

The Canadian Horticulturist

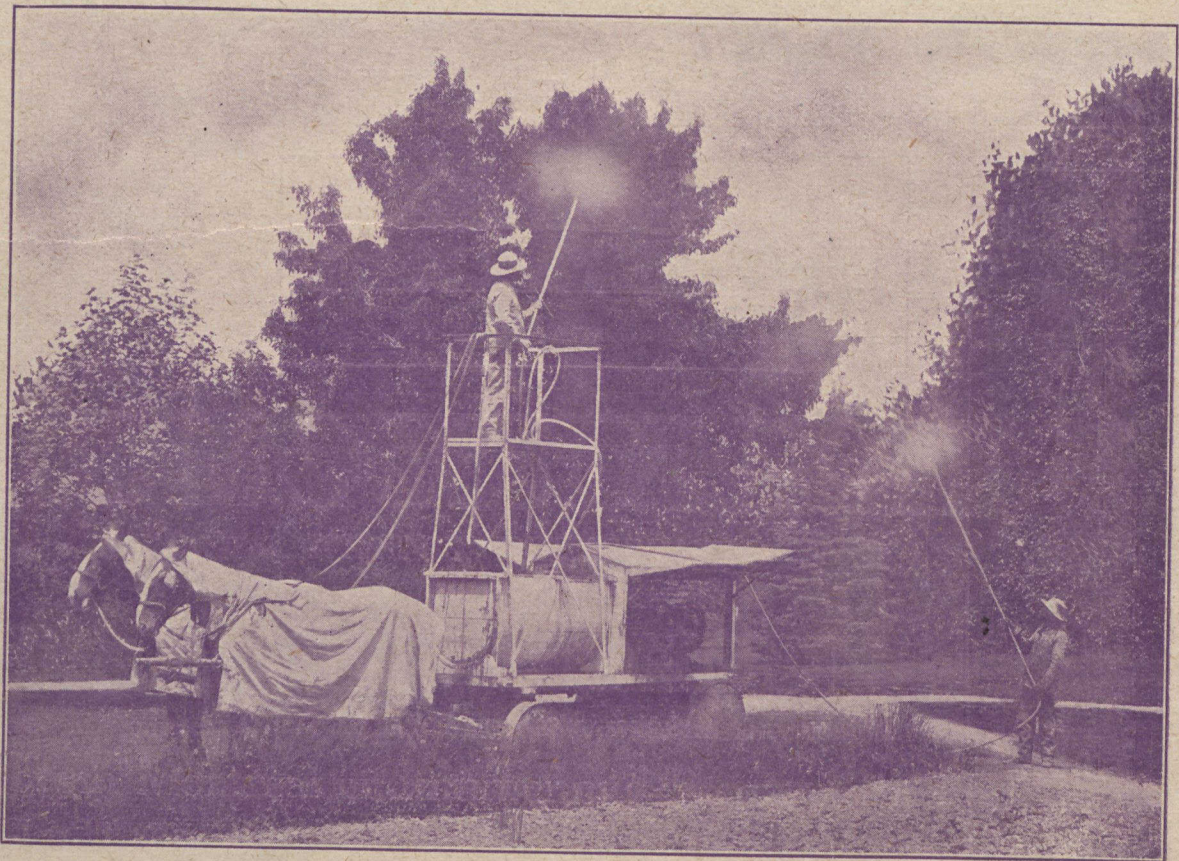
FEBRUARY, 1909

Volume 32, No. 2

60 Cents a Year

PETERBORO, ONTARIO

2 Years for \$1.00



The Power Sprayer Properly Equipped will Spray the Highest Trees in Park or Orchard

THE ONLY HORTICULTURAL PUBLICATION IN CANADA

Issued Each Month

FREE Lightning Insurance Policy

With Every Roof Covered With SAFE LOCK SHINGLES

Send for our Free Book "The Truth about Roofing"

EVERY Canadian farmer who expects to build or re-roof his house or barn should write us to-day for details of our Free Lightning Insurance Policy in connection with Safe Lock Metal Shingles.

We give it to you without any conditions whatsoever, except that you roof with Safe Lock Shingles.

Such an offer is unprecedented, but we can afford to make it because we know absolutely that Safe Lock Shingles will insure safety from lightning.

It is absolutely free. You do not have to pay one cent for this protection, either directly or indirectly.

Insurance records show that nearly one-half the fire losses on barns in Canada result from lightning. This loss, running into the hundreds of thousands of dollars, can be entirely prevented if Safe Lock Shingles are used.

We know this, and we back up our statement with a Free Insurance Policy payable under its terms in cash.

Safe Lock Shingles are sold at the same price as shingles known to be inferior in quality of steel, galvanizing and construction.

We have been manufacturing Safe Lock Shingles for over ten years, and roofs laid when we started in business are still "as good as new," to quote from hundreds of letters we have on file in our office from our pleased and satisfied customers.

In all this time these roofs have not cost one cent for repairs of any sort.

In all these years no building covered with Safe Lock Roofing has ever been destroyed by lightning.

Do you know that Safe Lock Shingles fully meet the rigid requirements of the British Government for Admiralty and other public service. Think what that means. Let us illustrate.

Every farmer knows from experience that ordinary galvanized fencing seldom lasts longer than two or three years without showing signs of rust. On the other hand, galvanized wire for Government use gives years and years of service, owing to the splendid galvanizing insisted upon.

Safe Lock Shingles are galvanized the same as Government wire, and therefore may be depended upon to give long service. We really do not know how long they will last. Safe

Lock Shingles in use for more than ten years show no signs of wear.

To-day we are using better material in their construction than ever, the steel is of higher grade, and the galvanizing is heavier. We have also made several improvements in manufacturing. For instance, every shingle is cut accurately to size before it is galvanized, thus protecting the edges of the shingles instead of leaving them raw and exposed to the decaying action of moisture.

We want you to remember the

thus causing a leaky roof.

Safe Lock Shingles cannot be blown off, nor can they be pulled apart by warping of the sheeting, or any other cause.

Study the small illustrations on this page, and you will be convinced of the truth of this statement.

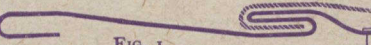


FIG. 1

In Fig. 1 the solid black line shows the top lock, the shaded line the bottom lock. Notice that a

contraction due to heat and cold. They cannot unlock.

Illustrations 3, 4 and 5 show the construction of other metal shingles.



FIG. 3

No. 3 is the old-fashioned cleat shingle now almost entirely driven from the market by the Safe Lock. These do not always shed water, and it is almost impossible to keep them from leaking after they have been on for a season or two.

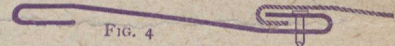


FIG. 4

Note in No. 4 that the nail is only about half way driven into the sheeting, leaving a large surface exposed to the weather. This makes a very insecure fastening for a roof, and this is still further weakened by the springiness of the steel, which has a tendency to pull out the nails, causing a loose, leaky, rattling roof.

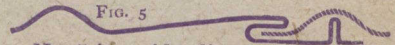


FIG. 5

No. 5 is a side slip pattern, similar to many now on the market. The one shingle slips into the other, but does not lock. Shingles constructed in this way pull apart easily and must not be confused with the positive lock in our Safe Lock Shingles, as shown in Fig. 2.

Safe Lock Shingles are absolutely uniform. We have spent time and money to perfect their construction, which is fully protected by patent. They are now easier than ever to lay, and a Safe Lock roof cannot leak, if the shingles are laid in accordance with our printed instructions.

SAFE LOCK SHINGLES are the only shingles that—

1. Give you a positive guaranty against Lightning, backed up by a policy signed and guaranteed by the manufacturers.
2. Meet fully the rigid requirements of the British Government for Public work.
3. Lock on four sides, and cannot be pulled apart.
4. Have three (3) thicknesses of metal along upper edge at point of greatest strain.
5. Completely protect nails from weather.
6. Have edges galvanized after being cut to exact size.

name Safe Lock. No other shingle has that name.

No other shingle is a Safe Lock Shingle.

Safe Lock Shingles lock positively on all four sides. Other shingles grip only on two sides. This is not enough for a permanent, durable roof. We know of many instances of buildings covered with these shingles being entirely unroofed in a stiff breeze. Another objection is that these shingles are apt to spread apart owing to the warping of the sheeting to which they are nailed,

double fold forms the top lock instead of a single fold, thus giving twice the strength at the point where the greatest strain comes.

With Safe Lock Shingles the nails are driven full length into the sheeting, and are protected by the peculiar lock construction from any possibility of water backing up and starting rust.

FIG. 2

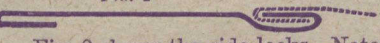


Fig. 2 shows the side locks. Note the deep firm grip which allows ample room for expansion and

The Metal Shingle and Siding Co.

Limited
Roofers to the Farmers
of Canada
Cedar St. Factory
Preston, Ont.
Branch Factory
Montreal

THE METAL SHINGLE AND SIDING COMPANY Limited

Cedar Street Factory PRESTON, ONTARIO
Please send me your book "The Truth about Roofing," with full particulars of your Free Safe Lock Lightning Insurance Policy.

CUT OFF THIS COUPON AND MAIL TO US

I expect to build a Kind of Building
State when you propose to build.....
Size of Roof..... If interested in any other Metal Building Goods, please state such fact here.....
Name.....
P. O. Province.....

The Two BEST Spraying Solutions

CAMPBELL'S NICO-SOAP

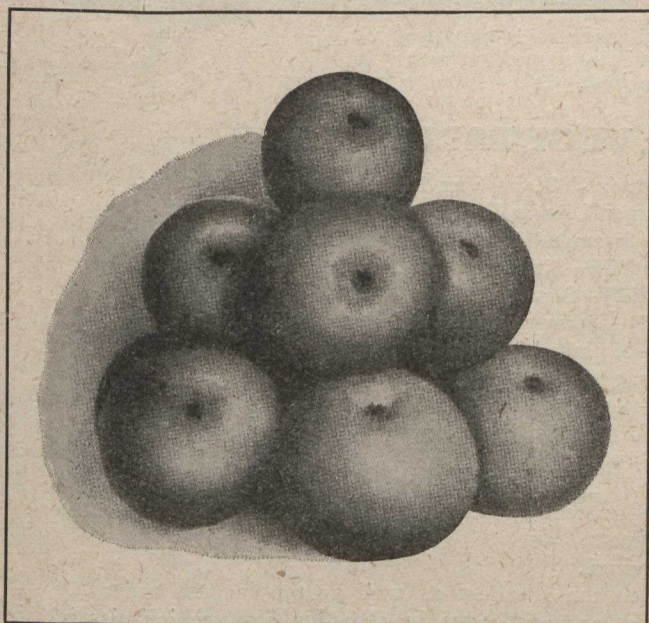
The King of Spraying Fluids, made of absolutely pure nicotine.

Instantly Soluble—Will not clog in the pumps.

Very Economical—One pound makes 40 to 60 gallons.

Reliable and Efficacious—Destroying Caterpillars, Tussock Moths, Brown Tail Moth, Gipsy Moth, Green and Black Aphis, Oyster Shell Bark Lice, San Jose Scale, Fire Worms on Cranberries, Insects on Roses.

Keep your Orchards clean and uninjured by spraying with **NICO-SOAP**, and reap a rich reward for your trouble.



CAMPBELL'S IMPROVED BORDEAUX MIXTURE

to prevent and cure Mildew, Blight Spots, and other diseases of fruit trees, potatoes and other crops.

Instantly Soluble—A 40 gallon cask can be prepared in a few minutes. Always the same quality. Vastly superior to any home-made article.

Campbell's Improved Bordeaux Mixture is compounded so as to form a glutinous substance which is so adhesive to foliage that it will not easily wash off. Its application to Potato Crops, Fruit Trees, etc., will materially improve their quality and increase their yield.

Send for our Manual of Instructions and Testimonials from Canadian Orchardists and Agriculturalists.

BLACKIE BROS. :: HALIFAX, N.S.

SEEDS FROM SPECIALISTS

THE Seed Business is highly specialized. Seeds that will grow have to be carefully selected and tested. Our experience of over **50 years** has convinced us of the importance of the proper testing of seeds—particularly with regard to vitality. Recognizing this, we have spared neither expense nor trouble in procuring seeds that will germinate, and will prove true to name.

We have each variety grown in that part of the world best adapted to its proper development—by the most experienced growers. On arrival, we immediately test them, and the seeds which do not pass a very high standard are rejected.

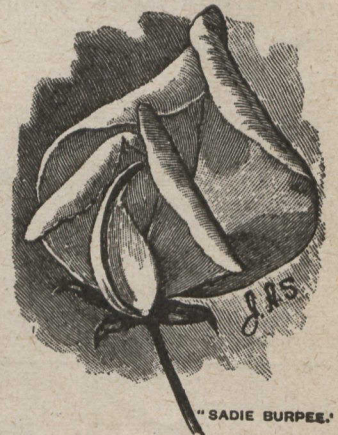
OUR ILLUSTRATED CATALOGUE for 1909

Our Illustrated Catalogue for 1909 is now ready, and is free to all who send for it. This CATALOGUE is the best arranged, and contains the most comprehensive list of **Flower, Vegetable, Grain and Root Seeds**, of any in Canada. It contains numerous reliable cultural directions, and a mass of information of interest to Horticulturists. Lists of **Plants, Bulbs, Trees and Sundries**, combine to make it a veritable *vade mecum* for everyone who aims to produce good crops.

Where all are excellent, it is difficult to particularize, but we mention the following as being worth attention:

IN FLOWER SEEDS

- ASTERS**—From the home of pure Aster Seed. Germany.
- PETUNIAS**—Giants of California—re-selected seed from a specialist in California.
- PRIMULAS**—Chinese—From famous French hybridists.
- PANSIES**—Our Giant Strain is replete with colours and markings not found in other strains.
- NASTURTIUMS**—Both Tall and Dwarf sorts. The colours range from Creamy White to intense Dark Browns.
- PHLOX DRUMMONDI**—This Hardy Annual in the many distinct shades we stock is a revelation to gardeners.
- SWEET PEAS**—Our Gilt Edged Mixture is produced by mixing the numerous exquisite named varieties in our list. We stock only the best.



IN VEGETABLE SEEDS

- BEANS**—Simmers' Giant Wax Bush or Butter.
- BEET**—Simmers' Extra Early.
- CABBAGE**—Simmers' Early German Brunswick.
- CAULIFLOWER**—Simmers' Gilt Edge.
- CORN, SWEET**—Simmers' First of All.
- CUCUMBER**—Simmers' Improved Early White Spine.
- LETTUCE**—Simmers' Nonpareil.
- ONION**—Large Yellow Globe Danvers.
- PEAS**—Simmers' First of All.
- TOMATO**—Livingstone's Coreless.

NOTE.—Our Seeds are grown by **Experts**.

They are **Tested by Experts**.

A Trial Order will convince.

Prompt Attention given to the smallest as well as the largest orders.

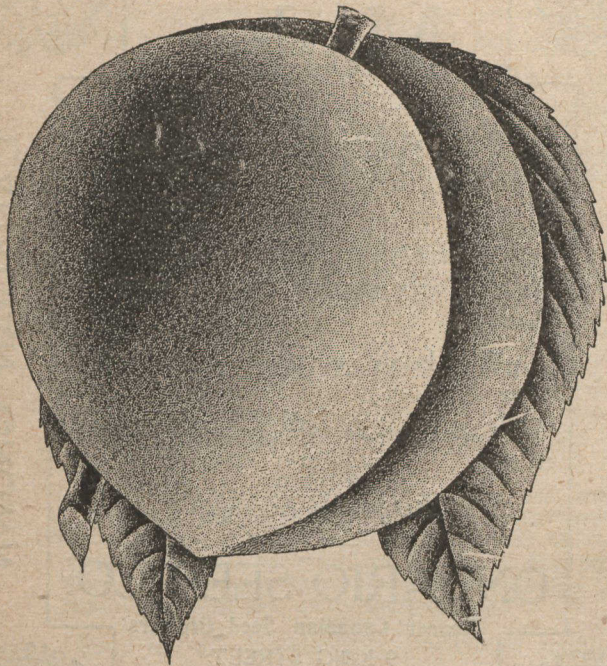
Write for Information on any difficulty in Horticulture, which is baffling you. Our experience is at your service. Send for Catalogue, a postal card will do it.

J. A. SIMMERS, Seeds, Bulbs, Plants
TORONTO, ONT.

CANADIAN GROWN PEACH TREES

FOR

SPRING 1909 DELIVERY



We have the largest block of Peach Trees grown in Canada this year. Many fruit growers pronounced the block "the finest one they had ever seen."

Write us for Prices before ordering elsewhere

BROWN BROTHERS COMPANY, Nurserymen, Limited
P.O. BROWN'S NURSERIES, ONT.

Canada's National Nurseries

OFFER FOR SPRING PLANTING

APPLE TREES—Over 100 leading varieties, including new sorts such as LaSalle, Peerless, Black Ben Davis, Milwaukee, La Victorie, Opalescent, Scarlet Pippin, Windsor Chief, etc.

CRABS—12 leading varieties including Hyslop, Transcendent, and Whitney.

PLUMS—Over 40 varieties of European and Japan, and a select list of Native Plums for Northern Districts.

STANDARD PEARS—30 leading varieties, including the Bartlett, Anjou, Clapp's, Dempsey, Flemish Beauty, Kieffer, etc.

DWARF PEARS—15 of the best varieties, with an especially big stock of the Duchess.

CHERRIES—Over 30 of the best varieties, including the Black Tartarian, Bessarabian, Early Richmond, Montmorency, Mercer, Schmitz, Windsor and Yellow Spanish.

SMALL FRUITS—A complete stock of all leading varieties in two-year-old, No. 1 plants, in Raspberries, Blackberries, Currants, Gooseberries, and Grapes, including the Herbert and King Raspberries, the Mercereau and Rathbun Blackberries, Perfection and Pomona Currants, the Victoria Gooseberry, Campbell's Early Grape, etc.

SEED POTATOES—The best of the new sorts, including the New King, Silver Queen, Quick Lunch, etc.

ROSES, SHRUBS, ORNAMENTALS, EVERGREENS AND HEDGE PLANTS—Splendid assortment of leading varieties in each, including in Roses: the Baby, Crimson and Philadelphia Ramblers, Frau Karl Druschki, Dorothy Perkins, and York and Lancaster; in shrubs: new named improved Lilacs, Sweet Scented Pæonies, Caragana, and Russian Olive, etc.; in Ornamentals: Birch Cut Leaved, Elms and Maples of all kinds, Mountain Ash, Oaks, Poplars, etc.; in Hedges: Berberry, Buckthorn, Honey Locust, Privet, Spirea, Japan Quince, etc.

ALL OUR STOCK IS SOLD AND DELIVERED UNDER OUR RED TAG BRAND—A GUARANTEE OF ITS QUALITY AND PURITY. Send US a list of your wants; ask for catalog, or take an agency.

Capital Nursery Company, Ottawa, Ontario

(Mention The Canadian Horticulturist when writing).

ORDER NOW

And secure what you want. Many lines of nursery stock are scarce this year and will be sold out at an early date.



OUR NEW SPRING CATALOGUE is ready for distribution write for it.



WE OFFER A SPLENDID LIST OF

- Apples Plums Pears
- Cherries Peaches Small Fruit Bushes
- Roses Flowering Shrubs
- Ornamental Trees, etc.

Pelham Nursery Co.

TORONTO, ONTARIO



RELIABLE RED RIBBON SEEDS



Market Gardeners

We are your seedmen because we are the only garden seed growers in Canada.

We know what we are sending you.

Good seeds are of vital interest to you.

Ask for our catalogue.

ONTARIO SEED CO.

Pioneer Canadian Seed Growers

9 KING STREET

Waterloo, Ontario

ACCLIMATIZED SEEDS

LARGER & SURE YIELD

CANADIAN GROWN



Field of Hydrangeas in our Nurseries.

EVERYTHING IN FRUIT AND ORNAMENTAL TREES, SHRUBS, VINES, EVERGREENS, ROSES, PERENNIALS, AND ALL NORTHERN GROWN. HARDY, FIBROUS ROOTED, FREE FROM SCALE AND DISEASE. TRUE TO NAME.

Carefully grown, dug, selected and packed by experienced nurserymen

We specialize in everything. We are pleased to furnish **you** with information. Our Landscape Department has not an equal in Canada. Attractive bargains in Shade Trees. All the New Roses.

Special inducements to Experienced Salesmen

CANADIAN NURSERY CO. LIMITED

MONTREAL, P.Q.

"Our Farther North Nurseries" at Point Claire, Que.

SEEDS THAT SATISFY

Bruce's Novelties for 1909

SEEDS THAT SATISFY

We offer some of the best of the new introductions, all of which we highly recommend. Our New Catalogue gives a further list of Novelties, and all the Standard Varieties in General Use.

NEW BEET, FIREBALL.—A grand extra early sort for sowing in frames and very desirable for sowing in the open. It is a perfect globe shape, with smooth skin, solid flesh of very sweet flavor, small leaf stalks, slender tap root, and of a bright intense red color. Pkt. 5c, oz. 15c, 2 oz. 25c, ¼-lb. 40c, 1 lb. \$1.25 postpaid.

NEW RADISH, SPARKLER.—The best variety for summer planting, and equally good for forcing. The radishes have a bright scarlet body, with a well defined white tip, and are crisp and mild; growth is rapid, and tap root small. Pkt. 5c, oz. 15c, 2 oz. 25c, ¼-lb. 40c, 1 lb. \$1.25 postpaid

NEW SWEET CORN, GOLDEN JUSTICE.—A fine early, hardy, variety unequalled in flavor, sweetness, tenderness and other eating qualities. It has a rich creamy, yellow color, of most tempting appearance on the table. Pkt. 5c, pint 30c, quart 55c postpaid.

NEW PEA, VELOCITY.—A round blue pea, not so large or sweet as the wrinkled varieties, but very valuable on account of its extreme earliness, combines all the merits of the extra early varieties, but is fully 10 days earlier and of very uniform size which also adds to its value. Pkt. 10c, ½-pint 20c, pint 35c, quart 60c postpaid.

Send for our Handsomely Illustrated 100 page Catalogue of Vegetable, Farm and Flower Seeds, Plants, Bulbs, Poultry Supplies, Garden Implements, etc., for 1909. FREE.

NEW MIGNONETTE, WHITE PEARL.—A white flowered variety, of stocky, robust growth, producing in abundance, large, broad, conical heads of deliciously fragrant white flowers; splendid pot culture. Pkt. 10c.

NEW SALVIA SPLENDENS, FIREBALL.—The best of all salvias, flowering early and continuing till frost. It is a bushy plant, branching freely and blooms so profusely as to almost hide the foliage; the flowers are large, a fiery scarlet color, and the spikes are large and broad. Pkt. 15c.

NEW SWEET PEA, MRS. RUTZAHN SPENCER.—Flowers very large, with blending shades of soft rose, buff and primrose and a decided rose edge, and of perfect form. Pkt. 15c.

NEW SWEET PEA, ASTA OHN SPENCER.—Flowers very large and wavy, the stems long and steady, with four blossoms to the stem. The color is a beautiful lavender, suffused with mauve. Pkt. 15c.

NEW SWEET PEA, LOVELY SPENCER.—Flowers very large and a beautiful bright pink, shading lighter to the edges. Pkt. 15c.

NEW SWEET PEA, MRS. SANKEY SPENCER.—Flowers very large, a pure clear white, and of splendid form. Being black seeded it germinates strongly. Pkt. 15c.

John A. Bruce & Co.SEED MERCHANTS
ESTABLISHED 1850**Hamilton, Ont.****THE FONTHILL NURSERIES**

OLDEST and LARGEST in CANADA—ESTABLISHED 1837—Over 850 ACRES



Block of HARDY PHLOX, Showing Saleable Plants for Spring 1909.

SEND FOR OUR
"PEERLESS" COLLECTION
OF
HARDY PHLOXES

All the newest and improved varieties from pure white to the deepest dark maroon. Immense panicles of flowers from June till frost.

Easy to Grow and
Perfectly Hardy

Send for List of Named Kinds
and Price

OLEANDERS

For indoor culture, and suitable for lawn decoration in summer in pots or tubs.

New Varieties and Colors
in Rose, White and Yellow

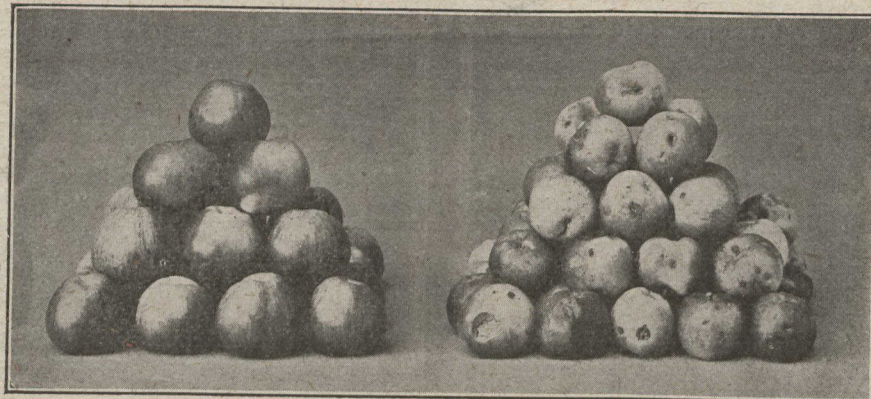
RUBBER PLANTS

Nothing more beautiful for interior decoration than the large waxy leaves of the Rubber Plant.

We offer strong thrifty plants for Pot Culture.

STONE & WELLINGTON, TORONTO, ONT.

Which Apples Do You Wish to Grow?



Grown in the same orchard on trees some distance apart at Bowmanville, Ont.
SPRAYED WITH V1 and V2 **UNSPRAYED**

COOPER'S V1 and V2 SPRAY FLUIDS

Are Certain Producers of More Fruit and Better Fruit

Extract from TORONTO WORLD, January 15th, 1909, report of the meeting held at Grimsby, Ont., January 14th, 1909, of The Niagara Peninsula Fruit Growers Assn.

A committee composed of Joseph Tweddle and Joseph Smith reported that they had last year tried the new V1 and V2 spraying mixture as well as the old reliable lime and sulphur, and when trees sprayed were examined in the fall they were found to be in good condition, the scale being almost entirely dead. The treasurer's report showed a balance of over \$250 on hand, but the association will appeal to the legislature for a \$300 grant.

Extract from TORONTO GLOBE, Jan. 15, 1909, report of meeting of The Niagara Peninsula Fruit Growers Assn. held at Grimsby, Jan. 14, 1909.

The committee appointed to investigate the new spraying mixture reported that they had made an application of the V1 fluid just before the blossoms came out on certain peach trees marked to be cut out by the inspector. An application of V2 had been made four weeks later after the fruit had set. Some time in November when the leaves were off an inspection was made, and only a few young scale were found. The committee expressed the opinion that the fluid is highly satisfactory for the destruction of the scale. The report was signed by J. W. Smith and Joseph Tweddle.

V1 AND V2 ARE THE SCIENTIFIC SOLUTION OF THE SPRAYING PROBLEM

EASY TO APPLY.

NO SEDIMENT TO CLOG NOZZLES

ONE GALLON MAKES 100 GALLONS OF SPRAY MIXTURE

FULL PARTICULARS IN BOOKLET B.

WILLIAM COOPER & NEPHEWS

506-507 MANNING CHAMBERS, TORONTO

Mention The Canadian Horticulturist when writing

The Canadian Horticulturist

Contents for February

Spraying Large Trees Cover

Fruits and Fruit Growing

Horticulture in Manitoba *Jas. Murray* 25
 Pear Blight *M. B. Waite* 26
 Spraying Strawberries *L. A. Hamilton* 26
 Commercial Lime-Sulphur *H. A. Surface* 27
 Naming New Strawberries 28
 Fertilizers for Strawberries 28
 Spraying Apple Trees *J. C. Harris* 28
 Apple Tree Canker *W. Lochhead* 29

Flower Garden and Lawn

Window Boxes *Wm. Hunt* 29
 Planting for Winter Effect *Geo. E. McClure* 31
 Tuberous-rooted Begonias *John Paine* 32
 Hints for Amateurs 33
 A Toronto Garden *T. McVittie* 34
Photograph by Galbraith
 Lilies *A. Barber* 34

Vegetables and Market Gardening

Growing Early Vegetables *A. V. Main* 35
 Construction of Irrigation Plants *W. T. Macoun* 36
 Foes of Vegetable Crops *T. D. Jarvis* 37

General

Editorials 38
 Commercial Spraying 39
 Prepared Lime-Sulphur *W. Lochhead* 43
 Notes from the Provinces 47 and xvii
 Fruit Station Work xi
 Poultry Department xiii

INDEX TO ADVERTISEMENTS.

Bank xiii
 Baskets and Boxes xviii
 Commission Merchants xii
 Fencing xiii
 Fertilizers viii, xiv, xviii
 Flower Pots 41, 44
 Furnaces xii
 Gasoline Engines xi
 Greenhouse Material xiii, xiv, xvii
 Insecticides iii, viii, 46, 47
 Land 43
 Nursery Stock v, vi, vii, 41, 47, xi, xii, xiv, xv, xviii
 Orchard and Garden Implements 48, xii, xiv, xv, xvi
 Phonographs 42
 Pianos 48
 Roofing ii, 40
 Rubber Stamps and Engravers xi, xiii, xvii
 Salt 44
 Schools 48
 Seeds, Bulbs and Plants iv, vi, vii, viii, 43, 45, xii, xiii, xv, xvii
 Sprayers 43, 46, 47, xi
 Steamship Companies xix, xx
 Typewriters xviii
 Washing Machines xvi

SEEDS

We want every reader of *The Canadian Horticulturist* who is interested in growing Vegetables or Flowers to write for our *new* illustrated *Catalogue*, replete with choicest strains of Vegetable and Flower Seeds. Contains 8 pages of Novelties in Flower Seeds. It also contains many engravings and invaluable *cultural directions*.

Special Offer—Write for Free Catalogue, or send us 10c in stamps and mention this paper, and we will send Catalogue and 3 pkts. Flower Seeds in Novelties. Write to-day.

DUPUY & FERGUSON
 38 JACQUES CARTIER SQ., MONTREAL

STRAWBERRY PLANTS

I handle strawberry plants exclusively and in my Tenth Annual Catalog you will find all the best varieties listed at the most moderate prices.



I grow my own stock and the plants are all healthy, strong and vigorous.

SOME OF THE OLD STANDARDS
 Bederwood Haverland
 Sample Senator Dunlop
 Wm. Belt Williams
 Glen Mary, etc.

A FEW OF THE GOOD NEW ONES
 Three W's Good Luck
 Arnout Hundred Dollar
 Commonwealth Chesapeake
 Virginia
 Pride of Michigan, etc.

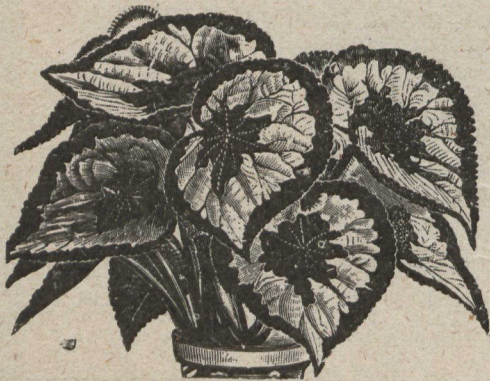
Send at once for 1909 Catalog

13 W's

W. H. VANDERBURG
 POPLAR HILL, ONT.

Steele-Briggs' Seeds

Are known everywhere for their purity and reliability. Send for our fine illustrated Catalogue for 1909. It tells all about the good things for the garden and farm.



Many new and reliable introductions

Palms
Roses
Shrubs
and
Plants

The Steele, Briggs Seed Co.

Limited

TORONTO, HAMILTON and WINNIPEG

HEADQUARTERS

IN CENTRAL CANADA

FOR HIGH GRADE

Vegetable and Flower Seeds
Grasses, Clover Seed
and Ensilage Corn
Plants and Bulbs
Garden, Greenhouse
and Poultry Supplies
Floral Work of all kinds

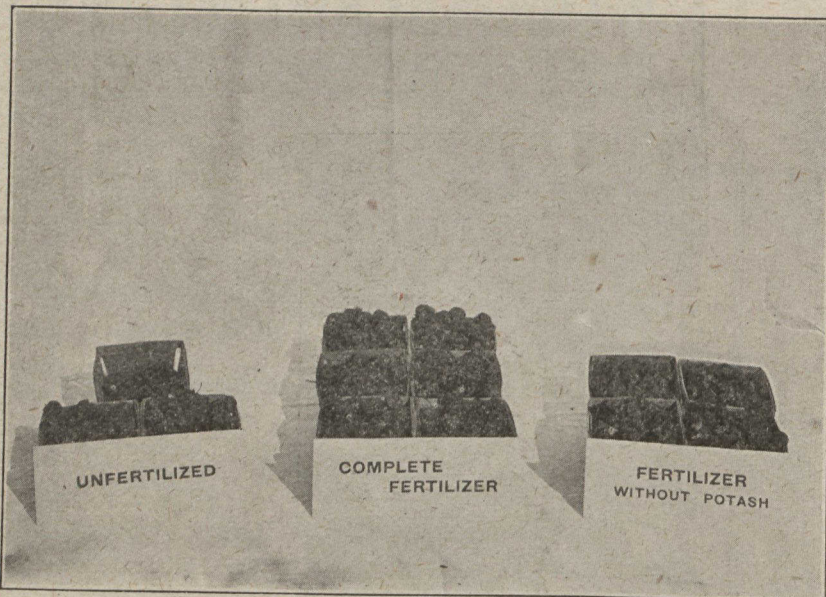
Catalogue now ready send for a copy

GRAHAM BROS.

53 & 55 Sparks Street

OTTAWA

EXPERIMENT ON STRAWBERRIES, in 1908, Conducted by E. EMSLIE, Oakville, Ont.
PLOT 1 PLOT 2 PLOT 3



Fertilizer	.....	200	.....	Sulphate of Potash
In Lbs.	.....	300	.....	Acid Phosphate
per acre	.....	100	.....	Sulphate of Ammonia
Yield per acre	2560	6144	4096	Baskets

This experiment shows an increase of 2048 baskets, directly due to the Application of POTASH

POTASH

Is absolutely indispensable as an ingredient of a "Complete Fertilizer" for all orchard and garden crops and can be obtained in the highly concentrated and quick-acting forms of

SULPHATE AND MURIATE OF POTASH

This highly important "plant food" not only increases the yield and aids in promoting a more vigorous growth but has also a marked beneficial effect on the quality, and consequently higher market value of the produce.

For full particulars and copies of our free literature, including:

- "Fertilizing Orchard and Garden"
- "Fertilizing Root Crops and Vegetables"
- "Farmer's Companion," etc., etc.

Write direct to—

Dominion Agricultural Offices of the Potash Syndicate
1102-1105 TEMPLE BUILDING - - TORONTO, ONT.

Mention The Canadian Horticulturist when writing

The Canadian Horticulturist

Vol. XXXII

FEBRUARY, 1909

No. 2

The Horticultural Possibilities of Manitoba

James Murray, Superintendent, Experimental Farm, Brandon

OF the prairie provinces, all of which have been lavishly supplied with edible wild fruits, Manitoba received probably the most abundant share. Wild strawberries, raspberries, currants, saskatoons, cherries and plums grow abundantly, and have long been a source of fruit supply and, although good in quality and frequently abundant yielders, they have not been permitted to occupy the field alone. Improved varieties have been grown since the early settlement of the province, and the suitable sorts have survived the trials of many years. The progress that has been made in thirty years in fruit, flower, and vegetable growing is notable, and may be taken as an index of what may be accomplished.

SMALL FRUITS

One of the most successful lines of horticulture is the growing of the small fruits—currants, raspberries, and gooseberries. These grow profusely in a wild state and under cultivation have been a striking success from their earliest introduction. Strawberry growing has not met with the same success, but in some districts splendid crops of a high class of fruit are harvested. The difficulties in the way seem to be the late spring frosts, the high winds and the lack of sufficient moisture. Where these factors can be counteracted or controlled, strawberry culture should be at least fairly successful. Blackcaps and blackberries have not been so successfully grown as red raspberries, but on this farm have met with fair success.

APPLE GROWING OUTLOOK

Apple growing in Manitoba has not yet reached the stage where it may be classed among our industries, but is making such progress that its exponents are no longer regarded as visionaries. Most of the early attempts to grow apples were unsuccessful on account of the stocks not being sufficiently hardy, but the introduction of hardy Russian varieties, and the use of *Pyrus baccata* as a stock is rapidly changing this. It is now no uncommon sight to see a few bearing trees of such crabs as Transcendent and Hyslop, and of apples like Hibernial and Duchess in farmers' grounds in many parts of Manitoba, particularly in the southeast.

On the Experimental Farm considerable progress has been made largely through the use of *Pyrus baccata* as a hardy stock and, to a certain extent, as one of the parents used in cross breeding. Among the varieties fruiting here are Hibernial, Duchess, Repko, Kislaga, Transcendent and Hyslop. Besides these there are a great many cross-breds and seedlings, some of which are of fair size and quality.

By far the best known apple grower in Manitoba is Mr. A. P. Stevenson of Nelson, who has been experimenting for over twenty years with apples, and who for several years has been reaping the

Kind Words from Manitoba

Editor, THE CANADIAN HORTICULTURIST:—I must compliment you on the improvement that has been made in THE CANADIAN HORTICULTURIST during the past three years. I find it very interesting from month to month, and think that you should have a large number of subscribers in this province.—James Murray, Superintendent, Experimental Farm, Brandon, Manitoba.

fruits of his labors. Mr. Stevenson has had as much as sixty barrels of standard apples in one season, and has fruited over thirty varieties. Of these he recommends only a few, such as, Anisim, Antonofka, Simbrisk, Blushed Calville, Wealthy and Hibernial. In justice to other fruit growers, it should be mentioned that the location and altitude of Mr. Stevenson's farm are unusually well adapted to fruit growing. His success could no doubt be repeated at many points in Manitoba, now that northern-grown stock can be secured.

PLUMS

Plums are plentiful in a wild state in some parts and, as many of them are of good quality, they have been introduced into cultivation very successfully. Attempts to grow European or Japanese plums have not been successful.

CHERRIES

Cherry growing cannot be said to be of any importance. The pin cherry

(*Prunus pennsylvanica*) and choke cherry (*Prunus virginiana*) are everywhere common, but are a poor substitute for the genuine article. A variety introduced by the Experimental Farm—the Japanese cherry (*Prunus tomentosa*)—has fruited at Brandon and seems to be hardy. It will probably prove useful.

VEGETABLES GROW TO PERFECTION

Vegetables are such a conspicuous success in Manitoba that a word is called for. Nowhere in Canada can vegetables of finer quality or greater yields be grown. Our very long days and bright sun force the growth and give a product unsurpassed in flavor. Tomatoes grown in the open can frequently be used for six weeks, and sweet corn grows to perfection and occasionally ripens. All the vegetables commonly grown in other parts of Canada are at home in Manitoba, and give crops as heavy and of as fine quality as produced anywhere.

GARDEN FLOWERS

The climate of Manitoba seems to be particularly well adapted to the growth of perennial flowers and hence they are largely depended upon by many of our gardeners. Pæonies, iris, campanula, larkspur, columbine, phlox and numerous others make splendid displays of bloom, and all the annuals that succeed well in Ontario make a better display here. Our long days of bright sunshine give colors much more striking than where the days are shorter. Success with annuals does not depend upon starting the plants under glass as we have fully fifty varieties of annuals in full bloom each year from seed sown in the open.

HORTICULTURE IS ADVANCING

Interest in horticultural matters is being encouraged and stimulated by a number of horticultural societies scattered throughout the province, especially by the Western Horticultural Society. By periodical shows, competitions and meetings, these societies encourage the planting of trees, shrubs and flowers, and the beautification of grounds and streets. Our landscape lacks the variety and beauty of the eastern provinces and such societies have a wide field for their work. They have accomplished a great deal already in many towns and cities and they deserve every possible help and encouragement.

Treatment for Pear Blight*

M. B. Waite, Pathologist, U.S. Department of Agriculture

AMONG the factors that influence pear blight the presence of the germ is of primary importance. If the pear blight is not present in the orchard or in the immediate

do, when followed by late treatment. On rapidly growing twigs and branches it is usually necessary to cut a foot or more below the lowest discoloration of the bark. In fall and winter pear blight

blight is to cut all blight from the trees, and save all the healthy parts that can be saved. Blight completely kills the bark of that portion of the tree which it reaches but leaves the rest of the tree

wholly uninjured. The only exception to this is where the girdling effect is produced by the blight at the collar or on the branches. Very few orchardists thoroughly know and understand pear blight. It has been with them so long that they regard it as one of the inevitable troubles of the year and, in fact, the apple as well. Still less generally known are the modern methods of controlling this disease by eradication.

Spraying Strawberries

L. A. Hamilton, Lorne Park, Ont.

The plants on the two-acre plot of strawberries set out on my farm in 1907 looked so promising in the spring of 1908 that I determined to give them every

possible chance to fight down insect and fungous pests. Adopting the formula given by the Norfolk Fruit Growers' Association as a basis, I sprayed heavily on the 21st of May with the following solution: Five pounds of blue vitriol, twelve pounds of lime, four ounces of Paris green to fifty gallons of water. Owing to the high percentage of lime the patch after spraying looked as if it had had a good dusting of snow.

It would be unwise to lay too much stress on a single experiment of this kind; but I can only say that we never had such a splendid patch of berries before on this farm. The plants continued to be strong and vigorous, and absolutely free from injurious insects, rusty and spotted leaves. The leaves held their dark green lustre until the crop was ripened. We gathered 13,000 boxes off the two acres. A finer lot of strawberries I have not seen before in this locality, much superior in size and quality to anything we had grown before.

This does not prove that these results were due to spraying. Several other factors might have exerted a potent influence, such as the plant stock, condition of soil, location, wintering and fruiting season. But the sprayed plants gave so much better results than the unsprayed



Scenes Like This are Common in Canada During the Spraying Season

The illustration shows Mr. A. N. Brown of Wyoming, Del., well known in Ontario, and assistants spraying with a Niagara Gas Sprayer.

vicinity there can be no blight. When spring opens up and new growth begins, if the germs are present or conveniently near by, and the conditions favorable, blight has a great opportunity to spread and accomplish its work of destruction. If, on the other hand, the germs do not occur, no matter how favorable conditions may be, there can be no blight.

The main method of controlling pear blight is to cut out the holdover blight. This is usually best done in late summer and autumn but it may be done at any time through the winter or early spring before the blossoms appear. When blight occurs on the main limbs or on the collars of the trees, one of the principal things in combatting the disease is to find all the cases, especially where the blight occurs under the rough bark. It requires close examination to find and remove all the blight in the tops of the trees but this can best be done in the summer or early in the autumn while the foliage is still on, the blackened dead leaves enabling one to easily locate the blighted branches. Summer cutting out of pear blight must be regarded, however, as of secondary importance in the treatment, though still a good thing to

cutting, it is usually possible to cut pretty close to the blight, say four to six inches, or, where it has thoroughly died out, an inch may do. On the other hand, when the blight blends off imperceptibly from the dead bark into the live bark, as it often does in summer, from one to two feet below the lowest point may be considered necessary.

In all work of cutting out pear blight a disinfectant should be carried to sterilize the tools and cut surfaces. For this purpose, one of the most convenient germicides is a 1-1000 solution of corrosive sublimate. A bottle of this can be carried in the pocket and a sponge, tied to a string, kept saturated with this solution. After trimming out the blight or removing the blighted bark from a diseased area, the cut surface as well as the instruments should be sterilized before turning to another infection. It is possible with proper tools such as a gouge, draw shave or box scraper, or, better, a specially made scraper, to remove the bark from a blighted area, disinfect the surface and thus save a large limb or the trunk of a tree instead of removing the same. All small limbs which can be easily spared should be cut out in removing the blight.

The object of the treatment of pear

*This is a continuation of Mr. Waite's address before Ontario Fruit Growers' Association. His remarks on Peach Yellows will appear in next issue.

ed that there is sufficient to warrant a continuance of the practice, and to make one lay down the principles that, as far as Glenleven Farm is concerned, spraying will have its proper place in the future.

Low-Heading of Trees

Editor, THE CANADIAN HORTICULTURIST:—In a recent issue, you invited the opinions of growers on the low-heading of trees. In my opinion low-heading is the only proper method. An orchard of trees with branchless trunks, six or seven feet high, is unsightly to begin with.

The low-down heads usually grow more symmetrical, the fruit is easier to gather, spraying can be done better, the wind does not affect the tree so much, there is less breaking at the crutches, pruning is more easily done, there is less sun-scald of the trunks, and less useless wood to be supported by the tree.

The sole advantage of high headed trees—convenience in cultivating among them—is becoming of little importance, owing to the introduction of machinery specially adapted to the purpose.—W. J. Kerr, Ottawa.

Many excellent varieties of apples can be grown in the home orchard that the commercial apple man would not think of growing.

As the currant is one of our hardiest and most productive of fruits, it is often neglected. If you want to make the best of the bushes, treat them accordingly.

Commercial Lime-Sulphur Solution*

H. A. Surface, Department of Agriculture, Harrisburg, Pa.

THIS year marks an epoch in the San Jose scale warfare by the appearance of a reliable commercial insecticide which can be used at any strength with absolute safety on any kind of tree or bush and with the knowledge that it will destroy the pests if applied thoroughly and strong enough. This material is nothing more nor less than lime-sulphur wash, made on a commercial basis, in a concentrated form, and prepared ready to ship in barrels or other vessels to the consumers as ordered.

To a person who wishes to use but a comparatively small quantity and not go to the trouble of building a fire under a kettle to make his own boiling mixtures, the prepared or commercial lime-sulphur wash will be most satisfactory and a boon. It has come as a response to the demands of our fruit growers, rather than being forced upon them by agents and manufacturers. It will destroy not only the San Jose scale, but other insects with which it comes in contact, such as the eggs of the tent-caterpillar and the canker worm, the larvæ of the codling moth in their winter retreats, the bud moth, plant lice eggs, and other pests that are to be found upon the trees during the winter time. It is also a fungicide, as is the home-made lime-sulphur wash, and one thorough spraying of peach trees with it during the dormant season is enough to prevent the destructive effects of peach leaf curl in that orchard during the entire next summer.

*Extracts from a bulletin of the division of zoology of Pennsylvania Department of Agriculture.

While it is not quite as cheap, in regard to the cost of material, as the home-made wash, yet it is much less expensive than the other commercial insecticides on the market, particularly the various brands of soluble oils. Of course, it is easy for any fruit grower to learn just what his raw material costs him and compute the value of his time, fuel and apparatus in making the home-made lime-sulphur wash and compare this with the cost of the commercial lime-sulphur wash, plus the freight delivered at his station.

In general, a fifty-gallon batch of the home boiled lime-sulphur wash ready for use costs about one cent per gallon for ingredients alone, and the commercial lime-sulphur wash when dilute costs about two and a half times this much, or two and one-half cents per gallon. We have used it satisfactorily at a strength of one to eight, or one part of the commercial material diluted with eight parts of hot water, and we believe that it might give good results when used one to ten, but would not recommend it weaker than that without first giving it careful trial to be sure that the weaker degree of dilution would not impair its quality in the destruction of the scale.

Like the home boiled lime-sulphur wash, the commercial material can be used upon any kind of tree, shrub or bush, and in any quantity or percentage, without injury to the tree. The only question is to use it strong enough to kill the scale and to use it so thoroughly as to do thorough work.

It does not crystallize in the barrels, contains almost no sediment, does not need to be strained, and will keep for any length of time, even for months, and not be injured by changes of temperature. We regard the advent of the commercial lime-sulphur wash as the greatest justification and verification that has been given to the faithful adherents to the home boiled lime-sulphur wash as the standard insecticide for scale insects. While our prediction



Two Power Outfits Used for Spraying for San Jose Scale

This cut and the one on page 26 were kindly loaned by the Niagara Sprayer Co. of Middleport, N.Y.

will bring about no weight in the future, neither for nor against any material, we venture to predict at this time that within a very few years this will be about the only commercial insecticide for the San Jose scale in Pennsylvania, and we agree with orchardists who have written to us stating that they regard it as a solution to the problem as to what to do for this serious pest.

Naming New Strawberries

The editorial in the January issue of THE CANADIAN HORTICULTURIST, suggesting that new varieties of strawberries with bi-sexual flowers be given male names and pistillate ones, female names, has been the subject of favorable comment. A number of letters in reference to it have been received from prominent plant breeders and horticulturists. Among them are the following (others will be published later):

"Your suggestion seems very practical."—W. M. Hays, secretary, American Breeders' Association, Washington, D. C.

"The idea of naming new varieties of strawberries in such a way that the names indicate the sex is new to me, but I like it."—L. H. Bailey, Director, College of Agriculture, Cornell University.

Fertilizers on Strawberries

It has been said that land cannot be too rich for strawberries. When considered within the bounds of reason, the statement is correct. Many growers starve their plants rather than feed them. To grow big berries and lots of them, plenty of manure and fertilizers are required. While barnyard manure in large quantities gives good results, it is not necessary. Commercial fertilizers also give excellent returns when applied properly and intelligently. The experience of many growers in all parts of Canada shows that the application of chemical fertilizers to strawberry land will produce the kind and quantity of berries that mean money. The following letter was received from Mr. E. Copley Thompson, Vernon, B. C.:

"I wish to report the result of some experiments made by myself last summer with artificial fertilizers, supplied by the Victoria Chemical Co., Victoria, B. C. I tried three plots on a dark, leaf-loam soil planted with celery. No. 1 had no fertilizer; No. 2 had complete fertilizer; No. 3 had incomplete fertilizer. No. 2 showed a marked superiority over the others both in growth and color.

"The most marked effect, however, was seen where I tried the fertilizers on strawberries, hoeing them in around the roots. The effect of the complete fertilizer on Plot 2 was so marked that it ought to have been seen to be believed or even to

realize the difference. I had three plots marked with pegs, but by bearing time there was no need for them; one could tell at a glance that the plants in one corner were much stronger than the others, the foliage several degrees darker and the fruit much larger. The berries were much admired and customers who once tried them would have no other.

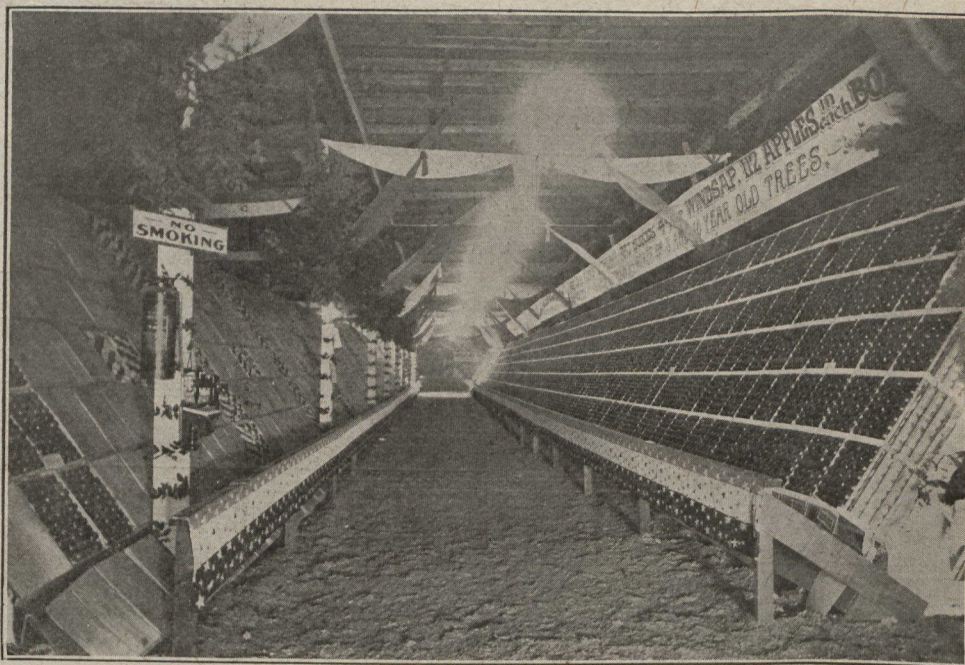
"It is impossible to give the yields on the various plots of berries as it is more than human nature can stand to have an order to fill and see nice berries across a certain line and not pick them. But I can say that Mr. Norris, the Government agent here came up with Mr. Dobie to see the results of my experiments this summer and the difference was so marked between those plants that had the complete fertilizer, incomplete and none, that he (Mr. Norris) said after a glance at them 'Oh, you have not given the others any water.' That theory could

Spraying Apple Trees

J. C. Harris, Ingersoll, Ont.

Should there be no scale in your district, it will not be necessary to spray until the blossoms are beginning to fall. This spraying is the pivot of success for the destruction of the codling moth and apple scab. Do not wait until the blossoms are all fallen. Do the work thoroughly. Put on lots of material (drenching a little won't hurt). Spray four sides of each tree with this spray if possible. Any part of the tree missed when going north and south can be easily seen when going east and west, the tree thus may be completely covered.

Apply two later sprays, one about ten days later, the other two or three weeks later. I use six pounds of bluestone, eight pounds of lime and six or seven ounces of Paris green to forty gallons of water prepared the usual way. I intend this season to use arsenate of lead



A Small Part of the Big Apple Show Held at Spokane, Washington

Exhibit of 70,560 Winesaps by Mr. H. M. Gilbert of North Yakima, Wash., who was awarded the second prize of \$500 in the carload competition. The illustration was kindly furnished by Mr. August Wolf, Spokane, Wash. At this show, British Columbia won nearly \$5,000 in prizes—See page 41

not stand, of course, as I watered them equally to get as much fruit as possible from the patch. The difference was so marked in size of berries, in size of plants and also in color, that it had to be seen to be appreciated. My best customers all wanted their berries before breakfast because they tasted so fresh.

"The secret of this was not water, which will bring size without much flavor, but cultivation and the complete fertilizer, which brought them first into the market, giving them the size and flavor. I made \$97.15 from 1,000 plants put in in spring of 1907. This was from an \$8 investment in Magoon strawberry plants and a bag or so of complete fertilizer, without which I shall never try to raise strawberries."

instead of Paris green as it is more certain. A few of the important points to be remembered in spraying are:

1. Have a good outfit with a high derrick so that you can see well what you are doing.
2. Keep the liquid well stirred or your efforts will be fruitless.
3. Start in time. Do not wait for the weather. Spray with the wind, if possible.
4. Be sure that your lime is fresh and put in plenty.
5. Remember that the June spraying, as the blossoms are falling, is the most important. Do it thoroughly. This one spraying with no more will give excellent results in most seasons, but spray once or twice if you can.

The New York Apple Tree Canker*

Prof. W. Lochhead, Macdonald College

FROM many sections of the country come alarming reports of the effects of canker on apple trees. An examination of some of the orchards reveals the presence of the New York Apple Tree Canker. The cause of the canker is the "Black Rot" fungus which is commonly found on apples. Professor Paddock of the New York Experiment Station, Geneva, demonstrated satisfactorily by inoculation experiments that the Black Rot fungus is the cause of the cankers so common on the branches of the trees. The first effect of the canker, after the infection occurs in the spring, is a discolored area of outer bark. These areas soon enlarge, and sometimes encircle the branches. The inner bark is killed, and there is noticeable a definite boundary to the diseased areas. After the disease has made considerable headway, the bark loosens and peels off, exposing the bare wood. Of course when apple girdling occurs, the portion of the branch beyond the canker dies. Professor Paddock believes that the fungus effects an entrance through wounds or cracks. It is very probable also that inoculation occurs very frequently through the agency of sucking insects, as I have frequently observed the infection to begin from punctures

in the bark, which are probably made by sucking insects. Professors Parrott and Stewart, of Geneva, have very cleverly shown that the Snowy Tree-Cricket (*Oecanthus niveus*) may be the unconscious agent of inoculation of trees by canker.

New York Apple Tree Canker is found more frequently on the larger limbs of well-grown trees than on the smaller and younger limbs of young trees. Moreover thrifty trees are more resistant than weak and neglected ones. On the bark killed by this canker spore bodies termed pycnidia are frequently observed in autumn and winter. The mycelium of germinating spores from these pycnidia cannot effect an entrance to the cambium through the living tissue, but can find an entrance through wounds. Paddock believes that in some cases the mycelium may live over winter in the bark, for he cannot otherwise account for the formation of the largest cankers. Paddock recommends, in the line of prevention of canker, that trees should not be crowded, and that they be pruned so as to admit sunshine and air.

To sun-scald and sun-burn were previously ascribed such injuries to twigs. It is very likely, however, that the injuries due to sun-scald have been exaggerated,

although it is undoubtedly true that trees suffer from this cause to some extent. The sun-scald areas are usually quite characteristic. They run longitudinally and are usually found on the south and south-west sides of the limbs.

The treatment which has been recommended for the control of this canker is:

(1). To collect and destroy diseased fruit, which usually accumulates on the trees in orchards. These, however, often contain the spores of the Black Rot fungus, by means of which the cankers are inoculation in the spring. The destruction of such diseased fruits will greatly diminish the liability of infection of the limbs.

(2). To scrape the cankered areas on the limbs and to paint these areas with to coat it with tar or paint.

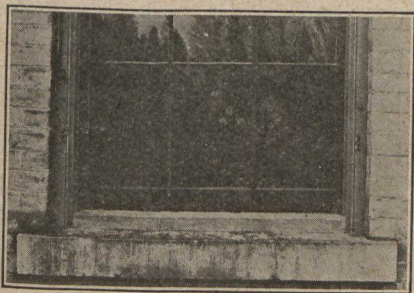
(3). To cut off the smaller cankered branches wherever possible, and to burn them.

(4). To spray with Bordeaux mixture. Observations in New York have shown fairly conclusively that cankers are most abundant in those orchards that are not sprayed with Bordeaux. Applications of Bordeaux made year after year appear to have a cumulative effect in keeping down all kinds of fungus diseases.

Window Boxes, Hanging Baskets and Rustic Stands†

Wm. Hunt, Ontario Agricultural College, Guelph

A WINDOW box does not necessarily require to be of an elaborate or expensive nature, so long as it is strong enough to stand the pressure of the weight of soil used and to resist the efforts of gales and winds to dislodge it from its position. A plain wooden box



An Undecorated Window

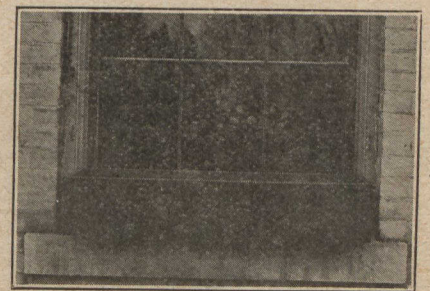
made of one inch dressed pine of the following dimensions will be found very useful, inexpensive and effective:

Length of box (over all) should be

about the width of the window itself, not including the window frames. The two or three inches in width of frames on each side of the window will allow for covering the box with cork bark, or other material, if required, of which more will be said later. The dimensions given here can of course be changed to some extent so as to suit the style of window, but care must be taken not to have the box too large, so as to be heavy and unwieldy: Width of box at top (inside measurement), nine to ten inches; width of box at bottom (inside measurement), eight to nine inches; depth of box (inside measurement), about seven inches.

The difference in the width of the top and bottom of the box will allow the front to stand at an angle or slope outwards from the bottom up, thus avoiding the common box-like appearance which a perfectly upright front board would leave. This method also allows the drooping varieties of plants to hang clear of the box, thus adding to the effect, as well as being beneficial to the plants. The box should have three or

four thin cleats of wood one inch in width and half an inch in thickness nailed to the outside of bottom to allow of free drainage, and to prevent the rotting of wooden sills. Some half inch holes should be bored about six inches apart in the bottom for drainage purposes.



A Plain Painted Box

two inches down from top on inside. A dark, dull, olive-green color is best for the box should be painted outside, and this purpose. A small iron staple or screw-eye should be placed on each end near the front top corner to support the box when placed in position. A piece of strong wire, or an iron hook, fastened

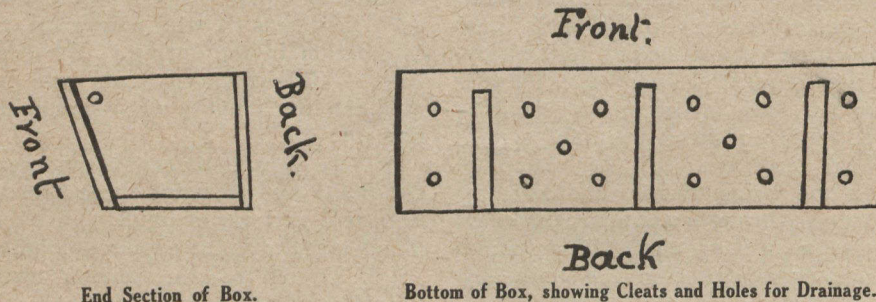
*Paper read at the last convention of the Ontario Fruit Growers' Association in Toronto.

†Part of an address delivered at the convention of the Ontario Horticultural Association, held in Toronto last November. It will be concluded in next issue.

to the screw-eye or staples placed in the windows should be used for this purpose. The box should have at least three inches bearing on whole length of window sill. A piece of galvanized sheet iron may be placed on the sill to prevent the sill from rotting. The following diagrams will perhaps be of service in the construction of the box:

A box constructed as stated will with ordinary care last for nine or ten years if given an occasional coat of paint.

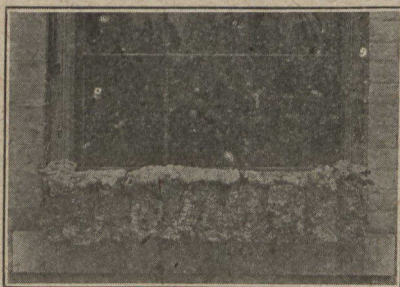
A more elaborately constructed box can be had by having the bottom project about an inch on the front and ends,



End Section of Box.

Bottom of Box, showing Cleats and Holes for Drainage.

and the edges nicely rounded. Beading can also be used effectively for appearance sake. All of these are of little use, however, and only serve to help rot the box. It is much better for the successful growth of the plants to have a plain box as described covered with virgin bark, or even the bark or some of our native trees. The bark should be nailed on firmly. Flat pieces of bark are best for covering window boxes. It may be necessary to run a saw cut partially through the cork bark lengthwise on the inside, to make it more pliable and to make it set closer. The bark of the hard maple, ash, and walnut are particularly well suited for this purpose, especially if taken from a recently felled tree, when the bark is pliable and easily placed in position. The covering of the bark—or bark and moss—as seen in the photos, not only gives the box an artistic and rustic-looking appearance, but also helps



Box Covered With Cork Bark

to prevent the soil from drying out as quickly as it does in a plain wooden box, a point worthy of consideration, especially if the box is to be placed in an exposed sunny situation. Covering the outside with small pieces of split cedar nailed on has a good effect from an artistic point of view, as well as preventing

the soil from drying out too rapidly. These are some of the methods by which window boxes can be made more artistic and less crude looking than we often see them, and also give the plants the best possible conditions for successful growth.

SOIL FOR WINDOW BOXES

A good, rich, loamy compost, about two parts loamy potting soil and one part of well-rotted barnyard manure with a little bone meal, makes a good soil for window box plants generally. It is of no use expecting good results in window boxes if poor soil is used. I have found

it a good plan to put a sprinkling of bone meal or a thin one-inch layer of well-rotted barnyard manure spread over the soil about an inch from the bottom of the boxes. This serves as a reserve fertilizer when the balance of the soil has become exhausted.

WHEN TO FILL

Window boxes should not be filled until it is about time to place them in position. In fact I prefer filling them after they are placed in position, if possible. Window boxes filled a few weeks before they are placed in position may look better at the time, but long before the season is over they begin to look shabby from the soil having become exhausted and filled with roots, a condition it is difficult to remedy even with the application of fertilizers, or with copious applications of water. Well-grown and well-hardened plants of a good size and appearance, and the box filled at the time of placing in position, will give far more satisfactory results for the season than a box filled earlier that soon gets past its best, even if the changed conditions from indoors to outdoors does not at once have a damaging effect, as it often does on the plants, unless shaded for a few days or placed in a well sheltered position from the sun and wind. Good, rich soil, large, well grown and hardened plants are essentially necessary to have a successful window box. About the first week in June is a good time to place window boxes in position.

HOW TO FILL AND ARRANGE

No other drainage is necessary beyond the holes in the bottom of the box. Fill in soil sufficient to fill box about one-third full. Stand the plants, after they have been knocked out of the pots they

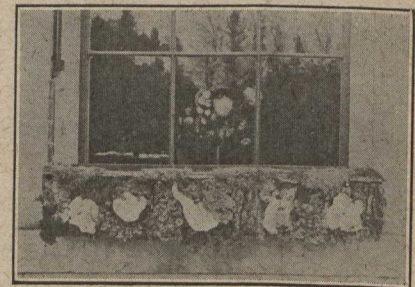
are in, in the position they are to occupy, and make sure that you have them in their proper positions before filling in any more soil.

Place the tall plants at the back, and place the drooping and trailing plants in front and ends of box. Then fill in any open or bare looking spots between with medium height plants. In placing the plants in position, due consideration must be given to height and habits of plants as well as color effect, and to have the plants arranged so that height, density and color may be properly balanced and harmonized, without their presenting a stiff formal appearance. The surface soil of the ball of earth on the plants when placed in the box should be about an inch or more below the top edge of the box.

When you are satisfied the plants are properly set and arranged, fill in the soil and pack it moderately firm around the roots of the plants, filling in soil to within an inch of top of box. Give water at once sufficient to moisten all the soil. Afterwards avoid over-watering at the roots for a few days until the plants are established in their new quarters. A sprinkle of water overhead and the plants shaded for a day or two will be beneficial when first planted. When growth has well commenced, water should be given freely every day unless in very wet weather. Give water so that it runs out through the holes in the bottom of box every time the plants are watered.

Towards the end of the season some liquid fertilizer may be given the plants. An application of fertilizer as used for pot plants once a week from middle of July until the end of the season will be beneficial, or a top dressing of rich soil may be applied about the end of July to advantage.

In the autumn many of the plants can be taken out, potted and placed in the window for winter. It is seldom that the box is of any use for indoor decorative purposes without being refilled. Window



Box Covered with Native Bark, Lichens and Fungi

boxes filled with ferns, bulbs or plants in the fall, look very nice, however, in a window in winter.

An article on the construction and management of hotbeds for starting vegetable and flower seeds will appear in next issue.

Planting for Winter Effect in the North*

George Edward McClure, Buffalo

WHEN we contemplate planting for winter effect, the mind turns first to the evergreens, then to berry plants, and to the bright colored branches of the dogwoods and osiers, and so



The Berries of *Euonymus Bungeanus*

forth, but seldom do we think of the beautiful effect of the winter woods, the persistent foliage of some of the beeches and oaks, which although brown and dry, yet is cheerful in its effect. Little is thought of the beautiful shades of brown, grey and white, in the trunk and branch, or of the variety of the framework of the various trees, which gives an element of strength to the winter landscape, or to the variety in trees and shrubs, in the delicate tracery of their smaller twigs, as evidenced by some of the birches and alders, and so forth, in the trees, and in the shrubs, by such as *Stephanandra flexuosa*, the coral berry (*Symphoricarpos vulgaris*) and some of the spiraeas.

DECIDUOUS TREES

Among the deciduous trees which are attractive during winter might be mentioned the American plane or sycamore

(*Platanus occidentalis*) which, with its pendent balls of fruit borne high against the sky, seem to take away the barrenness of the deciduous trees, and is suggestive of the Christmas decorations so admired by the young folks, on Christmas trees. While this tree is beautiful in winter, it has also much to recommend it as a fast-growing tree for summer effect. Its beautiful bark, with the irregular patches of green and grey, are also interesting in the winter season. In much the same manner the liquid amber (*Liquidambar styraciflua*) is interesting with its fruit in pendent spiked balls. Its symmetrical form of growth and extremely corky branches are noticeable to those who are only casual observers.

The little shell-bark hickory (*Hickoria ovata*) while suggestive of strength, is also especially interesting on account of its peculiar bark formation, which is unlike any other common species of tree. If planted near the shell-bark hickory and other trees with rough bark the American beech (*Fagus ferruginea*) shows to advantage, as its grey bark is the smoothest of any of our hardy American trees and never fails to attract attention from those who seek the beauties of winter as found in our woods. It is also especially attractive in winter as the young trees often hold their dry leaves as do some of the oaks well into the winter.

Among other trees which might be mentioned as being attractive in winter, from the standpoint of their bark coloration, are the yellow branched linden (*Tilia platyphyllos* var. *aurea*), the Babylonian or weeping willow (*Salix Babylonica*) and the white willow (*Salix alba*) with its brownish yellow branches, the white poplar (*Populus alba*) and its fastigate variety, *Bolleana*, with their grey-green bark, *Acer Pennsylvanicum* with its white striped bark and greenish twigs, the red birch (*Betula nigra*) with its brown bark, and the canoe birch (*Betula papyrifera*.) The white birch (*Betula populifolia*) and the European white birch (*Betula alba*) are the most beautiful white barked trees. Their graceful outlines are one of the delights of winter landscapes, but unfortunately they are afflicted with the birch borer, which, in some localities is so destructive that the culture of the trees has been abandoned. When it is possible for them to thrive, they are charming if planted along with some of the pines, such as the white pine (*Pinus strobus*) and the pitch pine (*Pinus rigida*.) The birches also thrive in sandy soil, which is favorable to the pines themselves. The effect of the white bark against the perpetual green background of the pines is to many,

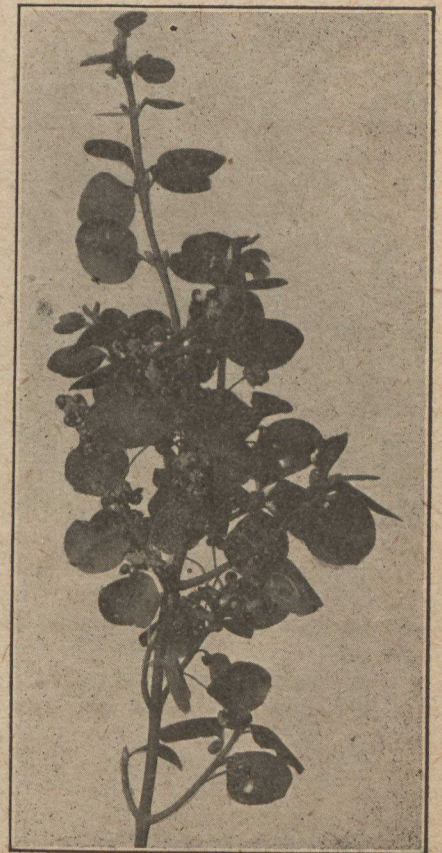
more delightful in winter than when the birches are covered with their summer foliage.

THE MIXED FOREST

Excellent winter effects are also obtained by what the forester terms the "mixed forest," which is a mixture of deciduous and coniferous trees. This forest growth is often to be found along the Great Lakes belt, and the effect is often very beautiful. It would be well if we would learn from nature and reproduce these effects in our parks and large estates. While it is out of the realm of this paper to mention fall coloration effects, this "mixed forest" effect is unparalleled when we behold the tints of the maples mixed with the dark green pines, and the impression produced is one that lingers in the memory of the most casual observer.

USE OF EVERGREENS

While we can secure much pleasure from the observation of trees in their bark, twig and fruit formation, yet the most impressive winter effects are largely produced by using the hardy coniferous evergreen with a lavish hand. In this connection it may be said that an infinite variety of evergreens is not necessary to produce fine effects, and while the list of the iron-clad evergreens, suitable for northern climate, is woefully



Euonymus Radicans, var. *Vegata*

* Extracts from a paper read before the Society of American Florists and Ornamental Horticulturists, at its annual convention at Niagara Falls, N.Y. The information applies to the region of the Great Lakes and locations of similar climate. Many of the species recommended for planting, but not all, may be used in all parts of Canada where hardy plants will grow.

short, yet we have no reason to be disturbed. On larger places the liberal planting of pines and hemlocks for screening unsightly buildings, and checking the force of the winter winds, will have much to do with the successful treatment of the place, for one can better appreciate the subtle beauties of a winter landscape if protected from the force of the icy wind by an effective screen of tall and stately evergreen trees.

The most useful large growing pines for northern planting are the white pine (*Pinus strobus*), the Austrian pine (*Pinus Austriaca*), and the Scotch pine (*Pinus sylvestris*.) The soft effect of the delicate needles of the white pine when young and its stately appearance when old, places it preeminently in the lead, while the larger needles of the Austrian and Scotch pines contrast well and give variety. The only objection to the use of the American hemlock is that it cannot be employed near large cities on account of the smoke and sulphur gases which are always present in manufacturing districts.

In both large and small places, the Douglas spruce (*Pseudotsuga Douglasii*), with its dark green foliage, and the Colorado blue spruce (*Picea pungens*), and its varieties *glauca* and *Kosteriana*, give variety to the winter landscape. For immediate effect, and for filling in between the more permanent pines and spruces, the Norway spruce (*Picea excelsa*) is useful, but as it very often outlives its usefulness at an early age, it is only useful for the purpose of temporary effects.

The mountain pine (*Pinus montana*) is the most useful of the low-growing evergreens for our northern climate and is not out of place on the smallest lawn. When massed at the foot of larger evergreens it is extremely effective. Some of the junipers can safely be employed in the north. By far the most effective of all is (*Juniperus Virginiana glauca*), the glaucous form of the common red cedar. It is much more hardy than the type, and it will thrive in the smoky atmosphere of the city as will no other cedar. Its whitish effect, like that of the Colorado blue spruce, is particularly striking. *Juniperus Chinensis stricta* is also an evergreen of the first rank for the north.

For low planting the savin juniper (*Juniperus Sabina*) is excellent, while *Juniperus communis* var. *nana*, which is still lower in growth, gives us an opportunity to produce an evergreen carpet when it is desired. As a useful, hardy evergreen we cannot overlook the Japanese yew (*Taxus cuspidata*). It is a welcome addition to the list of really hardy evergreens. The American arbutus (*Thuya occidentalis*) in its numerous varieties, is also useful as a northern evergreen, but prefers the shelter given

by wind breaks. Its golden variety, *aurea*, is extremely useful as it is really golden, and adds a touch of bright color which harmonizes well with the prevailing deep green of the majority of evergreens.

While the evergreens enumerated, do not include all of the Coniferæ that are hardy along the region of the Great Lakes, yet it does include the very hardiest species. These are sufficient to produce a winter picture, which as far as conifers are concerned, will be effective and leave little to be desired.

BROAD LEAVED EVERGREENS

What is true of the scarcity of the really hardy coniferous evergreens in the Great Lake or northern regions, is still more true of the broad leaved evergreens. One of the very few which is hardy under all conditions is the yucca (*Yucca filamentosa*). When planted in large masses it is a cheering sight in winter, to say nothing of its profusion of bloom in summer. It is doubly welcome, but its value as a winter plant is its chief asset. Even a solitary specimen on the lawn is an evidence of life in the snow.

The best evergreen ground cover is undoubtedly the periwinkle (*Vinca minor*). Its ability to thrive under adverse conditions of light, render it useful for oth-

er things besides winter effect. It is an excellent ground cover between evergreens, its cheerful green is not only beautiful to the eye but the plant acts as a protection from deep freezing of the soil. When it is planted in mass in the open, or on the edge of shrub border, in company with *Rosa blanda*, it makes an unique combination, as the brilliant large fruits of the rose borne near the ground and just over the ground work of green vinca, the effect is suggestive of the Christmas season.

Another broad-leaved evergreen which is useful in the northern latitudes, is *Euonymus radicans*, which as a low climber, takes the place of the English ivy. As a creeper it is seen at its best. The sun of February and March often burns some of the upper leaves, but whenever it produces its red berries it is a thing to be desired.

The Japanese honeysuckle (*Lonicera Halliana*), while not considered an evergreen, yet retains its green leaves until long after Christmas in sheltered situations, when used as a trailer, but not when used as a climber, as the leaves are more exposed to frost and wind and are not as persistent. As this plant is used for covering banks in open ravines, and around rocks and boulders, it has a cheery effect on a winter day.

(To be continued in next issue)

Tuberous - Rooted Begonias

John Paine, London, Ontario

WHEN tuberous rooted begonias are wanted for outside planting, start the tubers early in March, in shallow boxes filled with sand, as they require plenty of heat to start them growing. A furnace cellar is one of the best places for this purpose. Water sparingly at first. After they have made about half an inch of growth, put them in good strong potting soil, in five-inch pots and place them in windows facing the south if possible. Water now when the plants require it. By the last week in May, you should have strong plants, just coming into bloom for your out-of-doors bed.

A sandy loam made as rich as you possibly can make it, is the best soil for these begonias. Have the bed if possible, so situated that it will be shaded from the mid-day sun. Make the bed slightly oval. Plant about fifteen inches apart with the top of the tuber a little below the surface of the ground. For support, use strips of shingles about one-third of an inch wide. Take about six of the strips and push them into the ground about half their length around the plant four inches from the stem. The plants will grow upright and remain so through wind and storm. The growth of the foliage will soon hide the support.

Cover the ground of the bed with air-

slacked lime, just keeping clear of the begonia stems. When the lime becomes caked, scrape it off and apply more. Do this at least three times during the early part of the season.

During the warm weather begonias require plenty of water. Apply it in the evening.

To keep the tubers for another season, cut the stems off about three inches from the tuber and dig them up after the first hard frost in September, leaving a good sized ball of earth around them. Place in a furnace cellar until the earth about them becomes thoroughly dry. Then remove the tubers and store them in sand in a dry but not too warm a place for the winter. In this way, your loss of them will be less than two per cent. Most of my begonias are of the new frilled varieties, principally singles as I like them best of all.

Photograph your lawn and shrubberies in winter, and send prints for reproduction in THE CANADIAN HORTICULTURIST.

Send photographs of your window gardens to THE CANADIAN HORTICULTURIST for publication and tell how you care for the plants.

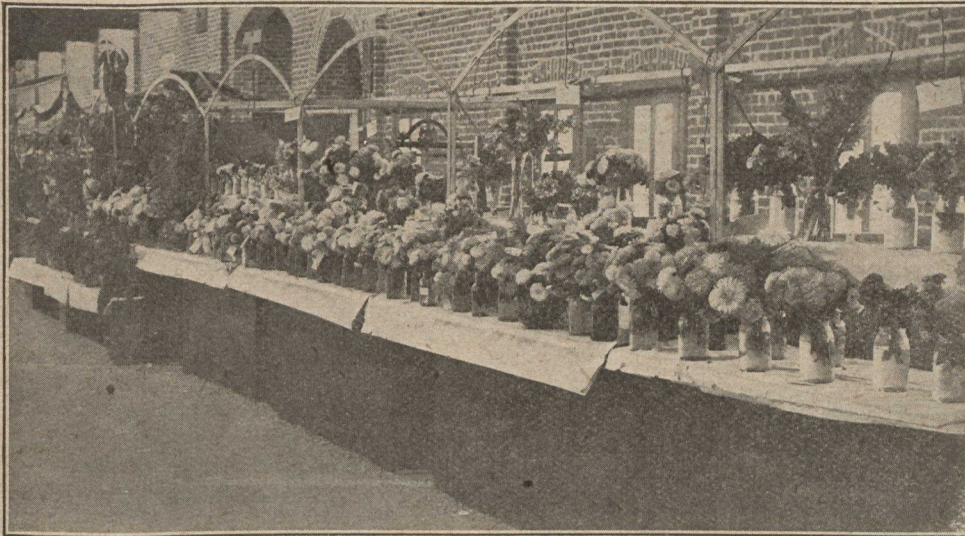
What Amateur Gardeners Can Do in February

If you want to grow the best kind of vegetables and flowers in your garden next year, secure catalogues from the firms that advertise in *THE CANADIAN HORTICULTURIST*. Read them carefully and make your selections. They are interesting not only for the lists of varieties that they contain, but also for the many

etc., earlier in the spring, if you sow the seeds inside about the last of the month or early in March. When large enough, the plants may be transplanted to a cold frame. If this is not available, transplant to other boxes in the house.

Keep a close watch on the window plants for insect pests. Syringe or

ed with insects and fungous pests, plan to have them sprayed this spring. It will be too early this month, but you had better plan ahead. If the orchard is small, purchase a knapsack spray pump, but better results would be obtained by the use of a barrel sprayer. To make the expense easier, it would be well to club in its purchase with a number of your neighbors. Consult the spraying advertisements in this issue of *THE CANADIAN HORTICULTURIST*. Write for catalogues and choose the sprayer that you like best. You will never regret it. In other columns of this issue may be found further information on spraying. This will be supplemented with some excellent articles next month.



Children's Exhibit of Asters at Flower Show Held Last Summer by Woodstock Horticultural Society

This society is one of the most useful in Ontario. Its work among the school children has been particularly valuable. Last year, 600 packages of aster seed were distributed to them. The president of the society is Mr. J. W. Armstrong and the secretary, Mr. W. R. Vroman.

excellent cultural directions that they give. It is wise to order early.

The earliest annuals of the garden may be secured by sowing the seed in February. Seeds of verbenas, lobelias, cockscombs, double petunias, sweet sultan and others may be sown in pots or boxes in the window towards the end of the month, for use in window boxes or hanging baskets. For bedding-out purposes, sow seed early in March. Towards the end of the month, sow a few seeds of sweet peas in pots or boxes for planting outside in spring, as soon as the weather and soil will permit.

You will have beets, lettuce, beans,

sprinkle the foliage two or three times a week with luke-warm water. A weak solution of tobacco applied once a week will be beneficial. Do not have the plants too close to the window at night. Should they become frozen, avoid bringing them into a high temperature. Keep them where it is only a few degrees above freezing. Cover them and keep in the dark for twenty-four hours, or until the frost is out of them. If they were not frozen too severely, they may be saved in this way but keep them away from bright sun-light for a week or two afterwards.

About the end of the month, fuchsias that have been resting, may be started into growth. For further information on how to do this, send enquiries to the "Question and Answer Department" of *THE CANADIAN HORTICULTURIST*.

If you want to keep your freesia bulbs after flowering, withhold water until the foliage turns yellow, and then give no more. Place the pots in a cellar until next fall, when the bulbs may be taken from the soil and re-potted.

SOME WORK OUT-DOORS

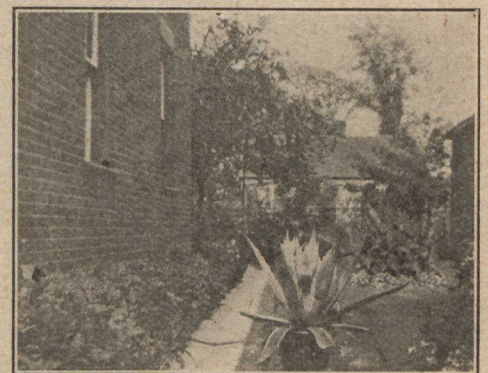
If you have not yet pruned your currant and gooseberry bushes, the work may be done any time during the dormant period. These fruits are quite hardy and will stand more abuse than others.

If your fruit trees have become infest-

A First Prize Garden

In the amateur competition for best lawn and flower garden conducted last summer by the Peterboro Horticultural Society, the first prize was awarded to Mr. Wm. J. Kennedy, of Peterboro. A glance at the illustration will show at the left a border of geraniums and foliage plants. The flower bed at the right hand lower corner comprised geraniums bordered with Madam Saleroi; the one in back ground, cannas bordered also by silver-leaved geraniums.

At the right, not distinctly shown, is a border of asters, petunias, stocks and phlox. These were started in the house in early spring from seed and planted outside in June. Three specimens of cacti adorn one side of the walk. Near the back of the lot is a wire fence with two rows of geraniums in front and a vegetable garden on the other side. The



A Prize Garden in Peterboro

entire garden and lawn was well cared for and presented a pleasing appearance throughout the season.

When spring-time comes, take a photograph of your backyard or garden before any improvement is made. Then give the plot as much attention as you can and, when it appears at its best, take another photograph. Send both to *THE CANADIAN HORTICULTURIST* for publication.



A Bed of Cannas and Caladiums

A Garden Effect in Toronto

T. McVittie, Toronto

THE illustration on this page shows a part of the pleasure ground in front of Sir H. M. Pellatt's conservatories, Toronto. The border to the right is planted with a mixed collection of annuals having for a background cannas and *Nicotiana sylvestris*. The annuals used are stocks, Semple's tall-branching asters, zinnias, verbenas, antirrhinums, petunias, French and African marigolds, and so forth, and bordered with tagetes.

The annuals are sown about the beginning of March, in flats in the greenhouses. When large enough, they are pricked out on old hotbeds which have first been covered with a couple inches of rich light soil. After being watered, the sashes are placed over them and kept

grown from cuttings or seeds, but best results will be obtained from seeds sown about the beginning of February, in flats or pans filled with a mixture of leaf mould and sand and covered lightly with the latter and afterwards placed in a warm greenhouse or hotbed. As soon as they are out of the seed leaf, they should be transplanted into shallow flats in a light mixture of loam leaf mould and sand. When large enough pot them into small pots. If properly looked after they will make nice bedding plants by the middle of May.

About Lilies

Editor, THE CANADIAN HORTICULTURIST:—As you wish correspondence from your readers re. experience in the growth and

that they may be grown in Ontario. I have had 25 flowers from a single bulb. Fresh manure should not be used. The soil should be very rich with well-rotted manure and if sandy loam so much the better.

Lilium candidum has given me great satisfaction. Can you fancy anything more beautiful than, say, 100 flowers all open at once, shedding a fragrance that cannot be described but which can be known only as a matter of experience. This lily should be planted in August, as in September and October they commence both a root and leaf growth. If bulbs are planted or disturbed in spring or late fall it will mitigate against their bloom for the following season.

It is true, Mr. Editor, as you remark, that the lily is amongst the noblest of garden plants. When we consider the great variety of those that are perfectly hardy, there appears to be no excuse for not having them in abundance.—A. Barber, Bowmanville, Ont.

Hints to Amateurs

W. J. Stevenson, Oshawa, Ont.

A fault of amateur gardeners is impatience. Efficiency, beauty and pleasure are often sacrificed for instantaneous results. One who buys a house standing in an arid waste of bricks and mortar, water holes, and so forth, naturally wishes to see it transformed at once.

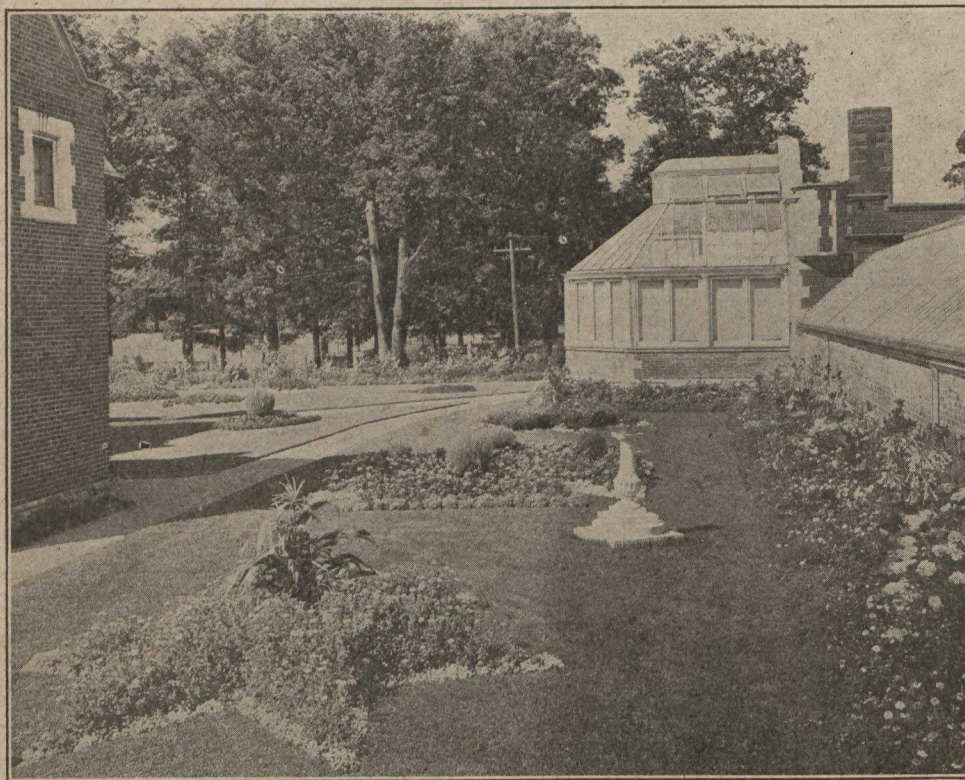
It is this sudden polishing up of a new garden, that ends in its ruin. It needs both time and thought to carry out the work properly. The attractiveness of a garden lies in its prospective growth of charms, the place being made to develop a constantly recurring succession of features. Economical gardening is remarkable for its simplicity. Some gardens look as well on an expenditure of a small sum per annum as others on which a much larger amount has been squandered. In one case, the strictest economy has been practised; in the other, there may be no end of rarities mixed so indiscriminately as to represent sublime confusion; and curiously enough in some gardens, where expense seems of little object, there is a great absence of order.

Age of Bushes

What constitutes a one-year-old and a two-year-old gooseberry bush from cuttings? If I plant cuttings this spring and take them up the following spring, are they one year old or two years old? Some persons contend that the cuttings are one year old before they are set out.—D. B., Norfolk Co., Ont.

In nursery practice, the age of the bushes is calculated from the time that the cuttings are planted. Bushes from cuttings planted this spring will be one year old the following spring.

Readers are asked to tell their experiences with freesias in the window gardens.



Some Flower Beds and Borders on Grounds of Sir Henry M. Pellatt, Toronto, last Summer

closed and shaded from the sun until the seedlings get well established, gradually hardening them off by raising the sashes during the day and after a time removing the sashes altogether.

The flower beds to the left are two five-pointed stars, one at each end, planted with verbenas. The centre bed is a maltese cross planted with geranium, Mad. Barney, on a ground work of alysum.

In the distance can be seen beds of begonias of the semperflorens variety; viz., Erfordi, Vernon and Graceless. These are fine bedding varieties and continue a mass of bloom from June until killed by the frost. They are easily

care of lilies, I desire to say that, having had considerable experience in their growth, the auratum may be successfully grown. My bulbs are planted about 15 inches deep in a partially shaded position and well drained soil. Last season, I had bloom 11 inches across from bulbs that had been blooming for a number of years. They had not been covered the previous winter, although I would recommend a light covering, say, of leaves but placed so that ice would not be formed upon the surface. I have grown *Lilium auratum macranthum* and *L. a. vittatum*, would perhaps prefer the former as a little stronger grower.

My experience with the speciosums is

Growing Early Vegetables in the Home Garden

A. V. Main, Gardener to B. Rosamond, Esq., Almonte, Ontario

IT is a great privilege to have a garden and in return we should make the most of it. Whether it be a working man's garden, a private garden or a market garden, earliness in vegetables is appreciated. In this article, we shall discuss the early crops outdoors and not the vegetables produced under glass.

PEAS

For early peas, commence the work the last week of March. Select an early variety, such as American Wonder or Steele, Briggs' Best Early Extra. Fill two or three dozen four-inch pots half full with light soil, placing first some rough leaves in the bottom of the pot. Sow eight or ten seeds in each pot and cover with soil within half an inch of the rim of the pot. Place a label in one of the pots stating the variety and when sown. Give a good watering with a watering-can having a fine rose sprinkler. If a hotbed is not available, place the pots in a warm sunny window.

When the plants sprout and commence to grow, keep the soil moist and give them plenty of light and air on favorable days. Keep the little plants stocky and strong. If the weather is good towards the end of April, remove the pots to a sheltered nook outdoors. Several degrees of frost will do no harm.

When the frost is out of the ground and the soil is dry enough, select a sunny sheltered aspect of the garden for planting. Plant each potful by itself and place them fifteen inches apart in the row. Procure some small branches, preferably dead spruce, and insert them on either side of the peas both for protection and support. With a small quantity of peas, it is a great assistance to support them with branches, or wire netting. Even the small market grower can practise supporting the vines with profit; the peas ripen earlier, they are easier to pick, are much cleaner and yield a bigger crop; it does not involve much labor.

Instead of using pots for sowing, other substitutes can be employed, such as, sowing on sods or starting the seeds in strawberry boxes or in V-shaped boxes. The latter method is excellent. Use two long four-inch boards and tie them together here and there with binder twine and drive a nail (only half way) in every three feet of the box. We have used this method with boxes nine feet long. When planting, the boards will easily sever partnership on the removal of the twine and nails and the roots will be left intact. By following this method of culture, I was able to have good filled peas on the 10th of June last year.

POTATOES

To have early potatoes, choose a reliable early sort that does well in your

locality. About the end of March, look up your seed tubers, for if you want a dish of potatoes on the 15th of June, you must have them moving. First of all, procure shallow boxes. These can be easily made. No amateur gardener should be without several of these boxes, in accordance to his requirements, to raise seeds, tomato plants, asters and all his many other garden favorites. It is a great assistance to forward a host of subjects under cover in spring, to achieve earliness and to get the worth of a garden. For instance, we might dig potatoes while the man in no hurry would only be planting. The boxes in question can be four inches deep, two feet long and fifteen inches wide, a convenient size for gardening purposes. The bottom of the box should have the seams between the boards half an inch in size to allow an outlet for water.

Fill these boxes with decayed manure or leaves half an inch in depth. Medium-sized potatoes are best without any cutting. Pack these into the box, keeping the end with the eyes or buds uppermost. Keep the leaves moist and set the box in a warm room, near the light. Strong heat is not conducive to sturdiness; a little above freezing point is excellent. As the growths push up, we thin them to two strong shoots on each potato. Endeavor to have short stubby growth by exposing to a cooler position.

When the conditions outside are allowable, plant in your warmest corner of the garden. Draw out furrows in rows, about six inches deep and two feet apart. Take out your seed potatoes carefully, with all the leaves and roots attached. Put one tuber only every twelve inches and cover with finely broken soil. A dressing of wood ashes over the tubers is beneficial if at hand. Spruce branches are a splendid protection from frost at night or an inverted flower pot or empty box. When the stems are sufficiently high, draw up the earth to them on either side, not necessarily into hills. In whatever locality you may be, the adoption of this method will bring potatoes a fortnight or three weeks earlier. Frost may scare you, but one must risk a little to gain anything.

TOMATOES

The best early tomato is Earliana. Sow the seed from March 10th to 20th in finely sifted soil in small boxes. A hotbed or a well heated greenhouse is better, but not always available. When transferring the seedlings to a larger box for more space, use care in handling them. A maxim in Tomato culture worth remembering is "Keep the foliage dry and the roots moist." Prepare a compost of loam, decayed manure and sand, thor-

oughly mixed. By May 1st the plants should be strong and ready for re-potting into four-inch pots. Pot fairly firmly and shade the plants for three or four days. Good supplies of water will be required by each pot, whether placed under glass or in the window. Do not put the plants outdoors too soon, allow the pots to get full of roots first. I like also to see the first truss of bloom out; May 25th is generally safe.

It is now that the use of pots gives us a start in the race for early tomatoes. The roots are not broken. We can plant on a sunny day and the plants get no check. Those grown in boxes come out injured and the sun is their torment for some days.

My method is to plant, two and a half feet apart each way, on light soil, not manured. Procure stout stakes five feet long and drive them in on the north side of each plant and secure the plant to this with soft twine. Only allow the main leader to grow up. Almost every week rub out the shoots that spring from the base of each leaf and when the fruit is swelling, it will do no harm to shorten the leaves with a knife. The air and sun must be admitted in unlimited quantities. At this stage, a good mulching of manure is spread all around the plants. Every shower will wash in this surface feeding. Supply the plants with plenty of water.

By judicious disbudding, tying up the plants, hoeing and surface manuring, one can easily obtain fine fruits by the end of July. The secret lies in growing the plants in pots, firstly, and in training the vines to a single stem.

While directing attention to the grower of a small garden, the application of the methods suggested in the foregoing notes would be profitable also to market growers on a large scale. In subsequent issues of THE CANADIAN HORTICULTURIST other vegetables will be dealt with.

Mushrooms

Can a man who is located 200 miles from market make money out of mushrooms in winter?—N. C., Temiscouata Co., Que.

If all other conditions are favorable, I do not think that a distance of 200 miles from market should trouble a mushroom grower very much. In order to be profitable, the crop should wholesale in winter for at least 50 cents a pound; at this price, the express rates would not be proportionately heavy. A more serious problem would be an easily available supply of suitable manure for making the beds. If that is 200 miles away the chances of financial success are small.—Thos. Delworth, Weston, Ont.

The Construction of Irrigation Plants*

W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa

WHAT seems to be a good system of irrigation and one which is favorably reported upon by some of the correspondents from whom letters have been received, is the Skinner System (The Skinner Irrigation Co., Troy, Ohio). This system provides for both green-house and outside irrigation. It is really a method of overhead sprinkling. For outside use galvanized iron pipes are used to convey the water. These are supported on upright posts high enough to permit of cultivating underneath, or about six feet above ground. In the galvanized iron water pipes are set nozzles about four feet apart or more, depending on the kind of nozzle used, the company supplying nozzles and machine for drilling the pipe to insert the nozzles. The lines of pipes with nozzles are from forty to sixty feet apart, depending on local conditions. The water is applied in the form of a spray through the nozzles and is said to be distributed very uniformly, if the plant is well installed. The company claims that "The initial cost is less than that of any other system of irrigation for an equal area; the power required for pumping is a minimum; no water is wasted, and the entire irrigation is accomplished with a very slight amount of labor." The company informs me, that the average cost of installation is \$125 an acre.

Bulletin 87 of the Office of Experiment Stations, Washington, D. C., on "Irrigation in New Jersey" gives more information in regard to the irrigation of vegetables and small fruits in eastern America than we have been able to get from any other source. The following description of a plant used in New Jersey in 1900 should prove interesting. The cost of engines and other items of expense will have changed some since that time, but the difference should not be very material.

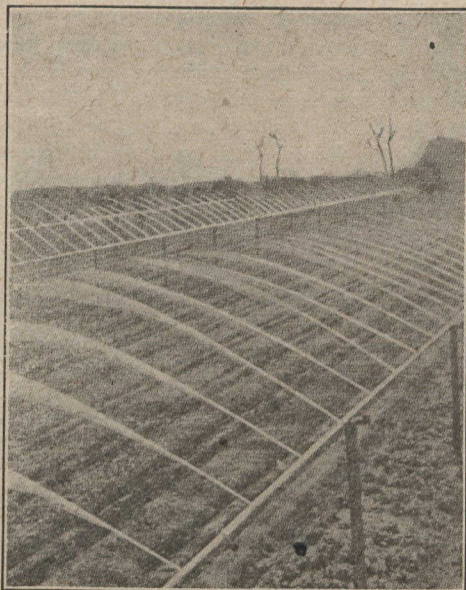
"The irrigation practised in the east so far has been on a small scale. Plants capable of irrigating six to eight acres are the rule. In the following paragraphs a small plant recently installed is described in detail as to construction and cost, in order that those interested may determine from the data given whether under their conditions the installation of plants will prove profitable investments.

A PLANT AT VINELAND, N. J.

"The irrigation works of Mr. George A. Mitchell, Vineland, N. J., (Mr. Mitchell's plant is not in operation now.—W. T. M.) consisted originally of 2.5 horsepower gasoline engine, a single-acting force pump and delivery pipe, con-

sisting of a 2.5 inch wrought-iron pipe, and condemned fire hose, and home-made distributing hose of tarred duck cloth. The engine and pump were enclosed in a building near the bank of a creek, a ditch leading the water to a pump. The water was then pumped 693 feet to the highest point on the farm, whence it was carried to different locations in the same manner as is now done. From forty to sixty gallons per minute were pumped.

"The slope from the twenty-foot elevation to the creek and south to Elmer road are comparatively regular, being steep-



The Skinner System of Irrigation

est for about 150 feet each side of the highest point. In the spring of 1899, the engine and engine-house were moved farther away from the creek, a ditch fifteen rods long by two and one-half feet was dug to bring the water to the pump. The water in the creek is raised six to twelve inches by a dam. A No. 2 centrifugal pump was secured with a ten-inch pulley, and set ten feet center to center of pulleys from engine. The three-inch leather belting runs from two and one-half foot fly wheel of engine to pulley on pump. The engine makes 320 revolutions per minute.

THE CONSTRUCTION

"An eighteen-foot length of three-inch pipe is fastened to the pump outlet by means of reducers and is held in a perpendicular position by four guy wires. An elbow with a two-foot length of pipe is fastened to the top of the upright and standpipe. The hose is fastened to this by binding with wire. The hose is the home-made kind hereafter described, and is seven and one-half inches in diameter. The different lengths are connected by inserting a short length of stove pipe

into the two ends and binding the hose to the pipe with wire. The large hose is used as the main, and extends 425 feet from the standpipe to the highest point on the farm. The hose is supported by a trestlework, which slopes four feet from the standpipe to the end. This slope is sufficient to cause the water to flow through the hose without any forcing from the engine, and consequently there is almost no pressure tending to burst the hose. For 150 feet from the end of the pipe the hose rests on foot-wide wire netting (chicken wire netting) supported on cedar poles. For the rest of the distance the hose is supported in a trough made from cedar slabs. When the hose was ten to twenty feet above the ground it would have been very difficult to build the trough. Where the hose strikes the ground at the top of the hill it connects with a distributor of galvanized sheet iron. The large opening of this distributor is about seven inches in diameter and the smaller openings are three inches in diameter. Small hose is attached to the small outlets and the water is taken to the land to be irrigated through this. All the water from the pump, about 150 gallons per minute, can be forced through two openings when so desired. Some condemned firehose that had been used during two years was used as distributing mains. This was laid in such a way as to interfere as little as possible with cultivation, being left in place during the summer and stored in the barn in the fall.

TARRED DUCK HOSE

"The tarred duck hose was made from twelve-ounce duck torn into strips of the desired width and sewed into hose in a sewing machine. A mixture of four parts of coal tar to one part of boiled linseed oil was then brought to a boil and the hose drawn first through the hot tar and next through a clothes wringer. Care should be taken not to allow the hose to touch the side of the vessel when it is hot, as it is liable to scorch the hose. Some of the hot mixture should be poured into the hose, before starting it through the wringer, to cover the inside with tar. The hose should dry two or three days, or better a week or more, before being used."

COST OF PLANT

A statement of the cost of this plant follows: Two and one-half actual horsepower Webster gasoline engine, set up on brick foundation, \$160; pump set up, \$40; belt and adjustments, \$8; 400 feet 2½-inch wrought iron pipe, tees, laying and painting, \$45; condemned firehose, 900 feet, with connections, price not constant (approximately), \$36; building for engine, trench for leading water to

*A portion of a paper read at the last convention of the Ontario Vegetable Growers' Association. The first instalment appeared in the January issue. The experiences of other growers in the eastern states and Canada will be published in later issues.

pump, various arrangements for distributing water etc., (approximately), \$40; total, \$329.

SOME RESULTS

A report was published in 1900 by Professor Voorhees, Director of the New Jersey Agricultural Experiment Station, on the results of irrigation for several kinds of vegetables made by Mr. Mitchell. These are herewith summarized. Early Jersey Wakefield cabbage was irrigated three times in 1899.

"The net income from the irrigated quarter of an acre was \$20.20 or \$80.80

an acre; from the unirrigated, \$15.39, or \$61.56 an acre. The cost of irrigating one acre of cabbage three times was approximately \$2.50. The capacity of the plant was sufficient to irrigate 20 to 30 acres of cabbage; thus the profit from irrigation on 25 acres of early cabbage at this rate would have paid for the plant. The yield was small owing to the character of the soil. The gain was 31.3 per cent. A gain due to irrigation of over 30 per cent. when applied to soil of good character would show much greater profits than in this case."

Foes of Vegetable Crops

T. D. Jarvis, Ontario Agricultural College, Guelph

GARDEN insects may be classified as follows: 1. Plant lice (aphids), leaf hoppers, plant-bugs, and related insects; 2, cutworms and related insects; 3, miscellaneous caterpillars; 4, leaf-beetles; 5, flea-beetles; 6, white grubs; 7, wireworms; 8, grasshoppers and related insects; 9, mites; 10, slugs.

Plant-lice (aphids), leaf-hoppers, plant bugs, thrips and related insects all obtain their food by suction. Plant-lice and leaf-hoppers were excessively abundant in 1908, the dry season having been favorable for their multiplication. The best remedies are soap-suds, kerosene emulsion and tobacco extracts; clean culture is also recommended.

OUTWORMS AND RELATED INSECTS

There are many species of cut-worms and it is impossible to give a description to fit all, but the most injurious species are soft-bodied, smooth, cylindrical caterpillars, varying in color from gray to nearly black, many of them being plainly striped or spotted. Cut-worms feed only at night, remain in concealment during the day, hiding in the ground or under any rubbish they can find. Poisoned baits are the best remedies against cutworms. Bran mash treated with any arsenical poison such as Paris green or arsenic, two or three ounces to a gallon of water, and about one pound of bran per gallon.

MISCELLANEOUS CATERPILLARS

Naked and hairy caterpillars which are in the main diurnal—the zebra and the corn-ear-worm are smooth and the yellow-bear and the soft marsh are representative of the hairy type. A spray of Paris green or lead arsenate will give good satisfaction for these pests.

LEAF BEETLES

For leaf beetles such as the asparagus beetles, cucumber beetles, potato beetles and blister beetles, Paris green, lead arsenate and clean culture are recommended. Flea-beetles are mostly small insects of a dark color. They have strongly developed hind thighs, which enable them to leap well. The turnip

flea-beetle and the melon flea-beetle are familiar examples. Arsenicals, Bordeaux mixture and clean culture are recommended for the control of these insects.

WHITE GRUBS

The parents of white grubs are known as May beetles or "June bugs." The



Scallion Onions the Kind Not to Grow
This is not a disease, but a misfortune

adults attack the foliage of many trees. Fall plowing is the best means of keeping these insects under control. This exposes the grubs to the cold and to the weather agencies. Rotation of crops and clean culture are also recommended.

The habits of the wireworms are very similar to the white grub. They both live under the ground and their natural food consists chiefly of corn, cereals and grasses, but in the absence of these they attack many other kinds of plants. The adults of wireworms are click-beetles. Selection of land for planting, rotation of crops and fall plowing are the most important defensive methods.

GRASSHOPPERS

Grasshoppers and related species are general feeders and are sometimes very

destructive in a season favorable to their multiplication. Breaking up their breeding places by plowing up old, dry pasture and stubble fields where they have laid their eggs is recommended.

MITES—(RED SPIDERS)

Nearly all vegetables are attacked by mites. They are very minute animals, usually not much larger than a pin-head. On dry seasons, such as the past, they become excessively numerous and do considerable damage. Flowers of sulphur mixed with water at the ratio of one ounce to the gallon sprayed over the plants is the best remedy.

SLUGS

Slugs are soft bodied arthropods, usually found in moist places. Salt and lime dusted over the affected plants is recommended.

Celery and Lettuce

1. What kind of lettuce is the best for forcing? 2. Is it too late to sow celery at the end of February for fall use? 3. What variety is the best for winter crop? 4. What is the name of the long variety they grow at Kalamazoo, Mich.—N. C., Temiscouata Co., Que.

1. For a head lettuce, Boston Market is the most popular; for a loose or leafy lettuce, Grand Rapids is best. 2. No, and even a little later will do. 3. According to Mr. Thos. Delworth, of Weston, Ont., there is more celery of the Paris Golden variety grown in Ontario than all the other varieties put together, although some gardeners who grow for winter storage prefer Evan's Triumph or some of the other giant green varieties. Mr. Charles A. Smith, of Lachine, Que., also recommends Paris Golden for general crop. 4. The celery imported from Kalamazoo to Toronto, usually is of the White Plume variety.

Strawberry Culture

Kindly give some information on strawberry culture. I have an orchard of pear trees planted 20 by 16 feet apart. Will strawberries do well between the trees?—J. P. M., Haldimand Co., Ont.

An article on this subject appeared in December issue of THE CANADIAN HORTICULTURIST. If your pear orchard is young, there is no reason why you cannot grow strawberries there. Of course the best soil for pears is not always the best for strawberries; still several varieties of the latter do well on heavy land. Better results are secured from old orchards by giving the trees the sole use of the ground. If you have no other land available, however, strawberries could be grown in the old orchard. This would be done at the risk of appropriating plant food and moisture in the soil that otherwise should go towards the growth and production of fruit on the pear trees.

Our question and answer department was crowded out this issue. Important questions on hand will be answered by mail.

The Canadian Horticulturist

Published by The Horticultural
Publishing Company, Limited

PETERBORO AND TORONTO



The Only Horticultural Magazine in the Dominion

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

H. BRONSON COWAN,

Managing Editor and Business Manager

A. B. CUTTING, B.S.A., Horticultural Editor

W. G. ROOK, Advertising Manager

1. The Canadian Horticulturist is published on the 25th day of the month preceding date of issue.
2. Subscription price in Canada and Great Britain 60 cents a year, two years \$1.00. For United States and local subscriptions in Peterboro, (not called for at Post Office) 25 cents extra a year, including postage.
3. Remittances should be made by Post Office or Money Express Order, or Registered Letter. Postage Stamps accepted for amounts less than \$1.00.
4. Change of Address—When a change of address is ordered, both the old and the new addresses must be given.
5. Advertising Rates quoted on application. Copy received up to the 18th. Address all advertising correspondence and copy to our Advertising Manager, 72 Queen street west, Toronto.
6. Articles and Illustrations for publication will be thankfully received by the editor.

CIRCULATION STATEMENT

Since the subscription price of The Canadian Horticulturist was reduced from \$1.00 to 60 cents a year, the circulation has grown rapidly. The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with Dec., 1907. The figures given are exclusive of samples and spoiled copies, and of papers sent to advertisers. Some months, including the sample copies, from 10,000 to 12,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruit, flowers or vegetables.

Circulation Statement

January, 1908.....	7,650	January, 1909.....	9,456
February, 1908.....	7,824		
March, 1908.....	8,056		
April, 1908.....	8,250		
May, 1908.....	8,573		
June, 1908.....	8,840		
July, 1908.....	9,015		
August, 1908.....	9,070		
September, 1908.....	9,121		
October, 1908.....	9,215		
November, 1908.....	9,323		
December, 1908.....	9,400		

Total for the year, 104,337

Average each issue in 1907, 6,627

Average each issue in 1908, 8,695

(Increased circulation in one year over 2,000)

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 benefits 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,

Toronto Office: PETERBORO, ONTARIO.
72 Queen street west.

EDITORIAL

REGULATING NURSERIES

At the last convention of the Ontario Fruit Growers' Association, suggestions were passed relating to controlling the sale and distribution of nursery stock. The proposed bill is published on page 39 of this issue. The purpose of this bill is good, but its wording may lead to confusion and probably to trouble. If the fines that may be imposed depend upon whether or not the grower can show a fraudulent intent upon the part of the nurseryman (see Clause 6), then the Act will be almost useless.

It would be clearly impossible, in nine cases out of ten, to prove a fraudulent intent; and it should not be necessary to do so if the fact appears that stock has been sold which is not true to name or that has other defects contrary to the Act. This fact should secure a conviction irrespective of whether the nurseryman intended to do it or not. The loss to the fruit grower is just the same, whether fraud was intended or not. It would seem therefore, that the Act will be more effective if the words in Clause 6, "where fraud can be shown in the substitution of varieties or the sale of stock untrue to name," be changed to read, "where the substitution of varieties or the sale of stock untrue to name can be shown." We would suggest that the Ontario Fruit Growers' Association have this matter rectified before the bill is brought before the Legislature. The public should realize, however, that if this legislation is passed there is a possibility that the nurserymen will have to charge more for their stock. The benefit of having assurance that the stock purchased is reliable would compensate for any reasonable advance in charges by the nurserymen.

ASSISTANCE FOR SCHOOLS

Among the many ways in which the Ontario Agricultural College has benefited the rural communities of Ontario is by the assistance given farmers, orchardists and gardeners in overcoming drainage problems. By sending qualified men to survey farms for drainage systems, the department of physics has done, and promises yet to do, work that is of great value. Equally important work could be done by the department of landscape gardening in the matter of making plans for and laying off rural school grounds. The excellent bulletin recently issued by the Ontario Department of Education, and prepared by H. L. Hutt, B. S. A., Professor of Landscape Gardening at Guelph, which is reviewed in another column, states that the professor will be glad to give school boards and inspectors assistance in any way possible. He is prepared to visit personally any rural schools that may desire his services. It is hoped that many schools will take advantage of this opportunity. The country would be made more beautiful and the ideals of the school children elevated.

The work of visiting applicants, surveying and drawing plans for grounds need not be burdensome on the department of landscape gardening. If the professor has not the time to visit all the schools that apply for assistance, there are always student-specialists in horticulture who would be available. Instead of being a burden the work would be welcomed. It would afford an opportunity for practice in landscape architecture for the student and it would bring that particular department of the college in closer touch with the people.

Instead of requiring school boards to pay a part of the cost of travelling, and so forth,

as is done with the farmers, who want their farms surveyed for draining, these services will be given free. Improved school grounds are a public asset. They may make a lasting impression upon the homes of the people of the country. The assistance offered by the college will be the means of rapidly improving scores of school premises that now are a disgrace to the province.

QUEEN VICTORIA PARK

On account of climate conditions, there are more possibilities for horticultural achievement in Queen Victoria Park at Niagara Falls than can be found in any other part of Canada, excepting probably the southern part of the Island of Vancouver. Its situation, its natural advantages and the care given it previous to the present management, made it one of the greatest attractions of our country. Unless competent men are appointed, Canada will soon lose one of her most beautiful features. Carelessness and mismanagement can do more harm in a short time than years of proper care and attention can restore. The effect of mismanagement already is noticed in a marked degree. It should be terminated at once.

Before growth commences in spring (which is early at Niagara Falls), capable gardeners should be placed in charge. There are scores of experienced men in the country whose services could be secured. Practical men are needed at this park, not wine merchants, ex-postmasters, ex-engineers and railroad men. The right kind of men can and will make the park the best on the continent; the wrong kind cannot if they will. The future of the park depends upon quick action on the part of the Ontario Government.

Something should be done to prevent unnecessary destruction of trees on the streets and roads of our cities, towns and country. Beautiful trees that have been growing for ten, twenty or fifty years are destroyed recklessly by telephone and traction companies and by others who do not know what they are doing and do not care. Mr. J. S. Pearce, Superintendent of Parks for London, Ont., refers to this matter in another column of this issue. The government of Ontario and our municipalities should see that this wanton destruction of trees is prevented in future.

Unless the Canadian exhibits at the Royal Horticultural Society's Show get good write-ups in the London papers, there is very little advertising to be got out of the exhibition, as the attendance is not very good. It has been suggested that it would be better for representatives of the provinces to put up a show of their own in some hall in London, during the Smithfield Cattle Show, or other favorable opportunity. Canada would then be free to develop every opportunity that such shows afford for advertising her great horticultural possibilities and resources. Some change is necessary in order to make it worth while to continue sending exhibits to Great Britain.

The illustration on the front cover of this issue of THE CANADIAN HORTICULTURIST was kindly furnished by The Goulds' Manufacturing Co., of Seneca Falls, N. Y. It shows one of the Gould sprayers in operation.

I am always looking forward for the next issue of THE CANADIAN HORTICULTURIST. I think it should be in the hands of everyone interested in fruit growing.—J. W. Hepburn, Kelowna, B. C.

Commercial Spraying

The subject of "Commercial Spraying of Apple Orchards" provoked a lively discussion and was ably dealt with by a number of experienced orchardists at the last convention of the Ontario Fruit Growers' Association. "As an apple buyer," said Mr. Mack Smith, of Burlington, "I always get the best fruit out of sprayed orchards. Most farmers are lax in the matter of spraying. This is due largely to the fact that they sell their prospective output to buyers early in the season. One acre of apples properly looked after will produce as much as 10 acres uncared for. The worst pest of our apple orchards is the codling moth. To control it in my own orchard, I spray and use bandages.

"In an orchard that I have had for about four years, I conducted experiments in spraying and recorded the results. In 1906, the fruit graded 44 per cent. No. 1, 35 per cent. No. 2, and 19 per cent. culls. In 1907 the result was 29 per cent. No. 1, 24 per cent. No. 2, 37 per cent. No. 3, and 10 per cent. culls. During these two years, the spraying was left to hired help and the results were not satisfactory. I decided, therefore, to do the spraying this year in person and the results were as follows: 80 per cent. No. 1, 20 per cent. No. 2, and practically no culls. The main variety in the orchard was Ribston. For an insecticide in the Bordeaux mixture, I use arsenate of lead instead of Paris green believing it to be more effective."

Mr. D. Johnson, of Forest, said that thoroughness in spraying is essential to success. Slipshod methods are of no use. He uses Bordeaux mixture and Paris green. For the codling moth, the chief spraying is performed just after the blossoms fall. Mr. Johnson sprays four times during the season and always sprays with the wind. He stops his outfit three times at each side of the tree so as to apply the material effectively at all angles. Mr. Johnson stated that he has not much faith in the much-lauded "mist spray." He uses a nozzle that will deliver plenty of material. "Our co-operative fruit growers' association has purchased a gasoline power sprayer, which is used in all our orchards. It is equipped with two hose, one to be operated by a man on a ladder and the other by a man on the ground. Ten years ago, my orchard of 25 acres yielded only about 400 barrels of fruit. Since receiving careful spraying and attention the yield has gradually increased until last year 2,800 barrels were harvested."

"We must study the pests that we are to combat and how to control them," said Mr. Jas. E. Johnson of Simcoe, "if we desire to be successful. We must spray thoroughly and at the right time, the latter point being the more important of the two. In handling the codling moth, one day's delay may ruin the whole crop of fruit. Large orchards should have more than one spraying outfit. A hand sprayer will handle from 10 to 12 acres, while a power sprayer is good for only three or four acres more. Spray four times: First, early in spring for fungi; second, when buds are opening for the bud moth; third, when the blossoms fall for the codling moth; and fourth, three or four weeks later for tussock moth." Mr. Johnson's method of spraying and the solutions that he uses were described in the March issue of THE CANADIAN HORTICULTURIST.

Mr. J. C. Harris, of Ingersoll, said that he does not spray until the blossoms are about half fallen. To cover his orchard, it takes about 10 days. He then repeats the operation. He uses Bordeaux mixture and Paris green. Mr. J. C. Caston, Craighurst, referred to the great damage that is being

done in some sections by the oyster-shell scale. Mr. J. E. Johnson said that the use of an excess of lime in the Bordeaux mixture will kill it.

Tree Pruning on Streets

Editor, THE CANADIAN HORTICULTURIST:—As I go about the country attending farmer's institute meetings and other business, I see many very sad and deplorable sights along the streets and roadways through the country. The ignorance and want of good judgment displayed by those who undertake to prune the trees on the streets and roadways is deplorable. There is probably no other class of work where so much mischief can be done in so short a time and when done is beyond repair. It would seem as though the Government should take some steps to stop such wanton destruction of the trees on our streets. Those who do this work and those who employ them seem to be oblivious to the fact that when a tree is once butchered and practically ruined, no money can replace it; only replanting and waiting for another to grow again will replace the mischief done.

Time only will set up a tree on or in front of your property. My father often told his sons and many other young men, "Boys, if you want a tree you must plant it and wait for it to grow. You can build a house, a warehouse or a barn in a few months." How true this is and yet how few realize the truth and importance of this fact!

The most serious mischief I have seen done is in the towns; where the trees are too thick, they have cut off the tops or pruned them up so high as to completely spoil them. These should have been thinned out and allowed the others to spread out. Heretofore, trees have been planted both on the streets and roadways in the country much too thickly. Thirty to 40 feet is quite close enough for a city or town and for the country 35 feet. I have seen miles and miles of roadway with the trees planted in each fence corner. This is twice too close and any who have such I would strongly advise to take out every other tree.

Much of the mischief in tree pruning has been done both in the towns and country by the telephone and traction companies' men cutting ways for their wires over and through the trees. In some cases, I have seen the whole side of a beautiful tree cut away; others I have seen with a space cut right through the centre of a tree top. These men should not be allowed to touch a tree on the streets or roadway unless under the direction and supervision of a competent man. These men know nothing and care less about how to cut or prune a tree. The fact is that competent men to do this work are few and far between. There are only two men that I know of in this city that I can depend on to do this kind of work. Every city, town and township should have a competent man appointed by by-law with full power and authority to do this work or supervise it. There is an Ontario Statute giving the municipalities the power to appoint such a person by by-law. This is an important matter and I hope the cities and towns will avail themselves of this Act.—J. S. Pearce, Superintendent of Parks, London, Ont.

Control of Nursery Stock

The sale of nursery stock by nurserymen has not always been satisfactory to fruit growers. The most annoyance has been occasioned through the substitution of varieties. Reliable nurserymen endeavor to give every satisfaction but there are some who are indifferent and careless. A few are

absolutely dishonest. To place the two latter classes within control, a committee appointed by the Ontario Fruit Growers' Association presented, at the convention last November, a report on the question in the form of a draft bill, which reads as follows and which was approved by the association:

1. This Act may be cited as "The Nursery Control Act."

2. In this Act the words "nursery stock" shall mean any fruit tree, vine, shrub or plant or any part of any fruit tree, vine, shrub or plant.

3. No person, firm or corporation shall engage or continue in the business of growing and selling nursery stock or act as selling agent, solicitor or otherwise within the province or shall import nursery stock into the province for sale without first having obtained a license to carry on such business in the province (Washington, Sec. 29) as in the Act provided.

4. All nursery stock sold within the province shall be labelled with the true name of the varieties and if imported, with also the name of the place where grown.

5. No person, firm or corporation or agent of such person, firm or corporation engaged in the sale of nursery stock shall substitute other varieties for those ordered without first having obtained the written consent of the purchaser.

6. Any nurseryman or agent of any nurseryman shall be liable for damages in the common courts of the province within 12 months after the trees come into bearing, where fraud can be shown in the substitution of varieties or the sale of stock untrue to name.

7. No contract shall be made by any nurseryman or agent of any nurseryman containing provisions contrary to any section of this Act.

8. The Department of Agriculture for Ontario shall publish yearly a complete list of the persons, firms and corporations engaged in any way in the nursery business, such list to state clearly whether the parties are bona fide growers of stock or agents only.

9. Licenses shall be issued from the Department of Agriculture for Ontario on application and shall be good for one year from date of issue. Such licenses may be suspended or cancelled by the Department of Agriculture upon evidence satisfactory to the department that the holder of the license has sold nursery stock contrary to any sections of this Act.

10. Any person neglecting to carry out the provisions of this Act shall upon summary conviction, be liable to a fine of not less than \$..... and not more than \$....., together with costs, and in default of payment thereof, shall be subject to imprisonment in the common gaol for a period of not less than days and not more than days.

We learn with regret of the retirement of Mr. James Arthur Richardson from the firm of Woodall & Co., Fruit Brokers, Liverpool, England. Mr. Richardson can claim the honor of being one of the principal pioneers in the apple trade from this continent. He commenced coming out here in 1879, and in those days, when good roads were scarce, locating apples and getting growers and dealers to ship was no easy matter. Finally, however, they "caught on," after years of effort, and his firm were by far the largest receivers of American apples in Liverpool. To-day Mr. Richardson has many friends among the old shippers that are now living, as well as among the younger ones. His genial disposition always makes him a favorite with those with whom he comes in contact.

FIFTY DOLLARS SPENT FOR MY SHINGLES

ADDS \$500 TO THE VALUE OF ANY HOUSE OR BARN

ANY building good enough to be roofed right is too good by far to be roofed with wooden shingles. No building worth carrying fire insurance on deserves any roof less good than "Oshawa" Galvanized Steel Shingles. Simply because—

"Oshawa" Shingles, of 28-gauge semi-hardened sheet steel, make the only roof that absolutely and actually will be a

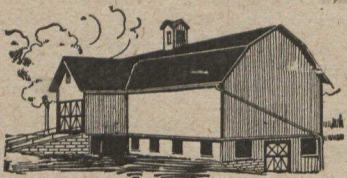


good roof for a hundred years. If any "Oshawa"-shingled roof shows the least sign of leaking in twenty-five years, this company will replace that roof with a new roof, free. That's the kind of a written guarantee you get when you buy "Oshawa" Shingles—and there's \$250,000 back of the guarantee.

Thousands of "Oshawa"-shingled roofs cover farm buildings, residences, public edifices, churches, all over Canada. They make a roof handsome enough for any building whatever—and it is the most practical of roofs—for the simple reason that an "Oshawa"-shingled roof can NOT leak.

It can't leak because, to start with, it is made of extra-heavy, extra-tough steel, special galvanized. The galvanizing makes these shingles wholly proof against rust—and rust is the only enemy steel has when it's used for roofing. That Pedlar-process galvanizing makes it needless to paint an "Oshawa"-shingled roof. Long years of weather-wear won't show on these shingles. That one item of paint saved—the need for painting entirely done away with—saves you the cost of an "Oshawa"-shingled roof in the first few years it's on any of your buildings. And just remember—it will be a good roof for a hundred years.

Such a roof is not only rain-proof,



snow-proof, and fire-proof, but it is wind-proof. It makes any building it covers warmer in winter and cooler in summer—because—

The Pedlar four-way-lock—every shingle locked to adjoining shingles under-



G. A. Pedlar

neath, on all four sides—makes an "Oshawa"-shingled roof practically one solid sheet of steel, without a crevice or a crack.

That keeps out the slightest suspicion of moisture—it keeps out the winter

"OSHAWA"
GALVANIZED STEEL
SHINGLES

A new roof for nothing
if they leak by 1934

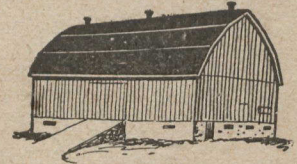
winds and keeps in the warmth—and in summer it wards off the sun's rays—won't let them get through.

And "Oshawa"-shingled roofs are fire-proof—as a matter of course. How could you set fire to a roof of solid sheet steel? The fire-insurance people will make lower rates on a building protected by "Oshawa" Galvanized Steel Shingles. That saving alone will pay for the roof within ten years.

Some think a corrugated iron roof is fire-proof and about as good as an "Oshawa"-shingled roof. That isn't so. We make corrugated iron roofing—and it's all right for its kind. Nobody makes any

better. But corrugated iron isn't the roof for a farm building—nor for any building that is meant to stand a long while. It is a good enough roof for structures that are meant to last only a few years—but only "Oshawa" Shingles are sure to last a hundred years and are good for a century.

Another thing about these shingles:—They make a building lightning-proof—



insulate it far better than any lightning-rod system ever could. Last year lightning destroyed over half a million dollars' worth of farm property. Not a cent of that loss could have happened if the buildings that were struck had been roofed right, which means roofed with "Oshawa" Galvanized Steel Shingles.

Maybe you think the first cost of these shingles is so high as to outweigh all the savings they make and all the merits they have? Would it surprise you to know that you can "Oshawa"-shingle any roof for \$4.50 a square. (A "square" means 100 square feet—an area 10 by 10 feet), just about the price of Al cedar or cypress shingles—and they'll be rotted to dust before even the first ten years of the Pedlar guarantee have passed. An "Oshawa"-shingled roof will outlast ten wood-shingled roofs—and be a better roof every minute of the time, in every way a roof ought to be good.

Anybody can put on these shingles—a hammer and a tinner's shears are all the tools necessary. It is impossible to get them on wrong—you'll see why when you send for a sample shingle and a book about "Roofing Right." Suppose you send for the book and the sample to-day—now. It will pay you to get at the real facts about the right roof.

Pedlar products include every kind of sheet metal building materials—too many items to even mention here. You can have a catalog—estimate—prices—



advice—just for the asking. We'd like especially to interest you in our Art Steel Ceilings and Side Walls—they are a revelation to many people. More than 2,000 designs. May we send you booklet and pictures of some of them?

THE PEDLAR PEOPLE of Oshawa ESTABLISHED 1861

ADDRESS OUR NEAREST WAREHOUSE:

MONTRÉAL 321-3 Craig St. W. OTTAWA 423 Sussex St. TORONTO 11 Colborne St. LONDON 83 King St. CHATHAM 200 King W. WINNIPEG 76 Lombard St. QUEBEC 7-11 Notre Dame Sq. ST. JOHN, N.B. 42-46 Prince William St. HALIFAX 16 Prince St.

WE WANT AGENTS IN SOME SECTIONS.

WRITE FOR DETAILS.

MENTION THIS PAPER.

Spokane Apple Show

Edgar W. Dynes, Nelson, B. C.

"The National Apple Show is the best exhibition of its kind that I have ever seen. It is alone in its class and its fruit is of splendid quality," said William Crossley, of Liverpool, England, representing D. Crossley & Sons, of Liverpool, Glasgow, New York, and Boston, after he had looked over the exhibition at the National Apple Show, that was held in Spokane, Wash., Dec. 7 to 12. "I am here representing our firm to find where the best apples are grown and to meet the people who grow them," he continued. "This morning I bought seven carloads of northwestern apples for shipment to New York and Europe. A short time ago we shipped to Europe a lot of Winter Banana apples, some of which reached the tables of King Edward, and were of splendid size and appearance. The Winter Bananas measured two and one-half times the size of the New England Baldwins, which had been customarily going to the Royal table." Mr. Crossley was only one of a number of eastern and European buyers, who were present at the apple show and they all expressed themselves in much the same terms.

The famous, much talked of \$1,000 prize for the best carload was awarded to Mr. M. Horan, of Wenatchee, Wash., while Mr. H. M. Gilbert, of Yakima, Wash., was a close second, with a car of Winesaps. The prize winning carload was composed of several varieties, including Winesap, Grimes Golden, Delicious, Esopus Spitzenberg, Yellow Newton, Rome Beauty, Winter Banana, Arkansas Black and Jonathan. The third prize was awarded to a car of McIntosh Reds, from the Bitter Root Valley, in Montana. It might be of interest to mention

that both Mr. Horan and Mr. Gilbert, are practically amateur fruit growers, as Mr. Gilbert came from Illinois to Yakima eleven years ago, and Mr. Horan's orchard is only eight years old.

There were no exhibits from eastern Canada, but British Columbia was well represented; that is, from the quality standpoint. Outside of Kelowna the exhibits were rather small and unworthy of what the province can really produce, but Kelowna won enough for all.

At this writing (Dec. 14th), I have not the complete record, but as far as I have been able to learn, Mr. F. R. E. De Hart, of Kelowna, wins in the neighborhood of \$5,000 of the \$35,000 awarded in prizes. A great deal of credit is due to him and to his assistant, Mr. J. Gibb, for the faithful way in which they carried out their work in connection with the exhibit. They were in Spokane for a full week before the show commenced and left no stone unturned to have their exhibits in the most presentable shape.

Perhaps Mr. De Hart's most important winning was for the best individual display of apples. This called for two boxes, two baskets, two barrels and two jars. The competition was very keen, but the Okanagan man won by four points over Mr. A. France, of Wenatchee, while the Chelan Commercial Club came third. The first prize was \$500, and the winner also had the privilege of selling two boxes to a Spokane grocery firm for \$25 a box.

Other prizes won by Mr. De Hart were: First for the best 10 boxes of Spy, the prize being an irrigated tract near Spokane, valued at \$1,250; first for the best 10 boxes of Jonathan, the prize being an irrigated tract at Hayden Lake, valued at \$2,000; first for the best box pack and first for the

FOSTER POTS



Red Pots

**MILLIONS
Now in Use**

By the leading
Vegetable and
Flower Growers
in all parts of
Canada.

Use our Pots for growing
Tomato Plants this spring, they
are giving satisfaction wherever
they are used.

**No Rough Edges
Well and Properly Baked
Carefully Selected and Packed
Made in all Sizes and Shapes**

*Our Large Stock permits prompt
shipping of all orders*

Send for Price List and Catalogue

The FOSTER POTTERY CO., Limited
Main St. West, Hamilton, Ont.

Mention The Canadian Horticulturist when writing.

Select Ornamental Trees and Shrubs



¶ The most careful and complete systems of transplantation, combined with the situation of our nurseries, enable us to dig thoroughly hardy, healthy, well-rooted specimens of fruit, ornamental and other trees, plants and vines including "specimens" for street, avenue and park plantings.

¶ Our prices, taking into consideration superior qualities, will be found most moderate and our personal attention is given to all enquiries relating to prices and advice on planting.

E. D. SMITH, HELDERLEIGH NURSERIES: Winona, Ont.

(ESTABLISHED OVER QUARTER OF A CENTURY. NURSERIES ETC. OVER 800 ACRES).

best barrel pack. In the best box pack entry all three prizes went to British Columbia people, Mrs. J. A. Smith, of Victoria, coming second and Mr. Herbert W. Collins, of Grand Forks, third.

For the best individual plate exhibit of apples grown by a woman, Mrs. E. Lowe, of Keremees, B. C., took the first prize,

which consisted of \$50 worth of Burbank's crimson winter rhubarb, and in addition a diploma.

The management of the show are considering the advisability of making it an annual affair. It has been a big success financially and so much encouragement has been given by exhibitors who purpose competing

another year that the continuation of the show and making it an annual affair is practically an accomplished fact.

AMBEROL RECORDS *for* *The* EDISON PHONOGRAPH



The greatest improvement in sound-reproducing instruments was made when Mr. Edison invented Amberol Records for the Edison Phonograph

No one thing has added so much to the pleasure of the Edison Phonograph as a Record which plays more than four minutes, and reproduces the melody or voice so clearly and perfectly that the illusion almost defies detection.

Edison Amberol Records are the same size as the ordinary Edison Records. They can be played upon any Edison Phonograph by the addition of an attachment which any dealer can supply and any dealer can affix.

Longer selections are now available for the Edison Phonograph than have ever been available before for any sound-reproducing machine, and these selections are better given.

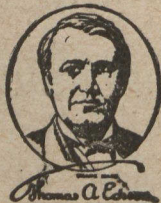
No Edison Phonograph outfit is complete without the attachment to play Edison Amberol Records.

You can hear these new Records at any dealer's. Learn about the attachment and equip your Phonograph with it today. If you haven't an Edison Phonograph, you can now buy one which plays both styles of Records—the two-minute and four-minute.

We will be glad to send to anyone, however, a booklet describing the new attachment, describing the Amberol Records, giving a list of the music now available on these Records and giving all the other information necessary to make it possible for you to get more than twice as much enjoyment out of your Edison Phonograph as you are now getting.

We desire Good, Live Dealers to sell Edison Phonographs in every town where we are not now well represented. Dealers having established stores should write at once to

National Phonograph Company, 121 Lakeside Avenue, Orange, N. J., U. S. A.



Improving School Grounds

An excellent work entitled "Improvement of School Grounds" has been issued by the Ontario Department of Education. Its author is Prof. H. L. Hutt, of the Ontario Agricultural College, Guelph. The bulletin is attractive and neat in appearance. It is well-printed on paper of good quality. A number of interesting illustrations show the value of school ground improvement by contrast and comparison and a dozen diagrammatic plans of grounds properly arranged teach the possibilities of this much needed line of effort in rural communities and in towns and cities. The bulletin is a credit to the author and to the department.

In subject matter, it is concise and replete with valuable pointers on the need for and the methods of doing the work that it advocates. In the space given, a wealth of information is imparted, including the location and planning of the grounds, grading and levelling, how to make a lawn and care for it, laying out and caring for walks and drives, planting trees, shrubs, vines, flowers and so forth. The bulletin should be in the hands of all persons who are interested in making our country more beautiful.

Re Fall Bulb Planting

Editor, THE CANADIAN HORTICULTURIST:—The best results in bulb-planting are obtained from buying new Holland bulbs every year as there is much less "bother." But some people like to "bother" about their garden. In that case, it is better to take the bedding tulips up after they have bloomed, leaving them in the beds as long as possible to ripen before planting the summer bedding plants. The beds can then be well dug and fertilized which is very necessary. I take the tulips up by sorts, being careful not to break the tops off and stand them upright in a clump (each color in a separate clump) under the shade of some hemlock and spruce trees, slightly banking up each clump with soil.

In the summer, I spread them out in an airy place under some trees for a few days, then clean them off and sort them into sizes and put them into flat boxes, being careful to put a label into each box. The boxes are then piled, leaving a space between each box (a stick at each end will do this) in a cool, dry, airy cellar until the fall when it is time to plant them again. This is not so much "bother" as it looks to be on paper, but can be easily done at odd spare times.

The later kinds of tulips, such as the Darwins, Gesneriana, Bybloem, Bizarre, Parrot, and so forth, are better planted in the permanent border where they can stand for two, three or four years without being touched, after which they can be treated as above.—A. H. Ewing, Woodstock, Ont.

Making a Hotbed.—The amateur gardener, as a rule, obtains better satisfaction in growing his plants from seed in a hotbed than when he buys the plants already grown. The latest ideas on making a hotbed are published in the 1909 seed catalogue of Dupuy & Ferguson, of Montreal. This catalogue will be sent free on request to THE CANADIAN HORTICULTURIST readers. A splendid silver cup, valued at \$25. and \$15. in cash prizes are offered by this firm for competition among the members of The Montreal Horticultural Society. Full particulars will be furnished upon application.

Prepared Lime-sulphur. : 7

A recent circular issued by the Georgia State Board of Entomology deals with various materials used for the control of San Jose scale. Among them is mentioned a prepared lime-sulphur solution that was used in experiments with good results. Orchardists and others in Canada who have tested this or a similar preparation are requested to tell their experiences with same, through the columns of THE CANADIAN HORTICULTURIST. The following valuable contribution is from the pen of Prof. Wm. Lochhead, of Macdonald College, the pioneer investigator in matters that pertain to the San Jose scale and its control in Canada:

"Regarding the value of the prepared lime-sulphur solution mentioned in circular 8 of the Georgia State Board of Entomology by Messrs. Worsham and Chase, I cannot say much one way or the other, as no experiments, testing this preparation, have been made in Canada, so far as I am aware. I may say candidly at first blush that I am disposed to vote against it, or rather to go very slowly in the matter after all our experiences in the preparation of the lime-sulphur mixture in the early fight against the San Jose scale in Ontario, but my disposition does not affect the Georgia results.

"I remember quite well a discussion at the 1902 meetings of the Entomological Society of Ontario when this question of a prepared lime-sulphur solution was treated quite fully by Mr. W. E. Saunders, Dr. Fletcher, Prof. C. C. James, Mr. Geo. E. Fisher and myself. (See Report Ent. Soc. 1902 pp. 20-21). We were convinced in those days that the lime-sulphur mixture (which is largely a mixture of different sulphides of calcium) was only effective when it was first prepared, and while it was still hot. When the solution cools, crystals

separate out; but we cannot stir it up 'nor can we restore it to life by cooking, nor will it stick when it is put on the trees.' (Fisher).

"Mr. W. E. Saunders remarked at that meeting that a sulphide of calcium preparation has been in use in the drug business for a long time as a remedy for skin diseases, and that at the strength it is made no crystals separate out in cooling. We were then under the impression that we knew very little about the properties of the various lime-sulphur compounds, and the chemists since that time have not added materially to our knowledge.

"It is quite possible then that the Georgia preparation is a good one, but it has not been proven to be effective at all times, on all trees, and in all localities. It was tried in February, 1908, and gave excellent results as a spring treatment. More confirmative evidence is needed before it should be given to the public as a safe, cheap and effective remedy for the San Jose scale."

Use Arsenate of Lead.—Many experienced fruit growers are now using arsenate of lead as an insecticide instead of Paris green. They have learned that it is more certain in its results and that it will not burn foliage. The active principle of arsenate of lead is arsenic. Many brands are on the market. The one that contains the largest percentage of arsenic is that manufactured by the Vreeland Chemical Co., Little Falls, N. J. Read what Dr. J. B. Smith, state entomologist of New Jersey, says about it in the following letter to the firm:

"Now as to your material in comparison with others brands on the market; it is infinitely the most effective, because it contains more arsenic than any other brand on the market. In our own analysis your material runs 20.12 per cent. as against 15.34

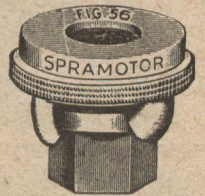
FERRY'S

There is scarcely any limit to the possible improvement in seeds, but it takes time and money. We have been improving flower and vegetable seeds for over 50 years. More than 2000 people are working to make Ferry's Seeds suit you. Buy the best—Ferry's. For sale everywhere.

FERRY'S 1909 SEED ANNUAL FREE ON REQUEST.
D. M. FERRY & CO., Windsor, Ont.

SEEDS

NOZZLE



This illustrates the Spramotor Nozzle, Fig. 56, designed to apply lime sulphur mixture. It is

made in brass with brass or steel removable discs, or with aluminum cap and body, and brass or steel discs. The particular merit of this type of nozzle is in the large liquid ways that prevent clogging and the double ways being at an angle that gives the most perfect form of spray.

We believe, for the purpose of spraying with lime-sulphur, or any coarse materials under heavy pressure, it will be found unexcelled. Price, by mail, \$1.00. Free catalogue for post card.

HEARD SPRAMOTOR CO.

1066 KING STREET

LONDON, ONT.

Fruit Lands in the Glorious Kootenay Valley

BRITISH COLUMBIA

If You Are Looking For:

A perfect climate.

An ideal home.

Magnificent Surroundings.

A good income upon a moderate capital.

Splendid hunting and fishing.

A healthy and enjoyable life.

ROBSON

Is the Place for You

It is a charming up-to-date fruit growing settlement situated on the Columbia River, near the beautiful city of Nelson, and has special advantages over any other district. Conclusive testimony from actual settlers and high authorities. Wide-awake settlers, after investigating all other fruit-growing districts in B. C. have finally located at **ROBSON**.

For further particulars and full information write for our free illustrated booklet No. 7.

McDERMID & McHARDY

210 Portage Avenue, Winnipeg, Man. and Nelson, B.C.

Every year each one of us consumes 15 lbs. of salt— Science says.

— More than a pound a month.

Just as well to have it pure.

Your grocer will tell you there's nothing purer than



WENTWORTH POTTERY advertisement featuring a pot illustration and list of products like Tomato Pots, Flower Pots, Hanging Baskets, Fern Pans, and Flower Jars. Includes contact info for John Cranston & Son, Hamilton, Ont.

per cent. which represents the best of the other brands. Twelve and 13 per cent. is not unusual in other brands, and it means practically that three pounds of your material will do the work of four pounds of any other brand that is on the market at the present time...

Enlightened Self-Interest.—People buy and sell with one fundamental object—the hope of gain. It is a matter of self-interest pure and simple and doubtless will remain so to the end of the chapter. In the United States one of the most conspicuous examples of self-interest wisely consulted is the seed business of D. M. Ferry & Co.

Form a Potato Club.—How to grow a larger and better crop of potatoes without increasing the acreage is an important subject for potato growers to consider.

1909, and even more. Do some thinking on the subject and then invite a half dozen of your neighbors to come to your home some evening and talk it over. Form a "Potato Club." Wonderful results will be sure to follow.

At the meeting of the Quebec Pomological Society, at St. Anne de Bellevue, an editorial representative of THE CANADIAN HORTICULTURIST had the pleasure of meeting Mr. R. B. Scripture, Manager of The Canadian Nursery Co., Montreal.

I have been a subscriber to THE CANADIAN HORTICULTURIST only since last spring, and have found each number both interesting and helpful.—W. D. Lang, Qu'Appelle Co., Sask.

Cut This Out - - Then Fill It In

MAY we ask a slight favor of you? There are no doubt several persons of your acquaintance who are interested in Horticulture, and who would like to see a copy of The Canadian Horticulturist. Will you fill in, on the form given below, the names and addresses of Ten such persons, cut it out and send to us.

Name Address
Name Address
Name Address
Name Address
Name Address
Name Address
Name Address
Name Address
Name Address
Name Address

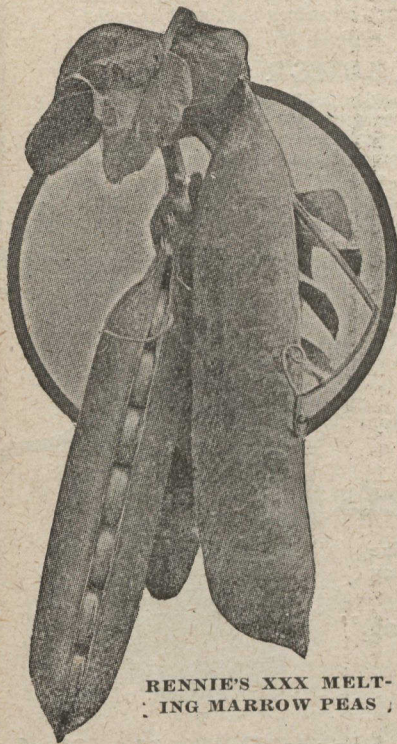
Your Own Name.....

Your Own Address.....

Will you be willing to see these people and to try to induce them to subscribe for The Canadian Horticulturist?.....

RENNIE'S XXX VEGETABLE SEEDS

For thirty-eight years we have tested every known variety of Vegetable Seeds on our extensive trial grounds; and a careful analysis of these tests has proved conclusively that the varieties now offered as **RENNIE'S XXX VEGETABLE SEEDS** are positively the finest possible to procure. Don't waste money experimenting, plant Rennie's XXX and be SURE of profitable results.



RENNIE'S XXX MELTING MARROW PEAS

RENNIE'S XXX MELTING MARROW PEAS

Closely follows the extra early sorts, filling in the gap between these and the midsummer varieties. Massive pods; robust plants, half dwarf, practically self-supporting. Superb, rich, buttery flavor.

RENNIE'S XXX SOLID HEAD LETTUCE

Immense solid heads, 15 to 16 inches across. Crisp and tender. Perfectly blanched heart. A robust growing, deep rooting, heat resisting and sure heading type. Outer color, pleasing apple green.

RENNIE'S XXX SCARLET ROUND WHITE TIPPED RADISH

The best for outdoor cultivation. Mild, crisp, white flesh; excellent flavor, never strong or rank. Attractive appearance; bright scarlet with distinct white tip which makes a vivid contrast.



RENNIE'S XXX SOLID HEAD LETTUCE

Rennie's XXX Bush Green Pod Bean

First in Spring, last in Fall. Always solid, meaty and tender; entirely stringless. Plants thrifty, hardy, early and prolific; bears continuously for several weeks. Pods thick, broad, extra long and quite uniform in shape.

Rennie's XXX Bush Butter Bean

The finest cylinder podded dwarf wax bean. Fine healthy plants, bushy and robust, free from rust or mildew and extremely prolific. Pods, six inches long; solid, meaty and tender, snapping brittle and unsurpassed for flavor.



FREE

to Readers of the
CANADIAN HORTICULTURIST

One Packet Enchantress Pink Aster (50 Seeds), price 25c., and One Packet of either the New Spencer Sweet Peas Mixed, price 10c., or the Golden Bantam Sweet Corn, price 10c.—Provided the Coupon printed in bottom right-hand corner of this advertisement is sent with your order.



RENNIE'S XXX SCARLET ROUND WHITE TIPPED RADISH

CUT THIS OUT

FREE

To Canadian Horticulturist
Readers

One packet Enchantress Pink Aster (50 Seeds), price 25c., and one packet of either the New Spencer Sweet Peas, mixed, price 10c., or the Golden Bantam Sweet Corn, price 10c.—Providing this Coupon is cut out and sent to us with your order.

Address all orders to
WM. RENNIE CO., Limited, XXX Seed Dept., TORONTO, ONT.

Mention the Canadian Horticulturist when writing

PRICE LIST OF RENNIE'S XXX VEGETABLE SEEDS

- Rennie's XXX Bush Green Pod Beans, pkt. 10c., lb. 30c., postpaid; peck, \$2.50, 5 lbs. \$1.00, lb. 25c., by express, at buyer's expense.
- Rennie's XXX Bush Butter Bean, pkt. 10c., lb. 40c., postpaid; peck \$3.75, 5 lbs. \$1.50, lb. 35c., by express, at buyer's expense.
- Rennie's XXX Globe Beet, pkt. 10c., oz. 20c., 1 lb. 35c., 1 lb. \$1.00.
- Rennie's XXX Early Summer Cabbage, pkt. 10c., oz. 30c., 1 lb. 90c., lb. \$3.00.
- Rennie's XXX Autumn Winter Drum-head Cabbage, pkt. 10c., oz. 30c., 1 lb. 90c., lb. \$2.75.
- Rennie's XXX Golden Self Blanching Celery, pkt. 10c., oz. 70c., 1 lb. \$2.00, lb. \$6.50.
- Rennie's XXX Table Carrot, pkt. 10c.
- Rennie's XXX Snowball Cauliflower, pkt. 25c., 1/2 oz. \$1.10, 1/4 oz. \$2, oz. \$3.50, 1 lb. \$12.
- Rennie's XXX Table Cucumber, pkt. 10c., oz. 25c., 1 lb. 60c., lb. \$1.90.
- Rennie's XXX Early Sweet Table Corn, pkt. 10c., lb. 40c., postpaid; 10 lbs. \$2.50, 5 lbs. \$1.50, lb. 35c., by express, at buyer's expense.
- Rennie's XXX Solid Head Lettuce, pkt. 10c., oz. 25c., 1 lb. 60c., lb. \$2.00.
- Rennie's XXX Golden Green Flesh Musk Melon, pkt. 10c., oz. 35c., 1 lb. 90c., lb. \$3.
- Rennie's XXX Connecticut Yellow Globe Onion, pkt. 10c., oz. 25c., 1 lb. 70c., lb. \$2.50.
- Rennie's XXX Connecticut Large Red Onion, pkt. 10c., oz. 25c., 1 lb. \$2.50.
- Rennie's XXX Earliest Sweet Table Water Melon, pkt. 10c., oz. 20c., 1 lb. 60c., lb. \$1.90.
- Rennie's XXX Evergreen Curled Table Parsley, pkt. 10c., oz. 20c., 1 lb. 50c., lb. \$1.50.
- Rennie's XXX Melting Marrow Peas, pkt. 10c., lb. 40c., postpaid; lb. 35, 5 lbs \$1.50, peck \$3.75, by express at buyer's expense.
- Rennie's XXX Guernsey Parsnip, pkt. 10c., oz. 20c., 1 lb. 40c., lb. \$1.00.
- Rennie's XXX Earliest Table Marrow Peas, pkt. 10c., lb. 40c., postpaid, lb. 35c., 5 lbs. \$1.50, pk. \$3.75, by express at buyer's expense.
- Rennie's XXX Scarlet Round White Tipped Radish, pkt. 10c., oz. 20c., 1 lb. 50c., lb. \$1.50.
- Rennie's XXX Autumn-Winter Green Hubbard Squash, pkt. 10c., oz. 20c., 1 lb. 50c., lb. \$1.50.
- Rennie's XXX Scarlet Oval Radish, pkt. 10c., oz. 20c., 1 lb. 50c., lb. \$1.50.
- Rennie's XXX Pink Skin Tomato, pkt. 15c., 1/2 oz. 35c., oz. 60c., 1 lb. \$2.00.
- Rennie's XXX Earliest Round Scarlet Skin Tomato, pkt. 15c., 1/2 oz. 35c., oz. 60c., 1 lb. \$2.00.

ANOTHER YEAR HAS PROVEN THAT NIAGARA BRAND LIME SULPHUR SOLUTION

Stands without a peer among commercial spray materials for convenience, effectiveness, and the economical control of

SAN JOSE SCALE

and kindred sucking insects; Apple Scab, Peach Curl, and other Fungus diseases. It has been so extensively used the past season throughout the U.S. and Canada that its efficiency is no longer doubted—it is fully endorsed by State and National experts. It is THE GREAT all around cleaning up spraying material for everybody having to spray. It contains a larger amount of Soluble Sulphur than any similar product.

Send for full description and prices, and your nearest selling agent.

We are also manufacturers of a very high grade Arsenate of Lead—FULLY GUARANTEED—at prices that will surprise you if order can be placed at once.

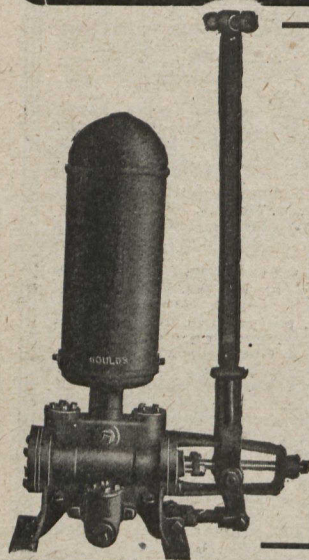
OUR TREE BORER AINT

absolutely controls one of the worst pests with which orchardists have to contend; non-injurious to trees; is convenient and economical.

Our Orchard, Park, Nursery and Green House Sprayers still stand in a class by themselves and are leaders in their line.

Descriptive Catalog, etc. Free for the asking.

THE NIAGARA SPRAYER COMPANY, MIDDLEPORT, N. Y.



SUCCESSFUL SPRAYING

DEPENDS LARGELY ON THE PUMP USED

The Durability, Capacity, Ease of Operation and the Efficiency of the Agitator are Important Features.

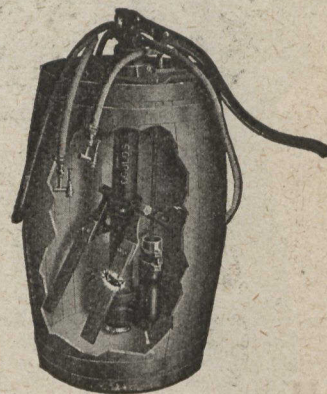
Goolds Hand and Power Sprayers

Have these essential points—they comprise the largest and most complete line on the market. Fruit growers will find it to their interest to send for catalog and to carefully consider the excellent points of superiority of the

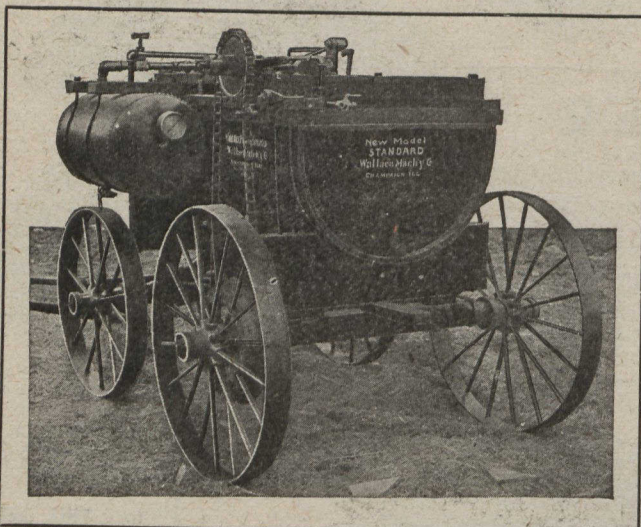
“Admiral,” “Monarch,” “Pomona,” “Savelot,”
“Standard” and Knapsack Sprayers

NOZZLES AND FITTINGS

THE GOULDS MFG. CO., 91 Fall St., Seneca Falls, New York
New York, Boston, Philadelphia, Chicago, Pittsburg, St. Louis, San Francisco, Los Angeles, New Orleans, Minneapolis, Montreal



WALLACE AUTOMATIC POWER SPRAYERS



HAVE PROVEN THEIR SUPERIOR WORTH for all kinds of work—on the Farm, in the Orchard and Garden, and among all kinds of fruit. Built for every known use where a Sprayer is required. POWER COSTS NOTHING.

Built of BRASS working parts, piping, and connections.

High pressure carried easily, and continuously, and yet permits of stopping at each tree to thoroughly spray it.

Hundreds in use in Canada, U.S.A., New Zealand and other countries, and NO FAILURES.

Write for information, and state what fruits you have; or if it is wanted for use on Potatoes, Strawberries, &c., or for killing Wild Mustard.

I also supply Gasoline Engine Sprayers, and Hand Outfits, as well as all kinds of accessories; and “Target Brand” Insecticides & Fungicides, Weed Killer and Asphaltum Oils (for laying dust.)

W. H. BRAND, Jordan Station, Ontario

NOTES FROM THE PROVINCES

Nova Scotia

R. J. Messenger

Some new and important ideas were advanced at the annual meeting of the Nova Scotia Fruit Growers' Association that seem worthy of notice even at this late date. Mr. F. C. Whitman, of Annapolis, in dealing with transportation of fruit, made the statement that apples could stand frost almost down to zero, provided they were kept in motion. He had teams bringing apples a distance of 20 miles in very cold weather without freezing. He had demonstrated that apples would keep much better in hot cars or steamer holds if they were well wet with cold water. He had washed carloads down with a hose and had cooled off the air very materially.

A discussion on thinning of fruit in summer resulted in the appointment of several of the best fruit growers to give thinning a trial in their orchards and to report results at next annual meeting.

Mr. W. T. Macoun's excellent address on "How to Increase the Yield of Our Orchards" brought out the following points: That cultivation should not be prolonged too late in the season since checking the wood growth while the fruit buds for the following year were forming, had a tendency to give more vitality to the fruit buds. It was a well known principle that wood growth was generally made at the expense of fruitage.

Anything that checked the downward flow

of sap in a limb or tree would result in increased fruit; e.g., grafting, since the place of union checked the flow of sap and so increased the yield of the graft. Partly girdling a limb, as a part fracture or barking of a limb, also had the same result.

A lively discussion took place on the address of Mr. R. J. Graham, of Belleville, Ont., who went to some trouble to prove that on our export of 600,000 barrels, Nova Scotia was losing \$140,000 by using the small barrel. We had to use more barrels and pay more cooerage, freight, and so forth, while they brought less per barrel in the English market, since the buyers went by the number of pounds in the package. The arguments seemed plausible, but they were argued from the shipper's and buyer's standpoint and not from that of the producer.

About eight years ago the Nova Scotia Government began setting out so-called model orchards in different parts of the province. The man on whose farm the orchard was planted agreed to care for it according to directions given by the Government for 10 years, when it became his property. It was considered at this meeting that the government, according to this agreement, was releasing its supervision just when the most important period of the tree's life was beginning; that if these were to be an object lesson or a test as to whether orcharding could be successfully carried on in these

districts, expert supervision should be extended for a larger period.

Annapolis Valley, N.S.

Eunice Watts

The recent cable advices from England report the apple market firm with prices ranging from 22 shillings for Baldwins to 26 for the finer varieties.

The past season, has also been a good

FOR SALE AND WANT ADVERTISEMENTS

Advertisements under this heading 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.

GARDENER—Seeks situation, age 26. Ten years' experience with Vegetables, Fruit and Flowers in first-class English gardens; good references.—**ERNEST FANE**, West Essa, Ontario.

STRAWBERRY PLANTS FOR SALE—Twelve standard varieties. First class, well rooted plants, \$2.50 per 1,000; 40 cents per 100, post paid. Send for list. Ontario Nurseries, Wellington, Ont.

STRAWBERRY AND RASPBERRY PLANTS, Seed Potatoes. Send for list. Mention this paper.—**R. C. CRYSLER**, St. George, Ont.

Northern Grown Trees

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

J. H. Wismer, Nurseryman - Port Elgin, Ont.

VREELAND'S ELECTRO ARSENATE OF LEAD

HAS NO EQUAL

Spray your Orchard and Field Crops with the Strongest and Safest Arsenical Insecticide

25 % STRONGER

Than the Best Other Makes. It won't burn.

The average per cent. of Arsenic and Water is printed on the Label—20% As₂O₅ - 40% Water

RECOMMENDED BY THE BEST AUTHORITIES

Kills Potato Bugs, Codling Moth, Tussock Moth, Canker Worm, Elm Leaf Beetle, Tobacco Worm, and all other Leaf Eating Insects

The Vreeland Chemical Co.

LITTLE FALLS - NEW JERSEY

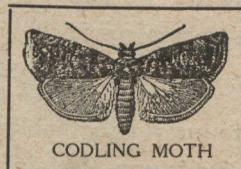
NATIONAL DRUG AND CHEM. CO.

CANADIAN AGENTS, TORONTO

Spray for Gain

BY USING

GRASSELLI'S ARSENATE OF LEAD



CODLING MOTH

DESTROYS ALL LEAF-EATING INSECTS

☞ To destroy SAN JOSE SCALE and all scale insects, use GRASSELLI'S LIME-SULPHUR SOLUTION.

☞ To control FUNGOUS DISEASES use GRASSELLI'S BORDEAUX MIXTURE.

☞ If interested in an insecticide and fungicide combined in one article, use GRASSELLI'S BORDEAUX-LEAD ARSENATE MIXTURE.

☞ Prices and information gladly furnished. Write any of our offices for nearest CANADIAN DISTRIBUTOR.

THE GRASSELLI CHEMICAL CO.

MAIN OFFICE - CLEVELAND, O.

NEW YORK, N.Y.

60 Wall Street

BOSTON, MASS.

90 Commercial Wharf

DETROIT, MICH.

CHICAGO, ILL.

117 Michigan Street

ST. LOUIS, MO.

112 Ferry Street

AND IN OTHER PRINCIPAL CITIES

PROTECT YOUR CROPS BY SPRAYING

one for cranberry growers. In western King's county, more bog land is being cleared and broken up for the purpose of making new cranberry beds. Since the advent of the gathering scoop, pickers have had to come down in their prices, which makes it possible for growers to extend their areas. Several cranberry specialists are abandoning the practice of flooding their bogs in winter which they claim to be unnecessary. At the close of each season, it is almost impossible to buy cranberries in the locality where they are grown as they are shipped as soon as possible.

Very little is going on in the horticultural line this month. In some places rhubarb is being forced in dark cellars for shipment to town and, as so little is grown in this way, it is fairly profitable. Lettuce is also grown under glass.

The season for root grafting has arrived. Apple tree seedlings which have been packed in bundles in sawdust in the cellar are now brought up and each root is cut in two and fitted with scions, thus making

two trees. Usually one person grafts and a second binds with strips of waxed cloth which are kept pliable with a warm brick on the stove. As soon as possible the grafts are re-packed in the sawdust, where they remain until the ground is workable, when they are planted close together in nursery rows.

Montreal

E. H. Wartman, Dominion Fruit Inspector

In my recent tour of inspection between Montreal and Kingston, I was pleased to note that very few boxes and barrels were dishonestly packed. One instance showed No. 1 Spys not keeping. Adjoining this decayed lot was another brand or pack of the same variety and practically from the same district which was firm from top to bottom. In the latter case, the fruit had been handled carefully and no fallen apples had been put in; therefore, the buyer was well satisfied as \$1 a barrel profit could be easily made. In the other case, there would

be \$1 a barrel loss. The lots packed by co-operative associations were very satisfactory. One firm in Montreal had purchased several cars since the close of navigation and could send them out to their customers with great assurance.

I have met many farmers having small orchards who tell the same story that apples were a poor crop. One said that he usually has from 25 to 30 barrels of Spys for sale, but this year had only three. However, as good apples are selling from 40 to 50 cents a peck, small stocks will fill the demand.

The man who predicted 25 years ago that apples would be so cheap in 1908 that they would not be worth gathering made a miscalculation. The other man who planted 25 acres of Spys, G. Russet, Blenheim, Baldwin and similar varieties on the north shore of Lake Ontario, between Kingston and Toronto, and cared for them is a lucky fellow. There is room yet for new orchards, but be careful in the selection of varieties and be prepared to look after the wants of the trees.

British Columbia

M. J. Henry

New settlers are coming in by the thousand and from every section of the world, buying and clearing up land to prepare it for spring planting. They are paying \$150 to \$250 an acre in the bush which costs from \$200 to \$300 an acre to clear it suitable for planting.

This means that a man must have a capital of \$5,000 to \$10,000 to start any kind of a fruit ranch near any of the cities. He has to live on his capital until he can get an income from his land which, in the case of fruit trees, means several years, but by growing vegetables and small fruits between his fruit trees he will begin to realize some money from it in two or three years.

The old settlers who took up the land from the government years ago are the ones who are "living in clover" these days.



FOR EVERYONE IN THE HOME

Rarely can you make a wiser investment for the home than an investment in a

GERHARD HEINTZMAN
Self Playing Piano
Any one can play it

Without music your home can never be complete. To know music—good music—is to-day as generally expected as to know good books.

For *one* investment—made *now*—you enlist this, the greatest of all teachers, for all the household at once. By *actually playing* they learn to appreciate—to distinguish the fine work of the great composers.

Let us tell you for what a reasonable investment you can secure this perfect instrument which plays the whole eighty-eight notes of the keyboard.

Your present instrument taken as part payment.

Gerhard Heintzman & Co., Limited
97 Yonge Street, Toronto

Hamilton Salesrooms:  127 King Street East

PERFECT POTATO PLANTING

Every farmer knows the importance of proper potato planting. Here's a machine that does it perfectly. Has none of the faults common with common planters. Opens the furrow perfectly, drops the seed correctly, covers it uniformly, and best of all never bruises or punctures the seed. Send a postal for our free book.

SAVE HIRED HELP

IRON AGE → Iron Age (Improved Robbins) Potato Planter

No Misses
No Doubles
No Troubles

BATEMAN MFG. CO., Box 516-P. GREENLOCH, N. J.



Taxidermy Book FREE

Mount Birds and Animals

Sportsman! Fishermen! Hunters! Naturalists and others seeking to better themselves by learning a great profession. The wonderful art of **Taxidermy**, so long kept secret, can now easily be learned right in your own home during your spare hours. No need to give up your business.

We Teach By Mail how to mount birds, animals, game heads, tax skins, make rugs and mount all trophies. A delightful, entrancing and money-making profession for men and women. Easily and quickly learned.

Success guaranteed or no tuition. Endorsed by thousands of delighted graduates all able to secure big incomes.

Great Book FREE! Our beautiful, illustrated book, "How to Learn to Mount Birds and Animals," and our handsome Taxidermy Magazine sent absolutely free to all who write. Stop depending on a job. Be a professional man or woman. Write today.

N. W. School of Taxidermy, Box 128 A Omaha, Neb.

Write today



Okanagan Valley

J. Sanger Fox

The result of the awarding of the prizes at the National Apple Show in Spokane, Wash., cannot but be viewed with more than satisfaction by the whole of Canada, and with absolute delight by British Columbia; while residents in the Okanagan Valley, and Kelowna in particular, have every excuse for the boisterous nature of their welcome to the man who took their exhibit to Spokane.

In competition with the whole of North America, the Okanagan Valley as represented by Kelowna, captured no less than 13 first prizes, 1 second, 1 silver cup, and 2 medals. The value of the awards taken by Kelowna reaches the astounding total of \$4,423. These prizes were obtained by exhibiting 43 boxes of apples, or an average in prizes of over \$100.00 per box!

Mr. F. R. E. DeHart left Kelowna with 72 boxes of apples and arrived at Spokane a week before the show. During that week all the fruit was re-packed by Mr. Jas. Gibb, head packer of Messrs. Stirling & Pitcairn, of Kelowna, to whose skill is due in no small measure the remarkable success which followed their united efforts.

The special prize of \$50 offer at the Spokane Apple Show to the nurseryman that supplied the trees that produced the prize winning fruit in one of the largest sections was awarded to M. J. Henry, of Vancouver, B. C.

The calendars, posters and almanac issued this year by the International Harvester Co., of America are fine productions and should be in every farm home. Ask the company's local agent for them.

Fruit Station Work

The advisory board for Fruit Experiment Station Work in Ontario held a meeting in Toronto on Jan. 4. Reports of the past season's work were received from all of the stations and will be published in full in the annual report as soon as issued.

The Jordan Harbor station made important progress during the year, large plantings of all kinds of fruits being made in the spring. Extensive vegetable tests for varieties, fertilizers, were started and will be continued from year to year. A large office and laboratory building, a greenhouse, a residence, teamsters' cottage, a stable and implement shed, a small cannery, and a cool storage building were erected during 1908 and will all be available for use with the new year. The outlook for this station is very promising and through the services of a permanent staff of experimenters should prove of great value, not only to the tender fruit sections, but to other parts of the province as well.

The smaller stations in this district will be closed as soon as possible, Mr. A. W. Peart at Burlington and Mr. L. Woolverton at Grimsby dropping out this year. Mr. Peart states that he has completed the experimental work assigned to him and is unable longer to give the necessary attention to this work. The board desire that Mr. Murray Pettit continue his work with grapes during 1909, paying special attention to experiments for the control of the grape rots and mildews.

Mr. W. H. Dempsey, of Trenton, resigned his position as experimenter in the spring of 1908. Since that time representatives of the department of Agriculture have been appointed in the counties of Prince Edward and Ontario and these men intend to conduct various experiments and investigations

in horticulture during the present season. As they are paid to give their full time, these men will be able to undertake more extensive experiments than was possible under the old system.

For this reason, the board recommended the appointment of such representatives in those districts where at the present time no local stations exist. In Simcoe county, where Mr. Caston has acted as experimenter for a number of years, the horticultural conditions are so varied that it has been thought best to close the station in view of

GOLDEN GATE STRAWBERRY PLANTS

Battensburg, Goldsborough, St. Louis, Highland, Saratoga, Good Luck, Word's Wonder, Chipman, Fendall, Bountiful, W. H. Taft, Jim Dumas, 3 W's, and all the old reliable varieties. Price list sent free on application.

E. B. STEVENSON

Maple Bank 270 Grange St., Guelph, Ont.

GOES LIKE SIXTY
SELLS LIKE SIXTY
SELLS FOR **\$65**



GILSON
GASOLINE
ENGINE

For Pumping, Cream Separators, Churns, Wash Machines, etc. **FREE TRIAL**
Ask for catalog - all sizes

GILSON MFG. Co. 104 York St. GUELPH, ONT

THE SUPERIOR STENCIL FOR BRANDS
MFG. CO. AND RUBBER STAMPS

"WE MAKE ALL KINDS FOR ALL PURPOSES"

124 YONGE ST. TORONTO.

HENRY'S NURSERIES

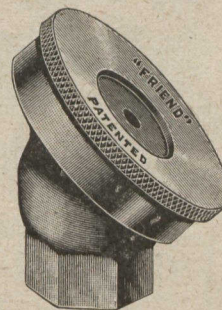
Pacific Coast seeds from the best growers in the world. NURSERY STOCK of FRUIT and ORNAMENTAL TREES, grown in B.C., the only section of the American continent not infested with San Jose scale. Am not obliged to fumigate our stock before shipping (and consequent damage to vitality).

Bee Supplies, Fertilizers, Spray Pumps and Spraying Material, Greenhouse Plants, Cut Flowers.

Catalogues Free

M. J. HENRY

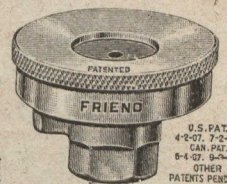
3010 Westminster Road, Vancouver, B.C.



"Friend" Angle.

Two
'Friends'

PRICE \$1.00 EACH
(NO DUTY)



"Friend" Regular.

Positively our own idea.
Any others like them are infringements.

The original large spray Nozzles doing away with the cluster. The only ones with the maker's name and the word "Patented" stamped upon them. They have no horns, hooks, nothing to catch, drip or clog. Makes the finest mist-like spray. Drives the spray farther into the trees than the cluster. The "Angle" sprays up under the leaves and down into the CALYX. The "Regular" is for ordinary work. State which is wanted. Satisfaction guaranteed or money refunded.

"Friend"
Bulletin

Now (Jan. 14th) shows sixty-two '19 model Power Sprayers sold to up-to-date men. Buyers of "FRIENDS" are not in the lone-some class.



1909 model at work

1909
"Friend"

Big wheels, short turning, low down, perfect agitator. Improved throughout. Complete, ready for the horses. The kind they are all buying.

Price, . . . \$260.00

"Friend" Manufacturing Co's

Gasport, Niagara County, N.Y.

Manufacturers of the first complete Gasoline Power Sprayer.

OUR NEW CATALOG IS FREE

BOOKS ON IRRIGATION

Irrigation for the Farm, Garden and Orchard
By Henry Stewart.

This book is intended to meet the wants of gardeners, fruit growers, and those farmers who have only a meadow to water, as well as those who irrigate their whole farm. It is plainly written, and copiously illustrated; is thoroughly practical, and sufficiently suggestive to meet almost any possible case in which water may be used for the benefit of the crops.—5x7 in., 276 pages, cloth, postpaid, \$1.00

Irrigation and Drainage. By F. H. King.

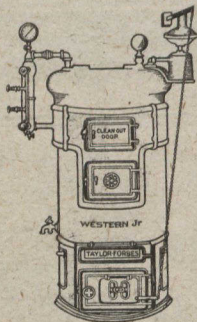
The writer presents in a broad yet specific way the fundamental principles which underlie the methods of culture by irrigation and drainage, and their importance in securing the most favorable conditions of the soil to produce profitable results. Illustrated, 5x7 in., 500 pages, cloth, postpaid, \$1.50.

Irrigation Farming. By Lucius M. Wilcox.

The most complete work on the subject ever published. New revised edition, enlarged and rewritten. Profusely, handsomely and practically illustrated.—5x7 in., over 500 pages, cloth, postpaid, \$2.00. Write for a copy of our book catalogue.

Book Department,
Horticultural Publishing Co. Ltd.
PETERBORO, ONT.

HEATING FOR HOT HOUSES



Without paying anything more for it you buy absolute reliability in the "SOVEREIGN" Hot Water Boiler, or the "WESTERN JR." Low Pressure Steam Boiler. Besides reliability, this apparatus saves in coal consumption. They are also easily installed and, in case of accidental breakage, the part or section injured is readily replaced without disorganizing the heating system.

WRITE FOR OUR BOOKLET.

THE
TAYLOR-FORBES
COMPANY, LIMITED

HEAD OFFICE: **GUELPH** WORKS & FOUNDRIES

BRANCH OFFICES AND AGENTS:

TORONTO MONTREAL WINNIPEG VANCOUVER
ST. JOHN QUEBEC CALCARY

the appointment of an assistant to the department representative at Collingwood, who will give his whole time to the horticultural work. This man will be expected to cover the Georgian Bay section and the Lake Simcoe section as well as the inland sections whose conditions were represented in the past by Mr. Caston.

The other stations will remain as in 1908 until their special work is completed or can be taken over by such representatives of the department as may be appointed from time to time. Mr. J. L. Hilborn at Leamington in peaches, and Mr. H. Jones at Maitland in hardy winter apples, have special problems in these fruits which require attention.

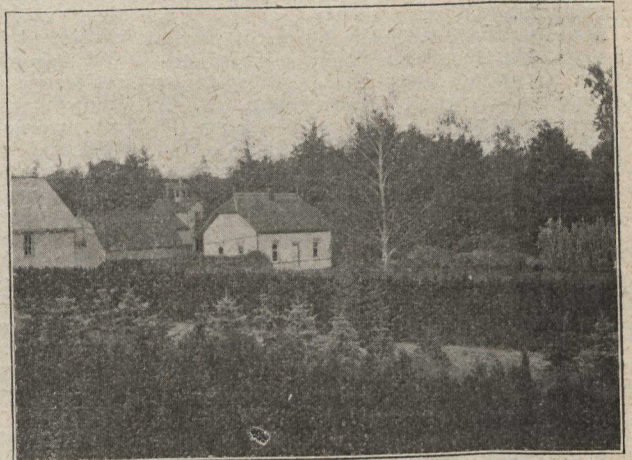
In addition to Mr. Young's work on St. Joseph's Island and some smaller experiments in the Temiscaming district, the new government farm at Matheson will be made use of, if possible, for experimental work in hardy fruits.

The department representatives in the counties of Essex, Simcoe, Prince Edward and Ontario will conduct numerous experiments during the coming season and make investigations into the horticultural conditions in their various districts. Mr. A. McMeans, of the Ontario Agricultural College staff, is working with the board in conducting experiments in cranberry growing at two points in the province. Other places have made inquiries and, if found suitable, plantings will be made this year.

I would not be without my old friend THE CANADIAN HORTICULTURIST for a good deal.
—R. Brodie, Westmount, Que.

Hamilton Vegetable Growers

At the annual meeting of the Hamilton branch of the Ontario Vegetable Growers' Association, the following officers were elected for the ensuing year: President, R. H. Lewis; vice-president, W. A. Drummond; secretary-treasurer, Thos. Tregunno, Bartonville; auditors, W. A. Emory and J. M. Mayell; executive committee, the foregoing and W. H. Smith, J. Lewis, M. Bur-

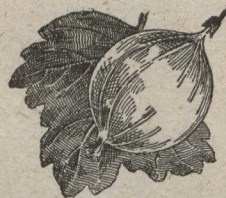


A Corner of Stone & Wellington's Nurseries, Fonthill, Ont.

ton, Geo. Awrey, J. B. Harrod, Jos. Smiley, E. J. Mahoney and J. Nairn, Jr.; provincial directors, R. H. Lewis and E. J. Mahoney.

A series of meetings was drafted, with subjects and speakers. Programmes will be mailed to members. Others may obtain them by applying to the secretary.

THE CANADIAN HORTICULTURIST is a very useful visitor in our home. I would not like to be without it.—J. McClelland.



SMALL FRUIT PLANTS

Gooseberries, Josselyn, Downing, Houghton.—Currants, Perfection, Ruby, Cherry, White Grape, Lee's Prolific, Champion, Black Naples.—Raspberries, Herbert, Cuthbert, Marlboro, Brinckle's Orange.—Garden Roots, Asparagus, Rhubarb, Perennial Celery.

Wm. FLEMING, Box 54, Owen Sound, Ontario

IF YOU HAVE APPLES OR POULTRY TO CONSIGN

we can handle them for you to advantage. If apples are in car lots, write us and we can sell them for you f.o.b. your station.

THE DAWSON COMMISSION CO., Ltd., Cor West Market and Colborne Sts. TORONTO, ONTARIO



Planet Jr.

Does six men's work quicker, better, and far cheaper than old-style back-breaking gardening methods. Saves seed and insures a bigger, better yield.

Be modern. Use Planet Jr. Seeders, cultivators and wheel-hoes, because they are made by a practical farmer and manufacturer who knows what is needed to lighten your labor.

No. 6. The newest Planet Jr. Combination Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow. Opens the furrow, sows any kind of garden seed accurately in drills or hills, covers, rolls down and marks out the next row—all at one operation. Also a perfect Wheel-Hoe, Cultivator and Plow.

No. 12 Double-wheel Hoe has adjustable wheels so that it works equally well astride or between rows—insures close work and does away with hand-weeding.

There's a Planet Jr. for every farm and garden use—45 kinds in all. Our 1909 free illustrated catalogue describes them fully. Write for it today.

S. L. Allen & Co., Box 11060, Philadelphia, Pa.

Write for Name of Our Nearest Agency.

POULTRY DEPT.
Conducted by S. Short, Ottawa

The Incubator

Although the temperature at the present time is that of mid-winter, progressive or up-to-date poultry breeders and fanciers are now turning their attention to the coming hatching season. Like the automobile, the incubator is becoming more and more generally used. It has passed the experimental stage and is now a complete and perfect hatching machine, capable of hatching 90 to 95 per cent of fertile eggs when operated by any one, whether beginner or expert, possessed of ordinary intelligence and perseverance.

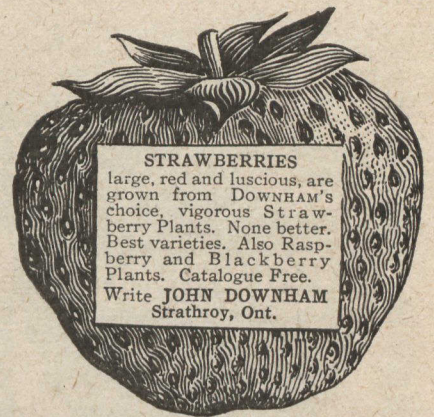
The incubator has advantages that cannot otherwise be obtained; for instance, it is generally admitted that eggs laid in February and early March, have stronger germs and are more fertile than eggs laid in late March and early April. Both for the show ring and for early winter layers, it is imperative that we have early hatched chickens. It is also a fact, that hens do not become broody (excepting an occasional one) in March and beginning of April and that is where the incubator is invaluable. If the breeding stock is healthy and vigorous, the eggs should be fertile. Chicks hatched the end of March and beginning of April, placed in a brooder, indoors, thrive well, if properly cared for and are in May ready to be put out on the grass runs where they make that rapid development so necessary for the fall winners at the shows and for early profitable layers.

Again, the chicks hatched in the machine

are free from lice of all sorts and are all of an age and even in size. With hens there is always the trouble of getting them to set in a convenient place. The fouling of the nests, the breaking of the eggs and the necessity of washing those not broken, the dusting of the hen for vermin, some of which always escape and attack the chicks, all of which is very disagreeable and sometimes very disgusting.

Incubators are made in all sizes from 50 eggs to several hundred. Some of the most successful hatches I have known have been the reward of beginners operating the machine for the first time. With each make of incubator there are specific instructions, very simple, clear and easily understood. Some breeders like one make of machine and some another. All machines of any prominence will do good work if instructions are faithfully carried out. While the incubator received its first start and came into general use in the United States, the machines made in Canada are equally good and have the advantage of being cheaper, there being no duty to pay and less freight, for Canadian purchasers.

The Highest Perfection.—It ought to be the aim of every person or firm that grows strawberry plants for sale to attain the highest perfection in vigor, growth and productiveness, but unfortunately this ideal is not foremost in the minds of all nurserymen. We are pleased to state, however, that one of our leading growers, W. H. Vanderburg, of Poplar Hill, Ont., makes this class of fruit a specialty and aims to grow plants that cannot be beaten anywhere. If you want big red berries and lots of them, buy your plants from this firm. Read the advertisement on another page of this issue.



Imperial Bank
OF CANADA
HEAD OFFICE—TORONTO
Capital Authorized, \$10,000,000
Capital Paid-up. 5,000,000.00
Rest, 5,000,000.00
D. R. WILKIE, President
HON. R. JAFFRAY, Vice-President
Branches and Agencies throughout the Dominion of Canada
Drafts, Money Orders and Letters of Credit issued, available in any part of the world
Special attention given to collections
SAVINGS DEPARTMENT
Interest allowed on deposits at current rate from date of deposit

Peerless Jr. Poultry Fence

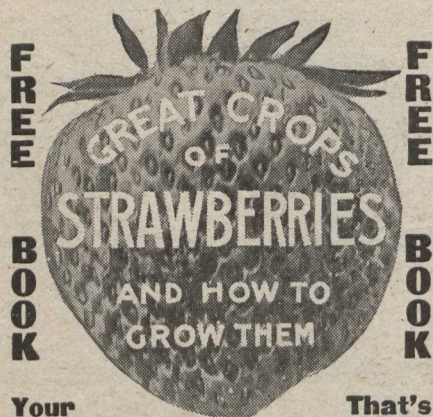
will turn large animals as well as small poultry. The top and bottom wires are No. 9 hard steel wire—heavily galvanized—to prevent rusting. No top or bottom boards necessary because the heavy wires take the place. PEERLESS JUNIOR Poultry Fence almost pays for itself in the saving made on fence posts alone. Only half the posts are required, as compared with most other makes of poultry fencing. Peerless Junior Poultry Fence is

Close enough for Poultry
Strong enough for Stock

Don't let your chickens eat your hog feed nor permit your hogs to tramp all over the garden. The same fence serves both purposes. PEERLESS JUNIOR Poultry Fence can be used as an **all around General Purpose Fence.** The wires are held together by the famous PEERLESS lock that cannot be slipped. PEERLESS JUNIOR Poultry Fence adds greatly to the appearance and value of the property it encloses. Write today for Free Fence Book which tells all about Fences—and how to choose fencing.

THE BANWELL HOXIE WIRE FENCE CO. Ltd.,
Box C
Hamilton, Ont. or
Winnipeg,
Man.

The Fence That Saves Expense



Your Name and Address That's All

OUR 1909 EDITION is the most practical text book on strawberry growing ever written. It's worth its weight in gold because it teaches the Kellogg method of growing the world's record crops of big red berries. Every detail of the work is illustrated by photo-engravings. You read it by pictures. They show you just how to do everything from beginning to end. Strawberry growers who follow the Kellogg way are getting more fancy berries from one acre than the other fellow gets from two. The book makes you acquainted with some of these top-notch growers; shows pictures of their strawberry fields and gives their yields. This Book for your address. We'll trade even. R. M. KELLOGG COMPANY, Box 570, Three Rivers, Mich.

Ontario Fruit Growers

This year marks the 50th anniversary of the organization of the Ontario Fruit Growers' Association. At a meeting of the board of directors held in Toronto in January, the officers for the year were elected as follows: Pres., E. D. Smith, Winona; vice-pres., Jas. E. Johnson, Simcoe; sec.-treas., P. W. Hodgetts, Parliament Buildings, Toronto. Standing committees also were appointed.

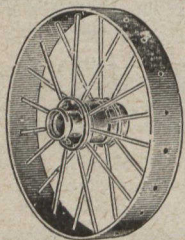
The American Pomological Society will hold its biennial meeting in St. Catharines in September, 1909. Messrs. A. W. Peart, Burlington, R. B. Whyte, Ottawa, Geo. Robertson, St. Catharines and Prof. H. L. Hutt, Guelph, were appointed a committee to make arrangements for the reception of this society.

A Plain Statement.—Some of the manufacturers of spraying fluids on the market claim that their fluid will destroy every egg with which it comes into contact. They very easily get over the difficulty here by saying "be sure that our spraying mixture reaches every egg," which is an impossibility in an orchard of 100 to 1,000 trees. It is rather a relief to get the plain statement from the manufacturers of Campbell's Nicot-Soap and Improved Bordeaux Mixture

(see advertisement on page iii) who in the introduction to their booklet put the matter as follows: "We wish to state as plainly and as forcibly as possible that every statement in this list, having regard to what our specialties accomplish, at what cost, dilutions, etc., is simple fact. There is no cheapest, best, kill-everything exaggeration, or other embellishment, concerning wonderful secret processes, peculiar mysterious chemical combination, mixtures, etc., so often claimed for articles of this nature."

Use the Right Materials.—The present tendency among orchardists seems to indicate that arsenate of lead is soon to replace Paris green as an insecticide for all leaf eating insects. It mixes easily with water and remains well in suspension. It will not wash off the leaves nor will it burn them. It is highly recommended. Another insecticide, and one with fungicidal properties as well, that is coming rapidly into esteem is the commercially prepared lime-sulphur solution. It is likely to supplant the home made mixture. Read the article that appears on page 27 of this issue. The Grasselli Chemical Co. manufacture both of these materials in their highest state of perfection. The address of this firm may be found in their advertisement on another page. Write to them for further information. They manufacture also Grasselli's Bordeaux Mixture Paste.

This number of THE CANADIAN HORTICULTURIST is as large as any that has yet been published and it carries advertising matter far in excess of any one previous issue. The publication is improving rapidly in size, in circulation and in the quality of its articles. Subscribe now and grow with it.

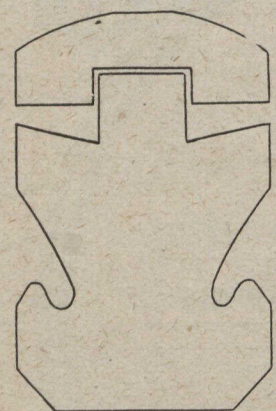


REPLACE YOUR BROKEN-DOWN WHEELS WITH OUR WIDE-TIRE STEEL WHEELS

Have you a wagon that is alright except for the wheels, which are either worn-out or rotted to pieces? Then, why not get a set of our Low Wide-Tire Steel Wheels? They are made to fit any axle. Lighter, stronger, more durable than wooden. Make your wagon good as new. Catalogue sent you free if you say so.

DOMINION WROUGHT IRON WHEEL CO., LTD., ORILLIA, ONT.

BATTS, LIMITED



Section of our No. 6 Bar and Cap

MANUFACTURERS OF

Cypress Building Material

Made only out of the best clear Cypress—
3 CENTS A FOOT

Suitable for Conservatories and
VEGETABLE FORCING HOUSES

50 PACIFIC AVENUE
WEST TORONTO

PHONE JUNCTION 427

LONG DISTANCE CONNECTION

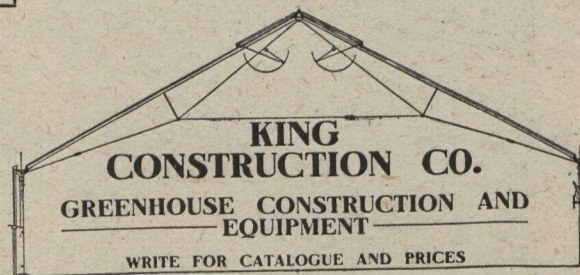
Mention The Canadian Horticulturist when writing

KING GREENHOUSES

Are the most

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.



WRITE FOR CATALOGUE AND PRICES

Plans prepared for complete plants and equipment at a moderate cost: all or part of the necessary materials supplied and houses of any size erected under our personal supervision if desired by builder.

Write and tell us the kind of houses you desire to erect or ask for question blank and we will mail you our descriptive bulletin by return of mail.

THE KING CONSTRUCTION CO.
248 Wellington St. West TORONTO, ONT.

Mention The Canadian Horticulturist when writing.

Express Companies Censured

A deputation of prominent fruit growers met the Board of Railway Commissioners in Toronto recently and laid complaints against the express companies. They asked that the companies be compelled to give lower and more uniform rates and to handle the fruit with greater care than has been the custom in the past. Mr. W. H. Bunting, of St. Catharines, stated that many growers have stopped shipping by express and have taken to freight on account of the unsatisfactory express conditions. He referred to losses during transportation and to the difficulty in securing settlement of claims. It was pointed out that the growers take the fruit to the cars themselves and that same is unloaded, in the case of Toronto, by the commission men, the express companies thereby having less trouble with it than with ordinary merchandise and therefore should give lower rates.

Mr. James E. Johnson, of Simcoe, showed that express rates from Simcoe to Hamilton and Toronto are much higher than from St. Catharines to these cities although the distances are about the same. He claimed that while shipping fruit out of Chicago he had found the express companies in the United States willing to pay losses from damage to the fruit caused by delays in transit for which the railways were responsible.

Mr. E. D. Smith, of Winona, pointed out

that if Ontario growers are to compete in the western Canada markets against the fruit from California and Oregon which, owing to its dry texture is shipped there by freight, our fruit must be forwarded by express. The express companies' charges are so excessive it makes it difficult for Ontario growers to do so. He protested against the claim in the agreement, that the express companies compel the shippers to sign, relieving the former of any liability for damage to the fruit caused by delays to the cars while in transit. Mr. Smith thought that the express companies should be liable for such loss.

A number of other growers addressed the commission. A deputation from Grimsby asked for a general reduction in express rates, a graded rate on size of shipment, the stopping of pilfering and the rough handling of fruit, the placing of responsibility for delay in handling fruit, proper accommodation and suitably ventilated cars. After hearing the evidence, the chairman of the commission, Judge Maybee,

ordered the express companies to confer with the fruit men with a view to meeting their wishes. It is expected that a satisfactory understanding will be arrived at before the next fruit season.

FOR SPRING DELIVERY

Try the Fruitland Nurseries for a full assortment of nursery stock and ornamental trees. Our stock is free from San Jose Scale. Government inspected. We allow 10% for cash. Send for our New Price List. No windy agents to annoy customers.

G. M. HILL & SON, FRUITLAND, ONT.

GLADIOLI

Groff's World's Fair Collection

Groff's New Blues

Groff's New Yellows

Groff's New Named Kinds

also

Cannas, Dahlias and Pæonies

Send for Catalogue

CAMPBELL BROS.

SIMCOE - - ONT.

THE MOST IMPORTANT FARM MACHINE

THE MANURE SPREADER

Are you Saving Money, or are you Losing it by being without One?

You believe that money spent for a mowing machine or a binder is well invested. Still you use these machines only a few days in the year.

You use the hay rake, because it saves you time and labor.

These are valuable machines. They are now counted indispensable by most farmers, even though they stand unused over eleven months in the year.

But a manure spreader is a still more valuable machine. Its purpose is to keep up the fertility of the soil. It is the machine you use *all seasons*, and the one on which the real usefulness of all your other farm machines depends.

If you have not already done so, you should consider now the advisability of having an I. H. C. manure spreader on your farm.

You will have choice of two different spreaders in the I. H. C. line—the Cloverleaf, endless apron spreader, and the Corn King, return apron spreader. Each of these spreaders handles the manure in all conditions perfectly and will give you long satisfactory service.

These spreaders are not ordinary. Their frames are made of air dried wood stock. They have serviceable, tractive power producing wheels, beaters that are unsurpassed for tearing the coarsest manure into the smallest pieces and applying it uniformly, aprons that deliver the manure to the beater with the least possible friction and

in a uniform manner. Any one of these machines will, if given proper care, last a lifetime.

The labor of spreading manure is greatly lessened by using one of these I. H. C. spreaders. Not only is the labor lessened, but it is changed into agreeable work.

But the strongest reason for using an I. H. C. spreader is the increased value you get out of the manure. The best authorities agree that manure spread by an I. H. C. spreader has at least double the value of manure spread by hand.

The I. H. C. spreaders pulverize and make the manure fine, and spread it evenly over the ground just as thick or as thin as may be required. The manure is placed upon the ground in a condition that is at once available for plant life. All is washed by the first shower into the soil—none is wasted.

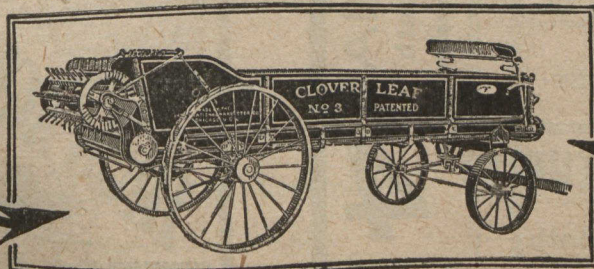
The good effects upon the crop are immediate and the permanent benefit to the land is greater than when the manure is spread by hand. There is no question but that land manured by an I. H. C. manure spreader will give an increased yield of from two to ten bushels per acre over land where manure is spread by hand.

Consider the labor saved, the more agreeable work, the better crops, the more fertile condition of the land—is not an I. H. C. manure spreader the machine you should have?

Are you not losing money instead of saving money by being without one?

Call on the International local agent and investigate one of these machines. He will supply you with catalogs and particulars, or if you prefer write nearest branch house.

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



INTERNATIONAL HARVESTER COMPANY OF AMERICA (INCORPORATED) CHICAGO, U.S.A.

Stood the Test.—At a meeting of the Niagara Peninsula Fruit Growers' Association held at Grimsby on Jan. 14, it was stated by a committee composed of Joseph Tweddle and J. W. Smith that they had last year tried Cooper's V1 and V2 spraying mixtures for San Jose scale. The committee expressed the opinion that the fluids mentioned are highly satisfactory for the destruction of scale. There is little doubt that Messrs. William Cooper & Nephews have, after years of experimenting, now hit upon an ideal orchard spray fluid. Testimonials continue to pour in, stating the satisfaction that these fluids have given in almost every country where fruit is grown. We can recommend a trial of these fluids by fruit growers throughout Canada. They mix easily with cold water and never clog the nozzles, and they do not injure the hands or the trees in any way. One thing about these fluids is certainly proved to the full, and that is that they are more easily prepared and more pleasant to use than any fluid that is at present known. We refer

our readers to a full page advertisement in this issue, and advise them to write to Messrs. William Cooper & Nephews for their Booklet "B," which will give full information as to the use of these fluids.

Only seeds of the most careful selection that have been grown by specialists in seed growing are offered in the new catalogue of Graham Bros., of Ottawa. The long experience of this firm in supplying seeds particularly adapted for the colder parts of the Dominion makes this house competent to deal with our readers. Readers of THE CANADIAN HORTICULTURIST will be supplied free of cost with a copy upon request.

Notices have been sent from the Central Experimental Farm, Ottawa, to all the larger nurserymen in Canada and to others in reference to a threatened invasion of the brown-tail moth. Fruit growers are advised to watch closely for the winter nests of this pest. Further information in respect to them will be published in our next issue.

The annual convention of the Western Horticultural Society will be held in Winnipeg on Feb. 18 and 19.



Front Cover of a Seed Catalogue That should be in every home.

You won't dread Wash Days after your husband buys a

"Puritan"

Reacting Washing Machine

It runs so easily—does the washing so quickly—that you will marvel how you ever put up with the back-breaking rub of the tub.

One of the children can easily do the washing with the "Puritan"—the only washing machine in Canada with improved roller gear.

Write us for booklet; if your dealer can't show you the "Puritan."

DAVID MAXWELL & SONS, St. Mary's, Ont.



At a meeting of the Brantford Horticultural Society held in January, Prof. H. L. Hutt, of the O. A. C., Guelph, delivered a lecture on civic and home improvement. The lecture was illustrated by stereopticon views. Among the officers of the Brantford society are: Pres., E. W. P. Jones; vice-pres., R. Elliott and C. S. Tapscott; sec., R. Walter Brook; treas., A. H. Adams.

We have received a copy of a bulletin entitled "Mixing and Placing Concrete by Hand," which is published by the Association of American Portland Cement Manufacturers, Land Title Building, Philadelphia. The secretary is Percy H. Wilson. The bulletin is filled with practical information. Write to the association for a copy.

The short course in fruit growing at the Ontario Agricultural College is now in progress and is proving of great value and interest to those in attendance. A full report of the proceedings, including the discussions, will appear in the next issue of THE CANADIAN HORTICULTURIST.

The short course held last month at the Agricultural College, Truro, N. S., was a record one both in attendance and in interest.

4 FARM AND DAIRY 4

Published Every Wednesday

THE BIG 4

An Entire FARM, GARDEN, POULTRY and HOME LIBRARY of 88 PAPERS For Only \$1.70	
<p>THE CANADIAN HORTICULTURIST—It is the only paper in Canada devoted to Fruit, Flower and Vegetable Growing. It is issued monthly, is profusely illustrated, and numbers among its contributors the leading Horticultural Authorities in Canada. Its fruit crop reports are a special feature. Subscription price, one year .60</p> <p>FARM AND DAIRY—A paper for farmers and dairymen. It is published every week in the year and is an all round strong agricultural and dairy paper. It has departments for all lines of farm work, including the cultivation of the soil, live stock, and a strong household department. Its market reports and letters from farmers are two of its best features. Subscription price, one year \$1.00</p> <p>THE CANADIAN POULTRY REVIEW is the acknowledged peer of all American and Canadian Poultry Journals. It is published punctually on the first of each month. Contains from 48 to 72 pages choke full of live poultry lore. Full reports of all shows, engravings from life photos, etc. Practical, newsy, down-to-date. 32nd year of publication, one year .50</p> <p>THE HOME JOURNAL—A Canadian illustrated paper full of practical, useful suggestions, stories, household, hints, etc., clean, patriotic and equal in appearance to the best foreign magazines, one year .50</p>	<p>Total \$2.60</p> <p>Our Special Combination Rate for all four papers, one year, only \$1.70</p>

Why not save money? Send us \$1.70 and get these Four Leading Magazines, one full year each, 88 papers in all—less than 2 cents each and postage paid.

Tell Your Neighbors

ADDRESS—
THE CANADIAN HORTICULTURIST
PETERBORO, ONTARIO

4 THE CANADIAN HORTICULTURIST 4

PETERBORO, ONTARIO
Published the 1st of Each Month

The FARMERS' GARDEN

A Seed Drill and Wheel Hoe is indispensable—not only in a village garden but on largest farms.

Farmers should grow all manner of vegetables and "live on the fat of the land." Should provide succulent roots for Cattle, Swine, Poultry, and save high priced feed stuff. Great labor-saving tools of special value for the home as well as the market garden. Send for free book.

SAVE HIRED HELP

Only One of Many Iron Age Tools

The most complete tool made

IRON AGE

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

New Brunswick

S. B. Hathaway, Sec., N. B. Fruit Growers' Association

While the attendance was small, the enthusiasm was great at the recent annual meeting of the New Brunswick Fruit Growers' Association. President Stephenson's address covered the work of the association and gave much good advice along fruit growing lines with special stress on growing and shipping apples direct from St. John to England.

In a short address, Mr. W. T. Macoun, reviewed the work at the Central Experimental Farm and told of his success in propagating hardy varieties of ornamental shrubs also in the cross fertilizing of apples, using McIntosh as the ideal in quality.

The subject of small fruits was thoroughly discussed. W. Teed Inch's paper on this subject was well written and J. C. Gilman's paper gave much practical advice. The discussion led by Mr. Macoun brought out many interesting points particularly in the matter of varieties of strawberries. The varieties that were satisfactory with some growers proved useless with others. The subject of hardy varieties was well thrashed out by Mr. Macoun. The revised prize list was criticized but no amendments were made.

A committee was appointed to confer with the Nova Scotia Association with a view to

establishing a score card for judging fruit; also a committee to wait on the Government in reference to an annual grant for the association. The secretary was asked to

correspond with the barrel manufacturers and to impress on them the necessity of improving the quality of their stock. The principal prize winners were: J. C. Gilman,

EWING

SEEDS OF "QUALITY"

If you really want good results next fall its pretty much altogether up to yourself. Good Seeds may be a little more expensive to buy than inferior ones, but they put the balance on the right side of the ledger on reckoning up day. EWING'S SEEDS are the best that nature, care and careful selection can produce.

GET OUR FREE CATALOGUE—
Its full of just the things you want to know.

WM. EWING & CO., Seedsmen
MCGILL STREET - MONTREAL



Don't Throw it Away

MENDIT

Does Your Granite Dish or Hot Water Bag Leak?

USE COLLETTE'S PATENT PATCHES mend all leaks in all utensils—tin, brass, copper, graniteware, hot water bags, etc. No solder, cement or rivet. Anyone can use them; fit any surface. Send for sample pkg. 10c. Complete pkg. assorted sizes, 25c. postpaid. Agents wanted.

Collette Mfg. Co., Dept. 35
COLLINGWOOD, ONT.

SPECIAL GLASS FOR GREENHOUSES

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

THE PHOTO-ENGRAVERS LIMITED.



DESIGNERS ILLUSTRATORS ENGRAVERS AND ETCHERS

10, JOHNSTON LANE
TORONTO PHONE MAIN 5251 ONTARIO

Mention The Canadian Horticulturist when writing

Norman Hallett, J. W. Clark, Isaac Stephenson and S. B. Hathaway.

The normal school students were present at an evening meeting and the audience listened to a splendid address by Dr. Hamilton on "Evolution." He was followed by that most entertaining speaker, Mr. Wm. McIntosh, of St. John, who interested all with his talk on insects. The fruit exhibit was distributed among the audience and the convention was over.

A splendid example of how a business will grow under personal supervision of the persons interested, is the development of the Friend Mfg. Co., of Gasport, N. Y. This firm started several years ago to study the needs of fruit growers for sprayers, and under the guidance of Mr. A. B. Hull, his two sons, and a son-in-law, the business has grown so rapidly that they have had to increase their plant several times recently. This is a strong argument in favor of the efficiency of their Spraying Machines. Send for a copy of their new catalogue.

Read our "Big Four" offer. 88 magazines for \$1.70.

Among farmers the first robin is usually taken to indicate spring. Horticulturists usually know spring is near when the

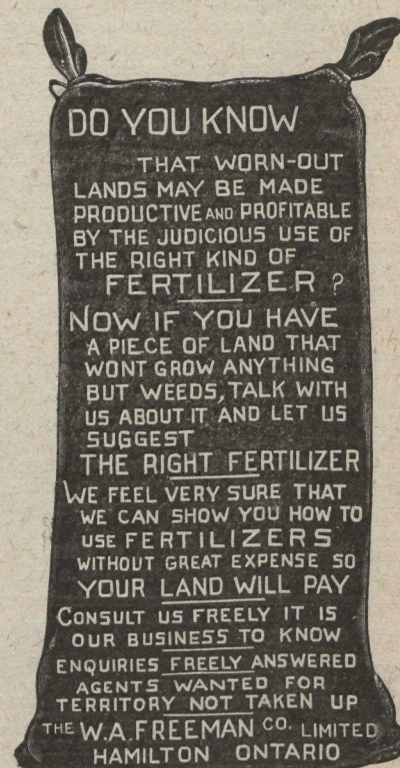
seedsmen's catalogues appear. The 1909 catalogue of Steele, Briggs Co., is as usual right up to the minute. Everything new is listed. The splendid illustrations and descriptive matter make it a desirable and easy catalogue from which to make selections.

A copy of the catalogue of David Gellatly, proprietor of Rosefield Nursery, Gellatly, B. C., has been received. It offers a complete list of Okanagan seeds, fruit trees, ornamental trees, shrubs, roses, and so forth. Cultural directions are given and the varieties are well described. Write for a copy.

A liberal offer is made to our readers in the full page advt. of Wm. Rennie Co., Toronto. This splendid offer is made only to our readers and in connection with orders for XXX or other seeds. This firm have for years watched the growth and experimented with the various kinds of seeds. Their experience has led them to brand what they consider the best seeds for all-round purposes as XXX seeds. Read their page advt. then order your seeds at once.

Secure two new subscriptions for THE CANADIAN HORTICULTURIST and get a 14-kt. Gold Fountain Pen.

Fertilize Your Lands



RELIABLE

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. See our Priced Catalogue before placing your orders. It will pay. If you have not had good results from others

TRY OURS—29th YEAR

Apple, Pear, Plum, Cherry, Peach and Ornamental Trees

A. G. HULL & SONS, St. Catharines, Ont.



UNDERWOOD

The UNDERWOOD is not only the original Visible-Writing Typewriter, but it is pre-eminently the Canadian Typewriter. It is sold by a Canadian company with offices in Toronto, Montreal, Halifax, St. John, Hamilton, London, Winnipeg, Edmonton; and Agencies in the other cities.

The interests of Underwood users all over the Dominion are well looked after by a concern of stability, looking not merely to the business of to-day, but of many years hence.

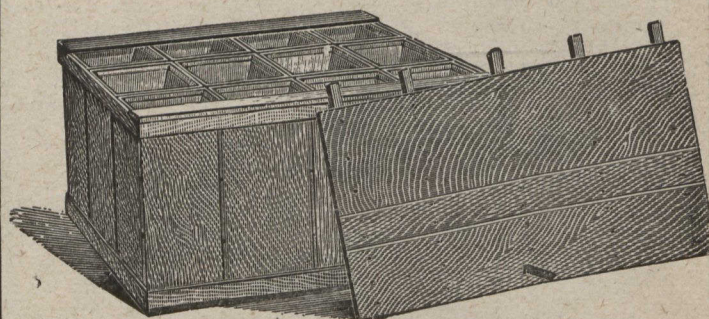
United Typewriter Co., Ltd.

HEAD OFFICE AT TORONTO.

Mention The Canadian Horticulturist when writing

BASKETS

We are Headquarters for all kinds of Splint Baskets



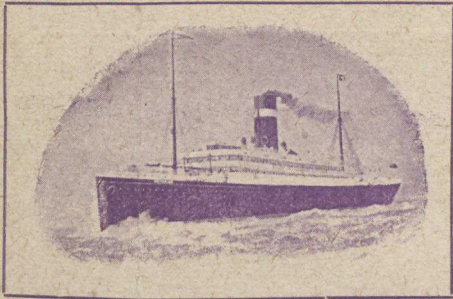
Veneer supplied for the protection of trees from mice during winter

FRUIT PACKAGES A SPECIALITY

SEND FOR OUR PRICES

The Oakville Basket Co., Oakville, Ont.

Mention The Canadian Horticulturist when writing



Turbine Steamers, "Victorian" and "Virginian."

ALLAN LINE STEAMSHIP CO.

Established 1854

LIMITED.

WEEKLY SERVICES

St. John and Halifax to Liverpool, London and Havre
Boston and Portland to Glasgow

Liverpool

S.S. VICTORIAN	- -	12,000 Tons
" VIRGINIAN	- -	12,000 "
" CORSICAN	- -	11,000 "
" TUNISIAN	- -	10,576 "
" HESPERIAN	- -	10,000 "
" GRAMPIAN	- -	10,000 "

Glasgow

S.S. IONIAN	- -	9,000 Tons
" PRETORIAN	- -	7,417 "
" CORINTHIAN	- -	6,226 "
" SICILIAN	- -	6,284 "
" NUMIDIAN	- -	4,838 "
" LAURENTIAN	- -	4,522 "

London and Havre

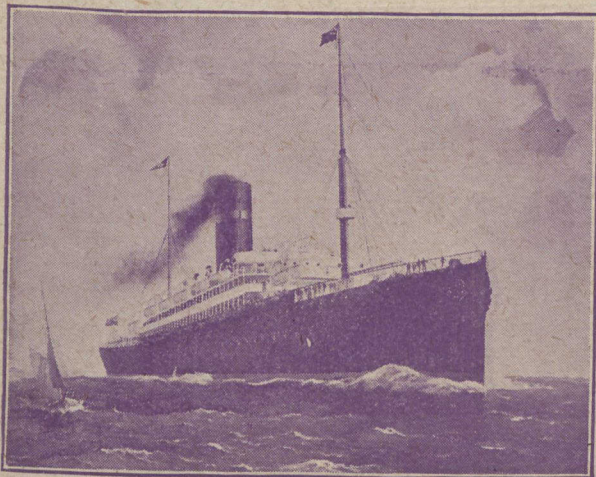
S.S. PARISIAN	- -	5,395 Tons
" SARDINIAN	- -	4,349 "
" POMERANIAN	- -	4,258 "
" HIBERNIAN	- -	5,000 "
" HUNGARIAN	- -	5,000 "
" ONTARIAN	- -	4,309 "

For Freight Purposes these steamers are equipped with all modern devices for stowage, handling, etc. For the Passenger Trade nothing has been left undone for the comfort of the travelling public

For full information write for folders or apply to

THE ALLAN LINE, 77 Yonge Street, TORONTO

It is desirable to mention the name of this publication when writing to advertisers



WHITE STAR-DOMINION LINE

ROYAL MAIL STEAMSHIPS

S.S. "Laurentic," 14,000 tons (building)

S.S. "Megantic," 14,000 tons (building)

PORTLAND TO LIVERPOOL

S.S. Haverford, Feb. 6th

S.S. Canada, Feb. 20th

S.S. Cornishman, Feb. 13th

S.S. Welshman, Feb. 27th

S.S. Ottoman, March 6th

(S.S. Haverford carries passengers.)

PORTLAND TO BRISTOL

S.S. Englishman, Feb. 4th

S.S. Turcoman, Feb. 18th

S.S. Manxman, March 4th

Favorite steamers for all kinds of perishable cargo, having fan ventilation, cold storage and cool air chambers.

WHITE STAR-DOMINION LINE

M. A. OVEREND }
J. W. WILKINSON } Travelling Freight Agents

MONTREAL OFFICE, 17 St. Sacrament St.
PORTLAND OFFICE, - - - 1 India St.

GEORGE W. TORRANCE, Freight Agent.
28 Wellington St. E., TORONTO

Mention The Canadian Horticulturist when writing.

DONALDSON LINE

WEEKLY SAILINGS

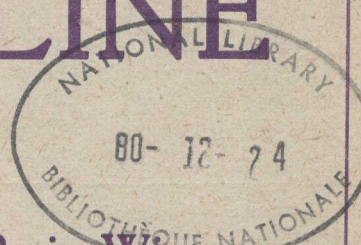
TO GLASGOW

From Montreal in Summer and St. John, N.B., in Winter

THE FAVORITE LINE FOR FRUIT AND PERISHABLES—MODERN STEAMERS, PERFECT VENTILATION—USING SIROCCO FANS, COLD STORAGE REFRIGERATORS

Excellent Passenger Accommodation on the One-Class Twin-Screw Steamers "ATHENIA" and "CASSANDRA."

Fares \$42.50 to \$50.00; Steerage \$26.50 to \$30.00. Other Steamers, Cabin only, \$42.50.



SS. "ATHENIA," 10,500 Tons. Twin Screw

THOMSON LINE

ATLANTIC REFRIGERATOR SERVICE

WEEKLY SAILINGS

TO LONDON

ALSO SAILINGS TO NEWCASTLE, LEITH AND ABERDEEN

From Montreal in Summer and Portland, Maine, in Winter

COOL AIR, COLD STORAGE, SIROCCO FANS—FOR BUTTER, CHEESE, BACON, APPLES AND ALL PERISHABLES, USE ONLY THIS LINE

FULLEST INFORMATION GIVEN ON APPLICATION. ASK YOUR RAILWAY AGENT, OR

The Robert Reford Company, Limited

110 UNION STATION, TORONTO, ONTARIO

HEAD OFFICE--MONTREAL, QUE.

BRANCHES--QUEBEC, ST. JOHN, N.B., and PORTLAND, MAINE