

The Canadian Horticulturist

AUGUST, 1908

Volume 31, No. 8

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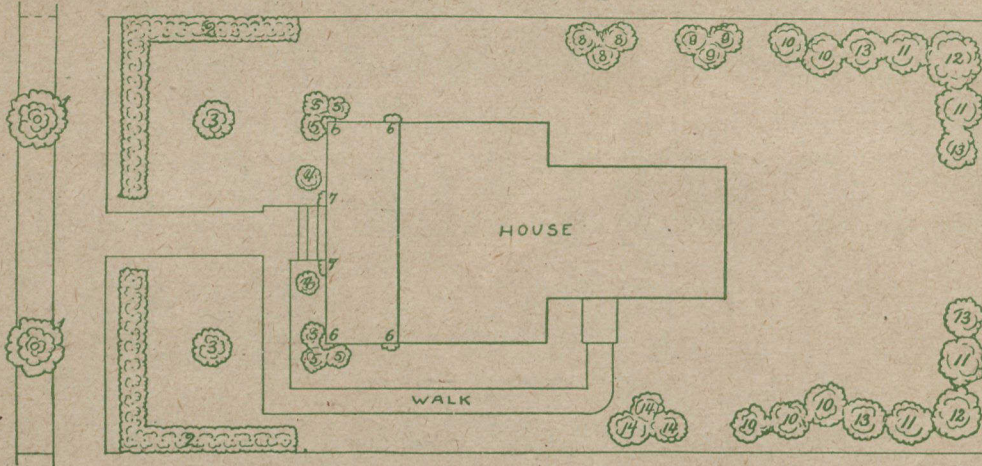
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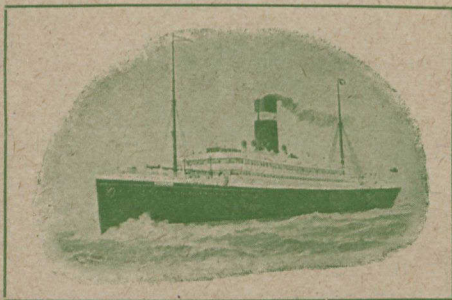
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The Canadian Horticulturist

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 Photograph by Maitland, Stratford

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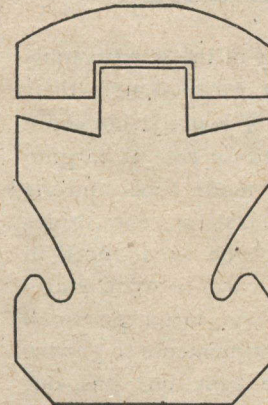
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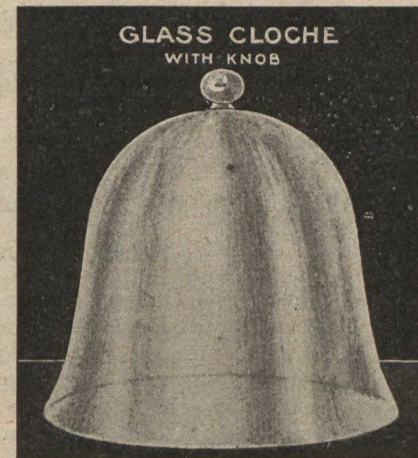
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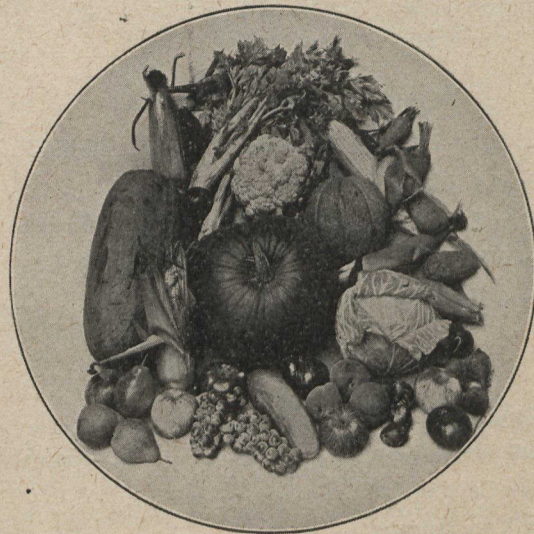
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The publishers of The Canadian Horticulturist have made arrangements with Mr. E. D. Smith, Nurseryman, Winona, Ont., who has sole control of this Apple, whereby they are able to offer one tree, Free of All Cost, to any reader who will send in only **One New Subscription at 60c. a year.**

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Secure the Subscription of a friend and have one of these
Trees sent to you for Fall Planting. DO IT NOW.

THE CANADIAN HORTICULTURIST
PETERBORO - - - - CANADA

The Canadian Horticulturist

Vol. XXXI

AUGUST, 1908

No. 8

Apple Growing North of Lake Ontario

Alex. McNeill, Chief, Fruit Division, Ottawa

THE counties from Halton to Hastings, bordering on Lake Ontario, are particularly well situated for the growing of winter apples. The business has been very profitable for a number of years, and many new orchards are being planted. Indeed, it is doubtful whether any other district of equal size has so many young orchards.

Unfortunately, with the multiplication of orchards has come the increase in orchard pests. Insects that were unknown, or that did little damage a few years ago, have become a serious menace to apple growing. The older orchards have given such good returns, and with so little labor, that apparently the owners did not need in former years to take much pains to combat these enemies. At the present time at least fifteen per cent. of the older trees are dead or dying from causes which appear somewhat mysterious to the owners. Even the young orchards are defoliated and are, therefore, stunted, with little attempt on the part of the owners to improve conditions. I visited many of these orchards recently, and found conditions exceedingly serious. The death of the older trees may be attributed to three or four causes, usually working in combination, chief of which are winter killing, imperfect drainage, oyster-shell bark louse, collar rot, and other forms of canker.

WINTER KILLING

Winter killing was quite common. Many of the older men said this was impossible, as they remembered winters much colder than any we have had lately, and the trees stood it all right; nevertheless, winter killing is doing a great deal of damage among the orchards of this district.

CAUSES OF WINTER KILLING

That it should be more prevalent now than formerly must be attributed, in part, to the adoption of clean culture, which is only one feature of what is really a much improved system of orchard practice. Formerly, it was extremely rare to see an orchard not in sod. Recently cultivation has become the fashion, and the sod has been turned down in many an old orchard. The result is to be seen in the large number of winter-killed trees. The

sod checked the growth early in the season, and thoroughly protected the roots, and thus prevented winter-killing. The clean culture not only exposed the roots, but induced a late and succulent growth of tissue in root and stem, that was more tender than that grown in sod. These orchardists made no mistake in cultivating their orchards. Most of them, however, have made a mistake in beginning the cultivation too late in the season. Many of them did not begin until the first and second week in June to plow their orchards, and these orchards were kept well cultivated through the summer. What should have been done was to work the orchards as early in the spring as possible, and cultivation should be stopped by the end of June, or not later than the middle of July, except in special

The Best of All

THE CANADIAN HORTICULTURIST is the best of all the horticultural papers that reach our office. We wish to congratulate you on the way you are developing it from year to year.—Luke Bros., Nurserymen, Montreal, Que.

cases. The protection which had been furnished to the roots by sod should be given in the form of a cover crop. Indeed, the two things, clean culture and cover crop, should invariably go together. Even without the cover crop, and making due allowance for winter killing, clean culture has been a very great advantage. But all the advantages of the sod protection, and the increased vigor induced by cultivation, are secured by uniting the two, clean culture and cover crop.

UNDERDRAINAGE

In the management of the soil of the orchard it is regrettable that so little underdraining is done. Many orchards are suffering severely for want of drainage, and it is noticeable that an undue proportion of the dead trees are to be found in the lowest portions of the orchard. It will take a great deal of missionary work to persuade many of the farmers that the best investment that they can

make in their orchards is tile draining, except it may be a spray pump.

SPRAYING

Many of the farmers have made a commencement of spraying, but very few of them perform the operation intelligently. In the younger orchards there are two insects which cause very serious damage, namely, the bud moth and the cigar case bearer. I did not see a single young orchard that had been sprayed so as to destroy these two insects. The poisoned Bordeaux mixture should have been applied as soon as the leaf buds had begun to swell, and show the slightest portion of green, or even before this. In no part of Canada that I have visited did I find the cigar case bearer and the bud moth worse than here. Many of the orchardists were only giving their first spraying on the 18th of June. It is needless to say that these men will be disappointed in their results. It will, indeed, do some good, but the injury from insects and fungous diseases will usually be so great that many of the orchardists will be inclined to think that spraying is scarcely worth the trouble.

OYSTER-SHELL BARK-LOUSE

The oyster-shell bark-louse is responsible for the death of some of the trees, at least. Nevertheless, it is noticeable that the bark-louse is worse upon trees, the vitality of which has been lowered by other causes, such as want of drainage, winter injuries or canker. It is asserted by many that the lime treatment alone is not effective. Others have tried a solution of concentrated lye. In no case has it appeared that these treatments are sufficient alone. A few have sprayed with kerosene emulsion while the insects were running; but even this has not proved successful. Many have been experimenting with patent miscible oils, also without success. None, however, as far as I can learn, have tried the lime and sulphur mixture, and apparently this is the last resort.

MISTAKES IN PRUNING

A large number of the old orchards in this district are rapidly degenerating. Many, as the result of too little pruning, have grown long and straggling, interlacing at the tips, and with no bearing

wood towards the centre of the tree. Having this form, it is impossible to spray economically, not only on account of the height of the bearing wood, but because the interlacing branches prevent the spraying apparatus from passing easily from tree to tree.

RENOVATING OLD ORCHARDS

The question is frequently asked whether these old orchards can be renovated. In many cases they can. Where the trunk and limbs of the tree are sound there is no reason why a new growth should not be started on the lower portions of the limbs. This new growth can be induced by cutting back the ends of the lower limbs along with the thinning of the finer brush towards the outside of the tree. This would, of course, temporarily reduce the bearing area somewhat; nevertheless, the result in the end would be beneficial. The bearing area is seldom too large, but it is unevenly distributed over the whole tree. Usually, in these old trees, it is confined to the tips of the limbs where the fruit spurs are much too crowded. The effect of thinning the finer brush, and cutting back the larger limbs moderately, would be to induce the growth of suckers or water sprouts on the naked limbs towards the centre. One or more of these may be selected on each limb, and so pruned as to fill up the vacant space in the centre of the tree.

These water sprouts usually grow very vigorously the first year. A growth of three or four feet is not unusual. The spring of the second year, the new growth that best suited the purpose of filling the vacant space, should be selected, and all others cut off close to the main limb. One year old shoots left should be pruned back to within four or five inches from the main limb. This would induce nearly all the buds upon this remaining stub to grow. Three or four of these would be selected and the remainder pinched out soon after growth began. By the end of the season the shoots left would usually make a growth, not as vigorous as the growth of the preceding year but still more vigorous than they would from the older branches. These again should be cut the following spring to the extent of one-half their growth. It is quite possible that, after this treatment, fruit spurs will form on these side shoots, the end buds developing into wood growth. This wood growth should again be thinned to two or more shoots as the case may require, and cut back slightly the third season. The third season fruit spurs will develop on the one year old wood, and after this very little cutting back will be needed.

If the original sprouts have been judiciously selected, you have three years af-

terwards the centre of the tree fairly well filled with bearing wood. During this time the outside of the tree has been carefully thinned, but some bearing wood would have developed, and if this is pruned to correspond with the new wood induced in the centre of the tree, you have now a good bearing tree ready to renew its youth, the younger wood growing from the centre taking the place of the older wood towards the outside.

BAD NURSERY STOCK

In the young orchards it can be seen very distinctly that the farmers are not well informed in the quality of the stock. In one case I saw an orchard of twelve or fifteen acres in extent planted with trees which must have been stunted stock, six or seven years old, severely cut back in the nursery, and making a very poor showing after being planted a year in their permanent position in the orchard.

(Continued on Page 179)

Raspberries in Dry Seasons

During seasons of drought, fruit trees and bushes often fail to give satisfactory results. To know how to care for them properly at such times would mean money in the pockets of the growers. The past two seasons were particularly dry in some of the fruit sections of the state of Michigan. During a visit to Toronto, Mr. A. W. Twiner of Sagatuck, Mich., called at the offices of THE CANADIAN HORTICULTURIST and told how he has grown raspberries successfully during dry seasons when others failed.

He grows his plants three feet apart in rows that are six feet apart. Instead of allowing the canes to grow in clumps, he throws the entire energy of the clump into one, two or three plants, usually only one. These are grown in tree form, by pinching back in summer to three feet high to induce the formation of lateral branches. For the following season, the strongest shoots are allowed to grow.

Early in spring, the soil is plowed about three inches deep toward the plants. Cultivation between the rows is carried on all season. The following spring, the earth is hoed away from the plants and cultivation is continued so as to maintain a dust mulch for the conservation of soil moisture. This system is repeated regularly.

One "Boy's Delight" apple tree given for one new subscription to THE CANADIAN HORTICULTURIST. See our premium offer.

Much of the small, imperfect, light-colored or wormy fruit comes from trees not growing under favorable conditions.

Canadian Plums

W. T. Macoun, Ottawa

Only a few domestic plum seedlings have come into prominence in Canada for the same reason mainly as with the pear, the tenderness of the fruit buds limiting the area also in which they may be grown successfully. Two Canadian varieties which are sold by nurserymen are the Glass and Kingston, the following descriptions of which are taken from "The Fruits of Ontario":

KINGSTON

"Kingston is a valuable market variety. Origin, province of Ontario; tree, vigorous and productive; fruit, medium to large, oval; color, dark purple, with thin blue bloom; stem, slender, about five-eighths of an inch long, inserted in a small, deep cavity; suture, shallow; apex, a small point; flesh, yellowish-green; flavor, tart; quality, cooking, good; season, early September."

GLASS SEEDLING

"Glass is a commercial variety resembling Quackenboss. Origin, with Alexander Glass, at Guelph, Ont.; tree, hardy, vigorous, upright, foliage peculiar dark green; productive; class, *P. domestica*; fruit, large, round oval, irregular at apex; suture, distinct; apex, depressed; stem, three-quarters to one inch long; color, dark purple with thin blue bloom and white dots; skin, thick, firm; flesh, free from pit; color, greenish-yellow; texture, juicy; flavor, sweet and agreeable; quality, dessert fair, cooking good; value, market good; season, September."

NEW PLUMS IN QUEBEC

On the island of Montreal in the province of Quebec, where domestic plums probably have been grown for nearly three centuries, many seedlings have originated, some of which are distinctly hardier in fruit bud than those usually listed. Three of the best of these are Raynes, Mount Royal, and Lunn. Descriptions of these plums will be published in the complete list.

Work is being carried on at the Central Experimental Farm in the improvement of the *nigra* and *Americana* plums and already several seedlings have been named.

In my bush fruit patch, I remove the old wood in fall after the fruit is picked. The tops also are cut off. This practice kills the insects on the old wood. By cutting the tops off the new wood, breaking is lessened.—Jos. E. Culp, Jordan, Ont.

The Salome apple should be planted more extensively. It is a splendid keeper and retains its flavor longer than most varieties. The tree is a vigorous grower and produces good crops.—D. J. Gibson, Newcastle, Ont.

The Summer Care of Vineyards

G. H. Carpenter, Fruitland, Ontario

A VINEYARD is like everything else—if you want to get the best off it, you must work for it. And during the summer is the time that most of that work must be applied, if the best results are to be looked for and obtained.



Grape Vines Well Kept and Cared For

The area planted to grapes is being increased every year. The market for this class of fruit is large, yet the time is fast approaching when only the best class of fruit will find a ready and profitable sale. Grapes will be subjected to grade the same as other classes of fruit. As quality depends as much upon summer care of vineyards as upon the training of the vines, the grower who is lax in the matter of summer cultivation will find that his vineyard is a rather poor asset. He who gives his vineyard proper care during the summer and at all times, however, will find that he has in his grapes a good source of income.

KEEP DOWN WEEDS

The great point in summer cultivation is to keep down everything but the grape vines. A soil that is supporting a vineyard does not want to be sapped of its nutriment by a crop of weeds. Cultivation should be commenced early in the spring when the ground is still moist from the spring rains.

The common custom in well worked vineyards is to plow away from the vines as soon as the soil is sufficiently dry to work well. If pressure of other work prevents plowing at this time, the land should be stirred up with a disk-harrow or spring toothed cultivator. This is most important, especially on land that is liable to bake in dry weather. Where the ground is kept stirred early in the spring, a mulch is created, the moisture is retained and the land can be plowed at any time, if deemed necessary to clean properly, no matter how little rain may have fallen later in the season. For plowing, we use a two-furrowed gang

plow and, by using an extension, can work close to the rows, leaving only a narrow strip to clean out with the grape hoe and hand hoes.

USE OF GRAPE HOE

When land is fairly clean, plowing can be dispensed with and the work greatly facilitated by using the cultivator in the middle of the rows, plowing one furrow away from the vine and finishing with the grape hoe. This method on clean land gives as good results as though the whole thing were plowed. After the grape hoe has done its work a man should go along with a hoe, and clean away around the vines, at the same time loosening up the soil. During the summer and until the crop is ready to remove, the soil should be stirred frequently, as with any crop, to destroy all germinating weeds and to conserve moisture. Immediately after the removal of the crop, the soil should be worked up to the vines either with a plow or disk harrow reversed.

COVER CROPS

Cover crops are sometimes grown in vineyards, though the common practice here is clean cultivation. When cover crops are grown they should be sown in August before the crop is removed. Any of the clovers, vetch or rye, are commonly used for such a purpose. Equally good results can be secured by mulching around the vines with barnyard manure applied in the fall. Wood ashes too gives good results.

SUMMER PRUNING

All sprouts should be kept down. These can be pinched off from time to time when small with very little trouble. Summer pruning also is advocated by some growers. This consists in removing all non-bearing wood, the object being to utilize all the nourishment brought up by the plants for the production of fruit. We have not followed this latter practice but propose trying it this year in an experimental way. The principle seems all right and the operation should prove beneficial, provided it is not done to the extreme.

SPRAYING

Spraying has now become an essential point in the management of a vineyard. A few years ago, we could produce a good crop of grapes without the help of the spray pump. Now, however, we meet with a class of insects with a special appetite for grapes and if we would have a crop, we must first put these out of the way. Grapes should be sprayed at least twice and, better, three times during the season. The Bordeaux mixture, the com-

position of which has been given many times in the columns of THE CANADIAN HORTICULTURIST, is the mixture commonly used. The first application is made before the blossoms appear, the second after the blossoms are done and the third two or three weeks later. Clean cultivation is important but spraying is equally essential. Without it a grower is taking a long chance on getting a crop.

Orchard Notes

There is no over-production of the best.

Never pack overripe fruit for shipment.

Peach trees require good cultivation to do well.

Midsummer pruning heals wounds rapidly and well.

Rotten chips and sawdust make a good fertilizer for the orchard.

Bud with new varieties the unproductive trees and make most of the orchard.

Grape-growers are requested to contribute articles and letters on the care of vineyards for publication in THE CANADIAN HORTICULTURIST.

Apples in Parry Sound

The possibilities of apple growing are not confined to a narrow strip in Southern Ontario. Parry Sound can hardly claim to be in the banana belt, but the accompanying illustration will show that if the varieties are judiciously chosen, apples in abundance may be grown in the Parry Sound district. The Yellow Transparent, Duchess, Lowland Rasp-



A Successful Northern Orchard

berry and Wealthy will be found hardy, and the McIntosh Red, Milwaukee and Baxter, for later fruit, can be grown to perfection in any sections.

The illustration shows apple trees growing in orchard of Mr. Geo. Wilkinson. Since blooming, the trees set too many apples and Mr. Wilkinson is thinning them out.

Lawn and Garden Hints for August

THE garden hose, or other means of watering is likely to be called into frequent use this month. All amateur gardeners do not understand just how to apply water to flower beds. Do not stand to one side and throw the



A Study in Black and White

water at the plants. If you are using a hose, sprinkle with care, and do not allow the water to fall with force enough to wash away the soil. If you have to bring water from a well or pump, use a watering can and apply carefully. The best time to water at this season is in the evening after the sun has set. Give a good soaking while you are about it.

If you want the season of bloom of your flowers prolonged, carefully nip all seed pods and leaves that are drying up. This is especially true of nasturtiums, sweet peas, gaillardias and larkspurs.

Maintain some kind of mulch on the soil. It may be of grass, leaves or other litter, or a dust mulch made by stirring the soil. Roses and the general run of perennial plants are especially helped by a mulch at this season.

To secure pansies that will produce flowers very early the following spring, the seed should be sown about the third week in August. The plants will winter well in a cold frame. Old pansy beds may be renewed by cutting off the young shoots around the base, many of which will already be supplied with roots. Plant them in rather sandy soil in a shady place. Keep them well sprinkled, and they will soon root and make vigorous plants to put in winter quarters ready for next spring.

Plant lily bulbs for next summer. Hardy lilies may be removed or transplanted if necessary. Lily of the valley also can be transplanted late in August or early in September.

Buy some raffia for tying plants to

stakes. It is worth more than string and rope for tying things in a hurry, and making them stay tied.

Gladioli should be staked if they are liable to be broken down by wind storms or rains. Better do this now.

Flowering asters should be well watered. Should rust attack the plants badly, spray with ammoniacal carbonate of copper.

To revive cut flowers, put them in warm salt water to which has been added a few drops of sulphate of ammonia.

Flowers for exhibition purposes should be cut early in the morning on the day of the show. Place them in a pail or jug of water immediately and put in a cool place until time of exhibiting.

The following annuals produce their flowers quickly after sowing and probably might give some flowers before frost if sown in August, and the weather conditions are favorable: Nasturtium, balsam, marigold, Shirley poppy, gypsophila, mignonette, larkspur, calliopsis, candytuff, calendula, sweet alyssum, and for climbers, scarlet runners and convolvulus.

Among the perennials that may be sown this month, and transplanted to the border late in the fall or early next spring to furnish bloom for next season, are hollyhock, delphinium, aquilegia, campanula, coreopsis, gaillardia and papaver. If transplanted in fall, protect against severe freezing winter.

Dahlias are heavy feeders. Fertilize the soil once a week while the buds are swelling. For insect pests, there is noth-

ing better than a solution of Paris green, sprayed upon the under side of the leaves. For cut-worms use a tablespoonful of air-slaked lime spread about the stalk of each plant.

Have you a photograph of a rose bush or of a rose garden? If so, please send it to THE CANADIAN HORTICULTURIST for reproduction.

FLOWERS INDOORS

Strike cuttings of coleus, heliotrope, and geraniums if young plants are wanted to keep for winter. Pot begonias, cyclamen and primroses for winter flowering.

For early freesias, plant a few bulbs late in August. Use plenty of drainage. Place six or eight bulbs in a five-inch pot. Place them in a shady place, and give water sparingly until growth begins to show. In about four weeks they can be brought to the light.

Plant some Roman hyacinths and paper-white narcissi for bloom at Christmas. After potting the bulbs, water once and put them in a frame or in the cellar. Be sure that the place is dark. If in a cold frame, cover with coal ashes. In about six weeks they can be brought into the light.

Cut back the outside petunias to within a few inches of the roots so as to have plants for winter bloom. Two weeks later, put them into small-sized pots.

Bermuda lilies for Christmas may be had by planting early this month. Put in clean pots, use plenty of drainage, and place outside on a bed of ashes to avoid



Sweet Rocket—*Hesperis Matronalis*—Growing Under and Around an Old Apple Tree
On grounds of Mr. A. Alexander, Hamilton, Ont.

the entrance of worms. Prevent too rapid drying-out by covering with hay or straw.

THE KITCHEN GARDEN

Continue cultivating the soil in the vegetable garden. Add water frequently and stir the surface soil as soon afterwards as it can be worked.

String beans, early maturing peas, flat early turnips, radishes and other quick-growing vegetables may yet be sown.

Spinach may be sown in fall for early spring use. Sow the seed before the middle of September. On the approach of winter, protect the plants with a covering of straw. Victoria and Flanders are the best varieties. If sown in August it will come in useful to pick during late fall, when almost all other green vegetables, except cabbage, are gone.

Plant some beets for autumn greens. The young leaves will be relished. If sown now, the roots will be large enough for table use.

The early crop of celery will be nearing maturity. Blanch the stalks with earth or boards.

Have you ever grown corn salad? It is much appreciated in March and April. Sow the seed about the first of September, in drills half an inch deep and six inches apart, in rich soil. Sow thinly. Protect the plants with clean straw when cold weather comes. The plants are cut for salads. The seed may be sown also in early spring. The plants are ready for use in six or eight weeks.

Another little known garden plant is chervil. It is a rich herb, cultivated and used like parsley. Sow the seed in early fall or in spring. If sown in fall, the seeds will remain dormant until spring, but will sprout more uniformly than those fall sown.

Sow seeds of lettuce for use at Thanksgiving. Start them outdoors, and later transplant to a cold frame.

AMONG THE FRUITS

If you have some fruit trees that are not bearing the varieties of fruits that you want, bud them with the desired kinds. A number of different varieties may be grown on one tree.

For best flavor in tree fruits, allow them to remain on the trees until thoroughly ripened. The pear is about the only fruit that improves when picked before maturity.

To cause the raspberry canes to throw out a number of branches, pinch them back to about three and a half feet from the ground. This is the only summer pruning that the bramble fruits should receive.

Have you read our premium offer? Send us the subscription of a friend, and secure one "Boy's Delight" apple tree for fall planting.

Rhododendron Veitchii

J. Walsh, Montreal

The accompanying cut represents a specimen plant of *Rhododendron Veitchii*. It is one of the finest cool greenhouse plants in cultivation, al-



Rhododendron Veitchii

though rather a slow grower. It is a hybrid raised by Veitch & Son, of London, England. The plant illustrated is about eighteen years old.

The cultivation of this plant is not difficult. The following compost suits: Equal parts of peat and leaf mould, with sand, and a little fresh potting soil. The best summer treatment is to plunge outside in coal ashes, in a partly shaded place, such as suits azaleas. Care must be taken to have the plant in the house before any danger of frost comes. It is very sensitive to cold or light frost.

If treated in this way the plant will give good satisfaction during the winter months. The perfume of its beautiful white flowers will scent the whole greenhouse.

Summer Care of Lawns

An important factor in the successful treatment of lawns is watering. Constant moisture is essential in the maintenance of a velvety turf condition. If the lawn is properly made, there need be no failure if the owner is situated where there is a good water supply. The water may be applied at any time, but it is better to do it at night or early morning.

When watering a lawn, give it a good soaking. Shift the hose about so that all parts will be reached. Unless watering can be done thoroughly and regularly, it is better not to do it at all.

Mow the lawn frequently as it increases the body of the sward. A lawn

should be cut about once a week, with longer intervals during the hottest part of the summer. If the grass is cut often, the clippings may be left on the lawn as they soon will shrivel up and disappear.

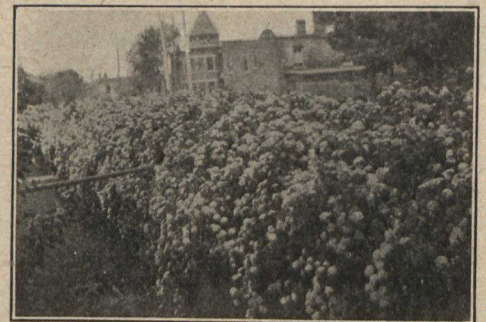
In order that trees and shrubs will not suffer by growing sod, circles should be kept around them without grass and the surface soil within same should be kept loose with the hoe. These circles make it possible, also, to keep the grass cut by means of the mower instead of having to use hand shears as is the case when the grass grows close up to the trunks.

If you want a first-class top-dressing for the lawn this fall, begin the preparation of same about the last of August. Secure equal parts of good, clean soil, and well-rotted stable manure. Turn occasionally until October and then spread on the lawn.

Spiraea Van Houttei

One of the most beautiful of our early-blooming shrubs is *Spiraea Van Houttei*. Its free-flowering habit gives much pleasure in June. While it responds to individual cultivation, it can be used in any place and in any soil. Its hardiness makes it particularly valuable. The flowers are pure white and are borne profusely in small, compact clusters on pendulous branches. Even when out of bloom, its drooping habit and its foliage make it attractive. Whether grown as a hedge, as an individual specimen on the lawn or massed in clumps, it is equally effective.

The beautiful hedge illustrated is to be found on the grounds of Mr. Richard Devlin of Ottawa. This hedge is composed of fifty plants set out in 1893. The second year after planting, they blossomed nicely. It has been trimmed at no regular time. In 1906, the owner



A *Spiraea Van Houttei* Hedge

cut the whole hedge down to two feet in height and now it has solid trunks to grow on and is exceedingly attractive.

Articles on amateur gardening will be welcomed for publication by THE CANADIAN HORTICULTURIST.

The Rose Outdoors and its Culture*

C. Craig, Ottawa

THERE is no other flower that grows in the garden that can compare with the fresh, sweet perfume of the rose. The rose is "Queen of the Garden." Everybody loves the rose, and many people try to grow it; but how many succeed?—only a small percentage, I fear. Yet there is no great difficulty in successfully growing roses if you give the right conditions and the necessary attention.

SOIL

In the cultivation of the rose the first and most important consideration is good soil. I have found moderately heavy loam to be the best, and if success is

sure, with another layer of manure on that and finishing No. 1 trench with the soil from No. 2. I have seen large rose gardens trenched three feet deep with four layers of manure; but one must be governed by the soil he is working with. The object of this trenching is to provide nourishment wherever the roots may go; most roses are strong feeders.

To those who cannot always secure farmyard manure I would say that a good substitute is rough bone meal well worked into the soil. Deep cultivation is also a preventive against mildew and other fungous troubles.

When planting, by no means let the

well. Let plants get a good start, then apply the kindness.

FERTILIZERS

As a stimulant I would recommend sulphate of ammonia or Albert's manure, about one ounce to a gallon of water.

WATERING

Another important point in successful rose culture is the use of the hose. I fully endorse the remarks of one of our most successful rose growers, that cold water applied from a hose pipe with force is the best means of ridding your roses of insects, especially the red spider. If syringing and watering is carried out faithfully morning and evening, there will be little trouble from insects. Someone may ask, what about mildew if you water at night? If the plants have been properly cared for as to deep cultivation, and so forth, they will be in a state of health that mildew will hardly attack them. After a dry, parching day as we very often get, the plants seem to glory in a nightly bath.

In carrying out the foregoing the grower must study his plants. If they are inclined to be weak they will need careful handling and attention as to manuring or once more his kindness may prove disastrous. The object must be to build up a strong constitution in the plants, not a great amount of soft, rank growth, but good, hard, solid wood that will stand hardships, for the rose in Canada has many hardships to go through.

PRUNING

Pruning should be done immediately on the first sign of the buds swelling. It is difficult to lay down any hard and fast rule for pruning rose bushes, but speaking generally, I would say take out all weak wood and cut the preceding year's growth back to fifteen or eighteen inches above the soil. The grower must be observant as to the habit and vigor of his plants.

VARIETIES TO PLANT

In the following lists, I include varieties which I know are hardy. While there are some newer varieties which may be preferable, those I mention will give good satisfaction and encourage the amateur to enlarge his collection.

HYBRID PERPETUALS

Crimson—Alfred Colomb, Duke of Edinburgh, General Jacqueminot, Prince Camille de Rochan; red—Ulrich Brunner, General Washington, Jubilee; pink—Magna Charta, Paul Neyron, Mrs. John Laing, Mde. Gabrielle Luizet, Bar-



An Amateur's Water Garden—See Next Page

to follow, the soil must be deeply cultivated.

TRENCHING AND MANURING

The ground should be trenched at least eighteen inches or two feet, all depending on the subsoil. If it is possible to go two feet, or even three feet, without striking gravel or sand or other poor quality of soil, it will be all the better; for roses, especially hybrid perpetuals, are very deep rooting.

First take out your first trench eighteen inches to two feet wide, wheeling all that comes out of it to where you intend finishing the operation. If trenching eighteen inches to two feet, put a layer of manure in the bottom, then put the top spit of the top of the man-

roots come in contact with the manure. The young roots when beginning to grow are unable to assimilate the rank food and consequently die. It may not seem necessary to tell this, but all too frequently inattention to whether the roots come in contact with the manure or not, is the cause of failure to grow roses. I had an example of this last spring, when I sold some rose plants to a certain gentleman. He came to me a few weeks later and said that his roses were dead. In answer to my questions as to his mode of planting he said, "I gave them every chance and I filled the holes full of manure before I planted the roses." My remark was, "You killed the roses with kindness." This mistake often happens with the beginner, not only with roses, but with other plants as

*A portion of a paper read at a meeting of the Ottawa Horticultural Society in June.

ness Rothschild, Mrs. Sharman, Crawford; white—Frau Karl Druschki, Margaret Dickson, Mrs. G. Bruant.

TEAS

Maman Cochet, pink and white; Marie Van Houtte, yellow; The Bride, white; Anna Oliver and Edith Clifford.

HYBRID TEAS

This is the finest class of rose grown, but a little more tender than the hybrid perpetuals. The following varieties can be grown successfully in this locality:

Bessie Brown, creamy white; Mde. Caroline Testout, salmon pink; Mildred Grant, white; Lady Battersea and La France, white and pink; Killarney, suffused pink; and Lady Ashton.

POLYANTHA CLIMBING ROSES

Crimson Rambler, bright crimson; White Rambler; Dorothy Perkins, shell pink; Lady, deep rose.

POLYANTHA DWARF

Baby Rambler, Mignonette, Perlee, The Pet or Red Pet.

Sedum Spectabile

Wm. Hunt, Ontario Agricultural College, Guelph

THIS showy species of the "Live-for-Ever" family of plants is not seen as often in the hardy flower border as its attractive beauty and usefulness warrants. Coming into flower

of a weaker growth and less floriferous than the specimen shown in the cut. This fact and, as it is well known that most of the "Live for Ever" or "Stone Crop" family of plants are suitable for



Sedum Spectabile Roseum—An Excellent Plant for the Hardy Flower Border

as it does usually in September when there are so few of the occupants of the perennial border in flower—except the yellow autumn flowers—the beautiful lavender pink flowers of the variety shown in the cut are most conspicuous and pleasing.

The variety shown is known as *Sedum spectabile roseum*, and was planted in the college borders three years ago, having stayed there each winter without any protection save the ordinary covering of snow. Contrary to general supposition that it flourishes best in rather stiff soil, this specimen is planted on a piece of high, light soil in the border, the subsoil being well drained by a quantity of old mortar rubble.

Another plant that I have planted on lower, moister ground does not flower nearly as well as the one noted, being

rockeries and dry positions, leads me to think that a moist situation or a stiff soil should not be recommended for this plant.

It is herbaceous in character, dying down to the ground in winter, hence could be easily protected if desired. Its honey-scented flowers are very attractive to bees and butterflies and other winged insects, as will be seen by the cut. The plant grows to about two feet in height.

An Amateur's Water Garden

T. W. Armitage, Toronto.

The illustration on page 168 shows an amateur's first attempt at a water garden. In constructing the pond which is about fifteen feet long by eight feet broad, the earth was shelved out to a depth in the centre of about a foot, and three half barrels sunk in a line in the

middle so that the tops would come just to the bottom of this basin, and the surface of the basin was cemented to the level of the lawn. The barrels were half filled with very rich soil and were then ready for planting.

In each of the end barrels we put a water-lily, *Nymphaea Gladstoniana* in one, and *Nymphaea Marliacea* var. *rosea* in the other. In the centre barrel we planted rushes and a giant arrowhead (*Sigittaria* sp.) and then partly filled the basin with water. This done, we placed a water hyacinth and a water poppy on the surface and, as the lilies grew, increased the supply of water until the basin was full. The water is supplied by means of the garden hose. No drainage is required, the sun causing considerable evaporation. The water garden thrives without any other attention and is a source of unending interest to ourselves and our friends.

Potash as a Fertilizer

F. T. Shutt, M.A., Chemist, Dominion Experimental Farms.

Wood ashes, long the only form of mineral fertilizer used in this country and certainly a form of potash that cannot be excelled, are fast disappearing from the market. Wherever obtainable in the unleached condition, at reasonable prices, the market gardener and orchardist should never hesitate to purchase them. Of good quality they will contain between five to six per cent. of potash and two to three per cent. of phosphoric acid. They also possess from twenty to thirty per cent. of lime, a very useful amendment on many soils. For vegetables and small fruits from one half to one ton per acre may be used.

Sulphate of potash, muriate of potash and kainit are all used in the compounding of fertilizers. The two first contain in the neighborhood of fifty per cent. of potash, the latter, kainit, about twelve and one half per cent. of potash. Sulphate of potash is more desirable than the other two named for certain classes of crops—e.g., potatoes and tobacco—but for the majority of garden crops there is no objection to the muriate or kainit. The one source of these potash compounds are the mines at Stassfurt, Germany. Of the sulphate and muriate, the usual dressing per acre is from 100 to 150 pounds; of kainit, from 400 to 600 pounds.

This, and what has been published in the last two issues of THE CANADIAN HORTICULTURIST, is a very hasty and imperfect account of these fertilizer ingredients, but to go further into details, interesting as they are, is now impossible, for we must say something of the requirements of the various market garden crops. This question will be discussed in the September issue.

Greenhouse Construction for Vegetable Growers

Robt. W. King, Toronto

WHEN contemplating the erection of a glass house for vegetable growing, the first question that broadly presents itself is "what is the best kind of a house to build?"

A very good article on greenhouse construction for vegetable growers by J. D. Fraser, Leamington, Ont., is published in the annual report for 1907 of the Ontario Vegetable Growers' Association. From his experience, the following pointers may be gleaned:

1. Greenhouses should be sheltered from the wind.
2. In no case is it advisable, either for defence or protection, to exclude sunlight. "Admit," he says, "every possible ray of sunlight."
3. Discard wood as much as possible.
4. For supports, use gas pipe set in cement.
5. For sash bars and other necessary wood work, cypress is preferred and must be painted.

6. Vegetables, for proper finishing, require a free circulation of air and lots of ventilation.

7. There is not sufficient air in very low houses.

8. Mr. Fraser builds houses with fourteen feet spans, connected in blocks up to 100 feet wide; but for a house only thirty-five to forty feet wide, he prefers a single span.

9. Large houses are easiest to heat.

10. Don't give a man a contract to put in pipes unless you are sure he knows how to do it. "The ordinary plumber doesn't know anything about heating a greenhouse."

As regards nine of the ten pointers quoted from Mr. Fraser's paper, it is needless to refer to any authority, either in support or contradiction. The only one not accepted or that called forth any question from the numerous experts assembled was No. 8 which refers to the width and height of the houses. And this has been just as much a question with florists with whom we have associated for the last fifteen or more years, as it is with the vegetable men to-day.

LIGHT AND VENTILATION

There are some plants and flowers that like shade and others that thrive better in the sun, but they all want light and air. As the art is not to succeed under glass in the summer when the sunshine and light is in plenty, so much as to produce during the dark days of winter when prices are up and the sun is down the nearest approach to summer out-of-door conditions, we want it in our power to admit every possible ray of light, even if we have to do some shading in the summer months. As regards the construction of the houses for ventilation, as much as is required should be secured for the summer months with as little increase as possible to the shadow of the sash during the darker days in winter.

SINGLE VS. CONNECTED HOUSES

Regarding the width of houses, the question of the day seems mainly to be between blocks of comparatively narrow houses built high and single separate houses of widths ranging from forty to sixty feet. For commercial purposes, the low, narrow, *single* house has long since become one of the mistakes of the past.

The advantages claimed for separate houses are: (1) The additional light on the first bed facing the south, the houses being placed a good distance apart; (2) the ability to obtain side ventilation; (3) in the colder climates the avoiding of the

piling-up of snow in the valleys, especially where the colder temperatures are required to be maintained.

The disadvantages are the extra expenses in a large plant of houses, of the said outside walls and side ventilating, together with the large extra cost per square foot of growing surface for real estate, fuel and boiler plant to heat the same. This has led to the present idea (by advocates of separate houses) of building them extra wide until in a case of a house 150 feet wide by 500 feet long, a whole block is enclosed in a single span, but in such cases, there is no more advantage as regards side light than would be obtained in a block of narrower houses of the same size.

In such houses, other objections materialize, as, for instance, the large extra amount of end glass to install, wind braces and heat in the winter. Another objection is the limited amount of ridge ventilation practical to be installed, also

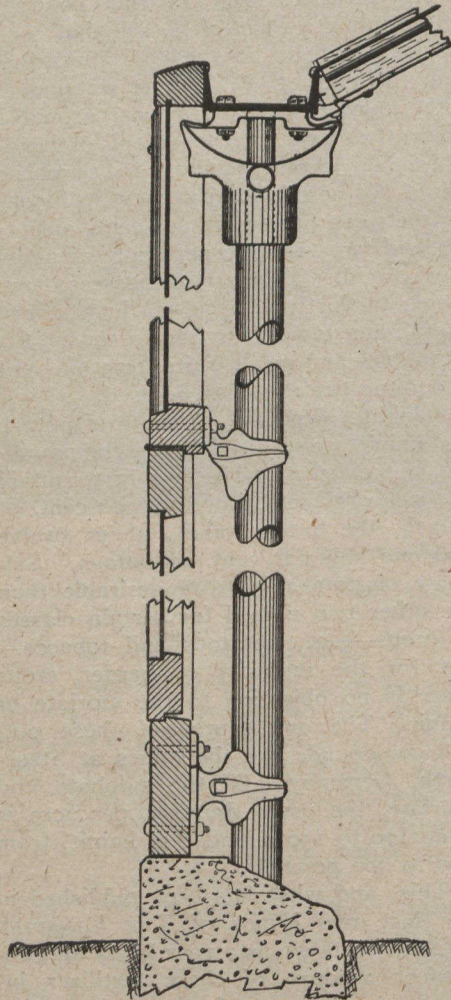


Fig. 1. Sash Being Used for Side Ventilation

Where a large amount of side ventilation is required, side sash can be hinged at the eaves, or where the eaves are too high a header may be run along the sides of the house, and the sash hinged to it as is shown in the illustration. The header is carried by special brackets bolted to the posts.

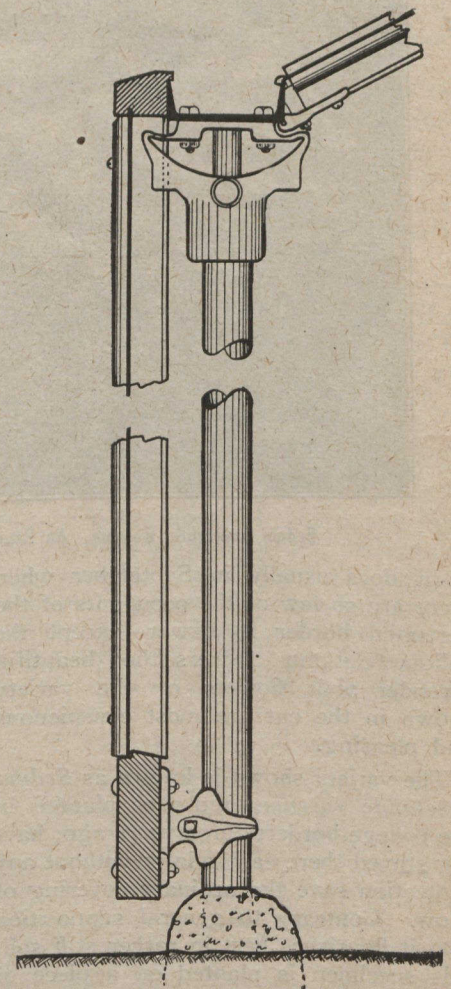
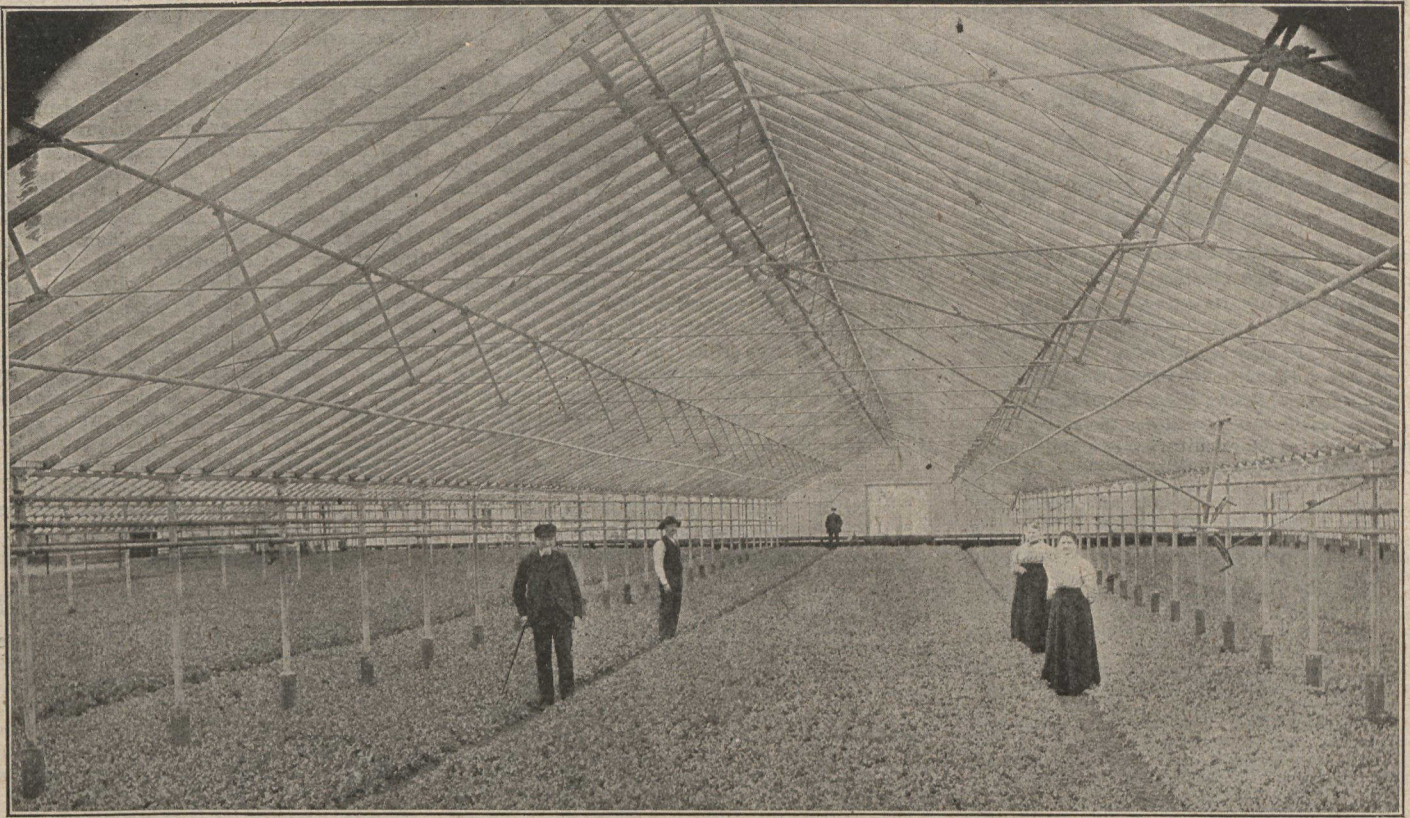


Fig. 2. Method of Ventilation at the Ground

The glass over the wall is intended to reach to within one foot of the ground. The wall is formed by setting a two by six plank edgewise. The plank is carried by special brackets bolted to the posts of the house. An opening is left at ground for ventilator which can be banked up in cold weather.



A Large Vegetable Growing Plant in Pennsylvania, Erected by King Construction Co.

Note that heating pipes are sufficiently high to permit the ground being plowed and cultivated with a horse. The large door at the end of each house will allow a team and waggon to enter with manure, also machinery for cultivating and for other purposes.

the difficulty of getting at the glass for repairs. Nevertheless, a house 150 feet wide by 500 feet long has been built and is claimed to be a commercial success. The popular question at present as to size of house for a man to start with, allow for extension as his business grows, seems to hinge around connected houses of twenty-one feet, eight and a half inches, using twelve foot sash bars, lumber length, and twenty-five feet, two and a quarter inch, using fourteen foot bars, or, where land is sufficiently plentiful, separate houses of not less than forty to sixty feet in width.

In the connected houses, continuous single ventilation is usually installed but if extra ventilation is required, then ventilation each side of ridge can be used and the King construction ventilator is such that the extra side can be added afterwards if required, using the same glass that was in the roof without cutting.

In these houses, also, the lightest sash bar, No. 6, can be used in the roof. Owing to the extra light-admitting qualities of this bar, the advantage gained by its use will out-weigh many objections that can be raised against it. The number of valley gutters required gives easy access to the roof for repairs and when of iron, as they should be, present sufficient surface for drainage and the melting of snow with reasonable rapidity. The nar-

rower span, twenty-one feet, eight and a half inches, is recommended where weather conditions are the more severe. Otherwise, the standard twenty-five feet spans have met with much success and are cheaper to install.

For the separate houses averaging fifty feet span, ventilation both sides of the ridge should be used since as regards amount, this is only equal to single ventilation in the block previously referred to. If more ventilation is required, however, side ventilation can be resorted to. It is held by growers, however, that side ventilation in wide houses, being only local, is a poor substitute for proper or sufficient ventilation at ridge.

In resorting to side ventilation in order to create a current of air (which, however, is looked upon by some as of the nature of a draft and injurious in many cases), as Mr. Fraser remarks, the opening should be low down, thus drawing the coolest air into the house. In working with the growers in the Great Tron-dequoit vegetable growing district of the United States, a cut of one of whose houses is here shown, the King Construction Co. has met some of the demands for side ventilation, by the plans shown in Figs. 1 and 2, which we explain as follows: The glass in the side of a vegetable house should reach within one foot of the ground, where weather conditions will admit, but in this country

where snow is plentiful and liable to bank up against the walls, two feet or in an extra wide house, even more dead wall may be necessary.

In some cases, in the district referred to, an opening is left under the framing of the sash (See Fig. 1) which is banked up in the winter. In other cases, side sashes are hinged to the eve, or where eves are too high, a header is run along the side of the house as in Fig. 2, to which the sash is hinged.

(Continued on Page 173)

About Tomatoes

The illustration on our front cover represents the tomato patch of Mr. Jas. A. Woods, of Stratford, Ont. The variety staked is Livingstone's Globe and the others, Livingstone's Favorite. The photograph was taken two years ago on August 2nd. According to Mr. Wood, the Erliana and varieties of that type are not successful in his locality, either in crop or quality.

When writing of the location, Mr. Wood said: "The elevation here is about 1,200 feet above sea level, or say 950 feet above Lake Ontario. The June frost is our chief dread. Scientifically, it may have nothing to do with it, but practically this frost is co-incident with the full moon."

ed all and every right which he had, so that even if the nurseryman could be reached by law, the buyer of the goods has practically put himself out of court by signing such a contract. The agent, who sold the stock, was not known in the neighborhood in which he was doing business, had no property in the country so far as was known and, therefore, was wholly irresponsible. Thus, it will be seen, that the customer has no chance of redress, should occasion require, either from the nursery firm or its agent. This contract was used by the Northwestern Nursery Co., Fife Lake, Mich.

We draw attention to this extraordinary contract with the purpose of warning our fruit growers and farmers against signing contracts and agreements without knowing exactly what they are signing. It is indiscreet, also, to deal with unknown agents, supposed to represent foreign nurseries, whether the nursery firm is well-known or not.

PURCHASE BARRELS EARLY

We wish to emphasize still further the wisdom of buying apple barrels early in the season. Coopers will sell much cheaper at the present time, and buyers of apples will buy the stock much more readily, if the owners have the barrels on hand. Indeed, this is very often an inducement by which the latter can get an advance of half the price of the barrels. Present prospects indicate that there will be a fairly large export trade this year, and barrels are sure to cost more after September than before.

There is no reason, also, why every grower should not estimate the crop which he is likely to have within the limit of twenty-five per cent., over or under. If, then, he orders for what he thinks is seventy-five per cent. of his crop, at the present time, in case his estimate should be too low, he will not have to buy more than twenty-five per cent. at higher prices. If his estimate should be higher, he will have, at most, only twenty-five per cent. to carry over, and, with proper care, will be out only his interest on a small sum for this. Think about this, and buy your barrels now.

Changes in Prize List

Several important changes have been made in the fruit prize list of the Canadian National Exhibition, Toronto. In the sections for plate fruit, the prize list calls for nine specimens on each plate, instead of five, as formerly. These sections cover apples, pears and peaches. In the case of plums, 20 specimens were called for instead of 12, as formerly. Prizes have been added for pyramids of fruit.

The object of the change is to insure a better display of fruit. The management of the exhibition has felt that the display of fruit in the past has not been as attractive as it should have been. It is believed that the prizes offered warrant these changes being made.

The latest report of the Dominion Chemist, Mr. Frank T. Shutt, M. A., Ottawa, contains much information of value to fruit and vegetable growers. The questions treated include the control of moisture in orchard soils, commercial fertilizers, insecticides and fungicides, analyses of apple pomace, and so forth. Write to the Central Experimental Farm for a copy.

Fruit Wrapping Machine

A fruit wrapping machine has been put in operation in California, says a correspondent of the *Country Gentleman*. It requires practically no attention, and entirely automatically wraps the fruit.

The fruit rolls down a slight incline to the operator, turning slowly over as it approaches him and giving him an opportunity to remove defective specimens. The fruit is lifted and placed, stem up, in rubber cups, which carry it to a mechanism operating much as the human hands. It is carried to the paper being cut and printed from the roll. The twist of the paper is made over the stem ends, thus cushioning the stem and preventing puncture injury. If the machine becomes clogged, it is stopped by a clutch operated by electricity. A counting attachment registers the number wrapped.

A Fruit Drying Process

An invention which produces "naturally dried fruit" in an "artificial manner" by a hot air process, has just been tested before experts in California, and proven highly successful. The fruit is laid in trays, constructed of wire netting, and a continuous draught of air heated to 150° is forced through the fruit. Moisture extracted is carried away through an air stack and by control of heat and air, nature is closely imitated.

The new process is claimed to do the work in two weeks' less time than the field drying method, and with the same result. The first tray of fruit, which happened to be prunes, taken out of the dryer was acknowledged by the experts to be exceptional. When weighed to ascertain the shrinkage by the new method compared with the old, an increase of 10 points was noted in favor of the hot air.

Profit in Spraying

The Nebraska Experiment Station has just issued Bulletin No. 106 entitled, "Does it Pay to Spray Nebraska Apple Orchards?" The Bulletin contains much information of value to Canadian fruit growers.

The spraying operations from which the records published in the bulletin were obtained were conducted in two orchards. The purpose of the work was to demonstrate the proper methods of spraying apples; and to determine whether, under the conditions existing in Nebraska, it pays to spray. The materials used were Bordeaux mixture and Paris green in the first three sprayings; and arsenate of lead alone in the last two sprayings.

The cost of spraying in one orchard was about 29 cents per tree for four sprayings, and in the other orchard about 40 cents per tree for five sprayings. Spraying produced a net gain per tree above the cost of spraying of \$1.70 in one orchard, and \$2.56 in the other orchard. It increased the yield of fruit by 1.7 bushels per tree in one orchard, and by 2.1 bushels per tree in the second orchard. The improvement in quality of fruit was also very noticeable. In one orchard the sprayed trees produced about 45 per cent. of No. 1 fruit while the unsprayed trees gave only 4 per cent. of No. 1 fruit. In the other orchard about 62 per cent. of the crop on the sprayed trees was first class fruit while only about 22 per cent. of the crop on unsprayed trees was first grade.

Suggestions are given in regard to methods of preparing and applying spray mixtures, and various arrangements for convenience in the work are pointed out. Five sprayings are recommended, as follows:

First—After the cluster buds open, but before the individual flower buds expand (usually late in April).

Second—Just after the petals fall (usually early in May).

Third—Three weeks after the blossoms fall (usually early in June).

Fourth—Ten weeks after the blossoms fall (commonly late in July.)

Fifth—Three weeks later (commonly about the middle of August).

Marketing Muskmelons

A bulletin has been issued by the Agricultural Experiment Station of Illinois on "Marketing the Muskmelon." This is a summary:

The leading type of muskmelon grown in Illinois for the general market is the Netted Gem, and the matter presented in this bulletin has special reference to the marketing of this type.

Illinois Gem melons intended for shipment to the Chicago market should, as a rule, be picked as soon as the fruit will part readily from the stem, but not before.

Well graded melons sell better than ungraded stock.

The quality of a melon is the primary factor which determines its grade. The relation between the netting of a melon and its quality, makes it possible to grade melons with extreme accuracy as to quality, on the basis of netting.

The full benefit of grading cannot be secured unless methods of packing are employed which will enable the melons to present an attractive appearance upon the market.

Different styles of pack should be adopted for melons of different sizes.

A convenient packing shed facilitates proper grading and packing.

To handle the melon crop properly, the working force must be thoroughly organized, and each person trained for his particular duty.

The most satisfactory way of supplying melons to the smaller cities is to ship directly to one high-class retailer in each city.

The safest plan to follow in shipping melons to a large city market is for the grower to make arrangements with some trustworthy commission firm to handle his entire product.

Landscape Gardening

One of the most notable personages in the art of landscape gardening that ever lived and one whose works and writings have been felt throughout the avenues of experience during the past century was Humphrey Repton of England, 1752-1818. He was a master in the science and practice of landscape architecture. Two of his best works are: "Sketches and Hints on Landscape Gardening" and "The Theory and Practice of Landscape Gardening." These two books have been re-printed and illustrated in modern form and have been issued in one volume under the title of "The Art of Landscape Gardening," edited by John Nolen, A.M., member of the American Society of Landscape Architects, and published by Houghton, Mifflin & Co., of Boston and New York. The price of the volume is \$3 net.

The work is a classic in landscape architecture. Its preparation has been carefully done. Its illustrations are high class. It deserves a place in the libraries of all persons interested in the laying-out and management of grounds.

Greenhouse Construction

(Continued from Page 169)

In locations where, on account of snow, the side glass will have to be kept up two or more feet, a good arrangement would be to use the ordinary King side wall modified by hinging the dead wall below the plate, or otherwise to make it removeable entirely, which can be arranged.

Before the subject of ventilation can be rightly understood, it is necessary to theorize to some extent. To obtain proper ventilation, sufficient openings must be made in the roof to allow the over-heated air to escape, while cooler air, due to its extra weight, will force itself in (even through the same aperture, if necessary) to take the place of the warmer air, whose lightness causes it to ascend. Thus we get the exchange of air necessary to the growth of plants, and which must be brought about, to some extent, even in the dead of winter, at the cost of fuel for heating. But that is not all the question. What is usually complained of may not be so much a lack of change of air, as it is the intense heat of radiation, due to two kinds of glass.

KINDS OF HEAT

There are two kinds of heat to consider. One is heat from convection; the other is heat from radiation. Convected heat is such as travels in currents of air, and can be carried away by a process of ventilation, by which movement of the air is produced. Heat from radiation is that scorching heat due to too close a proximity to some over-heated body in the open air, and by which even the moving of the surrounding air may increase the distress that the heat is causing. Above us, we have the scorching sun playing its heat on the glass. Glass intensifies, rather than obstructs, the heat of radiation. In the lower strata we have the cooler radiation from Mother Earth. Following this theory to its legitimate conclusions, you may find a very good and convincing reason why, if other conditions are not allowed to interfere, or be in themselves deficient, with glass carried high over head, mainly in high houses, they can be made cooler in summer and warmer in winter, than any houses where the glass is low. So that when you are considering the getting rid of the convected heat in the nature of over-heated air that needs to be exchanged, you may as well consider the injurious effect of the heat of radiation from the glass in winter, and move it further away from your growing space.

Build your houses, no matter for what purpose, roomy, to give lots of air, and evenness of ventilation, and reasonably high, to get away from the heat of the glass in summer and the cold in winter. The best way to insure this effect will not be to set up air currents in the houses so much as to obtain as even a distribution of ventilation as possible throughout the whole of the block, not looking so much upon getting one bed in a big house better than the rest, as to get all parts of the house equally good.

SOME CONCLUSIONS

The practical conclusions to be drawn from the theories advanced are, to keep your glass up, that separate houses, with side walls not less than six or seven feet high, should be built wide, say up to 40 to 60 feet, and should have double ventilation at the ridge, side ventilation being left optional with the grower, according to the requirements of the stock raised. The wider houses have an advantage in the

glass being higher on the average than in a narrow house with side walls of equal height, and in having a less area of glass to heat per square foot of growing space. Hence the claim that the larger houses are cooler in the summer, and easiest to heat in the winter.

For blocks of connected houses, a reasonably wide span should be used (up to 25 feet) but to obtain as good results as in the separate houses, due to the elevation of the glass, the side walls should be higher.

Now comes the question: "How high should they be?" Not to be thought a crank on the question of high glass, allow me to say that this question depends largely on the size of the blocks you are going to build. If it is a small block or a single house of a block to start with, you cannot afford high outside walls, because it takes too much fuel and heating plant to heat them, especially with the glass kept low, and on the north as well as the south side, as it should be. But, as the size of the block increases, the proportion of outside walls decreases until it is practically of very little consideration. Then you can well afford to keep your outside walls higher, eventually striking as good an average for height of glass. Or, better, if you like, than is to be obtained in the example of a single house first referred to, an idea that presents itself at this point, is that in building a block of houses, one could start with a standard height of out-

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side wall, and keep raising the gutters towards the centre of the block.

Having quoted from Mr. Fraser's paper as authority for vegetable growing in a district where, he says, they have very little snow, I may, perhaps, be excused for referring to a personal conversation with, perhaps, the largest vegetable grower in Canada down east, where the snow loads are most extreme, and who is, in consequence, afraid of ridge and valley houses, and who has recently returned from a trip through the vegetable-growing districts of the United States. He is in favor of the wide single houses with roof of skeleton construction, so as to admit lots of light, and also of keeping the outside walls up higher than he has previously been accustomed to.

TO EMPTY A HOUSE

In regard to emptying a block of houses at the side rather than at the end, this, apparently, is a hobby of Mr. Fraser's. Mr. Fraser advocates a main walk in the centre, and then narrow footpaths leading from it to the side, driving his team along side of the house when disposing of its load, but since he makes his block of houses 100 feet wide, it does not appear what advantage, as regards the loading, is to be obtained in comparison with loading the team at the end, having, say, a centre walk in each house section, with an outside door at the end, through which a handcart, or barrow, can be run in the

more usual manner, or a horse and cart for that matter.

In regard to the heating of a vegetable house, having due regard to the possibility of introducing horse power in the working of the same, a bank of pipes may be supported on each row of valley posts with a pair of pipes higher up or just under the gutter on either side. Then, there should at least be a corresponding quantity of piping in the centre of each section of house to counteract the current of cold air that otherwise would fall from the roof, and especially from the ventilating sash, when open in winter. This bank of pipe may be put on special supporting uprights, set in the ground, corresponding to the valley and wall, supporting posts so as to be low down near the ground, or, what may be better still, to have this bank of pipes more widely separated, and hung over head, so as to leave the whole space of each span clear for cultivation, and, at the same time, give a more even distribution of the heat.

It is worthy of note that in the North Wales house, over 150 feet wide, after putting a reasonable amount of pipe on the two outside walls, the main body of the piping is hung on the roof, directly under the glass. If this answers at all satisfactory (and it is claimed that it does) then, surely to hang fifty per cent. of the piping only, say, eight or nine feet from the ground, should be all right. One of the arguments in favor of this plan is that, naturally, heat comes from above, and that the thing to avoid in winter is the falling of cold air from the glass by compelling it to first pass the heating pipes. If this plan is tried, it will be well to keep the pipes pretty well up, and not immediately over the walks, as a heating pipe too near the heads of the workmen is liable to cause some distress in the way of headaches.

Ringling Herbaceous Plants

"Ringling" is a practice sometimes employed to apparent advantage in vineyards, as by it the bunches of grapes are in some cases made larger and earlier. It seemed feasible to apply the same practice to herbaceous plants, but test made upon tomatoes and chrysanthemums at the experiment station at Geneva, N.Y., proved the theory fallacious. With neither class of plants was there any gain in yield, increase in size or hastening of maturity; but in nearly every case the ringling was detrimental. So marked was the injurious effect in many instances, especially upon the root systems of the plants, that the experimenters doubt whether the practice is not more injurious than useful, even upon grape vines where the apparent advantage is most evident. These tests are recorded in bulletin No. 288 of the station.

Fertilizing Old Orchards

Bulletin No. 289, issued by the agricultural experiment station at Geneva, N.Y., teaches some important lessons on orchard fertilizing, as follows: That an orchard soil may not need potash, phosphoric acid, nor lime, even though the soil may have been cropped a half century; that in a soil which produces apples of poor color, potash and phosphoric acid may not improve the color; and that the apple does not seem to be as exhaustive of soil fertility as farm crops. The experiment suggests, as well, that to assume without definite knowledge that a tree needs this or that plant food often leads to the waste of fertilizing material; and that in the matter of fertilizing an orchard a fruit grower should experiment for himself, since an orchard's need of fertilizer can be determined only by the behavior of the trees when supplied with the several plant foods.

NOTES FROM THE PROVINCES

Kootenay Valley, B.C.

H. W. Power.

Despite the almost universal prevailing depression in business quarters, the settlement of Kootenay Lake fruit lands is going on merrily, newcomers taking up land at Creston, Crawford Bay, Kootenay Lake, Kaslo, Proctor and Harrop, the two latter points being on the west arm of Kootenay Lake. Burton City and Nakusp, on the Arrow Lakes, and the Howser Lake section are also receiving much attention. Fruitvale, a new settlement, near the boundary line, on the Spokane Falls and Northern Railway, is also thriving. The bulk of the newcomers are English, although a large number are Americans, and former residents of Alberta and Manitoba.

Ten years ago the sole industry in the Kootenay district was mining, but latterly horticulture is coming to the fore in an astonishing manner. The mountain valleys and lake benches have been demonstrated to be wonderfully fertile, strawberries and other small fruits, cherries, plums, pears, apples, peaches and grapes growing to perfection. Irrigation has been found unnecessary, the natural rainfall being sufficient for all needs. An eastern man would probably consider the area of good land limited, but the wonderful productiveness of the soil, due to a combination of climatic and other conditions, atone for this. Six

hundred dollars an acre for improved land is not an uncommon figure. Unimproved lands range all the way from \$50 to \$200 an acre.

Similkameen Valley, B.C.

The chief concern of growers here at present, is the question of transportation. While we have a fairly direct route to the most desirable market—the prairie provinces—it is necessary, in order to reach it, to ship over two roads, the Great Northern and the C. P. R. The Crow's Nest line of the C. P. R. is now building in this direction and will go through the heart of the valley, which will give a splendid direct route to the prairies. Both roads are also extending to the coast. When these lines are completed, our shipping facilities will be ideal.

D. F. Jelly, a prominent and energetic orchardist, has been appointed immigration agent for the Great Northern, and as he is also secretary for the Fruit Growers, is acting on his trips as their agent for looking up markets.

A point that has not yet been taken up here, but should be, is the effect of cottonwood trees on orchards. It is found in the older districts of Washington that these trees harbor insect pests, as might naturally be expected; and in certain parts of

the state the edict has gone forth that they shall all be destroyed. We are a new country here, and, as yet, free from pests, but, "an ounce of prevention, etc.," and if our growers are foresighted, they will take precautions at once. The cottonwood is about the only deciduous tree we have here, and adds much beauty to the landscape in places, but it should not be allowed to stand for a moment if there is any danger from its presence.

Keremos, the capital of the valley, is making a steady and healthy growth. Several new firms have started this summer, a church and school are under way, and timber is on the ground for a bridge across the Similkameen, to be built by the Provincial Government. It will be nearly 1,000 feet long, including a stretch across an island.

The Keremeos Land Co's irrigation works are so far advanced that water for their lands is ensured for this fall. They will cost over \$100,000. The main canal brings water down eight miles from the Ashnola River, and consists of six miles of open ditch and two miles of wooden pipe, from 30 to 40 inches in diameter.

Alberta

John Ryan

During my residence of 25 years in the Macleod district of Alberta, I have grown small fruits, such as currants, gooseberries and raspberries, with great success. I have some apple, plum and cherry trees that should bear next year. Two of my neighbors, Messrs. Thos. Clark and Jos. Hicks, have fruit trees bearing now. It is only recently that the planting of fruit trees has been thought of in this district.

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mental trees is doing well, and has induced many other persons to plant. Fruit can be grown in the MacLeod district, but the bushes and trees require some shelter from the winds. I would like to learn the experience of others in growing fruits through the columns of THE CANADIAN HORTICULTURIST.

Manitoba

D. W. Buchanan

This is rather an off year for some fruits. Plums did not set well owing to cold rain, and plum pocket has been bad, reducing the crop to 20 per cent. of last year. The apple crop will be 25 per cent. of last year. Strawberries are fair. Currants set a large crop, but the currant fruit worm has been very destructive, reducing the crop one-half in many cases.

Raspberries look promising and, with favorable weather, will give a good crop. Vegetables are yielding a fine crop on well-drained land, but there has been too much rain for low ground.

Winnipeg

George Batho

The prospects for the fruit crop in Manitoba are not above the average. Mr. Stevenson, the pioneer apple grower at Morden, reports only a small crop, this being a year of only light bloom. Plums have suffered a good deal from plum-pocket, and small fruits are, for the most part, bearing only moderately.

The beautiful weather of the early spring, followed by the heavy rains of June, which

prevailed throughout the entire stretch of the prairie provinces, have combined to make this a most favorable year for the planting and growth of forest and shade trees. This means a good deal to this country, as there are now being so many new windbreaks and plantations set out by farmers in our open prairie districts.

Arrangements are being carried forward for a Provincial Horticultural Exhibition, to be held in Winnipeg, under the joint auspices of the Western Horticultural Society and the Winnipeg Florists' Association. The dates have not been definitely set at time of writing, but it is quite likely that the show will occur during the first week of September. A committee of management has been appointed with F. W. Brodrick, professor in horticulture at the Manitoba Agricultural College, Winnipeg, at its head as secretary-treasurer and manager of the exhibition. This will be the first provincial horticultural exhibition in about six years, although as long ago as that a series of two or three good annual shows were held by the Western Horticultural Society. The trouble was that at the last show the financial basis was bad, and the weather proving unfavorable, a heavy deficit was experienced. A better financial arrangement now exists, and the chances are good for a first class show. For years the local horticultural society at Brandon has held a most creditable exhibition in that city.

The second annual convention of the Western Canada Irrigation Association will be held in Vernon, B. C. during the week beginning Monday, Aug. 10. For further information and program, write to the secretary, W. R. Megaw, Vernon.

Montreal

E. H. Wartman, Dominion Fruit Inspector

Fruit is selling well in Montreal. On June 27th, the first lot of ripe apples came to hand from Tennessee, red and green in color and of good size. The red variety in tenderness, like our astrachans, showed signs of decay; the green, more like our short stems, were in good order.

On July 6th, our Montreal auction room presented a very pretty scene; 15 cars of various kinds of fruits were on exhibition on the ground floor—bananas, melons, peaches, plums, apricots, lemons, oranges, pines and tomatoes—about 200 crates opened up so as to show ripeness, color and size. At 9:15 a. m., about 150 buyers assembled in the auction room to bid on six cars of California fruits, packed by Earl Fruit Co., Producer's Fruit Co., and Stewart Fruit Co. One characteristic of the sale was the strict attention of buyers and rapid bidding, auctioneer J. J. Callaghan quoting bids in French and English and passing from one kind to another in rapid succession. The whole six cars or over 6000 packages were knocked off in one hour and thirty minutes and invoices made out, aggregating \$8000. Mr. J. J. Callaghan as a fruit auctioneer is not excelled in America. The fifteen cars would aggregate about \$12000.

The district between Montreal and Ste. Anne-de-Bellevue, the extreme west end of Island, a distance of 20 miles bids fair for an average crop of fall and early winter apples, and common red sour cherries have been a good crop and retailed at 35 cents a gallon. The large setting of fruit trees on Macdonald Farm are doing well; the older ones are apparently full of fruit.

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New Brunswick

S. B. Hatheway

The Fruit Growers' Association held a series of orchard meetings at points along the St. John River during the last week in June, that were very successful and much appreciated. The speakers were G. H. Vroom, of Middleton, N. S., Dominion Fruit Inspector, and S. B. Hatheway, secretary of the association. A pump and

spraying outfit was used to demonstrate making and applying Bordeaux mixture. Instruction and practical work in pruning and care of fruit trees also was given. Evening meetings were held at Lakeville Corner and Oromocto, where insect pests and raising and marketing fruit, were discussed.

People are beginning to take an interest in the Fruit Growers' Association. If the Government could be induced to give an annual grant, as other local governments are doing, the advantages of having such an association would be more forcibly impressed on the public in general, and on fruit growers, in particular.

Nova Scotia

G. H. Vroom, Dominion Fruit Inspector

Fruit prospects in Nova Scotia at the present time are fair, although not quite what we expected when the trees were in bloom. Th canker worm did considerable damage in some sections and shortened the crop. Gravensteins are well set and up-to-date are nearly free from spot, where properly sprayed. Kings are looking well. Baldwin, Golden Russet, Ribston, Stark, Ben Davis and Astrachan are fair. Fall-water, Spy, Blenheim, Greening and many others are light.

The continued dry weather shortened the strawberry crop and the price has been good. The retail price in Halifax during the third week of July was 15 cents a box. Cherries are a good crop; plums and pears only medium. The Halifax market is well supplied with plums, peaches, pears and apples from the south. The cranberry crop is promising well in most sections and on good bogs.

Western Annapolis Valley

R. J. Messenger

Since July 1, we have had no rain to speak of, and the result is a pretty considerable apple drop. The varieties dropping most are Greening, King, Ben Davis and the early varieties, such as Gravenstein. Many complain of a light set of Nonpareils. The general opinion is that the crop here is not as large in prospect as at last writing. The weather has certainly been favorable

for clean fruit and thus far, very little spot can be seen; still, August is the month for the development of the spot. However, we hope that with the more general spraying this year, Nova Scotia apples will be better than last year.

Whether or not we merited the reputation, last year Nova Scotia apples caught it from all sources. The Nova Scotia Fruit Growers' Association has more than once discussed the question of having the names of violators of the Fruit Marks Act published. Such an action would be beneficial. We are confident, however, that an improvement will be seen this year.

In the best cared for orchards, the cover crops are sown and cultural operations have ceased for the season. Small fruits are only raised on a small scale in this section, and very little commercially.

Eastern Annapolis Valley

Eunice Watts

Although the year opened with unusually bright prospects, the dry weather and the insect pests have put a damper on the expectations of many growers. The canker worm got beyond the control of several orchardists in the apple belt under the North Mountain, where the devastation caused by these caterpillars is a sight not easily to be forgotten. At Starr's Point, near Blomidon, whole blocks of orchards are defoliated, or as red as the soil on which they are planted.

In some districts, blackberries are badly affected by the orange rust which is prevalent not only in plantations, but by the way side where it should be the duty of passers-by to dig up and burn plants affected, thus preventing the spores of this incurable disease from affecting cultivated patches.

Potato beetles are particularly active, not only on their own hosts, but upon tomato plants and nicotianas. If by some mistake, tomatoes are grown on ground which was occupied the preceding year by potatoes, the beetles will quickly devour them, unless they are hand picked, for tomatoes are easily injured by Paris green.

The woolly bear caterpillars have appeared in great numbers on a patch of broad beans, (*Vicia Faba*) and are doing much damage. Last year they attacked the onions.

Peas are suffering more than most things for lack of rain and the apples are becoming thinner. Where the cultivator is kept constantly at work the crops are not suffering to any great extent; on the whole they look well.

Growers of strawberries who were fortunate enough not to lose much of their crop by the dry weather have made a good thing this season as there was a demand for them at a good price. Raspberries and blueberries quickly succeeded the strawberries, but like everything else they need rain.

During the past year, 62,844 barrels of apples have been shipped from Berwick Station. This does not include bulk shipments. Many other stations in the valley are not far behind Berwick in their shipments.

Sale of Square Pianos—Square pianos made by such well known manufacturers as Steinway, Chickering, Haines Bros., are being offered for sale at the low price of \$75 to \$150 by the old firm of Heintzman & Co., Limited, 115-117 King St. West, Toronto. These instruments have all been put in good condition and only from 50c to 75c a week is being asked in payment.

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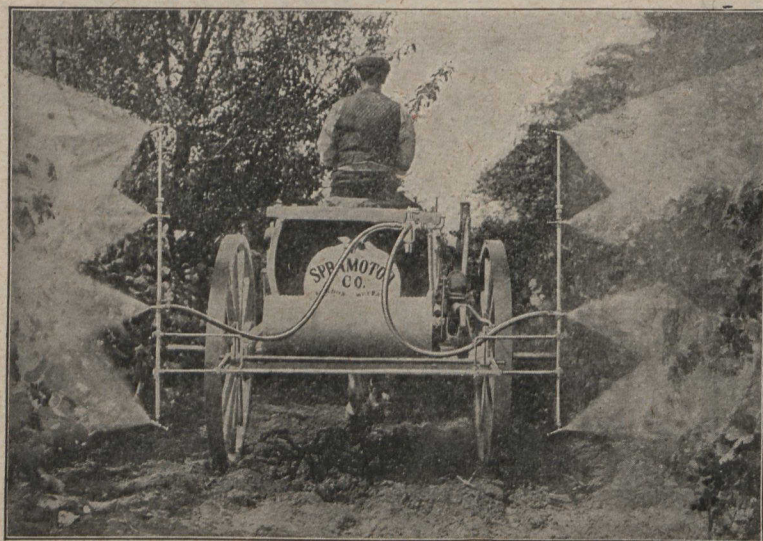
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The Winnipeg Industrial

George Batho

The horticultural features of the Winnipeg Industrial Exhibition have never been very strong, and the show held from July 11 to 17 of this year was no exception to the rule. Much the finest display of fruit came from Ontario and British Columbia. For some years the British Columbia people have made an excellent display of their products at the large fairs in the prairie provinces, and their fruit has naturally been coming more and more into favor in consequence. Last year the Ontario Department of Agriculture also made a display of Ontario fruits, and this year an even better exhibit was forwarded. Both of these displays showed all kinds of tree and small fruits, and the Ontario exhibit included a number of samples of honey. In both cases the exhibits were put up with a great deal of taste, and they were favorite corners with sight-seers from prairie sections where fruit growing is practically an unknown industry.

The Buchanan Nursery Co., of St. Charles, Man., had a most creditable display in the same building showing samples of perennial flowers grown in the open. A number of roses which have mostly been considered a tender line here, were shown, and of course such old favorites as peonies, irises, delphiniums, golden glow, bleeding heart, etc., were conspicuous, while a good showing was made in bottles of apples, crabs, plums and small fruits grown on the nursery.

The professional florists did not enter into competition, but two of them, The Rosery and R. P. Ormiston, both of Winnipeg, made up beautiful large stalls of cut and potted plants. A similar booth was fitted up by the Public Parks Board of Winnipeg.

In the amateur class for flowers there were only a few entries, but these were mostly very good. One of the best things was a collection of 40 different varieties of sweet peas, in which Mrs. Lundgren, of Winnipeg, won first, and H. J. Edwards, Winnipeg, second. The pansy collection was small, but remarkable in excellence. Edwards won first and Mrs. Lundgren second. These two exhibitors also got most of the prizes in the other flower sections. C. N. Andrew won first on roses grown out of doors.

The Exhibition falls at quite an off season for fruits, and they made practically no showing at all.

Ontario Horticultural Exhibition

P. W. Hodgetts, Secretary, Toronto

The Ontario Horticultural Exhibition will this year, be held in the St. Lawrence Market Arena, Toronto, Nov. 10-14. For three years this show has filled Massey Hall to overflowing and, after serious consideration at their last meeting, the directors decided to move to the larger buildings where all the fruits, flowers, vegetables, and honey could be shown on the one floor, and where ample space could be provided for the rapidly increasing numbers of exhibits in each section. The St. Lawrence Hall is conveniently located on the Belt and King St. car lines, and has already been used for various shows, including the Automobile and Horse Shows. It lends itself specially well to a show such as the commercial growers have been putting up the past four years. It is hoped also that rooms in the building may be filled up for the holding of the various convention meetings during the week.

The Eastern Passenger Association has granted more favorable railway rates

to the exhibition than last year. The single excursion tickets within a radius of eighty-three miles may now be bought from Nov. 10-14 good to return until the 17th, these to include a coupon admission ticket to the show for an additional 25 cents. Single fare tickets on the certificate plan may be bought from Nov. 6-16 and are good up to the 19th no matter how many may purchase tickets on the plan.

The prize lists for the various sections were submitted with some slight changes and the printed lists will be got out as soon as possible. A big effort will be made to advertise the show and the conventions as widely as possible both in Toronto and over the province generally.

Canadian Exhibitions in 1908

Halifax, Nova Scotia.....	Sept. 2-10
Kentville, N.S., Horticultural.....	Oct. 7-9
London, Western Fair.....	Sept. 11-19
New Westminster, B. C.....	Sept. 29-Oct. 3
Ottawa, Central Canada.....	Sept. 18--26
St. Catharines, Niagara District.....	Sept. 17-18
St. John, New Brunswick.....	Sept. 12-19
Toronto, Canadian National.....	Aug 29-Sept 14
Toronto, Ontario Horticultural.....	Nov. 10-14
Victoria, B. C.....	Sept. 22-26

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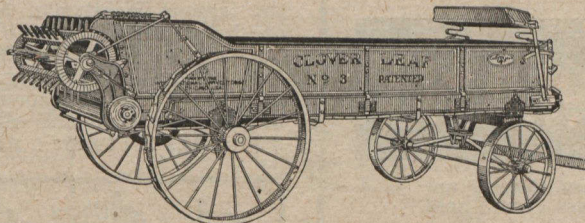
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IF you do not have to borrow, so much the better. But in any event have a spreader of your own this year. The increase in the first crop through the use of your spreader will more than pay the principal and interest. It will cut down the labor of manure spreading. It will make the work agreeable. There will be no waste of manure. You will have a more fertile soil for future crops.

A manure spreader should be considered as a permanent investment, not as a running expense.

For the only way you can get all the value out of the farm manure every year is to use a spreader. There is absolutely no comparison between results produced by hand spreading and machine spreading.

- The Cloverleaf Endless Apron Spreader
- The Corn King Return Apron Spreader



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I. H. C. spreaders are not built excessively heavy, but they have the strength required by such machines. The draft is as light as possible in any spreader.

The machines differ in certain features, but each have good strong broad tired wheels, simple and strong driving parts, are easily and conveniently controlled, and do first class work with any kind of manure.

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If you prefer, write direct to our branch house nearest you for any information desired.

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Canadian National Exhibition

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Departments, Close Monday, Aug. 12

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CORRUGATED CAPS PULP CAPS WHITE CAPS

You will also need Excelsior Barrel Cushions, Excelsior Box Cushions, Parchment and Wax Caps Manilla and White Tissue Wrappers, Lace Circles and Box Lace, Curved Elm Liners.

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Nico-Soap

Editor, THE CANADIAN HORTICULTURIST:

In the July issue of THE CANADIAN HORTICULTURIST, an article appeared over my signature entitled, "Some Spraying Mixtures," in which I inadvertently made the mistake of saying that "Nico-Soap professes to kill all insects and their eggs by contact." This was a mis-statement, as Nico-Soap claims only to kill insects by contact. The writer had been reading the advertising matter of Nico-Soap and another insecticide, and mentally "got things mixed."

The article was rather bitter in its tone, I admit, and was born of the feeling that the farmer is the one who gets "pulled" oftenest and is the least able to stand it; and in my zeal to aid my brother farmer, I am often unjust to others. I regret that the mistake was made and hope that those who are testing the merits of Nico-Soap may not be biased in their judgments, or in the reports of their experiments, by the error made in the article.—R. J. Messenger, Bridgetown, N. S.

Build a Metal Home

In every way metal is superior to wood or plaster for the interior of homes. Classified metal ceilings and walls, designed and manufactured by the Metal Shingle and Siding Co., Limited, of Preston, Ont., are to be preferred over all others for their beautiful and harmonious finish. They are made in a great variety of designs to suit all tastes and are classified according to the prevailing styles of architecture.

Metal ceilings and walls are fire proof and vermin-proof, are sanitary and easily cleaned. They may be beautifully decorated at small cost.

Those who are tired of the yearly expense of re-plastering, re-painting and re-papering, should make a change to metal ceilings and walls. They may be put on over the old plaster without dirt or muss, and in much less time than plastering would require. They last a lifetime and never need repairs, so that the first cost is the only cost.

Life insurance companies recognize the security which metal ceilings and walls afford, by making their rates one-third less on homes constructed of this material.

Illustrated catalogues and complete information as to cost may be obtained by writing the Metal Shingle and Siding Co., Limited, Preston, Ont. 57

Exceptional Bargains in Pianos—Square Pianos by such well known manufacturers as Steinway, Chickering, Haines Bros. and the famous Heintzman & Co. instrument, are being offered for sale by Heintzman & Co., Limited, 115-117 King St. West, Toronto, at such remarkably low prices as \$75 to \$150. These instruments have been put in good condition and all that is asked in payment is 50c to 75c a week.

Foreign Money in Our Orchards

P. J. Carey, Dominion Fruit Inspector, Toronto

The practice of foreign dealers recklessly advancing money early in the season to all classes of men, to operate in the orchards is responsible for a great many of the troubles of the apple business. This system encourages the wildest and most un-businesslike transactions in the way of purchasing and handling of fruit. The business man who is using his own capital and wants to work on a business basis has little chance against such opposition.

We would have a much healthier trade if the orchard operations were in the hands of the growers or reputable dealers who have their own money invested. Then, when our fruit is properly and honestly packed, we are ready for the Englishman and his money and will be prepared to give him a square deal.

Items of Interest

Orchard meetings were held in June in Ontario at Wicklow, Colborne, Brighton, Wooler, Castleton and Warkworth. They were addressed by Mr. A. McNeill, Chief, Fruit Division, Ottawa and Dominion Fruit Inspectors Carey, Rutherford and Brown. The meetings were largely attended. The subjects discussed included orchard culture, spraying and orchard pests.

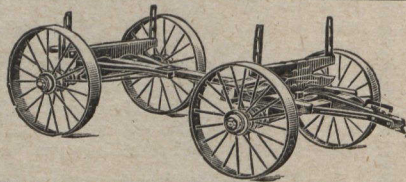
It is reported that the brown tail moth has entered New Brunswick. This summer, many specimens have been seen and it is known that they are coming from Massachusetts. The steamers plying between St. John and Boston have been closely watched and it has been learned that on every boat, scores and perhaps hundreds arrive and at once settle themselves in their new quarters.

Last month a number of orchard meetings in British Columbia were addressed by Prof. W. F. Thornber, Horticulturist of the Washington Agricultural College, Pullman, Mr. M. H. Dobie, Victoria, B. C., and other authorities. See report in next issue.

A neat little booklet entitled "A School Garden Illustrated" has been published by Hammond's Paint and Slug Shot Works, Fishkill-on-Hudson, New York. It contains much valuable information for gardeners. Send for a copy.

The exhibits of fruit from British Columbia at the Dominion Exhibition in Calgary last month were a credit to that province and received many favorable comments.

Fifty Dollars Buys a Piano—At the summer cottage, you have twice the fun if a piano forms part of the outfit. To help things along the old firm of Heintzman & Co., Limited, 115-117 King St. West, Toronto offer a number of square pianos, all in good condition, at from \$50 to \$75 each, payable in sums of from 50c to 75c a week.

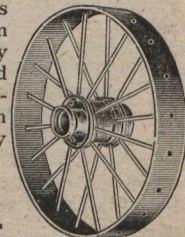


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The only Steel Wheels with this advantage. If they meet with an accident, as is possible with any wheel, they can quickly be repaired by any blacksmith. Our low, Wide-

Tire Steel Wheels do not cut into soft ground. Will carry as much as a team can draw. More durable, cheaper, than wooden wheels. Made to fit any axle. Free Catalogue gives details. Write for it.

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



Apple Growing

(Continued from Page 162)

It is surprising how many farmers are yet unfamiliar with the Inspection and Sale Act, part IX (the Fruit Marks Act). A copy of this act will be sent to anyone on application to the Fruit Division, Department of Agriculture, Ottawa. Until the farmer becomes familiar with this Act he is at the mercy of the buyers. They may carry a copy of it around with them and may read a part of it to the apple grower, but the apple grower is likely to be deceived if he does not get the Act himself and study it carefully. All contracts, wherever grades are mentioned, should read "Grade No. 1 and Grade No. 2 as defined by the inspection and Sale Act, Part IX." With the Act in his hand, the apple grower can make no mistake with reference to the marks that are required on all fruit packages.

Briefly, the Inspection and Sale Act asks only that the fruit be packed honestly, of the same quality from top to bottom, and that it be marked honestly, Grade No. 1 or Grade No. 2 as defined by the Act. There are few complications about it, and there is no reason why any grower should be led astray by designing buyers.

CO-OPERATION

There are very few co-operative associations in this district. They are being strongly opposed by the buyers of the less reputable sort. These buyers are not interested in securing a fair price for the fruit for the farmers, but are interested in making as big a profit as they possibly can. The larger buyers and real fruit merchants are in favor of co-operative associations inasmuch as they enable them to get large quantities of fruit with greater assurances that the quality and marking are right. But many dealers of the "sharp" sort see in the co-operative associations only a number of apple growers removed from the chance of being imposed upon by their fairy tales with reference to crops, prices and market conditions.

APPLE BUYERS

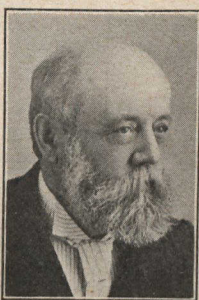
Not a few apple buyers attended these meetings. Some of them expressed their approval of the Inspection and Sale Act and of co-operative selling. But the most of them found in the Inspection and Sale Act and in the co-operative associations a restriction upon their actions. The members of the co-operative association could not be imposed upon. The manager, probably a smarter man than the buyer, looked after the market end of the business for the grower. Some of these dealers were opposed to the Inspection and Sale Act because it interfered with their buying orchards by the "lump." With the spread of knowledge and the help of the co-operative associations, it is to be hoped that the apple industry will dispense with many of these disreputable apple buyers, and that the fruit may pass directly from the producer to the apple merchant who will forward it and distribute it, with as little expense as possible, to the customers at home and abroad.

(NOTE.—Mr. McNeill concluded with some excellent recommendations for the district mentioned, but lack of space forbade their publication in this issue. They will appear next month.—*Editor*).

Mr. Beckley, of the Horace McFarland Co., expects to spend considerable time this summer on the hybridizing establishment of Mr. H. H. Groff, Simcoe, Ont., the gladiolus specialist.

The Late Mr. John Cape

In the July issue of THE CANADIAN HORTICULTURIST, mention was made of the death



Mr. John Cape

of Mr. John Cape, a well known horticulturist of Hamilton, Ont. At the time it was impossible to secure a good photograph of the deceased for publication. Through Mr. J. Kneeshaw, the secretary of the Hamilton Horticultural Society, a good portrait has since been secured and it is published herewith. Besides the citizens of Hamilton, many non-residents will recognize it and be pleased to see a likeness of one who was a good friend of horticulture and an enthusiast in its science and practice.

For many years Mr. Cape was actively interested in the work of the Hamilton Horticultural Society, holding offices at various times and was its president at the time of his decease. As a director of the horticultural exhibition held in Hamilton in 1905, he was instrumental in a large measure, for its success. He contributed occasional articles for THE CANADIAN HORTICULTURIST which always were read with profit and pleasure. His love for things horticultural was a characteristic that made him beloved and a useful citizen. His passing away will be felt not only by his immediate friends but also by all persons acquainted with his writings and work in the interests of horticulture.

I feel that I cannot work my fruit farm successfully without the assistance derived from THE CANADIAN HORTICULTURIST.—A. J. Cody, London, Ont.

\$75.00 for a good Square Piano—A good square piano by such well known makers as Chickering, Steinway, Haines Bros. and the well known Heintzman & Co., instrument can be bought at from 50c to 75c a week. The price asked for any of these instruments is only from \$75 to \$150 and they are being sold by the old firm of

Heintzman & Co., Limited, 115-117 King St. West, Toronto.

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Some Salts have lime and other impurities in them—which makes them coarse and gritty.

Windsor Table Salt

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Pure 173

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HOT WATER BOILER FOR
HOT HOUSE HEATING

It takes more coal, more attention and the next best boiler to produce the same results "The Sovereign" will give on less coal and practically no attention. The difference between "The Sovereign" and all other kinds of boilers is in

THE LARGER FIRST SECTION
an improvement in structure indvnted by the makers of "The Sovereign" and adapted exclusively for their boilers

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DO YOU KNOW

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

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

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

CONSULT US FREELY IT IS OUR BUSINESS TO KNOW

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AGENTS WANTED FOR TERRITORY NOT TAKEN UP

THE W.A. FREEMAN CO. LIMITED
HAMILTON ONTARIO

POULTRY DEPT.

Conducted by S. Short, Ottawa

Summer Tragedies

In the July issue of THE CANADIAN HORTICULTURIST the beginning of this article appeared, giving only the bird enemies of the poultry yard and a description of their methods of procedure. A promise was made that in this number a list of the animals that prey upon the poultry would appear. While there are but two bird enemies of the chicken in this country, viz: the hawk and the crow, the animal depredators are more numerous. In the country and suburban districts there are wild enemies, such as the racoon, fox, skunk, mink and weasel, and

also what may be termed the domestic enemies, the dog and the rat. In cities only the domestic enemies have to be contended with.

The first on the list is the "coon," a wary chap. He works at night always, preferably between one and three in the morning. He rarely visits the same yard twice in succession, nor does he discriminate. Every poultry yard in his neighborhood is visited. He climbs the fence posts with ease and will enter any yard except those wired overhead. He likes to kill but seldom takes away his quarry. He kills by biting off the heads of very young chicks and by cutting the throats of mature fowl. He will upset a coop and kill all the chickens unless disturbed. His presence is known by the alarm shrieks of the mother hen or by the outcry of the male bird. It is wise to have the shot gun at hand when a coon is known to be in the district. Throw on a dark cloak and go out softly without a light and you may be in time to get a shot at him. When disturbed, he usually runs up the nearest tree and it is a good idea to examine carefully the trees, if there should be any in the yard before going in. Last summer a racoon visited eight or nine different yards in the vicinity of Rockcliffe, Ottawa, and killed numbers of young fowl, escaping traps and dogs, until the writer had the honor of shooting him one night in the early part of August.

The fox is also wary and will not enter wired enclosures. He is dangerous only in the country districts and catches his prey early in the morning and towards evening when the fowl wanders too far from the yards. Scattered feathers at the edge of the bush or near a log fence tells the tale and soon the number of fowl rapidly diminishes unless the fox is shot or frightened off.

The skunk is a night prowler. He is very deliberate, being safe from attack from dogs. He first visits the nests in the hen house looking for eggs and then turns his attention to the chickens. If the place is to his liking, he will probably scratch a hole under the hen house or shed and stay right there. His meal time is about twelve o'clock midnight. He is not easily disturbed and can be easily shot for he goes on with his business of killing chickens whether the owner is there or not.

The mink and the weasel both work at night and in the same manner. They destroy from eight to a dozen chicks nightly by cutting their throats, but don't take away the bodies. The mink lives near a creek or beaver meadow, and must either be trapped or shot. The weasel likes a stone pile or trash heap, and may be seen sunning himself on sunny mornings on the bottom rail of the fence near his nest or den. It is worth while spending an hour to get a shot at him for he is hard to trap. Space forbids a description of the city enemies of poultry, the dog, cat and rat. It may be given another time.

In conclusion, it may be repeated that the animals that prey upon poultry are attracted by scent and the smell from a dirty yard will travel further than that from clean quarters.

Piano for the Summer Home—Life at the summer home is enhanced 100 per cent. if you have a piano. Easy enough to own one. Fifty or seventy-five dollars will buy one, payable in sums of from 50c to 75c a week. This at least is the way the old firm of Heintzman & Co., Limited, 115-117 King St. West, Toronto, are selling pianos this month.

BISHOP BETHUNE COLLEGE

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Visitor, the Lord
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PREPARATION FOR UNIVERSITY

A Residential School for Girls
Young Children also Received

For terms and particulars apply to the SISTER IN CHARGE or to THE SISTERS OF ST. JOHN THE DIVINE, Major St., Toronto.

College Re-opens September 16th

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.

MR. CHARLES ERNEST WOOLVERTON, Grimsby, Ontario, landscape architect, parks, cemeteries, pleasure, school and home grounds laid out, surveys made. Working drawings to a scale so that any gardener can work them out. Terms very reasonable.

NURSERY, GREENHOUSES, and fruit farm for sale in Ontario. Large sales in nursery every year. Positively no San Jose Scale on the place. Several acres in apples, pears and plums, all bearing; also small fruits, strawberries especially. One and a half mile from depot. Owner wishes to retire. Splendid chance for the right man.—Box S., The Canadian Horticulturist.

WRITE AND ASK FOR our rural bulletin; it gives valuable information about rural telephones.—The Canadian Independent Telephone Co., 26 Duncan street, Toronto.

IRON PIPE FOR SALE—150,000 feet, all sizes from ½ inch up, in good condition, at half price. Write us what you need.—Imperial Waste and Metal Co., Pipe Merchants, 7 Queen street, Montreal, Que.

HOT WATER FURNACE. — Wilkes, 14 x 36, suitable for greenhouse or small house. Cost \$100, sell \$25.—W. E. Saunders, London, Ont.

GINSENG.—Seeds and plants for sale for fall planting. Big money maker. Write for circular.—J. E. Janelle, Caughnawaga, Que.

GARDENER, GOOD REFERENCES. — Life experience in all branches; English; age 40; seeks situation with gentleman. Could manage fruit farm.—Apply, Box W, The Canadian Horticulturist, Peterboro.

Pear Blight

We Can Cure It

Our work has extended over a period of three years. Process and formula patented. Address correspondence to

Pear-Blight Remedy Co.

Vacaville California

Mention Canadian Horticulturist when writing

THE FRUIT CROP PROSPECTS

PRESENT prospects for fruit are not as bright as they were last month. There has been a falling off in the conditions. Early and fall apples promise an average crop, or slightly better; winter varieties, medium. Pears and plums will give a medium yield; peaches, over medium; grapes promise well. The crop correspondents of THE CANADIAN HORTICULTURIST report the situation to be as follows:

HANTS COUNTY, N. S.

Cambridge.—Prospects for an average crop of apples are favorable. Unless conditions change, the quality will be good. A few orchards in certain localities were stripped by canker worms and, in such, the crop will be a failure. Gravensteins and Kings still indicate a full crop; Blenheim and Spy, light; other varieties of winter apples, average.—J. H. C.

KING'S COUNTY, N. S.

Kentville.—The fruit prospects are good and if nothing unforeseen occurs, this valley will have an extra good yield. Some varieties will suffer from the ravages of canker worms and bud moths. At the horticultural exhibition, to be held in Kentville in October, the greatest show of apples ever exhibited in Canada will be seen.—M. G. deW.

Berwick.—On the whole the apple crop promises to be as good as last year. Kings are making a good showing but Blenheims and Spys are off.—J. N. C.

ANNAPOLIS COUNTY, N. S.

Bridgetown.—Apples promise a fair crop of smooth fruit; pears and plums, light; cherries, full.—F. H. J.

DIGBY COUNTY, N. S.

Bear River.—Dry weather has caused much dropping of fruit. Ben Davis, Golden Russet and Bishop Pippin (Yellow Bellflower) promise a medium crop; all other apples, light; pears, very light; cherries and small fruits, fair.—H. M. R.

SUNBURY AND QUEEN'S, N. B.

Upper Sheffield.—The apple crop is not as promising as it was a month ago. Duchess is doing all right but other varieties are falling off. Cherries, currants, gooseberries and raspberries are yielding a bountiful crop.—I. W. S.

YORK COUNTY, N. B.

Murches.—Owing to dry weather, apples are dropping in unusually large numbers; if drought continues much longer, the crop will be injured. Plums are a complete failure. English cherries are good crop; blackberries good; raspberries, half crop and late; currants and gooseberries, small crop.—J. F.

CHATEAUGUAY COUNTY, QUE.

Chateaugay Basin.—Raspberries are small and about one-half a crop. Drought and heavy winds have caused more than one-half our early apples to fall. Winter apples will give a medium crop.—P. R.

STANSTEAD COUNTY, QUE.

Beebe Plain.—Duchess, Peach and Yellow Transparent apples promise a large crop; Wealthy, a good average; winter apples will be light.—D. L. H.

L'ISLET COUNTY, QUE.

Village des Aulnaies.—In the Quebec district and north and east on both shores of the St. Lawrence, early apples will be light;

fall, medium; winter, failure; crab apples, medium; pears, failure; European plums, light; American plums, failure; sour cherries medium; raspberries, full; black currants, light; red currants and gooseberries, medium; cranberries, failure.—A. D.

MISSISQUOI COUNTY, QUE.

Henrysburg Centre.—Present prospects indicate not more than half a crop of fruit. The apples will be small and will not grade No. 1.—J. S.

PEEL COUNTY, ONT.

Clarkson.—Raspberries are a good crop. Lawton and other small fruits will yield well. Plums are a failure; pears, medium; cherries, good. With the exception of a few

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., Limited

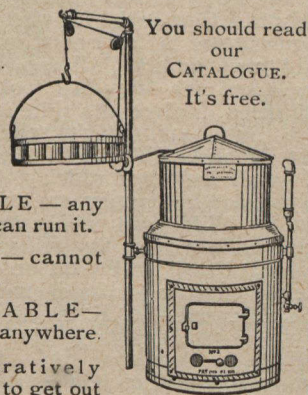
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WE MAKE ALL KINDS FOR ALL PURPOSES
124 YONGE ST. TORONTO.

Every Grocer, Fruit and Vegetable Grower

can save the money lost by overripeness, windfalls, by overloaded market, if he will install a Modern Canner.



You should read our CATALOGUE. It's free.

- SIMPLE — any person can run it.
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FRUIT GROWERS in every part of Canada are using our celebrated double truss high carbon steel wire extension ladders.

LIGHTER STRONGER CHEAPER than any other ladder made

The most perfect ladder in existence. Each side rail has a heavy, high carbon steel wire, stretched along the inside, securely fastened at the end, forming a truss and prevents side-swaying. Send for one of our new illustrated catalogues, giving sizes and prices.



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BERLIN - ONTARIO

Branches in all parts of Canada

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VAPORITE is the new, marvellous English product—a non-poisonous powder. Just sprinkle it on to the soil and plow or dig in as directed, before planting, or sowing. It acts quickly—the insects are destroyed in a few days so that your ground is free and fertile.

VAPORITE is revolutionizing many branches of Agriculture.

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It tells you briefly and simply all about VAPORITE, and shows the remarkable extra profits made by practical growers who use VAPORITE. It gives reports from all over the world.

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71a Queen Victoria Street
London, Eng.

early varieties, the apple crop will be light, especially Spy. Snow apples will be plentiful. Vegetables are looking well and promise a good crop.—W. G. H.

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of Horticultural Books to
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THE HORTICULTURAL PUBLISHING CO., LTD.
PETERBOROUGH, ONT.



Red Pots

FLOWER POTS

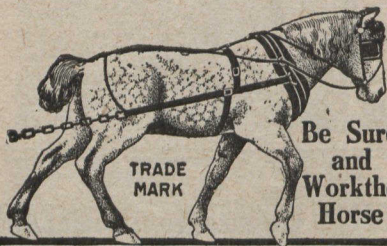
¶ We have a large stock of all sizes and varieties for spring trade.

¶ Try our pots for growing early tomato plants, etc.

¶ Write for Price List and Catalogue.

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If you use Bickmore's Gall Cure your teams can work right along and be cured of Saddle and Harness Galls, Chafes, Rope Burns, Cuts, Scratches, Grease Heel, etc. while in harness. The more work the quicker the cure.

BICKMORE'S GALL CURE

Is the standard Remedy for all these and similar troubles. Is excellent for Mange and Sore Teats in cows. Above trade mark is on every box. For sale by dealers. Money refunded if it fails. Sample and Horse Book every farmer should read 10c.

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HENRY'S NURSERIES VANCOUVER B.C.

CHOICE BEDDING PLANTS
BULBS
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Extra choice lot of
FRUIT AND ORNAMENTAL
TREES, for Fall Shipments

Home grown. No Scale. No Fumigation.
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Catalogues Free

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OFFICE 3010 WESTMINSTER ROAD
VANCOUVER B.C.

DUNDAS COUNTY, ONT.

Irena.—Early apples promise a full crop; Fameuse and McIntosh, light to medium. On the whole, the fruit crop will be light.—A. D. H.

HASTINGS COUNTY, ONT.

Belleville.—Prospects are good for early apples. There will be few Spys, Russets, Kings and Baldwins. Most other winter varieties promise a medium crop.—F. S. W.

HALTON COUNTY, ONT.

Burlington.—Fruit conditions and prospects are as follows: Raspberries, fair; blackberries, good; currants, good; cherries and pears, medium; plums and apples, light.—W. F. W. F.

LINCOLN COUNTY, ONT.

Jordan Station.—Raspberries have suffered from extreme heat and lack of moisture. Peaches will be only a medium crop of good quality where thinning has been done. Apples will be a good crop and comparatively free from scab and worm where spraying was practised. Grapes are well loaded and free from mildew and rot.—C. M. H.

Port Dalhousie.—Raspberry, currant and gooseberry crops are medium. Plums promise a medium crop. The crop of early peaches will be medium; Crawford's very light; St. John, medium; Elberta, light; late varieties, medium, early pears will give a good crop; Bartlett's, good; late varieties, medium. Grapes promise well. The apple crop will be medium.—E. M. S.

St Catharines.—Fruit prospects are for a good crop, with the exception of peaches, which in some varieties will be light. Pears promise a full crop.—J. H. B.

Queenston.—There are excellent prospects for all kinds of fruit, especially peaches. Unusual care has been taken in regard to pruning, spraying, feeding, intensive cultivation and thinning, the cost of which gives promise of paying returns.—W. A.

NORFOLK COUNTY, ONT.

Simcoe.—Apple crop will be only medium. The drop has been very heavy.—J. E. F.

BRUCE COUNTY, ONT.

Walkerton.—Cherry crop will be good; plums, very good; early apples above medium; late fall and winters, light to medium. Spy, Greening and Fameuse will be light; Russet, rather better than other varieties.—A. E. S.

GREY COUNTY, ONT.

Clarksburg.—Small fruits are turning out well. The cherry crop is very heavy. Prospects for fall and early varieties of apples are good, the apples being much larger than they were last year and appear to be almost entirely free from scab. In winter varieties, the appearance is for less than a medium crop of good quality. All apples are growing well and the drop that took place last month acted in place of a thinning.—J.G.M.

LISGAR COUNTY, MAN.

Pilot Mound.—This district grows cultivated small fruits, of which a fair crop is anticipated. Crab apples are only a moderate crop. Wild fruit will scarcely be as plentiful as last year, but will yield quite a nice crop; of such are Saskatoon, wild strawberry, pin cherries, choke cherries and high bush cranberries.—H. M. S.

ALBERTA

Magrath.—Currants and gooseberries promise a plentiful crop; raspberries, a failure. Apple trees that are old enough to bear have some fruit on. Our town is only eight years old and people have not planted many fruit trees, but will do so, as it has been proven that they can be grown successfully.—J. T. H.

New Boat for Fruit Trade

Canadian shippers of perishable cargoes will be pleased to know that another addition has been made to the already large fleet of steamers owned by the Thomson Line, for the carrying of cargoes from Montreal to Great Britain. The latest addition is the magnificent steamer, "Cairnrona." She has a length of 460 feet, breadth 52 feet, depth 34 feet 2 inches, twin screws, electric light and is rated A 100 at Lloyd's. This steamer is a large carrier, having a cargo capacity of 9000, dead weight. Her loading and discharging equipment is in every way modern. With her 11 winches and 25 derricks, she can quickly discharge and load cargoes on both sides of the ship at the same time.

The most interesting feature of the boat is the cold storage and cool air plants, which embrace six compartments, any of which can be maintained at a separate temperature running from 40 degrees down to five above zero, for the carriage of frozen meats, butter or fruit. Her cool air plant consists of four separate compartments, which also can be maintained at separate temperatures. A representative of THE CANADIAN HORTICULTURIST recently inspected the cold storage facilities of the "Cairnrona" and was much impressed with the facilities provided for the proper carrying of perishable cargoes. It has been conceded by experts, that the cool air and cold storage equipments of the Cairnrona, are the most modern and complete of any steamer sailing out of Montreal.

Our Premium Offer

This month THE CANADIAN HORTICULTURIST has made arrangements whereby its readers may secure apple trees of a variety that is not well known, but which promises to be an excellent variety for the home orchard. This variety is known as the "Boy's Delight," and is at present controlled by Mr. E. D. Smith of Winona. It is a seedling of the Fameuse and is much like this apple in appearance and flavor, but appears to be much freer from spots and scabs. It is an annual bearer and appears to be a heavy cropper.

A fuller description of this apple is given on another page of this issue. By taking advantage of our premium offer, fruit growers will be enabled to secure a specimen of this variety free of charge.

I think that THE CANADIAN HORTICULTURIST is the best paper of the kind that I have ever read.—Russell J. Frayne, Brantford, Ont.

I have received many valuable suggestions from THE CANADIAN HORTICULTURIST on growing vegetables in Saskatchewan.—G. T. Barley, Prince Albert.

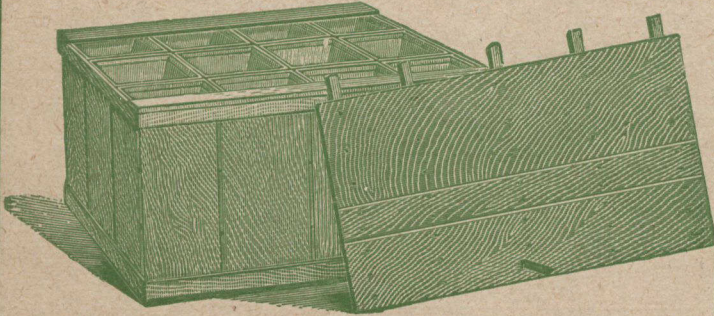
I read THE CANADIAN HORTICULTURIST regularly and would not care to be without it.—Ira Johnson, Wilson, N. Y.

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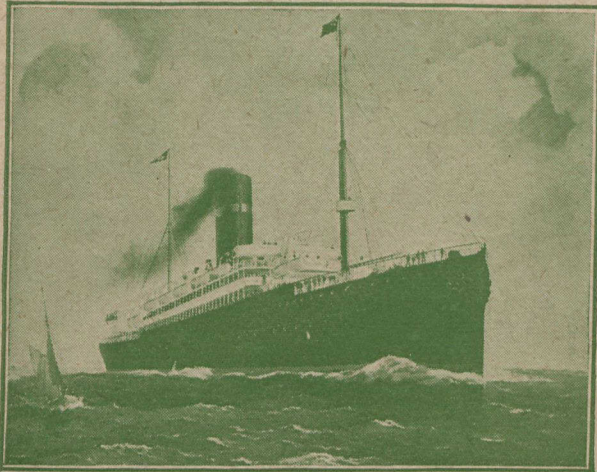
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