

376/F/161/122
Planting and Planning the Orchard, Garden and Lawn

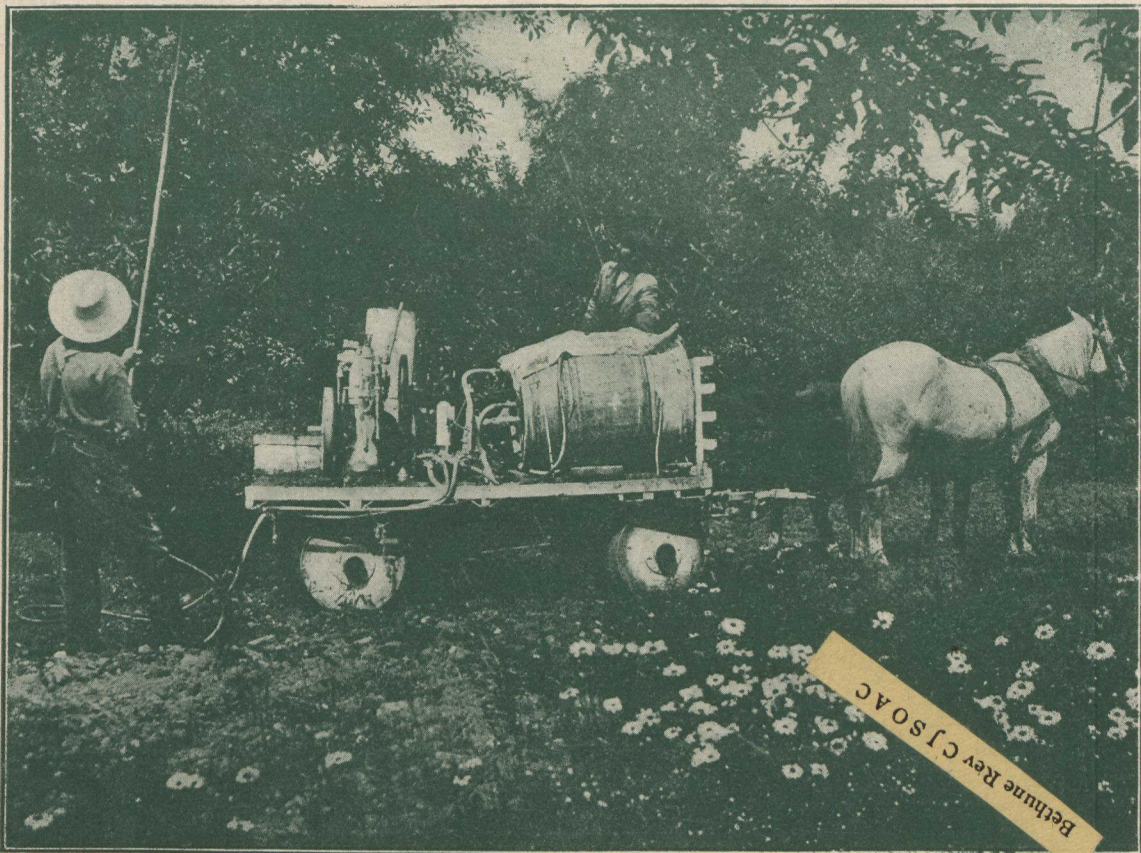
The Canadian Horticulturist

APRIL, 1907

Volume 30, No. 4

TORONTO

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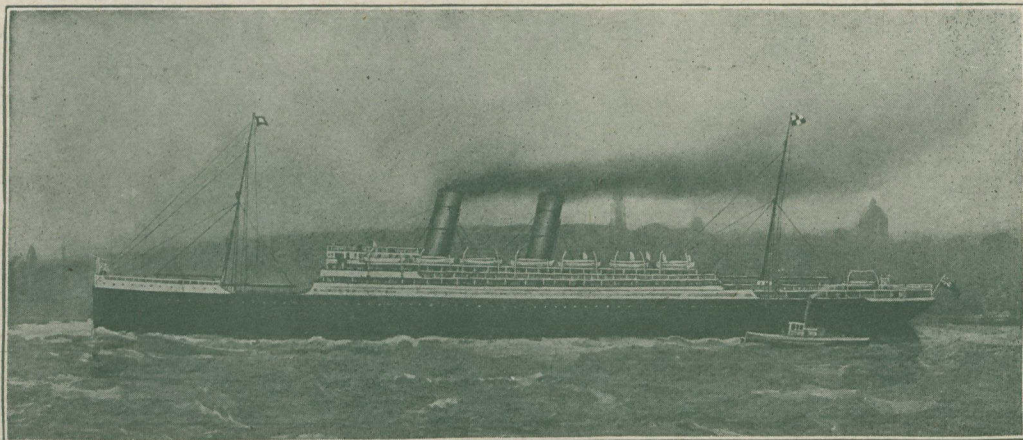
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Sat. " 13	Lake Champlain	Wed. " 27
Fri. " 19	Empress of Ireland	Fri. Apr. 5
Sat. " 27	Lake Erie	Wed. " 10
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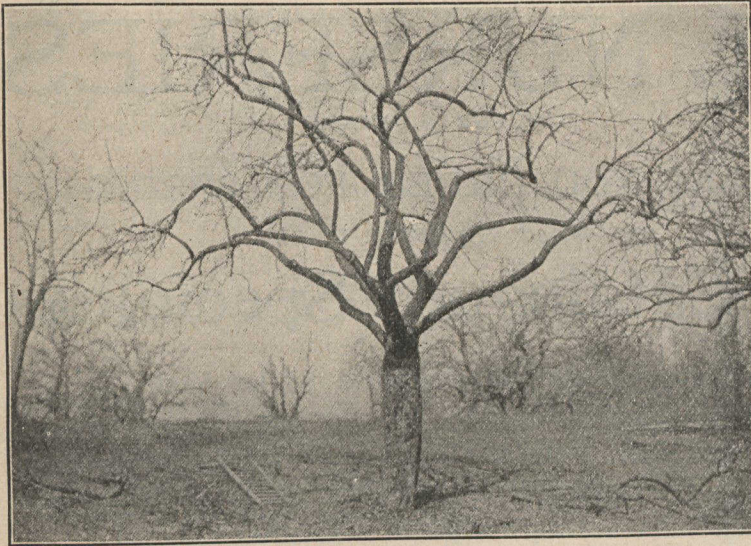
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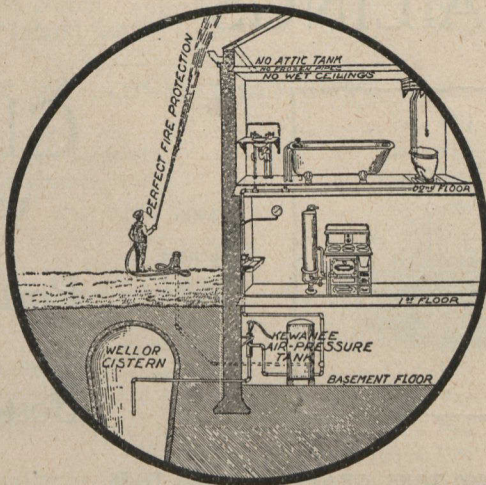
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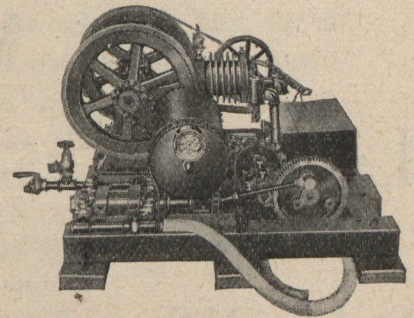
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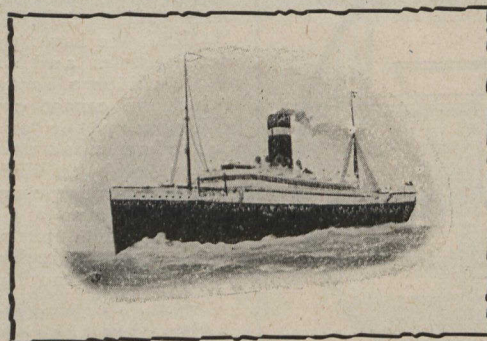
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Power Spraying in Nova Scotia *Cover*
Photograph furnished by F. C. Sears, Truro, N.S.

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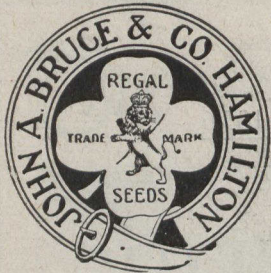
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The Canadian Horticulturist

Vol. XXX

APRIL, 1907

No. 4

Selecting and Planting Fruit Trees

G. Reynaud, La Trappe, Quebec

GREAT care and attention are required in the choice of varieties of the fruit we wish to grow. Avoid, first, varieties which cannot become acclimated; second, varieties that are unprofitable; and third, any inferior variety.

Regarding the first it is clear that the trees must be able to stand the cold of our winters. Buy the plants from reliable nurseries situated in Canada that sell only what they have grown themselves. One is then sure of having acclimated plants. Regarding the second, there are some varieties which enjoy a striking fertility; others, while giving fine fruits, are of little or late bearing. These are less advantageous. Regarding the last, by inferior qualities we must understand fruits poorly adapted to the intended trade, which sometimes is the only practicable trade. For instance, far from trade centres, the summer varieties are of no benefit because they do not keep, and the time for selling is very short. In this case, plant winter fruit, and especially those most in demand in the market. If a large business centre is near by, the earliest bearing varieties pay the best. The sale of early fruits, of *primeurs*, even if they are not quite ripe, always brings forth a sure profit.

When there is danger of making a costly mistake ask advice from some expert in the matter. The provincial and federal governments have established in several places experimental fruit stations precisely with the view of studying the values of the different varieties. There, may be found, at any time, exact and disinterested information.

Short trunk trees stand the wind better and facilitate the accumulation of snow, so necessary to protect the roots against late colds; but they present the serious inconvenience of rendering cultivation excessively difficult. It is better to buy medium-sized trees. Young plants with five or five and a half foot trunks are high enough to possess all the advantages of any other kind, without the inconveniences.

PLANTING

If everything is not ready for planting when the plants come from the nursery,

they must be placed slightly inclined, one by one, in a trench with the roots covered with earth. When ready to plant the plants can be distributed one by one in the holes, but the roots must not be left uncovered, because they suffer from exposure. Place with the roots at the bottom of the hole and cover with two or three shovelfuls of earth.

When trees are sent from the nurseries during periods of extreme cold, the box or package should be wrapped and placed in a cool cellar for a few days, where the trees will slowly regain their normal temperature.

Advanced Wonderfully

THE CANADIAN HORTICULTURIST has advanced wonderfully in the last two years. I believe that it is the uniform opinion of the fruit growers of the province that the paper is the best fruit growers' paper now published, and that there is no longer any necessity for going to the United States for such a publication.—P. W. Hodgetts, secretary Ontario Fruit Growers' Association, Toronto.

Planting must be done in dry weather so that the soil will fill in all the space between the roots. Before putting the trees in the ground they must be pruned, which consists in cutting sharply all the wilted extremities of the roots, and shortening at least by half the branches at the head. This is necessary to give the tree a systematic shape and robust growth. Throw enough earth, mixed with matured and good fertilizer into the hole so that the tree will stand in the ground at about the same height as in the nursery. Place the tree and arrange the roots in their natural position, then cover with more good soil and slightly pack it down. When the roots are completely covered, fill with the surface soil.

CARE FOLLOWING PLANTING

The wind in shaking the young trees sometimes prevents them from taking

root. The remedy for this is props. These are placed at the time of planting before the holes are filled up, on account of the danger of breaking the roots if put in later. The trees are bound to these by means of strips of cloth or some linden bark fibre.

The bark of a young tree changes a part of the sap into a wood-making substance, called "cambium," which becomes an integral part of the fibrous body of the trunk and adds to the growth of the roots. It is, then, important to keep the bark in good shape to prevent it from drying and to stop any foreign growth on its surface. To obtain this it is useful during August to wash the bark of the young trees with water in which are dissolved a little soap and some phenic or carbolic acid. This saves the trees from the ravages of insects.

If the planting season is dry, water the trees often, but only a little at a time. In rapidly drying ground, loose soil on the surface will retain moisture.

In the fall, do something to protect the young trees from late spring frosts, on account of the extreme sensitiveness caused by the small extent of their radicular system. One way of doing this is to pile up earth around each tree to about one and a half feet in height; another, to throw in the same place and after the first permanent snow, some strong manure. This manure will prevent the snow from melting rapidly; it creates in the soil at the foot of the tree a constant and regular coolness which keeps back vegetation and saves the young plant from the dangerous results of frost and thaw. Remove the earth or manure as soon as danger is passed.

One must abstain from pruning young trees during their first year in their new place. It would stop the growth of fresh roots and result in the death of the tree; or, if it lived, through it would cause in the tree an excessive sensitiveness to the inclemency of the weather. Notwithstanding, all branches grown on parts of the tree where they are useless ought to be cut off in the fall. In cases where it is feared that snow might break the branches, they should be bound to the aforementioned props.

The Growing of European Plums

Cecil C. Pettit, Fruitland, Ontario

FOR the last few years, the growing of plums at a profit to the grower has been a rather difficult problem. It has been an even chance that, if everything were taken into consideration and all expenses reckoned up, the grower would have been out of pocket. Of course, there has been an exceptional year now and then but, on the whole, the plum business of the last few years has been a financial failure.

Those who were fortunate enough to have a crop in the season of 1906 made good money. Plums were in demand and brought good prices. Some orchards paid at the rate of \$500 an acre.

The outlook for the future seems to be brighter. I am inclined to believe that the growing of plums will be a paying business. There are several reasons that have led to these conclusions. The West is rapidly filling up and that market must be supplied. Other markets also are opening. We are getting better transportation facilities. The canning industry is developing year by year, and this furnishes a market for large quantities of plums.

Another reason that can be given is that the area for plum growing seems to be getting more limited. The time was when plums could be grown successfully in almost any part of the country, but a few cold winters played havoc with thousands of trees in a great many districts and growers have neglected to replant for fear that the same thing might occur again. The great damage and destruction caused by the San Jose scale has played quite a part in reducing the acreage that has in former years been devoted to plum growing. Thus the area has been largely reduced.

These and other reasons that might be given lead us to the conclusion that the growing of plums, for some time to come, will be far more profitable than it has been in recent years. In passing, let me say that, for profit, there is no comparison to be made between European and Japanese plums. Most growers would be far better off had they never seen a Japanese plum tree.

SELECTING SOIL AND TREES

Plums can be grown on almost any kind of soil that is properly drained, but the heavier soils are preferable. I would advise any one contemplating the planting of a plum orchard to plant it on their heavy soil, and save their lighter soils for something else.

Good, thrifty, two-year-old trees should be selected, and, in no case, plant a tree over two years old. Rather than take them over two years old, take good, strong, one-year-old trees.

Plum growers have been seriously

handicapped by getting trees from the nursery that have not been true to name, oftentimes growing them for five or six years and then finding out that they have got a lot of trees that are fit only for firewood. It makes pretty expensive firewood. If nurserymen would be careful only to bud their young stock with buds taken from bearing trees, then they would know that their stock would prove true to name. The planters would be sure of getting what they ordered and paid for. Nearly all nurserymen take the buds from their nursery rows, from trees that never have fruited, and, consequently, in sending out young trees very often the varieties get mixed.

PLANTING

The ground should be thoroughly worked. The trees should be planted not less than 16 feet apart each way; in fact, some varieties would be better if they were planted 18 feet. Planters in the past have made the serious mistake of planting their trees too closely together. When we work around and spray among them we see our mistake.

Do not plant too many varieties. I would name the following kinds to select from: Bradshaw, Washington, Imperial, Gage, Yellow Egg, Lombard, Moore's Arctic, Monarch, Canada Orleans, Quackenboss, Pond's Seedling, Reine Claude, Grand Duke, and Shropshire Damson.

After the young orchard is planted, thorough cultivation should be given. It stimulates good hardy growth. In late summer sow a cover crop for protection to hold the snow and to improve the texture of the soil. This should be plowed down in the following spring. Some growers grow some kind of a hoe crop between their young trees. That is a matter of opinion and, of course, depends somewhat on the fertility of the soil. I, personally, prefer the former plan.

SPRAYING AND PRUNING

Spraying should be done from the first. Nothing helps trees to retain their foliage like Bordeaux, and it also keeps the trees clean and free from disease. When the trees get older and begin to bear fruit, spraying should be done more thoroughly and systematically. How often it should be done in a season depends on local conditions, and the amount of rot to be combatted.

Judicious pruning should not be neglected in a plum orchard, but we fear it very often is. Good, thorough pruning has a great deal to do with the quality of fruit grown.

Something might be said about the picking, packing and marketing of the fruit; but, we feel that this article is already too long. I will leave that feature of our subject for another paper,

especially that part of it that relates to the putting of fruit that is too green on the market.

The Gooseberry

Stanley Spellette, Nantyr, Ont.

For some years previous to last year gooseberries, when mature, commenced dropping off the bush till not a berry was left. It was proved here and at Guelph that this falling is caused by the presence of a little maggot in the berry. The eggs which produce the grubs are deposited in the berry when young by a small moth. Last year, the first for years, about 50 per cent. came to maturity and ripened. So I am in hopes that the scourge is passing. One season I thought that I could prevent the moth laying her eggs by keeping the bush sprayed with liver of sulphur, but it did no good.

The gooseberry will thrive and yield large crops upon almost any soil that is enriched with plenty of manure. A heavy clay loam well manured would be perfection, especially for the American varieties. Before a plot is set to plants it should be fallowed and made rich. Set native varieties six feet apart each way.

Mulching gives grand results in a dry year; but for a wet season I prefer cultivation. Care must be taken for a few weeks, just as the fruit is forming, not to go too deep under and about the bush, especially if the weather is dry. I lost three crops in this way before I detected the cause.

Native varieties do not need much pruning for three years. Keep the top open, and if a branch is to be cut, cut it close to the stem. Allow six or eight stems to grow. As soon as a branch grows dark-colored and hide-bound, and the fruit commences to run small, cut it away and allow a sucker to take its place. Fall is the best time to prune, but the young suckers, except those needed for renewal, should be cut away as soon as they are a few inches high.

After testing 60 foreign varieties, I am convinced that none of them is an improvement upon our own Red Jacket, Pearl or Downing. Foreign varieties have nothing to recommend them but size. Their thick skin is disagreeable if they are allowed to ripen or nearly ripen before being cooked. Red Jacket and Pearl are large enough for all practical purposes; in fact, they are as large as many of the English varieties tested.

The presence of large numbers of robins on a lawn is an indication of the presence of white grubs in the sod.

The Importance of Careful and Thorough Spraying

R. W. Starr, Wolfville, Nova Scotia

As the time for spraying is near at hand, perhaps it may not be out of the way to urge on orchardists the importance of early and careful

No matter what the nature of the season, from the commencement of growth until midsummer, we must be prepared to "watch and work," not

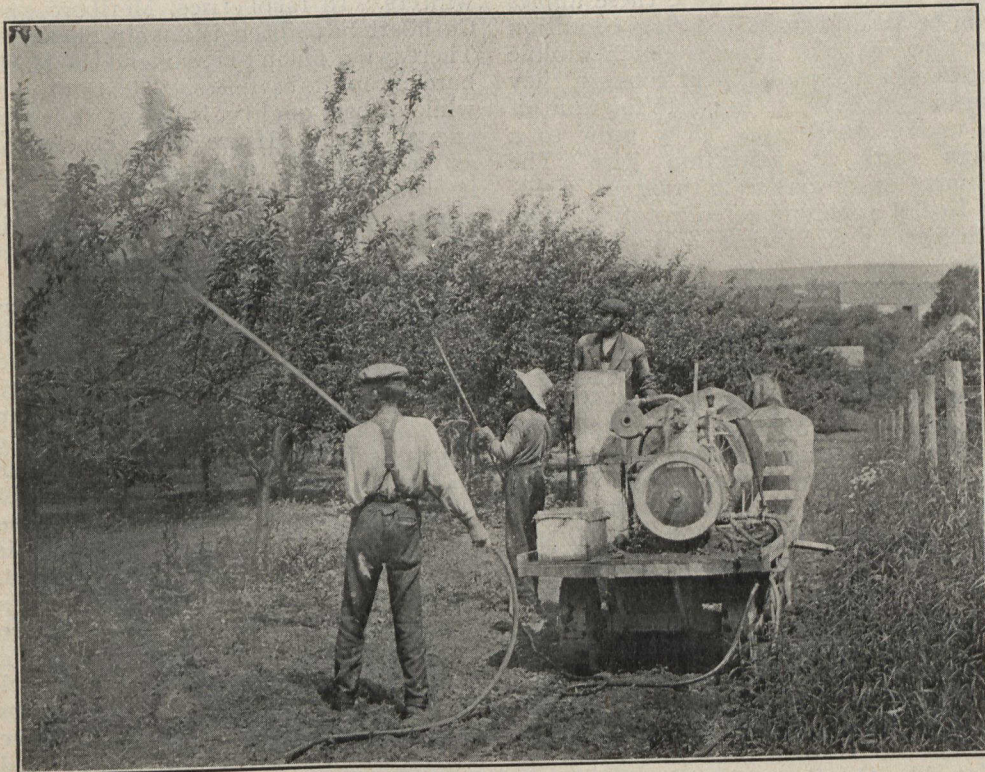
and foliage, the commencement of which we cannot see, but with results plainly evident.

If it were possible to have every fruit tree, in every orchard, carefully and thoroughly sprayed from the ground upward, and all diseased leaves and fruit lying on the ground destroyed, or covered with earth, before or just as the growth of the spores had commenced, we might have some hope of stamping out several of the worst of those pests. This is hopeless, however, unless we get perfect cooperation over a large section of country.

There is an old, frequently quoted adage that will apply to this operation of spraying very forcibly: "That which is worth doing is worth doing well." There is no work on the farm or orchard that requires more care, skill, and closer attention to details than the preparation, straining, and final mixing of spraying solutions in the cask or tank, ready for application, also keeping pump, agitator, hose, extension rods, nozzles, and so forth, in perfect condition all the time, so that the work may be well and economically done without loss of time or waste of material. It matters not whether the hand pump or the power sprayer is used, the same care and close supervision of the work and the same attention to detail is necessary.

MANNER OF SPRAYING

We must have force enough behind the pump to drive the liquid through the nozzles in the finest possible spray. A spray that will float in the air like a



Spraying in a Nova Scotia Orchard

This cut and the one on the front cover of this issue illustrate a power sprayer at work in the orchard of Mr. W. M. Black, Wolfville, N.S. Note the low trucks.

work in this department. It is well that every man should study his own especial wants in this matter. He should know by the past year's observation what variety of insect pest will be most likely to trouble him during the coming season, and be prepared to attack them at the most vulnerable time in their life cycle, not allowing them to get so far ahead as to damage either foliage or fruit, or get so strong as to be difficult to destroy. It will be time well spent if the orchardist will devote some careful study to the life-history of the insects that are troubling him, so that he may take the best means and the proper season to attack and destroy them.

Then we must combat those fungous diseases which have been so destructive to most varieties of fruits during the past two years. These can only be kept under control by careful and continuous spraying with the Bordeaux mixture, or some other preparation of copper carbonate, and at the same time by closely watching the climatic conditions. It is well known that warm, cloudy or foggy weather is a strong incentive to the propagation and growth of fungous spores, and that under such conditions, our precautions should be redoubled.

only to control the insect pests that we can see, but the far more insidious and dangerous fungous diseases of both fruit



A Sprayer at Work in the Orchard of R. S. Eaton, Kentville

thick fog is the ideal. With such a spray and careful manipulation of extension rods, we may cover every twig and leaf of a tree with the minimum amount of material and find our work more effective than if done with a coarse nozzle, sprinkling raindrops on the trees, leaving them dripping, but only half covered, and using twice the material.

In this way much of the work is only half done, and material is wasted by carelessness and want of skill, not only by common laborers who have not been taught to put "brains into their work," but by men who ought to know better, and who rush through what they consider a dirty, disagreeable job to get rid of it as soon as possible. Then they will tell you that they sprayed their trees once or twice, as the case may be, but did not receive much benefit from it and don't think that it is worth the time, trouble and expense. Under those circumstances they may be correct. Had they been more thorough in their work they might arrive at different conclusions.

For further information regarding the details necessary to successful spraying, I refer persons who desire same to the bulletins on spraying issued at Ottawa, Truro, Guelph, Cornell, Geneva and other stations.

Insects of all sorts are increasing year by year. If you have not observed any damage from them, on close examination you will find many kinds and species that you had no idea were infesting your trees. It is a simple matter of precaution, for insurance, therefore, to use arsenical poisons with the Bordeaux, in the proper proportions at the proper season. Spray early, spray often, and above all, spray thoroughly and carefully.

The Red June Plum Tree

Ralph S. Eaton, Kentville, Nova Scotia

Red June plum trees have fruited satisfactorily in Nova Scotia and the quality of the plums for dessert is good. In some seasons the leaves of the variety have been particularly subject to shot-hole fungus or a disease having similar effect. The leaves, after perforation at midsummer, would turn brown and drop and the fruit would soon follow.

The tree is a rapid grower. The long, slender, brittle wood, if allowed to grow all the season, should be cut back one-half. Nipping off the end of the growing wood in July would be preferable in order to save wood production and to induce fruit bud formation. The writer aims to do this with all fillers. After the third year, a little judicious thinning is desirable. The tree naturally forms a fine, round, spreading head. The fruit is handsome but must be severely thinned to secure good dessert size. If the foliage could be kept on during the summer, it would be a very profitable variety.

Varieties for the North

G. C. Caston, Craighurst, Ontario

FOR a commercial apple orchard plant Duchess. With the demand in the west for early apples, the improved facilities for shipping in the way of refrigerator cars well iced, and icing stations on the way, these apples can be laid down in first-class condition in that market; they are such prolific bearers and such excellent cookers, they are not likely to go to waste for want of a market in future. They grow to a high state of perfection here. The climate conditions seem to be just right.

In fall apples next in rotation after Duchess, the Peerless and Alexander. The former is little known as yet, but it is a good variety. I would not discard the old Calvert; it will always be a good shipping fall apple. My chief favorite is the Wolf River. It is one of the very best cooking apples. Its early and abundant bearing qualities, fine size and rich coloring places it in the front rank as a commercial fall apple. In the late fall varieties, or what we might call Christmas apples, Snow and McIntosh do fairly well here; but, unless people will spray them properly, they are not profitable, as a large percentage are unmarketable. The best substitute for these is the Shiawasee. It does famously here and is just about as good as either of the others in quality. The Baxter does very well here, except that, like the Snow, it is very subject to scab.

Of the late winter varieties, the Spy leads. We cannot have too many of them; if three-fourths of the orchard were Spys, it would be all the better. Spy, Baldwin, R.I. Greening, and King must be top-grafted on hardy stock. I don't think as much of Ontario now as I did a few years ago; it has not fulfilled expectations. The Seek-no-further Stark, Pewaukee, Gano, Salome, and Boiken are all good winter sorts here. That makes the list long enough. Do not plant too many varieties. Intending planters should bear this in mind. A commercial orchard should be confined to a few of only the best varieties.

We are out of the plum belt here, and it won't pay anyone to try to grow them. They succeed best near large bodies of water, and a few miles away from the Great Lakes they will not succeed. Practically the same may be said of cherries. The hardiest plum of the European varieties, of about 40 tested here, is the Staunton. It is still thriving while all the rest are dead. The best of the Japans is the Burbank. The American varieties are not worth growing. The best cherries are Orel 24, Osthien, Richmond and Montmorency. In pears, Flemish Beauty, Clapp's and Anjou seem to be quite hardy, and Bart-

lett does well top-grafted on Flemish Beauty.

The best blackberries are Agawam and Eldorado, although both of these have suffered damage in very severe winters. In raspberries, Marlboro and Cuthbert have been the main varieties. There is not much to commend the Marlboro except its earliness. The Cuthbert, while of best quality, is not quite hardy enough here. If we can get one of as good quality and perfectly hardy, it would fill the bill. I have a new variety, called the Eaton, from Michigan. It is a magnificent berry; if it proves hardy it will be an acquisition.

I have tried a great many varieties of strawberries, and my experience is that the old varieties I first started with, the old Wilson and Crescent, are the best I ever grew. But they are run out now. The Wilson rusted so badly it had to be discarded; although in its best days it did not show much signs of rust, the last few years I had it, the rust developed greatly. Crescent is doing fairly well yet in some localities. Among new varieties one that has a strain of Crescent in it is most likely to excel in public favor. I have tested a number of seedlings of my own, and I have one which I believe to be a cross between Crescent and Williams. I have fruited it for two years, and have decided to propagate it for my own use, but will reserve opinion until it has had a few years further trial.

Strawberry Varieties

W. F. W. Fisher, Burlington, Ont.

The choice of varieties depends largely on local conditions, and on the object for which the fruit is to be grown, whether for home market or for long distance shipping. Many growers fall into the error of needlessly multiplying the number of varieties. It is best to choose judiciously and keep the number for a commercial plantation down to two or three. A new and profitable demand will be created as soon as large plantations of single varieties of the right sort are offered to buyers.

The plants should be taken from well-wintered young beds. All weak ones should be discarded. Trim off the runners and dead leaves, lay the plants straight in a carrying basket, sprinkle well with water and cover to exclude air. They are then ready for the field. Plant as soon as possible after digging.

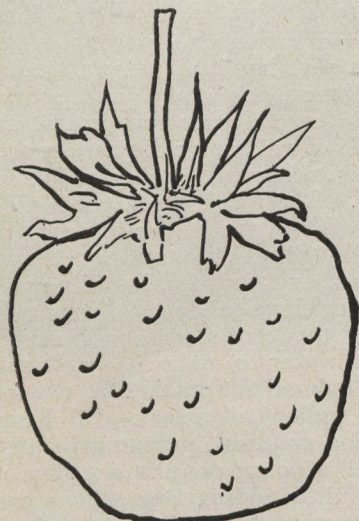
THE CANADIAN HORTICULTURIST is a credit to the publishers. The cuts are well done and the matter of great interest to all lovers of fruits and flowers.—The Toronto World.

The Best New Varieties of Strawberries

E. B. Stevenson, Ponsonby, Ontario

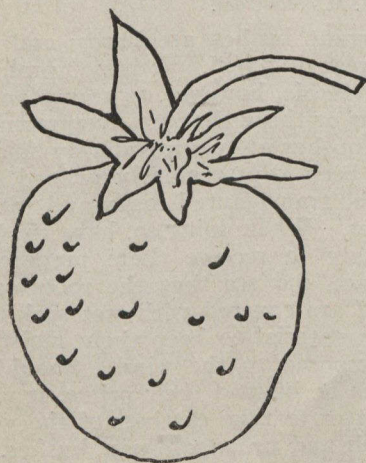
LAST season was one of large berries and good prices. The strawberry flourished. Some varieties are especially responsive to conditions, Sample and Dunlap particularly so. On narrow rows and on light soil, they ripen almost as early as Success or Clyde; while on heavier soil and in wide matted rows, their season is almost as late as Gaudy.

For fancy berries for the market, Kitty Rice, Minute Man, Mead, Auto



Auto

and President seem to be almost perfect; good growers; good yielders; perfect in form, regular; good color, with a shine on them; firm and fair quality. Among the best late varieties is Commonwealth, which ripens about with Gaudy. It is as large and fine as any, and very firm. Cardinal is without doubt one of the best late sorts. The plant is all that could be desired; fruit stalk is large and strong,

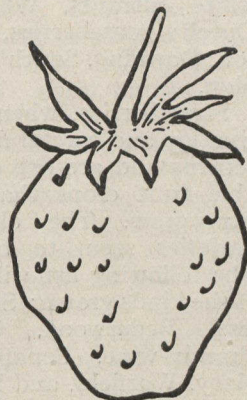


Cardinal

holding the fruit up well; berry, large, glossy, easy to pick, one of the firmest and will carry well. Among the very new ones the best are as follows:

Three W's was a wonder for pro-

ductiveness last year, ahead of everything. The blossom is perfect. At one of the pickings, I picked three boxes of berries without moving; at a later picking, I picked a box for every two feet of row. The plant is large, healthy, a vigorous grower. The berry is large, conical, blunt at the end, fine bright dark scarlet; seeds, yellow; good mild flavor; medium in firmness, but the skin seems to be tough, would rather dry up than rot when kept after picking. I judge from this that it would carry any distance. The size of the berries is uniform, few or no small ones.



Three W's

Mead is another new one that made a great showing of large, handsome berries. The blossom is perfect. It is a fine grower. The plant is strong and healthy, not a trace of rust, and is quite productive. The berry is large, roundish, coloring evenly, firm and good quality. This is a fine variety, and well worth a trial by all growers.

Uncle Sam, perfect blossom, was one of the best in last season's test. The plant is large, strong, healthy, a good runner and productive. The berry is large to very large, if not the largest, fully as large as the largest Clyde or Bubach, roundish in form, scarlet in color with yellow seeds; flesh pink, good quality and flavor, medium in firmness. This variety is worth a trial as a fancy berry for a fancy market.

Reynolds, perfect blossom, originated in Delaware. The plant is large, with thick, leathery dark green foliage, free from rust, a good grower, making plants freely and productive. The berry is large, dark scarlet with yellow seeds; flesh, red to centre, fair quality; a good one.

Minute Man, imperfect blossom, proved itself to be one of the best market varieties. The plant is healthy, a strong grower, and quite productive. The berry is large, roundish-conical, crimson, with yellow seeds; flesh, reddish pink all through, medium in firmness, good quality.

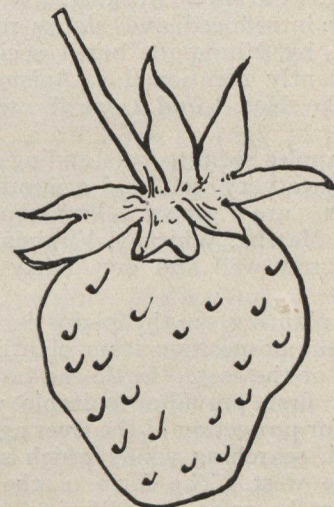
Kitty Rice or Downing's Bride, imperfect blossom, is a healthy grower, making plants freely; it is productive. The berry is large, roundish, good color, with a gloss. For a fancy market berry, Kitty Rice seems to be about the thing. It is of fair quality, and looks well in the crate.

Latest, imperfect blossom, is healthy and strong, stools out, makes few runners, but sufficient for narrow row. The berry is large, conical, good crimson color, flesh red, plant quite productive, good quality and firm. One of the latest and a good one.

Elma, imperfect blossom, is a strong and healthy grower; plant, productive; berry, large to very large, round in shape, bright red, medium in firmness; flesh, pink; nice spicy flavor and good quality, very late; first picking, July 1.

Early Hathaway is one of the best early varieties, perfect blossom. The plant is healthy, a good runner and productive; the berry is roundish-conical; flesh, red all through, acid, fair quality, medium to large in size, scarlet with yellow seeds.

Mellie Hubach, imperfect blossom, will prove a good market sort on ac-



Mellie Hubach

count of its productiveness and bright glossy berries of good size. The plant is healthy, a good grower, making plants freely. The berry is a bright scarlet with yellow seeds, conical, blunt at end, with a slight neck; flesh, pink and white in centre, acid but good flavor. It is an early variety and a good one.

Remedy for Peach Curl.—My remedy for peach curl is to spray the trees thoroughly before April 10, with blue vitriol solution, made of two pounds vitriol to 40 gallons water. This has always given excellent results with me.—J. L. Hilborn, Leamington, Ont.

Do Not Let Trees Go Dry Before Setting.—If not ready to plant when the stock arrives, see that it is immediately taken care of. The best way is to heel it in by packing the roots in a trench and covering them thoroughly with mellow earth well packed about them.

Varieties for Manitoba

F. W. Brodrick, Horticulturist, M.A.C., Winnipeg

UP to the present comparatively little has been done in apple growing in the west. The varieties grown are confined almost exclusively to the hardier Russian sorts. Of summer and early fall, the following varieties are recommended: Duchess of Oldenburg, well known; Charlamoff, a variety highly recommended by the Minnesota Hort'l Society for western planting, resembling Duchess, but a little later; Barovinka, another variety resembling Duchess; Blushed Calville, a variety resembling in appearance Yellow Transparent; and Teofesky is grown to some extent in the west.

Of late fall and winter varieties, Hibernial is recommended as being the best on account of its great hardiness. The trees are productive and the fruits of fair quality. Wealthy may be grown in some parts of the province, but is scarcely hardy enough for western planting. Patten's Greening, a variety recently introduced and highly recommended by Minnesota hort'l societies, is frequently mentioned. Anism and Simbriske, Nos. 1 and 9, are also recommended.

Crabapples seem to be standing western climate very well, and a number of varieties are grown. Transcendent, Hyslop, Martha, Whitney, Virginia, and Tonka grow well and give fairly good returns.

Tree planting on the plains is quite a different proposition from planting in Ontario or the east. Little can be done without first providing suitable wind-breaks for protection of the trees against the cold, searching winds which sweep over the west. The form of the tree also must be greatly modified to enable it to withstand the rigorous winds which prevail in the west. The trees are headed back in order to develop a low, bushy form which seems to enable them to winter much better than where the trees are allowed to develop a wide open top.

Plum culture is attended with but a moderate amount of success. A few of the heady sorts can be grown and ripened under western conditions. The following varieties are recommended for western planting: Cheney, Aitken, Wyant, Forest Garden, Surprise, and Bicksley. The best results are obtained by growing in protected locations and by keeping the trees well headed back.

Bush fruits, such as currants, raspberries and gooseberries, may be grown with good success with ordinary cultivation and moderate winter protection. The following is a good commercial list: Red raspberries: Shipper's Pride, Loudon, Ironclad, Cuthbert, Philadelphia, Kenyon, Turner, Marlboro; black raspberries, Gregg, Older, Ohio; yellow, Golden Queen; red currants,

Stewart, Cherry, Versailles, Victoria, Raby Castle, Red Dutch, Fay's Prolific; black currants, Black Beauty, Black Champion, Crandall, Black Naples; white currants, White Grape, White Dutch; gooseberries, Gothland, Houghton, Downing, Smith's Improved, Champion.

Strawberries, when given proper cultivation and careful mulching, give good returns and are one of the most profitable fruit crops that western farmers can grow. The old and well-tried varieties seem to be most in favor. The following list will give a good idea of the kinds grown: Strawberries, Sharpless, Bederwood, Crescent, Wilson, Brandy-wine, Senator Dunlop, Glen Mary, Warfield, and Haverland.

Renovating an Old Orchard

I am trying to work over and fix up an orchard. It is a comparatively young orchard, but has been neglected, neither pruned nor sprayed; hence, there are quite a number of pests infesting it. A number of trees have patches on them resembling dry whitewash. It may be a scale of some kind. These spots vary from one and a half inches to three inches long, and one and a half inches to two inches wide, mostly on the trunks. Would it be advisable to apply whale oil soap or Bordeaux mixture? I never saw an orchard where so many of the trees had spurs from one and a half inches to three inches long all along the main branches. These should be cut off should they not? They are very thick and have numerous annual rings on them. The orchard is 10 or 12 years old.—H. W. S., Lancaster, Ont.

With regard to the neglected orchard at Lancaster, I might say that one of the best ways of invigorating the trees is by pruning, so that I should advise the thorough pruning of the trees, not by the removal of many large branches—as in the colder parts of the country this is not a wise practice, as disease may set in—but thinning out the smaller branches from the outside of the tree. If possible, the sod should be broken up and the orchard put under a good state of cultivation. I fancy that the patches which are said to resemble whitewash must be due to lichens or fungous growth on the trees. I would advise giving the trees a thorough spraying early in April with a lime wash, made in the proportion of one pound of lime to a gallon of water, and sprayed on the trees from top to bottom, making two applications, the second as soon as the first becomes dry. This will have a very beneficial effect on the trees, cleaning them up in good shape. In addition to the lime-wash, the trees should be thoroughly sprayed with Bordeaux mixture and Paris green, beginning just before the flower buds open, but if the lime-wash is not used, Bordeaux mixture should be applied just as the leaf buds are breaking. Whale-oil soap need not be

used unless there are aphid on the trees. Long spurs on the main branches should not be removed, as these are the ones which bear the fruit. The ring-like appearance on the spurs is quite natural on old spurs. If possible, manure should be plowed under when breaking up the sod.—Answered by W. T. Macoun, Horticulturist, C.E.F., Ottawa.

The Apple Aphis

Last year the apple aphis did much damage in my orchard. Both fruit and foliage were injured by them. I sprayed several times with Bordeaux mixture, which was not intended to affect the aphis but to keep diseases in check. Please tell me how best to combat this pest?—H. B. S., Shediak, N.B.

This pest has been very abundant in New Brunswick and Nova Scotia orchards for the past two years, and is capable of doing much injury by sucking the juices from the young buds and the leaves. There are three effective remedies: (1) Tobacco and soap wash, made by dissolving two pounds whale-oil soap, or four pounds ordinary soap, in two or three gallons of a strong decoction of tobacco stems or leaves, and adding water to make 50 or 60 gallons. (2) Whale-oil soap solution, one pound to six gallons of water. (3) Kerosene emulsion solution, prepared by dissolving half a pound soap in a gallon of hot water, then adding two gallons coal oil and churning violently until a thorough creamy emulsion is obtained. In the application use one part of this emulsion to 12 parts of water. It is advisable that the first application, by spraying, should be made just as the buds are opening, and the second and third applications at intervals of two or three weeks.—Answered by Prof. W. Lochhead, Macdonald College.

Transplanting Currants

Is it advisable to transplant currant bushes?—S. H. M., Montreal.

Currant bushes are hardy and bear transplanting well. It is not profitable or advisable, however, to transplant old bushes or those that are overgrown. If your bushes are comparatively small or have been kept regularly pruned, they may be transplanted easily and without danger. When doing so, have the holes that are to receive them prepared in advance and see that the roots on removal are covered with wet sacking or other material to keep them moist and not exposed to the wind. Should the bushes be beyond their prime, it would be better to take cuttings of the young growth and propagate new bushes.

Pruning in early spring, before growth begins, induces wood growth.

Shrivelled trees may be made plump before planting by burying tops and all in earth for several days.

The First Flowers of Spring

Roderick Cameron, Niagara Falls, Ont.

ONE of the first plants that bloom in spring is the Christmas Rose, *Heliborus Niger*, probably named Christmas Rose from the fact that it blooms in the south of England about



White Rock Cress

Christmas. In Queen Victoria Park, Niagara Falls, last year, the plant was in bloom from November to April.

Another plant that blooms here in the month of April is *Daphne Mezereum*. This is a shrub that grows to five feet high and flowers before the leaves appear. It bears many violet-purple flowers, on brown, erect stems. The fragrance of these flowers is exquisite during the morning and evening. Many passers-by enquire where the fragrance comes from. *Daphne Mezereum* is a rare wildling in Ontario and even in America, but on the Dufferin Islands, in the Niagara river, it grows as underbrush. During the fall, it is covered with showy scarlet fruit about the size of peas. There is a variety of the same that produces white flowers and fruit; otherwise, they are similar. Both of these shrubs should be hardy in many parts of Ontario, particularly if grown from the seed. Another of this type is *Daphne Cneorum*, a dwarf, spreading, evergreen shrub, called by some "The Garland Flower." This is a choice subject growing by itself, or as a border to a bed of shrubbery. It produces flowers in abundance of a light lilac color during spring and fall, and fills the air with a most delicious fragrance.

Hepatica tribola and *Hepatica acutiloba* are native plants, better known by the name "Liver Leaf." They bear beautiful, deep blue flowers. They well deserve employment, particularly in well-shaded spots in the rockwork. Their leaves are evergreen. These plants are the first to bloom in the open.

The common crocuses and the snow-

drops are well known to all lovers of flowers. They are among the first plants to bloom, starting early in April.

Among the first to bloom in the open is the English Daisy, *Bellis perennis*. It is as common as the dandelion in the grass in the park. The next plant to bloom with us is the sweet purple English violet.

The foregoing are all the plants that bloom here during April, but May produces new-born flowers every day. I go around my beds and borders every evening to see and admire the new-born faces that seem to smile at me. It is needless to say that I smile in return I am so glad to see them, and to know that they have pulled through the winter so well. But it is a very difficult task to remember their proper names.

Cowslip, *Primula officinalis*, is a plant seldom seen in gardens; yet, its beauty and associations naturally make it valuable. It seems to stand our cold



Purple Rock Cress

winters and hot summers well. It is supposed to be the parent of the majority of our varieties of Polyanthus.

Farther north, where it would not be safe to plant greenhouse plants in beds before the middle of June, primrose, polyanthus and cowslip are grand subjects to plant in the beds in the fall to bloom in the spring, as they would be done blooming before the beds are required for the greenhouse stock. The primula is none the worse of being divided and transplanted. It is excellent for growing in out-of-the-way places during summer, and again planted into beds in the fall to bloom again the following spring. Such beds are much more beautiful and valuable than gaudy tulip beds, the bulbs for which have to be bought every fall. The plants should be hardy in many parts of Ontario. The flowers might require a little protection sometimes, when there was a likelihood of frost. The primula is to England and Scotland what the gentian is to

the Alps, the sweetest and most-sought-after flower.

During May and the fore part of June, White Rock Cress, *Arabis albidia*, and its double form play a very prominent part. They are the brightest gems in the garden. If a border or edging is made of them, it will be found that the season of bloom is very much lengthened by planting the single and double turn about in a row, as the one is done when the other begins to bloom. After both are done blooming, they may be trimmed back short, and sweet alyssum may be planted between the plants of *Arabis* to keep up the display of white for the rest of the season. *Arabis* makes a grand rock plant; the accompanying photograph will show how well it is suited for this purpose.

Purple Rock Cress, *Aubretia Hendersoni*, is in bloom at the same time as the white, and makes a grand show of purple. With the exception of the color, the plants are very similar. This is also a grand rock plant.

Adonis davorica flore pleno is a rare and beautiful low-growing plant, very hardy, producing double flowers three inches across, green and yellow in color. The plant has finely cut leaves. It grows 15 inches high and is a gem for the rockwork.

Barrenwort, *Epimedium alpinum*, is a dainty plant, growing 18 inches high. The foliage is neat and almost evergreen. It produces airy clusters of purplish and yellow flowers of quaint shape. A good place for it is among the rocks or in a clump by itself, where it could be seen to better advantage and its charms protected.



Leopard's Bane

A plant that is not often seen is Noble Tumitory, *Corydalis nobilis*. This is one of the finest ornamental herbaceous plants. The flowers appear in large heads on large, strong stems, and are of a rich, yellow color. The plant dies down to the ground soon after flowering. It is a native of Siberia, consequently

very hardy everywhere. It grows to a height of two feet.

Virginia Cowslip, *Mertensia Virginica*, is one of the best perennial plants in the garden. It is like the corydalis, disappearing soon after blooming. Such

plants should be kept staked to mark the place where they will appear the following season. This plant grows two feet high, producing beautiful sky-blue flowers that are always admired by every passer-by.

Leopard's Bane, *Doronicum excelsum*, grows to a height of two feet and produces yellow, sunflower-like blooms on long stems which are very good for cutting. It is a very free-blooming plant and makes a grand display in the border.

Shade Trees for Our Cities*

Prof. D. P. Penhallow, McGill University, Montreal

THE question of shade trees for our cities and towns, is a many-sided one, which has engaged the most careful consideration from a very early period in our history. Shade trees, as well as properly kept shrubs and flower beds, exert a powerful reflex influence upon those who are habitually associated with them in their daily lives. From this point of view it is therefore not difficult to determine that the extent to which trees are cultivated, and the intelligence expended in properly caring for them, may be safely adopted as an index of the relative progressive-ness, culture and civilization of a town.

In discussing the relation of shade trees to purposes of street ornamentation, there are three factors of leading importance which should be taken into consideration: Their productive value; their esthetic value; and their educational value. The popular notion that trees have a tendency to reduce the actual temperature of the surrounding air, has a slight basis of fact in a dense forest, but in the case of individual trees, their influence in this respect is so small as to be wholly unrecognizable; nor is it more conceivable that the thousands of trees which might be scattered throughout a large city, would exercise any more appreciable effect. Having thus eliminated what at first sight might reasonably be expected from the growth of trees, it is pertinent to ask in what respects they are protective? Trees constitute an active medium for the transfer of water from the soil to the atmosphere through their foliage, and the amount of water which may be translocated in this way, is very large during the period of active growth. There is therefore a constant tendency to maintain the atmosphere in a condition of desirable humidity, and though this effect is rapidly offset by the distributing influence of air currents, it is nevertheless sensible, and in this respect the presence of large masses of foliage is a desirable factor which tends to the amelioration of otherwise severe conditions.

Active foliage demands large supplies of carbon-dioxide gas which it draws from the surrounding air and rapidly converts into organic bodies,

these latter being subsequently utilized in building up the fabric of the plant body. In return, the plant yields up a corresponding volume of free oxygen, and the surrounding air is purified to that extent. In large cities, especially where there are extensive manufacturing interests as in Montreal, there is a tendency towards the local accumulation of the noxious products of combustion of which carbon-dioxide is the most important, and there can be no doubt that the presence of trees in large numbers exerts a most salutary effect by virtue of their absorption of this gas and the substitution of pure oxygen. It may reasonably be contended from these statements, that a city which is abundantly supplied with shade trees will, in general, be distinguished by the greater purity and more bracing quality of its atmosphere, and it would seem to me that the relations thus developed, are too often overlooked or even ignored in considering the part which trees play in urban life.

There is another respect in which

trees manifest their protective influence, as found in the extent to which they minimize the effects of excessive heat. Any one passing from a narrow and crowded business street devoid of trees, to a residential street provided with shade trees, becomes sensible of a gratifying difference in temperature. This difference is not altogether dependent upon the relative height and the crowded character of the buildings, though it is a large factor; but it is due, in the main, to the influence of the trees themselves. The trees not only give the pedestrian direct protection from the rays of the sun, but they so shield the pavements and buildings as to prevent the absorption and reflection of heat, affording to the buildings in particular, such a degree of protection as to give to the inhabitants a sense of refreshing comfort.

Of the esthetic and educational value of trees, much might be said, but it may be sufficient to point out that to bring up children habituated to association with those forms of vegetation which typify great beauty and grace



Shade Trees Such as These Increase the Value of the Residences

*Extracts from an article published in the *Canadian Municipal Journal*.

of form; which represent the embodiment of plastic strength and great virility, is to insensibly shape their moral natures in such ways as to develop character and self-reliance, as well as an appreciation of those more gentle graces which contribute so largely to the characteristic qualities of the cultured and refined. Nor can we doubt that an abundance of well-cared-for shade trees operate as an attraction to visitors and as an actual incentive to settlement. The naturally fine shade trees of Montreal constitute one of the features most commented upon by strangers, and it is the same feature which lends such charm to Toronto, New Haven, Washington, Buffalo, Detroit, and many other cities.

Turning our attention briefly to more practical considerations, it is obvious that it is the part of a wise civic policy to see to it that a form of property which possesses so many potentialities for good; which possesses so large a measure of intrinsic value; which constantly enhances in value with increasing age through a long period of time; and which also involves a considerable initial expenditure, should be most carefully protected, not only against the far too numerous enemies which Nature herself has provided, but against man himself as the very worst of all the foes with which shade trees must contend. The fact that Massachusetts has expended vast sums of money in its efforts to protect its shade trees against the ravages of insect pests; and that in spite of repeated failures, they still persist in the fight and continue to spend large sums of money annually, with a feeling of confidence in ultimate victory, is at once a tribute to the enlightenment of a community which finds it desirable to put forth such heroic efforts, and a practical proof of the wisdom of such a policy of protection, even though it involve the expenditure of millions of dollars of public money.

Abundant experience has shown that it is not alone a policy which shall deal with the pests when they arrive, that is wanted, but quite as much a policy of prevention which, ever alert, anticipates the coming evil and adopts such measures as will render its further operations ineffective. If all this may be said with respect to remedial and protective measures where natural enemies are concerned, it is certainly a penny-wise and pound-foolish policy which will expend thousands of dollars upon the destruction of insects and other natural foes, and at the same time permit man to operate in such ways as to be quite as, if not far more speedily and far more certainly, destructive. Since the introduction of telegraph, telephone and electric lighting wires throughout all the thorough-



Look! and Ask if we Should Not Protect our Trees

fares of our cities, shade trees have ceased to have any recognized status. A tree which has developed a fine form through the growth of half a century is suddenly deprived of its top or other essential parts and left a maimed and shattered wreck whose mutilated stumps of former members reach up their ragged ends as if in mute appeal for vengeance upon the vandals who have been guilty of such an outrage. The case is somewhat aggravated when an enterprising citizen plants a fine tree, perhaps at considerable expense, and watches with fondest care its gradual development into an object of beauty and utility. Some day he arrives home from his office to find only a wreck of that in which he has taken so much justifiable pride and pleasure. Trees which have been dealt with in such a manner, should be removed at once, for they can never become what Nature designed them to be, and their presence cannot fail to exert precisely the opposite effect to that for which they were intended, because of the false standards which they illustrate.

In justice to the linemen, however, it should be pointed out that while their operations are serious enough, they are by no means the only transgressors, since these are found even in the ranks of those who by profession, or at least by occupation, might be supposed to exercise the most intelligent and thoughtful oversight and care. The operations of the professional (*sic*) forester, or at least of the man who is paid to fill that rôle, are very often far from what they should

be. To cut off a limb with a hatchet instead of with a good saw; to cut from above and allow the falling limb to drag a long splinter with it; to leave a projecting stump with a ragged end; or to leave limbs on the tree long after they have commenced to decay—all these things not only present a most unsightly and unprofessional piece of work, but they one and all invite the entrance of decay and ensure the certain destruction of the tree.

The time has certainly arrived when every town and city should regard it as a paying investment to plant good trees. This should be done not alone by the city itself, but by property holders as well, who should be encouraged, in every way, to undertake such work independently. It should then be the further duty of the town or city to guarantee a suitable measure of protection to such trees against the attacks of animals, the lawlessness of street boys who have no higher ideals than delight in the destruction of everything which contributes to the grace and beauty of our streets, the attacks of insect pests and the operation of parasitic fungi. Furthermore, there should be a systematic inspection of all the trees each spring. Sporadic efforts in this respect are of very little value, but there should be a well-ordered service which will bring every tree under an intelligent inspection. If accomplished regularly and systematically, such service need not be costly, and it could be accomplished before the more pressing work of decorating the squares with flowers begins.

Under such a system, the actual amount of work to be accomplished in a given season would be reduced to a minimum; but where the work is carried out at irregular and often long intervals, the trees not only suffer severely, but the amount of work to be accomplished may become costly.

There is a fine opportunity for public sentiment to express itself forcibly with respect to this very important question; and in cases where the authorities are lukewarm or actually indifferent, it should be taken up and vigorously dealt with by a special association formed for that purpose. The work of such an association—and there are many towns where they are now in successful operation—should be governed by a broad policy which should comprise the encouragement of liberal planting; the selection of those types of trees which are best suited to the climate and to the locality, as also to the street to be treated; careful supervision of and directions for pruning; and lastly, the most careful protection against one and all of the many enemies which prey upon them.

The Amateur's Greenhouse

Hydrangeas should be showing color. When nearing their finish, they should have plenty of water at the roots. Keep pinching and rubbing out the early growths of azaleas. Lilacs, Azalea mollis, flowering cherries and other deciduous shrubs should be allowed to flower in a comparatively cool house.

Pot gloxinias, that were started some weeks ago, in light, fairly rich compost, before they get crowded. Unless the tubers are above ordinary size, five or six inch pots will be sufficiently large. Keep on the dry side until well rooted. Keep them in the light, but not in direct sunshine. Do not forget about keeping the water off the leaves.

Cyclamen sown last fall should be ready for pots. Do not plant deeper than up to the middle of the little bulbs. Thickly-sown seedlings, such as lobelias, petunias and so on, should be transplanted into other boxes before they become too spindly. Cannas and dahlias may be started. If you have not sown seeds of mignonette, candytuft and stocks, sow now. Keep geraniums clean of dry and dead leaves, and pinch back the lanky growth.

My plan of planting roses is in long open hedges, cultivating deeply the ground to a width of four feet and setting the plants in the centre four feet apart. In the spaces can be grown tulips or other spring bulbs and asters or showy annuals. Enrich the ground in the fall with cow manure and in the spring with bone meal.—A. K. Goodman, Cayuga, Ont.

The Leopard Plant

S. Armstrong, Jermyn, Ont.

The leopard plant, *Farfugium grande*, shown in the illustration, is about 10 years old and gets no particular care. In summer, it is placed on a south verandah.

In autumn it is re-potted to one of larger size, the space between the roots and the pot being filled with rich garden soil. The plant is then taken inside and placed in a south bay window, where it remains until spring. The house is heated by a wood furnace. A favorable temperature and an abundance of water constitute about all the attention that the plant gets.

proper cleaning and storing of all tools when not in use. For gardens of considerable dimensions, a tool-house should be provided with arrangements for convenient and safe storing. Brackets and hooks against walls for sieves, ropes, scythes, rakes, spades, and so on; shelves, drawers or cupboards for small tools, and boxes for labels, twine and pegs, should be furnished in every orderly tool-house. Make a point always to return every article to its proper place when not in use.

Wet days may be turned to account by oiling, sharpening and repairing tools that require it. Even in small gardens a place for the storing of tools ought to



A Leopard Plant Grown Successfully in Ontario

The Care of Garden Tools

Many and varied are the kinds of tools used in the work of gardening about the home. Most of them are familiar to the amateur gardener. More important than a mere enumeration of them is the difference between a good and a bad implement. One of the most commonly used garden tools is the spade. With one of the modern improved kinds, a person can do, with the same exertion, 10 per cent. more work than he could with the heavy, easily-clogged kinds formerly in use. It is also the case that, with well-adapted tools of a superior description, the work also is better done. The care of tools and implements is a matter that is frequently neglected by gardeners. Economy not only in outlay, but in labor, is secured by the

be found. With good, clean tools, more and better work is accomplished than is possible when they are rusty, or blunt, or rickety.

Lawn and Garden Jots

Fertilizers rich in nitrogen and poor in potash give the most grass and the least clover; they are, therefore, excellent for tennis courts, greens and similar situations.

On a lawn sour and mossy, with failing herbage, use lime and potash (there is no better potassic fertilizer than unleached wood ashes). This will bring in a liberal growth of clover, which can afterwards be largely supplanted with grasses, by withholding the mineral fertilizers and using one or two hundred weight per acre of nitrate soda.

Timely Pointers for Amateur Flower Growers

NOW is the time for making hotbeds for raising petunias, phlox, asters, cockscombs (*Celosia christata*), and other annuals. If the bed has been completed about a week it should be in fit condition to place seed boxes in. Always allow a little air to come in at the back of the frame so as to the hot steam, which always arises from a newly made hotbed, to run off. A few finely-sifted coal ashes, placed on top of manure, are very beneficial as they help to keep in the heat.

Seeds of annuals should be sown in a light, sandy soil in shallow boxes. Very fine seeds do not need to be covered. Sow them on top of the soil. Asters, balsams and zinnias require to be covered in the soil at about a depth the size of the seed. In sowing all kinds of spring seeds, the depth they should be sown can be judged by the size of the seed, that is, have just the same depth of earth on the top of the seed as the seed is high. Seed should not be sown in seed boxes until after the soil in the boxes has been well watered. After sowing, the seed should be pressed with some flat object to force them in evenly. It is a good plan to darken the surface with newspapers or other object to cause the seeds to germinate quickly. The seeds when germinating should be watched carefully. When the shoots begin to show the covering must be removed. At this period of growth, ventilation should be watched closely.

Now is the time to strike cuttings of coleus, ageratum, geraniums, lobelias. These will root in about 10 days or two weeks. As soon as rooted they should be removed and potted in small pots in light, sandy soil, and placed back in the hotbed again. Give them a good watering and keep them shaded from the sun for two or three days to allow the roots to start in the new soil. As soon as they are rooted, they should be again placed in the sun and light.

All pruning should be done now as danger from severe frosts is about over. Hardy roses should have all weak wood cut out, and the stout growths shortened to within six inches of the ground. They will be much benefited by a liberal coating of cow manure placed around the roots. Do this as soon as possible, so that the spring rains may wash the stimulant into the soil.

Now is the time to sow balsams and ferns. Put in boxes, or pots, if boxes are not convenient.

All canna roots should be divided, cleaned and put into boxes, upon the bottom of which should be placed a couple of inches of soil. Water slightly and expose to the light. After they

have started growth they may be repotted if so desired. Dahlias should be divided now for summer growth.

Tulips in beds should be uncovered immediately to get all the sun and light possible.

When all frost is out of the ground and the weather is fairly dry, the lawn should be rolled. If lawns are in poor condition, use a standard chemical fer-

tilizer to put them in good order. Grass edgings should be cut off evenly.

Plants that are broken down from winter frosts should be headed back, and grape vines that have not been pruned should be treated immediately to prevent bleeding.

If the roots of phlox or other perennials are large, divide them, using a spade or large knife.

A Fine Orchid

A FINE old orchid that is free flowering and easily grown when once its requirements are understood, is *Cœlogyne cristata*. The plant requires a good porous soil, and not too much of it. It is better to use moss altogether than peat of a low grade. Although when once well potted, they will sometimes grow and flower well for 10 or 12 years, that does not mean that, after

ing yellow. Plants that have become too large may be pulled to pieces, the dead roots and some of the old bulbs cut away, and as many pieces having leads placed in the new pots as can be done without crowding. They will shrivel considerably after this operation, but no attempt should be made to keep them plump by soaking them with water. If the plants are kept shaded and the soil



Cœlogyne cristata in a Ten-inch Pan

once being done, they should forever after be neglected. A top dressing should be given yearly after the flowers are past; and, to assist in this work when the plants become crowded, some of the old bulbs should be cut out and the spaces filled with new material. Water should only be given when the plants are seen to be dying out, and then a good soaking should be given. A dose of weak, liquid cow manure every second watering, when in full growth, will make them produce larger bulbs and finer flowers.

They should be grown in a house with a minimum temperature of 50 degrees, and only be shaded sufficiently to keep the leaves from turn-

just moist by syringing, they will take hold more freely, and will soon swell up again, when they can be more freely watered.

Japanese Iris

When should the bulbs of Japanese iris be planted? How long will flowers of this plant last when cut?—A. F., Woodstock, N.B.

Spring is the best season to plant Japanese iris. These plants grow well in rich, moist land. They should be planted in full sun. Shade has a tendency to make the stems weak and blooms flimsy. The latter last fairly well as cut flowers if cut a few hours before the buds are ready to unfold. The stems should at once be put in water and kept in a cool place.

The Best Way to Grow Sweet Peas

Edwin Uiley, Toronto, Ontario

THE sweet pea, *Lathyrus Odoratus*, is the most valuable annual flower of the present day. Its delicious perfume, its diversity of lovely colors, its lengthened period of bloom, and its value for cutting entitle it to a prominent place in every garden. By sowing the seed at once it may be had in bloom continuously from the first week in July until cut down by severe frost (generally late in October). Care must be taken to pick every flower as soon as it is fully developed and not to let any seed pods form. If seed pods are allowed to form, the plant will expend all its energy upon them and rapidly cease flowering. By August the seeds will be ripe and there will not be any more flowers.

The best way to grow sweet peas is by the trench system, because it makes one practically independent of the soil the trench is in. The garden may be heavy clay or pure sand, but by digging a trench and filling it with a good compost, one can be almost certain of satisfactory results. If the garden is a good loam all you need is some *old* manure. If it is light sand you will need some good loam and some old manure. I have tried many ways of growing these beautiful flowers, but the following has always proved the most successful.

Dig a trench 12 inches wide and from 12 to 15 inches deep, put a layer of old, well-rotted manure two or three inches deep in the bottom, then a layer of loam three inches, then old manure two inches. Mix the last two layers well with a garden fork and level with a rake. Fill the trench to within two or three inches of the top with soil, *without any manure*. Level nicely and sow your seeds. Cover to the top of the trench with loam; press down by walking back and forth on it two or three times. Your seeds will then be about three inches below the surface of the trench, and the surface slightly below the rest of the ground. I have sown sweet pea seed in the same trench three years following, just adding a small quantity of old manure each year, and forking it in, and the flowers the third year were better than those of the first.

Secure the best seeds that you can obtain. It is false economy buying cheap seeds. Sow the seeds in rows or broadcast in the trench an inch or two between each seed and when they grow above the surface (which they will do in about two weeks) pull enough to leave the vines not less than three inches apart. Each plant, if properly grown, will fill up a foot of space. As soon as they commence to grow put up something for them to cling to. There are

many ways to do this. Brush is the most natural and effective, but in a city it is not easily procured. Poultry netting is probably the simplest support, and it answers the purpose well. Let it come within two inches of the soil, because if the stems have not support early they become bent and the flower stalks will then also be crooked. Do not adopt the foolish fashion of putting strings vertically for the peas to cling to: They do not twine like a morning glory but send their tendrils in all directions, feeling for something to cling to.

If you have plenty of room let your sweet peas be sown away from the fences in a sunny position, the row running north and south, so that they can get all the sun and air possible. Before the weather gets very hot spread two or three inches of old manure or the clippings from your lawn over the roots of the vines. This is called mulching, and not only helps to retain the moisture but keeps the roots cool, an important thing with sweet peas. If you cannot do this keep the soil open by an occasional raking not more than an inch deep or scatter seed of the sweet alyssum along the trench. This plant does not send its roots down far enough to interfere with the sweet peas, and will help to keep the ground cool, at the same time giving you some nice sweet-scented flowers.

If the plants lose their bright green color, it is either because the manure is too strong or you have not enough of it. If the former there is no cure for it, but drenching the ground thoroughly with water will help. If the latter, an application of nitrate of soda will do much good. Dissolve a dessertspoonful in a pail of water and pour into the trench once a week. If the household washing is done at home, there is no better application for sweet peas than the suds which are thrown away; run them into the trench when cold and not too strong. Be sure that any manure you use is old and thoroughly well rotted. Cabbages, cannas, and so on, will stand strong manure, but sweet peas will be destroyed by it. The manure I used last year was four years old.

Sweet peas need plenty of water but the ground must not be kept sodden. They are liable in hot weather, unless the vines are kept moist, to be attacked by the red spider and then good-bye to your flowers. Keep the vine sprinkled with water (not drenched) once or twice a day in hot weather. If the ground is kept too damp the buds will turn yellow and drop off without opening. Avoid lime in any form.

There is not a plant grown in Canada that will give more flowers or for such a long period as the sweet pea. I have seen a record of one vine giving 1,200 flowers in a season. One year, I made my first cutting on July 1, and my last on November 7. I have a note in my diary under date of October 24, 1874: "Cut 20 dozen very fine sweet peas to-day." What flower can beat this?

Perennial Larkspur

Wm. Hunt

Some of the newer hybrids of these lovely, showy, hardy, border plants are a great improvement on the older types. Their long, erect spikes of flowers in all shades of blue, from the palest lavender to the deepest violet blue, make them a conspicuous object in the mixed border about the end of June and early in July.

The dwarf types promise to become popular, as one of the objections to the older types has been to keep them erect during the heavy rainstorms of summer. Seed sown in spring or early summer will produce good flowering plants the following summer. They can be sown in the border or in boxes and transplanted.

Fertilizing Kitchen Garden

My kitchen garden, 20 x 48 feet, was well manured for three years until last fall, when I neglected the application. It was well spaded, however, and left rough. Will it do to use chemical fertilizers this spring instead of barnyard manure; if so, what kind? Each year two or three succession crops have been grown by the liberal use of bone ash and nitrate of soda—J. M., Toronto.

It is quite possible to grow the crops this coming season without the application of any more farmyard manure. As you have applied bone ash, which is rich in phosphoric acid, and as the farmyard manure is comparatively rich in nitrogen, I would particularly advise the use of a considerable quantity of potash in the muriate or sulphate of potash form; or, if you can procure them, in the form of wood ashes. I think that along with that it would be well to use a little nitrate of soda for such crops as lettuce or radish to force rapid growth.—Answered by R. Harcourt, O.A.C., Guelph.

Growing Cos Lettuce

How should Cos lettuce be grown?—Mrs. P. C., Kentville, N.S.

Sow the seed and grow as you would other kinds of lettuce. When the leaves are large enough, they should be blanched by gathering them up and tying at the top. In a week or 10 days they will be fit for use.

Growing Potatoes for Profit*

W. A. Broughton, Sarnia, Ontario

JUDGING from 30 years' experience, the best soil for potatoes is a rich, sandy loam, with six to nine inches of surface soil, that is well drained either naturally or by tile. Drainage is important. Potatoes do not thrive on land that is not well drained. Drained swamp or muck lands grow good crops. As many as 400 bushels an acre have been grown on this kind of land. Sandy lands require more manure than any other kind. Stiff or heavy clay soils do not grow good potatoes. A clay loam will grow a good crop if properly handled.

PREPARATION OF THE LAND

The land should be plowed and disc-harrowed in August. It should be harrowed after each rain to keep down the

harrowed lightly. It is then ready to plant.

PLANTING

It is best to plant potatoes, both early and late varieties, as early as possible. Some growers plant the later varieties late. This is a mistake. I have found that late varieties will do better when planted early.

The best early potatoes are Early Ohio, Early Burpee, Bovee and Early Michigan. The best late ones are American Wonder, Rural New-Yorker, Empire State, Elephants and Clark's No. 1.

A change of seed is always desirable; that is, from one kind of soil to another. Seed potatoes should be of medium size and cut to one or two eyes. They should be planted as soon after cutting

fertilizer attachment that can be used when desired. With it 400 to 800 pounds of good fertilizer can be put in the rows. This gives the potatoes a better start and insures a better crop.

CULTIVATION

A week or 10 days after planting, the potatoes should be gone over with a weeder, the same direction as planted, to level the ridge that is left by the planter and to kill small weeds. This operation should be repeated every few days until potatoes are a couple of inches high. They should now be cultivated with a cultivator every week until tops are too large to permit cultivation. For the first few times they should be cultivated deep and close to plant, but shallower and farther from plants as they grow. Hoe them before the tops get too large. At the last cultivation, hill them slightly, just enough to protect the potatoes from the sun after the vines are dead.

The vines should be kept free from "bugs" by spraying with the following mixture: Two pounds of good Paris green to 50 gallons of water. For blight they should be sprayed with Bordeaux mixture five or six times during the growing season. Apply the Paris green and Bordeaux mixture at one application.

Melons and Melon Growing†

W. G. Horne, Clarkson, Ontario

Muskmelons and watermelons require warm, sandy land and considerable manure. The latter should be spread broadcast. It is too concentrated in hills, and has a tendency to dry them out. All the roots that need feeding are not only in the hills. They extend as far under ground as the vine reaches above ground. I have turned them up with the cultivator much farther away than I expected.

Melons need good cultivation. While the vines are small, the land cannot be worked too much. The land should be kept as free from weeds as possible.

Hot seasons suit melons best. They are of better flavor when the season is warm. They can stand dry weather for a long time if we have heavy dew at night. Much rain is not required, and too wet weather causes muskmelons to crack open. This renders them unfit for market, and not much good for home use.

WORK IN THE HOTBED

There is much to contend with in growing melons for the early market. It is necessary to start them in hotbeds,

†Extract from an address delivered at the last annual convention of the Ontario Vegetable Growers' Association.



The Potato Planter at Work in Mr. Broughton's Market Garden

weeds and to clean the land. Just before it freezes, the land should be plowed again seven or eight inches deep, if the surface soil will permit. Land prepared in this way the fall before, stands the dry weather better than it otherwise would.

As soon as it is dry in the spring, the land should be harrowed enough to level it and then 25 or 30 loads of rotten manure an acre should be put on with a manure spreader. If the land were a clover sod or second crop of clover plowed under the fall before, less manure is required. The land should be plowed, harrowed, rolled and again

as possible. Plant them in drills from 30 to 32 inches apart and 12 to 14 inches apart in the drills, and about four inches deep.

I use an Improved Robbin's Planter, which, in one operation, marks the row, opens the furrow, drops the seed and covers them. The machine requires a man, a boy and a team of horses. Planting done by the machine is better than the old way of planting by hand, for the following reasons: The depth is uniform; 2, the seed is put in moist earth, covered at once and, therefore, not so apt to dry rot on account of lack of moisture; 3, the rows can be made straight; and 4, time is saved in planting, as the machine will plant four or five acres a day. The machine has a

*The first prize essay on "Potato Growing" in the competition conducted by the Ontario Vegetable Growers' Association.

which means a great deal of extra work, and work that needs the closest attention. If they are neglected at certain critical times, much labor and plants are lost.

The most critical period in raising melon plants in a hotbed is at the time of germination, and just after they have made their appearance. The best temperature for growing melons at this particular time is from 75 to 80 degrees; in fact, this temperature is the best for them at any time. After being planted in the open, however, they have to stand sometimes a temperature not much above freezing. Hence, it is well to get them used to as low a temperature as possible a week or so before moving them into the open field. This will make them hardy and strong.

In starting the melon in the hotbed, it has to be done so that when it is moved into the open, the roots will not be disturbed. Melon plants will not "transplant," in the true sense of the word. It is necessary to plant them either in pieces of sod or in pots. These can be moved to the field without interfering with the roots.

Some growers use pots instead of sod, claiming that the plant takes root quicker in pots because the sod is full of grass fibres. I have tried both, and have not noticed any difference in this respect. For other reasons, I prefer the use of sods. There are distinct advantages in using sod. Pots have to be filled with the choicest of soil, and this has to be found every time you plant; they cannot be handled so easily as the sod when drawing out to the field, and they have to be cared for and stored from one year to the other. With the sod, you simply have to cut, place closely in the frame and plant. When drawing to the field

have them well soaked with water. Make your hole deep enough so that the sod will be two inches below the level.

Where the land is in good condition, watermelons should be planted at least seven feet apart each way, as although a large fruit, it grows a long, slender vine with small foliage. Muskmelons can be planted much closer. Five feet each way is the usual distance. Three plants in a hill are plenty.

Both kinds are prolific. An acre of muskmelons is capable of producing 800 dozen, and watermelons from 400 to 500 dozen, weighing possibly some 50 tons. These figures estimate an excellent crop and a possible one.

Celery a Profitable Crop*

J. Friendship, Kingston, Ontario

Celery is one of the most profitable crops that the market gardener grows, providing he has land suitable for its culture. It can be grown on almost any good soil, but on some the crop will not pay for the labor. The soil I prefer is one that is always mellow and does not get too wet or too dry. Such land is found in a hollow where in former years may have been a small lake whose bed is now covered with rich humus, 12 to 20 inches deep, with a blue clay bottom. Such soil will retain moisture and, if properly drained, seldom gets too wet. On such soil celery can be grown at one-quarter the cost of that grown on stiff or harsh soil. On proper soil the work from start to finish is easily done. Where such soil is not available, the land must be made as near it as possible by plowing and the working in of several dressings of good, rich, well-rotted stable manure. The harsher the soil, the more humus is required to make it mellow. When the soil is in

this condition, it should be well ridged in the fall so that no surface water can remain. In the spring, it should not be worked until dry. It then should be well worked and kept mellow until planted. It is a hard job to set out from 25,000 to 50,000 celery in stiff, dry soil.

GROWING THE PLANTS

In growing the plants the best soil that can be secured is necessary. Celery seed is slow to germinate and should be kept shaded until it appears above ground. Cover the seed very lightly and keep the soil moist, but not wet. The plants are hardy, but grow slowly. Weeds grow much quicker and should be removed as soon as seen. As soon as the plants form the second leaf they can be set in another bed, if you prefer transplanted plants. If not, they should be thinned out so as to get strong, rooty plants. The majority of gardeners do not use transplanted plants. They prefer setting direct from the seed bed, unless they intend growing celery for summer use. For that purpose, the seed should be sown in March in a well-prepared hotbed and, when large enough, removed to another bed, setting them three inches by two inches, so as to form good plants.

There is great danger of celery plants running to seed if they receive a severe check in growth. Great care is required in the setting and growing. I have seen nearly the whole setting of early celery lost by it running to seed. Late sowing should be done about the first of May or later. Late sown seed needs the same care as early. The soil requires to be kept moist. It dries out much quicker in May than in April.

*Extract from the first prize essay on Celery Culture, in the competition conducted by the Ontario Vegetable Growers' Association.



The Old Way



The New Way

Near cities, where market gardeners apply large quantities of manure to their land, the use of manure spreaders is becoming more general. Near Toronto, Mr. Joseph Rush, of Humber Bay, who uses one of these machines, writes us that with it he spreads 12 tons of manure to the acre. The machine is handled easily by two horses. When loaded evenly, from front to back, it spreads long, green manure as well as any other kind. Mr. Rush applies his manure at the rate of 50 loads an acre, and reports that he considers the manure spreader one of the best labor-saving devices on his place.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are Invited to Submit Questions on any Phase of Horticultural Work

Pollinating Lindley Grape

Can the Lindley grape be pollinated artificially and profitably to obtain a more perfect bunch?—S. L., Prince Edward County.

This question was sent to the Central Experimental Farm, Ottawa, from Winona, Ont., but as the writer did not sign his name to the letter, the columns of THE CANADIAN HORTICULTURIST have been used, knowing that the reply will come under his eye.

The Lindley grape is one of the varieties known to be self-sterile or partially so; consequently, if planted by itself, the bunches will be very imperfect. To get good bunches one should have one or more varieties, that bloom at the same time, planted near, to pollinate it. At the Central Experimental Farm, where we have a large number of varieties in our vineyard, and only a few vines of each of these scattered in different parts, the bunches of the Lindley are, most of them, well filled and quite satisfactory. We should advise, in planting a vineyard, to plant alternate rows of another variety. Niagara and Word'n should make two good sorts for this purpose.

Experiments in artificially pollinating the Lindley have given very satisfactory results, although the experiment was not carried on with the idea of making it pay; but, it is quite probable that it could be profitably done. In the case referred to, bunches of another variety were simply attached to bunches of Lindley when they were in bloom, and nature did the rest. It is possible that a more economical method of using pollen could be devised, such as applying it direct to the flowers. This will be a good line of experiment for the Niagara Fruit Experiment Station to take up.—W. T. Macoun, Horticulturist, C.E.F., Ottawa.

Pruning for Fruit Buds

If a lateral shoot of an apple tree be pruned back one-third, to or near a promising fruit bud, or two-thirds, with fruit buds on two year wood, has it a tendency to make or turn these said buds into wood growth? Is it a mistake to cut back every lateral, in spring pruning, on a tree, for are not a great number of the terminal buds fruit buds? Can you name the varieties whose fruit buds are frequently and invariably terminal?—L. B. P., Salmon Arm, B.C.

The pruning back of lateral shoots of apple trees will not change the fruit buds that have already been made into leaf buds. The fruit buds were formed early last summer and will expand when the time comes. Severe heading back of laterals in the spring will, however,

have its effect on the number of fruit buds which will form this season, as the tree will be re-invigorated by the heading back and the tendency will be for it to make leaf buds rather than fruit buds, although there may be as many of the latter form as is needed for a good crop.

It would be a mistake to cut back every lateral very severely, as it would mean the sacrifice of too many fruit buds. The ones to prune back will be learned by practice.

We have not made a study of the varieties which are most inclined to bear fruit on terminal buds, so cannot say which do it most.—Answered by W. T. Macoun, Horticulturist, C.E.F., Ottawa.

Hardy Roses for North

Kindly recommend a few varieties of roses for continuous bloom throughout the season in Peterboro county?—S. A., Jermyn, Ont.

The following half-dozen varieties of hybrid perpetual roses are among the best and hardiest: General Jacqueminot, Mrs. J. Sharman Crawford, Mad. Plantier, Ulrich Brunner, Magna Charta, and Alfred Colomb. While these will not bloom freely throughout the summer, most of them will continue to give a few blooms until autumn. By planting a few of the hybrid tea roses, more bloom will be obtained late in the season. Two of the best of these are: Kaiserin Augusta Victoria and Caroline Testout. The former is a white rose and the latter a pink. These are not quite so hardy as the hybrid perpetuals but, with a little protection, they come through the winter very well at Ottawa.—Answered by W. T. Macoun, C.E.F., Ottawa.

Transplanting Dogwood

Some fine specimens of Flowering Dogwood, *Cornus Florida*, are growing in the woods not far from my home. Kindly advise me as to the best time of year to take up and transplant dogwoods that are growing in a wild state?—B. P., Grimsby, Ont.

The only season in which dogwoods may be transplanted is spring. These wild trees have few roots, and you will not succeed with the transplanting unless you prune back the branches severely. Should you desire to secure the trees without its being necessary to prune back one-half or more of the growth, it will be necessary to root-prune the trees this spring and allow them to remain a year before transplanting. The cutting off of the roots causes many

more smaller ones to form, and this almost assures transplanting with safety. Dig a trench around the trees, 18 inches or two feet from the trunk; dig to a depth of two feet, then dig under the trees, cutting off all roots met with from first to last. Fill back the soil and let the trees alone for a year. But if the trees are out of shape prune back the branches a little, to shapen the outline. In fact it is a good thing to prune the branches at the same time that the roots are pruned. Such root-pruned trees rarely fail to live, and the practice is often adopted by those who wish to transplant wild trees.

Watering Trees at Planting

I intend to plant some shade trees this spring. Is it best to water them at the time of planting?—R. T., St. Hyacinthe, Que.

Tree planting succeeds best when water is applied. The water carries the soil in close contact with the roots. Pour the water in when the hole is about half filled with soil. When it has soaked away, the rest of the hole should be filled in with soil comparatively loose. Watering in this way saves ramming or firming the soil with the feet or a pounder.

Cost of Forcing House

What would be the cost to build a forcing house of about 400 square feet? What would be the proper size to build for a beginner? Which is best, steel or wooden frames? Would a forcing house of size mentioned pay?—N. C., Riviere du Loup, Que.

The cost of a forcing house of 400 square feet can best be determined in the vicinity where it is to be built, as prices of material vary greatly, and also the plans and construction. In Leamington, it would cost about \$100. It is difficult to state the proper size for a beginner without having some knowledge of the man and his capital. It is best to start on a small scale and increase as experience warrants. A house of 400 square feet, or even twice that size, is of little value except for starting plants in spring for moving to the open ground when the weather becomes warm. I have one house 42 x 100 feet, exclusive of boiler room, and I find it too small for growing vegetables in winter. It would pay "N. C." to erect a house for the purpose of producing plants for transplanting later and growing outside. For so small a house, it is best to use a wooden frame.—Answered by J. L. Hilborn, Leamington, Ont.

The Canadian Horticulturist

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H. BRONSON COWAN,
Managing Editor and Business Manager
A. B. CUTTING, B.S.A., Horticultural Editor
W. G. ROOK, Advertising Manager
GARRETT WALL, Circulation Manager

GREAT BRITAIN

FRANK FLETCHER, 135 Henrietta Street, Old Trafford
Manchester, Eng., Advertising and Circulation Manager

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THE CANADIAN HORTICULTURIST,
506-7-8 Manning Chambers,
TORONTO, CANADA

ACTION IS NEEDED

The presence of the San Jose Scale in localities in Ontario where, until recently, it was not known to exist, shows that the pest is spreading. A few growers deny this, but the truth is that the San Jose scale is to be found in districts a considerable distance from its first breeding ground in Canada, and where its presence is denied. Only recently an investigation in some forty orchards in a section of the Niagara district where the scale was not known to exist, revealed the fact that there was more or less scale in all but three of the orchards. Instead of trying to hide the truth growers should let the presence of the scale be known, that steps for its eradication may be taken. When it first appears in a locality, its presence should be reported to the provincial department of agriculture without delay.

The San Jose Scale has gone past the stamping-out stage. It is here to stay, and it must be fought persistently each year. Its control is not a difficult matter when treated annually and in the right way. The trouble is that most growers, except those in old-infested districts, do not know it when they see it, and do not realize what a devastating pest it is, and therefore neglect to combat it until it has secured a firm grip on their trees. Then there is a danger that after a few attempts to save

their orchards they will give up the fight in despair. It would be well, therefore, for the Government to make a thorough investigation to ascertain just how far the scale has spread, and to send a man into the midst of such growers to teach them what to do. Such a step is necessary if growers, who do not know the scale nor its remedies, are to meet and cope with the advances of the pest. Our growers have played the part of the ostrich, and refused to recognize the seriousness of the situation too long already. The time for action on the part of both the growers and of the provincial department of agriculture has arrived. It should not be delayed.

BE ON THE WATCH

Oftentimes and usually foreign insect and fungous pests are imported into Canada, and do much damage before their presence is noted. Many of our injurious pests have introduced themselves in this way. Others will follow. It behooves all persons interested in horticulture, in any or all of its branches, to be continually on the watch for new diseases and insects. The Gypsy and Brown Tail moths that have done so much damage in the New England states, and upon which thousands of dollars have been spent in an effort to exterminate them, already have been found in New Brunswick. Maritime horticulturists should report the presence of all suspicious caterpillars or moths that they may find.

The dreaded "railroad worm" of the apple orchards in New York state, known more properly as the apple maggot, is becoming numerous in certain orchards in Quebec. It should be watched for by fruit growers in that province, and in the eastern counties of Ontario.

A disease prevalent in Pennsylvania and other states, and one that is working northwards, is the "frog-eye" of the apple. It works on the leaves and produces an effect from which it derives its name. It is a difficult subject to contend with. Growers in Ontario and eastward to the Atlantic provinces should forward to their provincial agricultural colleges, departments of agricultures, or to THE CANADIAN HORTICULTURIST, any specimens of diseased leaves that show characteristics of this nature. Only by observing and locating these troubles at the outset can they intelligently be warred against.

A SAFE INVESTMENT

A few shares of the Horticultural Publishing Company, Limited, are still offered for subscription. This company owns THE CANADIAN HORTICULTURIST and *The Canadian Florist*, two publications that are growing rapidly and that are the only ones in their respective fields in Canada.

The Canadian Florist last year produced a handsome surplus over the cost of publication. The management expects that THE CANADIAN HORTICULTURIST also will be self-sustaining after this year, and that the company soon will be able to declare profits.

Here are some facts, taken in part from a notice sent recently to the shareholders of the company:

For four years in succession the receipts of the company from advertising have more than doubled each year.

Advertising rates in THE CANADIAN HORTICULTURIST average four cents a line. As the circulation of the paper increases, these rates can be advanced to eight and ten cents a line and higher, and the receipts from advertising be increased in proportion. This can be done without enlarging the paper. One fruit paper in the United States charges twenty-five cents a line for its advertising.

On September 1, 1906, the paid circulation of THE CANADIAN HORTICULTURIST was 4,100.

To-day, it is over 6,500 and growing rapidly. This means that the advertising rates will be advanced soon.

Last year *The Canadian Florist* netted a profit of over \$800. This year it will do still better. In one issue recently it carried over half a thousand dollars' worth of advertising.

Every director of the company has increased his stock holdings. Some of the directors have more than doubled the number of their shares.

This is not a get-rich-quick-perhaps scheme like some of the Cobalt and other mining enterprises that are flooding the market with their stocks. Instead, it is an opportunity for you to make an investment in a company that is managed by well-known and reliable men, and that is conducting a line of business that is noted for the safeness of investments made therein. If you are interested in fruit or flowers and would like an opportunity to secure a few shares of this stock we will take pleasure in sending you a prospectus giving full particulars. Write to The Horticultural Publishing Company, Limited, Rooms 506-7-8 Manning Chambers, Toronto, Ont.

It is surprising to learn that the Minister of Agriculture at Ottawa has seen fit to dispense with, temporarily, the services of two of our fruit inspectors. The attempt to evade the Fruit Marks Act by shipping via a foreign port and remarking there, the fact that only a small percentage of the apples exported from Canada come under the eyes of the inspectors, and the general need for a more strict enforcement of the Act would indicate the advisability of adding to the force of inspectors rather than subtracting from it. The minister would serve the industry better were he to re-employ the suspended inspectors and then double the whole force.

The manufacturers of baskets for shipping fruits are making such in the expectation that the law regulating the size of baskets will be changed during the present session of the Dominion Parliament. A year ago all sizes were definitely defined by the growers, and resolutions pointing out the desired changes were laid before the Minister of Agriculture at Ottawa. As yet, nothing has been done by parliament to meet the requirements. Growers are anxiously awaiting the announcement that the Weights and Measures Act has been amended along the lines desired.

Such splendid work has been done by so many of the horticultural societies in Ontario to improve the civic beauty of the centres in which they are organized, that the Ontario Horticultural Association deserves credit for having arranged to have Mr. J. Horace McFarland, the president of the American Civic Association, address a series of meetings in Ontario. Mr. McFarland has done more than any other one man on the continent to awaken general interest in civic improvement. As he is a fluent and pleasing speaker, and possesses many interesting stereopticon views, his meetings in Ontario should be well attended and productive of much good.

Fruit growers have been imposed upon by unreliable nurserymen so frequently that it is strange that vigorous and united protests have not been more numerous. Suggestions to lessen the difficulty have been embodied in resolutions passed by the Ontario Fruit Growers' Association, the Ontario Cooperative Fruit Growers' Association, the Niagara Peninsula Fruit Growers' Association, and other organizations, and sent to Hon. Nelson Mon-teith, Minister of Agriculture for Ontario. It

is hoped that the minister will take immediate action in the matter. Such will not injure nursery firms that are reliable. It may be a means of ridding the country of those that are not. There are sufficient of the former to supply the demand. The latter are not needed.

This year, as a result of the new act governing horticultural societies, a number of Ontario horticultural societies that, in the past, have been of little value, having been merged with their local agricultural societies, are starting out for themselves. One of these, Goderich, is planning to offer prizes for garden competitions, to distribute seeds among the school children, and to conduct an energetic campaign along horticultural lines. May the efforts of these societies meet with the success that they deserve.

What are you doing to help us increase the circulation of THE CANADIAN HORTICULTURIST? If you will merely draw the attention of a few of your friends, who are interested in fruit and flowers, to its merits and low subscription price, it probably will be sufficient to lead them to join the ranks of our regular readers. Any help of this kind that you may give us will be much appreciated.

Work for the Station

The discussion at one session of the recent convention of the Niag. Pen. Fruit Grs. Assn. centered in a subject of much importance to the fruit interests of the Niagara district; namely, the work and purpose of the new experimental station at Jordan Harbor. S. W. Fletcher, professor of horticulture and landscape gardening, Agricultural College, Lansing, Mich., said that one of the chief problems that will require attention is the improvement of varieties. While many of our varieties have good qualities, they usually are found wanting in one or more respects. A variety, for instance, which is of good color and flavor, might be of little value for shipping purposes. At the new station, varieties and classes of fruit should be bred for keeping qualities, flavor, hardiness, freedom from rot; in fact, they should be bred to eliminate all undesirable qualifications.

To be successful in plant breeding, one must first recognize the fact that there is a great variation in plants. The foundation for the work lies in the fact that no two plants are alike, and that even the least deviation in varietal type might, by crossing and selection, develop into a new variety of superior excellence. The professor described in detail the mode in which a plant breeder performs the operation of crossing and pollenating the blossoms.

The value of propagating nursery stock from trees of known worth also was mentioned by Prof. Fletcher. In selecting scions for the multiplication of stock in nurseries, the nurseryman should know the history of the trees from which the scions are taken. It is not always possible to secure large quantities of scions from bearing trees; in such cases, it would be well for nurserymen to propagate primarily from bearing and productive trees and for the next few years renew their stock from scions taken from young trees thus propagated. Every 4 years, however, it would be necessary to go back to the bearing trees for a renewal of the stock.

The professor said that the new experimental station would do well to make out a list of varietal names and synonyms for the use of our fruit growers. This is necessary because there are so many varieties that are nearly alike in character and even in standard sorts there are distinct varieties or strains.

An interesting feature of Prof. Fletcher's address were some comments on the Spencer Seedless apple. Recently the professor visited the home of this fruit, and found it to be nothing

more than a fake. The apple, according to the professor, is below medium in size, poor in color, and not pleasing in shape, coarse in texture and in quality, below that of Ben Davis; in fact, its only value is its keeping quality. It is not seedless, as at least two-thirds of the apples have seeds of more or less development. The worst feature of this novelty, however, is the fact that it has a core, and a tough one. It is the core of the apple, and not the seeds, that bother the housewife and the canner. "The Spencer Seedless apple," said the professor, "is a horticultural gold brick—there is nothing in it."

Markets of the West

During one of the sessions of the convention of the O.F.G.A. held in Nov. last, Robt. Thompson, of St. Catharines, discussed the markets of the west. He spoke particularly of the progress that has been made in the trade between the St. Catharines district and the west. Until 3 years ago, shipments to the west were made at only irregular intervals, except in the case, perhaps, of grapes and apples. On the whole they did not turn out satisfactorily. Buyers said that they would pay only the price that the fruit would bring at the point of shipping. Three years ago there was a change. Under the direction of Professor Reynolds of the O.A.C., the government sent some experimental shipments to the west that proved that fruit could be carried through successfully.

To take full advantage of the western markets, cooperation is necessary. It is not wise to send shipments of less than a carload, and it usually takes a number of growers in combination to fill a car each day. It should be packed at the right time, and cooled before shipping. A number of growers working together can get assistance from the departments at Ottawa and Toronto. They can load the cars quickly and have better railway facilities and fewer losses. They are in a position to better know the requirements of the market and distribute their fruit to better advantage.

Tomatoes for the west must not be sent green. The best stage is learned by experience. They should be firm and nearly all red. A lot depends on the package. Put part of a shipment in the 4-tray boxes. In a car, place, say, 100 trays, and 300 bsks. An assortment of sizes gives best returns. Peaches should be packed in boxes, and a large part of the shipment should be wrapped. It only costs from 5 to 8 cts. a box to wrap them. There is a good market in the west for pears, not in carloads, but in reasonable lots. Ont. pears are of better flavor than those imported from the western states. There is a market also for early apples if handled properly and packed right. The grape outlook is good; there is no competition, as B.C. cannot grow grapes. In other respects, competition with B.C. is not to be feared for 20 years to come; then the most serious competition will be in apples. Apples for the west should be packed in boxes.

Boxes vs. Barrels in England

The Extension of Markets Division, Ottawa, has received a letter from the department's cargo inspector at Glasgow, dated Dec. 14, 1906, of which the following is a copy: "Enclose, please find catalog of Messrs. Simons, Jacob & Co.'s apple sales. You will observe that some very high prices were paid for boxed apples from British Columbia, and also a note at the foot re sales of boxed apples from Oregon. These boxes are about the same size as Ont. boxes, and the fruit in each case was papered. There is an increasing quantity of apples in boxes being imported to Glasgow from B.C., all of excellent quality. Apples in boxes are becoming more popular, I believe, in Glasgow and district, and I think there is a market for a larger quantity of 'fancy grade' Ontario apples than are at pres-

ent shipped. In the recent arrivals of boxed fruit there has been so much No. 2 grade, some of indifferent quality, that it compares very unfavorably with boxes from Ore. and B.C., whose imports are rapidly establishing a reputation for excellence.

"I had a conversation with an importer of Ont. apples in boxes, who is also a retailer of Ore. and B.C., and he is of the opinion that it would be well for Ont. shippers to utilize this style of package for fancier quality of fruit than they are packing. The prices realized at the sale in question were:

British Columbia Apples—Prize Medal Fruit.	
	Boxes. Price
Canyon Brand, Spitz.....	9 14/
Cold Stream Brand, Spys....	5 14/
Jas. Gattreal, Kings.....	10 17/3
Nonsuch.....	5 12/6
Summerland Brand, Nonsuch.	5 16/6
Salome.....	10 16/6
Spitz.....	5 16/6
Stirling & Pitcairn, Newton...	5 18/3

"At the same time Oregon Newton Pippins in boxes were selling for 14 shillings a box, and the same variety in barrels was realizing on an average 16 shillings a bbl., thus showing that the package had a great deal to do with the enhanced price received for the boxed fruit"

San Jose Scale in Cities

Ed. CANADIAN HORTICULTURIST.—The San Jose Scale is spreading to an alarming extent. During the season of 1906, it spread faster than in previous years, partly owing to the continued hot, dry weather, and partly on account of the apathy or indifference of people who fail to live up to the law, and neglect to spray or cut out infested trees.

We have, in St. Catharines, a number of vacant lots, the owners of which live out of the province. These lots contain many seedling fruit trees, covered with scale and black knot. As there is no provision in the act to meet such cases, these places become uncontrollable breeding places for all kinds of insects as well as black knot. I do not suppose that St. Catharines is any worse in this respect than other municipalities, but I thought that by calling attention to this matter, you might be in a position to help us to find the remedy.

The season has arrived when all persons owning or occupying properties on which trees or shrubs are growing that are susceptible to scale or black knot, must be up and doing. They must get to work with a will and severely prune their trees and, where they find a tree that is badly affected, cut them out. Pruning makes spraying less costly and more effective.

There are several spraying formulas on the market, but only two have proved effective. One of them, the lime and sulphur formula, owing to the difficulty of preparation and handling in the small places of the city, as well as the trouble of getting men to apply it, is unsatisfactory. We are obliged, therefore, to use the Carlson formula. We have used this with good results for the past two years. It is easy of application and one barrel will cover about 3 times the number of trees that sulphur and lime will cover. I have had it used with good results in the latter part of the month of June, without seriously injuring the foliage or fruit.

The following is a list of trees, bushes and shrubs that are susceptible to scale: Apple trees of all varieties, Greening most susceptible; crab apples, badly; peaches of all varieties; plums of all varieties, Japans badly; pears of all varieties, Kieffer seldom attacked; apricots, not badly; sweet cherries; currants; quince; also rose bushes, lilacs, privet hedges, Japan quince, all kinds of thorn, willow, mountain ash and poplar.—Thomas Beattie, San Jose Scale Inspector for St. Catharines.

Get your friends to subscribe for THE CANADIAN HORTICULTURIST.

Practical Pointers on Small Fruit Culture

AMONG the many points of interest to strawberry growers mentioned in Bull. No. 276, N.Y. Exp. Sta., Geneva, is the variation in the tendency to produce runners, or to make new plants, to be observed in the characteristics of varieties. This is a point that deserves more attention than it usually receives. Most varieties produce a moderate number of new plants; some make very few, while others are such prolific plant makers that, unless planted far apart, the plants are badly crowded. When selecting and planting varieties, these differences should be borne in mind. Among the varieties at Geneva that produce very many plants are Mark Hanna, Ridgeway and Senator Dunlop; very few plants, Challenge, Joe Mead, etc. Among the vigorous plant producers at Guelph, are Sadie (no use otherwise), Ruby, Standard, etc.; medium to light, Warfield, Wm. Belt, Clyde, Glen Mary, Van Deman; Irene and Jounda.

CULTURAL NOTES ON BUSH FRUITS

During the past summer a bulletin, No. 278, on raspberries and blackberries, was issued by the N.Y. Agr. Exp. Sta., Geneva. Besides mentioning the best varieties and classifying them according to their characteristics, such as hardness, earliness and so on, the bulletin contains many interesting cultural directions which, in part, are as follows:

Raspberries and blackberries are nearly as cosmopolitan as strawberries in regard to adaptation to soils. Deep, moderately sandy loams, or clay loams containing an abundance of humus, usually give best results with raspberries, while blackberries are often at their best on a slightly heavier soil. It is important that the soil be not too wet as this condition often increases the amount of winter injury.

There is no one brand of fertilizers best suited to raspberries and blackberries under all conditions. The kind of plant food to use depends on the amount and kinds already in the soil, and on the physical condition of the soil. Some soils lack nitrogen, others potash or phosphoric acid, and many are deficient in humus which not only supplies plant food, but also aids greatly in the retention of moisture. Stable manure and cover crops are available for supplying humus. Care must be used in making applications of nitrogenous fertilizers or the resulting growth will not mature, a condition which may cause severe winter injury. If the soil is already rich in humus, it would appear desirable in some cases to avoid the use of stable manure, using commercial fertilizers in its place. Wood ashes, muriate of potash, acid phosphate, etc., are valuable where needed. The best way to determine the kind and amount to use is by trial, leaving check rows for comparison.

Raspberries and blackberries, unlike strawberries, occupy the soil for a number of years, and for this reason the preparation should be very thorough. If too wet the land should be underdrained. If for 1 or 2 years preceding, hoed crops have been used, there will be fewer weeds to fight. The land should be well plowed and thoroughly fitted to receive the plants.

Plant mainly only those kinds that appear to succeed in the immediate locality, testing newer ones in a small way. The varieties best suited for one set of conditions may be failures elsewhere.

Red raspberries are usually propagated by transplanting the numerous suckers which come up freely around the original hills. Black raspberries are increased by rooting the tips of the nearly mature canes in late Aug. or early Sept. The ends of the canes are covered lightly with earth, and by late fall a large mass of fibrous roots will be formed with a well-developed crown. Varieties of purple raspberries are hybrids, produced by crossing red and black raspberries and some of them may be propagated either by using suckers or by rooting the tips of the canes.

Blackberries do not sucker as freely as the red raspberries. These suckers have but few fibrous roots and as a rule do not make such good plants as those started from cuttings of the blackberry roots. The roots may be dug in the fall, cut into two or three inch lengths, stratified over winter and sown in nursery rows in the spring, and most excellent plants are usually obtained after one season's growth. Only strong, healthy plants should be selected, and it is often an advantage to choose these from a younger plantation rather than from an old bed, the plants of which may have deteriorated in vigor and may be infested with various insects and diseases.

Blackberries and red raspberries may be set either in the fall or in the early spring. If set in late Oct. or early Nov., the rows should be plowed up to, making a back furrow along each row of plants. This will be a great protection against winter injury. The earth should be taken away from the hills as soon as the ground is in working order in early spring. Such plants, as a rule, start into growth earlier than those set in the spring. These plants should be set as deep, or slightly deeper, than they were in the original beds. Black raspberry plants and the purple kinds rooted from the cane tips should be set in the spring instead of the fall, not covering the crown too deeply, and spreading the roots in a circle about the centre of the crown. It is an advantage to set the plants in the bottom of a shallow furrow, filling in as the plants develop. Under these conditions they withstand drought better and the canes are not so easily blown over by the wind.

The distance apart of rows and of plants depends on the system of cultivation, the varieties, the natural richness of the ground and the location. In general the plants should not be crowded. Red raspberries may be set closer than black raspberries, and blackberries should be set the farthest apart. These distances may vary from 3 x 6 ft. to 4 x 8 ft., depending on conditions.

The ground should be kept well cultivated and the plants hoed as occasion requires. In young plantations, if the plants have been set properly, cultivation may be given both ways thus reducing the expense of keeping down the weeds. The cultivation should be shallow as the roots lie near the surface. On heavy clay soils it may sometimes be desirable in some seasons to plow early in spring, following with the cultivator till fruiting time. During the picking of the fruit there is little opportunity to cultivate, but the ground should be thoroughly stirred as soon as the harvest is over. If desirable a cover crop may be sown in late Aug. or early Sept.

During the first 2 years it is not always necessary to give the land solely to the berry plants. Potatoes, cabbages, strawberries, etc., are often grown with advantage between the rows, so that a considerable income from this source may be obtained before the berry plants fully occupy the ground.

Summer pruning is not generally practised with red raspberries, but may often be done with advantage to black raspberries and blackberries. It consists in pinching or cutting off the tender ends or tips of the new shoots at a height that may vary from 18 inches to 24 or even 30, the blackberries usually being pinched somewhat lower than the black raspberries. The result of this pruning is the formation of rather low stocky plants with numerous lateral branches which will not require a trellis. As the young plants do not all develop at the same time it is necessary to go over the plantation several times in order to pinch the growth at the proper height.

The canes growing one summer, bear fruit the next season and then die, while new canes develop each year for the succeeding year's crop. Frequently the canes which have fruited are allowed to remain until the following spring

before removal, but better results are usually secured by cutting them out and burning as soon as the berry crop is harvested. By this method the insects and fungous diseases frequently infesting those canes may be destroyed, and the young canes have more room to develop. Each spring the plants should be gone over, cutting off the weak ends of the canes and thinning out some of the smaller ones where the growth is too dense. From 3 to 5 canes a hill are usually preferable to a larger number.

The winter protection of the plants is largely confined to the colder climates. Blackberries are usually much more tender than raspberries. Winter protection consists in laying down the canes and covering them with a thin mulch of straw and earth.

General Fruit Notes

W. B. Rittenhouse, Beamsville, Ont.

Last season many peach orchards, from over-bearing and not thinning, and owing to the dry season, produced an abundance of small, inferior fruit that netted the growers little or no returns. Orchards, properly pruned, sprayed, fertilized, cultivated, and where thinning the fruit was practised, well rewarded the owner for the care and expense spent upon them. Prices for peaches ruled about 20c. a bskt. more than last year. High-grade peaches, properly and honestly packed, always can be sold. Trash is not wanted in any market.

When on a trip to the west, my attention frequently was drawn to the fact that Ont. is injuring her reputation and soon will lose her hold upon the fruit market unless she adopts other tactics. We must grow only those varieties that are adapted to long distance shipping. The Ontario grower must be honest and correct in the way he puts the fruit in the package.

APPLES

For some years, the apples in my orchard were of inferior quality, being infested with worms and scab. The bulk of the crop was No. 2. The orchard had been fairly well cared for. An attempt was made at spraying, but a poor one. Only one application a year was made and with a pump that was not of much use. Last season we used a pump with which we sprayed the orchard 3 times. At harvest time, a cleaner and better lot of apples was hard to find.

A few years ago I visited the largest and oldest-bearing apple orchard in B.C., the Coldstream Ranch. I was much interested in the fine, clean, firm apples that grew and the care with which they were put up in boxes. They were sold f.o.b., at prices that would astonish Ont. growers, to dealers in Calgary, Winnipeg and other western points. That fruit entered the same market as the inferior stuff from Ont. Not only the dealers, but the consumers, had just cause to say unpleasant things of Ont. fruit. Last season, at least, 1 grower in B.C. contracted his entire crop at \$1.50 a box, f.o.b. shipping point.

Ont. apples are superior in flavor. If they are put up properly in boxes, they should command as good, and even better prices than B.C. apples. For the western trade, they must be strictly No. 1 or Fancy. In B.C., the acreage adapted for fruit growing is limited. That province cannot supply both home demands and the west. Ont. growers have a grand chance to secure and hold the western market. There is no fear of over-production in this province.

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Evidence of Chief of the Fruit Division

SPEAKING on the Early Apple Trade, before the select committee on Agri. and Colonization of the House of Commons, Mr. Alexander McNeill, chief of the fruit division, pointed out that the percentage of the early apples to the whole Canadian trade with Britain in this commodity fell last year to less than 2%. This was a great drop from nearly 4½% in the years 1904-05. Asked as to the reason of this, the speaker said that it was because the growers and dealers thought that they could not compete with the British growers, particularly when there was a good crop on the other side. It was also due to a peculiarity of human nature that made men averse to adopting changes. Then too there was a lack of confidence in the British market.

Mr. McNeill was questioned as to what accommodation had been afforded for shipping fruit at low temperatures, and answered that iced cars had been provided and also arrangements made for cool compartments on the ocean-going steamers.

"What guarantee has the shipper of the temperature at which these compartments are kept?" asked Mr. Armstrong of Lambton.

"There are the reports of the commercial inspectors on the other side of the water as to the condition of the fruit upon arrival and the thermograph records," answered Mr. McNeill. Mr. E. D. Smith, of Winona, asked if these

cars and compartments were kept at as low a temperature as they should be, to which Mr. McNeill replied that some apples were shipped to Montreal in ordinary cars and tests had shown the centre of some of the bbls. to go as high as 70 to 85 deg. These were placed in the cool compartments on the steamer alongside the bbls. that had come in the cool cars, to the great detriment of the latter.

"Do none of the shippers send their apples in boxes?" asked Mr. Smith.

"I am sorry to say that the fruit growers have not got into the way of shipping in boxes to any large extent," was the reply.

Further discussion on the cold storage question brought out the statement from the speaker that shippers should learn to cool their fruit before putting it on the cars. It should be delivered at the steamer at as low a temperature as possible. Mr. McNeill expressed himself positively in favor of boxes for the early apple trade. "Some tests made at Washington," he said, "showed that it takes nearly a week to cool the centre of a barrel of apples from 75 degrees to 33 degrees. To do the same with boxes requires only two days."

Mr. Smith suggested that steamers should be provided with machinery for cooling fruit, and was informed that that would be possible if the shippers were willing to pay double freight rates.

"But they pay 60% more than ordinary rates as it is," replied Mr. Smith.

Mr. McNeill pointed out that it would be cheaper to cool the fruit at home before starting it on its journey. He emphasized this as a very important point. This, a member pointed out, would involve the necessity of the farmer having cold storage right at hand. Mr. McNeill in reply pointed to the system that is in use at St. Catharines. He thought that there are several points in Southern Ont. where similar cooling stations might be established. He added that the question of cold storage buildings was a technical one, coming under the personal supervision of Mr. Ruddick, and said he believed that Mr. Ruddick will develop a cheap form of cold storage that can be used by groups of fruit growers.

Two important points were then touched on: 1st, that the condition of the fruit at the time it was picked determined in a great degree its keeping qualities, especially in the early varieties of apples, and 2nd, that the secret of success in shipping fruit was to cool it at the start and follow it up with cool transportation facilities all the way to the market.

Mr. McNeill called attention to the fact that early fruit needs more care in picking than the

later varieties. Unlike them it cannot be picked all at once. The fruit that is ready for shipping has to be selected first and the rest allowed to get into the right condition. Attention was called to the fact that in regard to a steady supply of early apples, Canada is very fortunately situated. Early in Aug. apples can be shipped from Essex Co. In the latter part of Aug. they are ready along the north shore of Lake Ontario. In the beginning of Sept. they can be shipped from the lower part of the St. Lawrence valley, and from the valley of the St. John River late in Sept. This gave a steady supply and if the trade were properly handled would bring the apples into favor with the importers.

Turning to another matter Dr. Sinclair asked if the Gravenstein family of apples were failing in Ontario. Mr. McNeill replied in the affirmative, stating that he thought that the difficulty might be overcome if the growers learned to top-graft the variety on a hardy stock.

A GREAT WASTE

Mr. McNeill quoted figures to show that the total production of apples last year was in the neighborhood of 12,000,000 bbls., and that the exports from the whole of the Dominion during the same period were but 1,500,000 bbls. Supposing that 1,000,000 bbls. were evaporated and two or three million bbls. more used at home there would be still a large quantity to be accounted for.

"They are fed to domestic animals," said one of the committee.

"I should consider that wasted," said Mr. McNeill.

The most natural and profitable outlet for this fruit, he averred, was the manufacture of it into jams and jellies, and evaporated fruit. In this, Canada might take a lesson from the U.S. Canada's exports of evaporated apples last year, he stated, were 3,500,000 lbs., equal in value to \$212,000. Apples in bbls. exported amounted to 4,000,000 bbls. The U.S. exported a little over 4,000,000 bbls. of green fruit and 27,852,830 lbs. of evaporated apples.

"Where do they find a market for it?" was asked.

"In Europe; a large proportion of it going to Germany," replied Mr. McNeill.

"But the German market is closed to us, is it not?" questioned one M.P.

"Yes."

Mr. McNeill then told his audience that in the best commercial opinion a good market could be found for Canadian cider in Gt. Britain. The expert cider manufacturers of that country could find a valuable use for it for blending with the home variety. Before the fruit now going to waste can be utilized he claimed that there will have to be a greater diffusion of knowledge among the growers.*

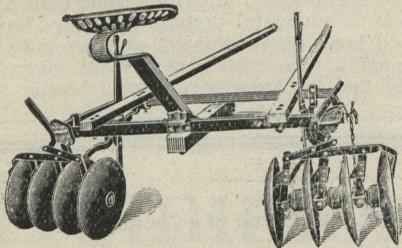
New Brunswick Fruit Growers' Association

THE annual meeting of the N.B. Fruit Growers' Assn. was held at Fredericton. There was an exhibition of apples grown by the members which was fairly representative of the principal varieties grown in the district. The task of judging these was entrusted to Prof. Sears, the horticulturist of the Agri. College at Truro, N.S., and Mr. A. McNeill, of the Fruit Dept. at Ottawa.

Pres. J. C. Gilman, of Kingsclear, N.B., said that, as a whole, the N.B. growers had fared as well last year as those of other provinces. Small fruit growers had found strawberries to be their most reliable crop, and with the good prices obtainable, much encouragement was afforded them to increase their output. Other small fruits had been variable, and the apple crop turned out somewhat uneven. Insects were numerous and active, giving much trouble. The conference of fruit growers at Ottawa had brought together representatives of the fruit growing interests in the various provinces.

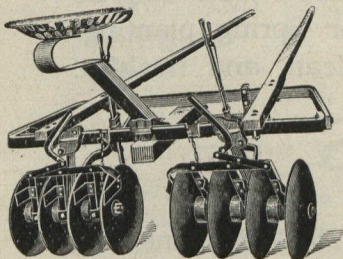
Amongst the most important work accomplished was the establishment of 4 grades of apples, the law to define the different grades. This would give one system of grading, one system of marking, and with a standard barrel and box make it possible for a buyer to know what to expect both in quality and quantity. Under these circumstances Canadian fruit should soon get the reputation its merits warrant in the markets of the world. It was for the growers of N.B. to ask themselves what they could do towards supplying the ever-increasing demand for good fruit. How were they situated with regard to production, cost of package, facilities for handling and transportation? There were within less than 100 miles of St. John thousands of acres of land well adapted to fruit growing, and the Government was giving valuable aid in various directions. The Federal Government proposes to aid cold storage. Local markets were not fully supplied, and even if they were,

BISSELL'S



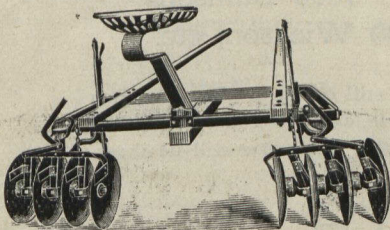
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ADDRESS

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St. John gives regular communication with foreign markets. The question of over-production was a receding one; discriminating buyers were to be found everywhere, buyers who wanted the best and were willing to pay for it, and such conditions were most encouraging. One of their most pressing needs was a more practical knowledge of grading and packing fruit by the most modern and expeditious methods. Practical lessons given by capable men at exhibitions and association meetings would do much towards educating the fruit grower in that most important part of his work. He suggested that the Minister of Agri. should be requested to include fruit amongst the crops of which statistics were required. In conclusion he asked them as producers to do their part and do it well, when he was sure that they would find fruit growing not the least profitable part of their farm work.

Mr. McNeill, of the Fruit Division, Ottawa, said that he was glad to find that fruit growing, particularly apples, was on the increase in the province. There was ample room for other fruit, however, especially small fruit; but to his mind apple growing would produce the largest returns of any. Fruit growers themselves might do a great deal to induce other farmers to embark in the industry, and by increasing the production they would be able to enlarge their markets. The individual who had not been reared "in the shade of the old apple tree" had missed the best part of his bringing up. The chief point to be considered was, could a market be found for the crop? His answer to that was, most undoubtedly there could, and if properly managed all the produce could not be sold, and sold to advantage. In some parts of Ont. people complained that they were sick of the business; they could not sell their produce, so had to feed it to the hogs. This was the substance

of several reports received by his Dept. These people, however, were chiefly the small growers who had but limited opportunities of disposing of their produce, and so waited for buyers. Large growers did not find this the case, as they found a ready market. When a dealer knew where he could rely on finding a good supply of saleable fruit, he never failed to go there. The more apples produced, the better the market and the better the price. The English market was always open and could never be overstocked; in fact, if the Canadian growers laid themselves out to do so, they could capture that market. There were too many varieties grown in Eng. and dealers could never depend on obtaining a further supply of any particular variety, whilst in Canada they were devoting their attention chiefly to certain specified varieties. As to making apple growing pay, there could be no manner of doubt on that point. In an acre of land, valued on the average at \$60, an outlay of \$10 would find the trees, and with \$3 more for the cost of planting, there was a total expenditure of \$73. The care of the trees for the next 4 years would cost \$10 a year, but this might be offset by the value of the by-crops grown between the rows. But, anyway, the outlay for the 4 yrs. would not exceed \$40, and with \$10 more for fertilizer would total up to \$123; but to be on the safe side, say \$150. At the age of 4 yrs. the trees would begin to bear a little, and from that time on the orchard would pay for itself. If this was continued till the tenth year, the trees would then be in full profit.

The average return an acre, Mr. McNeill claimed, according to the published reports received by his division, was about 80 bbls., and that at the moderate price of \$1 a bbl. showed rather more than a reasonable profit on an outlay of \$150. At 10 yrs. of age, a tree should be worth \$10, and therefore the 50 trees which

a 1 acre orchard should contain, would be worth \$500, and this should be a pretty strong argument in favor of the orchard. No one starting apple growing as a commercial pursuit should plant less than 5 acres, as the labor involved was not justified if only growing apples on a small scale. With reference to the crop grown between the trees, some sorts were liable to damage the trees, and care should be exercised in this respect. Dairying was, perhaps, the best supplementary branch of farming to take up with fruit culture.

If anyone was contemplating going into orcharding with the idea of shirking the spraying part of the business, then his advice was most emphatic, "Don't." Spraying was, if possible, of even more importance than cultivating; spraying was the one thing that might not be neglected. By following a simple routine of spraying, a grower could not fail to have successful results. Use poisoned Bordeaux mixture 3 or 4 times a year. Spray once before the blossoms open, but be careful not to spray when the orchard is in bloom. Spray again just after the blossoms fall, and then once more when the little apples were about the size of green peas. By these means, 9-10 of the insects which are detrimental to the orchard will be destroyed. The apple scab and the codling moth were 2 of the worst enemies, but if these were destroyed then about 90% of the other pests would go with them.

The speaker urged on his hearers the importance of careful grading and packing of the fruit, which often has much to do with the satisfactory sale of the fruit. In conclusion he said that there was no necessity for any one to be discouraged; any intelligent man could become a successful orchardist, as by buying a good book on the subject and carefully and thoroughly mastering the advice given, he would find his knowledge growing faster than

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E. D. SMITH

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his trees. He (the lecturer) was not preaching one method and practising another; he was simply advising others to do exactly what he was doing himself, and unless he was perfectly satisfied that what he was doing was right, he would not waste his time and money on the pursuit. Moreover, it was just as much to the interest of dwellers in the cities to do all they could to encourage fruit growing, as there could be no doubt that every extra orchard meant an additional family, and every extra family in the neighborhood meant more money circulating. Referring to the exhibits, he had never seen finer apples grown anywhere, and if they were typical specimens of N.B. grown apples, no grower in the province need have the least fear as to getting rid, at very remunerative prices, of as many as he could produce.

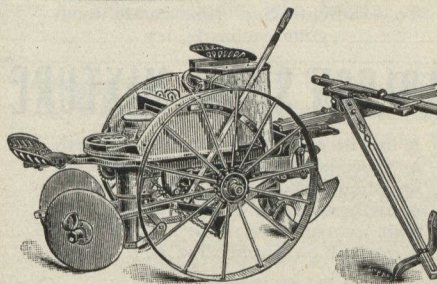
Prof. Sears, of the Agri. College, Truro, then gave an address upon the "Care and Cultivation of an Orchard." He thought that those who had heard Mr. McNeill could hardly come to any other conclusion than that an orchard was a paying concern. He fully agreed with him that it was useless to embark in the apple growing business on a small scale. The 5 acre orchard was as small as could be made profitable; but properly attended to there was no branch of farming that paid like it. His own idea was that 10 acres was as small an area as it was advisable to plant, and in an orchard of this size a grower should have at least 6 different varieties, as in the case of the failure of any one or more variety, the others were there to fall back on. The cream of varieties to his mind were the Duchess, Wealthy, Alexander, Wolfe River, Fameuse, Mackintosh, Dudley or North Star, and the Baxter. He would pick 6 out of this lot and plant his 10 acre orchard with them.

In embarking on apple growing, the 1st consideration should be the site of the orchard. There were 3 points to be considered in doing this, and these were soil, slope and shelter.

The question of soil was perhaps the least, and shelter the most, important. Apples, if properly looked after, usually will grow on any kind of soil, but they do best on a good clay loam, if such was to be had. As to slope, it was better to have the slope from the sun rather than towards it, as a northward slope would guard against the heaviest winds which usually came from the south-west. The other important matter was that of shelter. If a site could be obtained which was sheltered by woods or any large growth of natural timber, it was astonishing how an orchard would thrive under such circumstances. In planting, he thought the proper system to adopt was to plant strong, vigorous trees of a hardy variety and, when they were fairly started in growth, then re-top them with scions of the particular variety it was desired to grow. This would result in hardier trees than if the tree of the desired variety had been planted at first. It was most essential to plant only the very best stock of the kind, and if it was to be got, get it from a local grower, as for various reasons, it would not pay the latter to sell rubbish to be planted in his own district, and, besides,

trees bought locally need not be out of the ground for anything like so long a time as would be the case if bought from a distance.

Laying off the orchard required the greatest care, particularly in the matter of laying out the trees to see that they were in straight lines. This might seem an easy matter, but it was surprising what a difference in the appearance of the rows a few inches out of the straight would make. He feared Mr. McNeill's estimate of \$3 an acre would have to be considerably increased unless labor could be obtained for very much less wages than he had been accustomed to pay. In planting, too, never put manure of any kind near the roots. If the ground is such as to require some manure, then simply spread it lightly on the top of the soil when the roots were filled in. It was a good plan, also, to wrap the stems of the trees with some sort of covering in the fall; newspapers would do, but building paper was better. These saved the stems from being knocked about, from the attacks of mice and from sun-scalds. It should be continued each year until the tree was 5 or 6 years old. He had no hesitation in saying that if any one went to



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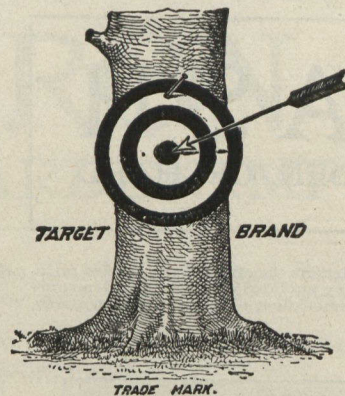
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(Mr. Fisher has bought a second supply to use on the trees which surrounded this one.)

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work in an intelligent manner and on the lines he (the speaker) had laid down, he need have no fears as to the ultimate success of his venture.

INJURIOUS INSECTS

Mr. T. A. Peters, the Deputy Minister of Agriculture, desired to call the attention of the meeting to certain caterpillars which might possibly be found about the orchard and other parts of the farm in the near future. They were the caterpillars of the Gipsy moth and the Brown Tail moth. This was a pest which had apparently started in Massachusetts, and was gradually working its way north. It had already reached the State of Maine, where they were spending thousands of dollars annually in trying to destroy it. The mature caterpillar of the Gipsy moth had a dusky or sooty colored body. Along the back, counting from the head, which is marked with yellow, is a double row of blue spots followed by a double row of red spots. This double row of spots almost invariably might be seen very distinctly on the back of a Gipsy moth caterpillar which had attained the length of 1½ inches or more. There were 5 pairs of blue spots and 6 pairs

of red spots. Until the caterpillar grows to the length of 1½ inches it does not always show these pairs of spots very distinctly. The mature caterpillar, not infrequently, attains the length of 3 inches. This caterpillar attacks all kinds of trees, both hard and soft woods, and if allowed to get a foothold, will not only cause great damage to fruit growers, but will cause serious damage to the lumbering industry.

The caterpillar of the Brown Tail moth feeds only on fruit trees and the different species of hardwood trees. When well grown it is of a bright tawny or orange brown color, marked along the sides of the body with a conspicuous row of pure white spots, and having 2 bright red spots at the lower end of the back. Wherever this insect comes in contact with human flesh, it produces a most painful nettling, and so severe is this affection, that in many cases people have been made seriously ill by it. The female is a very strong flyer. The female of the Gipsy moth cannot fly; and that species is spread mainly by being carried on different vehicles. If any of the members should happen to come across a caterpillar which appeared to answer either of these descriptions, he would be glad to have it packed and forwarded to him.

Gardeners in the Old Country are excited over the introduction of American gooseberry mildew into that country. It got a start through the importation of a few American bushes into Ireland.

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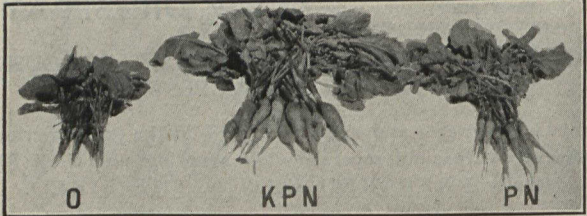
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Ontario Vegetable Growers Plan Their Year's Work

A meeting of the directors of the Ont. Vegetable Growers' Assn. was held in Toronto, March 5. Those present were Messrs. F. F. Reeves, G. Syme, Jr.; A. Shuter, R. Lankin, J. Rush and T. Delworth, of the Toronto branch; John Dougal, of Tecumseh branch; A. E. Dufor, of the Ojibwa branch; T. Wistow, of the London branch; S. A. Blunden, of Sarnia branch; A. M. Malcolm, of Scotland branch; A. McMeans, of Guelph branch; R. H. Lewis, of Hamilton branch; R. J. Bushell, of Kingston branch, and the sec-treas.

The sec-treas. announced that since the last meeting, branches had been formed at Ojibwa and Guelph, and that the growers around London had decided to affiliate with the Ont. Assn. Reports of the work done by the various branches were presented by the different delegates and were of a very encouraging nature. The election of officers resulted as follows: Pres., R. J. Bushell; 1st v-pres., T. Wistow; 2nd v-pres., R. H. Lewis; sec-treas., H. B. Cowan; executive committee, F. F. Reeves, Geo. Syme, Jr.; R. H. Lewis, T. Delworth, R. J. Bushell and H. B. Cowan.

A further discussion on the tariff situation took place. The conclusion reached was that everything possible had been done to secure a more favorable tariff, and that as the efforts had largely failed, the Assn. should endeavor again to have an appraiser appointed. The executive

committee were instructed to have a deputation wait on the Dom Govt. to urge the appointment of an appraiser for Ontario. It was decided to engage crop correspondents during 1907, as had been done during 1906. The executive committee was authorized to again purchase bulletins from the various U.S. Expt. Stations that might be of interest to the members of the Assn.

Mr. Delworth presented a report of the committee that had attended the meeting of the Expt. Union at Guelph. The report stated that the committee had decided that the experiments conducted by the Expt. Union would be of practically no value to market gardeners, as they were not conducted by experienced vegetable growers. The committee recommended that the Assn. should endeavor to conduct a few experiments on its own account in connection with the different branches.

The executive committee was requested to find what work for the benefit of the vegetable growers is to be conducted at the Agricultural College and Experimental Farm this year.

It was decided to offer prizes for competition among the secretaries of the branch assns., to see which of them could present the best reports at the end of the year upon the work done by their branches, including the holding of the

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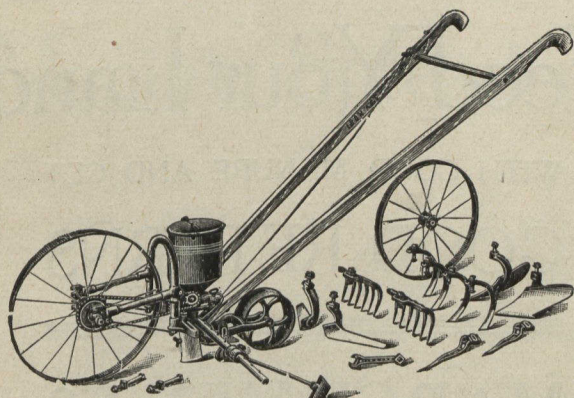
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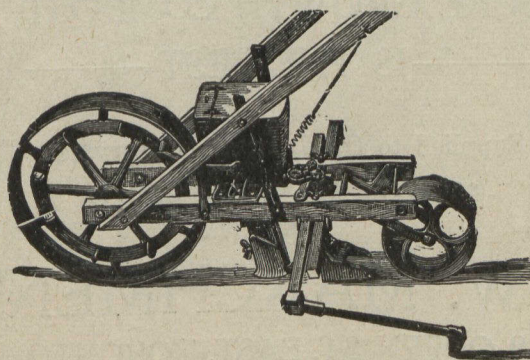
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largest number of and the most successful meetings, the purchase of supplies on the co-operative principle, and of other work of a similar nature.

Messrs. Shuter, Rush, Malcolm and Reeves were appointed to act as the representatives of the Assn. on the board of management of the Ont. Horticultural Exhibition.

IMPORTANT WORK

A meeting of the executive committee of the Assn. was held in Toronto, March 15. Those present were: Messrs. F. F. Reeves, of Humber Bay; R. H. Lewis, of Hamilton; T. Delworth, of Toronto, and the sec., H. B. Cowan. Mr. R. H. Lewis was elected chairman. The president of the Assn., R. J. Bushell, of Kingston, and T. Delworth, of Toronto, were appointed to act with the members of the Ottawa branch in laying the matter of the appointment of an appraiser to set a value on the vegetables imported into Ontario, before the Dom. Govt. It was decided to ask the branch assns. to write and request their members in the House of Commons to act on this deputation when it waits on the Minister of Customs.

As a means of securing capable speakers for the meetings of the branch assns., it was decided

to invite the branch assns. to arrange for some of their members to address their meetings on any of the following subjects: onions, potatoes, tomatoes, celery, cabbage and cauliflower, and greenhouse and hotbed work. Later the branches will be expected to furnish the names of their best speakers on these subjects to the provincial executive in order that the executive may arrange to have these men address the meetings of the other branches. It was decided that no speaker should be sent out until he had first addressed meetings of his own branch, and that the names of the speakers must be furnished to the provincial executive by Dec. 15, 1907, in order that arrangements may be made to have the speakers from the branches attend the meetings of the other branch assns. during Jan. and Feb., 1908. Later the speakers will be requested to furnish a letter outlining their addresses, together with the questions most frequently asked them and their replies thereto, that the same may be printed in the annual report of the Assn.

A MEMBERSHIP COMPETITION

It was decided to conduct a membership competition and to offer three prizes to the secretaries of branches sending in the largest number of

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new members on or before Nov. 1, 1907. It was further decided to offer three more prizes for competition among the members of the branch assns. for new members.

The idea of the assns. undertaking experimental work in vegetables in connection with the branch assns. was abandoned, owing to the great expense that would be involved and to the lateness of the season, as well as because it was felt that such work was somewhat out of the province of the work of the Assn.

CANNING FACTORIES

It was pointed out that a large number of vegetable growers in Ont. grow vegetables for the canning factories and that but little is known of the extent of this industry, and where these factories are located. In order that more information might be secured, it was decided to make a special effort to secure as complete information as possible in regard to this matter. Mr. C. C. James, Deputy Minister of Agriculture, was consulted, and stated that the dept. of agric. has been endeavoring to secure information of this nature for some time, and has found it very difficult to do so owing to the fact that the management of many factories has refused to allow the representatives of the dept. to visit the factories. The dept., however, has secured considerable information which is valuable and has a complete list of the factories. Mr. T. Del-

worth and the sec. were authorized to see Mr. James and ascertain just what information the dept. has on hand and to report at the next meeting of the executive committee, as to the best steps to be taken to secure a complete report of the vegetable canning industry of the province. It was felt that it will be a good move on the part of the Assn. to secure some reliable correspondents in every section where there is a canning factory, to give a full report at the close of the season as to the amount of the vegetables grown, and prices paid for them, as well as to give other information of a similar nature, this information to be published early in Dec. and later to be embodied in full in the annual report of the Assn.

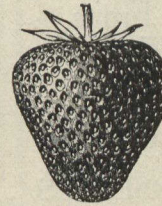
THE NIAGARA EXPERIMENT STATION

In compliance with the request of Hon. Nelson Monteith, that the Assn. should prepare an outline of the work that would be of benefit to the vegetable growers, that it would like to have undertaken at the new fruit and vegetable experiment station, to be established in the Niagara District, it was decided to make the following recommendations to the Minister of Agriculture:

- (1) That the work should include seed selection, hybridizing, the testing of standard against new varieties of vegetables, fertilization tests, and the testing of seeds to ascertain their germinating powers.
- (2) That bulletins should be

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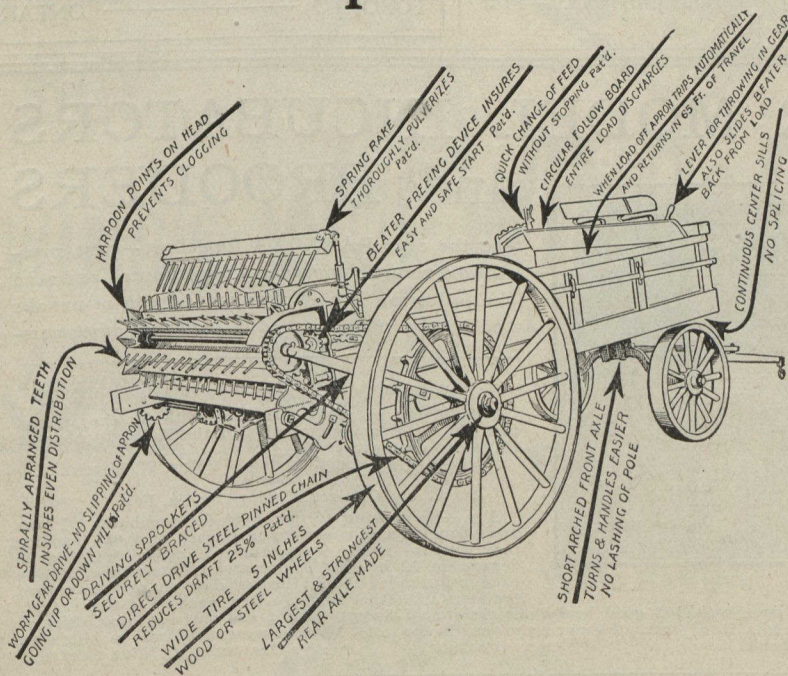
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ALL the manure you load on the "Success" will be thoroughly pulverized and distributed evenly. By our method of placing the ADJUSTABLE SPRING PULVERIZING RAKE, which makes manure fine or coarse as desired, directly over the axle of the beater, all the manure is thrown against the rake and thoroughly torn to shreds and pulverized. And the TENSION SPRINGS allow all sticks, stones and other hard substances to pass through without injuring machine in slightest.

Because the teeth of the raves of the beater are arranged spirally—not in a straight line—the manure is thrown towards the sides—away from the centre—distributed evenly. You know, the centre of the load is always the highest, and manure would come out more thickly towards centre of beater, forming a ridge, unless teeth were arranged in this manner.

Note the HARPOON TEETH which protect the ends of the beater. These teeth cut the long pieces of straw and grass up—do not allow them to wind around the beater, choke it up and cause it to run hard as is the case with common manure spreaders. They keep the beater of "Success" always clean—make it the easiest-working beater in existence.

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published at regular intervals, giving particulars of the tests conducted, how they were conducted, and the results to date. (3) That the vegetable growers' assn. should be represented on the board of control of the station. In regard to the work of seed selection, it was decided to recommend that when any varieties of vegetables are brought into a stage of advanced merit, that steps should be taken to have seed distributed to members of the Assn. desiring same. It was felt that the germination tests should be made in Jan., that the results might be published in Feb., so that the growers would be enabled to

use them when ordering their seeds for the year. In conclusion, it was decided to recommend that the supt. appointed to have charge of the station should have a knowledge of commercial vegetable growing.

Keeping Hens for Profit

Alfred Andrews, Burlington, Ont.

ED. THE CANADIAN HORTICULTURIST.—The question is often asked: "Is there money in poultry?" It seems to me that Mr. Short, in the January issue of THE CANADIAN HORTICULTURIST gives one of the best answers I have seen. For the past 30 years I have kept some fowls for the supply of our own family and occasionally have sold some of their products. Having kept a strict account of all expenses and sales for year ending Jan. 1, 1907, I give the results:

I had an average of about 50 hens, White Rocks, Barred Rocks and half-a-dozen Brown Leghorns. I kept no male bird as I was only aiming at egg production. We made no attempt at procuring eggs for sitting hens. The total expenditure including food, wire for runs, purchase of 20 pullets for the present season, lumber, etc., was \$135.66. The receipts were \$179.63, showing balance of profit to be \$43.97—not reckoning anything for care and attention or rent.

None of our eggs were sold below 18 cts. a doz., and a certain proportion have sold from 30 to 40 cts. The first two months of this year I sold none for less than 35 cts. and most of them for 40 cts. This includes 2½ cts. a doz. express charge to Toronto. I kept a daily record of eggs laid last year, the entire flock running together. This year, also, I am doing the same—only the record for each flock is kept separately. The average per hen for last year was 105. Last year the daily average number of eggs was 10.55 for the month of January. This year for same month we had an average of 14 daily. Keeping poultry is not for an average man a get-rich-quick business; but, when understood and judiciously carried on there are fair probabilities for a moderate return.

"I am greatly pleased with the get-up and contents of THE CANADIAN HORTICULTURIST. Every issue contains a lot of extremely interesting matter. Especially valuable are the news notes from the various provinces."—Prof F. C. Sears, Truro, N.S.

British Columbia Notes

C. P. Metcalfe, Hammond, B.C.

Among successful and progressive fruit growers all over this western country there is a general consensus of opinion that some form of protection of fruit trees against the ravages of fungous diseases and the depredations of insect pests is necessary, in fact, almost indispensable, and yet there is no detail of orchard work which is more neglected, in B.C. at least.

Unfortunately fruit growing in B.C. in the past, to a very great extent, has been carried on by ordinary farmers, who are so busy with their general farm work in the spring and early summer that the orchard has been neglected. Still another reason why the application of insecticides and fungicides is neglected and has become unpopular amongst many who grow fruits is the inferior character of the appliances used. Until quite recently the province has been flooded with frail, badly constructed and inadequately equipped spray pumps, incapable of generating sufficient pressure to send the spray into the crevices of the bark, or high enough to reach the top branches of an ordinary apple tree.

A fruit grower, to be successful in spraying, should use only the best of materials, and prepare them with the greatest care, as much of the trouble as the clogging of the nozzles and the burning of the foliage, is due to bad materials and careless preparation.

In B.C. we are not troubled with Codling moth or San Jose Scale as yet, so do not use the lime sulphur and salt spray very much.

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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

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Do you know my incubator will pay you a bigger profit than any other thing you can have on your place?

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It tells you how to make money out of chickens.

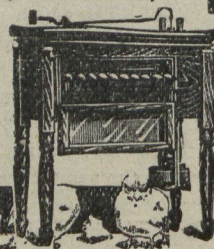
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Will you write for my book to-day? Just say on a postal "Please send me your Incubator Book"—that's all. Address me personally.

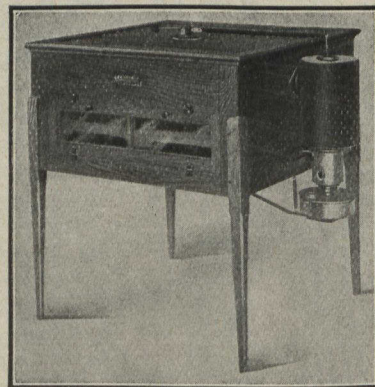
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I would not be without my incubator for the price of two if I could not get another of the Model Incubators. Have had good success.

I remain yours, MRS. W. MITCHELL.

Orangedale, Nova Scotia, Feb. 11, 1907.

Sirs.—No trouble to run a Model Incubator. I was away from home for eleven hours each day and machine took care of itself, temperature of cellar changing 26 degrees in 12 hours. Temperature of machine did not change in the least, only the last days showed an upward tendency of ½ to 1 degree. Ran machine at 103.

Results from one hatch, 148 good healthy chicks from 178 eggs. There was only one dead chick in the shell, in the lot. Dead germs of about eight days in the rest. My eggs were very dark, making close testing very difficult.

Yours very truly,

ORANGEDALE, NOVA SCOTIA.

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Bordeaux mixture is used to combat the bark canker (*Gloeosporium Malicortis*) of the apple, the pear and the apple scab (*Fusicladium Dendriticum*), and the plum and cherry rot (*Monilia Fructigena*). To overcome the foregoing fungous diseases, trees should be sprayed at least 5 times a year; once in the fall, once in the winter, twice in the spring, and once in the summer.

The winter spray should be the 4:4 formula, doubled, and the summer spray for plums and cherries the ammoniacal copper carbonate.

In spraying for insect pests, the insecticides are divided into 2 classes: (1) Internal poisons, such as Paris green, London purple, and arsenate of lead, which take effect by being eaten with the ordinary food of the insect; and (2) external irritants, or those which act from the outside, closing the breathing pores, or causing death by irritation of the skin, as kerosene emulsion, quassia chips and whale-oil soap, and resin and sal soda. It is to be hoped that fruit growers and farmers will provide themselves with good reliable spraying outfits and use them diligently, or else abandon fruit growing.

Send us two new subscriptions for THE CANADIAN HORTICULTURIST and one dollar, and we will extend your subscription for a year. For one new subscription, will extend it six months.

Prince Edward Letter

Rev. Father Burke, Alberton, P.E.I.

After a long delay, the government nominated F. G. Bovyer, of Georgetown, to the Island inspectorate. The Island inspector is rather an important official, as his duties constitute both instruction on fruit matters and inspection of fruits in the fall and winter seasons. We, therefore, require a good man, one conversant with the Marks Act, and also able to instruct in the various phases of horticulture.

Complaints have come to me, as president of the P.E.I.F.G.A., that much bad fruit has been imposed upon the community, and that the buyers have no redress because no inspector was available. In January, in company with our secretary, Mr. Dewar, I visited the fruit cellars of Charlottetown dealers. In many cases we found things to complain of, but in others we were glad to notice the honesty and fairness of packing. Some of Sherrington's cooperative packing delighted the eye. The deeper we delved towards the bottom of the barrel, the better we were pleased. Since the appointment of Mr. Bovyer as inspector, we expect to hear less complaints. Commissioner Ruddick informed us that he will do all he can to make inspection thorough. Any com-

ASPARAGUS WANTED

If you will have any Asparagus to sell this Spring write to me at once with particulars. It will be more profitable to sell to me than to any one else. Let me hear from you.

E. C. KIDDER
ST. CATHARINES, ONTARIO

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Don't buy your seeds from any old source. You cannot tell by their appearance just how good they are
THE ONLY TEST IS THE HARVEST TEST

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They are giving satisfaction to hundreds of planters and they will do so for you as only THE BEST can. We want you to have one of our '07 catalogue. Write for it now
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destroys all insects or fungi on potatoes, berry bushes, trees plants or vegetables.
Copper tank \$15, galvanized \$12. Agents wanted.
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plaints should be made known to the inspector. After all the discussion and work in the national council of fruit growers last March, and all the agitation during all these years for one barrel for Canada, it appears that no action is to be taken on the resolution that was passed by that representative body, asking that the 96 qt. bbl. be made the standard and only barrel for the whole Dominion. No other question, as the minister knows, exhausted to such an extent the time and ingenuity of the conference, and no more unanimous finding ultimately was made than upon this question. It is too bad, then, for any selfish interest to frustrate the enactment of law upon this matter, but if Hansard is to be believed, something of the sort has already intervened.

On Dec. 14 last, Alex. Martin, M.P. for P.F.I., rose in his place in parliament and put this pertinent query to the minister: "Is it the intention of the Government to bring in legislation to carry out the resolution, passed at the Dominion horticultural council last March with regard to the legal barrel? If so, when and how? If not, why not?" To this, the minister promptly replied: "It is not the present intention of the Government to give effect by legislation to the resolution as the Government has found that those engaged in the fruit industry have diverse opinions on this subject."

In the name of common sense, why gather representative fruit men together from ocean to ocean and ask them to reach a conclusion on the matter, and to reconcile their diverse opinions, and then refuse to take the conclusion that they reached with such unanimity? When will diverse views be more closely knit in any one decision than they were at the conference on this question of a uniform barrel? When will the country be better served by unanimity in its measure than at present?

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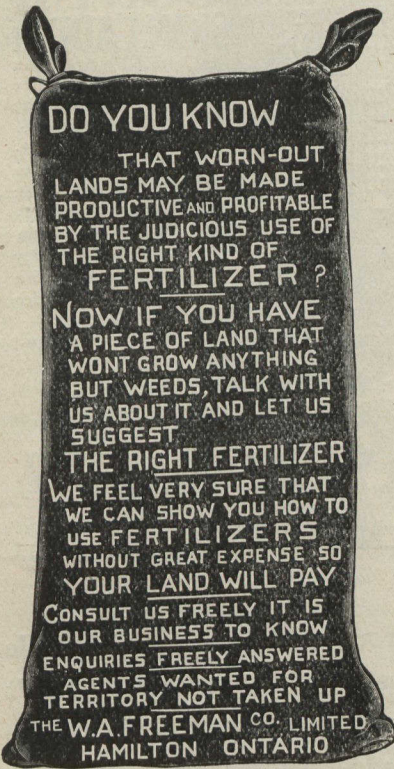
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We regret very much that the minister has not taken action on this matter. It will be "unfinished business" to be discussed and fought over at the next council. After the last conference, the whole country thought the matter closed, and well closed. The minister has said that it is not the present intention of the Government to take action in the matter. May it quickly become so.

High Prices for Apples

Mr. J. S. Larke, Canadian Commercial Agent in N. S. Wales, draws attention to the fact that a shipment of American apples sold in Australia for from 12 to 17 shillings a case of 1 bus. These apples were of a quality that could be supplied by B.C. or by Ont., were it not for the fact that in Ont. some of the apples are likely to be affected by Codling moth. Mr. Larke says that \$2.50 would readily be paid in Vancouver for 5-tier apples. This is a better price than can be obtained in the Northwest or in Gt. Britain. The essential condition is that the apples must be free from Codling moth.

The experience at the Exp'l Farm, Ottawa, goes to show that it is possible, with careful spraying, to practically banish the Codling moth from Canadian orchards. Last year it was impossible to find a specimen of the Codling moth in the orchards of the Exp'l Farm, and what was done there can be duplicated in any good orchard in Canada.

Vegetable Growers Meet

At a meeting of the Toronto branch of the Ont. Veg. Grs.' Assn., held in March, it was unanimously decided to sell rhubarb this spring at not less than 20 cts. a doz. An interesting talk on growing vegetables was given by J. B. Guthrie of Dixie, Ont. He said that land for vegetables must be well manured and well cultivated. The most improved implements should be used for tilling the soil and keeping down the weeds. Growers always should keep ahead of the work. When bunching vegetables, they should be put up neatly and uniform in size.

Mr. Guthrie sows early cabbage seed about Feb. 15 in flats. When the seedlings appear, they are transplanted about one inch apart in boxes. These are placed where the temperature is fairly cool. Two or 3 weeks previous to the time for planting outside, he puts them in a cool house or in cold frames. This makes the plants stalky. When transplanting to the field, care must be taken to have a ball of earth around each plant so as not to disturb the roots. Mr. Guthrie plants in the field about 2½ ft. apart each way. At a pre-

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Books for Fruit Growers

Grape Culturist

By A. S. Fuller. This is one of the very best of works on the culture of the hardy grapes, with full directions for all departments of propagation, culture, etc., with 150 excellent engravings, illustrating planting, training, grafting, etc. 282 pages, 5 x 7 inches. Cloth..... \$1.50

Successful Fruit Culture

A practical guide to the cultivation and propagation of fruits, by Samuel T. Maynard. This book is written from the standpoint of the practical fruit grower who is striving to make his business profitable by growing the best fruit possible and at the least cost. It is up-to-date in every particular, and covers the entire practice of fruit culture. Illustrated. 274 pages. 5 x 7 inches. Cloth..... \$1.00

Insects and Insecticides

By Clarence M. Weed. A practical manual concerning noxious insects and methods of preventing their injuries, with many illustrations. 334 pages. 5 x 7 inches. Cloth..... \$1.50

Spraying Crops

By C. M. Weed. A treatise explaining the principles and practice of the application of liquids and powders to plants for destroying insects and fungi. Illustrated. 140 pages. 5 x 7 inches. Cloth. 50 cents.

These are only a few of the books we handle on horticultural subjects. If interested, write for our free catalog of books.

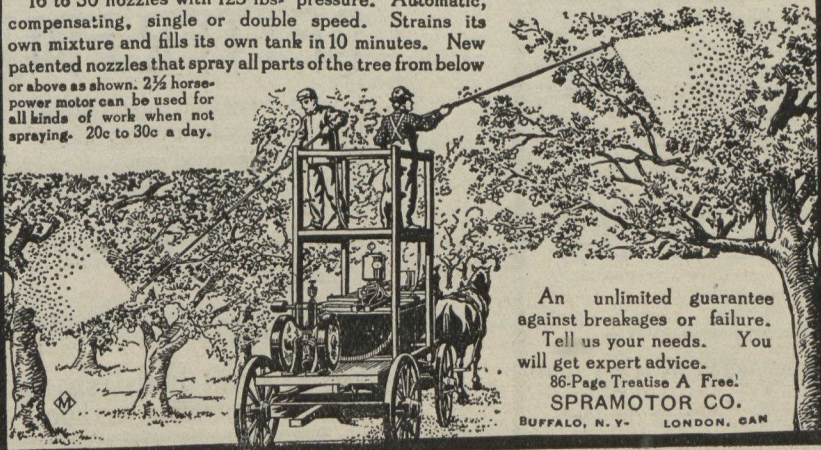
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vious meeting of the branch, it was decided to charge for all bushel boxes that are delivered, the amount of the charge to be refunded on the return of the boxes.

Notes From an Inspector

Ed. THE CANADIAN HORTICULTURIST: Since my departure from Montreal on January 1 last, my inspection work has been confined mostly to Northumberland County and Cobourg, Grafton, Colborne and Brighton. About Feb. 15 there were 35,000 bbls. of apples at these points to repack. The kinds in store were Golden Russets, Ben Davis, Baldwin and Spy. The latter have been selling well at home.

The apple houses in this county are of modern style, and although the winter has been very severe, yet very little fruit has been damaged by frost. The model packing house has generally model packers, but not always. When nearing some of these houses I have heard profane language, whistling and dancing, and the fruit was usually of the same grade, lacking uniformity.

When fruit is irregular in size and quality and hard to grade, one has continually to keep his mind on his business or something will happen. We read of one Ont. man getting 28 shillings a bbl. for No. 1 Golden Russets, and 20 shillings for No. 3 quality. We congratulate such a man, as he has made for himself a name that other men may well covet. Men ask me how such a man gets such a big price and others so much less. I tell them that he packs better, that an even grade can be depended upon always, and wherever his name is found on a package of fruit it is reliable. This is the secret of his success. So go and do ye likewise.


E. H. WARTMAN,
Dom. Fruit Inspector, Custom House, Montreal.

The Market Gardeners' Assn. of London, Ont., of which T. Wistow is the sec., and which has been in existence for several years, has affiliated with the Ont. Vegetable Growers' Assn., and in future will be recognized as a branch of the Ontario Assn. Mr. Wistow has been elected as the director to represent the London branch, which promises to become one of the strongest branches in the Province. All the leading cities of Ont., including Ottawa, Toronto, Hamilton, and Kingston, now have branches of the Ont. Assn.

A catalog that contains some of the most complete descriptions of varieties that we have noticed is that of Stark Bros. Nurseries and

Orchards Co., Louisiana, Mo. All the varieties of fruits worth growing are mentioned therein. This catalog should be in the hands of all Canadian fruit growers.

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ALL THE YEAR ROUND
A GOOD LADDER
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EXTENSION LADDER**

enables you to hand-pick all the apples on the tree. Its extension feature permits it to run through the tree—not only to rest on the outside

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Needs of the Fruit Growers

Early in March a meeting of the leading members of the Ont. Fruit Grs.' Assn. was held in Toronto, at which important matters relating to cooperation and transportation were discussed. The cooperative committee discussed the best means of bringing about the organization of new assns. Rules and by-laws of all assns. in Canada and the U.S. will be studied, so that such may be had for districts of varying conditions and requirements. A resolution was passed dealing with the question of substitution in nursery stock, and suggesting legislation to govern same.

The transportation committee will endeavor to obtain from the railway companies better accommodation, better equipment and reciprocal demurrage. Through the efforts of Mr. R. J. Graham during the last year, stop-over privileges of 48 hours have been granted at the rate of 2 cts. a cwt., or about \$5 on shipments for export. The committee purposes asking for a similar concession in respect to cars loaded with fruit for the international trade. A resolution was passed instructing the sec'y of the assn. to communicate with the secs. of the Montreal Bd. of Trade, of the Manufacturers' Assn., of the Man. and Sask. Fruit Grs.' Assns., and of the Alta. Farmers' Assn., with a view to securing combined action before the railway commission regarding the question of reciprocal demurrage.

Lack of Space prevents our giving a report in this issue of the discussions at the meeting of fruit growers held in St. Catharines, Ont., in March. The subject of the San Jose Scale and the best methods of combatting it, were discussed by Dr. Jas. Fletcher, of Ottawa, and Prof. H. A. Surface, of Harrisburg, Pa. The importance of spraying, to hold the pest in check, was emphasized, and the lime-sulphur wash was recommended as the best spray mixture.

Advertising Notes

We have just received a copy of this spring's descriptive catalog of the well-known firm, Stone & Wellington, which is, practically, an encyclopædia of all varieties of merit in the fruit and horticultural world. The publication is well printed, with handsome embossed cover, and profusely illustrated with half-tone engravings, showing scenes in their extensive nurseries at Fonthill. Attention has been given to certain lines, such as new and choice varieties of perennials and border plants, new Hybrid roses, rare Coniferæ, deciduous trees and shrubs, while their fruit list contains many new varieties of commercial merit.

The Deming Co. of Salem, Ohio, advertise their spray pumps in this issue of THE CANADIAN HORTICULTURIST for the first time. This Co. is one of the best known and most reliable in the U.S. Its machines have merits that Canadian growers should acquaint themselves with. The Co. furnishes interesting illustrated printed material free on request. Their little booklets are worth writing for.

Bugs and Blights is the title of a booklet being distributed by Hammond's Slug Shot Works, Fishkill-on-Hudson, N.Y., which fruit, flower and vegetable growers should be interested in. A postcard to the Co. will secure you one free of cost.

For the past 5 yrs. or more, we have published the up-to-date SPRAMOTOR ads. appearing in this horticultural medium, and we note with pleasure the rapid strides towards the building of a mammoth manufacturing concern, which could be accomplished in no other way than by modern excellency of product and honest, straightforward dealing with the consumer. Enterprise such as the SPRAMOTOR CO. is showing is to be commended.

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HOWARD, CINCINNATI—Beautiful Oak Case Cabinet Grand, with nicely decorated top door, full length music rack, Boston fall, 7 1-3 octaves, 3 pedals, including orchestral attachment. This Piano is in the best of condition, thoroughly guaranteed, and an instrument that will give good satisfaction, and we consider it A1 value at..... **\$245.00**

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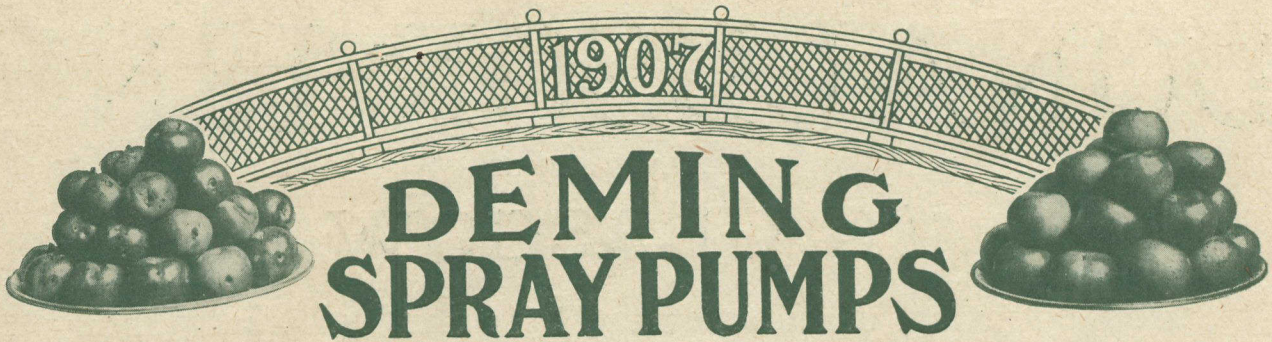
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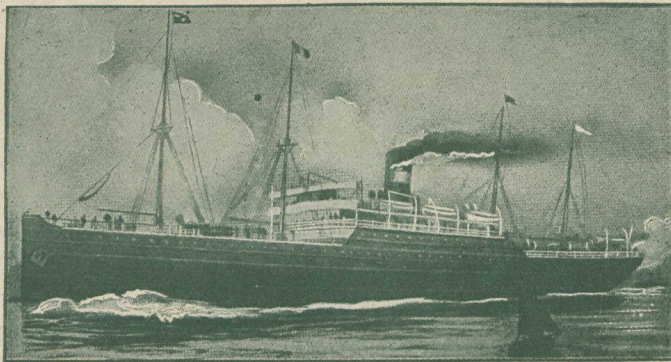
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