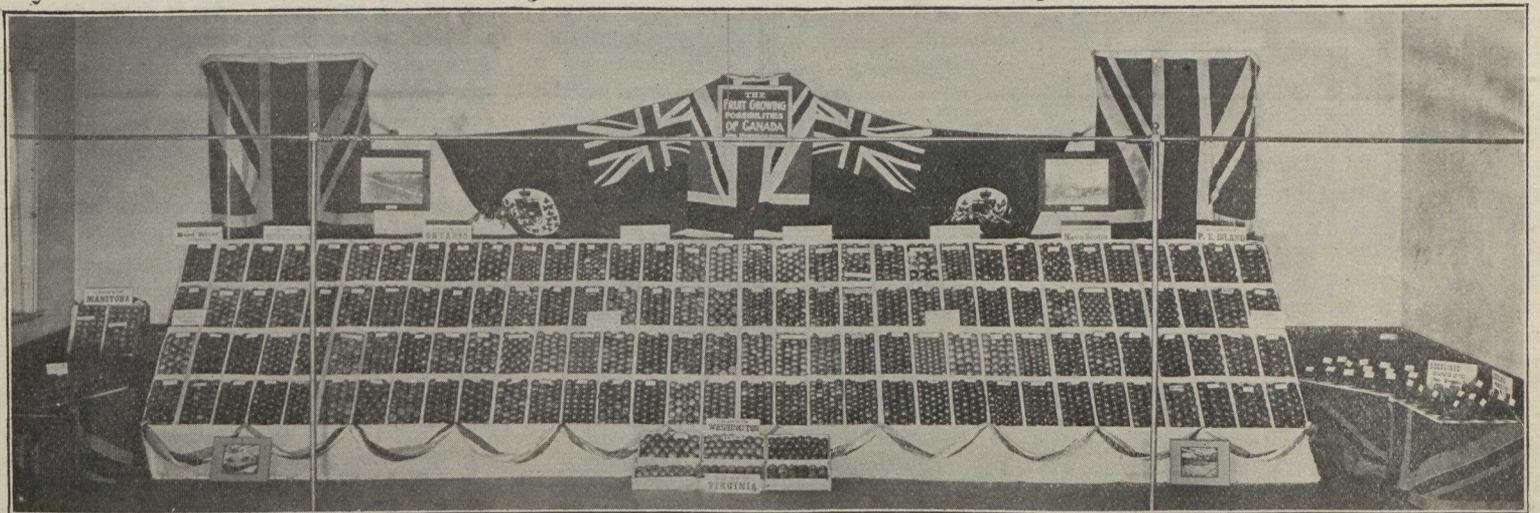
BONE FERTILIZERS

In the case of bone we are usually offered this in two forms: the steamed and crushed, and the dissolved. When steamed to extract the fatty matter which makes it less readily soluble in the soil, crushed and applied to the soil, it readily putrefies. Being in an intimate mixture with the soil particles this putrefaction acts on these and assists in transforming the inert matter to a suitable form for assimilation by plants. Bone in this form contains as well as the phosphate a percentage of nitrogen in a form that is valuable in the orchard, but treat it with sulphuric acid and you destroy this property and lose the greater part of your nitrogen. It is true that you have made your potash more readily available but a dissolved phosphate of lime is

equally valuable from whatever source it may be obtained. It is, therefore, questionable economy to obtain it from the more expensive bone rather than from the cheaper mineral. Then, too, when we bear in mind that the economical use of a fertilizer requires that it merely supplement the natural supply in the soil, and that the soil itself must supply the greater part of the plant requirements, we will readily see that any material which is not only in itself a plant food but also aids in unlocking the natural supply in the soil, returns us the greater value.

FARM YARD MANURE NOT A NECESSITY

The efficiency of farm yard manure is largely due to the important physical effects it produces in the soil. It helps to make a clay soil more loose, and when well rotted it imparts to a sandy soil the property of retaining moisture. It is also friendly to bacterial activity, but the same may be said of green manures, and those of the legume family have the additional advantage of adding nitrogen to the soil. Over and above this, green manures are the cover crops of our orchards, so that they serve the double purpose of a cover crop and when plowed in add to the humus contents in our soil, making it mechanically fitted to obtain the best results from commercial fertili-



Apples from all the Fruit Growing Provinces of Canada and from the United States as shown at the recent Dominion Fruit Conference, Ottawa.

The fruit on the left was from Oregon, British Columbia and Ontario, in the centre from Quebec and on the right from the Maritime provinces. Notice that the fruit from the east was just as well colored as the fruit from the west. Imagine what a grand display would be brought out by the holding of a National Apple Show here in the east.

zers. Hence my contention that a fruit grower can get along very well indeed without that expensive luxury—farm yard manure.

But there is a danger in the excessive use of cover crops, especially of the legumes, for if we accumulate a large amount of available nitrogen compounds in our orchards we retard the proper ripening of our fruit. Our aim must be, therefore, to grow just sufficient to keep our soil in good physical condition, and then by the use of such special fertilizers as are required to keep our soil up to its maximum efficiency.

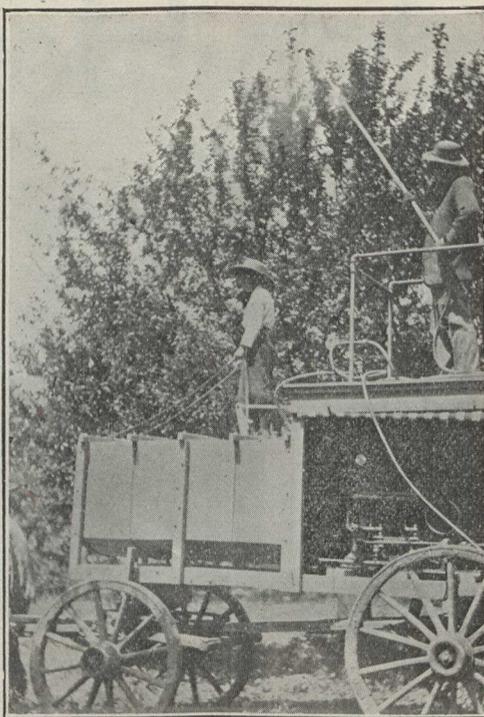
LIME A NECESSITY

A manure is "any solid substance added to the soil to make it more productive." Hence substances that are not in themselves a direct plant food or only so to a comparatively limited extent may be a manure. Lime, though fairly prevalent in soils, is nevertheless frequently lacking in the surface layers, and may be especially so when there have been heavy applications of animal manures and of green manures. Lime is necessary to the proper decay of humus and of proper nitrification. It neutralizes acids formed by decaying organic matter, and moreover it is a matter of experience that sweeter fruits are produced on soils that have a plentiful though not an excessive supply of lime.

Then, again, lime checks excessive wood and leaf growth resulting from an over-supply of moisture, and it seems to the writer it may in this manner be of service in the control of bacterial blight in the pear orchard. Hence a manure may also aid us in fighting disease.

FERTILIZERS COMBAT DISEASE

I once had an orchard of Japanese plums which had become badly affected with the shot hole fungus to such an extent that the trees were defoliated very early in the season. They had received two thorough sprayings with bordeaux, as well as the early applied lime and sulfur. To this orchard I applied a dressing of droppings from the hens' roost which had been pulverized and mixed with soil, then at the fall of the blossom, nitrate of soda at the rate of about fifty pounds to the acre, and again a similar dressing when the fruit was about the size of large buck shot. The results were most gratifying. The foliage showed a healthy color throughout the growing season and remained on the tree until late fall. Similarly, nitrate of soda may be used in the peach orchard when the foliage is threatened by leaf curl, but otherwise I would never advise its use in the orchard. It is too quick of action, and too stimulating, to make it a safe manure in the orchard. Nitrate of soda may be used advantageously in the strawberry bed to hasten growth in the early spring. It should be well pul-



A Power Sprayer at Work

Notice how thoroughly the trees can be covered with the spray.

verized and mixed with soil to bulk it and thus aid in distributing so small an amount as can properly be used, and applied when the foliage is dry else it will be apt to "burn" the plants. A peculiarity of nitrate of soda is that two light applications will have a tendency to hasten maturity while one heavier one will retard.

Let it be thoroughly understood that fertilizers will not replace spraying. Spraying is an absolute necessity, but fertilizers will help in certain diseases by giving strength and vigor just as stimulating diets are required by the human system to carry it through a crisis. It is needless for me to point out that over stimulation by nitrogenous manures in the pear orchard would only lead to disaster by encouraging conditions favorable to the spread of bacterial blight.

MECHANICAL CONDITION OF SOIL

Peter Henderson, in his "Gardening for Profit," describes soil deficient in vegetable matter as "a weight of soil." This expression is very apt, for soil in this condition is heavy, gritty and compact. The mechanical condition of such a soil is such that plants would not respond to fertilizers because it lacks air and loses its moisture rapidly. Air and moisture are essentials of plant life and to the releasing of plant food whether naturally in the soil or artificially placed there. It must be remembered that fertilizers though applied to the soil in soluble forms do not remain so, but rapidly revert and again become insoluble by the absorption properties of the soil. Before this occurs, however, the

soluble phosphates or potash distribute themselves more or less thoroughly in the soil, and exist in so fine a state of division that they may be rapidly rendered available by the natural agencies in the soil and the action of plant roots. Nitrogen alone remains soluble and is accordingly very subject to loss by washing.

AVOID OVER STIMULATION

The intelligent use of commercial fertilizers of known source and composition, together with a soil kept in a good mechanical condition by the plowing in of green manures and by proper cultivation cannot fail of results. Your orchard may not show the effects of a fertilizing the first year of application, because the trees fruit from last year's buds, yet a plentiful supply of food will produce a healthier and stronger growth with a subsequent improvement in productiveness and the character of the fruit. The one thing to avoid is over-stimulation, especially in young orchards. Do not try to force a tree or bush big too soon else you will defeat your own ends, but grow them as big as you can compatibly with a sound, healthy development.

Then, in applying manure spread it broadcast over the whole surface of the ground and not as is frequently done just immediately around each tree or plant. The aim is to encourage an extended root growth, whereas the application of fertilizers just around the plant induces a short, curled ramification of roots, much similar to a plant in a flower pot, a condition of things not at all to be desired.

A Useful Bush Sleigh

C. J. H., Ottawa, Ont.

In the extensive movement in New Ontario and elsewhere for the renovating of old orchards, a great deal of brush and deadwood is incidentally left on the ground. After the first pruning of a neglected orchard, if not removed before the snow leaves the ground, this brush is so thick as to prevent the early spraying. The quick and well timed removal of this brush, much of which is infected with blight, moth eggs, and injurious insects, means quite an undertaking. If not gone at properly, it entails almost as much labor as the pruning itself.

In the Georgian Bay district last winter the fruit grower with whom I stayed had a lot of brush to remove from his orchard. It was found that in using a team bob-sleigh the weight of the sleigh alone was almost too much for the horses in the deep snow. The fault was remedied as follows:

The platform and rear bob of the sleigh were removed from the sleigh, and two twenty foot maple saplings were laid on the truck of the bob. These were

laid with the thick ends facing ahead and were chained about four feet apart. On these saplings were nailed cross pieces about eighteen inches apart. These were placed at these intervals until within two feet from the thinnest ends of the saplings. Only one four inch nail can be put in each board as the rack must not be too rigid or it will break in turning corners. The broad crosspieces projected about a foot over the poles at each end, giving the rack a total width of six feet. On the last board an extra heavy cross-piece, two by three inches, was bolted to the poles. From the cross-piece we ran a rope forward to the first board. This

completed the making of the rack.

On reaching the place in which the load was to be dumped, we lead the rope up over the front of the load and passed it back behind the rack where it was held by one or two men as the load required. By starting the team ahead the load rolled off at the back in a neat pile. The dumping of a load by this means does not take as long as the telling.

By using one of these brush racks the wear and tear on horses and men is reduced to a minimum, and the time required for removing brush is cut in two. It takes a little less than an hour to make such a rack and it is easily made.

Refrigeration in Relation to Fruit Growing

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

THE modern use of refrigeration is nothing more than the systematic application of principles that have been recognized from time immemorial, and which have been universally practised by every housekeeper in the land. The vegetable and fruit cellars in connection with our houses, differ from regular cold storages only in degree or in the lack of that absolute control of temperature which refrigeration gives. The practice of hanging meats or poultry in a cold place during the winter months has exactly the same object behind it as if the goods were placed in cold storage. The fruit grower who holds his apples in a "frost proof" warehouse is using cold storage, which is more or less effective as the temperature of the warehouse is reduced to the minimum of safety. These methods, that take advantage of what may be called natural cold storage, are of course defective inasmuch as they are least useful, if not entirely valueless just at the time when the protection is most needed.

All admit the value of a low temperature in the preserving of milk, butter, meats, fruits, or vegetables for family use. Such foods are always placed in the coolest spot available and very generally in a miniature cold storage warehouse in the shape of a kitchen refrigerator. And yet it is a fact that there is still some prejudice against cold storage foods, not only on the part of the consumer, but with the dealer as well. It is true that food products do not always come out of cold storage in a satisfactory condition, for the simple reason that they are often out of condition, or over mature, when they are placed in cold storage. The function of cold storage is preventive, not corrective. I mention this because I find there is much need for more attention being paid to this point in the application of refrigeration to the preservation of food products.

It has frequently been asserted that the large quantity of apples which are

wasted every year, and especially when there is a heavy crop, could be saved if sufficient cold storage space was available. The writer of a paper at the last meeting of the Royal Society of Canada advanced this view, and his figures of the saving which might be effected ran into millions of barrels. I need not tell experienced apple growers that this view of the matter is erroneous. In the first place it is not possible to save these scabby, bruised, and wormy windfalls, and in the second place it would not pay to employ cold storage to save them even if it were possible. The proper destination for such inferior fruit is the evaporator or the cider mill. Moreover, there would be little or no advantage in cold storing a large proportion of the fruit that is actually marketed owing to the presence of defects or injuries which would result in early decay in spite of cold storage.

The losses arising from diseased fruit,

or from mechanical injuries received in picking and packing far exceed any losses which may result from a lack of cold storage facilities especially for late or winter varieties. I do not say that to minimize the importance of cold storage, but rather to emphasize the other thing. We will never derive full benefit from cold storage until we first learn to handle our fruit carefully, so as to avoid bruises and other injuries.

Refrigeration can be made to serve the fruit trade of Canada in the following different ways:

1. The use of iced cars for the transportation of fruit in warm weather.
2. The chilling of early apples and tender fruit before shipment in iced cars.
3. The cold storage of fruit intended for long keeping, and to extend the season for choice varieties.

USE OF ICED CARS

The use of iced cars for the carriage of fruit is increasing year by year. Fruit growers are learning that the question of temperature in transit is of as much importance as the length of time occupied in carrying the fruit from one place to another. As an illustration of what I mean I would draw your attention to the experience of this Department in the shipment of peaches from St. Catharines and other Niagara points to Montreal for export to Great Britain, in 1910, the details of which are to be found in bulletin number twenty-seven of the Dairy and Cold Storage Series. We found that we got better results when the fruit was despatched in iced freight cars than we did when it was sent by express without ice, although it took one day longer to go by freight. The same thing will apply in the shipment of any fruit.



Check Plots on Which No. Fertilizer Was Used. No. 1.

*Extracts from an address delivered at the recent Dominion Fruit Conference in Ottawa.

What Tests of Fertilizers Have Shown

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

IT is the first business of the farmer, gardener, and fruit grower to strive to produce maximum crops of good quality. To accomplish this year after year, it is not only essential that the land be in a high state of fertility, but that the farmer understand the peculiar needs of the crops he is growing and strive to make the soil, which is the home of the plant, as congenial for it as is possible. It is a well recognized fact that an abundance of suitable food and water and comfortable surroundings are of vital importance to the development of a strong healthy animal, but it is not so fully realized that the same conditions are as essential for the production of vigorous productive plants.

soils are abundantly supplied with all these essential food materials, and, furthermore, nearly all of them are held in such a form that they are not readily leached from the soil. Plants, however, take up comparatively large quantities of nitrogen, phosphorus, potassium and calcium, and as they are removed with the crop the supply must become smaller. Then, too, as nitrogen is finally made available to the plant as nitrates, which are very soluble and not held by any chemical combination with the mineral constituents of the soil, loss of nitrogen by leaching may occur. Lime, also, as a result of many chemical changes taking place in the soil, is continually being carried away in the soil water. Evi-

penetrate into the soil and supply the air essential to the life of the various types of organisms engaged in breaking down the organic matter and bringing its nitrogen into a form suitable for the growing plant.

The acids formed in this decomposition process help to render the mineral constituents available. Thus, while it may be correct to speak of the soil as a reservoir of plant food, it is equally true that it may be considered a manufacturing establishment in which all the various factors work together to produce the best results. We cultivate soils, then, not only to produce a good seed bed, but also to open it up that air and warmth may more readily penetrate to supply the wants of the roots and the myriads of organisms that are directly and indirectly engaged in preparing the food for the plants, and at the same time we conserve the moisture which is also essential to the well being of the life in the soil.

It is evident, then, that while a good soil may have abundance of plant food constituents, it is only as we cultivate thoroughly that we can bring about the condition essential for the rapid decay of the organic matter, which in turn supplies the nitrogen, increases the availability of the potash and phosphoric acid and conserves the moisture. Good management will also include careful handling of the farmyard manure and the judicious use of legumes to gather nitrogen from the vast supply in the atmosphere. It is only after the most careful attention has been given to all these points that fertilizers should be introduced.

THE USE OF FERTILIZERS

In the case of light feeding, deep rooted crops, as, for instance, some of our cereals, good cultivation and proper rotation will render it unnecessary to stimulate growth by the use of fertilizers. But with heavy feeding crops like mangels, turnips and many of the garden crops, even the best of cultivation may fail to render sufficient plant food available to produce a maximum crop. Again, if farmyard manure is supplied in large enough quantities to furnish the required amount of mineral matter for such crops as tomatoes or fruit trees, especially if legumes are used as cover crops, there is very apt to be too large a growth of leaf and stem with imperfect development and ripening of the fruit. This is due to the fact that farmyard manure is richer in nitrogen than in the minerals. For this and other reasons it is generally considered better practice to combine the use of stable manure and fertilizers for garden and orchard crops.

(To be continued)



This Illustration Shows the Effect of the Use of a Mixture of Nitrogenous, Phosphatic and Potassic Manures.—No. 2

A plant not only requires that its leaves be bathed in pure air and bright sunshine, but the soil must furnish a warm, airy and roomy place in which its roots may spread themselves and collect an abundant supply of food and water. The air and sunshine are free and an abundant supply always available, but the condition of the soil and the availability of the plant food is largely dependent upon the skill and intelligence with which it is handled.

Experiments have demonstrated that our common domestic plants require at least ten elements in their food. The absence of any one of these elements, or the inability of the plants to secure the minimum quantity required of any of them, must, consequently, be a limiting factor in the proper development of the plant. Fortunately, most of our

dence of this is seen in the fact that water leached through the soil is always hard, owing to the large amount of lime it contains. For these and other reasons the four above named elements are the ones which must receive the most attention.

MUST BE AVAILABLE

But! the presence of the chemical elements of fertility in themselves is not sufficient to insure good crops. To serve as food they must be in a form that the plant can take them up, i.e., they must be soluble in the water of the soil. Water is, consequently, absolutely essential both for the solution of the food elements in the soil and for their distribution in the plant. In well drained land this water is held on the surface of the soil particles and the interspaces are open, thus making it possible for the air to

Canadian Gardens—A Happy Day in a Hamilton Garden

By Miss M. E. Blacklock, Toronto, Ont.

ARTICLE No. 3

AN invitation to visit the beautiful garden of Mr. and Mrs. W. A. Child of Hamilton, had something sufficiently exhilarating in it to annihilate bad weather conditions the day of my journey. The reward for braving the elements proved ample, for my destination, "Netherwood," is truly a lovely spot.

The house is a large, commodious one with sun rooms and verandahs galore, and fitted up with every modern luxury. It is framed by wide stretches of lawn

owned to having given nature a little assistance by bringing home certain choice varieties, planting them here and there, but they were added with the "art that conceals art," and no stiff groupings or incongruous color schemes marred the harmony of the scene. In one spot a small "laid" stone wall, recently built, held back the earth, which otherwise would have blocked the path, and already little walking ferns and cliff-brakes were accommodating themselves to their new abode, as if they realized

boundary of Mr. Child's land, which goes through to the road on the mountain side, one had developed a fairly



"Netherwood," The Residence of Mr. and Mrs. W. A. Child, Hamilton Ont. (No. 1)

and magnificent trees. From one of the upper verandahs, which by the way is furnished with a huge brick fire place, a fine view of the grounds is obtained. Particularly beautiful is the outlook towards the mountain, where the flower garden merges into the grass-land, with fruit trees dotted over it, and the grass-land into the shrubbery, and finally into the wood on the mountain side.

After enjoying this view, my host and hostess suggested a ramble up the mountain, so we were soon loitering along a lovely path (Illustration No. 2) which wound in and out amongst the grand old trees, stopping here and there to take in a dozen different views of the house and grounds and the city beyond (Illustration No. 3.) All along this path nature has been lavish of her gifts. Ferns, asters, golden rod, and many other old friends, nodded a greeting to us as we passed, the leaves of hepaticas, trilliums, bellworts and many another of the dear ones of spring, brought a vision of what that season must be in this favored locality.

In answer to an enquiry, Mr. Child

that they were put there by a hand that loved them and were responding to it as plants nearly always do.

Before we succeeded in reaching the



The Rambling Path (No. 2)

wholesome respect for the height of Hamilton's mountain, particularly after coming out on this road and finding great cliffs still towering over our heads.

Returning by a different path, with beautiful and ever changing outlook, we at length reached what most people would consider the garden proper (Illustration No. 4.) This was comparatively small, but it fulfilled its mission in life, which was the supplying of cut flowers for the house. It was gay with the



One of the Lovely Views from Mr. Child's Garden (No. 3)



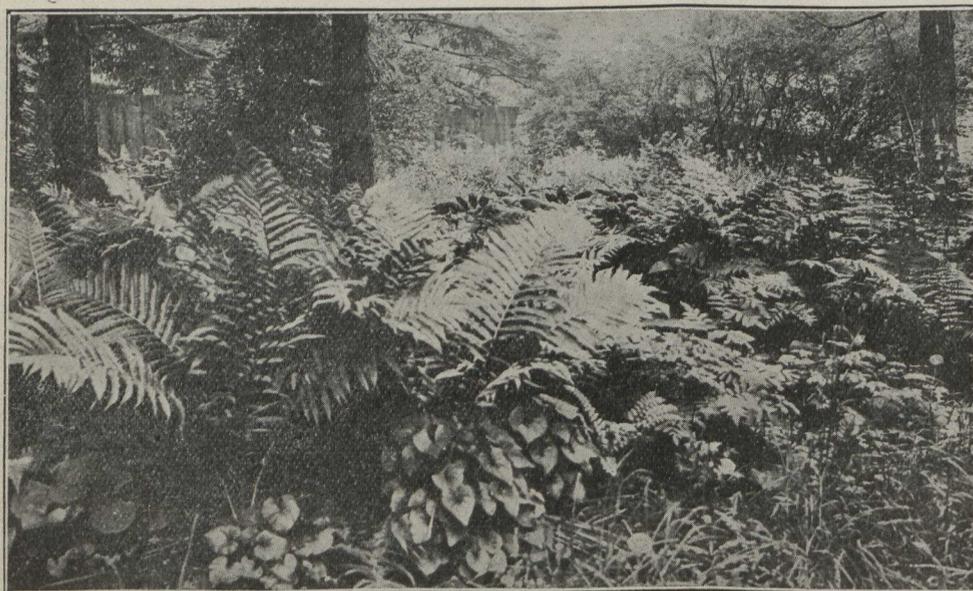
A Glimpse of Mr. Child's Garden, Showing a Corner of the Lawn (No. 4)

bloom of many sweet old-fashioned annuals, as well as salvias, cannas, dahlias and others. This, Mrs. Child explained, was her own particular delight, and very attractive it was, and she is planning to add to it more perennials, especially peonies.

THE LAWN AND FERN GARDEN

A terrace separates the garden from a fine smooth bowling green; this again is separated from the lawn by an evergreen hedge, one or two formal steps leading down to it. On the lawn were groups of the most beautiful trees, amongst them a glorious old sumach, giving quite a tropical air, and under which the family generally had their cup of afternoon tea during the warm weather. A little farther on, under the shade of the trees, Mr. Child pointed with pardonable pride, to the joy of his heart, the fern garden. He aims to grow here all the ferns indigenous to Hamilton and

the vicinity, and judging by the immense number already in his possession it seems as if the task he has set himself is nearing completion. Here one saw ferns that one had searched for in vain for many a year, or perhaps only found in Niagara Glen, where one is not allowed (I am thankful to say) to annex any of them. There were beautiful specimens of Goldie's Shield Fern (*Aspidium Goldianum*) and also of *Aspidium Felix-mas*. The narrow-leaved spleenwort (*Asplenium Augustifolium*), the Hart's Tongue (*Scolopendrium vulgare*). The Christmas fern in a ruffled variety, known as *Aspidium Acrostichoides*, variety *crispum*, and others that have escaped one's memory. Less rare, but none the less beautiful on that account, were clumps of filmy Maiden Hair and of the stately ostrich fern, and of its plainer sister, the sensitive fern. Farther on were some handsome specimens of the Royal fern,



A Section of the Fern Garden—Ostrich Fern in Foreground (No. 5)

which always makes one think of a brooding maiden hair, and its less aristocratic but equally beautiful sisters, the Cinnamon fern and the Interrupted fern, with the paler green of the New York fern to bear them company. (Illustration No. 5.) The Beech ferns also were in evidence, all three of them, their long stems giving the suggestion, as one writer has quaintly put it, "of holding their skirts out of the water." The graceful *Dicksonia*, and the lovely Spinulose wood ferns,—whose fronds often survive our winter snows, still keeping their perfect symmetry intact,—were hobnobbing with Bladder ferns, and the Evergreen wood fern, and others too numerous to mention. Many other lovely woody things



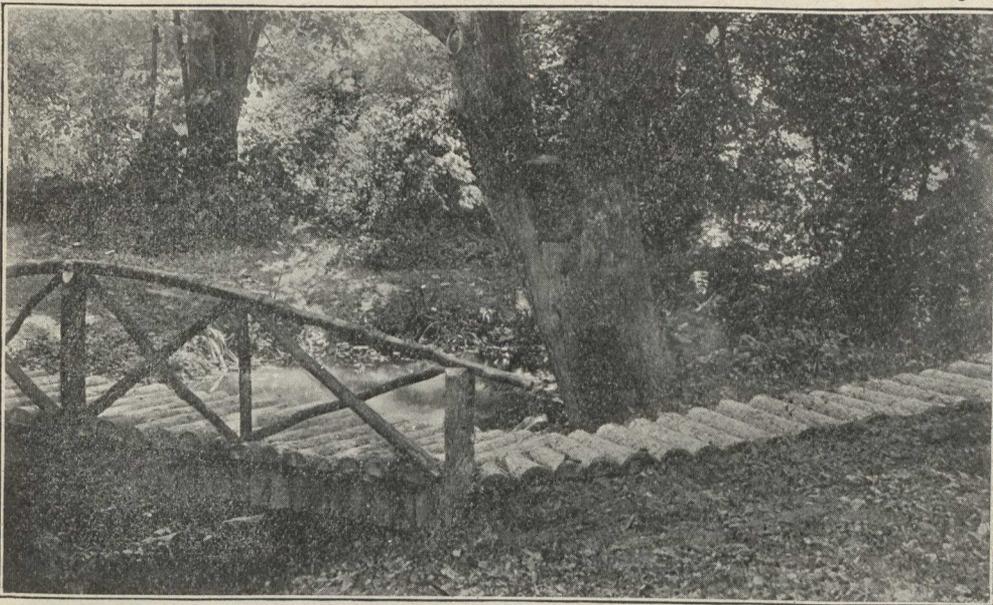
Arbor Covered With Grape Vines (No. 6)

grew here, in fact the fern garden gradually broadened into a wild garden, where many very interesting specimens were to be found.

From the wild garden we emerged upon a high tennis lawn, and wandering on we came to one of the grape arbors, from the rafters of which magnificent clusters of grapes hung in great profusion. (Illustration No. 6.)

Our explorations next took us to the grounds on the other side of the house, from which the ground slopes away, gradually at first, then abruptly. Between two steep banks a beautiful little stream meandered along, quietly, because the dry summer had curbed its babbling propensities, but in the spring of the year the water rushes over the little dam right merrily, my host told me.

The banks of this stream are planted with many water loving things, such as the wild iris, the marsh marigold and violets, and Mr. Child is planning to



The Stream and Rustic Bridge in Mr. Child's Garden (No. 7)

increase their number and effectiveness in the near future. A pleasing rustic bridge spans the stream. (Illustration No. 7.)

We returned to the house by a fruit-tree-studded lawn, and happening to pass a very artistic doorway, covered with beautiful vines, enquiry was made as to where it led to. The answer was "The kitchen!" It was an ideal back door at last. A whole sermon might be preached on that doorway, but it is not necessary for the photograph (Illustration No.

8) will convey the lesson better than words. Everyone must agree that it is a refreshing sight. Alas, how few can live up to it.

Mr. and Mrs. Child have evolved their garden bit by bit and have aimed at retaining all the natural beauties of their lovely place, which are always so much more satisfying than those "made to order." How admirably they have succeeded, the accompanying illustrations made from photographs taken by Mr. Child, prove conclusively.

Vines for All Purposes

F. E. Buck, Central Experimental Farm, Ottawa

THE number of hardy perennial or woody vines which can be grown in North America is about forty. Then there is about an equal number of half-hardy vines, very few of which can be grown further north than the latitude of New York—some parts of the west coast excepted—and finally a third group of more than fifty tender vines, most of which need greenhouse or conservatory conditions.

Altogether we have about one hundred and fifty vines—if some of the best annual vines be included—which are available for decorative and utility purposes in our homes and gardens. About twenty of these hardy woody vines can be grown with complete success in the vicinity of Ottawa, and perhaps an additional dozen in the more southern parts of Ontario.

CARE AND TREATMENT

Vines, like most other plants, respond to good conditions with regard to soil and situation, and also to careful treatment, but as a rule, and very fortunately so, most of the perennial vines thrive under many conditions, even when badly neglected. The large number of very pleasing vine effects obtained by people one might say almost by chance, is no doubt due to this fact. However, it

should be remembered that vines will respond to good treatment and when planting carry out these suggestions if by any means possible:

1. Supply good soil and also drainage where necessary.

2. Plant all vines a little bit deeper than they grew in the nursery.

3. If watering be necessary, water very heavily or not at all; pay special regard to this point just after the vine has finished flowering.

After the vine is established train it with consistency and care. Prune it very little, but prune to encourage it to take a graceful, natural, and attractive form. If it flowers in the spring, prune it just after it has flowered; if it flowers in the summer, the correct time to prune it is in the early spring.

PURPOSES

Vines are used for a number of purposes. These purposes, for the sake of clearness, are grouped here under two headings:

1. Vines used for purely decorative purposes.

2. Vines used as screens.

"Vines used as screens" may be further divided if wished, and in that case we should have, first, vines used as screens for the purpose of giving privacy or landscape effect, and second, vines used as screens to hide unsightly objects. The same vines, of course, may be used to serve both purposes, but discussing them as thus classified we have first of all—

DECORATIVE VINES

"Decorative vines" are used for about seven different purposes, or in seven different places. Even in Ottawa, where vines are not grown to the same extent as they are further south, one would shudder to think of the barren harsh appearance of the domestic architecture in our villages and cities were such deprived altogether of the softening effect produced by climbing plants. Their use not only lessens the number of intolerable eyesores produced by ugly fences, outbuildings, and untidy backyards, but by using climbing plants there is also a



"The Ideal Back Door at Last" (No. 8)

chance of redeeming the mistakes of the architect. Bare glaring house walls, ugly terrace walls, barren harsh-looking verandahs and porticoes may be softened and made pleasing by using suitable vines of rich foliage or flowering effect. Let us consider then, first, those vines suitable for growing:

ON AND ABOUT THE HOUSE

For the walls of the house, where English ivy will grow, no vine can take precedence, but this climber is not hardy at Ottawa, and we have to use another vine instead. One which can be recommended almost as highly, and in some respects more so, is the Virginia Creeper, not the more southern variety, but a particular strain known as *Ampelopsis quinquefolia hirsuta*, the self-fast-

the tops of buildings some forty or more feet high. The real *hirsuta* strain in addition to being the best climber is also the healthiest of all. It is seldom troubled with the red spider or other insect and fungous troubles.

BOSTON IVY

Another good vine for covering the house is the Boston Ivy or Japanese Ivy (*Ampelopsis Veitchii*). This is one of the best self-climbing vines. At present, however, no strain of it has been found hardy enough to withstand the Canadian winter. Every year it is partly killed back, and in severe winters it may be killed outright. In the south of Ontario if planted on the north or west side of the house it will often pass through many years without injury. It is a very sym-

Dutchman's Pipe Vine (*Aristolochia siphon*), generally quite hardy at Ottawa and Montreal; the climbing Bitter-sweet or Waxwork (*Celastrus scandens*), a native vine of distinct merit, which has good foliage and in autumn and winter its bright berries make it especially attractive; and as a third good porch or verandah vine, the Clematis claims a prominent place. Clematis' are to be had in great variety. Clematis *Jackmanii* is the large flowered variety producing an abundance of beautiful flowers throughout several weeks in the summer. Many colors are now obtainable. Of the smaller flowered clematis' there are several good varieties which will answer the same purpose. The Virgin's Bower is the common name often applied to any of the smaller flowered kinds. As a rule all but the *Jackmanii* type are best suited to cover terrace or fences.

Other good vines for porch or verandah are the Honeysuckles, several varieties of which are hardy at Ottawa as *Lonicera periclymenum*, *L. sempervirens*, and *L. hirsuta*; also the Chinese and American Wistarias, the Japanese Bitter-sweet, and a very graceful and highly attractive vine called *Akebia quinata*, a Japanese climber with many points in its favor, including that of hardiness.

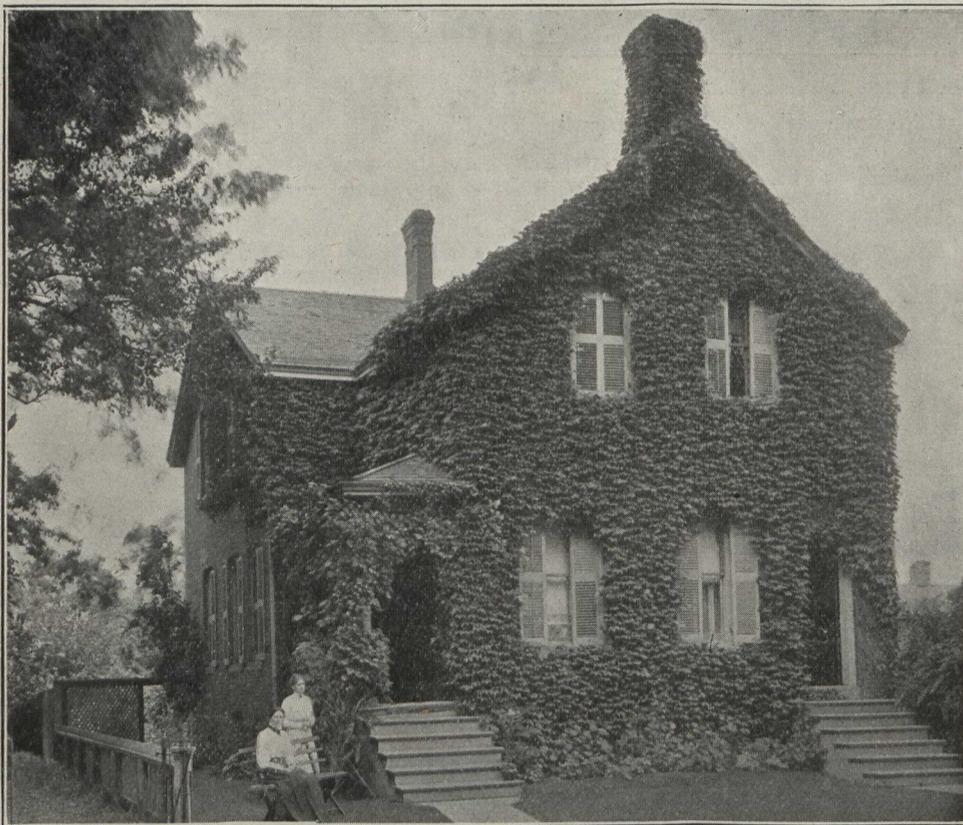
AROUND THE GARDEN

Half the charm and beauty of our gardens is created by the judicious planting of climbers. Nothing can be more delightful to the sense of sight and smell than that which is produced by climbing roses, honeysuckles, and other vines, climbing over arches, pergolas, and arbours, or rambling over terraces and rocks. They are the most satisfactory of all garden shrubs. Producers of ever increasing pleasure and seldom giving disappointment, it is surprising that their triumphs in creating so many ideal features in our gardens are not more readily appreciated by us.

ON ARCHES

Perhaps nothing can be nicer on arches than the climbing roses. Of these there are several which are fairly hardy even at Ottawa. Winter protection is, however, generally needed, not so much on account of the cold, but rather to inhibit a too early start in the spring. It is to be hoped that before long many varieties will be produced which can be recommended without any hesitation. At present several of the ramblers, namely, the well-known Crimson Rambler, and Dorothy Perkins, together with Lady Gay, climbing La France and Gruss an Teplitz, have proved themselves to be fairly hardy at Ottawa and vicinity.

But roses are not the only satisfactory vines for growing on arches. A very delightful vine for this purpose is that Japanese vine *Akebia quinata*, which has



The Vine on the House is the English Ivy, a Rapid Grower, and on the Verandah the Virginia Creeper. Residence of Mrs. P. L. Taylor, St. Catharines

ening variety. It may be mentioned that this variety is not always sold by the nurserymen as *hirsuta*. It appears to be called by some Englemanni. But it is important to obtain the self-fastening kind, which is quite hardy in Ontario and frequently seen.

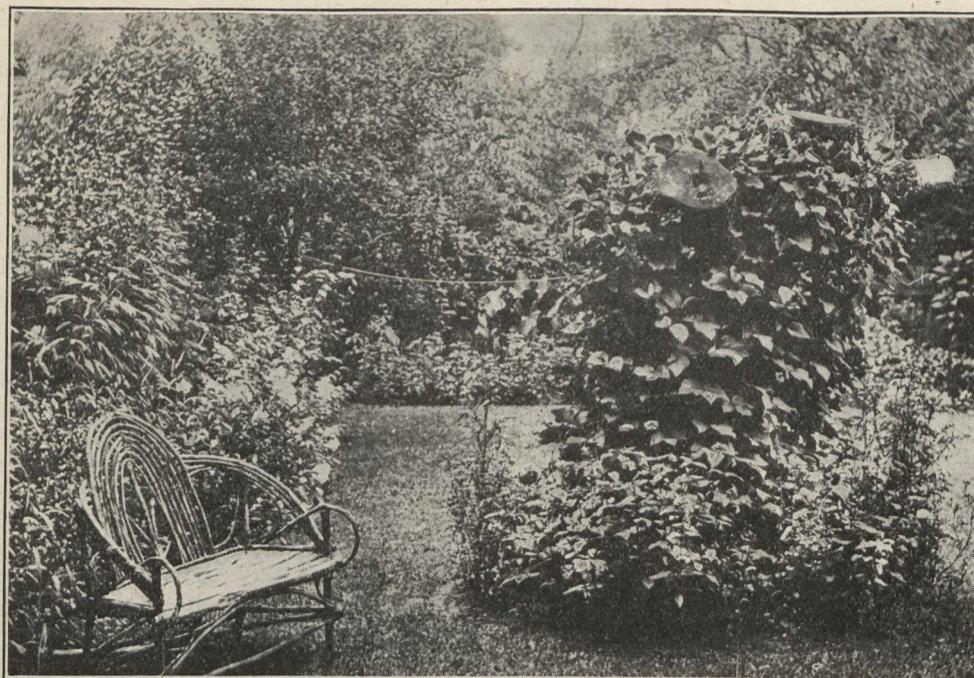
The ordinary Virginia Creeper is almost useless as a self-climber. As an instance that it is not always easy to obtain the right kind, it may be mentioned that several years ago a large public institution ordered about a hundred plants. Those which were sent under the name of *hirsuta* turned out to be no good as climbers, while those sent as Englemanni proved to be self-fastening, and in two years had reached to

metrical and beautiful vine and colors well in the autumn. It is readily distinguished from the Virginia Creeper on account of its simple leaves. The Virginia Creeper has five parted leaves on long petioles.

Two excellent vines for the house are the Trumpet Vine (*Tecoma radicans*) and the Kudzu Vine (*Pueraria Thunbergiana*). Neither of them are hardy in this vicinity. The former is hardy in the lake district, but needs partial support. The Kudzu Vine is not hardy, but is a vine of remarkable vigor, and gives great satisfaction where it can be grown.

ON THE VERANDAH OR PORCH

The best vines for growing on the verandah or porch in this vicinity are the



A Lovely Backyard, That² of Mrs. P. L. Taylor, St. Catharines

The fence around this garden is covered with a variety of vines, including trumpet vine, nasturtiums, sweet peas and wild cucumber. The tree stump in the center is covered with scarlet runner beans. Around it are zinnias, phlox, petunias and marigold. In the border are cannas, gladioli, foxglove, columbine, sea lavender, roses, lychnis with shrubs on one side of Japan snow-balls, hydrangea and pampas grass.

a very graceful and attractive habit, and should be seen much more frequently than it is. It has compound pretty rich green leaves and the flowers, which are delicately scented, are produced in the spring. As tested at Ottawa, it did not appear to be quite hardy, but hardy enough to warrant a trial. It is quite hardy a little south of here. Several varieties of Clematis also appear to good advantage on arches.

ON THE PERGOLA

Pergolas, both rustic and formal, are delightful garden features where they can be worked in without incongruity. A pergola affords the very best place on which to grow vines. All of the vines thus far mentioned can be grown with every degree of satisfaction and success on a pergola. There are, however, several vines which seem particularly suited to it. Of these the Trumpet Vine (already mentioned under house vines), *Tecoma radicans* or *T. grandiflora*, noted for its large orange-red trumpet-shaped flowers and vigorous habit of growth; the Japanese vine *Actinidia arguta*, noted for its glossy green attractive foliage and twining habit; and the *Wistarias* with their glorious racemes of pea-like flowers, are among the front rankers. Indeed, the *Wistarias* are regal in their magnificence.

Many people give to the *Wistaria* the premier place amongst all shrubs. A large *Wistaria* bloom on a pergola is a sight not easily forgotten. Unfortunately, however, these vines are not perfectly hardy at Ottawa. However slightly to the south, they are more reliable, and it

is to be hoped that before long we may get strains hardy here.

ON THE ARBOUR

For the arbour, grape vines, especially some of the hardy native wild grapes, are particularly suitable. *Vitis riparia*, the sweet-scented grape, is a rapid grower with graceful habit and *V. cordifolia* is a strong grower. Several of the cultivated grapes are also suitable for the arbour.

FOR THE TERRACE AND BALUSTRADE

The Clematis, in several varieties, can be recommended for the terrace and balustrade, together with several of the Honeysuckles, *L. Japonica*, etc. Also the Chinese Matrimony Vine, *Lycium*

Chinense, and the trailing roses, the best of which are the *Wichuriana* hybrids, called also Japanese Memorial Roses. These are not very hardy, but they can be grown successfully if a little care is exercised in the spring treatment. Hall's strain of *L. Japonica* and *Euonymus radicans* are both excellent for this purpose, but neither can be said to be hardy.

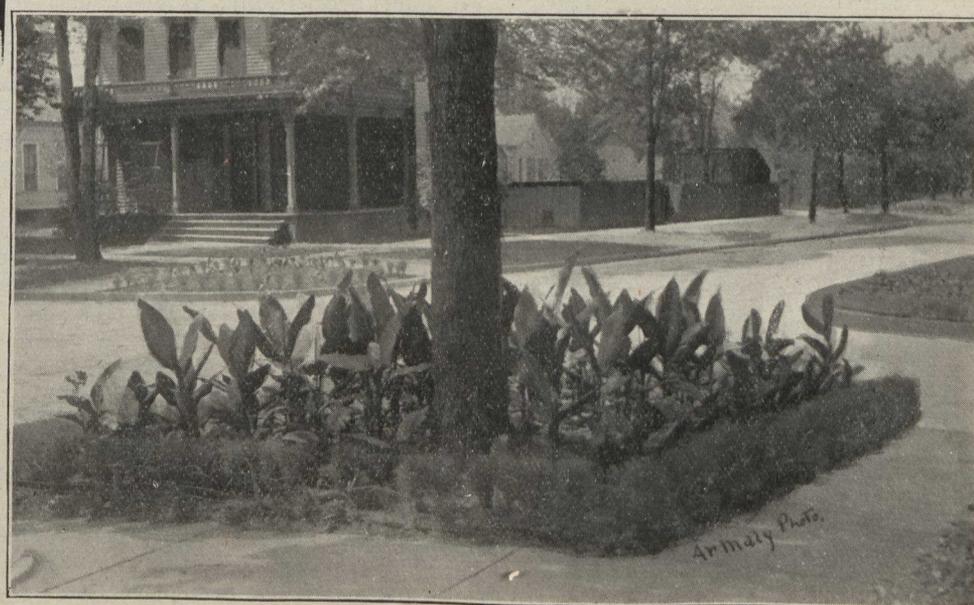
VINES AS FENCES AND SCREENS

Having dealt with vines from the standpoint which places their decorative value first, a few words remain to be said from that point of view which places their utilitarian value first. Looked at from this standpoint, it may be said that there are many which will, if treated correctly, form the least expensive and yet the most effective and permanent kind of boundary fence. And vines also are unique as being the only form of material from which we can form an effective and pleasing screen to hide or cover unsightly objects.

AS FENCES

There are several vines, such as the Matrimony Vine and the Honeysuckles, which will form quite effective fences. Without the aid of artificial support, however, generally the best way to use them as fences is to put up a light and low wire fence and train them over this. The common Virginia Creeper and the native Virgin's Bower are very suitable. Or both these vines may be grown together with fine effect.

The following varieties of Clematis are all good: *C. Ligusticifolia*, with white flowers in midsummer; *C. paniculata*, the Japanese variety, attractive flowers in September; *C. Virginiana*, the native Virgin's Bowers; and *C. Vit-alba*, Traveller's Joy, the European variety. A light type of soil is best suited to the needs of the Clematis. Several of the Honeysuckles make good fences, as



Some of the Flower Beds Maintained at Street Corners by the Windsor Horticultural Society

also do the hardy roses, as *Rosa Rugosa* and others.

AS SCREENS

As screens of all kinds a great many vines can be recommended. If a vine is to be grown as a screen the best way is to proceed as follows: Procure a plain strong screen, the style or pattern of which is a secondary consideration, and a good strong, vigorous plant. Give the plant good rich soil. If you want a rapid and successful effect remember that it can be obtained by putting an extra dollar into the cost of the preparation of the soil, and the quality of the plant. Ten dollars for the screen and twenty-five cents for the plants is a poor combination. A better one is five for the screen, one for the plant, two for the soil and pre-

paration, and two saved for eventualities.

In some parts climbing roses can be used with grand effect, especially if they are grown on screens which can be laid down during the winter. The Virginia Creeper, several of the vines mentioned above, and a number of annual vines are also suitable for growing on screens. Varieties of Clematis, however, should not be used, as all lack foliage, which is very essential in a vine used for a screen.

The question of the annual vines is too big for discussion here, but it should be mentioned that the annual forms are a great addition to our gardens. Among them are many which may be grown with success under many conditions. They should not be overlooked for some of the purposes mentioned above.

The Seed Catalogues

A. J. Elliott, Aylmer, Ont.

IN an article written by a lady in one of the floral papers, she said, "The annual seed catalogue is the best reading I can get in January." While few will follow this lady to that extreme, most of us are heartily pleased to get the first one that arrives. It is studied, new things noted and discussed, and when the whole budget arrives our lists are made out understandingly.

They are worthy of respect, most of them. We see in each a representation of some firm, that binds itself to abide by the conditions therein contained, and while we may smile forgivingly at the exaggerations they mostly indulge in, we acknowledge that they are doing their best as a drawer of business. Note the pretty litho-colored cover, the clean, sharp impression, cuts all brought up nicely, not too much ink nor too little, register right, book in folio and page; everything square, with no jagged edges, and you are almost sure to purchase anything you want from such a source.

It has often been said that it is an impossibility to grow flowers to the perfection that these catalogues show in their colored plates. While that may be true mostly, I have grown beds of tulips, asters, phlox drummondii and lilies that would defy printer's ink to equal in color and beauty.

By the old professional or amateur in floriculture a lot is taken for granted, and their knowledge guides them when making up their list of seeds. But they are liable also to be taken in occasionally by something new, as the writer was last year with the arctolis. It was listed as fifteen inches high, just what was wanted, but when it grew up to thirty-five inches, and at ten in the forenoon closed up its flowers to six o'clock in the evening, it made a glorious weed.

BE ON YOUR GUARD

I am fain to admit that to the tyro the catalogue is a delusion in more ways

than one. It is opened, and the flattering descriptions taken as gospel. A list is made out, oblivious to the fact whether the soil the seeds are to be planted in is clay, loam, sand or muck, or whether they are hardy or tender, annual or perennial, and at the end of the season, because of the failure that must ensue, the seeds, catalogue, and growers, are all termed frauds, it never occurring to the buyers that the fault lay with them, primarily through ignorance.

It is a fairly good theory to go easy on new things. Still, everyone likes to have a rarity in the garden to watch and care for, and if it turns out right, that is all the satisfaction required.

LEARN THE "STANDBYS"

To the new beginner, I would say find out the old standbys that succeed well in your section and soil for they are seldom beaten by the new candidates. Give them all the attention they require and you will be better satisfied. Then as you go along successfully, as you must, add the new comers as you feel your ability to cope with them.

It has cost the old hands dollars for plants, bulbs and seeds that having been tried one season were found wanting and withdrawn. This need not be your fate, unless you choose.

Better success can be gotten by buying direct from the house, whether it be seeds, roots or bulbs, and by so doing you are kept up-to-date by receiving a catalogue every year. Thus you hear of novelties and have advantage of any premiums, which are not forthcoming from the retail dealer. The order comes fresher, and in cases like *lilium auratum* it is an item, as this bulb objects to being kept in a dry condition.

One thing more. It may be a matter of policy for the seedsman to print a colored plate showing peonies, delphiniums, perennial phlox and hollyhocks blooming

at the same time, but it gives a wrong impression. It is not done.

The seed catalogue is the only medium between the grower and buyer, and is here to stay. Treat it understandingly and your prospect of success is made more certain.

Planning the Garden

E. I. Mepsted Ottawa

With the season of 1911 behind us we must now lay our plans for this year's garden that is to be. As we can do but little now except think, it behoves us to lay out our work. The best of success is only obtained by well thought out plans. We know what ground we have and now we can think over the best way to utilize it. It is very pleasant to plan out the crops we have to grow, and the best position for them, and to draw out a sketch of the same. To do this we must do some reading of horticultural books, and look over some of the volumes of *The Canadian Horticulturist*, and thus gain knowledge from the experience of others.

When we have thought out what we intend to grow, the next thing is to think of the varieties we should grow both in seeds and plants. We can gain a lot of information from catalogues of good seed houses. Depend mainly on good, well-tried varieties, and do a little experimenting with new varieties, but never depend for main crops on a new introduction, for although descriptive catalogues are most useful, yet some descriptions are rather highly coloured. Lots of information can be obtained from our successful neighbors. Never be afraid to seek such information. We have each and all some good sensible knowledge up our sleeves. Get your orders in for your wants early so that you are well up on the lists of the seedsmen and florists, for there is nothing like having necessities on the spot when the time comes to use them.

One great factor in the advance of horticulture in Ontario are the horticultural societies in the cities, towns and villages. Through them we obtain horticultural literature, papers and lectures on topics of interest, and what is the most useful, the "Question Box." I bring this to your attention because it is the beginning of the year, and every lover of horticulture, and everyone desirous of increasing their knowledge should join their local society. In this way also you will get premiums in plants, seeds and bulbs of the newest varieties.

When sowing seeds we should remember that flower seeds usually are very small, and that they should be covered very lightly.—D. W. Marden, Pilot Mound, Man.

Plants and Flowers for Shady Places

Wm. Hunt, O. A. C., Guelph, Ont.

THE importance of selecting plants and flowers suitable for the particular location they are to occupy cannot be over estimated. The greatest possible care bestowed on the preparation of the soil and the after care of the plants will be of comparatively little use unless the requirements of the plants as to sunshine and shade are given due consideration. This fact is perhaps not of as much importance in selecting plants for shaded or partially shaded positions, as it is in the selection of plants for very sunny positions. There are very few of even our sun-loving plants that will not give fairly good results in partial shade. On the other hand, a shade and moisture



White Foxglove

All of the foxgloves delight in a little shade. A sun-loving plant will be often entirely ruined if planted in a position fully exposed to the sun.

There are but few if any of our ordinary garden plants that would not be benefited by being slightly shaded from the extreme heat of the sun that prevails in the middle of the day during the summer months, sometimes even during the early part of June. This was very noticeable during the extreme heat and drought that prevailed during the early part of last summer. The shade loving plants naturally suffered the most. In many instances, clumps of perennial plants, such as iris, herbaceous spireas, lily of the valley, dahlias, primroses, pansies, and other similar plants suffered severely, so much so, that the flowers on them were of little, if any, decorative value. Dahlias especially suffered very severely from the extreme heat of last season. Indeed, very few good dahlia blooms

were seen until cooler weather prevailed quite late in the fall. Copious supplies of water at the roots, as well as overhead sprinkling, has no beneficial effect in counteracting such intense sun heat as prevailed during the early part of last summer. The same might be said of some of the shade loving annuals, such as the Malope (Mallow), *Convolvulus minor*, and *Nemophila*, planted out in the open, but where partial shade was given good flowering results were obtained.

THE SHADE TO GIVE

The great point to secure in giving shade to plants is to give the proper density of shade required, without shading too closely so as to induce a weak, spindled growth. This last named condition is quite as undesirable in plant life as over-exposure to the heat of the sun, if good flowering results are to be obtained.

Partial shade sufficient to break the concentrated heat of the sun, and so arranged as to allow of the maximum of normal light possible, and a free circulation of air, are the conditions that best suit most of our shade loving plants. For ferns, mosses and a few other non-flowering plants, a denser shade and less free circulation of air is desirable for these to succeed well.

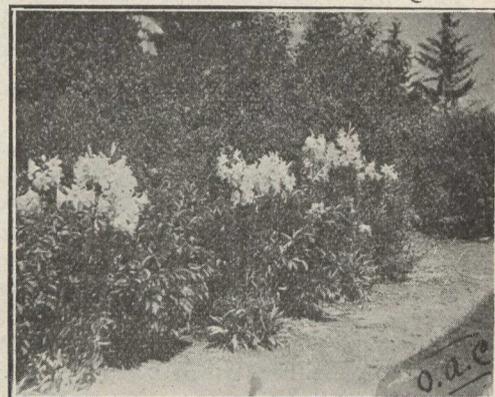
A short distance away from the north side of a fence or building, where the plants are shaded for three or four hours in the heat of the day, but otherwise fully exposed to light and the early and late sunshine, is an ideal position for flowering plants that require partial shade only. Ferns and similar shade loving plants could be so planted close up to the building or fence, instead of a short distance from it, as very few of them require any sunshine at all.

TREES FOR SHADE PURPOSES

Many trees may also be made use of for securing the desired modicum of shade for plants. Apple, pear and plum trees, and a few lawn trees, such as maple, birch and beech, may often be utilized for shade purposes. The difficulty in making use of trees to secure shade is the danger of the plants planted near them becoming starved or stunted, from the fact that the roots of the trees absorb and take up all the nutritive elements, and the moisture in the soil.

Very few plants will succeed when planted under or near to spruce, elm, willow and similar trees, that have what might be termed an abnormal root development, that devour everything of a nutritive nature there is in the soil anywhere near them. The roots of these trees will often extend around them on all sides to a distance equal to the height of the trees, hence the desirability of avoid-

ing planting near to them, either to secure protection from the sun, or for any cultural purposes. That partial shade, of a greater or lesser degree of density



Group of *Lilium Candidum* in partial shade

is desirable, is admitted. The point for the plant grower to ascertain is the amount of shade that can be given beneficially to the plants without injuring them.

SUCCESS FROM SHADING

A friend of mine used always to be able to carry off first honors for out-door cut roses at the July show. Not that the roses were better varieties or larger or finer blooms than others staged, but simply from the fact that his roses had a freshness and soft intensity of coloration almost indescribable. The secret was a shading of thin cotton sheeting, stretched on stakes and slats of wood over the bushes during the middle of the day, for a few days prior to the exhibition.

(To be continued)



Lemon Lily and English Garden Daisies
Partially shaded by apple trees.

Fertilizing and Starting the Celery Crop

A. McInnes, London, Ont.

FOR the production of celery there is no fertilizer that is so satisfactory as well rotted barnyard manure. It not only furnishes plant food for growing the crop but improves the mechanical condition of the soil by the addition of humus. The action of barnyard manure is rather slow and it is often desirable to supplement the manure by an application of commercial fertilizers.

If fresh stable manure is used it should be plowed under in the autumn. If the manure is well rotted, it may be plowed under early in the spring or used as a top-dressing a short time before planting. If the manure is plowed under the land should be re-plowed a short time before planting in order to bring the manure to the surface. From ten to twenty bushels to the acre should be applied each year the land is planted to celery. An application of five hundred to eight hundred pounds of common salt to the acre is desirable. Celery will take up a limited quantity of salt and its flavor is improved thereby.

One or two tons of high-grade fertilizer to the acre may be profitably applied on most soils in addition to the stable manure. As a rule, the quick-acting fertilizers are used. A suitable mixture for growing celery should contain about six per cent. of nitrogen, five per cent. of phosphoric acid, and ten per cent. of potash. Scatter it in the rows, and work it into the soil by means of a harrow or cultivator.

In the preparation of the rows it will be sufficient to apply between two and three quarts of high grade fertilizer to every rod of row to be planted, working the fertilizer into a strip of soil twelve to eighteen inches in width. After the celery plants have become well established their growth may be hastened by making frequent light applications of nitrate of soda to the surface of the soil before cultivation. As a rule the land should be plowed several weeks before planting, and the plowing should be very deep and thorough.

A few days before the land is required for planting, the surface should be cut with a disk or cutting harrow followed by such tools as are necessary to pulverize the soil to a depth of five or six inches, and just before planting the land should be rolled to secure an even surface. Commercial fertilizers should be applied while fitting the land for planting and should be well mixed with the surface soil.

The rows in which the plants are to be set should not be marked until a short time before planting in order that the soil may remain fresh.

The first and most important consider-

ation when preparing to grow a crop of celery is the securing of good seed from selected stock and true to name. Pay the highest price, if necessary, and demand the best. Sow the seed for an early crop from February first to March tenth.

The best plan is to secure a wooden flat or tray about twelve by sixteen inches in size and two or three inches deep, with several small holes in the bottom for drainage. After filling with sifted soil for the seed bed, level it off even with the top, and either shake down the soil or press it down by means of a board before the seeds are sown. Either sow in drills two inches apart or scatter broadcast, and cover the seed by sprinkling through a fine sieve a very small quantity of leaf mold or sand. The tray

can be placed in the window of a moderately warm room and watered by sprinkling very lightly as often as necessary to keep the surface from showing dryness, but the soil should not become waterlogged. The seedling will appear in from two to three weeks, after which the tray should be turned around once each day to prevent the plants drawing toward the light.

Sow for a late crop from April tenth to May tenth in drills ten or twelve inches apart and cover very lightly by sifting soil or by passing a roller along the drill after the seed has been dropped. When the seedlings are well started they may be thinned out and allowed to remain until planted in the field. Plants grown in this manner require very little attention as they can be worked by means of a wheel hoe or other hand cultivator.

Hotbeds: Their Construction and Use

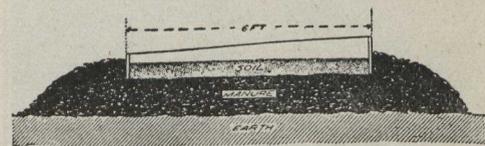
Prof. E. M. Straight, Macdonald College, Que.

We are now approaching that magic time of year when hotbeds are much in evidence. There is a certain satisfaction in working with hotbeds. The grower has been "frozen up"—more or less dormant during the winter. The hotbed offers to him the first opportunity of working off some of this surplus energy. Greater than all else is the advantage which the gardener secures in time; for by the hotbed he is enabled to secure a crop in advance of its normal season. To this problem the grower is obliged to bend his every effort, for the price which he obtains for most produce depends upon the season in which it is put on the market. On many markets string beans bring two dollars and fifty cents a bushel at the first of the season and thirty cents at the end, if they bring anything at all. This condition prevails with most market garden crops to a greater or lesser extent. The hothouse offers great advantages, but the initial expense in putting these up is so great that we hesitate to recommend them; but to the man who can afford neither hothouse or glasshouse the hotbed solves the problem, and offers advantages which he cannot afford to neglect.

The hotbed consists of an enclosure covered with sash and supplied with some form of heat. This heat may be supplied by means of hot air furnaces, lanterns, exhaust steam, or fermenting manure. Hot manure is the common method of heating the bed and is one of the best. The idea is not new, for it is said that the Egyptians used heating manure for the forcing of vegetables, in peculiarly constructed pits covered with talc tiles.

The hotbed used in commercial work

measures six by twelve feet and is spoken of as a "frame." Such a frame is covered with four "sash," each measuring three by six feet. These frames are usually placed end to end in continuous rows with walks between. The walks vary much in width. We believe that a seven



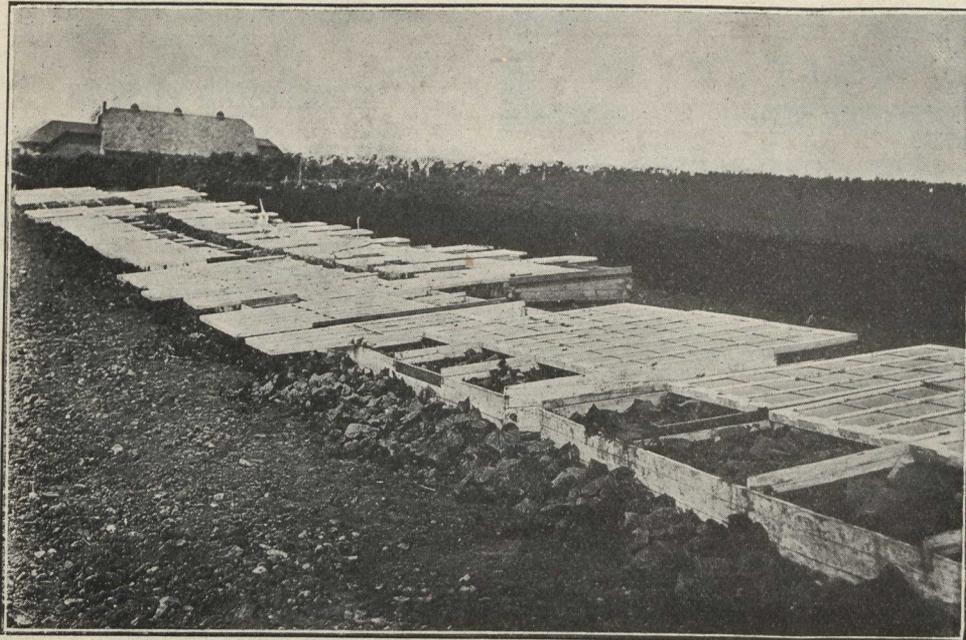
Cross Section of Temporary Hotbed

foot passage is quite sufficient, although some growers allow ten feet. With a seven foot walk, about two hundred and eighty frames may be used to the acre. The cost will depend upon the price of lumber and the price of labor. If the grower is "handy" with tools he may cut down the expense of starting very much.

THE PIT REQUIRED

The frames may be placed on a manure pile, but it is preferable to have a pit beneath the frame in which the manure is placed. The pit should be somewhat wider upon either side than the width of the frame, and should be about two feet deep. It may be walled with stone or brick.

Drainage must be provided for. On the ground is placed a layer of coarse material such as gravel to keep the manure from the ground. The manure is placed directly on this. The amount will vary, depending upon the kind of manure, the time of year, and the degree of heat you are obliged to maintain. If a large amount of manure is needed it will be necessary to obtain it from the livery stables, for manure which has burned out is of no value for the hotbed. Alter-

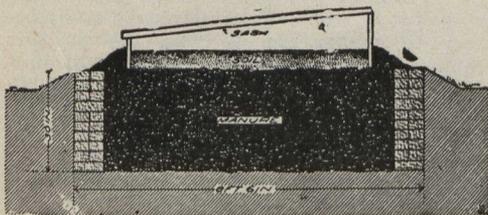


Melon Frames as Used at Macdonald College, Que.

nate forking over and compacting for two days is advisable so that every part will be heating uniformly, or the bed will burn out in spots while the remainder is cold.

Put in the manure in layers and tramp it down before another layer is put on. Twelve inches of manure is enough in the springtime, but it may be necessary to use twice that amount at some seasons. Above the manure a layer of leaf mould is often placed, which serves as a distributor of heat. On this, five inches of rich garden loam, in which the seeds are planted, is thrown in and carefully levelled. The sash are placed in position, but the seeds are not sown at once.

During the first days the heat goes up to ninety degrees, but it is not safe to sow the seed until the mercury drops below eighty, and much below that for such cool crops as lettuce and radish. Banking the bed with manure or soil is ad-



Cross Section of Permanent Hotbed with Enlarged Pit visible if run during cold weather, and covering the bed at night with burlap, or like material, is essential during the early season. Various hotbed mattings are sold by dealers in gardener's supplies.

There is no branch of farm work which needs greater attention than that of handling hotbeds. An hour's delay, when the plants need water, or ventilation, or heat, or shade, or the thousand

and one other little operations which go to make up the daily routine of the market gardener's life, is usually fatal.

He must see to it that he has sufficient heat and that he will be able to maintain it so long as required. The water supply must be abundant and constant; the sash must move easily to facilitate watering and ventilating. A wind break, such as a hedge or board fence between the beds and the prevailing wind, is a great conserver of heat. Lastly, they must be near the house. This saves time and energy and should not be neglected.

The frames are usually made eighteen inches high on the back and twelve inches on the front. They are always placed so that the glass is sloping toward the south. The six inches of fall provides for this. The frames may be made by the grower, but as a rule the sash can be purchased cheaper than it can be made locally, and are on sale by seedsmen and dealers in garden supplies. White pine and Cypress is commonly used in the construction. Cypress will cost more than the pine, but is more durable.

COLD FRAMES

Cold frames are exactly the same as hotbeds except that they are not provided with bottom heat. The heat of the sun is quite sufficient at this time for the purpose. Plants are taken from the hotbed to the cold frame and are thus hardened before going to the open field.

The question of double glass has received some attention of late years. It has been claimed that if sash are used with glass on either side, and an inch air space between, that all covers may be dispensed with. Our own experiments with double glass would show that too much has been said in favor of these. The double glass has the advantage of

about two degrees and not more. The sash cost more, are heavier, and the advantage of two degrees is more than offset by these disadvantages. True, two degrees of heat are often of great importance, but we think that it may be obtained much more easily by a burlap cover, and with less expense.

Hotbeds are worth the trial. They are interesting, and thousands of gardeners will testify that they pay.

Fertilizers for Potatoes

Recently the average gain from 750 pounds of a complete fertilizer used in 107 experiments in Canada was 85 bushels per acre, which at 50c. per bushel for the potatoes and retail prices for the fertilizer would leave a gain of \$28.00 per acre after deducting the price of the fertilizers. The fertilizer used was a mixture of 150 pounds of nitrate of soda, 400 pounds of acid phosphate and 200 pounds of sulphate of potash, which will analyze out about 3½ of nitrogen, 7½ phosphoric acid and 13 per cent. of potash. This latter can be taken as a good general, all round potato fertilizer, and will probably give results on a greater variety of soils than any other combination.

In Maine, which produces the highest yield per acre of any state in the Union, a 4-6-10 fertilizer is very generally used. I remember some years ago in talking with a manufacturer of fertilizers in the Maritime Provinces, he told me that he did not license a formula like the above in Canada, but did in Maine; and when asked the reason, he said that the Maine people knew what they wanted and were willing to pay for it. The Maine potato grower uses from 1,500 pounds to 3,000 pounds per acre.

In New York State, another heavy potato growing state, a 2-8-10 fertilizer is more generally used than any other. Where barnyard manure is available, a thousand pounds of a 10-8 goods, ten per cent. of phosphoric acid and eight of potash, is generally used.

Most of the successful vegetable growers I know are men who were at one time plasterers, brick-layers, masons or engaged in other similar lines of work. Finding that they were not making headway in the city they secured a little cheap land outside the city where they scratched away for a year or two until they began to get on their feet. Now they have good homes and are well-to-do.—J. W. Rush. Humber Bay, Ont.

Test the seeds if it has not already been done, and order early.

Start the hotbed and be sure that the temperature is uniform before sowing seed.

The Canadian Horticulturist

Published by The Horticultural
Publishing Company, Limited

PETERBORO, ONTARIO



The Only Horticultural Magazine in the Dominion

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

H. BRONSON COWAN, Managing Director

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. The Law is that subscribers to newspapers are held responsible until all arrearages are paid and their paper ordered to be discontinued.
5. Change of Address—When a change of address is ordered, both the old and the new addresses must be given.
6. Advertising rates One Dollar an Inch. Copy received up to the 18th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.
7. Articles and Illustrations for publication will be thankfully received by the editor.

CIRCULATION STATEMENT

The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with December, 1911. The figures given are exclusive of samples and spoiled copies. Most months, including the sample copies, from 11,000 to 12,000 copies of the Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

| | |
|-----------------|----------------|
| January, 1911 | 8,082 |
| February, 1911 | 8,260 |
| March, 1911 | 8,523 |
| April, 1911 | 9,469 |
| May, 1911 | 9,783 |
| June, 1911 | 10,178 |
| July, 1911 | 10,062 |
| August, 1911 | 10,043 |
| September, 1911 | 9,973 |
| October, 1911 | 9,991 |
| November, 1911 | 9,988 |
| December, 1911 | 10,137 |
| Total | 114,489 |

| | |
|-----------------------------|-------|
| Average each issue in 1907, | 6,627 |
| " " " " 1908, | 8,695 |
| " " " " 1909, | 8,970 |
| " " " " 1910, | 9,067 |
| " " " " 1911, | 9,541 |

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, ONT.

EDITORIAL

THE FRUIT CONFERENCE

The third Dominion Fruit Conference, held in Ottawa last month, proved an inspiration to all who attended. While it was generally realized that the fruit interests in the various fruit-growing provinces have shown a great advancement during the past few years, one needed to be present to realize and appreciate the spirit of optimism and ambition that pervaded the various sessions of the conference. It was evident that this spirit was but a reflection of the views held by the fruit growers in all our leading fruit districts, as these districts were represented by the delegates at the conference.

So much has been heard during recent years of the wonderful strides that have been made in the growing of fruit on the Pacific coast it was refreshing to find that the fruit growers of the east were wide awake also and determined to prove that their sections are capable of producing as fine fruit as can be grown anywhere. They were confident, also, that from now on the east will rapidly become an important factor in the growing and marketing of fruit of the highest quality. The splendid quality of the fruit from the different provinces that was on exhibition proved that there is now a general understanding in all our provinces of what constitutes high class fruit as regards color, size and methods of pack.

The success of the conference cannot be judged by the business transacted, important as it was. The greatest benefit derived will flow from the impression made by the gathering on the delegates themselves. These men have returned to their respective provinces impressed with the knowledge that their local governments, fruit growers' associations and brother growers must be up and doing if they are to hold their own in the march of progress now so manifest throughout Canada. The effect of their influence in this direction during the next few years can hardly be overestimated.

In harmony with the new national spirit so manifest throughout the sessions three most important decisions were reached. One of these was the advocacy, in a manner that would not be denied, of the separation of the fruit from the dairy and cold storage divisions of the Dominion Department of Agriculture. It is proposed that a commissioner shall be placed in charge of this department who will have not only a practical knowledge of fruit growing, but greater freedom of action and direct approach to the minister of agriculture not now allowed to the chief of the fruit division in the subordinate position that he holds. The conference made it clear that this is a condition of affairs that requires to be remedied. In line with this resolution was the action taken to form a national fruit growers' association and to facilitate the holding of a national apple show. When the Dominion Department of Agriculture has a fruit commissioner enjoying the powers such an official should possess, backed up by a national fruit growers' association and the holding of national apple shows, the fruit interests of Canada will receive the attention they deserve and we may expect to see

Canada become as noted for its fruit as for any of its other great natural resources.

A PLEASING CUSTOM

A pleasing feature of the recent general observance on this continent of the centenary of Charles Dickens' birth was the featuring in connection with it of the use of the scarlet geranium. It was the great author's favorite flower, and he grew it extensively in his garden at Gadshill. Special requests were issued to local Dickens committees by H. Snowden Ward, F. R. P. S., the commissioner to the United States and Canada from the Dickens' fellowship of Great Britain, urging them to use the geranium in connection with the giving of Dickens dinners, dances and similar entertainments.

The growing favor that the observance of Mother's Day is meeting with is due in a large measure to the custom now connected with it of sending flowers on that day to our mothers or of wearing flowers in their honor. While the use of flowers in memory of Dickens may never be expected to reach the same proportions it is likely to assume in connection with Mothers' Day, still it is a movement that is in the right direction and one which lovers of flowers may well do their best to encourage. There is no better way of extending the love of flowers.

SURPRISING APPOINTMENTS

Ontario's Minister of Agriculture, Hon. James Duff, during the past two or three years, has been subjected to considerable severe criticism at the hands of Conservatives and Liberals alike. It has been claimed that since his assumption of the portfolio, the department of agriculture has been characterized by a lack of progressiveness and inability to appreciate the needs and importance of the industry it represents. Nothing the Minister of Agriculture has done has so justified such criticisms as the recent appointments he has made to fill the vacancy created by the resignation of the provinces' talented Deputy Minister of Agriculture, Mr. C. C. James, Hon. Mr. Duff has appointed two deputy ministers. There was no more need for such action than for adding a fifth wheel to a cart. The deputy minister who has been appointed to assume the main direction of the work hitherto done by Mr. James is a young man who, until comparatively recently, was a reporter on a Toronto daily paper. He is absolutely without the necessary qualifications to enable him to hold the position which he now occupies. The idea of putting such experienced men as Dr. G. C. Creelman, Mr. G. A. Putnam, Mr. P. W. Hodgetts, and others under the direction of such an official, is so ridiculous as to be amusing, if it was not apt to be attended by the most serious consequences.

The members of the Goderich Horticultural Society have adopted the pansy as a flower which it is proposed shall be grown so extensively in the city as to make the city noted on this score. This is an idea which other horticultural societies and cities might well adopt. Were the growing of other flowers, such as roses, hydrangeas, peonies and many others that might be mentioned, to be made a specialty of in different communities, a civic pride would be created in the cultivation of such flowers which would add greatly to the beauty of such cities and to the pleasure of the public. The Ontario Horticultural Asso-

ciation, and similar bodies elsewhere, might well consider the adoption of means to ensure the example that has thus been set being followed in other municipalities.

The proposal to hold a National apple show in the city of Montreal, under the auspices of the Pomological and Fruit-growing Society of the Province of Quebec, has much to commend it. Montreal is convenient to Ontario, the province of Quebec and to the Maritime Provinces, and its selection should prove acceptable to the fruit growers of the west. In spite of the splendid advantages the province of Quebec possesses for the growing of certain high class varieties of fruit, less is being done by that province to encourage fruit growing than by any other fruit growing province in the Dominion. The holding of a National apple show in Montreal would have the effect of setting new standards for the fruit growers of that province and of calling attention to its possibilities for fruit production. The city of Montreal should

give liberal financial assistance to the exhibition, and thereby assist in making it an even greater success than the great apple show held a little over a year ago in British Columbia.

The proven ability of the fruit growers of the west to advertise their great resources probably led some who attended the recent conference of fruit growers in Ottawa to expect much in this direction from the delegates from the west. It came somewhat in the nature of a surprise, therefore, to find that the little delegation from Nova Scotia made more noise about the wonderful apple crop their province produced this year and concerning what it is going to produce in the course of the next few years, than practically all the other delegates put together. They made it clear that Nova Scotia will have to be reckoned with from now on. The Ontario delegates did not say much, but we venture to assert that not much escaped them, and that they will undertake to see that Ontario's development in the growing and marketing of fruit during the next few years will be something that the other provinces will have to sit up and take notice of.

the form of articles in which they are sure to be interested. These include one entitled "The cultivation of the garden," by Mr. J. McPherson Ross, of Toronto; another on garden work in the spring, by Miss M. E. Blacklock, of Toronto, whose interesting description of Mr. Child's garden appears in this issue, an article entitled, "Seed sowing and transplanting," by Mr. William Hunt; "Garden Notes," by Mr. E. I. Mepsted, of Ottawa; a special article, entitled "Fertilizers for flowers," by Mr. F. T. Shutt, of the Experimental Farm, Ottawa, and others too numerous to mention in detail. These articles will be profusely illustrated. In the vegetable department will appear an article entitled "Planning and preparing the vegetable garden," by Mr. W. J. Kerr, of Ottawa. In spite of these special feature in the floral section the fruit pages will not be overlooked. In them will appear an article by Mr. W. T. Macoun, Dominion Horticulturist, entitled "Growing small fruits in the orchard," and one entitled "April work in the orchard," by Mr. Grant S. Peart, of Burlington. We anticipate that our April number will be one of the best issues of the year.

A Magazine Without Ads.

Publishers of magazines, such as The Canadian Horticulturist, are sometimes asked, "Why do you not cut out all your advertising and give us a magazine containing nothing but reading?" There are two reasons why in general publications this is not done or even attempted.

One reason is that publishers could not discontinue publishing advertisements without having to increase the subscription price of their periodicals enormously. Most people little realize the amount of expense involved in publishing a single number of a paper such as The Canadian Horticulturist. In the majority of publications of this character the amount of money received for each subscription does not begin to pay even the cost of the white paper and the printing of the paper. The balance of this has to be made up out of the advertising receipts. And the printing is, of course, only one of the many items of expense in connection with publishing a magazine. All these other items have also to be paid out of the money received for advertisements. Were there no advertisements in The Canadian Horticulturist the subscription price would have to be raised to about three times what it is now. Lots of publications would have to increase their subscription price five or six times.

Readers of The Canadian Horticulturist know they can depend on the advertisements appearing in its columns. They know we do not accept or print unreliable, questionable or objectionable advertisements. They know they can depend on getting a fair deal from an advertiser in The Canadian Horticulturist. That explains why our advertisers have found that The Canadian Horticulturist can help them to increase their business, and why the best firms in their respective lines are represented regularly in its advertising columns.

We do not admit advertisers to our column except such as we believe are thoroughly reliable.

PUBLISHER'S DESK

The February issue of THE CANADIAN HORTICULTURIST established four new records. It was the largest issue we have ever printed. It was the first issue, the cover of which was printed in four colors. It was mailed to the largest number of paid subscribers in the history of the paper. The value of the advertisements carried exceeded those in any previous issue. This, if the expression may be permitted, we feel was going some. And yet the issue was but a reflection of the wonderful extension that is taking place in the fruit and general horticultural interests of Canada.

This issue of THE CANADIAN HORTICULTURIST is being mailed to almost three thousand more subscribers than THE CANADIAN HORTICULTURIST had just a year ago at this time. The circulation of THE CANADIAN HORTICULTURIST is now almost 11,500. This accounts for the fact that we are printing larger and better issues of THE CANADIAN HORTICULTURIST than ever before. This is in accord with what we have frequently told our readers, that as the circulation and advertising patronage increased we would be able to make many improvements for the benefit of our readers. Our readers will make still further improvements possible by speaking favorably of THE CANADIAN HORTICULTURIST to their friends and by patronising our advertisers, at the same time telling them where they saw their advertisements.

The April issue of THE CANADIAN HORTICULTURIST will be our gardening and spring planting number. We expect once more to print the cover in colors and to fill the issue from cover to cover with timely interesting articles, dealing largely with the garden. The first pronounced symptoms of the gardening fever generally make themselves noticeable in connection with the average amateur gardener during the month of April each year. Anticipating a recrudescence of this ailment, we are planning a prescription for the patients which will take

SOCIETY NOTES

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

Orangeville

The recently organized Horticultural Society at Orangeville is starting out on right lines. Besides the distribution of premiums to its members, it is the intention to hold regular meetings throughout the year, at which questions placed in the question box will be discussed and answered if possible. Matters dealing with home and public improvement will also be discussed. Among the various suggestions presented by the directorate for consideration have been the following:

Encouraging the planting of more evergreens on home grounds and in unsightly places about the town.

Cooperating with the municipal council in adopting a uniform system of graded boulevards, in the cutting of grass, in the selection and care of trees, in street planting and the destruction of various weeds.

Advocating the improvement of Mill St., the main approach from the C.P.R. station to Broadway, by the removal of fences, the proper grading of lawns and boulevards to the sidewalk line, and by the planting of deciduous trees where needed.

Cooperating with the C.P.R. in beautifying the approach to the station and corners by planting of trees and shrubs.

At a recent meeting, Prof. H. L. Hutt, of Guelph, gave an illustrated lecture on "Home and Town Improvement."

Port Dover

Our society is progressing. We hold a flower and fruit exhibition every year, and give flower seeds to school children. The children take great pride in cultivating and exhibiting their flowers. Our expenditure last year was \$328.83, and we hope to exceed that amount this year.—Jas. Symington, Secretary.

The Third Dominion Fruit Conference

FAR-REACHING results should follow the third Dominion conference of fruit growers that was held in Ottawa, February 14-16. The discussions that were held and the resolutions that were passed were fraught with much of importance to the fruit interests of Canada.

The conference was called by the Dominion Minister of Agriculture, Hon. Martin Burrell. It was thoroughly representative in nature, delegates being in attendance from all the provinces of Canada. They represented the various fruit growers' conventions, apple shippers' associations and provincial departments of agriculture. In addition to the delegates a number of representative apple growers and shippers were present from several of the provinces at their own expense. All present were allowed to join in the discussions, but only delegates were permitted to vote.

GREAT THINGS EXPECTED

The various meetings were buoyant with optimism and breathed a national spirit that was very apparent. Every delegate present was charged with the conviction that the fruit interests of his province are on the eve of a wonderful development. The confidence in the future of the industry this feeling inspired had its counterpart in the manifestation of a national spirit which led all the delegates to evince a keen desire that the fruit growers of the various provinces shall work in harmony with one another, and as far as possible under uniform laws pertaining to the handling and marketing of their fruit.

A feature of the conference was a splendid display of apples comprising about one



Honorable Martin Burrell

Who called the Conference and who presided at several of the sessions.

hundred and fifty boxes gathered from each of the fruit growing provinces of Canada.

There were also several boxes of fruit from the famous Hood River district in Oregon, the state of Washington, and the state of Virginia. In addition, the Dominion Experimental Farm at Ottawa had an excellent exhibit of Fameuse apples and an attractive selection of plate fruit representing various seedlings originated at the Central Experimental Farm, Ottawa. Manitoba was represented by two boxes of fruit.

The fruit from the different provinces was richly colored, high grade in quality and well packed. It afforded opportunities for comparison of fruit from the different provinces. The display made it manifest that while some provinces may produce more box fruit than others, still each of the provinces is able to produce fruit that will compare favorably with the best fruit from any other section. The fruit in the exhibit had been collected by the government from the different provinces and shipped to Ottawa, where it was all repacked by the same packers. It showed the possibilities of the cold storage of fruit and reflected credit on the Dominion Department of Agriculture which had arranged the exhibit. The exhibit was banked on the platform facing the delegates, where it made a most attractive display. An illustration of this exhibit appears on page 57.

HONORED GUESTS

A feature of the conference was provided by the attendance of His Royal Highness, the Duke of Connaught, Governor-General of Canada, at one of the afternoon sessions

Cheap Roses

If you want Roses that will do anything at all then don't *experiment* with cheap slips and cuttings bought from so-called Nursery concerns, but buy *two year* old Canadian grown plants from *reputable* Rose growers, who have raised them on their own nurseries and not imported them. Imported gowns may be attractive and alluring, but imported Roses and Shrubs are by no means satisfactory.

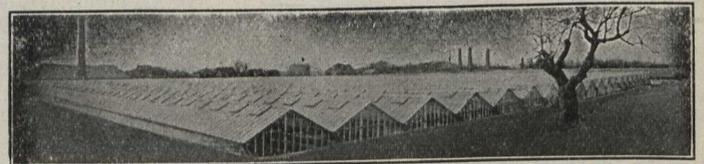
The climate of France and Holland is quite different from ours and plants from these countries feel the change sorely. Roses and Shrubs offered at "Bargain Counter" rates have undoubtedly been imported from England, France or the Netherlands, and are expensive even at the lowest prices.

Buy your Roses, Shrubs and trees from reputable nurserymen growing stock in your own latitude

Our selection of Roses, Shrubs, Trees and Plants is complete, and lists and prices will be cheerfully furnished on application.

THE CANADIAN NURSERY CO.
LIMITED
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SPECIAL GLASS FOR GREENHOUSES



Conservatories of The Dale Estate, Brampton, Ont.
Glass supplied by our Toronto Branch

GOOD QUALITY, FLAT, EVEN
THICKNESS, AND WELL CUT

We make a specialty of supplying
Glass for vegetable forcing houses

PILKINGTON BROS.
Limited

Toronto, Montreal, Winnipeg, Vancouver

Mention The Canadian Horticulturist when writing

and of the Right Honorable R. L. Borden, Prime Minister of Canada at one of the evening sessions, both of whom spoke. Honorable Mr. Borden assured the delegates that it is the intention of the Dominion government to promote the cause of agriculture in every way possible.

THE DISCUSSIONS

Owing to the limited time at the disposal of the delegates and the numerous important matters that had to be discussed, it was found necessary to conduct much of the business of the conference in committee meetings. This permitted more work being accomplished than would otherwise have been possible. Nevertheless there were a considerable number of lively preliminary discussions as well as discussions of the committee reports, all of which were conducted in the best of good spirit and which were productive of definite, beneficial results.

THE RESOLUTIONS

The conference resulted in the passing of important resolutions, most of which, it is hoped, will be crystallized into legislation by the Dominion government. The resolutions passed and decisions reached included the following:

A NATIONAL ASSOCIATION

To form a National Fruit Growers' Association. Steps to this end were taken, preliminary officers elected and a partial constitution adopted. It is expected that the Dominion Government will make a small grant to help defray the expenses of this association.

Instructions were given to the officers of this association to appoint a transportation committee of three members to look after

the interests of the fruit growers with the railway companies and power was given to the committee to appoint an expert transportation agent to investigate claims and railway and express rates and other similar matters.

STANDARD BOXES

It was decided to ask the Dominion government to make the standard apple box now used for the export trade the standard box for domestic use also. There being considerable difference of opinion as to the most suitable shapes for the other various box packages of fruit, it was decided to defer making recommendations concerning these in order that the various fruit growers' organizations may investigate the matter and report later with recommendations. The Dominion Department of Agriculture was asked to undertake the organization of the investigation. It was resolved that whatever size may be determined on for the pear box shall be made the legal size also for crab apples.

The Dominion government was requested to issue forms to basket manufacturers so as to ensure a uniform size of fruit baskets.

It was recommended that the four-basket plum tray 15¾ by 15¾ by 4½ in. inside measurement should be made the legal size for Canada.

STANDARD BARRELS

The government was urged to provide two standards for apple barrels, one the 96-quart barrel, commonly used in Nova Scotia, and the other the 112-quart barrel, commonly used in Ontario. The Department of Agriculture was requested to provide for the enforcement of the use by all growers and dealers of one or the other of

Douglas Gardens

Oakville, Ontario

OUR 1912

Spring Planting List

NOW READY

describes and offers, amongst other good things:

- ANEMONE JAPONICA, 4 varieties, at 15c. per plant.
 - CLEMATIS RECTA, at 20c.
 - DICENTRA (Bleeding Heart), at 15c.
 - GYPSOPHILA (Baby's Breath), at 15c.
 - HARDY GARDEN PINKS, 4 varieties, at 15c. per plant.
 - HEMEROCALLIS (Day Lily), 4 varieties, at 15c. per plant.
 - KNIPHOFIA (Flame Flower), at 20c.
 - SPIREAS, 3 varieties, at from 15c. to 35c. per plant.
 - TROLIUS JAPONICUS fl. pl (Globe Flower), at 15c.
 - YUCCA FILAMENTOSA, at 25c.
 - SHASTA DAISIES, 3 varieties, at 25c. per plant.
 - GLADIOLUS, 14 named varieties, at from 4c. to 30c. per corm.
 - GLADIOLUS, Groff's Hybrids, unnamed, at 10 for 25c.
 - GLADIOLUS, Groff's Hybrids, a very fine light colored section, at 25 for 75c.
 - GLADIOLUS, Groff's Hybrids, red and scarlet section, at 25 for 60c.
 - ISMENE CALATHINA GRANDI (Peruvian Daffodil), at 20c. per bulb.
- These prices include carriage to destination.
- Also a fine assortment of China Asters, Antirrhinum (Snapdragon), Salvia. Stocks, &c., for Bedding purposes.
- Mailed free to all on our Mailing List and to others interested who send names and addresses.

JOHN CAVERS



The trees were the best rooted we ever saw and every one of them grew — Howard G. Fisher.

Auburn Nurseries Pedigreed Peaches

2 Years Old. Grown by G. E. Fisher & Sons
Dulverton Fruit Farms, Queenston, Ont.

These are the kind of trees to buy. No storage stock about these, but the thrifty, healthy, sturdy kind that stand in the nursery row all winter, and are fresh and bright in the spring, and reach you in fit condition to start right into business. We still have a good stock of Peach, Cherry, Pear and Plum, Yearling Apple and Quince.

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They make you independent of slipshod help and give you time for rest and enjoyment besides. 55 Tools; guaranteed. Designed by a practical farmer; used throughout the world.

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No. 8 Planet Jr Horse Hoe and Cultivator is a wonder of scientific tool-making. Does more different kinds of work, better than any other cultivator. •Plows to and from row, hills, furrows, etc.

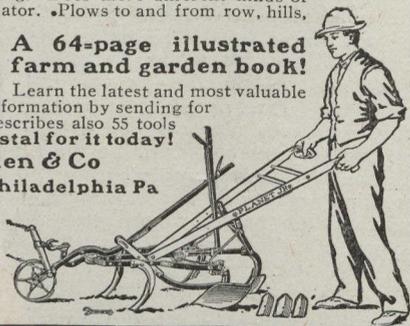


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Keep up to date! Learn the latest and most valuable farm and garden information by sending for this Planet Jr book. It describes also 55 tools for all uses. **Write postal for it today!**

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Why Don't You Plant EWING'S Reliable Seeds?

What's the use of giving your land, your time and your work for a season for anything less than the *best* crops? Ewing's Reliable Seeds have proved, for more than forty seasons, favorable and unfavorable, that they will produce the biggest crops of the best quality. Ask your neighbors

who plant Ewing's Seeds all about them. Plant them yourself this spring and get the full reward for your work. Your dealer should have Ewing's Reliable Seeds, but if he hasn't, write for our illustrated catalogue and order from us direct.



16

WM. EWING & CO.,
SEEDSMEN
McGill St., Montreal.

Peerless Poultry Fence Protects

We build Peerless Poultry Fence strong enough to keep marauding animals out and sufficiently close to keep small fowl in.

A Real Fence That Gives Real Service

Built same as farm fence of good galvanized wire, protecting it against rust. Top and bottom No. 9 heavy, hard, steel wire—intermediate horizontal wires No. 12—stays No. 13, 32 to the rod. This makes an excellent, all around, general purpose fence suitable for turning all classes of stock.

Agencies nearly everywhere. Live agents wanted in unassigned territory.

The Banwell Hoxie Wire Fence Co., Ltd., Winnipeg, Manitoba, Hamilton, Ont.

these standards and that the manufacturers be held responsible for their size.

NATIONAL APPLE SHOW

The advisability of holding national apple shows was conceded and the Dominion government was asked to appropriate \$10,000 towards the expense of the next National Show, provided at least \$20,000 in prizes is offered by the promoters.

The government was requested to have daily market prices for fruit cabled from their commercial agents in Europe and published in the daily papers in all provinces of the Dominion during the shipping season.

The Minister of Agriculture was reminded that the fruit interests of Canada are now of sufficient importance to warrant the placing of the fruit division on the same basis as the seed and live stock divisions with a commissioner appointed in charge.

The sufficient inspection at point of entry of imported deciduous fruit was urged so as to ensure its being marketed under the conditions of the Sales and Inspection Act.

FRUIT INSPECTORS

The Minister of Agriculture was requested to investigate the possibility of giving to applicants, on payment of a reasonable charge, a certificate of the results of any inspection made.

It was recommended that when an inspector has examined a closed package of fruit that it be stamped with the word "inspected" and the number of the inspector.

THE NUMBER OF APPLES

The amendment of the Fruit Marks Act was urged in order that it may be made compulsory to mark, on the outside of the box, the number of apples contained therein.

The Department of Agriculture was urged to divide the fruit growing provinces into suitable districts with a permanent and capable fruit inspector and instructor in each district so as to ensure, to the greatest possible extent, inspection at the point of shipment.

MINIMUM SIZE FOR APPLES

The amendment of Section 321, clauses two and three, of the Inspection and Sales Act, was urged in order that a minimum size of apples packed in barrels may be established as follows: The Fameuse, two and three-eighths inches for number one, two inches for number two.

Golden Russets and kindred sized varieties, two and three-eighths inches for number one, two and one-eighth inches for number two.

Baldwins, Spys, Greenings, Ribstone and kindred sized varieties, two and one-half inches for number one, two and one-quarter inches for number two.

Kings, Blenheims, Wolf River and kindred sized varieties, two and three-quarter inches for number one, two and one-half inches for number two.

It was recommended that where a packer of apples in barrels desires to establish a higher minimum standard for a portion or all of his pack he may do so by stamping or stencilling on the face end of the barrel the minimum diameter in inches and fractions thereof and that the diameter so marked shall be the minimum standard of size for such barrel.

DELEGATES PRESENT

The representative nature of the conference is best shown by the list of the dele-

Strawberry and Raspberry PLANTS

All the Leading Varieties
HOME GROWN

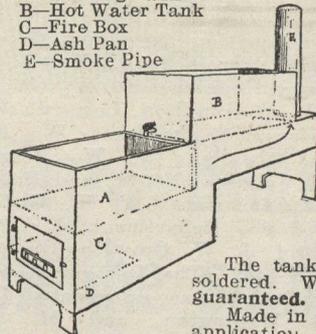
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Price List

C.P. NEWMAN

BOX 51

Lachine Locks - Quebec

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



Make Your Own Spray

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

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

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

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

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



How Do YOU Spread Manure

THE above illustration shows the difference in crops, between the I H C way of spreading manure—and the pitchfork method.

The pitchfork way is slow, hard, and disagreeable, wastes much of the value of the manure, and the results hardly justify the labor and time invested.

The I H C Spreader cuts the manure into fine shreds, spreads it evenly, and makes the work easy. Spreading manure the I H C way is bound to result in better soil, bigger crops, and more profits.

I H C Manure Spreaders

Corn King—Cloverleaf

are simple, strong, and durable. They have many advantages that make them superior to other spreaders.

All working parts are extremely simple and wonderfully strong. The beater driving gear is held in a single casting, so that there is no binding—no cutting of parts caused by the gears springing out of alignment. The roller-bearing support for the apron reduces the draft. The levers are convenient. The feed changing device can be shifted quickly and easily. The wide range of adjustment allows you to spread manure heavy, medium, or light, as your judgment tells you is best for the soil.

Whether you have a large or small farm, or want a spreader for orchard use or truck gardening—there is an I H C that will suit your requirements. Why not see the I H C local agent at once? Get a catalogue from him, or, write nearest branch house.

CANADIAN BRANCHES—International Harvester Company of America at Brandon, Calgary, Edmonton, Hamilton, Lethbridge, London, Montreal, North Battleford, Ottawa, Regina, Saskatoon, St. John, Weyburn, Winnipeg, Yorkton.

INTERNATIONAL HARVESTER COMPANY OF AMERICA

Chicago

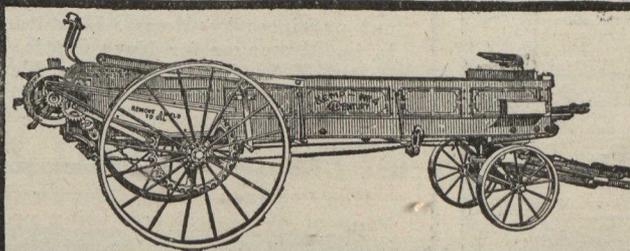
(Incorporated)

U S A



I H C Service Bureau

The purpose of this Bureau is to furnish farmers with information on better farming. If you have any worthy question concerning soils, crops, pests, fertilizers, etc., write to the I H C Service Bureau, and learn what our experts and others have found out concerning these subjects.



THE
**STRATFORD
EXTENSION
LADDER**

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

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

IF Interested write for Catalogue F

THE
Stratford Mfg. Co.
Limited

STRATFORD, CANADA

Makers of Ladders for every conceivable purpose

PRUNING SAW Patented Oct. 6th 1908

Operates from ground. No breaking of limbs by climbing. No moving of ladders. No sawing of wrong limbs. Can reach topmost branches and shape tree better than by old methods. Will save its cost in one day. Nothing to get out of order. Will last for years. Thousands in use. Recommended by all users. If your dealer can't furnish it, write for full descriptive circular and prices. Satisfaction guaranteed. Address

FRUITGROWERS' SAW CO., Scottsville, N. Y.
Representative for Ontario, Jas. E. Johnson, Simcoe, Ont.

Gladioli

GLADIOLI are now the most popular of summer flowers, nothing being equal to them for table decoration. We have a large stock of the best varieties and most valuable mixtures.

Groff Hybrids are still the best we can find and they are making their way all over the world, seven or eight acres now being grown at Simcoe, largely for export. Also Cannas, Dahlias, Paeonies and General Nursery Stock.

CATALOGUE on application to
Campbell Bros. Simcoe, Ont.

Strawberry Plants FOR SALE

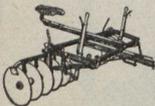
Choice Plants at reasonable prices. We have Early Ozark, Fendall, Barrymore, Silver Coin, Pocomoke, Aroma, etc., of newer varieties.

We also have Dunlop, Williams, Warfield, Brandy Wine, Bederwood, William Belt, Glen Mary, etc., of the old favorites.

Our free list tells all about them.

Order early as plants are scarce.

Ontario Nursery Co.
Wellington, Ont.



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

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

The Bissell Orchard Disc
T. E. BISSELL CO. LIMITED
ELORA ONT.

STRAWBERRIES
Plants by the dozen or by the million. 120 acres planted in 103 varieties. All the standards and the most promising of the new ones. Largest grower in America. Every plant true to name. Also Raspberry, Blackberry, Gooseberry and Currant Plants, Grape Vines, California Privet and other Shrubbery. Cultural directions with each shipment. Beautiful Catalogue FREE. Send a postal today. My personal guarantee back of every sale.
W. F. ALLEN
111 Market Street, Salisbury, Md.

gates who were in attendance. They were as follows:

Ontario.—Representing the Fruit Growers' Association: Harold Jones, Maitland; Walter Dempsey, Trenton; R. W. Grierson, Oshawa; L. A. Hamilton, Lorne Park; A. Onslow, Niagara-on-the-Lake; W. H. Bunting, St. Catharines; A. W. Peart, Burlington; D. Johnson, Forest, and Robt. Thompson of St. Catharines. P. W. Hodgetts represented the Department of Agriculture, and Prof. J. W. Crow the Guelph Agricultural College. The Ontario Apple Shippers' Association was represented by L. K. Shroud, Wellington, and M. C. Smith, Burlington, and the Cooperative Associations by Elmer Lick, Oshawa.

Quebec.—The Quebec Pomological Society was represented by Robt. Brodie, Westmount; R. W. Shepherd, Como; W. E. Jack, Chateauguay Basin; J. C. Chapais, St. Denis, and Charles T. Byers, Abbotsford. Mr. G. A. Gigault represented the Department of Agriculture; Prof. Saxby Blair, Macdonald College, and Father Leopold of La Trappe, the Oka Agricultural College.

Nova Scotia.—Nova Scotia Fruit Growers' Association was represented by R. J. Messenger of Bridgetown. A. C. Starr, Fort Williams; J. N. Chute, Berwick, and F. A. Chipman, Nictaux West. The United Fruit Companies were represented by C. O. Allen of Kentville. The Department of Agriculture by Prof. M. Cummings and the Truro Agricultural College by Prof. P. J. Shaw.

British Columbia.—The British Columbia Fruit Growers' Association was represented by W. F. Summers of Victoria; K. C. Abbot, Mission; R. H. Agur, Summerland; James Rooke, Grand Forks; W. A. Pitcairn, Kelowna, and Thos. Abriel, Nak-sup. The Department of Agriculture was represented by R. M. Winslow.

New Brunswick.—The Fruit Growers' Association was represented by C. M. Vroom, St. Stephen, and A. C. Parker, Burton; and the Department of Agriculture by A. G. Turney.

Prince Edward Island.—The Fruit Growers' Association was represented by J. A. Annear, Lower Montague, and by E. A. Dewar of Charlottetown; and the Department of Agriculture by Theodore Ross.

Manitoba—Prof. F. W. Broderick.

THE SESSIONS

The conference was opened Wednesday afternoon by Dairy and Fruit Commissioner J. A. Ruddick, who drew attention to the fact that the first Dominion Fruit Conference was held in Montreal in 1890 and the second one in Ottawa in 1906. Only two delegates who were present at the first conference, were present at the last two also. Messrs. Robt. Brodie and R. W. Shepherd of Montreal.

A cordial welcome was extended to the delegates by Honorable Martin Burrell, the Dominion Minister of Agriculture, who styled himself a fellow fruit grower. Responses were made on behalf of the different provinces by Messrs. Hamilton for Ontario, Messenger for Nova Scotia, Agar for British Columbia, Turney for New Brunswick, Dewar for Prince Edward Island, Shepherd for Quebec and Broderick for Manitoba.

OBJECTS OF THE CONFERENCE

Hon. Sydney Fisher, former Dominion Minister of Agriculture, being present, was invited to take a seat on the platform and incidentally was twitted over a statement (Continued on Page 78.)



Say, Isn't it fine to have an Independent Telephone in the House?

"Well, I should say so. Why, only yesterday, it saved me a long, cold drive to town. I just phoned the store, and they sent my stuff along by Sam Thompson." "Did you know eggs were up again?" "Yes, I phoned me, and said pork was going higher, too. Guess we ought to ship ours." "Say, Mary wants to talk to your wife." "All right—and Bill, won't the women folks enjoy these telephones?" "Yes, it's worth the money, just to help them from being so lonesome. They say they get more news over the phone than they did at a church social."

STROMBERG-CARLSON Independent Telephone

SATISFACTION GUARANTEED OR MONEY REFUNDED

is a time-saver and money-maker. It keeps you in touch with the market—brings help in case of illness or accident—makes farm life easier, brighter, happier, and more profitable.



You, and nine more men, can have your own telephone system—and operate and control lines and phones. Our Free Booklet "How The Telephone Helps The Farmer," Edition No. 58 tells all about this. Write for a copy, read it—then get your friends together and talk over the proposition. But write to-day.

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Go South Sir!

Farm Land \$10 an acre

up can be purchased in the Southeast along the Southern Railway, Mobile & Ohio R.R., Ga. So. & Fla. Ry. supporting good

12 churches, schools, stores and improved highways.

LIVE STOCK, POULTRY AND DAIRYING business pays big, and is conducted at smaller cost than in other sections of the country. Luxuriant pasturage and green fields the whole year round make this possible.

ALFALFA GROWS abundantly in nearly all parts of the Southeast. Many acres produce 4 to 6 tons, selling locally from \$14 per ton up.

APPLES, FRUIT, TRUCK AND COTTON are other big paying crops. Apple orchards net \$100 to \$500 an acre, and truck gardening \$200 up.

CLIMATE UNSURPASSED—Every day in the year one can work in his fields. These long seasons allow raising two and three crops from the same soil each year.

Subscription to "Southern Field" and booklets on States of Va., N. & S. Car., Ga., Fla., Ala., Miss., Tenn. and Ky. sent FREE.

M. V. RICHARDS, L. and I. Agent, Southern Railway, Room 18, Washington, D.C.

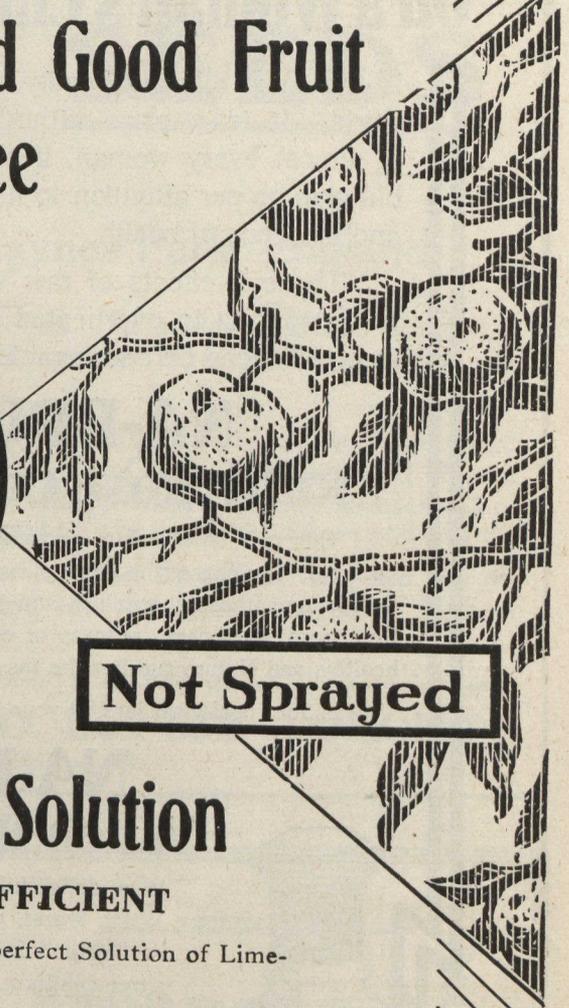
and Grow Rich

125 Egg Incubator and Brooder BOTH FOR \$10
If ordered together.
Freight paid east of Rockies. Hot water, copper tanks, double walls, double glass doors. Free catalog describes them. Send for it today.
Wisconsin Incubator Co., Box 106, Racine, Wis.

You Can't Grow Bugs and Good Fruit
on the same tree



SPRAYED



Not Sprayed

"Vanco" Lime-Sulphur Solution

IS STRONG, UNIFORM, CLEAR, EFFICIENT

It gives results every time because it is the most perfect Solution of Lime-Sulphur that expert chemists can devise.

"VANCO" LIME SULPHUR SOLUTION is the spray to use if you want your fruit trees to show a profit. It kills San Jose Scale, Fire Blight, Scab, Mildew and other parasites and fungi that destroy the buds.

Ready for use—clear—free of sediment—and does not clog the nozzle.

The specific gravity is stencilled on every barrel.

"Vanco" Arsenate of Lead

**Will Keep Fruit Trees and Vegetables
Absolutely Free of Leaf-Eating Insects**

"VANCO" ARSENATE OF LEAD will destroy Codling Moth, Potato Bugs, Cabbage Worms, Asparagus Beetles, Canker Worms, and other destructive pests and **WILL NOT BURN THE LEAVES.**

It sticks to the leaves, even after two or three rains—sprays easily—does not clog the nozzle and is easily kept in solution.

Read the "Vanco" Book—it tells a lot of facts about sprays that you ought to know. Glad to send you a copy free.

FERTILIZERS—Muriate of Potash, Sulphate of Potash, Nitrate of Soda and Acid Phosphate—straight fertilizing chemicals of guaranteed analysis.

SAVE FREIGHT—by ordering Sprays and Fertilizers together and having both sent in one shipment.

CHEMICAL LABORATORIES, Limited 148-158 Van Horne St., Toronto

The Rosy Bloom On a Woman's Cheek

is the most alluring beauty in the world. It is a prize within reach of almost every woman, if she will but give proper attention to her skin and her general health.

The evil effects of raw winds, dust, extreme cold, working in overheated and steamy rooms or in bad air, can be counteracted by using

NA-DRU-CO Ruby Rose Cold Cream

This is a snowy-white preparation with a delicate rose perfume. It cleanses the skin, nourishes and fills out the deeper tissues, smoothes out wrinkles and imparts a velvety softness, free from roughness, redness or chaps. It keeps the skin healthy, and Nature supplies the rosy bloom.

In 25c. opal glass jars, at your Druggist's.

NA-DRU-CO Witch Hazel Cream

is a delightfully soothing preparation of Witch Hazel, presenting all its wonderful cooling and healing properties in a most agreeable form.

For the skin irritation which winter brings—chaps, wind-burn, cracked lips, frost-bites or chilblain—it is a remedy as pleasant as it is effective.

25c. a bottle, at your Druggist's.

Always look for the Na-Dru-Co
Trade Mark when you buy.

National Drug and Chemical Co.
of Canada, Limited. 182



(Continued from Page 76.)

he once made to the effect that the province of Quebec produces the best apples grown anywhere in Canada. In defence of this remark he laughingly contended that King George buys the apples for his personal use from Quebec. Hon. Mr. Fisher, who called and presided at the Conference held in 1896, stated that he had had three objects in view in calling it. The same objects he presumed had led to the calling of this year's conference. These were first, to find what were the needs of the fruit industry; second, to obtain the advice of experts, and third, to consider the best means of promoting the industry on broad national lines.

CO-OPERATION

Mr. Alex. McNeil, Chief of the fruit division, gave an excellent address on "Co-operation and Fruit Growing." He dealt with the present status and advantages to be derived by cooperation and defined some of the problems that confront those who desire to cooperate. Some of the successes that have attended co-operative associations were noted and suggestions offered for further and new lines of work. One of the principal points Mr. McNeill made was that there is a radical difference between joint stock companies and co-operative associations. The object of the former is to earn profits upon the capital invested, while the object of the latter is to obtain better prices for the products of their members. Joint stock companies are a town-made institution which cannot be grafted with success on the country districts. We expect to publish a fuller outline of this address in a later issue.

NEW FRUITS

"New Varieties of Fruits." was the subject of a paper read by Mr. W. T. Macoun, Dominion Horticulturist, of the Central Experimental Farm, Ottawa. Mr. Macoun contended that while most of the standard varieties of fruit grown to-day were originated a hundred years ago, this does not prove that fully as good varieties cannot be originated to-day. He told how some of the old varieties were originated and described the work that has been done in Canada to develop new varieties. We expect to publish a fuller outline of this address later.

COLD STORAGE

At the opening session Thursday morning Mr. J. A. Ruddick read a paper entitled "Refrigeration in Relation to the Fruit Growing Industry." A portion of this paper is published elsewhere in this issue, and the balance will be given later.

The balance of this session was devoted to a discussion of fruit packages, including their sizes and legal dimensions. Much interesting information was brought out during the discussions, most of which we will publish later. The discussions were concluded by referring the points raised to various committees for further consideration.

CENSUS FIGURES DISAPPOINTING

Comparative statistics of the fruit growing industry in Canada for the years 1901 and 1911, as taken from the census returns, were given by Mr. W. W. Moore, Chief of the Markets Division, at the Thursday afternoon session. The figures quoted proved disappointing. Instead of showing an increase in the number of fruit trees in Canada since 1901, an actual decrease of 315,641 trees, including over 2,000,000 in the bearing trees, was reported.

The total number of fruit trees in 1901

FLOWER POT'S Hanging Baskets, Ferns Pans, Etc.



We have a large stock of all sizes on hand, and can ship orders without delay.

Order Now Before the Rush

Our pots are smooth and well burnt. We have our reputation to keep up.

Send for Catalogue & Price List

The Foster Pottery Company, Ltd.
Main St., West Hamilton

Paeonies, Phlox Gladiolus

Hardy

Azaleas, Magnolias and Rhododendrons

Trees, Shrubs, Roses, Vines, Tubers.

Write for new attractive catalogue. It's free.

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St. Thomas - Ont.

CARTER'S ENGLISH



TESTED SEEDS

Seed Growers by Appointment
to His Majesty King George V

James Carter & Co., High Holborn and Raynes Park, England

**Carter's English
Vegetable and Flower
Seeds**

Carter's Strains are of the best varieties. In sealed packets, price 10c. Wherever the English language is spoken Carter's Tested Seeds are recognized as standing alone.

**Carter's "INVICTA"
Lawn Grass**

Quickly forms a close thick turf. In sealed 5 lb. and 25 lb. bags, price \$1.30 and \$6.25. Carter's Grass Seeds, Grass Manures and Worm Eradicating Fertilizer have established a brilliant record on the American Continent—over three hundred Golf and Country Clubs use them and are enthusiastic.

**Carter's English Farm
Seeds**

Carter's Pedigree Mangels at 40c per lb., and Swede at 30c, are the result of years of scientific selection and root analysis represent highest yields and feeding values.

Full details will be sent on application. If your dealer does not stock them, send us his name: in any case we welcome correspondence.

PATTERSON WYLDE & CO., - **P. O. Box 532, TORONTO**
HEAD OFFICE: Chamber of Commerce Building, Boston, Mass.

Lime-Sulphur Solution



Arsenate of Lead

Grasselli Lime Sulphur Solution contains the maximum amount of Lime and Sulphur **actually in solution.** It is a clear solution and free from sediment. You will not be troubled with clogged nozzles when using it. It is uniform in strength and shipped in good barrels.

Grasselli Arsenate of Lead Paste contains 15% Arsenic Oxide. It mixes as easily as is consistent with the necessary adhesive qualities.

**Kills All Leaf-Eating Insects
Sticks to the Foliage**

**Mixes Easily with Water
Does Not Injure the Foliage**

Grasselli Spray Products are manufactured under rigid guarantee. Complete analysis on each package.

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First Aid to Busy Farmers

THE farmer's champion helper is an I H C Gasoline Engine. On thousands of farms throughout the country, they are kept busy every day, running the cream separator, churn, pump, feed grinder and cutter, fanning mill, thrasher, wood saw, grindstone, washing machine, dynamo for electric light plant, and many other machines. They are saving work, time, and money at every turn of the wheel.

I H C Gasoline Engines

are built for hard, steady work and years of it. They are simple, dependable, economical. They are always ready to save and make money for you.

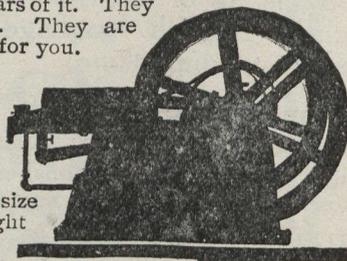
An I H C For You

The size and style I H C engine you need depends on the work you have for it to do—and on the particular conditions which surround your locality. Any size or style will not do. You must get the right engine to get the right service.

All I H C gasoline engines are marvels of strength, reliability, and durability. They run smoothly, year in and year out. They make and save money every time they are used, and whatever style and size engine you want is in the I H C line, which includes: Vertical type—2, 3, 25, and 35-horse power; horizontal—1 to 50-horse power; semi-portable—1 to 8-horse power; portable—1 to 25-horse power; traction—12 to 45-horse power; sawing, pumping, spraying, and grinding outfits, etc. Built to operate on gas, gasoline, kerosene, distillate, or alcohol—air-cooled or water-cooled. See the I H C local dealer, or, write direct today for our new catalogue.

CANADIAN BRANCHES: International Harvester Company of America at Brandon, Calgary, Edmonton, Hamilton, Lethbridge, London, Montreal, North Battleford, Ottawa, Regina, Saskatoon, St. John, Weyburn, Winnipeg, Yorkton.

International Harvester Company of America
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Chicago USA



I H C Service Bureau

The purpose of this bureau is to furnish farmers with information on better farming. If you have any worthy questions concerning soils, crops, pests, fertilizers, etc., write to the I H C Bureau and learn what our experts and others have found out concerning those subjects.

PROVINCIAL NOTES

Nova Scotia

An evidence of the increased interest being taken in orcharding in this province was furnished at the forty-eighth annual meeting of the Nova Scotia Fruit Growers' Association held recently at Wolfville, as it was the largest and most enthusiastic meeting in the association's history. While the reports generally were encouraging and showed progress, still dismay was felt when it was announced that the brown-tail moth is spreading rapidly in spite of the efforts that have been put forth by the government to stamp it out. Our growers were warned plainly that unless they put forth an earnest effort to assist the government in fighting it, it will soon become impossible of eradication.

The danger in the situation lies in the fact that many growers treat the matter lightly and are neglectful about fighting the pest until it has got a hold in their district. The worst district is Bridgetown, where some one thousand two hundred nests have been discovered. Search parties have discovered two thousand three hundred and sixty-four nests near Bear River, Smith's Cove, Deep Brook, and Middleton. Whereas the pests formerly attacked only apple, plum and pear trees, nests were discovered last season in oak, thorn, elm, birch, beach, cherry and other trees. The moth is becoming acclimatized and spins its nest to meet the climatic requirements.

OFFICERS ELECTED

The following officers were elected:

President—S. C. Parker, Berwick. Vice-president—A. C. Starr, Port Williams. Secretary—M. K. Ells, Port Williams. Treasurer—G. W. Munro, Wolfville. Executive Board—The president, vice-president, secretary, Wm. O'Brien, Windsor Forks, Hants Co.; R. J. Messenger, Bridgetown; C. O. Allen, Kentville; S. B. Chute, Berwick.

THE EXPERIMENT STATION

Much interest was taken in the address given by Mr. W. T. Macoun, of Ottawa, Dominion Horticulturist, regarding the work to be done at the Experimental Fruit Station at Kentville. The farm consists of two hundred and forty acres, three-fifths of which will be devoted to horticulture. Experiments will be conducted to determine how best to use land while the young trees are growing, the most economical way to use fertilizers, the best methods of cultivation to obtain not only quantity but quality, color and uniformity of size, the best cover crops to use and other similar work.

A practical paper on poultry raising in connection with fruit growing was given by Mr. M. K. Ells.

A RECORD YEAR

"Transportation and Markets" was the subject of an address by W. W. Moore, Chief of the Markets Division, Ottawa, who pleased his audience when he reported that up to early in January the total exports of apples from the province to British, foreign and home markets amounted to 1,020,657 barrels. The best previous record was made in 1909 and 1910, when 711,000 barrels were exported. While the government had received complaints about some of the Nova Scotia fruit it was not the fruit that had been shipped by the cooperative associations. The importance of the German mar-

CONSIDER NOW

what it will cost and how much money you will save on your next season's fertilizer bill if you should buy your

Nitrate of Soda

and other Farm Chemicals and mix them yourself

Your own brand MIXED AT HOME will be better than any patent brand and is sure to have in it just what you want.

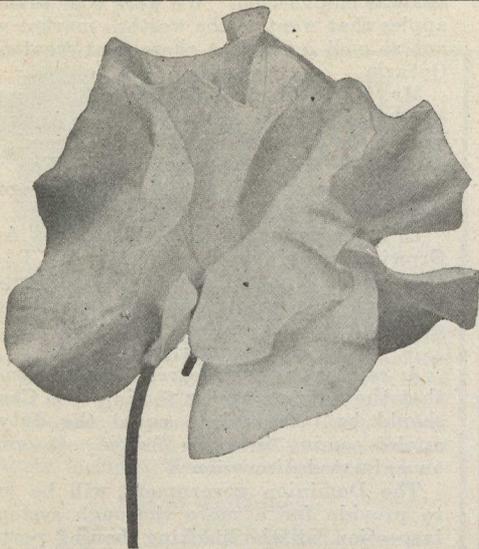
Book of formulas and full instructions for Home Mixing will be sent

FREE OF COST

if you will send your name and address on Post Card.

Dr. WILLIAM S. MYERS, Director of Chilean Propaganda
17 Madison Avenue, New York.

NO BRANCH OFFICES



Regal New Sweet Peas

New Duplex Spencer

The best of all Pink Sweet Peas for bouquets. In color both the standard and wings are a rich cream-pink, and practically all the plants give flowers with double or triple standards.

The beautiful lemon keel, in addition to the double standard, materially enhances the effectiveness of these flowers when bunched. Of strong, vigorous growth, the vines bear the grand flowers most profusely upon long, stiff stems. Pkt. 15c.

New Vermilion Brilliant

The most brilliant, iridescent scarlet Spencer yet produced. The flowers are of perfect form. The bold, erect standard is well waved and fluted, of large size, beautifully rounded and finishing well below the keel. The wings are of the same intense pure scar-

let as the standard, making a uniform self-color throughout and absolutely sunproof. Pkt. 15c.

New Irish Belle or Dream

The coloring is uniform in both standard and wings, a lovely rich lilac, flushed with pink, which gives a very distinct and soft tone throughout the entire flower. Of finest Spencer type, waved in both standard and wings, the flowers are of large size and well placed on long stems. Pkt. 15c.

New Pearl Grey Spencer

It is certainly a most lovely and distinct shade that might be described as a pearl or dove-gray, suffused with light rose, showing a trifle more of the delicate rose shading in the standard. The flowers, borne in clusters of three and four, are of the largest size and uniformly waved in both standard and wings. Pkt. 15c.

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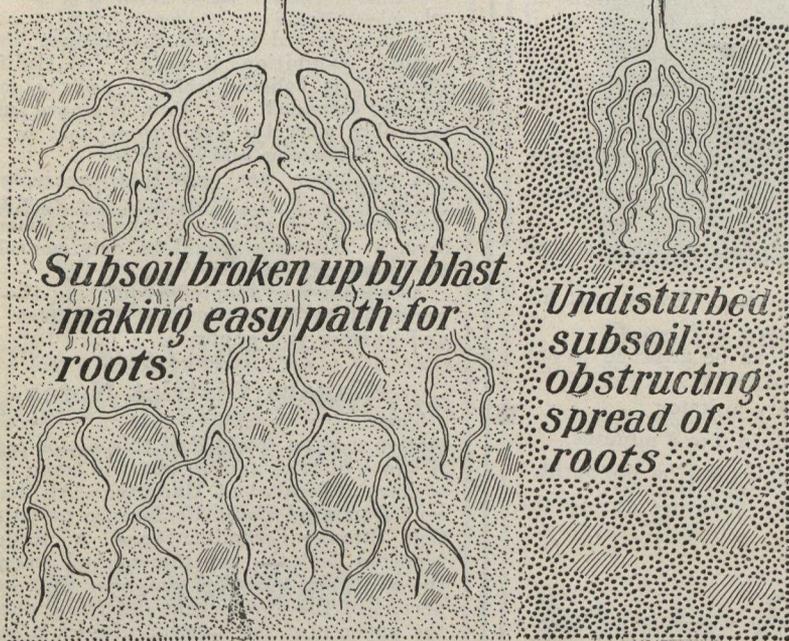
JOHN A. BRUCE & CO., Ltd.,

Seed Merchants,
Established 1850

HAMILTON, ONT.

*Fruit tree planted
in dynamited hole*

*Fruit tree planted
in spade dug
hole*



*Subsoil broken up by blast
making easy path for
roots.*

*Undisturbed
subsoil
obstructing
spread of
roots.*

A tree planted
by means of

Stumping Powders

not only thrives much better than a tree that is planted in another way, but also will produce larger crops. You can plant double the number in the same time for a much less expense.

Write us for **Free Pamphlet** on the use of

C. X. L. Stumping Powders

Used as well for removing Stumps and Boulders, Digging Wells and Ditches, Breaking Hardpan and Subsoils, Rejuvenating Orchards, etc., etc.

Manufactured by

CANADIAN EXPLOSIVES Limited MONTREAL Que.

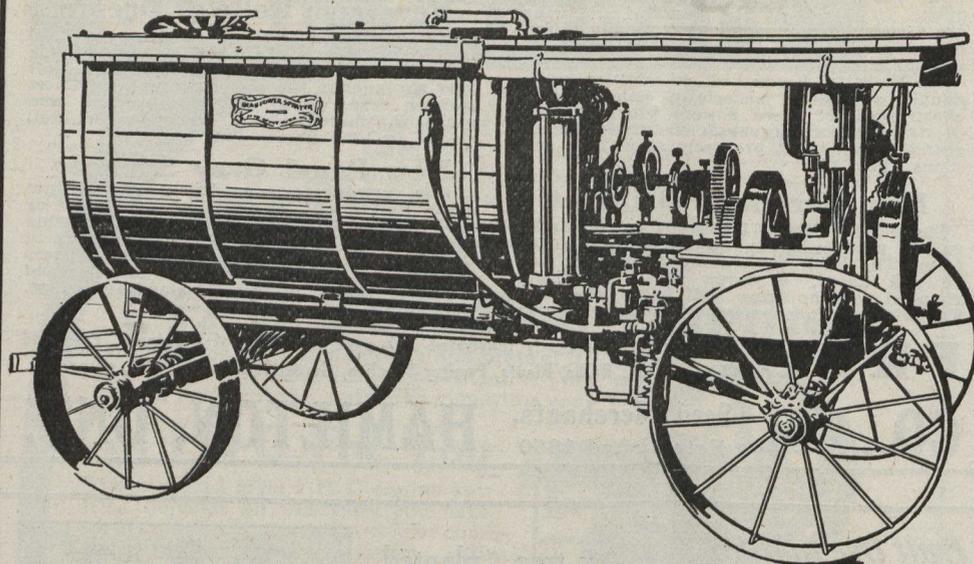


BING CHERRY TREE
SET IN SPADED HOLE



BING CHERRY TREE
SET IN DYNAMITED HOLE

Power Sprayers



Giant Power Outfit

GIANT POWER OUTFIT.—This is a three-cylinder pump of great strength, power and capacity. It will spray 9 gallons per minute at 300 lbs. pressure, if desired. It can be operated with either a 2½ or 3½ H.P. Engine.

NIAGARA POWER OUTFIT.—A three-cylinder pump of slightly less capacity, but the same high pressure. Can be operated with a 2½ or 3½ H.P. Engine.

DUPLEX POWER OUTFIT.—A two-cylinder pump, medium priced, but with large capacity and high pressure. Operated with either a 1½ or 2½ H.P. Engine.

All our pumps have porcelain-lined cylinders, so are proof against corrosion. These cylinders are guaranteed for 10 years.

These pumps are very strong, very simple, and built for large capacity and high pressure.

All parts are interchangeable. Repairs cost practically nothing. Every part fits every other, and they can be immediately supplied.

All our power outfits are mounted on steel frames, which can be attached to any wagon.

They are equipped with 150 and 200-gallon tanks with rotary agitator.

Tank Filler, which works by pressure, and will fill the tank in 6 to 8 minutes.

Steel folding tower. By removing one tail nut this tower folds flat on the outfit.

The highest grade of hose. Guaranteed to stand 300 lbs. pressure during the entire season.

Spray Rods—lined with large sized aluminum tubing.

Latest approved nozzles and other accessories.

We have hundreds of power outfits working in Ontario, and wherever we have a power outfit, we have a satisfied customer.

We have great confidence in these pumps and want to demonstrate them to you.

We will pay the expenses to our factory of any fruit grower in Ontario who intends to purchase a power outfit, and who will inspect our pumps before he places his order. He will be under no obligation to purchase from us. All we ask is that he purchase a power outfit of some kind.

HAND PUMPS: MAGIC No. 9, is the largest hand pump made. One man can easily maintain a pressure of 140 lbs.

LITTLE GIANT No. 70—Most powerful barrel sprayer on the market.

THE PIPPIN No. 50 is a strong barrel pump, made for smaller orchards.

Write for our complete illustrated catalogue.

Be sure and see these pumps before placing your order.

They are made with all troubles left out.

NIAGARA BRAND SPRAY CO., Limited
Burlington, Ontario

ket was emphasized. We were told that our apples that went to the western market were not as well packed as those that went from Ontario.

Mr. P. U. Parker, of Kentville, suggested that the fruit growers of the Annapolis Valley should establish a special brand, and suggested the brands "Grown For The Taste" or "The Land of Evangeline Brand."

In a discussion of the subject, "Is Apple Growing being over done?" Mr. W. T. Macoun made light of the question, contending that it is an old one and that the danger is imaginary rather than real.

RESOLUTIONS

A resolution was carried recommending that the duty on apples coming into Canada should be increased to equal the duty on apples coming into the States. It created an animated discussion.

The Dominion government will be urged to provide for a more thorough system of inspection at the packing house, ports of shipment and elsewhere, including open packages when and where advisable, and to issue certificates of inspection when circumstances and conditions warrant such action.

The government will be urged also to add to the duties of the fruit inspectors the inspection of the barrels in which the fruit is packed, and to so amend the act as require all coopers who manufacture barrels in which apples are packed to brand their name and address on the side of each barrel.

It is proposed to hold the district horticultural exhibition hereafter in Halifax, where it is believed that it will be more largely attended and thus compare more favorably with the exhibitions held in Toronto, Vancouver and elsewhere.

A resolution was passed at the instance of the W. C. T. U., expressing the view that the growing of tobacco on the experimental farm at Kentville would be detrimental to the youth of Nova Scotia.

A motion was adopted requesting the government to define the size of number one and number two apples.

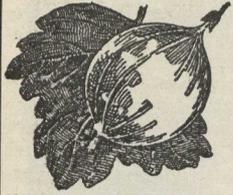
Niagara District Notes

There is a possibility that a pre-cooling station may be established this season in the Niagara district and an effort is being made to have it located at Hamilton. At the recent Dominion Fruit Conference at Ottawa Cold Storage Commissioner J. A. Ruddick reported that the government had amended the cold storage act in a manner that would permit of the government defraying part of the expense of the erection of such a building, providing it is built and operated on lines approved by the government. He stated that negotiations were still in progress between the promoters and the government.

A company capitalized at \$150,000 is arranging for the erection this season of a new canning factory at Hamilton.

A banquet will be tendered Hon. Martin Burrell, the new Dominion Minister of Agriculture, at the Welland House, St. Catharines, by the members of the Niagara Peninsula Fruit Growers' Association in connection with their spring meetings which will be held on March fourth, fifth and sixth.

Our fruit growers are interested in the discussion by members of the Toronto City Council of the proposal to erect a fruit market. A special committee of the council has been dealing with the matter, and Property Commissioner Harris has been requested to select a suitable site.



Hardy Small Fruits

Conditions of soil and climate make it possible for us to produce stock that is hardy, vigorous, and that will give good satisfaction in almost any locality. We exercise great care in the cultivation and handling of our stock, give personal supervision to packing and shipping, and **warrant all stock absolutely true to name.** This explains why we have built up a large list of satisfied customers.

We specialize on small fruits—Raspberries, Gooseberries and Currants --- also Garden Roots, including **Rhubarb, Asparagus, etc.**

List of Varieties:—

RASPBERRIES

| | |
|--------------|-------------------|
| Herbert | Cuthbert |
| Marlboro | Brinckle's Orange |
| Golden Queen | |

GOOSEBERRIES

| | |
|----------|------------|
| Josselyn | Red Jacket |
| Downing | Pearl |
| Houghton | |

CURRANTS

| | |
|----------------|----------------|
| Perfection | Fay |
| Ruby | Cherry |
| White Grape | Lee's Prolific |
| Champion | Black Naples |
| Black Victoria | |

Order now while the list of varieties is complete. Send post card for catalogue and price list.

WM. FLEMING

OWEN SOUND Box 54 Ontario, Can.

You Want

The **GRANDEST** of all **GLADIOLI** and **DAHLIAS** in your garden this year

Send for Catalogue

H. P. Van Wagner

Stoney Creek - Ont.

Landscape Designing

For Small Properties

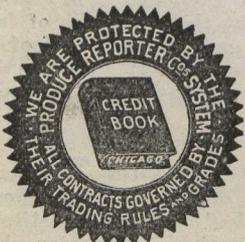
No property is too small to dispense with the services of a competent Landscape Designer in planning for effective plantings of Shrubs, Roses, Perennials, Evergreens, Climbing Vines, etc.



Our **Landscape Department** is at your disposal. Send a rough sketch of your property and we will advise you how to plan it.

No charge for suggestions. Send for catalogue and circulars.

Stone & Wellington--Toronto



We Solicit Your Consignments

Send for Shipping Stamp

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

Good Prices Always

For Your Fruit and Vegetables

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

H. PETERS
88 Front St. East, Toronto

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



The ONTARIO FRUIT SPRAYER

BUILT FOR BUSINESS

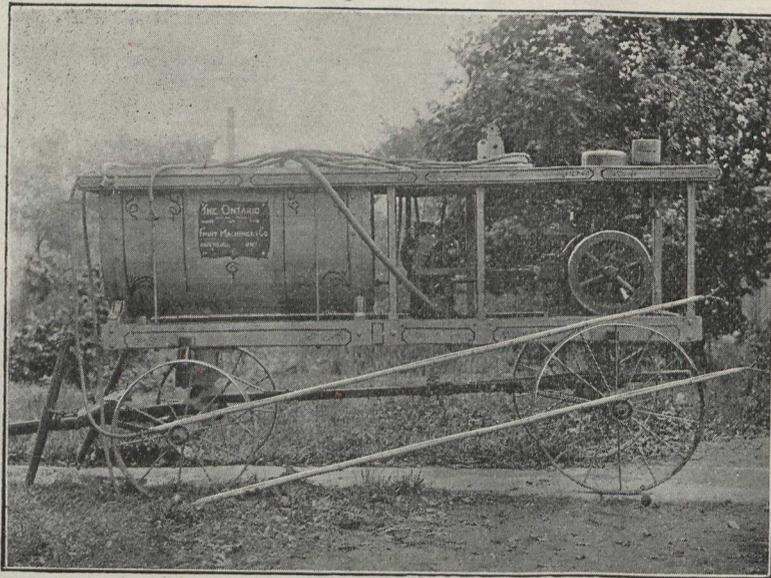


Fig. 73 No. 1 A, 1912 Model

This cut illustrates our **1912 MODEL FRUIT SPRAYER**, a marvel of simplicity, strength and durability, $2\frac{1}{2}$ H. P. engine, water cooled and always ready; can be quickly cut off from pump jack and used for other purposes. This outfit represents all that first-class machinery, material and skill can produce at a moderate price. Write for detailed description and price. We manufacture a full line of Apple Evaporating Machinery.

Installing Power Evaporators a Speciality

FRUIT MACHINERY CO. - Ingersoll, Ont.

WIRE FENCING BARGAINS

We have just purchased from one of the largest makers, their surplus stock of about 25,000 Rods Wire Fencing at a reduction of 25% to 50% off regular prices.

This Fencing is all made of the best quality, extra heavy No. 9 gauge galvanized steel wire, with standard lock, and is guaranteed to unroll and hang perfectly.

NOTE THESE CUT PRICES

| No. | Line Wires | Inches High | Stays Apart | Spacing Between Line Wires | Price per Rod |
|-----|------------|-------------|--------------------|--|--------------------|
| 949 | 9 | 49 | 22 in. | 4, 5, 5 $\frac{1}{2}$, 6, 6 $\frac{1}{2}$, 7, 7, 8 in. | 29c |
| 748 | 7 | 48 | 22 in. | 5, 5 $\frac{1}{2}$, 7 $\frac{1}{2}$, 9, 10, 10 in. | 23c |
| | | | These two sizes in | 20, 30, 40, rod rolls | |
| 544 | 5 | 44 | 22 in. | 8, 10, 10, 12, 12 in. | 18c |
| 542 | 5 | 43 | 22 in. | 6, 12, 12, 12, 12 in. | 17 $\frac{1}{2}$ c |
| | | | These two sizes in | 60 rod rolls only. | |

All delivered free to the cars here. Also a number of rolls of other sizes. Please note this stock being limited, send your order with amount enclosed at once, giving shipping instructions plainly; orders filled as received. Also Galvanized Staples, $3\frac{1}{2}$ c per lb

First class Fence Stretchers, Heavy Chains and Clamps, \$6.50 each. **Special Offer**—One stretcher free with every order of \$100.00 or over. Also enormous stock of Belting, Pipes, Rails, Pulleys, etc., at bargain prices.

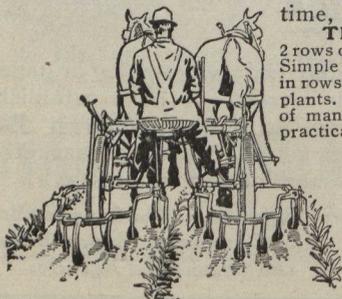
THE IMPERIAL WASTE AND METAL CO. - 65 Queen Street, MONTREAL

Get double speed at single cost

with

Planet Jr 2-row Cultivator

"It's the greatest general purpose implement on the farm", writes an Ohio farmer of **No. 72 Two-Row Pivot Wheel Cultivator, Plow, Furrower, and Ridger**. No other implement in large crops saves as much time, labor, and money.



Think of the saving in cultivating perfectly at one time 2 rows of potatoes, corn, beans, etc. in rows 28 to 44 inches apart. Simple and works like a charm in check and crooked rows, and in rows of irregular width. Never leaves open furrows next to plants. Cultivates crops up to 5 feet high and covers 2 furrows of manure, potatoes or seed at one passage. Designed by a practical farmer; fully guaranteed.

FREE! A 64-page illustrated farm and garden book!

It's full of valuable information for every farmer and gardener and includes a description of 55 latest-improved tools for all crops. **Send postal for it today!**

S L Allen & Co

Box 1106G

Philadelphia Pa

Write for name of nearest agency

It is understood that a new canning factory will be erected this season by the Dominion Cannery, Limited, at Jordan Station.

While the unusually severe weather this winter is believed to have done some damage to fruit buds, still it is not believed to have been serious. In the St. Catharines district no damage is reported. Reports from Norfolk county show that some damage has been done there.

British Columbia

The trial shipment of apples from Summerland, shipped to the firm of Messrs Garcia, Jacobs and Co., London, has been reported on very much to the satisfaction of the shipper, Mr. C. J. Thomson. So delighted were the brokers that they immediately stated that they could handle ten thousand boxes of such apples each day of the fruit season and could do this without spending a penny in advertising, depending wholly on the apples themselves to win their way in the London market. Messrs Garcia, Jacobs and Co. report that they would rather handle British Columbia fruit than any other apples, and that we can easily capture that market. In packing our apples for that particular market this firm states that better results would be obtained by lining the boxes with corrugated paper and placing cardboard between each layer of apples.

Notwithstanding the fact that the Christmas trade had been supplied before the arrival of this shipment, the prices realized were very satisfactory. Had the shipment arrived three weeks earlier even better prices would have been paid. The following is a list of the varieties shipped and the prices realized by each: Spitzenberg, 14s to 14s 6d; Newtown Pippin, 14s to 14s 6d; Winter Banana, 15s; Wagener, 10s to 14s; Northern Spy, 9s to 9s 6d. These prices show the varieties most desired.

One of the first cherry fairs ever held in Canada is to be conducted at Kaslo the latter part of next July. The competition will be open to all fruit districts, and it is expected that thousands of boxes and bottles of cherries will be shown. It will be held under the auspices of the Kaslo Fruit Growers' Association.

Our British Columbia fruit growers expect to meet with even keener competition in the prairie markets during the coming season than hitherto as the result of the formation of an exchange for the handling and marketing of the fruit of all the affiliated associations of the Pacific North-West States, including the Hood River, Rogue River and Yakama sections, the exchange being based on the California plan. It is expected that this exchange will handle something over eight thousand cars of fruit during the season, or more than half of the crop of the Pacific north-west. In due time a similar exchange will have to be formed in British Columbia.

Mr. Mitchell's Spy Tree

So many readers of THE CANADIAN HORTICULTURIST have asked Mr. George Mitchell of Clarksburg for further information about the twelve-year-old spy tree of his that was illustrated in the January number of THE CANADIAN HORTICULTURIST and which last fall produced five barrels and one bushel of apples, ninety to ninety-five per cent. of which were number one and all highly colored, Mr. Mitchell has written us giving further information about it. Mr. Mitchell writes as follows:

FARMERS, FRUIT, AND VEGETABLE GROWERS



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

KINDLY ANSWER THE ABOVE

PURE BONE MEAL IS THE CHEAPEST **FERTILIZER.**
THIS PLANT FOOD IS ALL FROM OUR CANADIAN SOILS AND SHOULD ALL GO BACK.
SEND FOR PRICES, ETC.

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



Killed While Pruning

That has been the fate of many who climbed to do the work in the old way, saw and axe fashion.

NOW the up-to-date operator stands on terra firma, where he is safe, where he can shape a tree correctly and without mutilating the bark with his shoes. This bark wringing process can't be seen at once, but the damage is done just the same.

What has brought the change? The use of the any-length handle, automatic, well made, up-to-date KANSAS PRUNING KNIFE improved. This knife does big work, doing it fast and easy. Really, pruning with it is a pleasure.

We would like to tell you more about the KANSAS KNIFE, also about its little companion the HAPPY THOUGHT KNIFE with its quick pump gun action.

Now while the pruning season is on, for your good as well as ours, drop us a card for more information.

Made by the Taylor-Forbes Co., Guelph, Ont.
INTERNATIONAL TOOL COMPANY
49-51 Porter Street, Detroit, Michigan

SPECIAL GUARANTEED
Lime-Sulphur Hydrometer

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

Sent Postpaid on receipt of 80 cts.

PARKE & PARKE Wholesale Druggists
HAMILTON, ONT.

BERRY PLANTS

Strawberries, \$3.00 per 1,000; Raspberries, \$6.00 per 1,000; Blackberries, \$2.00 per 100 and up; 150 Strawberry Plants, \$1.00, or 200 Strawberry and 50 Red Raspberry Plants sent postpaid for \$2.00.

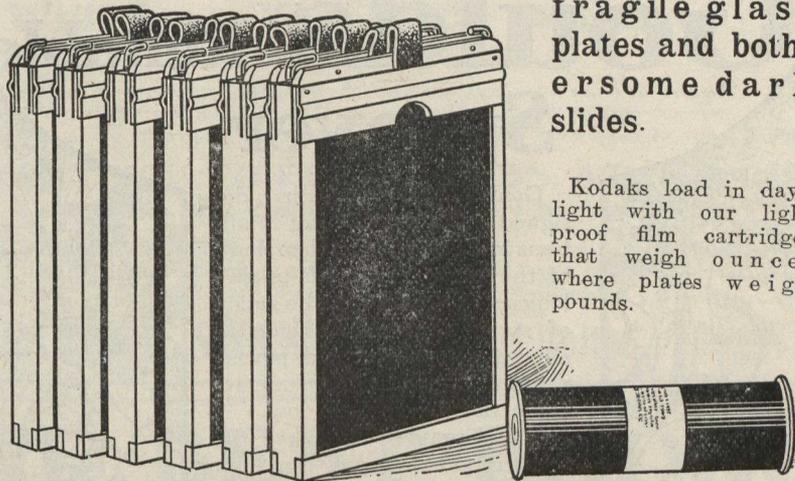
GIBRALTAR BLACK CAP
greatest yielder at Experimental Farm. Also Seed Corn.
Send for price list.

N. E. Mallory, Blenheim, Ont.

Don't judge photography by your plate camera experiences.

KODAKS

do away with cumbersome plate holders, heavy fragile glass plates and bothersome dark slides.



A dozen 4 x 5 glass plates and holders for same.
Weight, 2 lbs., 8 ozs.

Kodak Cartridge containing 1 dozen 4x5 films
Weight, 2 1/2 ozs.

THIS PICTURE TELLS THE STORY

By the Kodak System there's no dark-room in picture making. Loading, unloading, developing, printing all by daylight—and better pictures than you can make by the old methods.

CANADIAN KODAK CO. Limited.

Catalogue free at the dealers or by mail.

Toronto, Canada.

PROPERLY PROTECTED POTATOES PAY

If you protect your potatoes, you get from 3 to 4 times as many from the same acreage.

The Horse-power **SPRAMOTOR** sprays an acre of potatoes in 15 minutes and does it thoroughly. It sprays tops and vines from 12 nozzles with a guaranteed pressure of 100 pounds. Nothing escapes the working of the **SPRAMOTOR**.

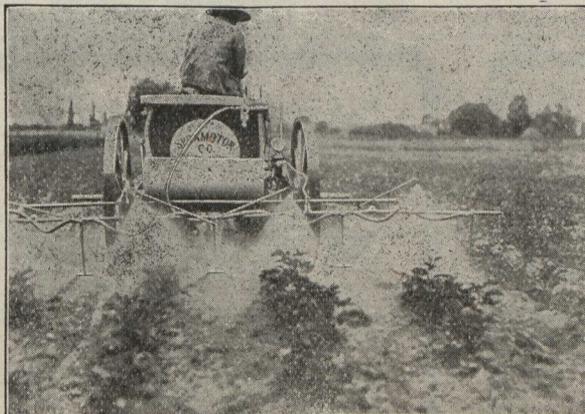
Made for 1 horse or two. Has a 12 gallon air tank. Automatic and hand controlled. Agitator clean-out pressure relief into tank and nozzle protector under driver's seat.

Equally efficient for field, vineyard or trees. Nozzles **WILL NOT CLOG**; nothing to get out of order.

We publish **FREE** a valuable treatise on crop diseases. Every grower should have a copy. Send for one to-day.

AGENTS WANTED

HEARD SPRAMOTOR CO., 1391 KING STREET
LONDON - CANADA



**You've Got to Spray
If You Want Good Fruit**

You can do thorough spraying *only* with the most efficient pump and outfit. No other kind of spraying is worth while—no other spray pump is worth bothering with. That's why you should buy a

**Goulds Reliable
Sprayer**

Goulds Sprayers are, first, designed to meet spraying conditions most efficiently; then, built of the proper materials to give long service and resist the action of spray chemicals. Made in all types, for hand and power.

Don't buy a spray pump because the first cost is low. A Goulds Sprayer will prove the most economical you can buy.

Send for our booklet—

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

The numerous and authentic spray formulas it contains make it of the greatest value to every crop grower.

The Goulds Mfg. Co.
17 W. Fall Street
Seneca Falls, N.Y.

Largest
Manufacturers
of Pumps for
Every Service



"Most of the readers of THE CANADIAN HORTICULTURIST think this must be an exceptional tree or else that it has received extraordinary special treatment. It is a little out of the ordinary for a twelve-year-old tree to bear that many first class apples, but it is no uncommon thing for Spys to bear early here. This particular tree was planted in a break in my orchard when the first planted was lost by an accident, and was forced a little more than we usually do, in order, if possible, to make it catch up with the rest of the orchard. Hence the result.

"Still it is not that alone; it is the locality. Spys usually begin to bear with us at eight years if they receive anything like reasonable treatment. The Georgian Bay Fruit Growers, who are the leading growers here, have acres of Spys bearing four to five barrels a tree at from twelve to fourteen years of age, and have frequently had Ben Davis carry a barrel at five years. They, of course, receive first class treatment, the manager being a thorough orchardist.

Compulsory Spraying

"Noticing that fruit growers are agitating to have a law passed compelling spraying," writes G. W. Wright, the secretary of the Clarksburg Horticultural Society, to THE CANADIAN HORTICULTURIST, "I wrote my brother, D. W. Wright, one of the oldest growers in the Wenatchee Valley, in the State of Washington, and asked him how it is the fruit from his district is able to command such high prices in the east. He has replied as follows, and I commend what he says to our Ontario apple growers whose fruit I would like to see command as good prices as that from the Wenatchee Valley:

"Don't run away with the idea that you can grow apples as good as the Wenatchee Valley apples, which sell in New York and Boston for as much per box as the best eastern apples fetch for a barrel. Perhaps if your growers handled and packed their apples as we do you might get more. I am sending you some picking, packing and grading rules, WHICH WE HAVE GOT TO COMPLY WITH, or we can't ship our apples at all. There are always inspectors at every shipping point, so it is impossible to put in an imperfect one in a car lot. Every apple in a fancy or extra fancy box must be perfect. That is the reason! Then apples grown on high altitudes keep better than those grown in lower and moister temperatures.

"To grow fruit properly you must have laws, strictly enforced, as we have, compelling growers to keep clean orchards and clean fruit. If a grower here does not spray when the inspector tells him, it is done for him, which costs more than if he does it himself. I do not think that any one man, or any dozen, can grow A 1 apples, unless everyone is compelled by law to do the same.

"Here in Washington, one of the main crops is apples so it is easy to get laws and money voted to pay inspectors, which I am afraid you will find it hard to do. When you do the western apple will have competition, but not till then."

Good cultivation and all it means to the tiller of the soil has for its chief end the maintenance of sweet aerated tilth in which soil organisms can grow and work freely.

Imperial Bank

Established OF CANADA 1875
HEAD OFFICE- TORONTO

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

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

Branches and Agencies throughout
the Dominion of Canada

Letters of Credit, Drafts and Money Orders
Issued available in all parts
of the world

Special attention given to collections

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

**Strawberry
Plants**

That are Great Yielders

Buy your strawberry plants from one that has made a success of growing berries for the market for many years.

I grow the Williams Improved, Parsons Beauty, Splendid and Michel's Early.

Last year the yield from 2.3-4 acres was 31,500 boxes, and in 1910 the yield from 11.5 acres of Williams Improved was 16,770 boxes.

I have for sale a fine lot of plants of above varieties. Prices: 75 cts. per 100; \$5.00 per 1,000.

W. WALKER
Port Burwell, Ont.
Elgin Co.]

Maritime Fruit Possibilities

At the recent Dominion Fruit Conference at Ottawa, the report of Mr. W. H. Bunting, of St. Catharines, who last fall conducted a careful investigation of the fruit-growing possibilities of the various fruit-growing provinces of Canada, was awaited with keen interest. Mr. Bunting's report, when it was presented, was found to contain just such information as some of the people had been asking for. Space does not permit of our publishing it in full. That part of the report dealing with the fruit possibilities of the maritime provinces is here given:

I looked forward with a great deal of interest to a visit to New Brunswick, as I had heard so much of the St. John Valley and the opportunities for fruit-growing which were just beginning to be realized by the residents of this beautiful district. It is included in district five.

Fruit has been grown for a good many years in considerable quantities in the counties included along the valley of the St. John River and in portions of Charlotte, Albert and Westmoreland. Many fine orchards attest the capabilities of this province to produce fruit of splendid color and quality. The late Francis P. Sharp was probably one of the first to undertake the growing of fruit in anything like a commercial way in this province. He was an enthusiastic, enterprising investigator, and with wonderful optimism undertook, many years ago, to secure, develop and plant fruit on a large scale in Carleton county. The result of his work is still to be seen in the vicinity of Woodstock. It is only within recent years, however, that definite data have been secured and made available to the general public, as to the varieties of fruit which may be planted commercially with every confidence and hope of profit. The provincial government, through the secretary of agriculture, Mr. W. W. Hubbard, and the provincial horticulturist, Mr. A. G. Turney, both of them active and enthusiastic men, has put new life into the New Brunswick fruit industry, and this province is now taking active steps to fill its proper place as an important fruit-producing section.

SMALL FRUITS THRIVE

No finer strawberries, raspberries or other small fruits are grown anywhere in the Dominion. The list of apples recommended for New Brunswick covers the season and provides a class well suited for export shipment, as well as for supplying the local markets. With cheap and rapid transportation by water, with an over-seas market very close at hand, with plenty of suitable land at a very moderate cost, with the knowledge that has been secured as to the proper varieties, and with the active co-operation of the government, the success of New Brunswick as a fruit-producing area seems assured.

NOVA SCOTIA'S POSSIBILITIES

Districts six and seven are included in the Province of Nova Scotia. District number six comprises the counties of Hants, King's, Annapolis and Digby, extending from Windsor on the east to Digby on the west, an area about one hundred miles in length and

**INTERNATIONAL
3 FEEDS FOR ONE CENT**

We Positively Guarantee
That a 25-Lb. Pail of
INTERNATIONAL STOCK FOOD
Will Save You **\$7.00** Worth of
Corn or Oats

Because it promotes digestion and assimilation, and enables you to cut down the grain ration 15% to 25% and still get better results. This saving of grain represents a saving of good hard cash to you.

WE WANT YOU TO FEED 100 LBS. AT OUR RISK
It Will Not Cost You a Cent If You Are Not Satisfied

See our dealer in your town or write for particulars. Mention this paper and the stock you own and we will send you a litho, size 16 x 22, of our three champion stallions.

INTERNATIONAL STOCK FOOD CO. Limited, TORONTO

THE BEST BOOKS
on Fruit Growing and Gardening

THE CANADIAN APPLE GROWERS' GUIDE, by L. Woolverton, M.A.—This is the latest and most up-to-date work on Canadian apple growing. Published in 1910. Covers in a practical manner such subjects as selection of varieties, planting, packing, marketing, insect pests and fungous diseases, grafting etc. Also descriptions and illustrations of all varieties known to have been grown in Canada, with carefully prepared lists of varieties best adapted for growing in the different sections. A book worth many dollars to every man who owns an orchard.

Regular price, post paid \$2.25
With The Canadian Horticulturist, 1 year.. \$2.50

FERTILIZERS, by E B Voorhees—A book for the farmer or fruit grower who is interested in learning how he can make his land produce more.

Regular price, post paid..... \$1.35
With The Canadian Horticulturist, 1 year.. \$1.75

These books have been carefully selected from among a large number of books on similar subjects. We unhesitatingly recommend them to you.

THE PRINCIPLES OF FRUIT GROWING, by L. H. Bailey.—Recognized by fruit growers everywhere as an authority on general fruit growing. Covers cultivation, planting, fertilizing, protection from disease, etc.

Regular price, post paid \$1.65
With The Canadian Horticulturist, 1 year.. \$2.00

THE PRUNING BOOK, by L. H. Bailey.—Gives reasons for pruning the different fruits, and tells how to do it.

Regular price, post paid \$1.65
With The Canadian Horticulturist, 1 year.. \$2.00

THE PRACTICAL GARDEN BOOK, by C. E. Hunn and L. H. Bailey.—A book of advice which contains the simplest directions for the growing of the most common things and for the simple operations of the home garden.

Regular price, post paid \$1.10
With The Canadian Horticulturist, 1 year.. \$1.50

Write for a copy of our Book Catalogue.

The Canadian Horticulturist
PETERBORO, ONT.

**Our
April
Number**

The Big Issue
of the Year

Cover . . . A special cover illustration is being secured. It will be printed on special paper and will surpass any of our previous efforts.

Contents . . . See "Publisher's Desk" on page 71 of this issue. April is the one month of all months when our readers are looking for special information along horticultural lines. Our April number will supply such information.

Size . . . From present indications it will be the largest issue ever published, surpassing even our February and March issues.

Circulation . . . The paid circulation of this number will probably exceed 11,500, and the total number of copies printed will be about 12,500.

Rates . . . Double page, \$60, or in two colors, \$75; page, \$30; 1/2 page, \$15.00, etc. \$1.00 an inch flat.

Special . . . Application should be made early for special locations. A number of full pages have already been reserved. A few more good pages still available.

Positions . . .

THE CANADIAN HORTICULTURIST - - PETERBORO, ONT.

**Spray Pumps, Hydrometers,
Nozzles, Pruning Saws, etc.**
Write for description and Price List.
Jas. E. Johnson & Bros.,
Simcoe, Ont.

For the Land's Sake use Bowker's Fertilizers

They enrich the earth and those who till it. By the use of a good fertilizer, any farmer can add greatly to his profit through raising bigger crops. He can make each of his acres produce more, or he can cultivate fewer acres, and still produce as much as he is getting now, but with less labor and expense. This is a big item, if hired help is scarce.

We have a fertilizer to fit every crop and every pocketbook. Each one is ready to use, and easy to apply. Our catalogue gives full information and directions. Many years of experience in both Canada and the United States, the best facilities, and prompt service are behind every bag we ship.

If we have no agent near your farm, we want one. It pays to sell as well as use our fertilizers.

Write today for our catalogue and calendar. Both will be sent promptly and without cost. If interested, ask for agency proposition, but write anyway for the catalogue.

BOWKER Fertilizer Company,
77 Lyman St., Buffalo, N. Y.
Original and largest manufacturers of special fertilizers.

five to fifteen miles in breadth, popularly known as the Annapolis Valley. This territory, on account of its peculiar and favorable location, along the south shore of the Bay of Fundy, is extremely suitable for the production of many of the standard apples and other fruits, and, as an additional advantage, it is adequately protected from winds and ocean fogs by a range of hills on either side, known as the North and South mountains.

In some parts of this district the cultivation of the apple began very early, and magnificent trees which have passed the century mark, are still to be found producing crops of fruit. As the success of apple culture became assured, the people began to increase their orchard planting rapidly, until at present, considering the territory involved, no portion of the Dominion has larger or more important orchards within a given radius.

In the vicinity of Waterville, Berwick and in other parts of this valley there are large areas of virgin soil that can be obtained at very low cost. While a considerable portion of this land is covered with a second growth of birch, alder, spruce and other small trees, it can be easily cleared and profitably utilized for fruit-growing, as an inspection of the fine orchards in the immediate neighborhood will clearly demonstrate.

It has been estimated by experienced men that not more than ten per cent of the available fruit land in this entire valley is being utilized for that purpose. The balance, outside of the dyke lands and an occasional improved farm devoted to mixed farming, lies fallow and waiting the advent of those who will develop it and repeat the successes of those who have done the pioneer work.

SPLENDID OPPORTUNITIES

A splendid field lies open in these cheap lands, which may be purchased from ten dollars per acre upwards, depending upon the location. It is somewhat amazing that for years these opportunities have remained unimproved, while thousands of settlers have passed on towards a more distant and alluring goal. It is also to be regretted that many of the younger generation, drawn by the attraction of city life, or the stories of great wealth to be obtained so easily elsewhere, have abandoned a sure means of obtaining a comfortable livelihood in this beautiful valley, for an uncertainty and, in many cases, a disappointment. Many other fruits besides the apple do well throughout this valley. Bountiful crops of pears, plums, cherries and small fruits are produced in many places, and as there is a very good market for all of these, their production might very profitably be extended.

District number seven comprises the remaining portion of the province, and includes many sections where fruit is being produced with more or less success. In the neighborhood of Bridgewater some very good orchards were observed, and along the southern shore there are many thousand acres of blueberries, while cranberries are also being cultivated with considerable success.

Near the town of Truro and in portions of Picton county the hardier fruits, if given care and protection from severe winds, should succeed fairly well. Further work should be undertaken to more fully demonstrate the range of fruits likely to prove suitable for this and similar areas.

(To be continued)

We vouch for the reliability of the firms who advertise in THE CANADIAN HORTICULTURIST. It pays to patronize them.

Anything From a Berry Plant to a Shade Tree is waiting your order



No better stock or value offered than at the old reliable CENTRAL NURSERIES. We ship direct to customer with satisfaction. Send for priced catalogue before placing your orders. It will pay. If you have not had good results from others, TRY OURS—32nd YEAR. No agents.

The new hardy Hydrangea HILL OF SNOW, a Beauty. Plant the new St. Regis Raspberry. Ever-bearing from June till October. Try it.

Apple, Pear, Plum, Peach and Ornamental Trees.
Roses, Shrubs, Asparagus Roots, etc.

A. G. Hull & Son, St. Catharines, Ont.



Aphine

The Insecticide that
kills plant Lice
of every species

\$2.50 per Gallon; \$1.00 per Quart.
Dupuy & Ferguson, Montreal, Can.

STRAWBERRY, RASPBERRY AND ASPARAGUS PLANTS

Barrymore, Heritage, Wooster, Good Luck, Steven's Late Champion, Paul Jones, Goree, Joe, and all the old reliable varieties. Herbert and Cuthbert Raspberries. Palmetto, Giant Argenticul, Conover's, Snow Cap and Glory of Brunswick Asparagus.
Price list free on application.

E. B. STEVENSON, 270 Grange St., Guelph, Ont.

SPECIAL GUARANTEED Lime-Sulphur Hydrometer

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

Sent Postpaid on receipt of 80 cts.

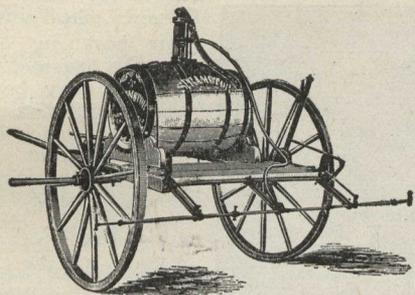
PARKE & PARKE Wholesale Druggists
HAMILTON, ONT.

Northern Grown Trees

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

J. Wismer, Nurseryman,
Port Elgin, Ont.

Hand Spramotor



Made with 4 to 8 nozzles. Wheels and row sprayer adjustable in width from 26 to 36 inches and in height 16 inches.

Mounted on cart suitable for one horse. Perfect spray for row crops, vineyards or trees. High pressure sends chemical searching into all parts of plants or trees and makes destruction *certain*. All SPRAMOTORS are guaranteed. AGENTS WANTED.

Ask for our *free* treatise on crop diseases. You should know what it tells.

Heard Spramotor Co.

1392 King St., London, Canada.

Half a Million

Canadian Grown
Strawberry Plants
For Sale

Pure, vigorous stock of the popular Williams and 30 other choicest kinds.

Here on the north shore of Lake Erie the drought of last summer was not felt. Consequently the plants we offer are of best quality.

Also the famous Plum Farmer, and Cumberland and other leading Black Caps.

SEND FOR CATALOG.

LAKE VIEW FRUIT FARM,

H. L. McConnell,

Grovesend, Ont.



Fruitland Nurseries

are offering choice
Fruit and Ornamental Trees, etc.
at 5 per cent. off for cash

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Orders also taken for Stock Yards and Toronto Manure. Send for Price List

G. M. HILL - - Fruitland, Ont.

Operate Your Dairy For Top Prices

OPERATE your dairy for top prices—and at the same time operate it as economically as possible. Top prices and low expenses mean greatest profits.

One way to economize is to buy a separator that is built to give the greatest value for the money you invest in it; that is, one that will skim the closest and last the longest. That is why we want you to examine an I H C Cream Harvester before you buy any separator. An examination will convince you that

I H C Cream Harvesters Bluebell and Dairymaid

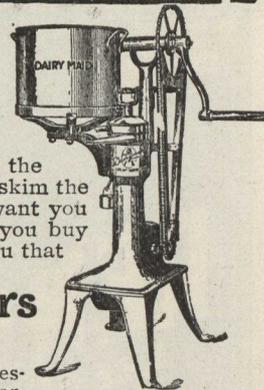
are superior in design, material, and workmanship. Investigate for yourself. You will find that I H C Cream Harvesters are the only separators with milk and dust-proof gears that are easily accessible; that they are equipped with a patented dirt-arrester which removes the finest particles of dirt from the milk before it is separated; that the frame of an I H C is entirely protected from wear by phosphor bronze bushings; that the I H C has large shafts, bushings, and bearings. They have many other features that mean less work for you and longer life for the separator. I H C Cream Harvesters are made in two styles—Dairymaid, chain drive, and Bluebell, gear drive—each in four sizes. Let the I H C local dealer tell you all the facts, or, if you prefer, write nearest branch house for catalogues and any special information you desire.

I H C SERVICE BUREAU

The purpose of this Bureau is to furnish farmers with information on better farming. If you have any worthy question concerning soils, crops, pests, fertilizers, stock, etc., write to the I H C Service Bureau and learn what our experts and others have found out concerning these subjects.

CANADIAN BRANCHES: International Harvester Company of America at Brandon, Calgary, Edmonton, Hamilton, Lethbridge, London, Montreal, North Battleford, Ottawa, Regina, Saskatoon, St. John, Weyburn, Winnipeg, Yorkton.

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The Weekly Fruit Grower

Market Gardener and Poultryman

The only weekly paper in Canada devoted entirely to Fruit Growing, Market Gardening and Poultry Raising.

It deals in its season with every phase of **Commercial Fruit Growing** and **Market Gardening**.

Pruning, Spraying, Thinning, Fertilizing, Cultivating, Picking, Packing, Shipping, Marketing and Storing discussed by men of experience and writers of ability. Subscription Price, **\$1.00** per year.

SPECIAL CLUBBING PRICE

Clubbed with The Canadian Horticulturist only **\$1.20 a year** for both papers. Regular price \$1.60.

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THE CANADIAN HORTICULTURIST - Peterboro, Ont.



THE BEST OF THE PATCH
RENNIE'S SEEDS
 ARE SUPPLIED TO YOUR DEALER DIRECT FROM US - AFTER EACH HARVEST - AND ARE ALWAYS FRESH AND RELIABLE - TESTED BY GOVERNMENT - BUY THEM IN SEALED PACKAGES - CATALOGS FREE
WM. RENNIE CO. LIMITED
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England's Pedigree Seeds

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CENTS PER PACKAGE

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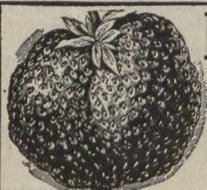
NEALS the reliable Seed Merchants, established 1820, have entered the Canadian Field. All Seeds 5 cents per packet. Duty and Postage paid.

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Write for Catalogue To-day

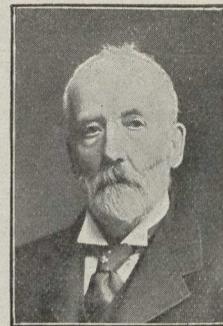


Fall Bearing Strawberries

Wonderful Fall Bearing Strawberries are a great success. Bear fruit fall and spring, three crops in two years. Have yielded as high as 10,000 qts. to acre in Aug., Sept. and Oct. of first year, with us. We cannot get enough fruit to supply demand at 25c per qt. wholesale. I know of nothing in the fruit line quite so profitable. We are also headquarters for Plum Farmer, Idaho and Royal Purple Raspberries, Early Ozark Strawberry, Watt Blackberry, Hastings Potato. Catalogue of all kinds of Berry Plants free. Address **L. J. FARMER, Box 296, Pulaski, N. Y.**

A Lover of Horticulture

The glory of the horticultural societies of Ontario, as of horticulture generally, lies in the unselfish, faithful, persevering efforts of lovers of flowers, who give of their best in order that the cause of horticulture may be advanced and the lives of others enriched by being brought into closer touch with nature. Among such may well be classed Mr. J. Kneeshaw, an officer and past president of the Hamilton Horticultural Society. Mr. Kneeshaw, who is now in his eighty-second year, came to



Mr. J. Kneeshaw

Canada when six months old, being educated at Lachute, on the Ottawa river. He moved to Toronto in 1848 and to Hamilton in 1851, where he has resided ever since.

The Hamilton Horticultural Society was organized in 1850, but it was not incorporated until 1859. Mr. Kneeshaw's connection with it started in 1864. He has been a member of the society almost continuously since that date and on the board of officers since 1890. In 1909 Mr. Kneeshaw was elected its president and since then has acted in the capacity of honorary president.

The membership of the Hamilton society last year was four hundred and sixty-five. During the past few years the society has about doubled its membership, due in a large measure to Mr. Kneeshaw's faithful work. Having retired from business, he has had more time on his hands than formerly and has made it a practice, when in different parts of the city during the early summer months, to call in and see any strangers whose gardens he notices and to tell them about the society and thus secure their membership. In this way many new members have been obtained.

Mr. Kneeshaw looks back with pleasure over the splendid work that has been accomplished by the Hamilton Horticultural Society. In 1862 the society sent an exhibit of fruit to the Royal Horticultural Society of London, England, and was awarded a valuable silver medal. This medal Mr. Kneeshaw wore at the last annual convention in Toronto of the Ontario Horticultural Association. In 1870 the society had three hundred and fifteen members, who paid two dollars a year. Four exhibitions of flowers, fruit and vegetables were held and numerous prizes were awarded. This shows the great interest that was taken in the society as long as forty years ago.

Items of Interest

The Ontario Department of Agriculture is running an agricultural instruction train along the lines of the C.P.R. in most of the farming districts of old Ontario. The train started out at St. Joachim, in Western Ontario, on February 26th and will conclude at Apple Hill, in Eastern Ontario, on Saturday, March 16th. It consists of four baggage cars and three coaches used for lecture purposes. The former are equipped with exhibits covering fruit growing, live stock, field husbandry, drainage, dairying, feeds, poultry, bee-keeping, fertilizers and concrete. The fruit growing features include samples of fruit, nursery stock, mounted specimens of insects and fungous

Dahlias

Choice Stock of All The Best Varieties

15 for \$1.00 (postpaid)

20 for \$1.00 by express
(not prepaid)

Geo. E. Egerton
GALT, Ont.

Strawberry Plants

FOR SALE

Good, clean, healthy stock. The Parson's variety stood the drouth best of all, and by far the best producer.

Also Peach, Apple, Pear and Cherry Trees for sale. For Prices address:

W. E. FITCH

Box 406 Niagara Falls, South, Ont.

SELECTED SEEDS

WORLD'S FINEST STRAIN

Do YOU KNOW that the best seeds are obtained through a process of persistent, exhaustive selection? that of the famous seed breeders of Germany, France, England and America, we find one excelling in asters, another in sweet peas, and so on.

You should plant in your garden, **SELECTED SEEDS**, the best the world affords of the desired varieties.

Write for our *New Illustrated Catalogue replete with choicest strains of VEGETABLE AND FLOWER SEEDS*

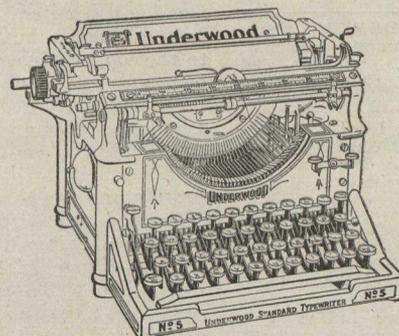
Contains 12 Pages of novelties. It also contains many engravings and invaluable cultural directions.

Dupuy & Ferguson

38 Jacques Cartier Square

MONTREAL

Some History about *Typewriters*



Modern and Ancient

CHAPTER 8

FOR example we sold a firm two Special Underwoods.

IN addition we devised and installed for them, with charge, an Underwood system by which they save \$5,000 a year.

HUNDREDS of smaller firms save just as much proportionately.

THAT is what we mean by service. And that is why we have expert simplifiers of office methods to show customers how to use the Underwood to the best advantage—how to make it work for them at its highest efficiency.

THE service is free. You can't get it with any other typewriter at any price, because the Underwood makes it possible.

United Typewriter Co.
Limited
TORONTO



There's a SECRET at the Arrow Point

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

SIMPLY because they GET THERE. An Imitation indicates that somewhere there is an ORIGINAL. Look on the NOZZLE you use and see if you can find the MAKER'S NAME and the word "PATENTED." The "FRIEND" is the ORIGINAL large Nozzle doing away with the cluster. "FRIEND" Nozzles have no HORNS, no HOOKS, nothing to catch, drop or clog. They make the finest MIST-LIKE Spray, driving it further into the trees than the cluster. The "ANGLE" sprays up under the leaves and down into the CALYX. The "REGULAR" is for ordinary work. Size which is wanted. Satisfaction guaranteed or money refunded. Price, \$1.00 each, postpaid.

"FRIEND" MFG. CO.

Gasport, Niagara County . . . New York

Mrs. of the "WORLD'S BEST"
Hand and Power Sprayers

Our New Catalogue is Ready

You Can't Take Chances

If you want the Best Seeds that grow, then you want

ASK FOR THIS
McDONALD'S SEEDS
FREE

For twenty years McDonald's Seeds have made money for a host of progressive farmers and gardeners all over Canada; they'll do the same for you. Send for 1912 catalog, FREE.



Kenneth McDonald & Sons, Ltd.
Ottawa . . . Ontario

Write to-day Dept. E

The Big Issue

April Number is our Spring Planting and Gardening Number. The big issue of the year. Ask us for further particulars and special positions available. Write the Advertising Dept., The Canadian Horticulturist, Peterboro.

Reserved Some of our advertisers have already reserved space for special full-page advertisements in our Big Spring Planting and Gardening Number. This will be the big issue of the year. Ask us about some of the good pages still open. A page costs \$30; double page, \$60, or in two colors, \$75.

MAKE YOUR GARDEN YIELD ITS LIMIT

Plant thoroughbred seeds. Thoroughbred seeds do not happen. They result from long and intelligent breeding. They produce big crops of the best vegetables. Use Ferry's.

For sale everywhere.
1912 SEED ANNUAL
FREE ON REQUEST
D. M. FERRY & CO., Windsor, Ont.

FERRY'S SEEDS

FOR SALE AND WANTED

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

BLUE AND NORWAY SPRUCE, Roses, Shrubs, Vines at attractive prices. Catalog free.—A. W. Graham, St. Thomas, Ont.

WANTED—POSITION AS GARDENER, about middle of April, by Englishman, married. Where some glass preferred. Reliable and good worker.—A. Edwards, 71 Charlotte St., Brantford.

FREE—TO ONE PERSON in each locality for introducing and selling 6 dozen China Cement we will give a handsome China Tea Set. No money required. Write for particulars.—China Cement Co., Peterboro.

THE APPLES OF CANADA are faithfully and accurately described in part II. of The Canadian Apple Growers' Guide. The descriptions and photographic illustrations are made from Canadian grown samples, and from practical experience of fifty years growing and marketing. All the latest methods of culture, spraying, pruning, etc., are given in Part I. An invaluable book for apple growers. Price, post-paid, \$2.25.—Address Linus Woolverton, Grimsby, Ont.

FARMS FOR SALE

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

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

LARGEST APPLE ORCHARD IN ONTARIO, adjoining the live town of Picton. 65 acres of apple orchard, youngest trees of which are 8 years old, others 11 and 30 years old, all in good condition, large house with furnace, bath, water-works, electric light. For further particulars write F. J. Watson, 127 Bay St., Toronto.

ASK DAWSON. He knows.

IF YOU WANT to sell a farm consult me.

IF YOU WANT to buy a farm consult me.

I HAVE some of the best Fruit, Stock, Grain and Dairy Farms on my list at right prices.

H. W. Dawson, Ninety Colborne St., Toronto.

SALMON ARM, 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.

pests, spraying apparatus and mixtures, tools for pruning, packing outfits, sample fruit barrels, boxes and baskets. Among the speakers will be Mr. P. W. Hodgetts, Director of Horticulture, and Prof. L. Caesar of Guelph.

The Toronto Vegetable Growers' Association is arranging to hold a series of meetings during the coming season in the gardens and greenhouses of a number of its members. The first of these is to be held at the greenhouses of Mr. Thomas Delworth of Weston, the afternoon of Saturday, March 2nd.

WEIGHTS OF VEGETABLES

The following are the weights, by the bushel and bag, that the members of the Ontario Vegetable Growers' Association have petitioned the Dominion government to make legal by law for the Dominion:

| | Bushel | Bag |
|--------------|---------|---------|
| Artichokes | 56 lbs. | 75 lbs. |
| Beans | 60 lbs. | |
| Beets | 50 lbs. | 70 lbs. |
| Carrots | 50 lbs. | 70 lbs. |
| Castor beans | 40 lbs. | |
| Onions | 50 lbs. | 75 lbs. |
| Parsnips | 45 lbs. | 60 lbs. |
| Potatoes | 60 lbs. | 80 lbs. |
| Turnips | 50 lbs. | 70 lbs. |

A Limited Fruit Company

At a meeting of representatives of the various cooperative fruit growers' associations in Ontario, held recently in Toronto, a limited company was organized to be known as the Cooperative Fruit Growers of Ontario, Limited. The intention is not to pay dividends but to distribute the profits to the cooperative societies uniting with the company. The object of the company is to buy supplies at the most advantageous wholesale rates and to sell the societies' products at the best prices obtainable. In addition, it will decide upon standard brands and see that the products are packed in accordance with the standards adopted.

The following officers were elected: President, Elmer Lick, of Oshawa; vice-president, Robt. Thompson, of St. Catharines; secretary-treasurer, pro tem., P. W. Hodgetts; and directors, Roy Carey, of Toronto; A. Brown, of Owen Sound, and C. W. Gurney, of Paris. Mr. A. McNeil, Chief of the Fruit Division of the Department of Agriculture, Ottawa, represented the government in an advisory capacity at the meeting.

Herbaceous Perennials

An idea of the excellent work being conducted in the Botanic Garden at the Central Experiment Farm, Ottawa, is given in Bulletin number five entitled "Herbaceous Perennials," now being distributed. The bulletin is by W. T. Macoun, the Dominion Horticulturist and Curator of the Arboretum and Botanic Garden, from whom copies of the bulletin may be obtained by writing to him at the Central Experiment Farm, Ottawa. In this bulletin a list is published of two thousand one hundred and sixteen species and varieties.

The herbaceous perennial border in the botanic garden at Ottawa is about half a mile long and twelve feet wide. A record has been kept of the hardiness, growth and height of the plants, and also the dates when the plants begin to bloom and when the blooming season is over. Descriptions of the flowers have also been taken. As much of this information as possible has been included in the bulletin, which has a number of excellent illustrations.

April issue will be our big Spring Planting and Gardening Number. This will be the big issue of the year. Watch for it.

HOW TO GET BETTER LIGHT

From COAL OIL (Kerosene)

Recent tests by Prof. McKergow, McGill University, Montreal, on leading oil-burning lamps show the Aladdin Mantle Lamp gives over twice as much light as the Rayo and other lamps tested, and burns less than one-half as much oil. It is odorless, safe, clean, noiseless. Better light than gas or electric. Fully guaranteed. Our burners fit your old lamps. Ask for Catalog M, learn how to get

ONE LAMP OR BURNER FREE

AGENTS: Ball sold over 1000 on money back guarantee; not one returned. Bruner sold \$800 in 15 days. Ask for liberal agency proposition. Sample lamp furnished.

MANTLE LAMP CO. of Am., Inc., 192 Aladdin Bldg., Winnipeg, Man.



Feed The Land AND It will Feed You

Many farmers would get higher interest on their money if deposited IN THE SHAPE OF FERTILIZERS IN THE SOIL, than if they placed the money in bank—the interest being paid in increased crops.

When the Canadian farmer becomes sufficiently interested in fertilizers to make his own mixtures at home, it will be a good thing for the farmer and for the country at large.

Fertilize scientifically — study the "VANCO" Book—and reap the benefits in bigger crops.

Make your own Fertilizers, to suit each soil and crop — buy "VANCO" guaranteed chemicals, prepared right here in Toronto, and thus save the heavy duty which must be paid on ready-mixed fertilizers.

MURIATE OF POTASH

—guaranteed 50% actual Potash.

SULPHATE OF POTASH

—guaranteed 48% actual Potash.

NITRATE OF SODA

guaranteed 15% Nitrogen, equal to 18.84% Ammonia.

ACID PHOSPHATE

guaranteed 14% to 16% available Phosphoric Acid.

Write for our prices—and also copy of the "Vanco" Book—you'll find it a big help in mixing Fertilizers.

CHEMICAL LABORATORIES

148-158 Van Horne Street - TORONTO

Feed Your Fruit Trees and Gardens

Practical Fruit Growers and Vegetable Gardeners realize that to obtain the largest profits from their land **it is just as necessary to fertilize their trees as it is to spray them.** We manufacture brands of Animal Fertilizer especially designed for the use of Fruit Growers and Market Gardeners. Some of our brands that are specially suitable for these purposes and their guaranteed analyses are :

| BRAND | GUARANTEED ANALYSIS | | |
|---|---------------------|------------|--------|
| | Nitrogen | Phos. Acid | Potash |
| Potato Special | 3.30 | 8 | 8 |
| General Vegetable and Market Garden | 4.11 | 9 | 5 |
| Early Vegetable Manure | 4.93 | 9 | 5 |
| General Crop Fertilizer | 2.47 | 10 | 2 |
| Fine Steamed Bone | 4.93 | 22 | — |
| Sol. Bone and Potash | 1.64 | 10 | 5 |
| Tobacco Grower | 4.11 | 9 | 6 |
| Greenhouse Special | 4.11 | 5.5 | 5 |

Remember our brands are based on materials of animal origin and are not purely chemical fertilizers. The effect is therefore more permanent and the plant foods not so liable to loss through leaching, etc. The advantages are all outlined in our **Fertilizer Booklet. Send for one.**

Our Fertilizer Department is under the management of a graduate of the Ontario Agricultural College and of Macdonald College, Que., who is well qualified to advise you regarding fertilizers suitable for your soil and the crop for which it is required. He will be pleased to give any information possible on this subject.

Write for literature and quotations. We have agents in some sections and want men for others. Easy terms and satisfaction guaranteed to our patrons. Orders by mail promptly filled—no extra cost. Write:

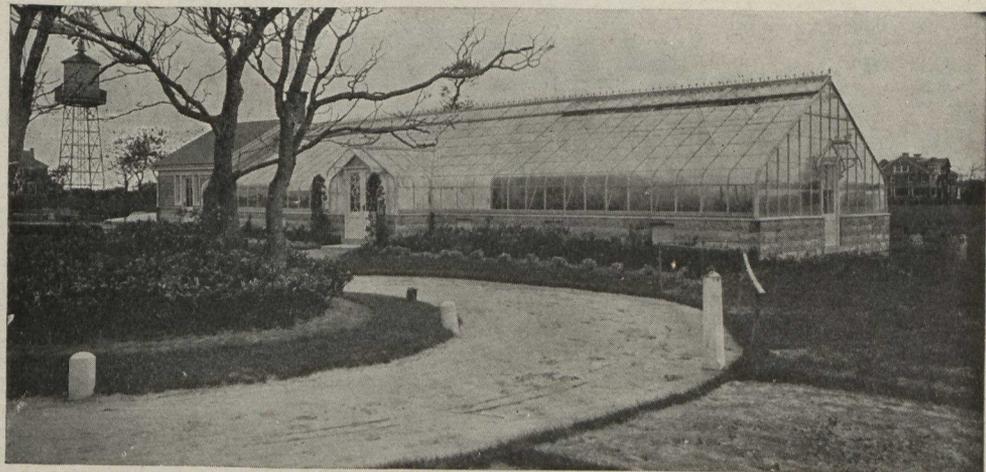
Wm. Davies Co.

521 Front Street East

Limited.

Toronto, Canada

Still More Points
for the Few Who
Have Not Gone
Thoroughly Into
U-Bar Greenhouse
Construction



Last month our chat was particularly about the way these houses are bound to outlast others, because of no joints at the eaves, and the complete protection from decay of the wood in the steel encased U-Bar, but we stopped talking just as we were about to mention the question of heat.

They are easy houses to heat, because of the absolute tightness of their construction. They keep the weather out and the heat in. Heat leakage means money leakage. The U-Bar is the lightest, strongest, tightest house built.

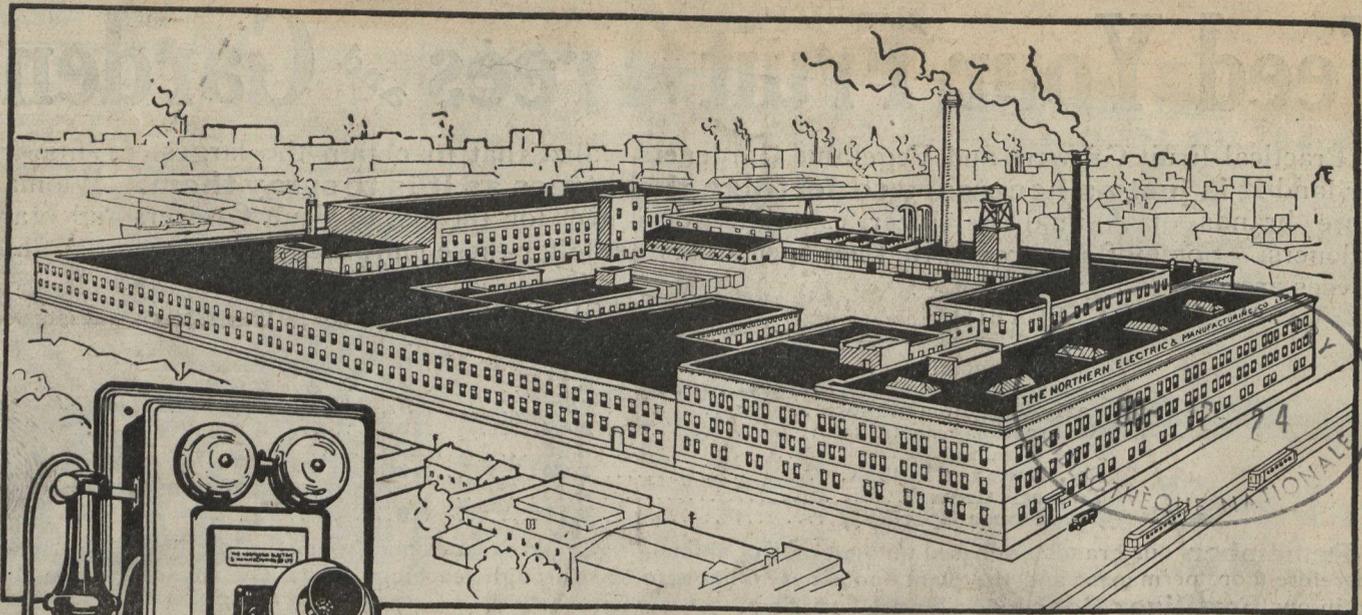
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U-BAR GREENHOUSES

PIERSON U-BAR CO

ONE MADISON AVE. NEW YORK

CANADIAN OFFICE, 10 PHILLIPS PLACE, MONTREAL



This is the make of instrument that is on the wall of nine out of every ten telephone users in Canada.

THIS PLANT IN MONTREAL STANDS BACK OF EVERY NORTHERN RURAL 'PHONE

THIS is the immense Canadian factory where Northern Electric Rural Telephones are made—in fact, where ninety per cent. of the telephones used in Canada come from. Our big organization, with its branches extending straight across Canada, is ready to help you in every detail of the formation and construction of a rural telephone line in your own community. Not only will we help you with your company-organization, line-construction, instrument-installation, etc., but our men are ready to give you much personal help out of their own telephone experience. With the help we offer, you can easily interest your friends and neighbors and operate your own self-maintaining telephone system.

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238

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