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No. 1

Sweet Peas in British Columbia

Geo. A. Robinson, Royal Oak, Victoria, B.C.

AS the flowering season of the sweet pea as grown here for seed purposes has only recently drawn to a close, and while the behavior of the different varieties is fresh in one's memory, it is an opportune time to make a comparison between the different varieties in their respective colors and to decide which one to grow another year. This season has been a particularly favorable one for sweet peas in this part of the country, and all varieties, both old and new, have done remarkably well. During June, climatic conditions were such (dull, muggy weather), that a fungus disease attacked the plants and stunted the main shoots. Inside of a week or ten days, however, this had disappeared, and the laterals grew just as healthily as if nothing had happened. This disease also attacked sweet peas in the same way, and for a few days, things looked mighty serious for the sweet pea growers around Victoria, of which there are quite a number.

It may be interesting to your Eastern readers to know that forty acres of sweet peas are being grown for seed in the vicinity of Victoria this year (1921), and the probabilities are that many more will be grown next year. Most of this seed is grown for English seed houses. Seed of the latest varieties is sent out here to be grown and, in fact, quite a few varieties are to be seen that are not yet disseminated. Of these, of course, I dare not say anything.

Sweet peas do remarkably well on South Vancouver Island, the climate being ideal for them. Being able to sow the seed early in February, they have a long season of growth, and the bright hot days and cool nights of the summer months are just suited for setting and ripening the seeds of the highest qual-

ity. Our seeds are all hand picked, being left on the vines until they are thoroughly ripe. This ensures good quality seed, much more so than if they were cut and thrashed, ripe and unripe at the same time. Such a variety of sweet peas is grown now that it is a difficult matter to pick out a list which will suit everyone's taste or every purpose. However, I will endeavor to give you what I consider the best varieties in their respective classes.

A few of the novelties sent out this year are great advances over older varieties, notably: Royal Scot, Picture, and Gladys, in light blues. Mrs. Tom Jones is magnificent and stands alone in its color, as also does Commander Godsall. In dark blues the latter variety has superseded Jack Cornwall, V.C., and Lord Nelson Spencer. In bluish-pinks, Elegance is true to name, being a

and Ed. Cowdy, will have to take a back seat with this variety. In scarlet-reds, Scarlet Glow is a good thing, but I like Mrs. C. P. Tomlin better.

There are many new cream-pinks being sent out and it is hard to make a selection as they are all good with slight variations in color, habit of growth, etc. Picture, Cecily, The Queen, Fair Lady, Caress, Giant Attraction, Market Pink and Mrs. Arnold Hitchcock are all good, but I think the two first named are the cream of the best.

Charity is a grand crimson and stands head and shoulders above Sunproof Crimson and King Edward Spence. I have, however, seen one in the trial grounds this year, not yet disseminated, which, I think, will supersede Charity when it is sent out.

Mrs. J. T. Wakefield is classed as finished-pink. It is a lovely pea and should be generally grown. This variety and Mrs. Tom Jones were the only two varieties to gain unanimous awards of merit by the National Sweet Pea Society, of England, in 1920.

There are quite a few lavenders, most of which are lovely colors. In dark lavenders, Gladys, F. R. Felton, Lavender Belle, and Austin Frederick Improved, are all splendid varieties.

In light lavenders, Hawlmark Lavender and Unwin's Lavender are both good and well worth growing. Splendour, Warrior, and

Dobbie's Maroon, in maroons, are all good varieties, especially Splendour. This variety has no trace of purple in it at all. King Mauve is in a class by itself, as also is Royal Purple in their respective colors.

Tangerine, and Robert Sydenham Improved, are two grand orange-colored varieties, but unfortunately they burn badly in the sun. Grown



A Field of Sweet Peas in British Columbia.
Forty acres of sweet peas for seed grown in the vicinity of Victoria, B.C., last year. Our illustration shows a field of Elegance.

beautiful variety, a good grower, with long stems, and holds its color well. Doris is a beautiful cerise-pink. Glory is supposed to be an improvement over this variety. It is a little darker in color, but Doris will hold its own in any company. Royal Scot, cerise-scarlet is a good pea in every respect, being large, a good grower and of splendid color. Old favorites such as Alex. Malcolm

under glass they are fine. In orange-scarlets, Ed. Cowdy, The President, and May Unwin, are fine, but they burn in the sun. Grown shaded, the colors are intense. Jean Ireland, as cream-ground picotee, and Annie Ireland a, white-ground picotee, are both nice flower and worth growing.

Hebe is a fine pink and has replaced Hercules. It is a good grower with a long stem. Daisybud is a beautiful pale pink and should be largely grown. Hawlmark. Pink stands alone in dark pinks. A batch of this in the field is a sight worth seeing. Unfortunately, it broke badly this year, but by persistent selection and conscientious roguing, it can be kept fairly true, and is worth the trouble. Unwin's Pink is also a good dark pink, but perhaps better on the exhibition table than in the garden.

There has been less improvement in white sweet peas than in any of the other colors. Mascot's White and Money-maker are both good and Constance Hinton, although it shows a tinge of pink when opening its flowers, is, nevertheless, a grand variety.

With every grower striving to get a yellow sweet pea, it is no wonder that there are numerous creams on the market. In color, they all look alike to me. Felton's Cream, Unwin's Cream and Majestic Cream are all good growers with long stems.

In selecting the fifteen best varieties in their respective colors as I have seen them growing, I should place them as follows: Mrs. Tom Jones, Elegance, Royal Scot, Charity, Splendour, Gladys, Hawlmark Pink, Doris, Constance Hinton, Royal Purple, Felton's Cream, Picture or Cecily, Daisybud, King Mauve, Mrs. Wakefield.—The Canadian Florist.

Everbearing Strawberries

L. M. McConnell, Port Burwell, Ont.

THAT race of strawberries known as the everbearing strawberries is, to many people, a conundrum. They cannot understand how any variety of strawberries can produce two crops in a season. This is true, nevertheless, as has been proved by hundreds and thousands throughout the continent. They are becoming very popular in many sections; are ideal for the home garden, and are planted extensively by some as a commercial proposition. After eight years close study and experience with the Everbearing strawberries, I have found that they are a fixed type of berry and that they are truly everbearing (that is, fruiting from spring till fall.)

There is no chance of the everbearing of June bearing sorts, but they are very valuable in their place and are well deserving of extensive trial by all. The everbearing sorts are planted in

the spring, the same system being followed as with the standard varieties. Keep well cultivated and hoed throughout the season. Plant on well enriched soil which is well drained and in a good state of cultivation. After planting keep all blossoms picked off until about the middle of July. Before the middle of August you can commence to pick ripe berries in abundance and continue to do so till hard freezing weather. Last fall I picked berries after the 15th of October.

With regard to culture they can be grown in the matted row system, but the most popular way is the hill method. By the hill system no runners are allowed to take root and, therefore, the full strength goes into the plant, and it is astonishing the berries that are produced. It is nothing unusual for a plant to bear from one to two boxes of berries during the summer and fall.

The second season, they will produce a heavy crop in the regular season during June and July and after about two weeks' rest will commence to fruit again and continue to do so throughout the balance of the season.

The chief merits of the everbearing strawberries are as follows: 1—Their remarkably long fruiting season, giving fresh berries practically all summer and fall. 2—High prices received for the fruit during August and September. 3—Are not injured by late spring frosts, for if the early blossoms are killed by frost, they will immediately put forth more blossoms. 4—Will grow successfully wherever standard varieties are grown. Are very successful in the western provinces.

With regard to varieties, the Progressive is without doubt the best of the everbearers. Other good sorts are Americus, Superb and Peerless.

Ordering Plants and Seeds

W. T. Macoun, Dominion Horticulturist

MANY persons leave the ordering of plants and seeds until very shortly before they are needed in the spring with the result that there are frequent disappointments as either the variety desired is sold out or there is not time to test the germinating power of the seed received, before planting time, and if, after it is sown, few plants come up there may not be time to re-sow and obtain a good crop. The early planting of most varieties is important if the best results are to be obtained. It is wise, therefore, to plan one's garden several months ahead and to order early. Catalogues from the most reliable seed and nursery firms, which are usually available in January, should be obtained in good time and the order sent off without delay.

The best is none too good for one's home garden, hence, when planning what is to be ordered, lists of best fruits, flowers, and vegetables should be consulted. This information can be obtained through the Dominion Experimental Farms.

There is a great difference in the strains of the same varieties of vegetables and flowers, and usually seed of the best strains is more expensive than where careful selection has not been made, but the small difference between the cost will be compensated many times over by the superiority of the crop. This higher priced seed does not refer to novelties, which may be only old varieties under new names or new sorts which are not as good as the older ones. The testing of novelties should be left largely to the experimental stations. Some of the vegetables where good strains count much are

tomatoes, cauliflowers, and onions, but there is a great difference in the strains or selections of other kinds as well. This applies to flower seeds also, and it is very annoying when one has ordered seed of phlox, verbena, aster, or some other annual of a certain color, to have a mixed lot when the plants come in bloom.

It is desirable to mark "no substitution" on the order one sends as sometimes seedsmen will substitute other sorts for those ordered, which the buyer does not want. This substitution is not so important in the case of vegetables and flower seeds unless one is growing these on a large scale, as it only affects one year's operations, but when one is dealing with fruit trees which may remain alive through the greater part of one's life, it is very important not to have inferior sorts substituted for good ones.

It is better to receive trees and plants a little too early than late, as provision can usually be made for putting them in a cellar for a few days if necessary before the ground is ready for them. When ordering, it is a good plan to ask for delivery of trees at the earliest date that one is likely to be able to plant as it is very unsatisfactory to receive trees, shrubs, or herbaceous perennials when spring is far advanced. This applies particularly to roses, many of which fail to grow when received late in the spring, but all trees and shrubs will suffer if planted late. Small orders are liable to be left by nurserymen until large orders are filled unless the order is received early, before the rush, which is another reason why one should not delay in ordering.

Beautifying the Verandah

W. E. Groves, Hamilton, Ont.

VERANDAHS should be given more planning than they often receive, and may be treated to some extent according to size. Hanging pots are pleasing if used in moderation, and carefully attended to during the growing season. Have the boundary wall or rail, so that it is not continuously of the same height. This can be done without badly marring the architecture, and if more built-in receptacles for planting were used, there would be less of the artificial appearance sometimes seen. It is, of course, easy to fix boxes on a brick wall and plant with advantage, but it is not so easy to do the same thing on a 1921 verandah rail. A few plants placed on stands, or even on the verandah floor, is a good addition, but it is well to avoid crowding.

Steps could be much improved generally. In a majority of houses, they are not built massive enough. It is possibly easier to say this than to provide the remedy, but from the garden viewpoint, there is much to gain by providing a bold approach to any home. Planting should always be done on either side of stone or brick steps, either shrubs or a small rockery being suitable. Where there are pillars they are obviously meant to take a box or tub of plants. Something green generally gives the best effect. Plants for window and verandah boxes in the more sunny aspects should include dra-

caenas, *Asparagus sprengeri*, coleus, and some of the commoner trailing plants for green, with geraniums, petunias and verbenas for brightening up. Vivid scarlet and salmon pink geraniums are each good. For a touch of blue, trailing lobelia and ageratum are useful, and for white, alyssum, white geraniums, and some of the silver foliaged plants are chiefly used. There is always a temptation to plant thickly for immediate effect. It might be an ultimate gain, if there were less crowding, and room left for development. For shady positions, begonias, fuchsias, heliotrope, with a similar mixture of green usually provide the best assortment. Ferns might be more often used, especially if there is some protection from prevailing winds.

If boxes are portable, a fine spring bulb effect can be secured by planting bulbs in late fall, keeping in cool cellar and retarding as much as possible. When real danger of frost is over, the boxes can go out, and a fine effect can often be had for some time before the usual summer planting. The best plants for real winter effect are Norway spruce, arborvitae, cedars and junipers. These retain their color better than many other kinds, and are always fairly effective. For plant boxes and tubs, spruce is the best winter plant, and, of course, boxwoods for summer. By way of a change, small evergreens may be used amongst the

flowering plants in summer. There is also a golden privet quite attractive for this purpose, though it will not stand the winter in this climate. Baby rambler roses in boxes sound out of place, but given a good position, a fairly large box, and plenty of attention, are really uncommon. Amongst useful verandah plants are *Hydrangea hortensis*, several good varieties being admirable for this purpose. Window boxes may be used freely where there is little or no real garden. This decoration may easily be overdone and should be restrained, excepting under the conditions named. Plants suggested for verandah boxes will be suitable, care being taken not to crowd unduly.

To sum up, real home beautifying should commence at the street, and be continued through to the back alleyway. There is hardly a spot in the whole garden, where something will not grow. Trees, shrubs and flowers should find themselves in happy combination, not always according to strict rule, but along the lines laid down by the great teacher, Nature. In this particular time of stress and strain when men everywhere seem to be groping after something they know not what, there is an emphasized demand for the content and quietness associated with gardens. For the sake of an individual and national uplift, for the sake of national purity, the home beautiful is essential. Bolshevism and beauty are thoughts absolutely opposed to each other. They are positively insoluble, and it is no far-fetched assertion, to say that in a land of good homes, extreme social theories have no place. It is, perhaps, safe to say that this glorious country will only find its proper place, and become fixed as a real star in the great firmament of the divine, when through the town garden lots, and down the country sides there comes the fragrance, the beauty and the glory of homes, not only made beautiful by the hands of those who dwell in them, but are loved and cared for right to the point of beautification.

Watch the house plants for pests. The most troublesome are green and black aphid, red spider, scale and mealy bug. A dry temperature is conducive to increasing these. For aphid use a strong solution of tobacco water. The best preventive for red spider is moist temperature and sprinkling the foliage, especially on the lower side. For scale, wash the leaves with strong soap suds, rinsing with cold water. Brush mealy bugs off the plants with a small brush or stick. Destroy them while young.

Mulch the strawberries and fruit trees and shrubs if this has not been done.



An Attractive Window Box

A window box of petunias, grown and photographed by O. H. Foster, Kerrwood, Ont. The seed was sown in the box in moderately rich sandy loam. Bloom continued from the middle of July until late in October.

Water Features and Arches

HERE are a few simple features that in their proper place add largely to the home appearance. Where steps in a garden are required, stone or brick with plantings on either side are pleasing. They should be wide, and not over six inches in depth. Some of the lesser used paths may be grass. Pleasant to walk in, restful to the eye, they also form a delightful blend with the colors in nearby planting.

A water feature is of intense interest, where it can be provided with any naturalness. Even a built fountain or pool, if the water is on the same level as the garden, may be made really artistic. At the end of a walk or grass area appears to be the fitting place. The grass can extend to the edge, or some planting between stones round the edge helps to make the appearance more natural. If some bright-colored flowering plants can be placed near the pool, the outdoor mirror of the surface of the water produces a charming effect. The idea can, of course, be extended to include water lilies and fish, and it might also attract the birds to some extent.

Arches, both wire and rustic, are always admired. They should be massive enough to give an impression of stability and when covered are an added charm. They may be used to advantage near steps, or on paths to give the appearance of additional length, or at walk intersections. From arches to pergolas is not far, for the latter is but a glorified arch. One of the finest kinds of garden architecture, it has to be planned with care, and should only be used where the position is suitable. Covering steps down to a garden level, and extending a few feet along a path; at the end of a garden wall, or at garden intersections are possible positions. If built of wood that has to be painted, a dull brown color is the best. When well planted with any of the vines named, the first and right impression is rather of the plants than the structure. There is not sufficient time to deal with the construction but a well built pergola demands some thought and labor, and is worth it.

Plum Pockets

Prof. L. Caesar, O.A.C., Guelph, Ont.

PLUM pockets or bladder plums is a disease that is confined in Ontario, apparently, to native varieties, doing no damage to the European kinds; hence, it is not of much importance to commercial plum growing. However, as it often almost ruins the crop of native plums, and as many

farmers, especially in the colder districts, prize these varieties highly, it will be of interest to them to know that the disease can be controlled at small expense.

Plum pockets or bladder plums, or, as the farmers often call them, blasted plums, are characterized by the fruit, instead of developing normally, becoming much swollen soon after it is set, turning first pale yellowish or reddish color and later brownish. If such fruits are examined, they will be found to be spongy, leathery in texture and to have no pit inside. Moreover, they drop several weeks before healthy plums are ripe.

This disease is caused by a fungus which seems to winter chiefly on the buds, and, like peach leaf curl, to which it is closely related, can be controlled by an early spray with lime-sulphur, 1 gallon to 7 or 8 gallons of water, applied very thoroughly in the spring before the buds have begun to show signs of bursting. In spraying take special pains to cover the twigs thoroughly.

About ten years ago the writer tested this method and obtained excellent results. Lately it has been again tested on a larger scale in Montana and again proved satisfactory. No poison is needed with the lime sulphur.

Pruning the Orchard

W. S. Blair, Kentville, N.S.

THE pruning of orchard trees should receive more than passing notice. Successful pruning is that which removes the least amount of top possible to give an open head and eliminate undesirable branches. It is pretty well established by experimental data that anything which reduces the vigor of the top in like degree reduces the vigor of the root. The reduced vigor is undoubtedly due to loss of foliage, which is the factory of food production for the tree. You can quite understand, however, that the removal of certain branches would increase the vigor of the leaves on remaining branches. Hence, by cutting down the leaf-bearing area, you may produce conditions that will make that area more efficient. The reduction of leaf-bearing area, however, beyond a certain point may seriously interfere with proper food elaboration. So it is desirable that moderate annual rather than excessive pruning on occasional years should be practiced.

A principle of pruning not well understood, and from my observation seldom used, is, that branches to be repressed, should be cut heavily, and those to be stimulated should be cut lightly or not at all. Make practical application of this fact in your prun-

ing operations, and it will do more to assist you in shaping your trees and getting a proper spread than anything else. If you practice this, you do uneven cutting, and the average pruner would laugh at the job.

To illustrate this point, suppose two branches which arise from the same branch, are cut back equally. They will tend to produce equal growth the next year. If one is cut back heavily, and the other lightly or not at all, the latter will continue to form the framework of the tree, whereas the other will become a secondary branch.

A heavy pruning when trees are dormant disturbs the equilibrium existing between top and root. Nature endeavors to restore this balance the following season by the growth of leaf developing branches, and the chances are that maximum fruit bud development will not take place. Nature aims to replace the lost foliage area resulting from heavy pruning rather than form fruit buds. For this reason heavy pruning has the opposite effect of light pruning. Light pruning makes it possible to develop large trees more quickly, and is also conducive to early fruiting.

Do not, however, get the impression from what has been said, that little or no pruning is necessary. Without judicious pruning, you cannot develop satisfactory crops, but aim to direct your pruning operations so that best results will be obtained. If the severe pruning usually practiced on young trees were followed at our Experiment Station, the trees would not have the size nor would they produce the fruit they do. You know right well that the average pruner prefers pruning a young to an old tree. He would much rather do it than to get up into a big tree, and take out the surplus branches carrying weak buds, which necessarily must produce weak leaves. The number of branches under some of our young trees after the average pruner gets through with the job gives one the impression that few who prune understand the principles involved, their whole aim apparently being to develop an open, good looking tree.

Lately I have been going over all the back numbers of The Canadian Horticulturist. I have some as early as 1916, cutting out and indexing items that interest me, and there are a lot of them. Your paper is one that I think everyone who has a garden should take. Every number is helpful; besides it is Canadian and looking after Canadian interests.—Harold Boyce, Sydenham, Ont.

Send your garden photos to The Canadian Horticulturist.

QUESTION BOX

W. E. Groves

AT the suggestion of the editor, I am to have the privilege of caring for this department. The name implies that Question Box is to be a kind of problem clearing-house, and the intention is to honestly try and assist every reader. You will, however, have to come into line; the reply to your question may help a hundred others, and for that reason alone you should ask it freely. Please make each question as clear as possible. If you ask it at the time the information is needed, this will often prove the best time for reply. If it is thought that any enquiry should have a reply before the next issue of the paper an effort will be made to send it by mail, publishing it in the column, also for general information. Will readers generally try and make this part of the paper one of increasing interest and a place where everyone is welcome. Address all questions to The Canadian Horticulturist, Peterboro, Ontario.—W. E. Groves.

Creeping Jenny in the Lawn.

My garden and lawn are troubled with a creeping weed, sometimes called Creeping Jenny. Is there any spray that will kill it, or what other method could I use?—J. M., Meaford, Ont.

To keep a lawn clean it is necessary to make the grass grow strong enough to smother the weeds. If the weed named is not too bad, the lawn could be well raked over and a top dressing of really rich soil given at once. In the early spring some good grass seed should be sown, care being given dur-

ing the season to encourage all the growth possible. Bad weed patches could be cut out and seed sown on the bare places. Bone meal is a good food for grass, as is also sulphate of ammonia, each used at the rate of one to two ounces to the square yard. It is well always to remember that it is on poor and uncultivated ground that the weeds give most trouble. In the garden a safe remedy is the hoe.

Begonia Rubra.

I have a begonia, which is four feet high, and has just two straight stalks with a few leaves on top, which kept green all winter. It is beginning to show signs of shooting out. Would you advise me to cut it down, and to what height, also the best time to do it?—Mrs. C. C., Toronto, Ont.

From the description given of the growth of the begonia mentioned, I think it must be the variety called *Begonia rubra*, which often throws up straight stems as mentioned. I would not advise cutting these back at all, as this growth usually produces lateral or side shoots that will produce flowers later on.

English Broad Beans.

Please print cultural directions for English broad beans. Can they be grown free from rust?—I. B. W., Thorndale.

The writer has to confess that he has had little success, but English broad beans may be grown in this country. From observation of the methods of good growers, it is evident that a deep rich soil is necessary. Seed should be sown about six inches apart in rows. If sown in a shallow drill, the soil can be drawn towards the plants as they grow. Cultivation should be followed and late in the season a light mulch is sometimes used.

Rust is the result of hot, dry weather, rarely appearing in a rainy season. To make sure of a crop it is wise to sow just as soon as danger of frost is over and by cultivating and feeding the plants should be kept growing as fast as possible.

Pruning Trees.

State best time for pruning trees, bush fruits and grape vines.—I. B. W., Thorndale.

Pruning is generally a matter for the winter and spring seasons. It is presumed that enquirer refers to ornamental trees. This work can be done at any time when the trees are dormant and weather conditions suitable. Bush fruits, such as currants and gooseberries are usually pruned in spring, as also are grapes, though there is apparently no reason for delay in this connection if the winter months are not too severe for working outside. Raspberries and blackberries call for attention after fruiting, the old canes being then removed.

Garden Bulbs.

Please give the names of garden bulbs for spring planting, also name of lily similar to tiger lily but without spots and any other general information on the planting of a garden next spring.—H.A.P., Toronto.

You should get in touch with a good nurseryman, securing catalogues and information that any reputable firm is always ready to give on the question of planting. If you have not yet begun to plant, it would be well to lay out a definite scheme which need neither be elaborate nor costly. Shrubs in variety should be groups, a good rose bed, and a perennial bed or border. The latter would be a good spot for lilies for which you appear to have a special liking. The variety about which you inquire is probably *Chalcedonicum*, but there are quite a number of kinds possible of successful garden culture. A good seedsman's catalogue would be of real help in the selection of roots for spring planting.

Disinfecting Pruning Tools.

In disinfecting knives for pruning, corrosive sublimate cannot be used as it acts almost instantly on knife. Would arsenate or carbolic acid in solution be just as effectual?—H. B. Sydenham, Ont.

I have used the same knives and the same saw for four years in succession disinfected with corrosive sublimate and little injury resulted to either. There is no need of your correspondent being alarmed on this point or trying to use some other disinfectant. The corrosive sublimate does not do much harm to steel in this work.—Prof. L. Caesar, O. A. C.

Pruning can be done in the orchard on warm days from now on. Burn all trimmings as promptly as possible.



The Home of a Cape Breton Reader

This is the attractive home of John Taylor, Sydney Mines, N.S. Cape Breton has a late spring owing to the drift ice from the north. Once the growing season sets in, growth is rapid. (See letter on page 6.)

LETTERS to EDITOR

Growing California Poppies

Editor, Canadian Horticulturist:

Someone asks in your valuable paper how to grow California poppies. These have done very well for me. Let the seed ripen thoroughly before picking. Prepare a shallow box with good garden soil, press it down with the hand and have the soil damp. Scatter the seed (for it is very fine) sparingly. Sift a little fine soil over the seed.

In order to avoid hardening the ground when watering place a piece of tissue paper over the box and water through it. The seeds will not come up if the soil is hard.

When the young seedlings have grown the fourth leaf, transplant in a shallow box, preferably an old wash basin which contains good garden soil. Water gently so as not to injure the young seedlings with the weight of the water.

About the middle of May transplant to a border, lifting the young plants out with a teaspoon. This is where the shallow box is of advantage, as you can press your spoon down to the bottom. Your plant thus stands a better chance of living, for they do not like to be moved. Take as much earth as possible of each plant and without disturbing the roots.

Once started, California poppies are quite hardy. In the winter they should be covered with some litter. Plant in the shade of a tall plant or about 15 feet apart in the border. They have a striking appearance and this balances up the border. Place white near them so they will be modified.

—Mrs. A. S. Flood, Smith's Falls, Ont.

Gardening in Cape Breton

Editor, Canadian Horticulturist:

I have never yet seen in The Canadian Horticulturist anything, either in picture or writings, from this little island of Cape Breton, which forms the southern point of the great Gulf of St. Lawrence and the northern point of the province of Nova Scotia.

We have a pretty late spring, owing to the drift ice from the north, but when once the growing season sets in, in the month of May, vegetables certainly drive ahead.

Potato planting generally takes place on or about the 24th of May, but we cannot set our cabbage, cauliflower or tomatoes with any degree of certainty before June 10th.

I must certainly compliment you with regard to The Canadian Horticulturist, for it is a neat, interesting, and instructive magazine. Interesting I know it must be to the up-to-date gardener and very instructive for the amateur like myself.

I have had great success with cabbage this season in my garden, due solely to the advice I received through your paper. I have been troubled previously with club-root on my cabbage, and scab on potatoes, but this season I dipped my seed in corrosive sublimate 1 oz. to 7½ gallons of water for two hours, then I added another two and a half gallons of water to the solution and used it on my cabbage plants for club-root. The result was, my potatoes were free to a large extent from scab, and I had very little club-root among my cabbage. I watered my young cabbage plants with this solution four days after planting, and gave them two more doses at intervals of ten days apart. I believe if I had followed up,

as per instructions, with a fourth watering with this solution I should have eliminated this disease altogether. I had cabbage that went over 15 pounds, and lots that went 11 and 12 pounds in weight.

I take great pride in my garden, and supply ourselves with vegetables all the year round. We have a piece of land 150 ft. by 70 ft., which is like a small park during the summer months. The forward half is given over to the house and lawn, trees and flower beds, while the other half I devote to vegetable growing.

You seem to use mostly pictures of gardens around Toronto, Hamilton, and towns in that vicinity, but I suppose it is because your readers are failing to supply you with pictures of their gardens elsewhere in this great Dominion. However, I always admire your pictures, and must say there are some lovely gardens around Toronto and Hamilton.—John Taylor, Sydney Mines, Cape Breton.

Receptacles at Exhibitions

Editor, Canadian Horticulturist:

I note the letter in your last issue on the subject of receptacles at exhibitions. As I happen to be the only recent contributor to mention the matter in your columns, it is natural to conclude that I am the unconscious offender. With your permission I will develop the subject of exhibitions in a future issue when I may have something further to say about receptacles.

My one reason for writing now is to definitely disclaim any intention to discourage small societies, an intention quite unnecessarily implied in the communication signed by Mrs. Potts. Those who happen to know me and the work I am trying to do, will not need this disclaimer. A number of readers, however, are not burdened with my acquaintance, and it is for these particularly that I make the statement.—W. E. Groves, Hamilton, Ont.

HORTICULTURAL SOCIETIES

Hamilton

THE December meeting of the Hamilton Horticultural Society was held recently, J. A. Webber, President, being in the chair. A poor attendance greeted the speaker, Miss Mary Yates, the President of the Ontario Horticultural Association for this year. Her subject was "The progressive policies of the Ontario Horticultural Association." With a vision and an outlook that was refreshing as well as new, Miss Yates in an exhaustive address freely criticized some of the work and methods of the organization over which she presides and suggested for consideration many new lines. She sounded a necessary note of warning against what she called the spoon-feeding of Horticultural Societies by the Department and asked for a higher and altogether more worthy outlook. In this connection she suggested the appointment of an association finance committee to take in hand the raising of necessary funds for various developments being considered. Miss Yates gave a glowing account of the joint exhibit at the Canadian National Exhibition, praising very much the self-sacrificing work of those who gave their time to the effort. The exhibit was visited by Lady Byng who congratulated the association on its success in staging the fine display.

Lack of registration facilities as well as

opportunities for testing new plants were spoken of and also the lack of efficient judges for our shows. Miss Yates evidently was unaware of the work being done in each of these directions by the Canadian Florists' & Gardeners' Association or she would probably have been a little less critical.

A suggestion to arrange for a real Provincial Show in different cities of Ontario was warmly advised, the speaker estimating that some finances were already in sight and left no doubt in the minds of the audience as to the possibility of raising the necessary funds.

The address was practical as well as visionary and the Ontario Horticultural Association might well be congratulated upon having at its head a lady whose outlook is wide and who obviously feels that the organization has boundless opportunity for extending and developing its work. A cordial vote of thanks was given Miss Yates on the motion of the chairman.

St. Thomas

AN executive meeting was held on December 6, at which it was decided to send a formal invitation to the American Gladiolus Society to hold its 13th show and to the newly-formed Ontario Gladiolus Society to hold its first annual exhibition in this city in August, 1922.

Plans for an energetic membership drive were made, to be conducted along lines adopted in the organization of the Chamber of Commerce which proved so successful. Dr. Bennett urged the necessity of a strong organization. With an enthusiastic drive, he felt confident that the present membership, which is about 3,000, can be increased about 50 per cent.

A committee of committees was appointed at the suggestion of Trustee Conley, who declared that the society had been leaving too much work for Dr. Bennett and the working secretary. The organization has developed to a point where a management committee is absolutely necessary in order that all departments may receive proper attention. The committee will receive suggestions from the members and act on them either by the formation of other working committees or individually, thus relieving the president of many duties.

An encouraging report was submitted on the financial standing of the society.

Some time ago the society took up the matter of the further extension of the Michigan Central Railway Park System, being beautified and controlled by the society. The support of the C. P. R., who have running rights, was also sought. Landscape-gardener Winegar, of Montreal, and Claims Agent Price have investigated the proposed plan and were both much surprised. They will report favorably on the proposed plan.

The best grafting wax I have used is made as follows: Melt together 16 ounces of common resin (powdered) eight ounces of metholated spirits and 1½ ounces of olive oil. Apply with a small brush. In a few days it will set hard on the grafted part. The melted wax keeps in a liquid state for several days and can always be remelted. It is cheap and good.—The Gardeners' Chronicle.

Lawn trees of the poplar species are not satisfactory for extensive planting, foresters state. Their extensive root system may lead to the filling of sewers, tile drains, cisterns and cellars with fibrous roots.

Still More About Imperial Show

TWO changes in Imperial Fruit Show procedure and regulations would mitigate some of the disadvantages suffered by Canadian entries at the recent exhibition in the Crystal Palace, London—fewer judging and no unwrapping of fruit before judging. That is the opinion of P. J. Carey, Dominion Fruit Branch demonstrator, who returned last month from London and a subsequent holiday in New York. Mr. Carey had charge of the Canadian Government's display at the show, and assisted in staging several of the exhibits, both competitive and non-competitive, from the provinces.

To The Canadian Horticulturist, Mr. Carey said that less than a half-dozen experienced judges would have been sufficient to cover the entire show. Instead, there were about 80 judges (not 65, as Mr. Carey had first thought in London, and so stated in the despatch that he sent to The Canadian Horticulturist in November). In his opinion, judges for the British Empire and Overseas sections, at least, should be secured from some country that was not competing and they should be men who had a thorough knowledge of box packs and packing. He had heard some talk in London about appointing French judges for the next show, but was not in favor of that idea, because French judges knew little or nothing about box packing. One or two experienced judges from the United States or, if the expense were not too great, from Australia or New Zealand, would be satisfactory.

At the recent show, there was little chance for overseas exhibits to win in the open classes. The Newton Wonder entry, which violated all rules of grading and packing, as explained on this page last month, winning in the culinary class of the British Empire Section was an example. And Cox's Orange Pipin, Mr. Carey thought, would win over there as a dessert apple in competition with any other varieties of the world, simply because it was Cox's Orange Pippin, regardless of the quality and appearance of the particular entry or of the manner of grading and packing.

With reference to requiring the two top tiers of apples in boxes being unwrapped, Mr. Carey thought that the regulation should be done away with. If the show was

to be educational in a commercial way, the fruit should be wrapped and judged as originally packed. That was the right way to judge fruit for commercial purposes. Some of the wrappers could be removed afterwards for exhibition purposes. It was this two-tiers-unwrapped regulation that prevented a number of Canadian entries, including some of those from Quebec, from winning prizes. Some entries that had all the fruit wrapped and packed in the open-alternating style naturally were too loose after being unwrapped. With the wrappers on, the style of pack was sufficiently solid for commercial purposes, but, once the wrappers were removed, any man could imagine what would happen. That was the case with some of the Quebec entries and with a number from some of the other provinces.

Speaking of the Quebec entries in particular, Mr. Carey said that the fruit was very fine, but suffered through this regulation. The representatives of the Dominion Fruit Branch had taken every precaution and given every attention and assistance towards placing the entries on the stands in the best possible condition. All the Quebec entries that arrived were in the competitions, but fared just as did many of the entries from the other provinces. The Quebec apples met with much complimentary attention on the part of all who saw them.

Comments of English Papers

THE English papers gave the Imperial Fruit Show wide and persistent publicity. The London Daily Mail, which was responsible for the organization, financing and arrangement of the show, naturally lead in advertising the show's significance, possibilities and excellence. The Daily Mail well deserved the high praise that it received for making the show possible and for carrying it through to great success. In the words of the British Minister of Agriculture, Sir Arthur Griffith-Boscawen, who opened the show: "The Daily Mail performed a great national, a great imperial service." From The Daily Mail and other English papers, the following interesting comments on the show are taken:

From the Daily Mail.

"The finest display of amateur-grown fruit ever seen....excelled only in color and beauty by the wealth of fruit sent for exhibition by the professional growers of Great Britain and the Empire."

"A striking feature of the show was the success of English growers in the section open to exhibitors from all parts of the Empire. It demonstrated that we are the best growers of apples in the world."

From "Canada" (London).

"The Dominion Government's display consisted of leading varieties gathered from all the fruit-growing provinces.... Every specimen was as near perfection as could be secured, and was artistically arranged."

"Mr. W. L. Hamilton, in charge of the Ontario Fruit Growers' Association fruit, has a very high opinion of the fruit-growing industry in Ontario, and believes that the province offers unrivalled opportunities to practical men."

From the Gardeners' Chronicle.

"The promoters must be congratulated on the show as a whole, but we do not

recognize the claim that it was the finest fruit show ever held, for there have been fruit exhibitions in the same building which, in our opinion, equalled the present one in interest, if not in extent."

"The show revealed one important fact, i.e., that great improvement is being made by many commercial growers in the packing and grading of apples for market, although it was evident from many of the exhibits that much remains to be done in this direction before the standard of the colonial packer is reached." (Get that "colonial"!)

"Generally, the home grading was equal to that in the colonial exhibits, but the packing was, at times, inferior. It was also obvious that, in spite of the long journey, Canadian apples would keep sound and good longer, in many circumstances, than the home-grown fruits. This may be explained partly by the fact that the Canadian apples have firmer skins and contain more sugar, but we feel convinced that unsuitable methods of packing are largely responsible for home weaknesses."

"The greatest interest was naturally centred in the Empire classes, where the Home Country and the great Dominion of Canada competed on equal terms....It is gratifying to be able to record that both first prizes (dessert and culinary) were won by the Mother Country....In the culinary class, the champion 20 boxes were of Newton Wonder—a truly wonderful exhibit."

"The Canadian exhibits were mostly of brilliantly colored varieties, such as Snow, but in many instances the natural bloom had been polished out of existence, leaving a shiny, oily-looking surface to the fruits." (This comment referred particularly to the Dominion and provincial displays, not in competitions).

From The Fruit-Grower (London).

"The show may, in the opinion of many, be found to give a new lease of life to the condemned 'offset' pack as a practical commercial pack." (The term "offset" pack is used in England for what is known as the "riff-raff" pack in Canada).

"The public must not be allowed to forget the fact that in certain districts of England the growing of fruit has been brought to a higher pitch of perfection than in any other country whatsoever."

"Packing has been much improved, and, with quality and color of the first order, the reputed superiority of the North American specimens not being observable on this occasion, competition was unusually keen."

"That the leading dessert (British Empire section) proved to be Cox's Orange Pippin, will meet with popular approval, for whatever the judges may have to say on its merits when reckoned according to the standard laid down for their guidance, Cox's Orange Pippin is to the public the apple par excellence."

"First place also fell to home-grown fruit in the culinary class....The judging, which was unanimous in favor of Newton Wonder, reached a deadlock when the second and third prizes came to be decided, and arbitration had to be resorted to before the matter was finally disposed of, the result being that second prize went to Bramley's Seedling, shown by Mr. H. M. Cobb, of Rochester, Kent, and the third to Greening, the exhibit of the Ontario Fruit Growers' Association, Toronto."

"In the opinion of the judges, the apples shown by growers of the Mother Country in point of appearance, quality, flavor and pack were in advance of those from the

Canadian Apple Men Must Watch Their Laurels

THE following quotations are from letters on the Imperial Fruit Show received by the Fruit Branch, Ottawa, and read by Mr. Baxter at the recent meeting of the Quebec Pomological Society:

"That the exhibition will stimulate growers in this country (the United Kingdom) there cannot be any doubt; at the same time, we also hope that it will induce shippers in Canada to give the utmost possible care and attention to the grading and packing of their fruit."

"It was to be clearly seen by anyone visiting the show in the Canadian interest that English growers are breaking away from their past haphazard and indifferent methods, and that the effect of an educational show of this kind is bound to be seen, in not the very distant future, in the keener competition that home-grown produce will offer to Canadian and other imported fruit. The excellent reputation that Canadian packing and grading has already built up will not readily be lost; but, it is well to emphasize the fact that English growers are now after the business and, though their progress may be slow, it will probably be laid on good foundations."

daughter Dominion of Canada, both desert and culinary, the leading varieties which secured the verdict being Cox's Orange Pippin and Newton Wonder. Canada, we have no hesitation in saying, accepts the verdict, and is compensated in a measure by the knowledge that, while agreeing it is a waste of time to teach one's grandmother to suck eggs, Canadian packing methods have enjoyed the distinction of being held up as an example to our growers which has been followed, so that what is on the face of it a victory for the Mother Country is one that actually is shared by the whole family. When the distance travelled by the competing apples from Canada is taken into consideration, the achievement of the home-grower is not so very extraordinary after all, for the advantages were mainly on our side. Canadian growers exhibiting were further handicapped by the very early date of the show, rendering it necessary to pack the apples from British Columbia as early as Sept. 25, and those from the eastern provinces not later than Oct. 5. This drawback, too, had the effect of considerably reducing the number of entries that would have been expected to come forward under more propitious circumstances. It is only fair to Canada that these things should be made known. We give the information not as an excuse or in extenuation, but simply as an explanation. For ourselves, we are reluctant to regard the British Empire section as a competition between Great Britain on one side and the Overseas Dominions on the other. We dislike the idea altogether. The Crystal Palace Fruit Show we shall always best remember as the finest and greatest exhibition of apples and of fruit growing and distributing accessories the world has ever known, demonstrating what the British (in its imperial term) fruit grower can really accomplish when once he has made up his mind to do a thing."

Missing Quebec Exhibits

AN unfortunate misunderstanding on the part of London correspondents of Canadian newspapers resulted in the publication of a despatch to the effect that nearly 100 boxes of Quebec apples had been lost in transit, thus casting an undeserved reflection on the steamship services. The facts are that no definite advices had been received as to the quantities of Quebec apples actually shipped, nor had the Agent-General for Quebec been notified as to Quebec arrivals, as was done in the case of the other provinces. Copies of all prepaid entries from Quebec, however, had been forwarded to the Fruit Trade Commissioner, who also had other reason to expect the Quebec shipments on the ss. Metagama, along with the Ontario and New Brunswick exhibits. The latter duly arrived, and the quantities reached the total that had been expected.

In the case of Quebec, however, there was a wide discrepancy between entries and arrivals, and, in the absence of notification in this regard, there was at first some thought that the fruit might have been miscarried in some way. When it was definitely ascertained, however, that all Quebec entries, whether of 6 or 20-box lots that had arrived, were complete, it appeared altogether unlikely that any mishap had happened to the balance, and the conclusion was reached, since confirmed from Canada, that, for some reason not yet explained, a portion of the Quebec entries had not been sent forward. In the meantime, however, the report as to loss in transit had been given regrettable publicity.—J. Forsyth

Smith, Fruit Trade Commissioner, Liverpool, in Weekly Bulletin, Department of Trade and Commerce, Ottawa.

NIAGARA PENINSULA

Suggestions Wanted

E. F. Palmer, Vineland Station, Ont.

IN the spring of 1922, the Horticultural Experiment Station will have control of an additional 35 acres of good land, suitable for all kinds of fruit and vegetables. Definite experimental and breeding work has been planned for a part of this area only. There are many other projects which might and should be undertaken. This letter is written with the object of securing the views of growers as to new cultural problems which they consider should be studied in an experimental way. The major lines of experimental work now being carried on at the station or already planned for the coming spring are as follows:

1. Variety tests of apples, pears, plums, cherries, peaches, grapes, etc., comprising over 1,000 varieties of fruits.
2. Summer vs. winter pruning of apple trees, vs. no pruning.
3. Study of the effect of varying degrees of dormant pruning on the development of the apple.
4. Study of the interrelation of pruning, soil fertility and distance of planting in the peach.
5. Study of the comparative merits of clean cultivation, alfalfa sod mulch and grass sod mulch for apples and pears.
6. Grape: correlation of the number of buds left in pruning and the vigor, productiveness and longevity of the vine.
7. Study of height of heading in raspberries in relation to vigor, crop production and cane support.
8. Comparative value of various high-grade fertilizers for outdoor tomatoes.

In addition to these, experiments have been completed on the following problems: Overhead irrigation of raspberries and strawberries; irrigation of asparagus; irrigation and fertilizer tests for early beets, early carrots and celery; northern vs. southern-grown potatoes as seed tubers; self-fertility and self-sterility of grape varieties; value of certain self-fertile varieties of grapes as pollenizers for self-sterile varieties; ringing grapes; plum vs. peach roots for peaches for heavy soils; spring vs. fall planting of fruit trees. The title, in each case, indicates the nature and scope of the experiment.

We ask fruit and vegetable growers to carefully read this list, and would appreciate suggestions for new lines of work which they consider we should undertake. Write or visit the station immediately so that necessary stock, etc., can be ordered for spring delivery.

Niagara Fruit for West

ACCORDING to a press despatch from Winnipeg, in December, Ontario strawberries and raspberries will next season be plentiful on all western markets. Over 200 carloads of Ontario fruits and vegetables were handled through the Winnipeg office of the Niagara Peninsula Growers, Ltd., in 1921. Greater preparations are being made for the handling of the next crop.

The express companies all give exceptionally good service to perishable fruits, and the government has expended a great deal of money in experimenting to find out

the most ideal way of keeping the cars cooled. Shipments leaving Hamilton on Saturday are ready for the Winnipeg market on Monday. Cheaper transportation in sight should see a great improvement in both variety and quality of Ontario fruits from the new and successful organization. The western business has been in charge of Arthur H. Brown, who states that they were extremely successful the past season with a limited quantity of strawberries and raspberries.

Shippers Await Settlement

SHIPPERS of fruit from this district are wondering when the Canadian National Express Company is going to make settlements for packages which were sold by the company last season, says the St. Catharines Standard. The matter has been taken up by the local agent, but the officials higher up have not yet shown results as yet. True some of these accounts were handed down from the Canadian Express Company. Did not the present company assume the liabilities as well as the assets of the company?

One shipment in question was strawberries. They were sold in Toronto because connections had been missed. Is the shipper to blame for this? The company request that all fruit be shipped on the special train run for that purpose. The shippers can't see why the company is not liable, and if they claim they are not, why they (the company) don't have the courtesy to answer communications and state their position.

Basket Prices for 1922

F. G. H. Pattison, Winona, Ont.

IHAVE been informed that the price of baskets for next season is likely to be around \$100 a thousand for 11-quarts and \$80 for 6-quarts. This appears to be much too high. Both materials and wages are away below last season, and from all accounts local basket factories have been making good profits of late and they ought to share up with the growers now.

The new basket factory in Niagara Township, for instance, owned and managed by the local fruit growers, which only started last season, is reported to have made a profit of nearly 40 per cent its first season. If that be the case, what have the other basket factories in the Niagara District been making? Manifestly, they have been doing very well indeed, and they should be more reasonable this year. An obvious cure for overcharging in the matter of baskets is for the fruit growers' cooperative to establish some basket factories of their own.

The Vineland Branch of the Ontario Vegetable Growers' Association met at the Horticultural Experiment Station on December 9, and elected the following officers: Hon. pres., E. F. Palmer; pres., Chris. Fretz; vice-pres., Leo Martin; sec., O. J. Robb; treas., J. W. Philbrick; directors, the foregoing and Gordon Fry.

An interesting feature of the Canadian Government's display at the Imperial Fruit Show was an exhibit of fresh grapes from the Niagara District. Red Rogers and Vergennes had been collected by J. R. Hastings, Chief Fruit Inspector for Western Ontario, and sent to the show packed in cork in boxes. Mr. Carey said that the first-class condition in which they arrived showed that Niagara District grapes could be shipped successfully to England in that way.

PROVINCE of QUEBEC

Pomological Society

R. J. M. Reid, Chateaugay Basin.

AMONG the resolutions adopted by the Pomological and Fruit Growing Society, at the recent annual meeting, were the following:

"Resolved, that the thanks of our society are due to the Hon. Mr. Caron, for the very kindly and sympathetic aid which he has always shown to the efforts of our society in its striving for the best in fruit culture for our province, and more especially at this time for the financial aid given the society, which made it possible to have our province represented at one of the greatest exhibitions of fruit that has ever been staged, and we desire to include the name of Mr. J. H. Lavoie in this resolution of thanks for his part in securing the grant for this purpose."

Federation of Societies.

"Resolved, that this society urge the necessity and importance of establishing a federation of all horticultural and allied societies into a provincial society, the central organization of which will be the Pomological and Fruit Growing Society of the Province of Quebec, whose technical members are looking to the improvement of general horticulture, including fruit growing, vegetable growing, floriculture, tobacco growing, etc.—the aims of the provincial society to be: first, to gather together knowledge concerning these subjects through its members and then to distribute the same through the local societies, and in this way to get in touch with the rural community; second, to find out the needs and protect the interests of all members interested in horticulture and allied subjects; third, to hold an annual provincial horticultural affair, followed by the annual meeting of the provincial society, consisting of delegates from each of the local societies; and that a committee be appointed to communicate with all other horticultural and allied societies with these objects in view."

Orchard Conditions in 1921.

In the course of his address as secretary, Peter Reid, Chateaugay Basin, said: "I have gone over the reports of our directors for 1921, and find that, aside from trees dying out as a result of freezing of 1917-18, there was no winter injury and only slight spring injury in one or two sections of plums and strawberries. Not a great deal of planting has been done this year of apple trees aside from those which were planted to replace dead ones, but districts 2, 4 and 9 report plantings up to 5,000 trees. Most of the sections report large planting of strawberries and raspberries, district 4 running as high as 250,000 plants.

"Tent caterpillars are becoming more abundant, and a word of warning for next spring is not amiss. Codling moth was very abundant in some places, the second brood were more of a pest than the spring brood. Fall webworm was abundant. One district reports railroad worm. Very little scab reported, especially on sprayed trees, but canker is on the increase in district 9.

"Most of the reports show that the crop was medium to light, with Wealthy the nearest 100 per cent variety. Plums were the fullest crop, with the other fruits generally ranked as medium. Dudley, Okabena, Lowland, Lobo, Melba and Cooper's Market apples have been recommended in different

localities. Most districts reports spraying with best results. Labor was more plentiful, but still fairly high—\$2.50 to \$3.50 a day, sometimes with meals. Cultivation is still only moderately carried on. All report markets good and some report that local markets not supplied by local growers, large supplies being brought from Nova Scotia and Ontario."

The building used as a packing house at the Experimental Farm, Summerland, B. C., was burned in December, as one of the methods of wiping out the codling moth, which had obtained access to one of the orchards there.

BRITISH COLUMBIA

Signing 5-Year Contracts

A NEW idea in co-operative organization contracts, insofar as the Okanagan Valley is concerned, was outlined at the Vernon Fruit Union meeting, Dec. 2, by C. E. Barnes, the organization manager of the Okanagan United Growers, reports the Vernon News. Mr. Barnes told of the success with which he was meeting in signing growers on the five-year contract

Rural Service Department



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Special attention given to Farmers' problems. Use our Rural Exchange Service. If you have livestock, feed or seed grain to sell, or wish to purchase, list it on our Bulletin Board. Auction Sale Registers furnished free of charge. Have you received one of our Farmer's Account Books? Have you been supplied with a "Breeding and Feeding Chart"? Call in and see us—we are interested in your welfare.

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See Advertisement on another page.

basis. This was being carried out in California with great success and wherever he had approached growers in British Columbia they had given their approval.

In Grand Forks, Wallachin and a number of Okanagan shipping centres, the growers were signing the new agreements which would greatly help the parent organization in financing and in other ways carrying on its business. The speaker pointed out that in California financing was made much easier, for when the union had a five-year contract with a grower the banks were more ready to advance loans. They knew that the association was not a yearly affair, but rather a permanent institution organized for the betterment of the industry and in the interests of the growers. The idea was approved by the meeting, judging by the hearty applause with which the address was received.

K. W. Kinnard, manager of the Vernon Fruit Union, quoted figures showing how the tonnage that went through the packing house of that organization had increased during the past three seasons. In 1919, the previous big crop year, 307,132 boxes of apples were packed and shipped compared with 212,259 last year and 465,945 this season. In addition to this quantity the following other fruits had been handled: Crab apples, 91,590 boxes; prunes, 66,275; pears, 6,679; and plums, 34,299 packages.

Okanagan Marketing, 1921*

IN considering what measurers are necessary for future successful marketing, we must start with the undeniable fact that our whole future hangs on the question of quality. The standard of our grade and pack must be made equal to or better than the best that can be found in any market. We must establish and maintain for the brand of B.C. apples a reputation that will command a preference and a ready sale at fair prices to the discriminating purchaser, even though the markets be overfilled with the world's production of inferior quality. We believe that we produce the best apples in the world; that we can send to the markets a larger proportion of perfect fruit than any other fruit growing country. We must prove to the world that this is true, for in this way only can we capture the discriminating trade that will always pay a good price for the best.

"Quality First."

It is obvious that in order to overcome both of the weaknesses which have been

*Conclusion of circular letter sent by Okanagan United Growers, Ltd., to its members, in November. The first part appeared in The Canadian Horticulturist for December.

responsible of the failure to get full advantage of the 1921 market condition (see The Canadian Horticulturist for December), there must be a unanimity of purpose and action among the producers of B. C. apples. All must accept the standard of "Quality First" and all must unite in action to ensure that this quality fruit shall be so distributed as to bring the best possible returns, that local competition among ourselves shall not be allowed to sap our strength when we measure ourselves against our foreign competitors who are now far ahead of us in the race. This is but another spelling of co-operation. In no other way but by the united action of all the growers can these evils be remedied, and they must be eradicated or the B. C. fruit industry is headed for disaster.

The 1923 Crop.

This statement may appear like exaggeration, but it is not. In 1923 it is probable that we will have an apple crop in B. C. that will make this year's crop look small. We may then have no crop failure in the eastern states,—no car shortage in the northwestern states to give us a bare market in the eastern cities—no surplus of cars at home to give us a phenomenally rapid movement to distant points—no exchange in our favor, and if we have then no better organization for controlling distribution and are no better prepared to meet the demand for quality in the big eastern markets, it does not require any gift of prophecy to foresee disaster to the B.C. fruit grower.

We may have a comparatively light crop in 1922, but this is by no means certain. In any case, it will fall to us to play the part of the foolish virgins. If we are to be ready for the crop of 1923 and the still larger crops of the years to follow, we must get together now and by united effort prepare for the future. There is much to do and but one year within which to accomplish our purpose. We must have better control of distribution, a better standard of quality, more and better facilities for handling the increasing tonnage, an extended organization for securing and developing new markets. All of these things must be done and all will be done if we have the united support of the growers, upon which we are confidently relying.

The Mutual Fruit Company, Vernon, B. C., issued cheques in December to growers who shipped through that organization during the season. The returns paid were: Hyslops, ones, \$1.50. Duchess, ones and twos, \$1.75; crates, \$1.25. Wealthys, ones, \$1.66; twos, \$1.40; crates, \$1.30. McIntosh, ones, \$1.91; twos, \$1.55; threes and crates, \$1.00.



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References: The Bank of Nova Scotia, King and Victoria Branch, and Commercial Agencies.

MARITIME PROVINCES

New Brunswick's Chance

It has been maintained by experts, and demonstrated by actual results, that this province contains large areas exceptionally well suited for fruit growing, and especially adapted for apple orchards. Conditions of climate and soil have been shown to be almost ideal for apple culture, and all that is needed to put the province in the forefront among the apple producing countries of the world is an intelligent and determined effort on the part of those who would profit most by such action. Many difficulties had to be overcome before the possibilities in this direction received even a fair share of public recognition. That so much has been accomplished in recent years is due very largely to the persistent efforts of the provincial government, through its department of agriculture, in encouraging, instructing and otherwise aiding the apple growers.

In view of the success which has been attained, it may be regarded as somewhat surprising that a greater number of farmers are not devoting more attention to this opportunity for securing additional profits. The home market, which now is supplied to too great an extent from other provinces, should be well worth cultivating, and the export market, with its great demand for apples of the highest grade, affords an opportunity for tapping a source of profit which would bring new wealth to the province.—St. John Telegraph.

Annual Meeting of N.S.F.G.A.

The 58th annual meeting of the N. S. Fruit Growers' Association will be held at Bridgetown, N.S., Jan. 17-19. A large attendance is expected, and some very important questions will be brought before the meeting for discussion, such as using chemical fertilizers, growing certified seed potatoes, the best methods of combating insect pests, and dust spraying. One of the most important questions will be "Pre-Cooling of Apples." All these questions will be taken up by competent speakers from the departments of agriculture of the United States and Canada. Do not fail to be present at this meeting, as we expect it to be the "banner meeting" in the history of the N. S. F. Growers.—F. W. Foster, Secretary, N. S. F. G. A., Kingston, N.S.

CROPS and MARKETS

Protective Packing

C. W. Baxter, Fruit Commissioner.

In view of the susceptibility to damage by frost during the winter months, shippers should give special attention to the packing of fresh fruits and vegetables. Enormous losses occur annually because large quantities of these commodities are frosted in transit. To conserve the food supply is a duty resting upon every citizen of Canada.

Express goods are carried on passenger trains, which are heated by steam or otherwise, and shippers may therefore be under the impression that fruit and vegetables forwarded by express are always quite safe from frost. It must be remembered, however, that these goods are hauled by wagons in the cities, and are of necessity moved on station platform trucks between trains and depots, where heated protection cannot always be provided. In the mutual interests of shippers and carriers, and of the public welfare, the matter of the best possible protective packing for fruit and vegetables during the winter months is worthy of consideration.

Apples to South Africa

ACCORDING to The Argus, Cape Town, consignments of Canadian apples reached South Africa in November in splendid condition, "a treat alike to the eye and to the palate." The South African supplies from cold storage had ceased, and these arrived just at the right time to catch an open market. King, Gano and Ben Davis arrived from Canada, the paper says, and McIntosh from British Columbia. The McIntosh were said to be the "pick of the lot, which, taken as a whole, has rarely, if ever, been equalled." Cape Town, "by far the largest apple consuming city in South Africa," took 50 per cent of the consignments, Johannesburg 30, and Duham 20 per cent.

The first barrels to be auctioned realized £5 each. The following day they brought £4 5s. to £4 15s, and the next day they "were firm at £4 10s., with no likelihood of any lower price." The boxes began running at 26s. to 30s. each, and were standing the next day at 25s. 3d. to 28s. 3d. again "with no probability of any lower price." No mention is made in either case of prices by varieties.

"Last season," The Argus said, "Canadian

Gladioli and Paeonies

Send for lists. You cannot do without these. Prices lower now than in spring.
H. P. VANWAGNER,
R. R. No. 5, HAMILTON, ONT.

NEW Seed Catalogue SOON

We are hard at work on our new catalogue and will mail it early in February. It will be pretty much the same size and general appearance as last year, but there will be considerable changes in it and lots of changes in prices, mostly lower. We do not want to cut so low in prices as to sacrifice quality, for quality is the biggest thing of all in buying seed.

Send for your copy.

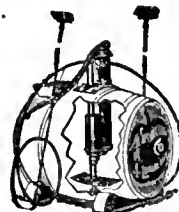
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(It isn't a SPRAMOTOR unless we made it)

"Gets" Every Insect, Grub or Blight

It sprays the insecticide to even the smallest cavity where insect life that harms plant or tree can live.

Farmers who own a Spramotor will tell you it has paid for itself many times in crops saved.



Write for illustrated catalogue and spraying guide.

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Wherever Fruit Excels
Niagara Spray is Used

Start the New Year with a determination to rid your orchard of all its enemies—Scale—Aphis—Curl—Scab—Codling Moth, etc.

Buy Niagara Spray—The Spray that always gives results—First in business—First in quality—First in results. Do not be discouraged because some other Spray disappointed you.

Niagara will do the work—Because it is made right. Niagara costs no more—Is higher in quality—Always reliable.

Everything for Spraying or Dusting—Soluble Sulphur—Lime Sulphur—Arsenate of Lead—Calcium Arsenate—Raw Sulphur—Dusting Sulphur—Spraying and Dusting Machines (Hand or Power).

NIAGARA BRAND SPRAY CO., LIMITED

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Price list on application.

Send for Price List. Vick's Famous Asters

GLADIOLI : DAHLIAS

Burpee's Famous Sweet Peas.

MORNINGTON GLADIOLUS GARDENS
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Dry and green posts from 3" to 9" in diameter. Save middleman's profit by buying from producer. Freight lower than from Northern points.

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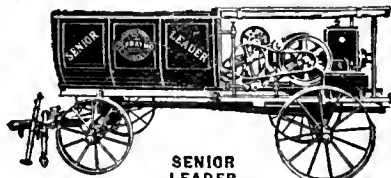
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SPRAY GET BETTER FRUIT AND TIP-TOP PRICES

There is no market for knotty, gnarled fruit and wormy apples. Spray with the right material at the right time and give nature a chance to grow her finest. You will find just the spraying appliance you need in our famous line of

OSPRAYMO High Power Sprayers

An Ospraymo Sprayer means a high-power sprayer, and high power is most important. You are sure to make your spraying job effective.



SENIOR LEADER
Gasoline Engine Orchard Sprayer

Above is a popular style of power sprayer for general orchard spraying. Investigate our mounted traction Red Jacket and Yellow Jacket Sprayers for beans, potatoes and vegetables. Also Barrel, Bucket, Knapsack and Hand Sprayers.

Send today for our latest catalog. Don't buy any sprayer until it comes. We have local dealers at many points, but write direct for catalog to the address below.

FIELD FORCE PUMP COMPANY
Dept. C. H., Elmira, N. Y.
40 Years at Sprayer Building

apples did not arrive until Christmas, just the time when our Southern African grown apples begin to appear. Of course, in competition with fresh fruit in abundance, excellent in quality and cheap, the imported article stood no chance and consignors lost pretty heavily. It is hoped that the present consignment lasts out until Dec. 20, when another shipment is expected from Canada, and must reach here to the very day, or there will again be a fatal clash with our South African apple."

Marking Export Packages

THE attention of the Fruit Branch has been drawn to the fact that many barrels of apples are being received in England carelessly and improperly marked. In this connection the Canadian Government Cargo Inspector at Liverpool states:—"Recently there have been many cases where barrels of apples have had the grade and description or both written in pencil instead of in a plain and indelible manner as required by the Fruit Marks Act. It is a very simple matter for the buyer, should he so desire, to erase these marks and remark with a higher grade. In some brands the grade is stencilled on the side as well as on the top, and this is proving an excellent practice, as well as preventing any attempt at fraud."

In view of the above, the attention of shippers is directed to section 320 of the Inspection and Sales Act, Part 9, which requires that every closed package shall be marked plain in a plain and indelible manner with letters not less than one-half inch in length. It has been demonstrated that the marking of an ordinary pencil is not indelible and, therefore, does not meet the requirements of the Act. Apart from the legal requirements, it is quite obvious that proper stencilling is necessary for the protection of the shipper's brand.—Fruit Branch, Ottawa.

Apple Firm Fined

ON information laid before J. Miller, J.P., of Castleton, Ont., by the Dominion district fruit inspector for Eastern Ontario, a Colborne firm was fined \$90 on Dec. 20, on two charges: (1) For changing the grade marks on packages which had undergone inspection; (2) for branding apples "No. 1" which were not fit for that grade.

The local fruit inspector made an inspection of the lot of apples in question during the process of packing and found they were being properly graded "No. 2" and "Domestic." Later he found the same apples at the railway station marked "No. 1," the grade having been raised by the owners after his inspection.

There have been very few cases of the changing of grade marks, but this is a fraudulent practice, reflecting most seriously on the industry. The Federal Fruit Branch will make every effort to secure the maximum fine in every case of this kind.

Fruit Dealer Fined

A FRUIT vendor of Wingham, Ont., pleaded guilty, on Dec. 13, before Magistrate Reid, of Goderich, on two charges: (1) For obstructing an officer in discharge of his duty; (2) for having in possession for sale fruit which was unfit for consumption. The fines and cost amounted to \$100. The information was laid by the district fruit inspector of the Fruit Branch of the Dominion Department of Agriculture.

The Fruit Branch has been receiving complaints that some dealers were in the habit of re-packing tender fruit before offering it for sale, and placing sound fruit on the face and decayed and inferior fruit beneath. Instructions were issued by the branch that special attention should be given to this offence, with the result that

Easy Now to Rid Your Farm of Rats

Wonderful Discovery by Noted Scientist Kills Every Rat Within a Week's Time —Not a Poison.

Rats cost farmers over two hundred millions of dollars a year, through the destruction of grain, poultry and buildings. Farmers need no longer suffer this loss because they can now kill off all the rats on their farm in less than a week's time. This is possible through the remarkable discovery of E. R. Alexander, a chemist, who has perfected a virus which kills rats, mice and gophers as though by magic. This product is not a poison—it can be eaten by human beings or any animal on the farm as safely as their regular food, but means quick, sure death to rats.



This wonderful rat virus, which is known as Alexander Rat-Killer is merely mixed with bread or meat scraps and placed where rats, mice or gophers can get to it. Within a few hours after a rat has eaten Alexander Rat-Killer he gets a high fever and suffers a terrible thirst. He leaves the barns and nesting holes and goes to the open fields in search of pure air and running water. Rats and mice affected always die away from the barns and houses, so there is no odor.

It is a scientific fact that one rat affects others and soon the whole colony leaves the buildings and dies. And though this virus is absolutely deadly to rats—chickens, hogs, cattle or any farm animal can eat it and not be affected at all.

So confident is Mr. Alexander that Alexander Rat-Killer will kill every rat on your farm in less than a week's time that he offers to send, as an introductory offer, a regular \$2.00 tube for only \$1.00. Give it according to directions, and if at the end of a week's time you are able to discover any rats, mice or gophers on your farm, your money will be refunded. A big Toronto bank guarantees that Mr. Alexander is reliable and will do as he says.

Just send money order, check or currency for \$1.00 to E. R. Alexander, Alexander Laboratories of Canada, 2005 Terminal Bldg., Toronto, Ont., and the tube will be mailed at once on the guarantee that if not absolutely satisfactory your money will be returned without question. Write today and stop your rat losses now.

PERRY'S SEEDS

Alpine and perennials, unique collection; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate. **HARDY PLANT FARM, ENFIELD, ENGLAND**

a fruit inspector last August visited the store of the vendor in question and found peaches being tampered with in the manner described. When the proprietor of the establishment learned the nature of the work of the inspector, he assaulted the inspector and ordered him to leave the

premises. His report was also destroyed by the defendant. Information was laid shortly after the occurrence, but on account of the absence of an important witness for the defence, the case was remanded from time to time.

It is the intention of the Dominion Fruit Branch to stamp out the practice of misrepresentation by falsely packing fruit.

Cooperation in Ontario

As a result of conferences held in Toronto last month between Hon. Manning Doherty, Minister of Agriculture, officers of the Niagara Peninsula Growers, Ltd., and others, cooperative apple marketing in Ontario will be encouraged this coming season to an extent greater than since pre-war time, and it may be supported by government aid in financing the establishing of central packing houses.

At the latest conference, Dec. 29, which was attended by, among others, Lt.-Col. H. L. Roberts and T. J. Mahoney, president and general manager respectively of the N. P. G., Ltd., it was decided that plans would be effected this winter by that company towards its offering to act as sales agent for any cooperative apple association in the province that desired the service. Conditions would be laid down respecting grading, packing, the use of central packing houses, etc., for the mutual interest and protection of all parties concerned.

Hon. Manning Doherty, who frequently has expressed publicly his desire that the great apple industry of Ontario should be handled on a cooperative basis, was strongly in favor of the scheme, and stated that his department would aid its accomplishment and its progress in every way possible. He announced that he intended to introduce legislation at the coming session with a view to offering financial assistance in some form for the erection and establishment of central packing houses for the cooperative handling of fruit.

Dominion Fruit Conference

Although certain papers, especially of Toronto and Montreal, announced last month a "Dominion Fruit Growers' Convention" to be held in Toronto, Feb. 9 and 10, no definite announcement, with dates, respecting the proposed Dominion Fruit Conference had been given out from the Dominion Fruit Branch up to Jan. 5, the date this issue of The Canadian Horticulturist went to press.

The delay has been due probably to the change of government. As the new cabinet was sworn in on Dec. 30, an announcement from Ottawa may be expected shortly. It is expected that the conference will be held immediately after O.F.G.A. convention.



We have a large stock of all sizes **FLOWER POTS** FERN OR BULB PANS AZALEA POTS and Rimless Pans

Order Filled Promptly. Send for Prices

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ROOT PRUNED APPLE TREES

For the first time in the Nursery Trade we are offering certain varieties in root pruned trees. Root pruning enhances early bearing.

Send for circular and full information.

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Your Money Last Year Went to the Bugs

The actual damage done to your fruit and potatoes by insects last year ate up in profits far more than the cost of a Spramotor. This year let some of your money go to buying the only effective combatant of the bugs that steal your profits. The Spramotor drives the chemical everywhere the bug can get—cracks and crevices provide no protection when it is used. Over 100 gold medals have been awarded the SPRAMOTOR

Write for complete catalogue and spraying guide.



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Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

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

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VAN'T HOF & BLOKKER, AKERSLOOT, HOLLAND—Bulb growers and exporters. Orders taken for Roses, Gladioli, Paeonies, Tulips, Hyacinths, Narcissi. Write Canadian Office, 430 Brunswick Ave., Toronto.

BULBS—Lily of the Valley and Gladioli of all descriptions. Write for prices. C. Keur & Sons, Hillegom, Holland. New York address—5625 Mosholu Ave. The trade will be visited by us in due time as usual for 1922 spring and fall orders. Lily of the Valley and Gladioli can be shipped immediately direct from our warehouse and Canadian farms.

TREES & SHRUBS
BROWN BROTHERS Co.
NURSERYMEN LIMITED
BROWNS NURSERIES, ONT.

30 Egg Incubator and Brooder \$23.75
If ordered together, Freight and duty paid to any R. N. station in Canada. Hot water, copper tanks, double walls, double glass doors. Free catalog describes them. Send for it today. Orders shipped from nearest Canadian warehouse. Our larger size outfit is a bargain, freight and duty paid. **250-Egg Incubator and Brooder, \$39.75**
WISCONSIN INCUBATOR CO., Box 208 Racine, Wis., U.S.A.

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116 Broad St., Room 40, New York, N. Y. Your address for Holland-grown Hyacinths, Tulips, Crocus, Gladioli, Iris, Paeonies and all miscellaneous bulbs and roots. Please write for illustrated catalogue.

NORWAY SPRUCE.
For Hedges and Windbreaks. Healthy, well-rooted plants 3'-3 1/2', transplanted three times. Price F.O.B. Clarkson Stn., \$25.00 per 100—\$225.00 per 1,000. An asset to any fruit farm or garden. 80 acres of ornamental shrubs, evergreens, roses and perennials.
THE SHERIDAN NURSERIES, Sheridan Ontario.

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Carters Sunrise Collection
of early vegetable seeds is the result of 120 years' selecting and testing. Earliness and quality combined.
SUNRISE TOMATO—The earliest, most productive, good sized, scarlet fruit, very even, of fine quality, with solid meat and few seeds.
16 DAY RADISH—Oval, white-tipped, crimson, crisp and tender.
CRIMSON DALL BEET—Very early, round, bright crimson, good size and fine flavor.
SPRINGTIDE or ALLHEART CABBAGE—A dwarf variety maturing in early spring. Quality unsurpassed.
PERPETUAL LETTUCE—All season head lettuce.
LITTLE MARVEL TURNIP—The earliest white globe turnip, crisp, solid flesh of delicious flavor.
Try this collection at our expense. The money you send will apply on your first order. Send 25c and ask for Sunrise Collection No. 149 and we will send by return mail the 6 packets of Earliest and Best vegetable seeds, our illustrated catalog and a 25-Cent Rebate Check to apply on your first order of \$1.00 or more.
Catalog Free—Our 85th annual Catalog of Carters Tested and Selected Seeds will be mailed free to anyone mentioning this paper.
CARTERS TESTED SEEDS, Ltd., 133 King St. E., Toronto, Ont.

Hardies Have Kept Pace With Spraying Needs

Twenty years ago little was required of a sprayer. Orchardists had not yet realized the necessity for a persistent fight against the enemies of fruit growing.

To-day, the many dying fruit trees and the large profits earned from well cared for orchards, have aroused the owners to the necessity for high-pressure spraying. This necessity and the high cost of labor have developed a demand for spraying equipment of sturdy construction, high capacity, and low cost.

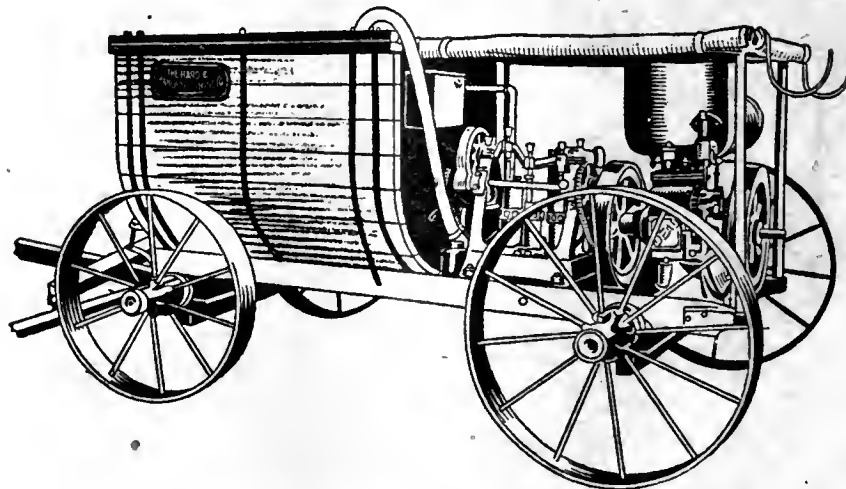
The Hardie Manufacturing Company has kept pace with this development. As a result, its power sprayers are at the highest point of efficiency. They are light in weight, with pressed steel frames. They have light-running engines and pumps. They have

the Peerless regulator that keeps the pressure uniform at all times, and relieves the pressure from the pumps when the nozzles are closed. They are mounted on underslung trucks to give them the low centre of gravity necessary for safe operation in hillside orchards.

Hardie hand pumps are sturdily made, and operate at the lowest upkeep cost. Complete figures for 20,000 pumps over a period of twenty years show that the repair cost has been less than 5 cents per pump per year.

Hardies are durable and run at small cost. They cut your spraying costs, but do your spraying rapidly and thoroughly.

Hardies are made in twenty styles and sizes, both power and hand, to fit every orchard need. Get illustrated catalogue of the complete line.



Hardie Triplex, the high-efficiency power sprayer. It has 3 and 1-2 horse-power engine, 2 and 1-2 inch Triplex pump, delivering 10 gallons of liquid a minute at 250 pounds pressure

HARDIE MANUFACTURING COMPANY

PETROLIA, ONT.

FACTORIES AT HUDSON, MICH.

The Canadian Horticulturist

Floral Edition

Vol. XLV.

TORONTO, FEBRUARY, 1922

No. 2

Spraying Fruits and Vegetables

C. B. Alden, Toronto

FEBRUARY is not too early for the gardener to prepare to combat the insect enemies of fruits and vegetables. The earlier that spraying materials and a pump are secured, the more likely one is to succeed in holding the pests in check, for early efforts in fighting insects are the most effective.

In the vegetable garden, destructive insects give the gardener a fight from the time he puts his seed into the ground until the crops are ready for use. Left alone, they would devour every useful plant in the garden. Fruits, likewise, in most seasons are apt to be badly injured. The successful gardener is the one who studies the habits of these pests, learns the means of combating them, and keeps constantly at it.

The gardener who starts with clean soil has done much to keep out insects and diseases. One of the best ways to avoid trouble is to plant each vegetable in a different part of the garden each year. In spite of the best precautions, however, insects will appear. One should always prepare in advance for the combat.

Measures Most Effective.

The principal measures effective against insects are various kinds of poisons, generally applied as a spray or as a poison bait. Arsenical stomach poisons, such as Paris green and arsenate of lead, are used to destroy insects that bite and chew the leaves and other parts of the plants. Of these, arsenate of lead is the best and safest for general use, and also adheres better to the foliage. Paris green is apt to burn some plants, such as beans, seriously, if not carefully applied, but on account of its long use can be obtained almost anywhere.

Arsenate of lead is sold in either dry or paste form, and should be mixed at the rate of one pound of paste or one-half pound of dry powder to 20 gallons of water or Bordeaux mixture. Being deadly poisons, these insecticides should be kept away from children. Two to four, sometimes even more, sprayings are necessary during the season to keep down garden pests. The powdered arsenate of lead

may also be applied dry, mixed with 10 to 20 parts of cheap dry flour or hydrated lime and dusted on, preferable when the dew is on, by means of guns or bellows, so as to cover the plants and leave as little as possible.

Little Bugs with Big Appetites.

As space for this article is limited, only one biting insect will be discussed in detail—the potato beetle, known more commonly as the potato bug. This beetle passes the winter in the ground and emerges early in the spring, so that he is on hand when the first potato leaves appear. Within a few days the familiar little clusters of orange-colored eggs may be found on the underside of the leaves. These hatch inside of a week, and the shiny,



Spraying Celery.

An efficient home-made spraying outfit for the gardener is here shown. One man works the pump, the horse being trained to keep between the rows. Three rows are done at a time.

dark-red larvae, commonly called slugs, commence devouring the leaves at a disastrous rate. They attain maturity in about three weeks after hatching. There are from two to three broods a year, depending upon locality, and, as one female beetle is known to lay between 500 to 1,800 eggs, it can easily be seen that the rate of multiplication is appalling.

In small garden patches, it is well to find and crush the eggs and the beetles on the leaves. The beetles may

also be picked off or jarred into large pans containing water with a film of kerosene. In larger patches, an arsenical poison must be used, either sprayed or dusted.

Many other kinds of insects are now wintering over in some form, and will come out early to plan their campaigns. Specific advice respecting any of these will be given by The Canadian Horticulturist's question and answer department, or by any agricultural college or department of agriculture on application.

Another Type of Insect Pest.

Sucking insects, or those which puncture the skin of the leaf and feed upon the sap within, are combated with contact preparations, sprayed or otherwise applied on the bugs, such as nicotine sulphate and kerosene emulsion. Perhaps there is no class of garden insect the method of attack of which is so insidious as that of the plant lice, or aphids, the best known type of sucking insect. At first, in spring, a few plant lice may be found hidden on the underside of the leaves of melons, peas, cabbage and other vegetables, or of fruit trees. A little later the leaves begin to curl up and to lose their color, and an examination will show the inside of the rolled leaves to be literally alive with aphids, feasting on the juices of the plants. At this stage something must be done quickly, for within a few days there will be another of the many generations, or broods, at work.

Arsenical poisons are useless. Nicotine sulphate—a tobacco extract—is the most satisfactory preparation for controlling these pests. To be effective, it must be used exactly according to the directions given on the container. One authority says:

"For small garden plots, one teaspoonful of nicotine sulphate should be used to one gallon of water, to which a one-inch cube of hard soap should be added and thoroughly mixed. If a larger quantity is desired, use one fluid ounce to eight gallons of water, with the addition of one half-pound of soap."

The spraying should be done as early as possible, always on the first

appearance of the insect, not only because it is good practise to keep the plants free from pests, but because more thorough work can be done on small plants. The plants and insects must be completely covered with the spray.

The foregoing brief sketches of potato beetles and plant lice simply illustrate the two types of insects with which the gardener has to deal, and deal severely, if good crops are expected in any season. Scores of other insects of both fruits and vegetables will be encountered. And fungous diseases of many kinds will have to be controlled. The gardener will be well advised to fortify himself long in advance with the necessary materials.

Starting Hotbeds

Horse manure free from straw or chips, is satisfactory for hotbeds. The reason horse manure is used is because it is a hot manure. Hotbeds can be made in ordinary garden frames during spring, provided they are raised to afford perfect drainage. They should be sheltered from the north and east. Drainage and position are the greatest factors. If straw is placed round the outside of the frames they will retain their heat longer. The manure should be turned every three or four days, and should not be left for six or seven days. If it is at all burned in the centre it should be discarded. If it does not heat properly pour a little water on it while turning. After the third turning it can be put in the beds. The manure should be placed two feet thick at the back of the frame and eighteen inches in the front. Cover it with a layer of two inches of soil.

When the temperature declines to 80° F. the seeds may be sown. In temperatures higher than 80°, harm may result to the seeds. Few seeds will germinate in a temperature higher than 90°. They germinate best between 70° and 80°. Radishes and lettuce are satisfactory crops for forcing in hotbeds, but cauliflowers, cabbages, tomatoes and other vegetables may be started thereon for later planting outdoors. Water the hotbeds carefully by means of a watering can with a fine spray, and with tepid water. Cold water will check the growth of the plants.

Get materials ready for topworking fruit trees next month.

Spraying should be done at just the right time. Two days before or after may make all the difference in the world.—Prof. L. Caesar, Guelph.

Caring for the House Plants

Henry J. Moore, Islington, Ont.

PLANTS, used to ornament our greenhouses and homes, require to be kept clean and free from insect pests. Carelessness in home sanitation will soon extend its evil influence to the plants. Where filth abounds, so will vermin of many kinds.

Generally speaking, all insects which attack ornamental indoor plants, whether grown for their flowers or their foliage, are harmful. Some are common, others not so much so, like the insects of our orchards and woodlands. Those which attack indoor plants are of two classes—biting and sucking, and may be controlled respectively by employing stomach poisons and materials which smother or kill by contact when spraying.

Atmospheric conditions exert quite an influence in the control of insects indoors, and are largely responsible for the kinds which attack the plants. A study will show that red spider, mealy bug, and thrips are usually prevalent, and increase rapidly in a high temperature. Green and black aphids, white fly, and others will live and multiply equally well in a temperature considerably lower.

The most serious insect offenders of the greenhouse and home are scale, green and black fly, red spider, thrips, mealy bug, white fly, mites, slugs, and caterpillars.

Prevention.

The attacks of nearly all insects may be prevented by sponging the plants thoroughly or by spraying them, when laid down on a piece of burlap or other clean material, with pure water. If really in need of a wash, a little pure soap should be dissolved in the water. To remove traces of soap on the leaves, a further sponging or spraying with pure water should be given.

Remedy.

Insecticides may be applied in the form of a spray from a hand syringe to large and to hard-wooded plants. Insects may, however, be more effectively removed from the smaller plants by dipping them in the insecticide. In the home, large plants may be removed to a convenient place and sprayed. Wherever the operation is performed, however, the temperature should approximate that of the room in which the plants are grown.

Scale Insects.

Scale insects are hard to get rid of, as the insecticides, which are effective, are usually of such strength as to injure the leaves of the plants also. With a fine scrubbing brush, scale may be removed from woody stems and foliage of a firm texture, and from cracks

and crevices with a toothbrush dipped in soapy water, or in weak lime sulphur solution. Badly infested plants of this class should be dipped or be sprayed with a solution of lime/sulphur. Tender plants, like begonias or ferns, should be carefully sponged with soapy water, the worst of the leaves or fronds being removed and burned. Experiments tried on tender plants with lime sulphur or other scale removing material must be at the owner's risk.

Green and Black Fly.

Spray with or dip the plants in a weak solution of tobacco water. One gallon of water, three teaspoonfuls of nicotine, and a little pure soap will make an excellent solution.

Again, one may stand the plants in a large box with an airtight lid, or in an airtight cupboard, or disused room. Fumigate by burning tobacco paper, which is procurable at seed stores.

Red Spider, Thrips and Mites.

The treatment for these insects is much the same. Mix flowers of sulphur, one handful to each gallon of warm water. Add one-half ounce of pure soap to this. Immerse the stems and leaves of the plants therein for a few minutes. The sulphur will adhere to the plants, and should not be removed for a few days. Before the mixture is used, it should be thoroughly stirred, and be allowed to cool to the temperature of the room.

Mealy Bug.

Sponge the leaves and stems of plants infested with this insect with soapy water. If the masses of insects are touched with a camel's hair brush, dipped as required in wood alcohol, they will immediately succumb. The alcohol, however, should not be painted on the plants or injury will result.

White Fly.

It is generally supposed that fumigation with potassium cyanide or sodium cyanide is really the only effective way to extirpate the white fly. Such is not the case. It may be destroyed with strong tobacco fumigations if the plants are removed to a small airtight chamber, and after fumigation are allowed to remain therein over-night. The insect lays eggs, these hatch in four days. The plants should then be re-fumigated. Failure to fumigate every four days until the last insect and egg is destroyed will result in failure to control the pest. Beware of the poisonous cyanide unless you have a greenhouse and know how to use it.

Selecting Seeds for the Garden

Ella C. Morton, Niagara Falls, Ont.

IF seeds for next summer's flower garden have not yet been selected, no more time should be lost, for February is the start-off month for seed sowing and seed growing. Some kinds of perennials will bloom the first season, if started now, and annuals that are wanted in bloom earlier than usual in summer must be forced in advance. Various kinds of seeds should be started in a window, hotbed or greenhouse at the end of this month or early in March. The gardener who delays will miss one of the greatest delights of gardening—having things a little earlier and perhaps a little different from those of friend or neighbor gardeners.

Summer Decorative Plants.

Among the annuals and perennials that should be started indoors are petunias, verbenas, antirrhinum (snapdragon), Pentstemon gloxinoides, salvia (scarlet sage), ageratum, dusty miller, golden feather pyrethrum and lobelia. There are few summer decorative plants that can be raised from seed that will make a finer and more continuous display in the flower garden than those named, if the seed is started early and the plants given ordinary care and attention. If sown outdoors even as soon as spring opens they are very late in flowering. Petunias, verbenas, and snapdragons especially give good results if sown early. All the plants named will be found very useful also for helping to fill window and verandah boxes, hanging baskets and rustic stands.

The pentstemons are very similar to snapdragons in growth, but far prettier when grown well. The seed must, however, be sown early—not later than the end of February. For early flowers, the salvia seed should also be sown about the same time. Seeds of the other kinds mentioned should be sown in March. Earlier sowing is not necessary, excepting in very warm localities. Pansy seed also may be started in March indoors.

If a few tall plants for the centre of a bed or the back of a large border are required, plant a few seeds, of castor oil bean some time in March, or even early April, in shallow boxes in the house and transplant singly, when three or four leaves are started, into small flower pots or even berry boxes made tight. One may even start single beans in small pots and allow the plants to grow there until time for planting outside. Some cosmos seed and some of the small-flowered sunflowers (helianthus) may also be started indoors at about the same time. These plants, and all the others mentioned, when started as suggested, should be transplanted, when four to six leaves have been produced, singly into good soil in small pots or be set about two inches apart in well-drained boxes.

Annuals and Annual Climbers.

Most of the annual climbing plants must be sown outdoors where they are to grow, as they do not transplant well, but there is one that should be started inside in March—Cobaea scandens

(cup and saucer vine). The others, if started inside at all, will transplant best from pots. Cobaea is one of the best climbers for trellises and verandahs. Transplant to a medium-sized pot when four to six leaves have started, grow indoors until all danger of frost has passed and then stand outdoors in partial shade and keep protected until warm weather comes. This plant and the castor oil plant are very easily chilled and should not be planted out until the ground is quite warm. In fact, all plants started indoors should be set out in cold-frames or in some other sheltered spot when weather permits, so that they may become hardened to outdoor conditions before being planted in permanent quarters.

Common Annuals.

A few varieties of the common annuals, such as asters, Chinese pinks, Phlox Drummondii, zinnias, balsams, marigolds, coreopsis, scabiosa, calendula (pot marigold), mignonette, and schizanthus, may be started either inside or in the open. For earliest bloom, sow the seed indoors in March, even as late as early April in coldest districts. Many annuals, such as poppies, nasturtiums, ten weeks' stocks, silene, gypsophila, love-in-a-mist, larkspur, and portulaca, do not transplant or succeed well when sown indoors.

Besides the various plants mentioned, one may find many others described and illustrated in the seed and plant catalogues for 1922 that every good gardener will have at hand by this time. There's a wealth of information and many surprises in these annual catalogues, if one only looks well. In the space here available, it would be impossible to mention all the good things that one may select from them for a flower garden. Perhaps it would be helpful if a list of the best of them are given in order of some of the uses to which they may be put. The plants marked with an asterisk (*) are perennials, those with a double asterisk may be had both as annuals and perennials, and those unmarked are annuals only. Some of them, such as Canterbury bell, foxglove, sweet william, hollyhock, forget-me-not, are either biennials or have biennial forms which are treated as annuals or perennials, according to variety. Tuberos begonia, feverfew, and maurandia are perennials that are treated as annuals.

For Special Purposes and Places.

For Beds and Masses.—Achillea,* Aster,** Begonia (Tuberos),* Bachelor's Button, Balsam, Bleeding Heart*, Calendula, Canterbury Bell,* California Poppy, Celosia (Cockscomb), Clarkia, Coreopsis,** Four O'Clock, Foxglove,* Gaillardia,** Godetia, Heliotrope,* Love-Lies-Bleeding, Love-in-a-Mist, Lupino,** Marigold, Nasturtium (dwarf), Nicotiana, Pansy, Pentstemon,*



A Lily Pond and Bird Bath in a Dundas Garden.

These attractive garden features were arranged in the garden of J. A. Kyle, secretary of the Dundas Horticultural Society. (See article, "An Attractive Garden," on page 24.)

Peony,* Petunia, Phlox,** Pink (Dianthus),** Pyrethrum,* Salpiglossis, Scabiosa, Scarlet Sage, (Salvia), Schizanthus, Silene (Catchfly), Sweet Sultan, Sweet Sultan, Sweet William,* Verbena, Veronica,* Wallflower,** Zinnia.

Best for Backgrounds.—Castor Oil Bean, Cosmos, Golden Glow,* Heelenium,* Helianthus,** Heliothis,* Hollyhock (B), Larkspur.**

For Edging Beds and Borders.—Ageratum, Anemone,* Arctotis, Aster (dwarf),* Begonia (Tuberous),* Bellis,* Candytuft, Clarkia (dwarf), Dusty Miller, Feverfew,* Forget-me-not,* Gilia (dwarf), Lobelia, Marigold (dwarf), Nasturtium (dwarf), Pansy, Phlox nana compacta, Portulaca, Primrose,* Pyrethrum aureum, Sweet Alyssum, Verbena, Violet,* Zinnia (dwarf).

Suitable for Rockeries.—Adonis,** Anemone,* Bellis,* Gypsophila, Iceland Poppy, Lily-of-the-Valley, Pansy, Primrose,* Pyrethrum,* Silene, Veronica,* Violet.*

For Sunny Places.—Arctotis, California Poppy, Castor Oil Bean, Coreopsis,** Helianthus,** Petunia, Portulaca, Veronica.

Shade and Partial Shade.—Asperula, Begonia (Tuberous),* Bellis,* Canterbury Bell,* Columbine,* Feverfew,* Forget-me-not,** Foxglove,* Larkspur,** Lily-of-the-Valley,* Lobelia, Morning Glory, Pansy, Phlox (garden),* Poppy, (common), Schizanthus, Snapdragon, Sweet Alyssum.

Fine for Fragrance.—Asperula, Heliotrope,* Mignonette, Moonflower, Nicotiana, Scented Stock, Stevia, Stock (Ten Weeks), Sweet Alyssum, Sweet Sultan, Verbena, Wallflower.**

Annual Climbers.—Balloon Vine, Canary-bird Vine, Cardinal Climber, Cohaea scandens, Cypress Vine, Gourdis Hop (Japanese), Hyacinth Bean, Maurandia,* Moonflower, Morning Glory, Nasturtium, Sweet Pea, Wild Cucumber.

These groups are merely suggestive. Many other annuals and perennials might be included. The plants listed here for special purposes and places are not always grown in ways specified. For instance, the plants and flowers mentioned as suitable for rockeries are not all rock or alpine plants, but they are worth trying for that purpose and usually give satisfaction. Again, those grouped as suitable for shade or partial shade are likely to do their best in the latter degree of darkness; only lily-of-the-valley will prove successful in dense shade. Some of the annuals and perennials mentioned will grow almost anywhere. Any one of them is worth trying in the flower garden of 1922.

If the weather is not severe, hotbeds may be started the latter part of this month. See that they are well protected on the outside with dry straw or dry manure. Heating or wet manure freezes and takes heat from the beds.

If early celery is desired the seed should be sown during the month of March in a hotbed or in the house. For late celery the seed is sown about the middle or during the latter part of April.—W. T. Macoun, Ottawa.

An Attractive Garden

THE two illustrations on pages 23 and 25 of this issue show views of the attractive and well-planned garden of J. A. Kyle, Dundas, Ontario, secretary of the Dundas Horticultural Society. It contains a lily pond, a bird bath, and a sundial. How these three garden accessories are constructed is told in the following:—

The lily pond is on the first terrace at one side of the garden. It is about ten feet in diameter and two feet deep, and is built up in the front with stone and cement. In the bottom of the pool three holes were dug for tubs fourteen inches in diameter and eighteen inches deep, the tops of the tubs being level with the cement in the bottom of the pool, which is six inches thick. The sides are built up against the bank from 6 inches to 4 inches at the top, with a thick coat of cement. After setting, the tubs were filled with earth and well-rotted cow manure, and well mixed before planting the lilies, which were obtained from Dreer's, of Philadelphia. Of the three planted, I only succeeded in raising one, which had 22 blooms on last summer. It is called *Marliacea rosea*, and has a large flower, of deep rose color. The young leaves are purplish red, changing to deep green. In the other tub, I planted a seedling which I raised during the past summer. This has not bloomed yet. The third tub had the common bullrush. Surrounding the pool is a border. On the one side is planted lilies and on the other perennials, with iris. The west side is about 30 inches wide, planted with Murrillo tulips, which look much like the water lilies, and made a grand show in the spring with iris of different kinds surrounding the whole border. In the pool, I have 22 gold fish, which I keep in the house in the winter. Of these, I only had eleven to start with one year ago. I have no trouble keeping them and can feed them out of my hand with worms, of which they are very fond. Some of them are six inches long now.

The bird bath near the pool is made of cement, three feet high. The basin is twenty-two inches in diameter, and one to three inches in depth. It is a delight to the many birds that visit my garden, and also amusing to watch the different birds fight for their place. There is also a feeding place not shown, where we place feed of different kinds for the birds all the year round. Nuthatches, robins, flickers, jays, and wrens and sparrows cover the feeding shelf during the winter.

The sundial, on the west side of the garden, is also made of cement, three

feet high, with a shaft six inches at the bottom, and tapering to four and a half inches. The top is nine inches square. The dial is made of copper one-eighth of an inch thick, with a slot for the gnomon or style to set in. The style is of brass and cut to the angle of 51 degrees. I placed the dial on the pedestal and after finding the true north, as near as I could for an amateur, I watched the shadow from the style every hour and marked it with a pencil before cutting it permanently, to be sure I was right. It was correct during the summer but now is not, with the change of the sun. All this has been of great interest to both my wife and myself during our spare hours.

The Striped Cucumber Beetle

H. L. Spooner, Windsor, Ont.

THE easiest way to combat the striped cucumber beetle is to use some form of repellent. They abhor dust of any kind, and many odors are offensive to them. Air-slaked lime is commonly used. It is generally scented with kerosene, turpentine, or carbolic acid. As the beetle spread rapidly, it is important that the lime be on the plants all the time. Therefore they should be dusted when the beetles first appear, and at frequent intervals thereafter until the danger is past. Paris green is sometimes mixed with the lime, and gets some of the beetles that the lime fails to drive away.

Other dusts are often used in place of lime, such as land plaster, road dust, tobacco dust, and cayenne pepper. Tobacco dust is especially good. Instead of the dust, tobacco stems are sometimes used, being placed around the plant on the ground. Besides acting as a repellent, they have a high fertilizing value. Wood ashes saturated with kerosene are also used in this way, but care must be taken that they do not touch the plants, as they are rather strong.

Instead of dusts, some growers use sprays. The most common is Bordeaux mixture, which is the best as it is a fungicide as well as a repellent. Arsenate of lead is usually mixed with it, about three pounds of the lead to fifty gallons of 3-6-50 Bordeaux. Lime-sulphur is sometimes used with good effect in conjunction with the arsenate of lead. A spray made by dissolving a bar of laundry soap in a pail of warm water is excellent. It kills every bug it touches and repels the rest. By pouring a barrel of water on a gallon or two of coal tar and letting it stand a day, then sprinkling on the plants, an effective spray is made.

QUESTION BOX

W. E. Groves

Plants for Windy Position.

What would you advise for a very windy and sunny spot—plants to be grown in pots or window boxes?—Mrs. C., Hamilton, Ont.

Any of the stouter stemmed summer plants could be used, though continual wind is bound to affect even these. Geraniums, fibrous begonias, coleus, lobelia and alyssum should all be satisfactory. If a box is used, two or three plants of dracaena would help to steady the other plants, and in this case petunias could be used. There are many worse things than dwarf nasturtiums for the purpose. The object to be kept in mind is to use plants as dwarf as possible, any taller kinds to be those with naturally stiff stems.

Cactus.

I had a plant with drooping stems and sharp thorns with a red flower. Was this a cactus, and if so, would it do in this country?—Mrs. C., Hamilton, Ont.

The plant was more than likely one of the cactus class, though just which variety is not easy to say, the number being so numerous. However, there should be no difficulty in making a plant grow here if given a decent place in winter and stood out of doors during the summer. A plain gritty soil suits them best, and if kept growing during the summer season and rested a little during the winter, will usually flower in spring. They are not hardy here.

Color in Apples.

What will give color to Snow apples? Ours are never as red as they should be.—Mrs. J. T., Hamilton, Ont.

Trees grown in light sand, even when well cultivated and fertilized have a higher color than those grown in heavy land. So, too, have trees grown in sod as compared to cultivated land. I doubt if there is any substance known that will add to the color of apples. There is a great difference in the individuality of trees. Some trees of the same variety have much higher color than others.—Prof. L. Caesar, O. A. C.

Hardy Chrysanthemums.

What are the names and colors of the best hardy chrysanthemums?—F. G., London, Ont.

The only chrysanthemums that are at all fit for outside planting are the Pompon varieties, which succeed if planted in a sheltered place. Care has to be taken in this connection, in view of the fact that the plants are needed for bloom before the frost comes, and a south border is really the only safe place. The following varieties are the most suitable: Beth wine color, Carrie (yellow), Golden Glow (yellow), G. S. Kalb (white), Mrs. Roberts (pink), October Gold (orange), Doris (red), Julia Lagraverre (red), Goachers Crimson (red), Queen of Whites.

Starting Geranium Slips.

A number of geranium slips in small pots have been coming along well, but when the new leaves are about a quarter inch in size they dry off. They are in a sunny window and all sprouted. There is

a heater in the room. How can I remedy this condition and bring them to maturity?—Mrs. R., Toronto, Ont.

The slips are probably not rooted, and, if in a warm room, may shoot out leaves before the rooting action is completed, with the result stated. It is likely that the plants will continue growing all right, though it will be wise to guard against over-watering during the dull days of this month. The room being warmed precludes danger from frost, and unless the reason suggested covers the trouble, one will have to be found in the atmospheric condition of the room. Is there any chance of gas doing the damage? Gas from a heater will occasionally seriously injure plants, especially at night when fires are checked off

Rubber Plant.

What is the cause of my rubber plant leaves going as the enclosed one? How shall I treat it for this? This is the second winter it has occurred, but it is only on last year's growth, and not on that made during the past season.—F. G. W., St. Lambert, Que.

Gas, cold, a dark position, or too much water may each be a reason for the plant going off as stated. See that a light position is provided. If the plant is stood in a jardiniere guard against water collecting in the bottom. This affects the drainage and sours the soil. See that drainage is good and keep plant away from draughts. The fact that the new leaves do not fall off does not admit the possibility of too little moisture and a too dark position is more than likely to be the cause.

Planting Apple Trees.

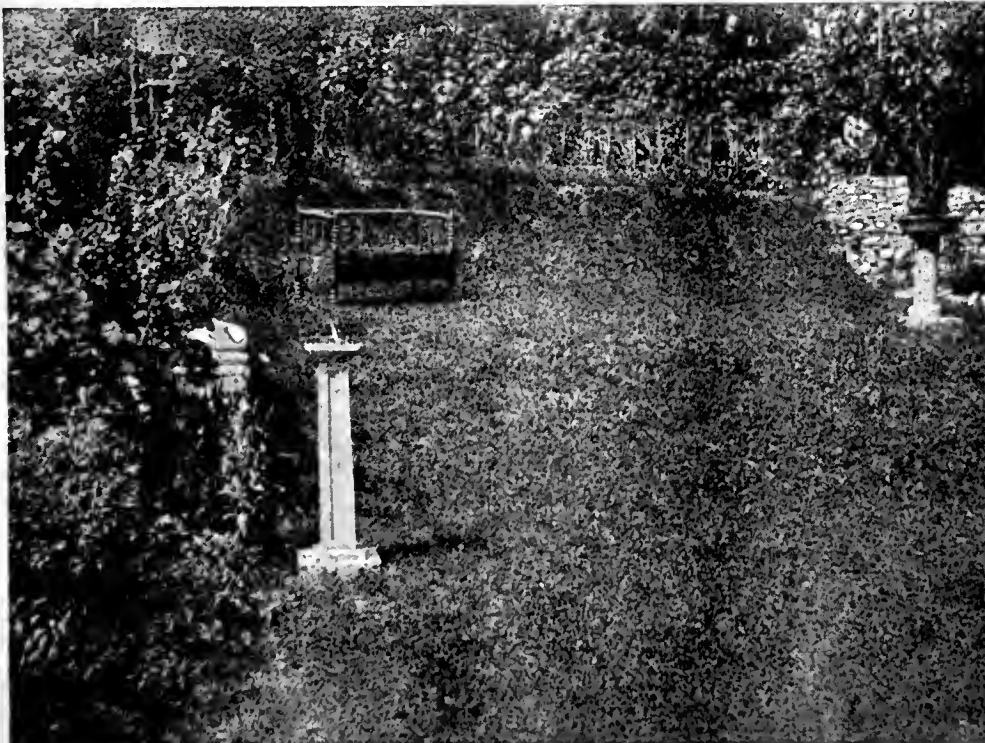
I am told that if an apple tree dies, another one will not grow if planted in the same place. What is your opinion?—H. B., Sydenham, Ont.

I have set out apple trees under these conditions, and they have grown fairly well. I took the precaution, however, to put good, fresh soil into the hole before planting. The surface soil works well for this purpose, if the dead tree has not been a very large one. There is no reason that I can think of why a new tree should not be planted in the same place as the dead one. If it has been an old one, it is difficult to get the roots all out and the earth sufficiently firm. As a general practice, it is better to set trees in new soil.—Prof. L. Caesar, O. A. C.

Annual Pinks.

A bed of annual pinks is keeping green under straw manure. Will they bloom next season?—Mrs. C., Hamilton, Ont.

The plants are really biennial, and if frost does not kill them, will probably bloom again next season. As to whether they will survive the winter is, however, rather problematical.



Another View of an Attractive Dundas Garden.

At the left is a sundial, and at the right Bird Bath and Lily Pond. The article on the preceding page describes these.

HORTICULTURAL SOCIETIES

London

THE annual meeting of the London Society was held on January 16, attended by about 125 enthusiastic members. W. E. Saunders, presided. The annual report of the Secretary showed \$3,519.82. The disbursements showed a deficit of \$23.58; 1,731 was the membership for the year, 2,000 being the objective. The President gave an interesting resume of the year's work, which showed that the directors had not been idle. Altogether a very successful year was reported. One and a half dozen named gladioli were given for the spring premium, and two and a half dozen choice named tulips of the tall, May-flowering variety for fall premiums. In addition, each member was given "The Canadian Horticulturist," which every member appreciates. Right here I want to congratulate the publishers on the improvement of this magazine, the only one of its kind in Canada. Canada first is my policy. There is absolutely no need of us getting American papers when we have just as good at home.

The election of officers resulted mostly in re-elections. Much regret was expressed at the retirement of S. F. Wood, a past-president and director of long standing, J. C. Middleton, and H. Hartry. Their places were filled by capable men, J. C. Cameron, of the Collegiate Institute staff, and the well-known horticulturists, Walter E. Greenway and W. E. S. Potts. The other directors re-elected were W. A. Hayden and Wm. T. Lawrence. Those elected a year ago to fill a two-year term were K. W. Caselman, C. W. Baker, J. W. McLeod, Wm. McNaughton, and M. W. Alt-house. W. E. Saunders was again elected president for a third term, as were also E. Jeffrey and T. C. Fleming, first and second vice-presidents.

American Peony Show.

The President spoke at length of the coming show of the American Peony Association, which is to be held in London in June next. Few people realize what a great show this will be. This is the first time it has been held in Canada, and the first time it was ever held in a city of less than half a million people. So London is greatly favored.

For 1922, 4,000 members is the objective of the directors. Membership booklets of ten memberships each are being distributed among the most enthusiastic members. It is a favor to a

friend to ask him to join the society.

At the inaugural meeting of the directors it is expected that a good membership committee will be appointed by the directors to consist not only of directors but enthusiastic members. The committee will meet at intervals and conduct a well-organized campaign, so as to raise the membership. New members are not only needed, but old members should pay their dues promptly. These are payable now. Payment may be made to Dominion Seeds, Ltd., Morgan's, West's, Dicks', Gammage's, Miss Watson's, Huron and Erie, tellers' on Richmond St., Child's Drug Store (now Armstrong's), Young and Ferguson's seed store, or to any of the officers.

Hamilton

Seven well-attended meetings were held last year by the horticultural society, in addition to other activities, was the report made at the annual meeting on January 13. Some \$2,418 was raised and \$2,276 expended, leaving a balance on hand.

The officers elected for 1922 are as follows: President, Dr. D. G. Storms; first vice-president, Benjamin Johnston; second vice-president, Corbett Whitton; directors (two years), E. W. Blackmore, William Hobson, Jas. Dunlop, Calvin McQuesten, and W. R. Turnbull. Five other directors were elected last year for a two-year term. A. C. Blake and W. Fearnside were appointed auditors.

Grimsby

The horticultural society has elected the following officers for the ensuing year: President, T. P. Jenkinson; first vice-president, R. Mole; second vice-president, Henry Hillier; secretary-treasurer, W. A. Cullingford. There was a good turnout of members at the annual meeting on January 14, and the various reports were the best in the history of the society.

Guelph

The annual meeting of the local society showed that the past year has been one of unusual activity in all departments. There has been a marked improvement in the interest and co-operation of the general public. The treasurer's report showed receipts of \$2,956.08, with expenditures of \$2,914.45.

Officers elected for the ensuing year were: Hon. presidents, Mayor Howard, Frederic Watt, H. Occomore, Dr.

Bethune, Wm. Laidlaw; president, R. R. Graham; first vice-president, Geo. M. Yates; second vice-president, Dr. Norman Wallace; secretary, J. E. Carter; assistant secretary, H. Occomore; treasurer, Jos. A. Hewitt; Directors, for two years: J. J. Dryden, Chas. Dempsey, J. A. Paul, A. A. Duignam, J. M. Campbell; auditors, John Sutherland, Geo. Chapman. Duignam, J. M. Campbell.

Peterboro

The past year has been one of the best in the history of the local society, 211 new members being added, making a total of 348. Improvements were carried out at the corners of various streets and at Inverlea Park. Two successful shows — Gladiolus and Aster — were held. Officers were elected for 1922 as follows: President, Dr. J. E. Middleton; First Vice-President, Alex. Weddell; Second Vice-President Carl Simpson; Secretary, L. Fraser; Directors for one year: E. E. Brumwell, A. Sanders, T. E. Bradburn, J. Smythe, E. H. D. Hall; Directors for two years, Mrs. Dr. H. M. Yelland, Mrs. J. Wells Fraser, Mrs. F. D. Kerr, I. Boddison and C. Land.

F. J. A. Morris, M.A., of the Peterboro' Collegiate Institute staff, gave an address on orchids, declaring that many rare varieties were to be found near Peterboro'.

Ottawa

The Ottawa society recently held an enthusiastic annual meeting, where reports showed that the past year had been very successful. The membership for 1921 was 1,527. Financially the society had a slight surplus. Cash prizes to the amount of \$391.75 were offered. Of this, \$320.50 were awarded to 34 successful exhibitors.

Elections resulted as follows: President, F. C. Nunick; first vice-president, R. M. Motherwell; second vice-president, W. B. Varley; directors (two years), Mrs. J. A. Wilson, F. H. Byshe, H. W. Cooper, M. B. Davis, John Graham.

Niagara Falls

The Horticultural Society held its annual meeting for election of officers on January 11. Reports of the affairs of the society were presented, showing everything to be in a satisfactory state. President Geo. Emory gave an outline of work for the coming year.

The officers elected were: President, Geo. Emory; First Vice-President, John Oakes; Second Vice-President, Mrs. McHattie. New Directors, J. Rose, M. C. Goodsir, Mrs. D. Kelley and J. Barnes; old Directors, Mr. Garner, Dr. Snyder, Mrs. F. Anderson, Ald. Wilkin-son and C. Sanders.

Ingersoll

The Ingersoll Horticultural Society had splendid success during 1921, as was shown by reports submitted at the annual meeting. There were 139 members and much important work was performed during the year. The officers for the year are: President, F. P. Leake; First Vice-President, Mrs. R. A. Paterson; Second Vice-President, Miss A. Elliott; Secretary, R. V. Rogerson. New Directors are, George Sutherland, George H. Mason, J. V. Buchanan, Mrs. F. W. Bowman and Mrs. W. K. Watterworth. D. G. Cuthbertson and W. J. Elliott are the Auditors.

Preston

The annual meeting of the Horticultural Society was held on Jan. 10, being well attended. This is the youngest society in District No. 6, and for this reason the Superintendent, J. E. Carter, of Guelph, has offered a silver cup for competition at the Flower Show. There are 228 members, and there were 241 entries at the annual exhibition last year.

The following officers were elected: President, H. Sneyd; 1st Vice-President, T. Yates; 2nd Vice-President, W. R. Edgar. Directors, J. H. Mickler, J. Kelly, W. Zinn, C. E. Bryant, O. A. Kummer, J. Bregman, J. Preston, Jos. Gordon, Mrs. T. Yates, Mrs. Baldwin.—H. Sneyd.

Georgetown

The second annual meeting of the Georgetown Horticultural Society was held on January 18. Reports for the past year proved from every standpoint that the year had been a very successful one, and prospects for 1922 are exceptionally bright. The receipts for the year were \$479.44 and the expenditures, \$414.36, leaving a cash balance on hand of \$65.08 to start the year's work.

The newly elected officers are: Hon. President, Mr. Papst; President, W. L. Davidson; First Vice-President, Prof. Hutt; Second Vice-President, Major Grant; Secretary-Treasurer, Miss Annie Bradley.

Elora and Salem

The annual meeting of the society was held on Jan. 10, closing one of its best years. Though situated in a village of only 1,100, it has a membership of 241 and expended nearly \$1,000 last year.

Its Birdhouse Show, where 175 houses were exhibited by 121 school children, was greatly commended by Mr. Lewis of Ottawa, who had the difficult task of awarding prizes.

The flower show had nearly 400 entries, several entering the class of the 50 gladioli exhibits.

The following officers were elected for 1922: President, E. Davidson; First Vice-President, W. Gordon; Second Vice-President, Rev. G. A. McDonald, B. A.; Secretary-Treasurer, W. O. Mendell. Directors, T. Tuckey, J. J. Brown, W. Pitt, R. E. Mills, W. L. Gordon, Rev. L. J. R. Naftel, B. A.; Rev. W. S. Daniels, B. A., B. D.; F. F. Tophan, W. Murray and Past President W. Brown, who is the vice-president of the newly formed Ontario Gladiolus Society.—W. O. Mendell.

Kitchener

At the annual meeting of the Kitchener Horticultural Society, J. A. Halman was re-elected President. Other officers included: Isaac Hillborn, First Vice-President; Mesdames E. Schaefer and E. Opperman and Messrs. C. Elmslie, H. W. Brown and W. G. Bain, Directors. The reports showed the society to be in a healthy condition.

Memorial to W. B. Burgoyne

The recent death of W. B. Burgoyne, president of the St. Catharines Horticultural Society, will prove a severe loss to the horticultural development of, not only his city, but the province as well, throughout which he was well known. At the annual meeting of the St. Catharines Horticultural Society a tribute was paid to his memory by the placing of a resolution on record, expressive of deep regret at his demise and the great loss sustained. A committee was appointed to consider a permanent memorial to his memory.

The late Mr. Burgoyne was one of the founders and for several years the president of the Ontario Horticultural Association. This he frequently represented at important horticultural conventions in many parts of the United States, where he became widely known. He presented a rose garden to the city of St. Catharines, and for a number of years has been the main force behind the large horticultural exhibition held annually there.

The vegetable garden will be just as important this year as last. Plant freely and take good care of the garden. Some fine catalogs have been issued the last few weeks. It is worth while to read some of them.

Celery seed loses its germinating power very soon and for that reason care should be taken in obtaining fresh seed from a reliable source. The seed should be ordered early and its germinating power tested before the time of sowing.—W. T. Macoun, Ottawa.

The Gladioli

Mrs. Geo. A. Bonisteel, Belleville.

THE gladiolus, as an imposing and gorgeous summer flower, has no competitor.

It has reached a stage of perfection that it would seem useless to try to improve, yet hybridizers are forging ahead producing new features, characteristics and colorings. What is considered most beautiful to-day may seem commonplace a few years hence.

The blooming period of the gladiolus is July, August and September, the months of greatest heat. Therefore one can preserve the bloom much longer by removing from the plant. Although they are beautiful blooming in the garden, they are extremely decorative when cut. In fact, the gladiolus is first and last a cut flower.

Anyone who has not felt an indescribable thrill at the beauty of some of the present day varieties when arranged artistically in a suitable receptacle has a most pleasing emotion yet to be awakened within him.

Notwithstanding its beauty, it is a flower for everyone, for the most satisfactory thing about it is its absolute suitability for amateur and florist alike. For this reason it is growing in popularity in leaps and bounds.

For the benefit of the would-be grower a few notes on cultivation would not be amiss.

We will begin with "Do not."

Do not plant your bulbs here and there among other flowers. Do not plant close to any other flower or shrub, as the latter will take the moisture and absorb the plant nourishment faster than the bulb. Consequently the bulb rarely matures to blooming stage.

To produce good flowers it is best to plant in double rows about seven inches apart, the double rows being about fifteen inches to two feet apart, according to space at command. The bulbs are placed from six to twelve inches apart in the rows (strong growing varieties twelve inches) and the bulbs planted four to six inches deep.

In heavy soil we have found it best to trench slightly and cover only three inches on planting. Then when plants are about five inches high gradually draw more earth around them. Deeper planting tends to hold plants erect, although there is some discussion as to production of cornels with deep planting.

A cord run along the outer side of the double row and fastened there with an occasional stake if the rows are long, holds plants firmly against wind and storms.

Paint over the larger wounds made when pruning.

LETTERS to EDITOR

Decorative Exhibits

Editor, Canadian Horticulturist:

The part played by the exhibition in the educational activities of the horticultural society can scarcely be over-stated, because it is the medium through which the public is most directly reached. Every factor, therefore, which contributes to the drawing power of the show is worthy of the best consideration that the directors can give it. The exhibition has two main purposes: first, to encourage keen but friendly rivalry, looking to the improvement of varieties and cultural methods; second, to create an individual and community interest in gardening and outdoor beauty. Perhaps the order of these might be reversed.

How to achieve these purposes is discussed in the interesting letter of Mrs. Potts in the December issue of the Canadian Horticulturist. Mrs. Potts, as a prelude to her observations, quotes the opinion of Madison Cooper, editor of "The Flower Grower," that too much stress is placed upon "artistic arrangement and display." I wish not only to dissent from that dictum of Mr. Cooper, but to advance the view that too little attention has been paid to it by those responsible for the preparation of exhibition schedules.

Flowers in Four Inch Vases.

For years the Ottawa Society offered prizes for flowers in four inch vases, with results that not infrequently reacted upon the artistic consciousness of many who came to view them. Every impossible color combination of the traditional "posey" was represented, and varieties of flowers possessing no natural affinity or complementary quality were jammed and jumbled together in the same receptacle. The fault was not so much with the exhibitors, who were complying with the requirements of the prize list, as with the society in failing to realize the importance of encouraging artistic standards in floral display. The reversal of that policy has been productive of the most satisfactory results, not only artistically, but from the more practical point of popularizing the shows. The society is now strong on "decorative features," and the beautifully arranged tables, baskets and bowls make a compelling appeal particularly to the, as yet, non-gardening portion of the public. These are the people whose conversion we are striving to obtain. Many who give a passing, though pleased, glance at the competitive classes of individual blooms ranged in long, straight rows on the show tables, will hover ecstatically over the decorative exhibits. These arrangements of flower and foliage are not only attractive in themselves, but add greatly to the general effect in relieving the stiffness of the serried ranks of vases on the other tables.

Arrangement Adds to Charm.

It is apparent that Mr. Cooper has not considered the whole question, or he would not have under-estimated the educational value of the decorative exhibit. Flower growing is important, but the fine art of arranging flowers is equally worthy of illustration and development. As the setting enhances the brilliancy of the jewel, so the arrangement adds to the charm of the flower. A notable improvement has been observed in the character of the decorative pieces at the Ottawa shows, and a standard has been set up by the exhibitors them-

selves that puts out of the running anything fantastic or of doubtful artistic merit.

This departure has introduced a new element of interest. Formerly the lady members of the society, numbering several hundreds, were not conspicuous as exhibitors in the ordinary competitive classes. Now the opportunity is presented to exercise the artistic talent inherent in woman-kind with the added zest that comes from amiable rivalry.

Taste in Judging.

The task of judging these decorative exhibits is assigned to persons with special qualifications for it. Perfection of individual bloom does not count for so much here as the general arrangement and the effect produced by it. Judges highly qualified to appraise the merits of exhibition flowers are not necessarily the best for decorative exhibits. This work presents unusual difficulties because it has to do with that elusive and indefinite thing called taste, and there are different standards and conceptions of beauty. But, on the whole, the judging has been well done, and little complaint has been heard, even from the unsuccessful competitors.

What possible conflict can there be between the decorative and other classes? They are not in competition. The standards of judging are not the same. One does not trench upon the other, and no comparison can be drawn between things which are unlike. Adventitious effects resulting from arrangement are not sought in the ordinary competitive classes of cut blooms. There the flower depends entirely on its intrinsic merit in competition with its rival. But the two classes are complementary, and the show must lack in interest, beauty and educational value if either is excluded. The ideal is a combination of both.

Milk Bottles as Receptacles.

Something was also said by Mr. Cooper in defence of the use of milk bottles as receptacles. If nothing else is available, by all means use milk bottles rather than give up the idea of having a show; but if other receptacles can be had, they are much to be preferred. This is a practical question of finance, and it presents a serious problem to all societies. Our society wrestled with it for years. We had a constantly diminishing supply of glazed pottery vases, mostly in the smaller sizes, but there was a demand for more receptacles capable of taking care of peonies and the larger perennials. War-time quotations for glass and pottery were prohibitive, considering our resources. Then someone proposed galvanized sheet vases. Sheet iron and flowers do not suggest a happy combination, but when the samples were before us, the effect was not displeasing and the practical utility was apparent. Most important of all, the cost was within reach. Two sizes were procured, one ten inches high by four inches wide, and the other eight by three. The price averaged 25 cents each. Time toned down the galvanized coating to a soft, neutral gray which harmonizes well with all flower colors. These vases have the merit of being light in weight and unbreakable, an advantage of importance to a nomadic society, which has to hold its shows wherever it can find a hall and to transport its impedimenta hither and thither. The question of vases is just one of the many practical details that might with advantage be discussed through the correspondence columns of The Canadian Horticulturist, and might also find a place on the agenda of the next meeting of the Ontario Horticultural Society.—George Simpson, Ottawa.

Receptacles at Exhibitions

Editor, Canadian Horticulturist:

The article, "Receptacles at Exhibitions," by Mrs. A. L. Potts, Hamilton, in your December issue, is what I term good common sense. As I go in a lot for competition myself, her idea on containers for staging flowers at flower shows is right. We want to see flowers, not containers. I have been connected with the Riverdale Horticultural Society since it started, and we put up a good show every year, using the containers we can pick up. If we had a regulation container it would be a failure, as the average society cannot go to that expense.

The Canadian Horticulturist has been a great help to me, and the many useful hints I find every month are certainly interesting.—Wm. Ogg, Toronto.

Destroying Weeds with Chemicals

THERE are numerous plots of waste ground in towns, along roadsides all over the country, railroad tracks, and large areas of stony or rocky ground that cannot be cultivated, where keeping down weeds by chemical sprays might be profitably considered.

The spray should be applied in fine, calm weather when there is a probability that no rain will fall during the next 24 hours. The amount of spraying mixture will vary somewhat with the kind of spraying machine used, but as a general rule at least 60 gallons are necessary to cover an acre. The spray should be applied while the weeds are young.

The chemical substances most used are sulphuric acid, iron sulphate, copper sulphate, common salt caustic soda, sodium arsenate, carbolic acid, orchard heating oil and fuel oil. After the use of some of these, the soil remains sterile until the chemical has been washed out by rain. In calculating the strength to be used it has to be remembered that a gallon of water weighs 10 pounds.

Fuel oil can be used on waste ground or garden paths. After its use the soil remains sterile for a considerable period.

Orchard heating oil is applied at full strength in a fine mist. It destroys all vegetation but is not poisonous and does not injure the soil.

Sulphuric acid or oil of vitriol has a corrosive effect on the spraying apparatus, and can be used only in a weak solution varying from 3 to 10 per cent. It has a fertilizing effect on the soil.

Carbolic acid is used in a solution of 12½ per cent. or stronger.

Iron sulphate or copperas is used in a solution of 15 to 20 per cent. Copper sulphate or bluestone can be used instead of iron sulphate, but in a solution of 1½ to 2½ per cent.

Common salt or sodium chloride is used in a strength of 20 to 25 per cent. It checks the growth of other plants, besides weeds until it has been washed out by rain.

Caustic soda or sodium hydrate is used in a five per cent. solution. It kills all kinds of vegetation.

The formation of the Ontario Gladiolus Society, at a meeting in St. Thomas recently, has been received in Ottawa with favor. Indications are that this district will provide a considerable number of members. At present, Ottawa's sole representative is William B. Varley, a vice-president of the Ottawa Horticultural Society, who has been appointed regional vice-president for the Ottawa District.—E. G. W., Ottawa.

The O.H.A. annual convention will be held in Toronto, Feb. 9 and 10.

Eastern Ontario Apple Men Meet

THAT interest in the apple industry of Eastern Ontario is rapidly reviving was abundantly evidenced by the attendance at the tenth annual meeting of the Northumberland and Durham Apple Growers' Association, held at Brighton, Ont., on Jan. 18. Nearly 300 persons were present, and the great majority were actual producers. The few addresses were of a very practical nature, being particularly well adapted to conditions in the neighborhood.

Benefits of Cold Storage.

A. Fulton, supervisor of the Ontario Government cold storage plant at Brighton, described the benefits the growers might derive from this affair, among other points stating that if producers could see their way clear to utilizing this storage during the months of June and July for tender fruits the concern would soon be on a self-supporting basis. Mr. Fulton stated that although the full capacity of the plant had been taken up practically since the opening in September last, the bulk of the apples stored were of the lower grades, whereas,

would be well repaid in financial returns received.

Mr. Ross dealt with the other side of the question, giving the results of different tests with various sprays. One point of particular interest to apple producers in this part of the province brought out by this speaker, and in the discussion following his address, was the fact that dusting "should not be considered as a substitute for liquid spraying, but merely as a valuable adjunct to it." Dusting, he said, helped the large grower to get over his plantation when it could not be accomplished with liquid spray, but in nearly all cases he advised the latter where at all possible.

M. B. Davis, Central Experimental Farm, Ottawa, discussed pruning and fertilizing. The meeting was ably presided over by President Brock Scripture, assisted by Secretary Harry Sirett.

Officers Elected.

Officers and directors of the past year were re-elected as follows: Pres., R. B. Scripture, Brighton; vice-pres., A. A. Col-

inspectors made such inspections. He admitted, in reply to a question by Mr. Baxter, that they had not demanded a certified copy of the inspector's report.

Fruit Commissioner Baxter stated that every now and then some dealers try to beat down prices to the growers by making unwarranted claims for rebates on the ground of defects in the fruit. Last summer a dealer in Winnipeg faulted a car which had been shipped by the Niagara Peninsular Growers, Ltd., and claimed that the fruit had been condemned by the fruit inspector. The N. P. G., Ltd., reported the case to the Fruit Branch, which, on investigating it, found that the car had not been faulted by the fruit inspector, but had been passed by him. Where claims of this kind are made, it was suggested that if any doubt exists as to their accuracy the facts should be submitted to the Fruit Branch, Ottawa, for investigation. T. J. Mahony, general manager of the N. P. G., Ltd., advocated the inspection of fruit at the shipping point. He pointed out that were this done very few dealers would dare to make fraudulent claims for rebate and when they did the fruit growers would be protected by having the inspector's certificates.

Apple Blister Canker

INVESTIGATIONS conducted by the New York Agricultural Experiment Station at Geneva show that an outbreak of blister canker in apple orchards is always possible, especially following a protracted period of dry weather in the spring. The organism causing the disease is nearly always present in the orchard or in nearby woodlots, and since apple trees are most susceptible to attack in the spring when new growth starts any condition of the soil or weather which retards growth favors the development of blister canker. Early cultivation to preserve soil moisture is, therefore, especially desirable.

The disease gains entrance into the wood through some injury to the tree, usually a pruning wound, hence it is important that all such wounds be covered in some way. For this purpose a coating of common shellac followed by coal tar gave the best protection and withstood weathering better than any of the other wound dressings which were tried.

The immediate removal of all blister cankered branches is probably the best control measure as such practice retards the spread of the disease in the orchard. It should be remembered, however, that in removing a diseased branch the cut should be made as far away from the canker as possible because the disease extends in all directions through the wood and unless all diseased wood is removed a new canker will form.

"Paradichlor" for Borers

THE so-called peach-tree borer has constituted one of the principal drawbacks to the successful cultivation of the peach for 150 years, and only within five years have effective and practical means of control been discovered. The para-dichlorobenzene treatment developed by E. B. Blakeslee of the bureau of entomology, United States Department of Agriculture, is described in Farmers' Bulletin 1246, "The Peach Borer; How to Prevent or Lessen Its Ravages," by Dr. A. L. Quaintance, entomologist in charge of fruit insect investigations. The bulletin treats briefly of the life and habits of the insect; of the "worming" method of destroying the

(Continued on page 32.)



A Power Spraying Outfit is Needed on Every Commercial Fruit Farm.

Because of the abnormally early spring last year, spraying was neglected in many orchards, and pests of all kinds had opportunity for increasing more than usual. Orchardists will require to be on the job early and effectively this coming season.

In his opinion, growers could not afford to store anything but Nos. 1 and 2 fruit while there was any of this quality on hand. Judging by the discussion following Mr. Fulton's address, local producers are more than satisfied by this experiment of the provincial government, and although the concern has been in operation but a few months, the season has been extended to such an extent by its use that thousands of dollars have been made out of fruit and vegetables which under ordinary conditions would have gone to waste.

More Spraying Advocated.

Prof. L. Caesar of the Ontario Agricultural College and W. A. Ross of the Vineland Experimental Station briefly discussed spraying and spray materials. Prof. Caesar, while convinced that interest in fruit growing, and particularly apples, was rapidly being restored after the war-time depression, claimed that the growers were still "falling down in their efforts to produce good, clean fruit." To accomplish this end he urged more frequent and universal spraying, and stated that those doing so

will, Newcastle; sectreas., Harry Sirett, Brighton; directors, W. H. Gibson, Newcastle; W. J. Gragg, Bowmanville; C. R. Lovekin, Newcastle; E. H. Martin, Port Hope; J. G. White, Colbourne; A. M. Macklam, Brighton; W. Montgomery, Brighton; P. C. Dempsey, Trenton.

Unwarranted Claims

THE methods adopted by some fruit dealers to secure unwarranted rebates in the prices they agree to pay for fruit or unduly high prices for fruit they sell, were revealed at the meeting of the Ontario Experimental Union, held in Guelph, Jan. 10th to 12th. W. C. Good, M.P., of Paris, referred to a difficulty some farmers in his section had had in the adjustment of prices over a car of Nova Scotia fruit which had been purchased, and which was very defective. The shipper claimed the fruit had been inspected by the Dominion fruit inspector and was according to grade when shipped. Mr. Good asked Dominion Fruit Commissioner C. W. Baxter, if the

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borers where there are only a few trees involved, and of "paradichlor" method.

The peach borer is the larva of a beautiful clear-winged moth. It feeds on the inner bark at the base of the tree or on the adjacent roots, seriously injuring and

frequently killing the trees attacked. As a result of experiments begun by the department in 1915, it was found that this pest could be largely destroyed by the application of para-dichlorobenzene, which is a volatile poison.

The chemical is applied in the fall around the base of the tree. The soil is first leveled off and a band of "paradichlor" is applied to the soil on a continuous band about two inches from the tree trunk using it at the rate of one ounce per tree. After the chemical is applied the soil is covered with two or three shovelfuls of earth. The vapor from the chemical permeates the soil and kills the larvae in their burrows.

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PROVINCE of QUEBEC

Five McIntosh Seedlings

In a paper on "New Varieties of Apples Originated at the Central Experimental Farm," read at the annual meeting of the Quebec Pomological Society, W. T. Macoun, Dominion Horticulturist, stated that the horticultural division of C.E.F. was now in a position to introduce new varieties of apples that had proven themselves superior to our present standard varieties, after being tested for a number of years and coming through the test winters of 1911 and 1918. The five outstanding varieties were seedlings of McIntosh. These were Melba, Joyce, Pedro, Lobo and Patricia.

Melba comes into condition in August, and has a long season for a summer apple. It is of good size, handsome appearance and of very good quality. This variety comes into bearing early and is recommended for general planting in the Province of Quebec, where McIntosh succeeds.

Joyce is fit for use from two to three weeks later than Melba and continues in season through September and October. It is superior to Duchesne in quality and recommended to replace this variety. It is highly recommended as a variety to follow Melba in season.

Pedro is in season from late September to December, being ready for use about three weeks after Joyce. It is perhaps the handsomest of the three, being a lively, attractive shade of red and having a perfume. The quality is good. This variety is recommended to replace Wealthy. The tree is very hardy, is a vigorous grower and is a regular and heavy bearer.

Lobo is in season just before McIntosh. This is one of the most highly-colored of the McIntosh seedlings and has already fruited in the Province of Quebec. It is like the McIntosh in flavor and size.

Patricia is considered by some persons to be the best dessert apple. It is considered a little under-sized. The character of the flesh of this apple is superior to any of the others and the quality is very good.

A number of other seedlings of good quality were touched upon by Mr. Macoun, but were not recommended as they have not been tested sufficiently to ensure their value to the orchardist. Mr. Macoun pointed out that the objects of the horticultural division were to produce fruits of superior quality to those already used by the growers, and said that there was a big need for a keeping apple of good quality to come in after McIntosh.—R. J. M. R.

The South African Department of Agriculture arranged last year to have codling moth larvae collected in Italy and sent to South Africa, with a view to introducing the Italian parasites of this pest. An attempt is also being made in South Africa to introduce the minute chalcid fly from North America, where it parasitizes the woolly aphids.

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MARITIME PROVINCES

History of N.B.F.G.A.

A. G. Turney, Provincial Horticulturist.

THE New Brunswick Fruit Growers' Association first came into being on Dec. 14, 1904, when a number of New Brunswick fruit growers met at the Winter Fair, Amherst, N.S., and on motion of W. D. Albright, seconded by W. W. Hubbard, the following resolution was carried unanimously: "Resolved, that a Fruit Growers' Association be organized for the Province of New Brunswick." The following provisional officers were then elected: President, J. C. Gilman, Fredericton; vice-president, George McAlpine, Lower Gagetown; secretary-treasurer, W. D. Albright, Sussex. Fifteen directors were also elected, and a committee was appointed to propose a constitution and by-laws, to be submitted to a meeting of the association to be held at Fredericton, Jan. 27, 1905. This was the first annual meeting. The second, third, fourth and fifth annual meetings were held at Fredericton. In 1910 there were two meetings, one at Fredericton on Feb. 24, and the other at St. John, Oct. 30 to Nov. 2, in connection with the first New Brunswick Apple Show. The seventh annual meeting was held at St. John in conjunction with the second New Brunswick Apple Show, Oct. 31 to Nov. 8, 1911. The eighth, ninth, tenth and eleventh meetings were held in Fredericton. The twelfth annual meeting was held in St. John in conjunction with the third New Brunswick Apple Show, Oct. 31 to Nov. 3, 1916. All subsequent annual meetings have been held in Fredericton.

The late J. C. Gilman, of Kingsclear, York County, was president of the associa-

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tion for the first three years of its existence and his able leadership did much to place it on a firm basis. He was succeeded by I. W. Stephenson, of Sheffield Academy, Sunbury County, who held office in 1910 and 1909. C. N. Vroom, of St. Stephen, Charlotte County, was president from 1910 to 1913; S. B. Hathaway, Kingsclear, York County, in 1914 and 1918; H. H. Smith, Hoyt Station, Sunbury County, in 1915 and 1916; R. A. Fillmore, Burton, Sunbury County, in 1917; Col. O. W. Wetmore, Clifton, Kings County, in 1919; A. R. Gorham, Grey's Mills, Kings County, in 1920; and W. B. Gilman, Fredericton, York County, in 1921.

Henry Wilmot, of Lincoln, Sunbury County, was treasurer from 1904 until 1914, when the office was combined with the secretaryship. S. B. Hathaway was secretary for some years prior to 1910, when A. G. Turney was appointed to that office and has held it to the present date.

The record of membership is as follows: 34 in 1905; 37 in 1906; 37 in 1907; 30 in 1908; 24 in 1909; 79 in 1910; 115 in 1911; 72 in 1912; 113 in 1913; 122 in 1914; 91 in 1915; 110 in 1916; 151 in 1917; 128 in 1918; 170 in 1919; 203 in 1920; 187 in 1921.

Encouraged by the active sympathy and generous support of the N.B. Department of Agriculture, the association has steadily shown greater activity and usefulness, as evidenced by the increase in membership. To-day it is a very important and influential factor in the policy of encouraging the development and advancement of fruit growing in New Brunswick.

The advance made in the cooperative supply business carried on by the association is shown by the following figures:

Year.	Value of Nursery Stock.	Value of Other Supplies.
1912	\$3,820.00	\$515.00
1913	3,000.00	625.00
1914	1,853.94	675.00
1915 (Exclusive of Nursery Stock)		825.00
1916	"	800.00
1917	"	2,522.44
1918	"	3,000.00
1919	"	4,000.00
1920	1,340.95	14,615.45
1921	1,690.97	8,691.09

Although these figures are small as compared with the supply business of some fruit growers' organizations, they show a very marked increase and interest in the business the last five years. The larger value of the supplies handled in 1920 is due to the fact that the entire barrel supply for our members was handled through the association.

In 1919 the association was incorporated under special charter of the legislature, empowering it to carry on a general cooperative business, both as to purchasing and selling, and it now receives an annual grant of \$200 from the New Brunswick Department of Agriculture.

Fruit in P. E. Island, 1921

J. A. Clark, Supt., Exp. Farm, Charlottetown

THE spring of 1921 opened early; the snow was gone by the 17th of April, and spring work commenced on the 27th of April, two weeks earlier than usual. On May 18th, the trees appeared green; this was 10 days ahead of other years. The strawberries wintered well, and the small bush fruits escaped injury from the early frosts. The spring weather was favorable for all fruits; the early summer drought, which extended to the 15th of July, retarded the growth of large fruits, and considerably reduced the yield of strawberries after the second picking.

Small Fruits.

Black currants, which bloomed on the 19th of May, set well, and gave a good crop of ripe fruit on the 27th of July. Red currants bloomed on the 23rd of May, and were ready for picking on the 21st of July. They gave a much heavier yield than the black, but there is a very poor market for them, and the price is low. White currants came into bloom on the 22nd of May, and gave a yield quite equal to that of the red currants

SPRAY GET BETTER FRUIT AND TIP-TOP PRICES

There is no market for knotty, gnarled fruit and wormy apples. Spray with the right material at the right time and give nature a chance to grow her finest. You will find just the spraying appliance you need in our famous line of

OSPRAYMO
High Power Sprayers

As Ospraymo Sprayer means a high-power sprayer, and high power is most important. You are sure to make your spraying job effective.



SENIOR LEADER
Gasoline Engine Orchard Sprayer

Above is a popular style of power sprayer for general orchard spraying. Investigate our mounted traction Red Jacket and Yellow Jacket Sprayers for beans, potatoes and vegetables. Also Barrel, Bucket, Knapsack and Hand Sprayers.

Send today for our latest catalog. Don't buy any sprayer until it comes. We have local dealers at many points, but write direct for catalog to the address below.

FIELD FORCE PUMP COMPANY
Dept. C. H., Elmira, N. Y.
40 Years at Sprayer Building

130 EGG WISCONSIN INCUBATOR AND BROODER

BOTH FOR \$23.75

If ordered together we send both machines for only \$23.75 in Canadian money and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in **Winnipeg, Man. and Toronto, Ont.** Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery order egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped set up complete—ready to use. Ten year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used. If you compare our machines with others, we feel sure of your order. Don't buy until you do this—it pays to investigate before you buy. Remember our price is covering freight and duty charges. Send for FREE catalog today, or send in your order and save time. Make Money Orders payable to us at Racine, Ont., but mail remittance with order to us at Racine, Wis.

WISCONSIN INCUBATOR CO. Box 208 RACINE, WISCONSIN, U. S. A.



Natural Finish California Redwood (11)

Freight and Duty Paid



This Big 250 Egg Size and 250 Chick Brooder \$39.75

on the 26th of July. There is a readier market for these, on account of their use in the making of jellies.

The summer of 1921 was very favorable for raspberries. The Shaffer, a purple raspberry, led; Herbert, one of the varieties of red raspberries, was a close second; Golden

Queen, the best white, was third, with a very satisfactory yield.

The strawberry crop, as already mentioned, dried off after the second picking, and was not so good as the crop harvested in 1920. Parker Earl, Senator Dunlap and Glen Mary still stand at the head of the list of varieties. Portia, a variety introduced by Mr. Macoun, at Ottawa, has also given very satisfactory yields.

The season was also favorable for gooseberries. Keepsake, Pearl and May Duke have given very satisfactory returns over a number of years.

Large Fruits.

During the period of drought, the larger fruits were checked in their growth, and were quite undersized at the first of August. They, however, quickly recovered when the rains came, and the harvest of apples, plums and pears was the best for many years. The cherry trees that had been regularly sprayed all gave a very good crop. In the province, however, very few orchards of cherry trees have withstood the attacks of Gnomonia (during the past ten years), which practically defoliates the orchard early in the season. The remedy is regular, thorough spraying, with lime-sulphur and Bordeaux.

Apple Sucker in Nova Scotia

IN August, 1920, the Dominion Department of Agriculture placed a quarantine on Kings, Hants, Colchester, Cumberland, and part of Lunenburg counties on account of the apple sucker, a pest that was first discovered in Nova Scotia in 1919. The quarantine prohibited the shipment of nursery stock unless the shipment was accompanied by either a permit or certificate. As a result of scouting work carried

GLADIOLI

65 Varieties.

Orange Glory, Byron L. Smith, Pride of Goshen, Herada, Gold Measure and many others. Write for list.

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73 Highland Ave., Belleville, Ont.

Gladioli

Selected List of These Magnificent Free-Flowering Summer Bulbs:

América, pink; Halley, salmon color, early; War, blood red; Francis King, salmon red; Peace, late white; Pink Perfection, pink; Loveliness, creamy white; Willy Wigman, bluish with dark blotch; Panama, pink; Schwaben yellow; Lily Lehman, creamy white.

\$1.00 for 25
\$3.50 per 100

Excelsior, mixed—extra first sized bulbs, \$3.00 per 100. Cash with order. No charge for packing.

The Peterboro Flora Co.
PETERBORO ONTARIO



FLOWER POTS

Hanging Baskets and Fern Pans

We make the "Standard" Pot, the best Pot in the world—uniform, best of clay, well burned, in every respect superior to all others.

All our pots have rim on shoulder, thus allowing them to be placed together perfectly and preventing breakage in shipping and handling.

Place your Spring Order NOW.

A complete line and large stock of all sizes kept on hand to ensure prompt shipment.

Send for NEW CATALOG and PRICE LIST.

The Foster Pottery Co.
HAMILTON ONTARIO
Main Street West.

Honey Containers

"ORDER THEM EARLY"

Did you order your honey pail requirements early last year? If so, was it not very satisfying to have the pails ready at your apiary in time to take the honey from your storage tanks? DID IT NOT MEAN MONEY IN YOUR POCKET?

On the other hand, if you happened to be one of the beekeepers who neglected to order pails early—what was the result? You lost an early sale of honey, and allowed your honey to granulate in the tanks. THIS MEANT A DIRECT LOSS TO YOU.

Think it over, and decide this year to place your order in plenty of time to allow us to stencil your name and have the pails at your apiary when required.

Our illustrated circular and price list is being sent out. If you do not receive yours, drop us a card.

Macdonald Manufacturing Co., Limited

SPADINA AVE. AND RICHMOND ST.

TORONTO, CANADA

BRUCE'S SEEDSESTABLISHED
1850**"Seeds That Grow"**

SEND for a copy of our big catalogue. Everything for the farm garden and lawn. 128 pages. Free for the asking. A post card will do it. Don't delay.

JOHN A. BRUCE & CO.
LIMITED
HAMILTON
CANADA

245

**Strawberries**

Grow the Kellogg Way
Yield BIG Profits
Our Free Book tells how.
Written by the Strawberry King. Gives his secrets for growing the Big Crops of Fancy Strawberries that won him fame and fortune. Worth its weight in gold. Costs nothing—It's FREE.
R. M. KELLOGG CO.
Box 181 Three Rivers, Mich.

FREE BOOK

on during the past summer, for this pest, it was found that the apple sucker had spread into Halifax county. On Nov. 15, a ministerial order was passed adding Halifax to the districts already quarantined.

Persons who wish to send any shipments of nursery stock and desire further information should apply either to the Dominion Entomological Laboratory, Annapolis Royal, N.S., or to the Dominion Entomologist, Department of Agriculture, Ottawa.

N.S.F.G.A. Convention

AT the annual convention of the Nova Scotia Fruit Growers' Association, Bridgetown, Jan. 17-19, a resolution was adopted asking the departments of agriculture at Ottawa and Halifax to make provision for experimental work in pre-cooling apples in N.S. this year. Another resolution petitioned the Federal Department to employ at Kentville a specialist for the purpose of developing new sorts of apples suitable to conditions in N.S., particularly with reference to late-keeping varieties.

Important addresses were delivered by W. T. Macoun, Dominion Horticulturist; C. W. Baxter, Dominion Fruit Commissioner; J. A. Ruddick, Dairy and Cold Storage Commissioner; B. Leslie Emslie, Soil Fertility Specialist, Ottawa; Dr. M. Cumming, Prof. W. H. Brittain and Prof. Truman, Truro; W. S. Blair, Kentville; G. E. Sanders, Annapolis Royal, and others.

Officers were elected as follows: Pres., G. H. Vroom, Middleton; Vice-Pres., J. Elliott Smith, Wolfville; Sec., F. W. Foster, Kingston; Executive, George Hutchinson, Morristown; Fred Johnson, Bridgetown; Ray Clarke, Lakeville; Fred Chipman, Nictaux West. Delegates to Dominion

Fruit Conference—C. P. Raymond, Berwick; E. H. Johnsen, Wolfville; W. C. Spurr, Melvern Laquale; J. H. Cox, Cambridge.

The New Brunswick Department of Agriculture will hold a three days' apple packing school at Fredericton this month, probably on the 14th, 15th and 16th, or 21st, 22nd and 23rd. P. J. Carey, Dominion Fruit Branch demonstrator, will be in charge of the work. The annual meeting of the B. C. F. G. A. will be held in conjunction with the packing school.

Exhibition Gladioli

M. Foch, new Pink, Edith Cavell, white, etc. Schwaben, Peace, America, Mrs. King, Niagara, \$3.50 per 100.
Mixed Varieties, \$2.50 per 100.
All 1 1/4" up. O. SANSBY, Let Free.
7 Waverley Road, Toronto, Ont.

For Gladioli and Paeonies

Send for lists.

H. P. VAN WAGNER,
R. R. No. 5. Hamilton, Ont.

Fruit Growers

Write for circular describing the new and only lime and fertilizer machine which fills your needs.

W. J. BUCHAN,
Beamsville Ontario

Trees, Roses, Shrubs, Vines and Perennials



ARTISTIC Planting will help to make your home beautiful. We grow the stock, and will cheerfully give you the benefit of our experience,

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Nurserymen and Florists

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QUALITY SEEDS

SEED SERVICE OF AN UNUSUAL KIND



Eliminating undesirable varieties and confining our recommendations only to the best strains of the most high-bred varieties of vegetables and flowers.

"Quality Seeds"

is the title of our catalogue. It tells you about seed novelties and specialties as Sure Crop Stringless Beans, Early Wonder Beet, Golden Giant Corn, New Melon "Oka," an improvement on Montreal Market, Marrowfat Pea Progressive. Asters: Ball's White, perfectly double, of flawless purity and form. Pacific Beauty, best lavender to date; Blue Lace Flower; New Hollyhock, Exquisite; Sweet Peas: Mascot White, Dobbie's Maroon, Daisybud, Cecily, Pink Pearl; Zinnia, Double Dahlia Flowered; Campanula, Violet King; Petunia, Elk's Pride, a striking deep Royal Purple, and many more interesting and delightfully new Flowers and Vegetables.

Catalogue on request.

DUPUY & FERGUSON
38-42 Jacques Cartier Square
MONTREAL

BRITISH COLUMBIA

B. C. F. G. A. Convention

THE annual convention of the B. C. F. G. A. was held in Victoria, Jan. 18, 19 and 20. The attendance was excellent, being the largest on record, and all sections were well represented. Numerous resolutions were presented, the most important being those relating to pest control and compulsory spraying. Following these resolutions measures were taken which will insure the control of any pest or disease outbreaks in the province and assist in maintaining the high quality of British Columbia fruit. One of the resolutions adopted advocated the adoption of Washington pack and grade rules for British Columbia. This idea was supported by many delegates who pointed out that in the larger markets British Columbia fruit was meeting competition from northwestern apples and that it would be an advantage to British Columbia if all fruit were graded and packed according to the same standards. British Columbia was losing money by selling under the 1, 2 and 3 grades and that if the grades Extra Fancy, Fancy and C. grade were adopted, there would be no discrimination and selling would be much easier.

Papers on various subjects were read as follows: "Fertilizer Problems," Messrs. Boving and Helmer; "Transportation Problems," G. E. McIntosh, Ottawa; "Small Fruit Subjects," Messrs. Barss and Eddie. Excellent addresses were given also by D. F. Fisher, of the U. S. Department of Agriculture, on "Spoilage of Apples after

Harvest" and R. C. Treherne on "Codling Moth and Superheating."

Delegates to the Dominion Fruit Conference were also appointed. Those representing the growers were Messrs. Barnes, Palmer, Abriel and Mutrie; to represent the shippers, C. Lowe.

Officers were elected as follows: Pres., C. E. Barnes, Walthachin; Vice-Pres., L. E. Taylor, Kelowna; other executive officers, R. M. Palmer, R. V. Agur, W. F. Laidman, and T. Abriel; Sec.-Treas., A. F. Barss, Vancouver.

B. C. Berry Growers

THE British Columbia Berry Growers' Association, organized last summer, handled the fruit of about 500 acres, or some 2,500 tons. It acted as the central selling agency for 13 berry marketing organizations that were already in existence. The sales manager is H. A. McNaughton, Gordon Head.

The success of this new organization in its first season stands out as a memorial to the value of co-operation. For 25 years individual growers had been struggling along without signal success. Various small associations that came into existence could not afford to provide proper cooling-plants and other facilities for handling the fruit previous to shipment, or else they could not afford proper inspection as to grade and pack. In 1915, the Gordon Head Fruit Growers' Association on Vancouver Island was formed and soon built up for itself an enviable reputation in B. C. and prairie markets. Then various other co-operative associations began to spring up on the lower mainland.

The Fruit and Mercantile Exchange at

CONFIDENCE

Except Eggs, no other article purchased so little indicates the quality within as seeds, for seeds do not give any clue whatever.

Seed demands, first, a lot of confidence on the day of purchase; and secondly, a continuation of that confidence during the growth of the plants—quite two months at least—and if the results are bad the purchaser has only himself to kick.

57 years of good service and good seeds has gained for us the confidence of many gardeners. Ask one.

Write for our catalogue.

SEEDS Vegetable Flower

GEO. KEITH & SONS

124 King St. East, Toronto, Ont.

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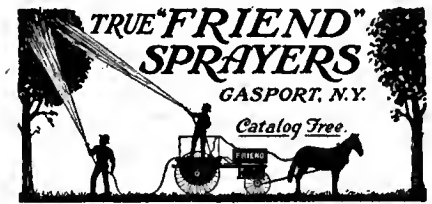
Ten prize-winning DAHLIAS of all classes, \$1.00 postpaid.

Twenty mixed varieties, \$1.25 postpaid.

Send for price list.

MRS. C. DOUGLASS,

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HARDIE SPRAYERS are sold plus service, for all Hardie Agents carry repairs.



AGENTS—Duncan Robertson, Oakville; S. Piott & Son, Stoney Creek; Jas. A. Wray, Grimsby; R. O. Wilcox, Beamsville; L. S. Haney, Fenwick; Hall Bros., St. Catharines; G. W. Manley, Niagara Falls; W. H. Harrison, Niagara-on-the-Lake; G. H. Shaver, Hamilton.

HARDIE SPRAYERS

HAVE STOOD THE TEST

Every part of the Hardie Power Sprayers is the best that money, brains and experience can make, and the difference in price between a Hardie and the cheaper makes, is nothing compared to the loss of time and trouble costs, which cheaper makes entail.

Hardie Power Sprayers are made in many styles and sizes to fit varying conditions. Tell us your Sprayer troubles, and the conditions you have to overcome and we will give you our knowledge and experience in overcoming spraying difficulties gratis.

There is a Hardie Sprayer that will exactly fit your requirements.

Hardie Sprayers are light in weight and being manufactured of the very best material, are very strong and durable, easily cleaned after spraying, and are known by Hardie users everywhere as "the Sprayer with the trouble left out."

Write for our illustrated catalogue and price list.

THE BIGGS FRUIT & PRODUCE CO., LIMITED

BURLINGTON - ONT.

District distributing agents for the Niagara Peninsula, and Hamilton to Toronto fruit districts.

CARTERS NEW INTRODUCTIONS



NEW HYBRID ESCHSCHOLTZIA
—Contains many new shades of color not previously seen in Poppies; flesh-colored, pale rose, brilliant acetate, slate and smoke colors.

EVERBLOOMING HOLLYHOCK—Blooms from seed first year, July till late autumn. Profusely branching, filled with large double flowers; great variety of colors.

DOUBLE GODETIA, DOUBLE PINK—Very handsome.

Send 10c and ask for Novelty Collection No. 249 and illustrated catalog of flowers and vegetable seeds, or send for the catalog alone. Mailed free.

CARTERS TESTED SEEDS, Ltd.,
133 King St. E., Toronto, Ont.

NEW ASTER DISPLAY

JOHNSTON'S NEW VICTORY.

An improved and very beautiful type of Aster. The blooms equalling chrysanthemums in form and very free blooming, are borne on long stems, every flower coming full and perfect in every way.

These asters have been unbeaten and have secured premier honors during the last three seasons at The Canadian National Exhibition.

Johnston's New Victory—Flesh Pink, pkt., \$1.00.

Johnston's New Victory — White—pkt., \$1.00.

Each package contains about 100 seeds.

R. JOHNSTON,

23 Grafton Ave., Toronto, Ont.

The Fruit & Produce Market

The Commission firms undernoted wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. - Toronto, Ont.

CONSIGNMENTS OF FRUIT AND VEGETABLES SOLICITED.

Shipping Stamps furnished on request.

MANSER, WEBB CO.

83 Colborne Street - Toronto

Wholesale Fruit and Produce Merchants.

Consignments Solicited on Commission.

STRONACH & SON

33 Church St., Toronto, Ont.

All shipments of Fruit and other produce consigned to us receive our personal attention.

Shipping stamps furnished.

Phone Main 2390.

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 Front St. E., Toronto, Ont.

See Advertisement on another page.

Hatzic was formed, and the members thereof, recognizing that upto-date methods were essential to success, built a warehouse and installed in it a small freezing and pre-cooling plant. They shipped berries in cartons to the prairies in perfect condition and frozen fruit for jam as far east as Ontario.

By the end of the first season the membership of this exchange had increased from 28 to 120, and by July of 1920 there was completed at Hatzic a modern pre-cooling and cold-storage plant of hollow-tile construction capable of holding 600 tons of berries, which capacity can be increased to 1,000 tons by further insulation of the basement.

This was followed in 1921 by the organization of the British Columbia Berry Growers' Association, collecting under one head at first 10 co-operative associations in different parts of the country. The acreage under small fruits in British Columbia in 1921 was three times greater than in 1919, and the various local associations were strengthened proportionately. The central organization bought a large cold storage plant with the object of storing berries for canning and for pulping for jam, and of checking any glut in the fresh fruit market. This move proved most successful. Although prices for berries were lower last season than for many years, the entire operations of the new organization were of remarkable benefit to the berry growers of the province.

Publicity for McIntosh

THE McIntosh Red received unexpected publicity at the Imperial Fruit Show, London. The director of the exhibition department of the Daily Mail took a special fancy to this variety, and brought a constant succession of notabilities to the Canadian section to test its quality, also arranging for it to be specially written up in the Daily Mail. On press day also several boxes were provided for the press room, resulting in further publicity, and lastly, a presentation box was sent to Lady Northcliffe, the wife of the proprietor of the Daily Mail, the London Times, and other important newspapers.

Very wide attention was therefore directed to this variety, which many of those who tasted it had no hesitation in declaring to be superior to the English favorite, Cox's Orange. As a result, Canadian representatives have been deluged with requests by mail from English growers for information as to where trees can be procured. Another more important result will be the awakening of interest in the McIntosh Red among the trade and among consumers, as hitherto this variety has never been appreciated at its full value on English markets, actually taking second place to Jonathans.—J. Forsythe Smith, Canadian Fruit Trade Commissioner, Liverpool.

Nicotine Dusting

TO the sorrow of some of the insect pests which feed on the under side of plant leaves and so escape the effect of poison sprays, the United States Department of Agriculture has been conducting experiments with nicotine sulphate applied in dust form. Mixed with kaolin to give the poison bulk, 40 per cent strength nicotine sulphate did remarkable work in controlling melon, cabbage, and pea aphids and onion thrips. All these insect pests are hard to reach with ordinary sprays, but the floating dust settles upon the under side of the leaves as well as on the surface.

The experiments show that much larger areas can be treated in less time than is

Dominion Fruit Conference
Preliminary Programme

FOR consideration at the Dominion Fruit Conference, Ottawa, which is to be held at Ottawa, Feb. 22, 23 and 24, the following subjects have been suggested:

Standardization of fruit packages (berry crates, stone fruits, cantaloupes).

Change in sizes of berry and currant boxes (elimination of two-fifths and four-fifths quart; adoption of imperial pint and quart).

Grades for tender fruits in open packages.

Specific national grades for apples.

Differentiation in grade names and grade definitions as between boxes and barrels.

Transportation.

Fruit by-products.

Fruit statistics.

National Horticultural Council.

As several of the provinces will have held their annual fruit growers' meetings by the date set for the Dominion Conference, it is expected that various other subjects will be submitted for discussion.

required by spraying. Moreover, the equipment necessary to apply the dust is much less expensive than a spray outfit and its cost of application is less than by the older method. It weighs less than spray and is more conveniently handled. It can be mixed with arsenate of lead or sulphur for use against insects and fungous diseases.

At a meeting of the Penticton branch of the B.C.F.G.A., held in December, the growers of the district pledged themselves to contribute up to the amount of one cent per packed box of apples and pears per year to fight the codling moth infestation in the Okanagan Valley.

See page 42 for list of meetings to be held this winter.

GLADIOLI

A card will bring my price list.

ROBT. F. CAMERON,

210 Ontario St., St. Catharines, Ont.

NORWAY SPRUCE.

For Hedges and Windbreaks.

Healthy, well-rooted plants 3'-3½', transplanted three times. Price F.O.B. Clarkson Stn., \$25.00 per 100—\$225.00 per 1,000. An asset to any fruit farm or garden. 80 acres of ornamental shrubs, evergreens, roses and perennials.

THE SHERIDAN NURSERIES,
Sheridan - Ontario.

PERRY'S SEEDS

Alpine and perennials, unique collection; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate.

HARDY PLANT FARM, ENFIELD, ENGLAND

VAN GINHOVEN & CO.

116 Broad St., Room 40, New York, N. Y.
Your address for Holland-grown Hyacinths, Tulips, Crocus, Gladioli, Iris, Paeonies and all miscellaneous bulbs and roots. Please write for illustrated catalogue.

CROPS and MARKETS

A Fruit Tree Census

THE need for having an accurate census of the fruit trees in the Niagara Peninsula was pointed out by T. J. Mahony, general manager of Niagara Peninsular Growers, Ltd., at the meeting of the Experimental Union held in Guelph, Jan. 10th to 12th. Mr. Mahony stated that one of the greatest difficulties the N. P. G., Ltd., had to contend with last year was the receipt of unexpectedly large quantities of fruit late in the afternoons of shipping days. Enquiries were always made ahead as to the quantities of fruit the growers expected to deliver and sales were made by telegraph and telephone on the basis of these reports and arrangements were made for the shipment of the fruit. Very frequently it happened that much larger quantities of fruit were received than had been expected, with the result that it was then often difficult to find an immediate market for it or to have it shipped as promptly as it might have been.

Mr. Mahony pointed out that in parts of British Columbia and in California the growers' organizations have complete records of all the trees in the orchards of the district, showing their age, variety and bearing condition. These are kept up-to-date each year. This makes it possible for the fruit growers' associations to estimate, much more accurately than could otherwise be done, the quantity of fruit of the different varieties that is likely to be delivered throughout the season. He pointed out that the buyers always endeavor to make it appear that the quantity of fruit that will be offered for sale will be very large in order that they may beat down the prices. In the Niagara District they were led to believe on one occasion, by the dealers, that some 15,000 tons of grapes were likely to be delivered during a certain season. When however, they investigated the situation for themselves they found that the production was not likely to exceed 4,000 tons. This was due to many vineyards having been neglected, to the number of growers not being as large as reported and to other similar reasons. By keeping a fruit census the growers would know accurately what the real conditions were.

United States Containers

TO eliminate fraud in the marketing of fruits and vegetables by the substitution of short-measure packages at full-measure prices is one of the principal objects of specialists of the United States Department of Agriculture now making a study of the hundreds of different types of containers in use. For example, baskets which contain seven-eighths of a bushel are frequently used as bushel baskets, it being difficult to detect the short measure. In Farmers' Bulletin 1196 from the bureau of markets, the specialists discuss the need for standard containers for fruits and vegetables and describe how the public is sometimes defrauded because of the many types and sizes of containers now in use. As a number of important recommendations have been made by the investigators, Canadian shippers, who are interested in American markets, will find them suggestive.

Since the passage of the United States standard barrel law, in 1915, there has



Irises, Peonies and Gladioli

The Flowers that Bloom from April until October

Order now for early spring delivery. We are growers and importers of the choice varieties. Over 600 varieties of Irises. Our ideal soil conditions enable us to grow the finest of roots and bulbs. Our selected varieties of Irises and Peonies withstand our extremes of weather, and are, therefore, acclimated to grow well in all parts of Canada and United States. Our Gladioli are selected from the finer varieties. We ship with the idea to please, and that we succeed in this respect is shown by the number of repeat orders received.

Send to-day for our Free 25 page illustrated catalogue and supplements.

RAINBOW GARDENS

701-2 COMMERCE BUILDING

ST. PAUL, MINN.

Kunderd's New Gladiolus Catalogue

For 1922 describes nearly 400 varieties in Ruffled, Plain

Petaled and Primulinus Types, all of them originated by A. E. Kunderd. 29 varieties are shown in beautiful colors, and many others are illustrated in half-tone. Most complete cultural information is also given, with special directions for the growing of show flowers. **Mailed Free**

Kunderd's Gladioli

are now so well known as the **BEST** in the world that no garden is complete without a choice collection of them. No other grower has ever produced so many nor such wonderful kinds. Send for the beautiful free catalogue which shows in colors these new Ruffled strains of Gladioli.

A. E. KUNDERD

The Originator of the Ruffled Gladioli
Box 60, Goshen, Indiana



SMALL FRUIT PLANTS

Gooseberries—Josselyn, Downing, Houghton.
Currants—Perfection, Fay, Ruby, Cherry, Boskoop, Giant, Lee's Prolific, Champion, Victoria, Naples.
Raspberries—Herbert, Plum Farmer, Shaffer's Colossal, Columbia, Cuthbert.
Asparagus and Rhubarb Roots.

PRICE LIST ON APPLICATION.

WM. FLEMING : Nurseryman : Owen Sound, Ontario



Wheels Turn Easier -

Imperial Mica Axle Grease gives perfect lubrication between hub and axle. Its mica flakes smooth the roughness of the spindle and hub, enabling the grease to do its work more thoroughly. Saves friction, wear and tear, horse power and axle trouble. Goes twice as far as ordinary axle grease and lasts twice as long.

Harness Lasts Longer -

Imperial Eureka Harness Oil will keep leather soft and pliable and double the life of harness. Tugs and straps remain soft and are easily adjusted, as the oil penetrates to every fibre of the leather. Prevents cracking and breaking of stitches and needless repair. Imperial Eureka Harness Oil gives a rich black, lasting finish.

IMPERIAL OIL LIMITED

Canadian Company Canadian Capital
Canadian Workmen

been a steady progress in the work of eliminating unnecessary and deceptive sizes from the list of containers used in marketing fruits and vegetables, says the bulletin. The passage of the United States container act, establishing standards for grape baskets, berry boxes, and small till baskets, followed in 1916.

Many Sizes Increase Cost.

The serious lack of uniformity of containers increases the cost of marketing,

say the specialists, because of the greater expense of manufacturing a large number of unnecessary styles and sizes and by breakage in transit, which is sometimes directly attributable to the difficulty of loading odd-sized containers. There are in common use at present about 40 sizes of cabbage crates, 20 styles of celery crates, 30 lettuce crates or boxes, 50 styles and sizes of hampers, 15 styles and sizes of round-stave baskets varying in sizes from

1 to 24 quarts, whereas relatively few standard sizes would satisfy all demands of the trade. In many cases the 6-quart market basket, the 14-quart peach basket, the $\frac{3}{8}$ -bushel bean hamper, and the 5-peck lettuce hamper are confused with peck, half-bushel, and $1\frac{1}{2}$ -bushel baskets.

Containers Recommended.

The two acts referred to, which establish standard containers, have done away with a large number of unnecessary sizes of barrels, berry boxes and grape baskets, and have awakened a widespread demand for the application of the same principal to other containers, says the bulletin. At present there is no standard hamper, which is one of the most widely used types of containers, especially popular in the eastern and central states. Almost 30,000,000 of these baskets are used annually. The sizes of hampers which are recommended by the bureau of markets as being sufficient in number to satisfy all legitimate requirements of the trade are as follows: 8-quart, or 1 peck; 16-quart, or $\frac{1}{2}$ -bushel; 32-quart or 1 bushel; 48-quart, or $1\frac{1}{2}$ -bushel. It is suggested that the latter be made in two styles to meet the preference in various parts of the country.

The round-stave basket, for which there is no standard, is popular in all regions except the southern and middle Atlantic states and on the Pacific coast. About 29,000,000 such baskets are manufactured annually. The sizes which are recommended as standards by the Bureau of Markets usually. The sizes which are recommended for the hamper except for the elimination of the 8-quart size. The splint, or veneer baskets, for which there are also no standards, are well known to the public as market baskets. The sizes which are proposed by the bureau of markets are five in number—4, 8, 12, 16 and 24 quart.

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Every one interested in the care of large, beautiful lawns should have a copy of this book which tells all about Ideal Power Lawn Mowers.

It shows many photos of well-known homes, parks, golf clubs, cemeteries, colleges, etc., where the lawns are cared for the "Ideal Way." It tells about the Ideal Junior, a moderate-priced power mower for medium-sized lawns, the 30-inch Ideal Power Lawn Mower for large lawns, and the Ideal Triplex Power Mower for large parks, golf clubs, etc. Write for this book to-day—learn how to keep your lawn in better condition at less cost.

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ANNUAL

Fertilizer Number

Out March 4, 1922

This special number should appeal to every advertiser of equipment and supplies of interest to fruit growers and horticulturists. It deals with fertilizing problems of the orchardist and gardener.

DOMINION FRUIT CONFERENCE

A full report of the coming Dominion Fruit Conference will also be given. Copies of the issue containing this will be sent to every member of every provincial fruit association in Canada.

Plan a strong, attractive message about your offering.

Forms close February 20-25.

THE CANADIAN HORTICULTURIST

Peterboro

Ontario

Community Packing Pays

THAT the handling of an apple crop through a community packing house had actually resulted in bringing the orchard owner higher prices, while at the same time it had given the consumer better apples, was the contention of H. W. Prettyman and H. S. Vandervoort, two representatives of a community packing house at Morganstown, West Virginia, who addressed a session of the American Association for Horticultural Science in Toronto in December.

A state appropriation was made by the West Virginia legislature to establish a demonstration community apple packing house in the principal apple growing district in the state. This house was used to demonstrate the best methods of growing and picking apples. During the first season, 1920, over one hundred cars of apples were handled through the house. These apples brought a better price than those packed by orchardists themselves in the orchard, stated Mr. Prettyman, showing that a community could organize and handle its crop much more satisfactorily than the individual.

The fruit growers agree to put all of their crop through the house and pool their products selling as a group; each receiving pay for the apples according to the number of barrels and the grades.

Horticultural Short Course

A short course for amateur horticulturists will be given at Macdonald College, St. Anne, Que., from February 13-17 inclusive. Practical demonstrations and lectures on fruits and vegetables, and the care of trees, shrubs and flowers will be given.

A three-day course for commercial gardeners and fruit growers will also be held February 28 and March 1-2, dealing with practices in growing fruits and vegetables, the control of insect pests, etc.

No fees will be charged, and accommodation can be secured at reasonable cost.

The fruit and vegetable division of the United States Bureau of Markets has started an investigation of the methods and practices of auction companies in that country. A preliminary survey of the fruit auctions in the cities of the Atlantic seaboard was made during December.

Growers and others interested in the apple industry of the State of Washington are planning to collect, by a small assessment per box, a fund of \$250,000, to be used next season for advertising the apples grown in the Wenatchee district.

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TRANSFERS of money to all parts of the world, by draft, post remittance, or cable, can be made through this Bank quickly and at advantageous rates.

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With its 149 branches in Ontario, 47 branches in Quebec, 1 branch in New Brunswick, 3 branches in Nova Scotia, 44 branches in Manitoba, 44 branches in Saskatchewan, 87 branches in Alberta and 14 branches in British Columbia, serves rural Canada most effectively.

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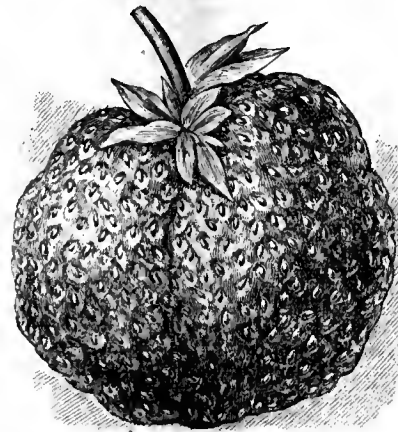
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- Gooseberries.
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- Bulbs.

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Success with Strawberries

Largely depends upon a proper knowledge of the necessary details. The soil must be right, the plants must be right, and the right care must be given. Our book, "Farmer on the Strawberry," 112 pages, 60 illustrations, tells all about it; price 50c, postpaid.

Our business is to show you how to grow strawberries and other small fruits, etc., and to sell you the plants. The stories of successful strawberry growers in 1921 are almost unbelievable—55c to 70c per qt., wholesale; \$25 per bushel crate; over \$1,500 net per acre, etc., etc. All this is told in our free catalogue for 1922. You are interested in adding \$500 to \$1,000 or more to your income. Send to-day for our beautifully illustrated 48-page catalogue, and let us talk it over these long, wintry evenings. Address

L. J. FARMER

"The Strawberry Man,"

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



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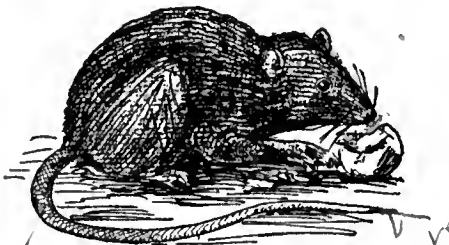


References: The Bank of Nova Scotia, King and Victoria Branch, and Commercial Agencies.

Easy Now to Rid Your Farm of Rats

Wonderful Discovery by Noted Scientist Kills
Every Rat Within a Week's Time
—Not a Poison.

Rats cost farmers over two hundred millions of dollars a year, through the destruction of grain, poultry and buildings. Farmers need no longer suffer this loss because they can now kill off all the rats on their farm in less than a week's time. This is possible through the remarkable discovery of E. R. Alexander, a chemist, who has perfected a virus which kills rats, mice and gophers as though by magic. This product is not a poison—it can be eaten by human beings or any animal on the farm as safely as their regular food, but means quick, sure, death to rats.



This wonderful rat virus, which is known as Alexander Rat-Killer is merely mixed with bread or meat scraps and placed where rats, mice or gophers can get to it. Within a few hours after a rat has eaten Alexander Rat-Killer he gets a high fever and suffers a terrible thirst. He leaves the barns and nesting holes and goes to the open fields in search of pure air and running water. Rats and mice affected always die away from the barns and houses, so there is no odor.

It is a scientific fact that one rat affects others and soon the whole colony leaves the buildings and dies. And though this virus is absolutely deadly to rats—chickens, hogs, cattle or any farm animal can eat it and not be affected at all.

So confident is Mr. Alexander that Alexander Rat-Killer will kill every rat on your farm in less than a week's time that he offers to send, as an introductory offer, a regular \$2.00 tube for only \$1.00. Give it according to directions, and if at the end of a week's time you are able to discover any rats, mice or gophers on your farm, your money will be refunded. A big Toronto bank guarantees that Mr. Alexander is reliable and will do as he says.

Just send money order, check or currency for \$1.00 to E. R. Alexander, Alexander Laboratories of Canada, 2005 Terminal Bldg., Toronto, Ont., and the tube will be mailed at once on the guarantee that if not absolutely satisfactory your money will be returned without question. Write today and stop your rat losses now.

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"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable.

Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

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Ontario F.G.A. Programme

THE annual convention of the Ontario Fruit Growers' Association, Prince George Hotel, Toronto, Feb. 7 and 8, will be in programme a stock-taking of the fruit industry of Ontario. Ontario's educational associations, orchards, varieties, spraying, pruning, fertilizing, grading, packing, packages, sales organizations and financial returns from fruit will be dealt with. Among questions for open discussion will be the following: What about advertising our fruit? Are we ready to supply the demand? Can we change some of our varieties profitably? What kind of grapes are most profitable? Of strawberries, pears, plums, peaches and apples? Shall we plant Delicious, Jonathan, Winesap, Newton, Cox Orange and Rome Beauty? Has the C.E.F. anything better to offer? Shall we adopt the imperial pint and quart boxes for berries? Shall we adopt the western grades for boxes only? Why not more co-operation in selling? Are we fooling ourselves on our profits?

Addresses will be given by the following speakers: "The Ontario Fruit Growers' Association," P. W. Hodgetts, Toronto; "The Niagara Peninsula Fruit Growers' Association," C. E. Fisher, St. Catharines; "The Northumberland and Durham Apple Growers' Association," H. Sirrett, Brighton; "The Niagara District Grape Growers, Ltd.," and "The Niagara Peninsula Growers, Ltd.," T. J. Mahony, Grimsby; "The Norfolk Fruit Growers' Association," J. E. Johnson, Simcoe; "A National Horticultural Council," C. W. Baxter, Fruit Commissioner, Ottawa; "The Imperial Fruit Show: Its Results," W. L. Hamilton, Collingwood; "Spraying," Prof. L. Caesar, O.A.C., Guelph, and W. A. Ross, Vineland Station; "Pruning and Fertilizing," Prof. J. W. Crow, O.A.C., Guelph; "Further investigations into the Fruit Industry in Durham County and the Niagara Peninsula," Prof. A. Leitch, O.A.C., Guelph. The directors will report on the fruit outlook in all parts of the province. Every fruit man in Ontario should be present.

Ontario V.G.A. Programme

THE annual convention of the Ontario Vegetable Growers' Association will be held in the Canadian Foresters' Hall, Toronto, Feb. 16. An excellent programme of reports, addresses, and discussions has been arranged.

Morning Session—President's address, Maurice May, Tecumseh; report of the secretary-treasurer, J. Lockie Wilson, Toronto; "Asparagus," Harper Secord, St. Catharines; "Ontario Should Supply Her Own Potato Market," Henry Broughton, Sarnia; "Northern-Grown Potatoes for Seed," W. A. Broughton, Whitby; "Currants and Other Small Fruits," J. R. Berney, Owen Sound.

Afternoon Session—"New Methods Developed in Control of Insects and Fungous Diseases," A. H. McLennan, Vegetable Specialist, Toronto; "Successful Greenhouse Growing," C. Fretz, Vineland Station; "Canning Vegetables," W. H. Stewart, Aylmer, Que.; "Suggested Improvements in Field Crop and Garden Competitions," J. J. Davis, London; "Profitable Growing of Onions, Seed and Transplanted," Howard Rittenhouse, Beamsville; "My Experience with Fertilizers on Vegetable Crops—Tomatoes Especially," W. M. Grant, Blenheim.

Evening Session—Banquet at 6.30 in Y.M.C.A. Building, 40 College St.; at which prominent speakers will deliver short

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BULBS—Lily of the Valley and Gladioli of all descriptions. Write for prices. C. Keur & Sons, Hillegom, Holland. New York address—5625 Mosholu Ave. The trade will be visited by us in due time as usual for 1922 spring and fall orders. Lily of the Valley and Gladioli can be shipped immediately direct from our warehouse and Canadian farms.

GREENHOUSES

GREENHOUSE FOR SALE—Lord and Burnham construction, 18x40, in first class condition, hot water heating. Complete line of potting house pottery and equipment. Easily moved. Apply Box 50, The Canadian Horticulturist, Peterboro, Ont.

FOR SALE—Two Greenhouses, with complete heating plant, hotbed sash, iron pipe and garden tools. J. MacNamara & Sons, 789 Davenport Road, Toronto, Ont.

GLADIOLI

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7 Jack London	...40c	10 Marechal Foch	20c
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25 Prim Beauty	...40c	10 Kennermerl'd.	10c
20 Salmon Beauty	15c	20 Shirus 10c

W. E. SAUNDERS,
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addresses. Later, commencing at 8.00—General discussion on the value of green cover crops as fertilizers; "A Canadian Council of Horticulture," L. F. Burrows, Assistant Fruit Commissioner, Ottawa; "Would Flowers Be a Valuable Adjunct to Vegetable Growing," illustrated, George M. Baldwin, Toronto.

Time for discussion following each paper will be provided. Every market gardener in the province is requested to attend. It will be a day well spent.

Winter Meetings

COMING events of horticultural importance and others of indirect horticultural interest are listed below. Secretaries of associations and exhibitions are requested to send dates and other information as early in advance as possible, particularly for events of provincial or district, rather than local, scope.

Grimsby—Niagara Peninsula Growers, Ltd. (shareholders)	.....Feb. 20.
Ottawa—Dominion Fruit Conference	.....Feb. 22-24
St. Catharines—Niagara District Grape Growers, Ltd., (shareholders)	Feb. 10
Toronto—Ontario Association of Fairs and Exhibitions	.....Feb. 7-8.
Toronto—Ontario Fruit Growers' Association	.....Feb. 7-8.
Toronto—Ontario Horticultural Association	.....Feb. 9-10.
Toronto—Ontario Vegetable Growers' Association	.....Feb. 16.
Toronto—Ontario Good Roads AssociationMar. 2-3.

The Canadian Horticulturist

Floral Edition

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TORONTO, MARCH, 1922

No. 3

Ontario Horticulturists In Convention

GRANTS to horticultural societies and for horticultural education, plant registration and standards, horticultural exhibitions, horticulture at the O. A. C., Guelph, the relationship of amateur organizations with commercial, and various financial matters featured the business of the convention of the Ontario Horticultural Association, held in Toronto, February 9 and 10. Although business should come before pleasure, and be chronicled before play, the series of floral pictures projected on the screen in the Pompeian Room of the King Edward Hotel, where the convention was held, also must be recorded at the outset as an outstanding feature. Beautiful in coloring and in photographic execution, the hundreds of pictures of landscapes and gardens, of railway and roadside planting, and of trees and shrubs and flowers in great variety combined entertainment with instruction in a manner that will not soon be forgotten by the large gathering of delegates and other lovers of horticulture present.

Not least in interest also was the delightful banquet held during the evening of the first day. Under the able guidance of the president, Miss Mary Yates, of Port Credit, who occupied the chair at all sessions and functions, the programme was carried through with that smooth satisfaction that appeals alike to speakers and audience.

President's Address.

In her opening address as president, Miss Yates reviewed the achievements and the progress of the past year. She asked for the hearty co-operation of all horticultural interests and organizations. She thought that the horticultural societies should continue the displays at the Canadian National Exhibition, so well done and so well regarded last September. Referring to the proposed Canadian Council of Horticulture, she stated that this association would gladly co-operate in any scheme that meant the really effective co-ordination of all branches of horticulture. For the consideration of the delegates, President Yates suggested four specific problems: 1, the desirability of establishing a provincial horticultural show; 2, the finances of the association;

3, education of gardeners; 4, the relationship of amateur with commercial organizations.

The report of the superintendent, J. Lockie Wilson, Toronto, pointed out that no organization in Ontario had made such rapid and substantial growth as the horticultural societies. Last year the membership was 32,000 and the expenditure correspondingly great. The number of branches had increased by 25, the largest yet recorded in any one year.

The superintendent expressed a doubt as to the advantage of amateur

undertaken by some societies was, the report stated, the care of cemeteries adjoining towns and villages, and a great deal of improvement had been accomplished. Mr. Wilson thought this work could be extended to embrace cemeteries in the country. He advocated also the sending of expert lecturers by the societies to rural sections for the purpose of encouraging the further beautifying of rural homes and rural schools.

The report of Treasurer C. A. Hesson, St. Catharines, showed receipts of \$745.34 for the year; expenditures, \$403.35; balance in hand \$341.99.

Horticultural Shows.

In discussing the advisability of establishing a provincial horticultural show, J. E. Carter, Guelph, thought that such would be of great assistance to this association and would greatly stimulate the work in which it was engaged, but felt that a provincial show would meet only part of the requirements. He advocated, instead, a Dominion Horticultural Exhibition embracing fruits, flowers and vegetables. A Dominion organization of that kind, he contended, would make it possible to secure a Dominion Registration Act and a Dominion Standards Act, both needed to encourage the introduction of new varieties and the improvement of present varieties. Such a show would advertise Canada and bring exhibits and exhibitors from all over the continent of America. It would encourage more of our boys and girls to take up horticulture as a profession. Dominion acts respecting registration and standards would bring from the United States and other countries growers and others who desired to register new varieties in Canada. Mr. Carter contended also that few judges at local shows had a real knowledge of standards. A Dominion show would educate judges as well as exhibitors. He strongly advised all horticultural interests to consider its establishment at once.

In a discussion which followed Mr. Carter's address, many delegates thought that such a show should be provincial rather than Dominion-wide. The President pointed out that the idea

(Continued on page 54.)

Officers and Directors

At the Toronto convention, the Ontario Horticultural Association elected the following officers and directors:

President, Rev. W. M. McKay, Weston; first vice-president, J. P. Jaffray, Galt; second vice-president, J. E. Carter, Guelph; secretary, J. Lockie Wilson, Toronto; treasurer, C. A. Hesson, St. Catharines. Directors:

District No. 1. Carlton, Dundas, Glen-garry, Grenville, Lanark, Leeds, Prescott, Renfrew, Russell, Stormont—George Simpson, Ottawa.

2. Durham, Frontenac, Haliburton, Hastings, Lennox and Addington, Northumberland, Peterboro, Prince Edward, Victoria.—H. A. Middleton, Lindsay.

3. Algoma, Dufferin, Kenora, Manitoulin, Muskoka, Nipissing, Parry Sound, Rainy River, Simcoe, Sudbury, Temiskaming.—W. P. Bailey, Fort William.

4. Ontario, Peel, York.—T. D. Dockray, Toronto.

5. Haldimand, Halton, Lincoln, Norfolk, Welland, Wentworth.—Rev. T. W. Tebbs, Burlington.

6. Bruce, Grey, Huron.—Wm. Hartray, Seaforth.

7. Brant, Waterloo, Wellington.—J. H. Halliman, Kitchener.

8. Elgin, Lambton, Middlesex, Oxford, Perth.—Dr. F. E. Bennett, St. Thomas.

9. Essex, Kent.—J. E. Brown, Kingsville.

growers exhibiting at the Canadian National, where commercial florists and such large private conservatories and gardens as those of Sir Henry Pellatt, Sir John Eaton and others were able to make such extensive and varied displays. Referring to the great progress made in recent years by commercial floriculture, he thought that such was due to the influence of the amateur horticultural societies inculcating into the public greater love for flowers and a consequent consuming desire.

A line of work which had been

The Iris in Early Spring*

Dr. F. G. Brethour, Toronto, Ont.

AS soon as the frost is out of the ground, and before any growth starts, trim off all ends of the foliage, down to two or three inches from the ground. Remove all debris, such as leaves, grass and weeds, and scrape off any soil that by accident has gotten too high on the rhizomes. Then peel off any broken leaves, or any that show signs of being winter-killed or diseased. This gives your clumps a neat appearance, and is not conducive to rot if the weather is wet. Now, go over them carefully, feeling for any soft or spongy spots and cutting them smoothly off with a sharp knife. Then spray them with a 2 per cent. solution of formalin or a solution of permanganate of potash, half ounce to a gallon of water.

Bear in mind that the iris has two sets of roots. One set lies just beneath the surface, running out horizontally, so that fertilizer must not be used too freely for fear of burning. In the first place, scatter all over and around air-slaked lime to make the ground look white, and scratch this in gently with a small iron rake. This breaks up any crust that may have formed on the surface. Then, after the first rain I go to a pile of rich earth, made up of decayed sod, or edge clippings and leaves, which has been covered all winter with a pile of manure. I scatter this about half an inch thick between the different clumps, followed by some bone-meal, about a handful to a plant, which is scattered thinly. This I rake in gently also. Nothing remains to be done except to watch for signs of root-rot, if the weather is wet. If you do not get good bloom from this, I certainly

*A paper read at the recent convention of the O.H.A. at Toronto.

would dig up the clumps and remake the ground.

The best time to plant iris is immediately after blooming period. If, however, you have to plant in spring, or have seedlings to transplant, do it early.

Iris Show

What promises to be one of the outstanding events in horticulture in the province this year is a big Iris show to be held by the Toronto Horticultural Society in early June. For the first time our own Canadian seedlings will be shown for awards by merit, and the Federal Committee on names of novelties will be on hand to pass on these specimens. Besides iris, the Darwin tulips, lilacs, shrubs and perennials will also be shown, and it is possible the wonderful peony show of last year will be eclipsed. Further notice of this show will be given.

The Gladiolus

Mrs. G. A. Bonisteel, Belleville, Ont.

THIS article on types and standard varieties is intended for the amateur rather than the professional grower, the latter already being familiar with them.

The different points to consider are size and color of flower, arrangement and number of flowers on stem, number open at one time; height and erectness of flower stalk, and keeping qualities of flower. Few gladioli reach perfection in all points.

Hybridizers have increased the size of gladioli from two inches to some magnificent beauties six and seven inches across, although those with which we are most familiar are three and a half to five inches—a nice size, indeed.

Flowers may have a solid color, a blotched or lined throat, or be mottled.

The writer gives preference to a clear tint, either in a solid shade or with delicate throat markings or blotch, yet there are some remarkable combinations in mottled and striped productions.

A flower of good height with an upright flower stalk, and flowers facing one way, is to be preferred, although a twining stem is graceful in a vase arrangement, but not handy for shipping.

One of the most important points is the number of blooms on a flower stalk and the number open at one time. Most standard varieties produce from ten to sixteen blooms, but several newer varieties have from fourteen to twenty. A first-class variety should have not less than four blooms open at one time, unless flowers are extremely large; there are a few varieties that will show as many as six to eight flowers open at one time.

The time required to obtain bloom is approximately eighty to one hundred and ten days, according to variety.

Among the very early standard varieties we have: Halley, salmon; Prince of Wales, a salmon pink over yellow, a sort of glorified Halley, of which it is supposed to be a sport; and the wonderful new Marechal Foch, a light lavender pink of beautiful texture, measuring six inches across. This is a cross of Halley and our old standard America. It has the earliness of Halley and the color of America and is larger than either.

A little later come Mrs. F. Pendleton, Mrs. F. King, Europe, Panama, Schawaben, Loveliness, Niagara, and America, Peace, a standard white, and War, a good red, are both late and bloom at the same time. Therefore, we can see the necessity of knowing if a variety is early, medium, or late, when

(Continued on page 52.)



This convention marked another milestone of satisfactory progress in the history of the horticultural societies of Ontario. Delegates to the Convention of the Ontario Horticultural were added, and a still further rapid develop-

Fertilizers For The Amateur

E. S. Archibald, B.A., B.S.A., Director, C. E. F., Ottawa

EVEN amateur gardeners must have constantly in mind the three important factors of production, that is, increasing production, improving the quality and decreasing the cost. The essential requirement for these is to have the soil in proper physical condition and containing the necessary fertilizing ingredients in an available form. The study of the above problems, then, is of just as great importance to the amateur gardener as to his professional fellow.

Soils for Gardening

The ideal garden soil is a rich, friable loam. Unfortunately, however, this ideal is not available to the majority of those wishing to grow garden crops. Hence, it is imperative that the soil available, whatever it may be, either sand, clay, muck or any combination of these, must be so treated and so modified that good results may be obtained. The day is past when it was considered that only a special type of soil was suitable for garden crops. Modern methods of handling soils will permit of profitable crops being harvested from any type of soil which may be available.

Time does not permit us to go into any lengthy discussion upon the importance of thorough cultivation of soil, rotation of crops and proper drainage, but every good gardener should thoroughly understand the importance of these. What may be emphasized here in this regard is that proper cultivation includes fall plowing or digging, working the manure thoroughly into the soil at that time and leaving the land in good shape for spring work. It also includes thorough and constant

cultivation of the soil for moisture conservation, destruction of weeds and liberation of plant food from early spring until the crop has covered the ground.

Fertilizers

The fertilizers used are of the utmost importance and warrant the most careful study, since a large percentage of amateur gardeners are doing so at a loss, either because of insufficient use or using fertilizers which are unsuited to their soils or crop conditions. The most important requirement of any fertilizer is that it contain the main fertilizing ingredients, namely, nitrogen, phosphoric acid and potash in proportions suitable to soil and crop and in the form available as needed.

Analysis show that the first nine inches of our medium to poor soils contain 2 per cent. nitrogen, 1 per cent. phosphoric acid and 3 per cent. potash, or a total amount per acre of 5,000 pounds nitrogen, 2,500 pounds phosphoric acid and 7,500 pounds potash.

Considering that a crop of 200 bushels of potatoes per acre contains only 42 pounds nitrogen, 18 pounds phosphoric acid and 60 pounds potash, it is seen that such a crop takes, even from our poorer soils, a relatively small percentage of their actual fertilizer content. The reason why a proper application of manure or fertilizer, or both, to such soils stimulates production from 15 per cent to, in an extreme case 200 per cent, is owing to the availability of the fertilizing ingredients thus applied.

Unfortunately, we can not give this subject the detailed study it deserves here, but I would emphasize the need

of everyone intending to garden studying carefully the values of manures and fertilizers, the time to apply them and the amounts to apply, not only to suit his or her particular soil, but also the type of crop to be grown, since each type of crop has its own requirements.

Value of Barnyard Manure

The value of this cannot be overestimated. Barnyard manure is the most important source of soil fertility which we have. It contains, per ton, twelve pounds of nitrogen, four pounds of phosphoric acid and ten pounds of potash. These amounts vary more or less according to the source of supply and the care with which the manure has been handled and applied. Above all, it is the source of humus or decaying vegetable matter which is of even greater importance to the soil than are the fertilizing elements themselves supplied by the manure. Humus, in its turn, is a source of nitrogen and, in fact, is the regulating factor in the preservation of nitrogen and its liberation as nitrates in the soil. In gardening the physical effects of humus are most important to plant growth, and finally, its biological effects are controlling factors as to whether the soil is to be a "dead" one or "live" one, that is, a soil in which bacterial organisms are making available the fertilizing ingredients.

Commercial Fertilizers

Neither will time permit us here to enter upon a detailed discussion of commercial fertilizers. We can only again emphasize that this subject demands the most careful study. It may, however, be said here that as yet our knowledge of commercial fertilizers is only fragmentary, hence each gardener must study his or her own gardening conditions in the endeavor to ascertain what commercial fertilizer will best



Association Which Met in Toronto February 9-10, 1922.

It represented over 130 societies, with a combined membership of over 32,000. During the past year, 25 new societies

ment is anticipated during this coming year.

suit requirements. Again, the function or place of a commercial fertilizer is to act as a supplement to, rather than as a substitute for, barnyard manure. It should be applied in the minimum amount to obtain the maximum profit from the resulting crop. This does not necessarily mean the maximum crop as not infrequently a small increase in yields obtained by a heavier application of fertilizer is unprofitable.

Again, the source of the fertilizing elements contained in commercial fertilizer is important as indicating their availability and suitability. Many commercial fertilizers sold contain reasonable amounts of the three named fertilizer ingredients, but these ingredients become available to crops so slowly that they are of little value in stimulating growth at the time they are most needed.

The importance of using high-grade fertilizer rather than a low-grade one must also be borne in mind. Although the former may be more expensive per ton, the gardener will find that almost always in securing the high-grade product, he is buying his fertilizer units more cheaply.

If, after careful study, the gardener is sure that a ready-mixed fertilizer is satisfactory for his soil conditions and crops, the purchase of such is to be recommended. Otherwise it will pay him to buy the various ingredients and mix them according to his soil and crop requirements. In fact, unless one has had experience in applying the individual ingredients rather than compounded fertilizers, it is almost impossible for one to ascertain and understand the requirements of his soil.

Nitrogen is the most important, in fact, the controlling factor, in soil production. An adequate supply of nitrogen in the form of nitrates is imperative to the plant if it is to use to the best advantage the other fertilizing elements, namely, phosphoric acid and potash. Moreover, growth in the early part of the season for all garden crops, and especially for early crops depends upon the supply of immediately available nitrates in the soil. Nitrogen is best supplied by application of barnyard manure or in commercial fertilizer in the form of nitrate of soda. The factors regulating nitrification in the soil are bacteriological activity, warmth and moisture in proper proportions.

On this subject there is a large amount of information available to readers in the results published from years of work on the Dominion Experimental Farms. We have indicated the importance of a supply of nitrates in the soil and would, in this connection, emphasize equally the danger of losses

through leaching and loss of nitrates, unless the soil is properly worked and cropped.

HORTICULTURAL SOCIETIES

London

The membership for 1922 is now 700 and when this issue is out will be 800. Many of our membership committee in canvassing have secured every one on whole blocks. Why not get every one on every block? They all love flowers, and if they can't grow them themselves, they can join the horticultural society and help boost "horticulturalism" (that's my word) in London, and so make a more beautiful city.

We will get 4,000 members this year if every one works. Yes, 8,000 if that latter condition be fulfilled. Why not enlist all the doctors, lawyers, ministers and school teachers? I should have mentioned the latter first. A minister told us recently that school teachers are the greatest nation builders. By the way, I am one of them myself, and have no apologies to offer. More power to the school teachers, we want them all to be horticulturists; also the children, the working man and the working woman, working in God's good air, in His native soil and producing His flowers.

To the members of 1921 I want to say this. If your fees are not paid for this year, why are they not? No one is considered a member of the society unless the fees are paid for the current year. Will you kindly see to this matter NOW before you forget it.

Our premium committee have decided that the spring premium will be six Peace Gladioli (Groff) and six Flora. For quality this is the best we have yet given for spring. Peace is considered one of Groff's masterpieces. Flora is the best yellow I saw at the American Gladioli show at St. Thomas last August. Our members will get six of these, a flower better than the \$2.00 Golden Measure (my opinion, please). 1921 members whose dues are not paid had better do so at once, if they want to get this choice premium.

E. Wyatt, Secretary.

Dundas

A very interesting annual meeting of the society was recently held, leading features being the number of prominent citizens present and the general enthusiasm shown for co-operation in making the town thoroughly up to date. Secretary Kyle reported a membership of nearly 300 and a cash bal-

ance on hand. 250 loads of black soil were secured by the society and given to citizens during the year for gardens and boulevards. Flower seeds were distributed among the school children and the Victoria Nurse distributed 100 more in the homes she visited, with splendid results. For the first time the society received \$250 in donations. Plans for improving the old Union Cemetery have been completed and the work should soon be under way.

Among other suggestions made was that the Parks Board should approach the Dominion Department of Agriculture with a view to securing an experimental station plot in the Dundas Park. It was also suggested that beds of iris and perennials and a lily pond should also be placed in the park.

The officers of the 1st Battalion asked for the co-operation of the society in approaching the Militia Department to carry out plans for having a park made out of the Armory grounds.

Other suggestions were: the trimming of the town trees, planning of a swimming pool, a park at the top of the mountain, signs at the town entrances and the widening of the road on the Hamilton hill.

The Gladiolus

(Continued from page 50.)

planting. In fact, a Peace takes the whole season to bloom and the bulb to mature after blooming.

Some of the newer varieties that are fast becoming standards are: Kundcrdi-Glory, Evelyn Kirtland, Herada, Crimson Glow, and Pride of Goshen.

If planting different varieties of full-sized bulbs, for home purposes only, I would recommend putting in the ground any time from the tenth to the twentieth of May.

The primulinus is a type of gladioli obtained by crossing the gladioli proper on the fine and slender yellow primulinus species. The result is a smaller and more dainty flower of delicate shading, with a fine, straight and wiry stem, and blooms usually arranged alternately with a short space apart. Any person growing gladioli should try a few bulbs of the newer primulinus varieties.

The following is given as a general rule of guidance for planting potatoes in Canada for highest yields. Where the spring is early and autumn frosts early, plant early; where the spring is early and summers are dry, plant early; where the spring is late and autumn frosts late, early planting is not so important; where the spring is late and autumn frosts are early, plant as soon as soil is dry enough.—W. T. Macoun (Dominion Horticulturist).

QUESTION BOX

W. E. Groves

Asparagus Sprengeri and Plumosus.

Asparagus I am now growing from seed has a small bulb somewhat resembling an oxalis root, the fronds of which are not like another variety I have. I am enclosing a sample, and will be glad of the name of each variety.—N. H., Gordon Bay, Ont.

The sample enclosed is *Asparagus sprengeri*, a variety with a drooping habit much used for hanging pots and boxes. For verandah boxes or baskets it is one of the best plants to use, the graceful fronds often growing to eighteen inches in length during the season. The name of the other popular variety is *Asparagus plumosus*, this being the kind most used in a cut state for decoration with flowers. The habit of this kind is climbing, a well established plant sending up shoots many feet in length. Grown in pots this makes a really fine house plant and under these conditions does not grow to such a height. The two varieties are quite different in habit and appearance, *plumosus* being generally the most popular.

Starting Canna Seeds.

Is there any better method for starting canna seeds than boiling water? I treat



A Fine Display of Bloom.
A plot of improved asters grown by R. Johnston, Toronto, Ont. Mr. Johnston calls his asters "Johnston's New Victory."

the seeds three times by pouring boiling water over them.—C. L. T., Dutton, Ont.

Sulphuric acid could be tried, soaking for just a few minutes. Another method is to cut or file off a bit of one end of the seed, the object being to let in the moisture. A thorough soaking in water, however, usually softens the seeds sufficiently for fairly quick germination, if after sowing they are kept in a warm temperature.

Planting Violets.

Would separating violets and planting in a semi-sunny place with ordinary rich soil be the correct method to induce blooming? Would the bank at the side of a ditch be a good place to plant?—C. L. T., Dutton, Ont.

A cool spot should be selected and the shady side of a ditch ought to be ideal, especially if the soil is good. Separate or take off the runners after blooming and the plants will make good growth for flowering the following year.

Transplanting Date Palm.

How many years should date palm from seed be given in their first pot before transplanting? If left undisturbed the second summer will they grow character leaves?—C. L. T., Dutton, Ont.

Presuming that the seeds were raised in a bed, and the young plants potted in small pots, the leaves mentioned are usually formed before the plants demand repotting. It is not easy to lay down definite rules on this, but generally the need for repotting, and the showing of character leaves will occur at about the same time.

Gladioli Among Tulips.

Could gladioli be planted between tulips for summer bloom? The tulips are eight inches apart and the ground is unusually rich.—C. L. T., Dutton, Ont.

The gladioli should not materially damage the tulips if the latter are planted fairly deep. When gladioli corms are lifted, a dressing of well-decayed manure might be a help, lightly forked in if possible. The method will have no ill effect on the ripening of the tulips, though, of course, it is easy to see that this kind of planting could not be maintained indefinitely without a renewal of the soil.

Moving Crimson Rambler.

Could a three-year Crimson Rambler rose be moved in spring, and would it live after replanting?—C. L. T., Dutton, Ont.

With ordinary planting precautions such as saving all possible roots and avoiding the drying out of roots during the operation, there is no risk.

Paeony Seed.

How long from bloom does paeony seed take to ripen? Is it best to let the seed ripen on the plant or the stem placed in water in the sun?—C. L. T., Dutton, Ont.

So much depends on weather and district that it is not easy to give exact

data on this matter. The flower stem should be left on plant for best results, and there is usually no difficulty in securing well-matured seed before the fall. If seed is required for sowing at once care is needed at this season, and it is generally best to hold it over until January.

Paeonies.

Should paeonies planted along a west wall bloom as quickly after planting as those on south or east side of garden?—C. L. T., Dutton, Ont.

Given similar soil conditions both positions are equally good and results should be much the same.

'Mum Sevenoaks.

Is the chrysanthemum sevenoaks hardy if grown from seed and planted on the south-west side of the house? Is it as hardy as the common pink and yellow varieties so frequently used in hardy borders?—C. L. T., Dutton, Ont.

The chief value of Sevenoaks is its earliness and continuity of bloom. It should be hardy in a sheltered spot in the garden, and plants raised from seed would be just as likely to succeed as those raised from cuttings. Seed should be sown quite early to secure good strong plants for putting in the ground in May or early June.

Pollinating Iris.

Will seeds form in an iris border without artificial pollination?—C. L. T., Dutton, Ont.

Yes, in some instances, but it is best to do your own pollination to be on the safe side.

Market for Flower Seeds.

Is there a market in Canada for hardy flower seeds, such as canterbury bell, hollyhock, etc.?—C. L. T., Dutton, Ont.

Apply to any of the large seed merchants who will readily give this information.

Cactus and Begonia.

A white fungus is killing my cacti and begonia. A strong soapy solution does not seem to stop it.—M. E. C., Dunnville, Ont.

We are inclined to think that this is mealy bug. If so, the best remedy is to literally wash it off with soap and water, for which purpose a soft brush could be used. The plants may be cleaned after with clear water. Write again and send an infected leaf if this reply does not meet the case.

Primula Obconica Poisoning.

What is a good remedy for *Primula obconica* poisoning?—A. T., Toronto.

A mixture of equal parts of lime water and lemon juice, and applied externally, is said to be good.

Ontario Horticulturists Meet In Convention

(Continued from page 49.)

was to hold a Dominion show, centred each year in a different province. Wm. Hartry, Seaforth, expressed the opinion that it would be difficult to gather material from the far east and the far west for a Dominion show, as flowers would not carry well for long distances. As an instance, he said that large quantities of flowers arrived in bad shape at the C.N.E. last year from Fort William and other distant points, though packed by experts. Percy Mitchell stated that roses properly packed can be sent successfully by mail for over a week's journey. He favored a Dominion show each year in a different province. Dr. F. E. Bennett, St. Thomas, said that flowers could be shipped almost any distance, but, for certainty of arrival in best shape for exhibiting, the exhibitor should travel with the flowers and personally care for them on the journey.

A report of a delegation to the American Civic Association was given by C. A. Hesson, St. Catharines. A report of representatives to the Royal Agriculture Winter Fair Association was presented by W. J. Evans, Toronto. This report stated that plans were now being made for a big show in the arena next November.

Diseased Bulbs.

For the committee on diseased bulbs, Mr. Hartry reported that about a year ago the matter of diseased bulbs came to the attention of the association, investigation followed and an exaggerated report on same appeared in the newspapers. Out of 23 correspondents on gladiolus bulbs, 18 reported that they had had no disease. Various persons and firms reported also no trouble with Holland bulbs. Five correspondents reported disease. The speaker had himself found only three or four bulbs actually diseased out of some 2,000. These few were submitted to Prof. J. E. Howitt, O.A.C., for examination.

A discussion on diseased bulbs that followed the report brought out that lately many bulbs from Holland had been diseased, that home grown stock was preferable and that the growing and testing of bulbs should be more extensively tested in Canada. W. T. Macoun, Dominion Horticulturist, said that the Central Experiment Farm was prepared to test bulbs at any time. The willingness of the O.A.C., Guelph, to do work of that nature also was expressed. Mr. Hartry stated that bulbs, sometimes condemned, have proven to produce good bloom. That the Investigation Committee be made a standing committee was moved and carried.

The report of the Finance Committee, presented by J. E. Carter, Guelph, declared that a larger portion of the federal grant to Ontario for agricultural instruction should be apportioned to horticultural education. While the apportioning of the grant to various purposes was a provincial matter, Mr. Carter hoped that, through the personal influence of Dr. J. H. Grisdale, who had charge of the administration of the grant at Ottawa, horticulture would receive better treatment in future. George Simpson, Ottawa, pointed out that the local societies could not be expected to furnish any assistance for furthering the educational work of the central association, as they already had too much on their hands. A further grant must be secured from the Government. President Yates suggested the possibility of raising money by other means, such as the sale of O.H.A. badges to the members of societies, life memberships, private donations, en-

couraging the leaving of legacies to the association, etc.

Report on Names and Varieties.

The growing need for having a committee or committees with some Canadian organization behind it for them to pass on new varieties of horticultural plants of Canadian origin, was emphasized in the report of the committee on names and varieties, presented by W. T. Macoun. The need had been felt the past year more than ever. It was hoped that something would be done at this meeting to strengthen the action of the Canadian Florists' and Gardeners' Association, which had already made arrangements for the registration of Canadian novelties. Amateurs as well as professionals or commercial growers should be on any committee functioning in that way. The report also impressed on the members the great importance of keeping the standard of awards at exhibitions very high, in order to gain and maintain the confidence of the public in the value of awards. The report included lists and descriptions of new and little known varieties of iris, by Miss M. E. Blacklock, Meadowvale, and by W. E. Saunders, London; of gladioli, by Prof. H. L. Hutt, Georgetown; of roses, by Miss I. Preston; and of paeonies, compiled by the American Paeony Society. All these lists will be published in The Canadian Horticulturist.

A provincial library of lantern slides was advocated by Dr. J. M. Baldwin, Toronto. Such slides might be grouped according to nature of subject, each group accompanied by adequate descriptive matter. Such features, available for use among local societies, would help to increase membership. Miss Jennie Dixon, Hamilton, pointed out that slides provided entertainment, as well as instruction, and would help to make interesting meetings for which speakers were not available. F. C. Nunnick, C.E.F., Ottawa, announced that a series of slides on home beautification now were available from the division of extension and publicity of the Central Experimental Farm. The slides were accompanied by explanatory manuscripts. They were available to any society, free of cost, excepting express charges one way.

Important Resolutions.

A resolution was adopted authorizing the executive to arrange for a deputation to

wait upon Premier Drury and the members of the Cabinet to urge the necessity of an increased legislative grant of \$10,000 to horticultural societies. Another resolution petitioned the Government to retain out of grants to the local societies a small percentage, proportioned according to amount of grant, for the use and purposes of the provincial association. This resolution appears in full on this page.

Billboards came in for strong condemnation in a resolution tendering congratulations to the provincial highways department on its issuing of regulations recently "pertaining to this nuisance, and thus paving the way for a cleaner and brighter province." The association put itself on record by resolution, as it did two years ago, as favoring the founding of a Canadian Council of Horticulture. A resolution was adopted also favoring the passing of a Dominion Registration and Standards Act and the holding of a Dominion Horticultural Exhibition. Another resolution called for a committee to consider the advisability of selecting some typical flower as an emblem for the Province of Ontario. Another supported the idea of holding a special Iris show. A resolution was adopted providing for the establishment by the association of a provincial library of lantern slides, with appropriate literature, to be available for the use of the branch societies.

By silent standing votes, resolutions of sympathy were passed to the families of the late W. B. Burgoyne, St. Catharines, and of the late John Glassford, Chatham, two leaders in horticulture who passed away during the year. The President's address, the Superintendent's report, and various speakers' discourses throughout the convention voiced the general feeling of regret over the loss that the association and the province had sustained through the passing of these gentlemen.

Illustrated Lectures—Activities In St. Thomas—City and Railway Adornment.

In an interesting illustrated talk on "Floral Adornment of a City and of a Railway Right-of-Way by a Horticultural Society," Dr. F. E. Bennett, of St. Thomas, said that there were many plans under way for the co-operation of the railway and the horticultural society for the general beautification of all railway areas in and around that city. The Michigan Central had given

Ontario Horticultural Association's New Plan for Raising Funds

RESOLVED that the Minister of Agriculture of Ontario be and is hereby petitioned to retain out of the annual legislative grants to various horticultural societies, the following amounts, in accordance with the following schedule, that is to say, from societies entitled to receive a grant of over:

\$100 and less than \$200	3%	of said grant
200 " " "	300	5% " " "
300 " " "	400	7% " " "
400 " " "	500	8% " " "
500 and over	10%	" " "

and that from societies receiving less than \$100, a stated sum of \$3.00 shall be retained and paid to the Ontario Horticultural Association for the use and purposes of this association in lieu of all affiliation fees.

Memo. Based on Grants of 1921.

28 Societies received \$100 and less than \$200	@ 3%	\$120.00
5 " " " 200 " " "	5%	65.00
6 " " " 300 " " "	7%	134.61
2 " " " 400 " " "	8%	69.76
9 " " " over 500	10%	612.21
Total		\$1,001.58

Revenue O.H.A., 1920—\$292.00
1,000.00
\$1,292.00

This resolution shall not be effective until the consent of the majority of the Ontario horticultural societies has been obtained and that the secretary be instructed to forward a copy of this resolution to each secretary in the province, with a request that a special meeting of the society be called and the resolution acted upon at once.

Dominion Registration Act and Dominion Exhibition

THAT the representatives of the Horticultural Societies of the Province, in the 16th Convention of the Ontario Horticultural Association, recognizing the valuable work that has been done in plant registration by the florists and gardeners in Canada, a synopsis of which is outlined in bulletin No. 1, copy herewith attached, and viewing with uncommon interest at this particular time the inviting and expansive branches of service in Pomology, Olericulture, Floriculture and Landscape Horticulture, are agreed that the period has been reached in Canadian record when the interests of these four departments of intensive soil activity would be promoted by

- First—The passage of a Dominion Registration and Standard Act; and
Second—The holding of a Dominion Horticultural Exhibition.

In view of these two requirements for the furtherance of scientific and practical soil culture, they do now

Firstly—Name and appoint H. J. Moore, Prof. W. T. Macoun, Prof. Hutt, Miss Blacklock to act as representatives of this Association, and that they, in conjunction with representatives to be appointed by kindred other organizations working on kindred lines, be charged to prepare and submit to the Department of Agriculture at Ottawa facts and figures bearing upon the important service to Canada of intensive soil production, with the request that an Act be passed covering the horticultural requirements as to-day; and

Secondly—Name and appoint another committee as follows: J. E. Carter, Dr. A. H. Scott, T. D. Dockray, who shall act with representatives and kindred organizations or associations, whose duty it will be to prepare and submit for the approval of those immediately concerned, a workable plan for the carrying out of a Dominion Exhibition, at which interested persons on each or all of the aforesaid branches of Horticulture throughout the Dominion may have opportunity to set forth in friendly competition the results of the skill and wealth of intensive soil production in Canada.

a park and an annual grant of \$500 to the society. Beautifully colored slides were shown of horticultural ornamentation, including profuse growths of roses, peonies, hyacinths, etc. An interesting treatment of the blind end of a street was shown, with flower beds and a semi-circular curb of cement.

The advantage of improving foundry or similar surroundings (where grass could not successfully be grown) by putting in shrubs and beds of hardy flowers, and keeping the balance of the area covered with cinders, free from all grass and weeds, was pointed out, and a good example of this sort shown on the screen. Several illustrations of gardens in workmen's homes were shown, many of which were extremely attractive. It was noted that special efforts had been made to create attractive spots where the children could play—little shelters, etc. Several slides dealt with the American Gladiolus Society Show, held in Alma College grounds. During one horticultural show in St. Thomas, an organ recital was held, a feature which might well be adopted wherever possible in connection with such exhibitions.

Pictures of the large trial grounds in use by the St. Thomas horticulturists were shown, bearing thousands of gladioli. The use of the Skinner irrigation system was illustrated.

A valuable suggestion was made when the speaker described the depositing of leaves in one general pit or dump for the use of the people as fertilizer. It is against the law of that city to burn dead leaves, and they are here put to the full use for which nature intended them.

Municipal birdhouses are a feature in St. Thomas. It is believed that many harmful insects are destroyed every year through this means, and the beauty spots of the city are improved by the presence of the birds. Private birdhouses are also encouraged in the city.

Following Dr. Bennett's address, B. M. Winegar, landscape gardener, C.P.R., Montreal, said that that railway was beautifying its station grounds, etc., and found such ornamentation to be very attractive to travellers and of good moral effect on the families of employees at stations, section houses, etc. Many section foremen were members of horticultural societies and were making their home surroundings attractive. S. G. Skinner, landscape gardener, G.T.R. Ontario lines, stated that the horticulturists and the railways must work to-

gether for the beautification of this country. The societies sometimes provided valuable material and advised the railways respecting the improvement of their properties.

Other Illustrated Lectures.

A number of other interesting and instructive illustrated lectures were given. Lack of space forbids detailed reports at this time. A symposium on the iris comprised "Culture," by W. T. Macoun; "Garden Use," by Rev. T. W. Tebbs; "Names and Varieties," by Dr. F. G. Brethour, Toronto; and discussions by Miss M. E. Blacklock, Meadowvale, and others. "Kingsville Gardens" were described by J. E. Brown, Kingsville. "Continuity in Garden Bloom" was discussed by George Baldwin, Toronto. "Beautification of Provincial Highways" was dealt with by H. J. Moore, Islington.

Co-operation between horticultural societies and other organizations in community work was urged by F. C. Nunnick, Ottawa. The societies, he continued, had the right to expect such co-operation of all local organizations capable of assistance, such as city and town councils, Rotary Clubs, and so forth. "Improved Home Surroundings," an address by A. H. Tomlinson, O.A.C., Guelph, will be published separately in full.

Relationship Between Amateur and Professional.

By means of a carefully prepared paper, W. E. Groves, Hamilton, President of the Canadian Florists' and Gardeners' Association, answered the questions: "What Relationship Should Exist Between the Amateur and the Professional Gardener?" The speaker stated that the horticultural societies were the greatest force in the province for the improvement of horticulture in itself and in its relation to the home and to the community. The address will be published in full, or in part, in a subsequent issue. Of special significance were Mr. Groves' references to horticultural needs at the Ontario Agricultural College. Speaking of the need for a place where would-be gardeners might be taught at least the elementary rules of the profession, he said:

"We look sometimes to the O.A.C., and what have we? A principal apparently quite out of sympathy with our branch of horticulture. I am unable to suggest a reason. Probably it is through ignorance as to the necessities for this branch of his work, probably because his interests are in other directions, but we feel that in

either case the head of a great institution like that at Guelph should be big enough and the great Department of Agriculture should be big enough to see that this work of developing the love for beauty is positively bound up in our progress as a nation, and they have no right to pass it up. It is true that at Guelph we have a Horticultural Department head who is giving the very best of his life to this work for the benefit of his Province. His well known ability, his teaching capacity, his splendid sympathy, stamps Professor Crow as the Ontario Horticulturists' friend, and it will be difficult to ever repay him for the struggle he has made and is making to demonstrate the possibility of Guelph were he given a chance. Yet, because of the utter lack of interest shown in horticultural education by the powers that be the equipment of the college is just a monumental disgrace."

Banquet at King Edward Hotel.

That the Horticultural Department of the O.A.C. was the poorest equipped of all departments there, and needed funds for putting it in a position efficiently to further the interests of horticulture throughout the province, was contended also by Harry Ryrie, Oakville, in a short speech following a delightful banquet held by the delegates, with friends, at the King Edward. The Provincial Government was neglecting its duty to horticulture by not better financing the department at Guelph, Mr. Ryrie averred.

At the banquet, Prof. Thomson, of the University of Toronto, spoke on the oceanic garden project. Until times improved, it was holding fast and waiting for financial developments. The speaker advocated a definite organization, with an organizing secretary, to pull all horticultural interests together. J. Lockie Wilson, who followed with an excellent speech, thought that the University of Toronto itself might set an example in spreading the desire for and the gospel of horticulture by doing a little more horticultural work on its own grounds. W. W. Gammage, London, representing the Canadian Florists' and Gardeners' Association, referred to the need in Canada for a school for education in gardening. Young folks at present could not learn the fundamentals of the profession through lack of opportunity.

Brief addresses were given also by W. A. McLean, Deputy Minister of Highways; R. W. Wade, live stock branch; W. J. Connelly, Cobden; Prof. Mavor, University of Toronto; and W. B. Roadhouse, Deputy Minister of Agriculture. Mr. Roadhouse advocated the adoption of a floral emblem for Ontario. President Mary Yates, as toastmaster, was a combination of grace and tact personified.

After the banquet, "Some Hardy Flowering Trees of the North Temperate Zone" was the subject of an illustrated address by John Dunbar, Rochester, N.Y. Among the trees shown on the screen and described by the speaker were: Juneberry, or shade tree; American hawthorns in great variety, various crabapples, bell-tree, dogwoods in various species, native plums, white fringe, cherries of many kinds, Chinese evodia, golden chain viburnum, horse-chestnuts, lilac and magnolia speciosa.

An illustrated talk on "Birds, Friends and Enemies of the Garden," by W. E. Saunders, London, concluded an evening of much enjoyment and instruction. Mr. Saunders' address was one of the most interesting of the convention. Lack of space prevents reporting it in detail. On the following afternoon a visit to the beautiful greenhouses of Sir Edmund Osler concluded a convention that was replete with good things from beginning to end.

DOMINION FRUIT CONFERENCE

THE founding of a Canadian Horticultural Council, the adoption of new grade names for apples in boxes, and the raising of grade standards, the changing of sizes for berry boxes, recommendations for the improvement of transportation methods and facilities and in the manufacturing of jams and jellies, and a score of other important recommendations and decisions, characterized the big Dominion Fruit Conference at Ottawa, Feb. 22 to 24. From beginning to end, it was a business conference. The results in many particulars are expected to revolutionize the fruit industry of Canada. While the doings were not decisive in changing existing practices and legislation, they being merely suggestive or advisory at the time, the recommendations respecting transportation methods, for instance, are expected to bring about important changes for the better, and the recommendations respecting grading, packing, packages and other legislative concerns, are practically certain of becoming law.

Action featured every problem discussed. No time was wasted. That so much was accomplished in such short time was due partly to the apparent advance preparation on the part of the delegates, who, furthermore, were sympathetic of each other's viewpoints, and in large measure to the masterly fashion in which the sessions were handled by the chairman, Fruit Commissioner C. W. Baxter.

At the opening session, Mr. Baxter emphasized the innovation of including this time representatives of the allied interests, as well as of the fruit growers, instead of the latter alone, as formerly. This was the sixth conference of the kind, others having been held in 1896, 1906, 1912, 1914 and 1918. While past conferences had been responsible for much important legislation respecting fruit marketing, the chairman looked for even greater advances from this gathering. Dr. J. H. Grisdale, Deputy Minister of Agriculture, in an address of welcome, lauded the spirit of co-operation that prevailed now, as never before, among the fruit provinces, associations and the growers themselves, and between the Fruit Branch and all those fruit factors.

Address by Hon. Mr. Motherwell.

At a banquet tendered by the Department of Agriculture to delegates and others in attendance, Hon. W. R. Motherwell, Minister of Agriculture, stressed the importance of organization. No feature in society was more helpful to a government. The fruit and other horticultural interests should be centralized nationally along lines similar to those of the National Dairy Council. Standardization of packages was another matter that required particular attention.

Speaking on cold storage, Mr. Motherwell referred to the Cold Storage Act, sponsored by the late Hon. Sydney Fisher, which provided for a bonus of 30 per cent. to companies and associations that desired such assistance for the erection of such plants, and to its being amended by the Borden government to being applicable only to municipalities. For economy, the present government might have to follow its predecessors. He hoped to live long enough to see a reversion to the old Act. With proper control, cold storage was one of the greatest blessings of the age.

Throughout the three days, the topics dealt with in discussion and resolution concerned chiefly fruit by-products, fruit statistic, grade names and grade definitions for apples and other fruits, the standardization of packages for berries, transportation, cold storage, fumigation, and the formation of a Canadian Horticultural Council. Lack of space prevents reporting the discussions in detail. The important groups of resolutions and decisions are given under separate headings on this and the following pages. Miscellaneous resolutions and other matters were as follows:

"Fruit Statistics" was dealt with by Ernest H. Godfrey, of the Dominion Bureau of Statistics. The work and the plans of the bureau were outlined.

"Fumigation of Nursery Stock" was discussed by Mr. MacLaine, of the Entomological Branch, and others. Some of the delegates contended that fumigation injured the vitality of trees. No action was taken.

Miscellaneous Resolutions.

A tariff resolution requested of the Federal Government that, in the event of any material change in the customs regulations pertaining to the entrance into Canada of foreign fruits and vegetables, no change be made in the regulations until the various producing interests have had an

opportunity of presenting their views to the Government in connection therewith.

The Dominion Government was urged to restore the aid previously granted toward the erection of cold storage plants under the Cold Storage Act, of 1907, which was rescinded by Order-in-Council in May, 1919, except as it applied to municipal cold storage. A bureau of markets, under the Department of Agriculture, also was requested.

Complimentary resolutions were extended to Hon. W. R. Motherwell, Minister of Agriculture, for making the conference possible, and to C. W. Baxter, Fruit Commissioner, for the able and impartial manner in which he conducted the proceedings.

Resolutions Rejected.

Quebec representatives requested the inclusion of windfall apples among the grades that may be marketed in closed packages. At present there are three grades, number ones, twos and threes, all of which must consist of sound fruit. Sod culture is universal in Quebec, and good prices could be secured if the practice was permitted. The resolution was lost.

British Columbia asked for a grade definition for apples in crates, and that that Province be permitted to continue the use of the two-fifths hallow for berries. Lost. A resolution to provide for inspection of apples at points of shipment and that such inspection be accepted as final, was lost.

Proposals to standardize packages for melons were not adopted. It was thought wiser to experiment with crates for another season before making definite recommendations.

Transportation Recommendations

A COMMITTEE appointed by the Conference to report on transportation matters pointed out, through its chairman, W. H. Bunting, St. Catharines, that the carload fruit movement within Canada runs into several thousand cars, and represents a very large revenue-producing traffic for the railway and express companies. To improve transportation conditions, a number of important changes were necessary, as follows: The number of unloading points should be increased for carload express shipments; additional destinations and routings should be arranged; there should be no difference in the charges for ice supplied, whether for express or freight shipments, and no difference in switching and demurrage charge, as between express and freight cars, the special fruit tariffs should cover all varieties of fruits, both carload and less carload; all types of cars in the fruit service should be made suitable for the traffic, and a sufficient supply provided to render the use of unsuitable cars unnecessary. Storage-in-transit privileges for certain movements were suggested. These recommendations were adopted.

Resolutions Adopted.

A number of important resolutions that this committee presented were adopted unanimously. Space permits their publication only in brief.

The Conference went on record as opposed to any increase in the classification of fruits and vegetables by the railway companies, but looked for a readjustment and reduction. A substantial reduction in freight rates for fruits and vegetables was asked in a resolution that pointed out that the present high rates were working a serious hardship to these industries.

Whereas, there is a growing necessity for wider distribution of Canadian fruits, it was resolved also that the carrying

companies be requested to establish express carload commodity rates from producing centres to distributing points in local territory, also from British Columbia and Ontario points to the various large United States cities and intermediate points; further, that the unloading in transit privilege apply the same as on cars moving from American territory to Canada.

Types of Cars—Minimum Weight.

Another resolution asked that the Fruit Branch continue and extend its experimental work in connection with best types of cars for carrying fruit, and the best methods of loading. A reduction was recommended in minimum weights, from 20,000 pounds to 17,000 pounds, for large express refrigerators, and 15,000 pounds for smaller cars on both domestic and export traffic. The railway companies will be asked to extend the carriers' protective service to and from all points in Canada at a reasonable charge, which charge shall be calculated on the cost of the insurance service. That ventilated and refrigerator cars only are the proper equipment for the safe movement of fruit, was contended in a resolution recommending that the Dominion Atlantic Railway be asked to discontinue its additional charge for refrigerator cars, and thereby place all shippers on an equal basis.

The Conference will ask the express companies to restore the privilege, enjoyed for 20 years by the fruit shippers of the Niagara district, until last year, of a carload express rate loaded by one shipper for distribution to various points in distant markets, and to extend the privilege to all parts of the Dominion, or, failing that, to issue a special rate for such shipments substantially lower than the rate for less than carload shipments.

Canadian Horticultural Council

BY the adoption of a provisional constitution and the appointment of provisional representatives of some of the interests concerned, a Canadian Council of Horticulture was founded by the Dominion Fruit Conference. Early in the proceedings of the Conference, J. Howe Cox, Cambridge, N.S., moved, and Sam S. Savage, Calgary, Alta., seconded, the adoption of the proposal to form a Council. This was carried unanimously. After some discussion, the objects of the Council, as outlined in a tentative constitution submitted by the fruit branch, also were carried on motion of Senator E. D. Smith, Winona, Ont., seconded by Thomas Abriel, Nakusp, B.C.

The next day, after further consideration, it was decided, on motion, that the chairman appoint a committee to consider especially the matters of finance and membership, and to report later. Such committee was named as follows: T. J. Mahony, Grimsby, Ont. (convener); J. Howe Cox, Cambridge, N.S.; N. E. Jack, Chateaugay Basin, Que.; W. B. Gilman, Fredericton, N.B.; Thos. Abriel, Nakusp, B.C.; F. W. Bishop, Paradise, N.S.; A. Brenchley, Vancouver, B.C.; W. A. Fraser, Trenton, Ont.; Jas. Wagstaffe, Hamilton, Ont., and E. B. Luke, Montreal, Que.

Membership.

At the concluding session, the report of this committee was presented to the Conference by Mr. Mahony. In brief, the resolution recommended that the membership in this Council include two representatives of the producers from British Columbia and the prairie provinces (one to represent the small fruit growers and one to represent the tree fruit growers); two representatives of the fruit growers of Ontario (one to represent the small fruit and tender fruit growers and the other to represent

the apple growers); one representative of the fruit growers of Quebec; two representatives of the fruit growers of the Maritime Provinces; one representative of the vegetable growers; one representative of the Canadian Florists' and Gardeners' Association; one representative of the canners and jam manufacturers; one representative of the nurserymen, one representative of the package manufacturers; one representative of the wholesale vegetable and garden seed merchants; and two representatives of the wholesale fruit dealers (one to represent British Columbia, and the prairie provinces, and one to represent Ontario, and the other eastern provinces).

Financing.

It was suggested that the Council be financed by (a) a membership fee of \$100 per member in the Council from each association or allied industry appointing a member; (b), a contribution of 50 cents yearly from each producer (fruit grower or vegetable gardener); (c), an annual contribution as follows from each allied industry (to be made jointly by the several businesses concerned and to be collected as those within each allied industry may deem best):—Nurserymen, \$200; package manufacturers, \$500; seed merchants, \$200; canners and jam manufacturers, \$500; florists, \$500; and wholesale fruit dealers, \$1,000, and that in the meantime the Dominion Government be asked to provide a grant of \$5,000 for organization purposes. The provisional directors were authorized to make such alterations in these suggestions as may be deemed essential to the success of the organization.

Provisional Members.

Immediately following the adoption of the report, the delegates to the Conference got

together by provinces, or interests, and nominated the following provisional members of the Council: For producers of fruits—British Columbia and Prairie Provinces, W. J. Manson, Mission, B.C., and C. E. Barnes, Vernon, B.C.; Ontario, Lt.-Col. H. L. Roberts, Grimsby, and Jas. E. Johnson, Simcoe; Quebec, Peter Reid, Chateaugay Basin; Maritime Provinces, F. W. Bishop, Paradise, N.S., and A. G. Turney, Fredericton, N.B. Wholesale dealers—British Columbia and Prairie Provinces, R. R. Scott, Winnipeg; Ontario and eastern provinces, Karl B. Conger, Ottawa. Package manufacturers, W. A. Fraser, Trenton, Ont. Nurserymen, E. B. Luke, Montreal. Jam manufacturers and canners, Jas. Wagstaffe, Hamilton. Representatives of the seed, florist and vegetable industries were left to those interests to select. The provisional members present appointed F. L. Burrows, of the Fruit Branch, Ottawa, provisional secretary.

On Feb. 25, the day following the Conference and the formation of the Council, the following members waited upon Hon. W. R. Motherwell, Minister of Agriculture, and requested that a grant of \$5,000 be made to the Council for organization purposes: C. E. Barnes (spokesman), W. J. Manson, W. F. W. Fisher (representing Col. Roberts), Jas. E. Johnson, F. W. Bishop, G. P. Raymond (representing A. G. Turney), S. S. Savage (representing R. R. Scott), and Karl B. Conger. The Minister expressed his sympathy with the movement, and the delegation left, feeling confident that the organization grant would be forthcoming.

Following the meeting with the Minister, these provisional members decided that no further action could be taken in promoting the affairs of the Council, including the selection of an executive, until all the interests included in the Council had appointed their representatives. The provisional secretary was instructed to arrange for the completion of membership at as early a date as possible.

Delegates in Attendance at Dominion Conference

OVER 150 growers and others interested in the fruit industry of Canada attended the various sessions of the Conference. The official delegates were as follows:

Representing the fruit growers—Rev. G. P. Raymond, Berwick, N.S.; F. H. Johnston, Greenwich, N.S.; J. Howe Cox, Cambridge, N.S.; W. C. Spurr, Melvern Square, N.S.; A. E. Dewar, Charlottetown, P.E.I.; W. B. Gilman, Fredericton, N.B.; N. E. Jack, Chateaugay Basin, Que.; C. H. Petch, Hemmingford, Que.; Jas. E. Johnson, Simcoe, Ont.; Wesley Montgomery, Brighton, Ont.; W. F. W. Fisher, Burlington, Ont.; W. L. Hamilton, Collingwood, Ont.; A. A. Craise, St. Catharines, Ont.; C. E. Barnes, Vernon, B.C.; Thos. Abriel, Nakusp, B.C.; W. J. Manson, Mission, B.C.; and J. T. Mutrie, Vernon, B.C.

Growers' shipping organizations—F. W. Bishop, Paradise, N.S.; T. J. Mahony, Grimsby, Ont.; and C. L. Lowe, Vernon, B.C.

Wholesale dealers—E. A. Goodwin, St. John, N.B.; J. R. Clogg, Montreal; Karl B. Conger, Ottawa; Sam S. Savage, Calgary, Alta.; A. M. McCallum, Winnipeg, Man.; and A. Brenchley, Vancouver, B.C.

Barrel manufacturers—W. A. Fraser, Trenton, Ont.

Box manufacturers—J. M. McDonald, New Westminster, B.C.

Basket manufacturers—J. M. Wallace, Oakville, Ont.

Jam manufacturers—James Wagstaffe, Hamilton, Ont.

Nurserymen—E. B. Luke, Montreal.

Retailers—E. M. Trowern, Ottawa.

Grading, Packing and Packages

THE decisions and recommendations of the Conference that were of greatest interest and importance to fruit growers in general, concerned grading, packing and package matters. The changes recommended in berry boxes, in grape baskets, in grade names for boxed apples, and various others, were discussed from all angles and from all viewpoints, according to the interests and the provinces concerned. A full report of these discussions would make interesting reading, and would more than fill this entire issue. Only the resolutions can be reported this time.

Grade Names for Boxes.

In future, Canadian apples packed in boxes will be graded to a higher standard than those standardized in the Western States. The Conference resolved unanimously to recommend the grade names, Extra Fancy, Fancy, and C., in place of the Canadian grade names of number one, two and three, and to adopt grade definitions superior to those recommended by Western United States fruit growers and shippers at a recent conference in Spokane, Washington, for 1922. Fancy apples produced in Canada must be fancy in fact as well as in name, was the contention of the committee that submitted the resolution, and all delegates supported the contention.

It was recommended also that the three "combination" grades, as defined in the Washington State grading rules, be made

standard grades for Canadian boxed apples, but that there be no grade for orchard run.

A recommendation will be made to the Government to forbid in future the use of such terms as "orchard run" or "straight pack," in addition to the grade mark, No. 3, for apples packed in closed packages.

Grades for tender fruits in open packages were recommended and made permissible, but not to be legalized at present.

By unanimous resolution, the Conference also decided to recommend to the Government the legalization of the half barrel for use in Canada. Heretofore, this package has been legally used for apples in the export trade only, and for this purpose has been employed quite extensively in Nova Scotia. The package is not especially popular in Great Britain, but its standardization as to size and specification was thought desirable.

Another resolution advised that any action taken respecting apples apply also to pears and crab-apples.

Grape and Cherry Packages.

A resolution was adopted, sponsored by Senator E. D. Smith, Winona, and seconded by T. J. Mahony, Grimsby, recommending that the three-quart basket for grapes be changed to one of the same size as the "pony" basket, used in the United States. Another, moved by G. A. Weistead, St. Catharines, and seconded by A. M. McCallum, Winnipeg, recommended that the Fruit

Branch be given power to issue permits to growers to use the so-called 12-quart basket for bulk shipments of grapes in Canada.

A resolution was carried, moved by C. L. Lowe, Vernon, B.C., and seconded by Thos. Abriel, Nakusp, B.C., asking that the depth of plum and prune boxes be changed from 3½ inches to 3¼ inches, and of the cherry box, or lug, from 5½ inches to 3½ inches.

Berry Boxes to Be Changed.

"That this Conference recommend the adoption for use in Canada of the United States standard pint, and the United States standard quart berry and currant boxes, and that this regulation shall come into effect this current season, excepting that the boxes now in use be recognized as lawful packages in order to permit stocks on hand to be utilized until Oct. 1, 1923."

Fruit By-products

KEEN discussion took place at the Conference on jams and canned goods, on fruit, juices and other by-products. The following resolutions were adopted:

For Pure Jams and Jellies.

"Whereas, the Act defining the standards for pure jams and jellies seems to have fallen into abeyance, whether from the inability of the department having charge of the enforcing of it, to carry it out without grievous injury to the home manufacturer, or whether, because owing to the closing of the Department of Inland Revenue this Act has fallen by the wayside, or from whatever cause we do not know, and

"Whereas, in the interest of three important classes, viz., the consumers of jams, jellies, etc., the producers of fruits used in the making of these articles, and those manufacturers of the same, who desire to set a high standard of purity for their products, the present standards for pure jams, jellies, etc., or other improved standards, shall be strictly adhered to,

"Be it resolved, that we urge upon the Dominion Government that the fixing of standards for jams, jellies, etc., and the making and carrying out of regulations enforcing adherence to the same, both by the home manufacturer and by the manufacturers of these articles imported into Canada, be placed in the charge of the same branch of the Department of Agriculture that has charge of the regulations fixing standards for canned fruits and vegetables, and that every effort shall be made to compel the strict observance of regulations made by that branch, with a view to creating and maintaining a high standard of purity for these important adjuncts to the fruit growing interests."

To Improve Marketing.

"Whereas, the canning and jam industries of Canada are of very great value to the fruit-growing industry, this Dominion Conference of fruit growers would respectfully urge upon the Minister of Agriculture the desirability of taking every opportunity to assist those industries in placing their products on the markets in the most advantageous and attractive manner to merit the confidence of the buying public, as this would be of direct benefit to the fruit and vegetable-growing industries."

No Faking of Fruit Beverages.

"Resolved, that regulations be adopted to prohibit the use of chemicals in the preparation of beverages, such as cider, fruit juices, wines, etc., such practice being detrimental to the best interests of fruit growers generally."

MARITIME PROVINCES

N.B.F.G.A. Convention

ABOUT 50 enthusiastic fruit growers were present at the annual meeting of the New Brunswick Fruit Growers' Association, Fredericton, Feb. 15. President W. B. Gilman occupied the chair. In his presidential address, Mr. Gilman pointed to the achievements of the association's entries at the Imperial Fruit Show in London last fall as answering effectively the question as to how New Brunswick apples compared with those from other parts of the Dominion. The awards showed that N.B. could grow certain varieties of apples as fine in appearance and in flavor as could be grown anywhere. That showing indicated, the president thought, the need for an immigration policy for this province that would insure the coming of many new settlers who would appreciate the splendid resources of New Brunswick at their full value.

"The co-operative shipping of apples to Montreal the last few years," the president continued, "has been a great benefit, and shows us the advantage of growing fewer varieties. Montreal dealers have reported our pack equal to any and superior to most packs on the market. For this we must thank the N.B. Department of Agriculture for supplying us with a most efficient and painstaking horticulturist—A. G. Turney—who, with his assistants, has done splendid work in bringing up the standard of the New Brunswick pack."

Resolutions were adopted unanimously thanking A. G. Turney for his efficient services as secretary-treasurer of the association, endorsing the action of the executive in recommending that the growing of only a limited number of varieties of apples be encouraged, recommending the advisability of increasing the selling charges on supplies, so that the financial affairs of the association might be increased, and urging the incoming executive to make ample arrangement with various exhibitions to give proper and ample space for the display of fruit exhibits, together with sufficient oversight to prevent the loss or damaging of fruit.

Officers were elected as follows: Pres., W. B. Gilman, Fredericton; vice-pres., W. W. Hubbard, Fredericton; sec.-treas., A. G. Turney, Fredericton; directors, A. C. Parker, Woodstock; A. G. Dunphy, Douglas, and H. G. Smith, Long Reach.

A very successful apple packing school was conducted preceding and following the convention. The instruction was in charge of P. J. Carey, Dominion Fruit Demonstrator, Ottawa, assisted by A. G. Turney, Inspector G. H. Vroom, Inspector Potts, George Danby, A. C. Parker and W. P. Fox. A pleasing feature of the school was the presence of boys and young men, as well as older men, all keenly interested in the proceedings and full of faith in the future of fruit growing in New Brunswick.

Orchard Cultivation

W. S. Blair, Kentville, N.S.

IN general there are but two methods; the cultivation and the sod mulch. The former is under average condition for a period of years likely to prove the better. The latter if followed consistently may give good returns.

The cultivation method consists of early spring cultivation with frequent cultivations

at intervals of two weeks to July 1st, after which no cultivation is given. At this time a cover crop may be sown, of which the common vetch is best at the rate of one bushel per acre.

The sod mulch demands cutting of the grass when not more than six inches high to get best results, and this will be necessary twice or better three times during the season. On hilly situations where cultivation is difficult and washing is likely to result this method should be followed.

Freights on Fertilizers

THE appeal for lower freight rates on fertilizers which was made at a recent sitting of the Dominion Board of Railway Commissioners in Halifax and St. John brought quick results. Dr. M. Cumming appeared before the commissioners in Halifax. The result of the conference has been announced as follows:

"The matters under advisement were fully and frankly discussed. The railway representatives felt that it would be impossible for them to give any general reduction on fertilizers without covering the whole freight situation, but they met the delegation frankly and among the concessions granted were these:

"1. Nitrate of soda and sulphate of ammonia intended for agricultural purposes to be placed on the same footing with other fertilizers and to be ranked as tenth class, with the privilege of carrying 25 per cent. of either or both commodities in mixed cars.

"2. A reduction in the tonnage of straight cars of sulphate of ammonia from 40,000 lbs. to 60,000 lbs.

"3. The C. P. R. to reduce local rates so as to equalize those in force by the C. N. R.

"4. Concessions to P. E. Island lines which will give residents of the Island the advantage of the mainland commodities.

"The railway authorities did not agree to reduce the limestone rate to that of gravel, claiming that it was already very low and on short hauls below the gravel rate. They promised that the findings would be communicated to the railway commission forthwith and hoped that soon the rates would be effective and in force."—Berwick Register.

Excessive pruning on young trees is accountable for much of the weak growth noticed, and during the first eight years the aim should be to develop as many vigorous leaves as possible. Pruning to direct growth is necessary and the main branches should be established, but this practice of thinning out young trees to make them look nice, is all wrong. We are doing too much thinning on young trees and not enough on old trees. The greater the area of vigorous foliage on young trees, the better will the roots develop, because roots cannot develop with a scant foliage area. Between root pruning and top pruning, we have lost a lot of time in developing young trees and both of these have been avoided in the development of the orchard at the Experimental Station, Kentville.—W. S. Blair, Kentville, N.S.

Many transplanted garden plants, after they have become established,—such as tomatoes, cabbage, celery and the garden annual flowering plants, may be stimulated into active growth by scattering a little nitrate of soda around them just before a rain. It is well to use judgment, however, as a little too much may injure the roots and kill the plant. The fertilizer should be kept from the foliage as it will cause injury.—W. S. Blair, Kentville, N.S.

NIAGARA PENINSULA GROWERS, LTD.

WITH a total turnover of about \$1,500,000 at an operating expense of 8½ per cent. of sales, or 12 per cent. of members' credits, the Niagara Peninsula Growers, Ltd., completed its first fiscal year (of only nine months) with a statement which surpassed the expectation of even the most optimistic. At the annual meeting of the shareholders held at Grimsby, Feb. 20, at which more than 400 were present, satisfaction was expressed, and the growers most interested financially declared themselves exceptionally well pleased with the management in every respect. The annual statement, which had been forwarded in pamphlet form to the shareholders the preceding week, was read and explained in detail. Complete figures were presented and everything of interest was laid before the meeting. All the statements were adopted.

In the absence of Lieut.-Col. H. L. Roberts, Grimsby, president of the organization, who was seriously ill, the chair was taken by Vice-President A. A. Craise, of St. Catharines. Regret was expressed by the officials and by several members, as well as by resolution, over the illness of the president, and many expressions were voiced of appreciation of Col. Roberts' great work and constant interest in the affairs of the association since its organization.

After the adoption of the minutes of the preceding general meeting, read by Secretary-Treasurer G. G. Bourne, the following directors for the ensuing year, as nominated by the districts, were announced: H. T. Foster, Burlington; T. J. Mahony, Stoney Creek; F. W. DeWitt, Fruitland; J. P. Bridgeman, Winona; Col. H. L. Roberts, Grimsby; H. K. Griffith, Grimsby Beach; James Taylor, Beamsville; Arthur W. Smith, Vineland; H. W. Hunsberry, Jordan; Arthur A. Craise, Peachland; W. C. Nickerson, St. Catharines; J. M. Crysler, Queenston; Robert G. Lawson, Niagara-on-the-Lake; M. A. Ware, Fonthill and Fenwick.

General Manager's Report

An interesting account of the year's work was given by General Manager T. J. Mahony. From 469 members at the inception of the organization last May, the enrolment now was 656, with 934 shares subscribed. The growers had wanted to get away from the old system of selling through dealers, commission houses, brokers, etc., and had made a good start in a hard year. When the organization started it was looked upon as a combine to boost prices, with nothing offered in return. Honest effort to improve grades, eliminate waste and arrange for a better system of marketing had resulted in the disappearance of this hostile attitude. Considering many difficulties encountered throughout the season, Mr. Mahony thought that progress had been satisfactory. Among the difficulties encountered were exceptional earliness of season, abnormal heat in summer, decreased buying power on the part of the public, and so forth. The lack of adequate facilities for handling the crop was deplored. Pre-cooling and cold-storage systems were missing, central packing houses were practically non-existent and fruit was being packed in containers which did not meet with favor on western markets.

Speaking of the British markets, Mr. Mahony stated that the apples and pears shipped there by the company had brought prices as good or better than those ob-

tained in Canada. Instead of only 18 cars of pears being exported, however, 50 cars or more would have gone forward had central packing and cold-storage facilities been available. For the United States markets there must also be a change in methods and packages. The business done there with Niagara District grapes had been successful. Other fruits could be handled to the same advantage were our grading and packing and packages suitable to the requirements across the line. As the Niagara District had a market of 40,000,000 people within a radius of 500 miles, our growers should adopt every possible means of taking advantage of same, and that meant, for one thing, the changing of our package standards to conform to United States demands.

Comprehensive fruit surveys were another need of the industry. Mr. Mahony advocated the preparation of charts of the whole district, which system was adopted in other large fruit-growing sections. Acreages would be determined, the number of trees and their ages could be known, the company would have on intelligent forecast of the probable crop and, in any one season, an estimate of the amount of any one kind of fruit or other product to be handled, some time before the crop was harvested. To emphasize the importance of wise marketing, Mr. Mahony said that in 1920, when a large part of the Niagara fruit crop rotted on the ground \$32,000,000 worth of American fruit came into Canada.

Financial Statement

The financial statement was then read, as given on page 61 of this issue. The statement was the same, with slight adjustments, Mr. Mahony explained, as given out at the district meetings. While in some particulars it might not be as "rosy" as some of the members would like, it was much better than the company's competitors and others outside the organization had expected.

A number of questions were asked respecting the salaries of the leading officials. "What does the president receive per year?" asked a shareholder. Chairman Craise replied that the president had received the magnificent sum of about \$6.00 a month for expenses attending directors' meetings, and no salary, but that the organization must expect to pay henceforth a president's salary that would be adequate. Probably no other man was in the same position as Col. Roberts, financially and enthusiastically, to devote so much time and personal expense to the interests of the company. Col. Roberts had been on the job constantly since the beginning early last year, and deserved the highest words of praise and appreciation for what he had done, not only for this company, but also for the fruit industry of the district throughout a period of many years' service.

Salaries of Officials

In reply to the same member's query re the salaries of the sales manager and assistant sales manager, it was pointed out by H. C. Cox, Winona, and others that the Carpenter Brothers had given up a business of \$600,000 a year, the major part of which had been absorbed by this company—a business from which they had acquired a larger personal income than the salaries they now received. It was pointed out, further, that the record of their achievements this past year was sufficient in itself to show that the salaries were not too high. No

objection was voiced respecting the amount of salary paid to the general manager. Incidentally, to show the salaries paid by similar organizations elsewhere, Chairman Craise stated that the manager of the Norfolk Fruit Growers' Association received \$10,000, and Hon. Manning Deherly, who was present and expressed himself well pleased with the reports, stated that the manager of the California Fruit Exchange was paid \$40,000.

Sales Manager's Report

Sales Manager C. D. Carpenter presented an exceedingly clear and complete report on the operations of his department. This report appears in full on page 60. He referred to the difficulties of the season and mentioned, in addition to the handicaps referred to by the general manager, the lack of advertising through newspapers and other mediums. He thought that an advertising campaign to reach the public must sooner or later be started and afterwards conducted annually.

In answer to a question respecting the shipment of tomatoes, Mr. Carpenter said that basket-packed tomatoes should be abandoned. There was no use in sending tomatoes in 11-quart baskets to Winnipeg and expect them to stand up for reship-

Recommendations From Old Directors to New Board, N.P.G., Ltd.

WITH a view to bigger business this coming season and to greater efficiency in all departments and activities of the company, the old board of directors of the N. P. G. Ltd., passed to the new board the following recommendations, which the annual meeting approved by unanimous vote:

That so far as it is consistent with the best interests of the company, as much information as possible be given to members with regard to sales, prices, movement of crops and other matters of general interest.

That growers be given the privilege of securing advance cheques against their accounts at head office on making application through their divisional managers.

That the rules and regulations be so amended that the general manager shall have complete authority over all departments.

That all members holding half-shares of stock, be entitled to vote and that every effort be made to increase the membership of the company, by encouraging small, as well as large, growers to join.

That the necessary re-arrangement be made in the sales department with a view to making more use of the ability and experience of our divisional managers.

That the salaries and appointments and duties of officials and employees of the company be considered, with a view to curtailed expenditure and increased efficiency, in order that the overhead expense be reduced as much as possible.

That, having in view the importance of the local markets as an outlet for our products, every effort be made to use them to the fullest extent.

That every effort be made to induce the Dominion Department of Agriculture to supply a sufficient number of inspectors in the district to inspect all carload shipments; and we further recommend that company inspectors be appointed whose duty it shall be to see that the company grades are properly maintained, and to co-operate with the growers in improving the quality of their pack.

That some change be made in regard to commission sales on the Toronto market, so that members whose produce is shipped there will not be subjected to a double commission.

That wherever practicable, steps be taken to secure sites and arrange for the financing of central packing houses, the establishment of which will contribute very materially to the successful marketing of our crops.

ment from that point. Packed in boxes, Niagara's fine tomatoes would more than hold their own in the markets of Montreal, Toronto, and the West. He advocated the use of boxes entirely and the packing of tomatoes in central packing houses.

For improving the efficiency of the company, a number of recommendations from the old board of directors to the new board were read by Chairman Craisc. These are published in full on page 59.

Some Resolutions

That the company was forced to market its fruit at a disadvantage, through lack of cold-storage facilities, was emphasized in a resolution designed to remedy this state of affairs, if the Federal authorities saw fit to carry it out, as follows: "That this meeting of the Niagara Peninsula Growers, Limited, realizing the necessity of cold-storage facilities in order to market our fruit crop profitably, and to secure our share of business on the export markets, hereby petition the Federal Department of Agriculture to amend the regulations regarding assistance to cold-storage warehouses, in order that co-operative marketing companies may be eligible for such financial assistance as is now available to municipalities."

Another resolution, heartily endorsed, expressed appreciation of the efforts and interest of Hon. Manning Doherty, Minister of Agriculture, in the association and trusted that the minister would continue to favor the association with no abatement in such interest and work. The absence and illness of Col. Roberts were sincerely regretted, as already mentioned, in a resolution adopted unanimously by standing vote.

Hon. Manning Doherty

Congratulations on the success of the first year's business were tendered the members in an encouraging talk by Hon. Manning Doherty. Only by organization could the stabilizing of markets be effected. The Niagara Peninsula Growers, Ltd., had cut its first teeth, he said and had made a success of its life already. The Minister made special mention of the great services rendered by Col. Roberts. Ontario needed more men, he averred, who unselfishly worked in the interests of the community.

Growers outside the association have claimed in some cases that they secured as high prices as those obtained through the company. "What price would I have got if there had been no association?" the Minister advised such men to ask themselves. That alone was the important question. There have been criticism also of the management, he continued, but no organization, so large and so full of promise, should be expected to run smoothly the first year. It may take three years, perhaps five, to perfect the organization in all details. No grower could afford to stay outside the association and every man inside should be loyal.

Referring to the discussion on salaries, Hon. Mr. Doherty said that more co-operative associations had failed through underpaid officials than overpaid. Men of calibre were needed, he declared, and the company should be prepared to pay them. "I look for you to have a turnover of two or three million dollars this coming season," he said "I expect one million dollars in apple business alone. To do that kind of business, you must have wide-awake capable men." The amount of salaries was of small concern. The big matter was the net returns to the growers. Regardless of the shortcomings of the past year, of criticisms from outside and of all other initial obstacles, the members should allow no one or nothing to interfere with the working of the organiza-

tion. "Be loyal!" the Minister advised, "and after another year or two's experience you'll be proud of the company and its achievements."

James E. Johnson, Simcoe, manager of the Norfolk Fruit Growers' Association, also spoke, and referred to the difficulties of co-operative marketing. Words of advice were offered which were much appreciated.

Throughout the various addresses and discussions special mention frequently was made of the efforts of T. J. Mahony, Drysdale Carpenter and Elsdon Carpenter, the

three prominent figures in the organization. Their work was considered in a large measure responsible for the success of the year.

After the meeting, Mr. Mahony told The Canadian Horticulturist that an announcement respecting the handling of supplies had been inadvertently overlooked. The company was in a position to handle for its members orders for fertilizers, packages, spraying materials, spray pumps, and other ordinary necessities. J. W. Hewitson was now in charge of the supply department.—A. B. C.

1st Annual Sales Report, N.P.G., Ltd.

C. D. Carpenter, Sales Manager, Grimsby

I WISH to present the first annual sales report of the Niagara Peninsula Growers, Limited, for the season 1921. Our fiscal year ended December 31. Figures for sales to that date have already been given out by our general manager, but total sales to date, which include final sales of apples, amount to \$1,501,156.48—a little more than \$1,000 over our objective set last March 1, which was very creditable, taking several things into consideration, such as lack of public buying, unemployment, short crop, short marketing period of fruit, two or three weeks ahead of proper ripening period, extreme hot weather during that period and no advertising done to advise the public, except through our weekly or semi-weekly quotations and a little free advertising in local papers, advising them that the fruit was on and would be gone before the householder had a chance to preserve for winter use. Furthermore, it was also the case that the householder in most cases was still on her vacation—the reason of the big demand and high prices paid for late and inferior fruit.

On Commission and on Sales

Next, I will give figures for the total business on commission, including guarantees, \$236,995.13, or 15.78 per cent. With guarantees deducted as near as can be ascertained, brings our total on commission down to 10 and 11 per cent. in money and our total percentage of baskets on commission to 14 to 15 per cent. The business done in the larger centres, where we did both wholesale and commission, was confined to Toronto, Montreal and Ottawa, and, on account of unforeseen circumstances, some fruit sold in Winnipeg on commission. Of course, in other years shippers used almost any town of importance for commission shipments, which I have no hesitancy in stating stopped the wholesaler or retailer from buying, because he never knew what was on the way for him and also was always willing to take a chance that he did receive something on the morning express. The figures for four cities are as follows:

Montreal, \$256,401.97, approximately 65 per cent. on sales; Toronto, \$226,610.46, approximately, 45½ per cent. on sales; Winnipeg, \$143,553.04, approximately 98 per cent. on sales; Ottawa, \$44,735.41, approximately 70 per cent. on sales.

Cars Shipped and Provincial Percentages

The next figures I have to present are the approximate total number of cars shipped last season, giving the chief varieties with the balance grouped as miscellaneous: Rhubarb 3, asparagus 9, cabbage 10, canteloupes, 54, cherries 49, apples 105, currants 10, cucumbers 8, eggplant 6, gooseberries 3, grapes 336, Kiltatinies 7, strawberries 75, raspberries 40, tomatoes 133, plums 74, peaches 564, pears 119, peppers 11, miscellaneous 30; a total of 1636 cars. Dividing total number of cars

into districts, the west or three prairie provinces handled 135 cars; Maritime, 51; Quebec and Ontario, 1,407; Great Britain, 40, and U. S. A., 3. I have also the figures of the percentage of fruit business done in each province, as follows: Alberta, .2; Saskatchewan, 1.3; Manitoba, 8.4; Ontario, 62.6; Quebec, 21.4; New Brunswick, 1.1; Nova Scotia, 1.8; P. E. I., .1; Great Britain, 2.8; U. S. A., .3 per cent.

Conditions, Both East and West

Regarding our western conditions this year, to say the least, they were very bad, owing to British Columbia's very heavy crop and the superior way in which they pack their fruit. In other seasons, with a B. C. smaller crop, we have been able to compete to some extent, but the last season hardly anything was shipped into Alberta and Saskatchewan, and then again it is the first time in the history of Manitoba that they were able to ripen their own tomatoes in large quantities and sell them on the Winnipeg market for 1c per lb.; in fact, tomatoes were reshipped from Winnipeg to outlying cities. In other years, Ontario always supplied Manitoba, principally with a lot of late tomatoes and vegetables. The lower provinces business was affected the same way. Also by the express companies stopping our distributing privileges and, in both cases, the advance in icing and freight, and express charges, curtailed our shipping to distant markets considerably. Our estimates show on fruit shipped by the N. P. G. this last season that it cost us over \$50,000 this year more than last.

Sales by Divisions

Our sales by divisions are as accurate as is possible to take off, as you are all aware that there is considerable trucking from one point to another and also fruit put in cold-storage, which when shipped out gave that point credit. These figures have been carefully gone into and are as follows:

Burlington, \$185,631.55.
Stoney Creek, \$63,875.66.
Winona and Fruitland, \$173,830.91.
Grimsby, \$133,150.39.
Grimsby East, \$81,297.87.
Beamsville, \$114,139.32.
Vineland, Jordan, \$246,318.98.
St. Catharines, \$171,252.63.
Peachland, \$66,004.43.
Fenwick and Fonthill, \$25,261.28.
Queenston, St. David's and Stamford, \$61,641.98.
Niagara-on-the-Lake, \$67,617.45.

Next the figures deal with percentages of fruit sold to wholesalers and retailers. The total percentage of fruit sold to wholesalers as near as can be figured is 44 per cent. This includes jobbers No. 1 and jobbers No. 2; that is to say, a wholesaler in Toronto we figure a jobber No. 1 and a wholesaler in a town approximately the size of Lindsay, a jobber No. 2. This figure includes both.

Next, the amount of peaches shipped out

at Niagara-on-the-Lake and Queenston, and percentage both in baskets and money averages on sales and commission:

	Quantity.	Proceeds.	Average.
Commission ...	50,057	\$35,232.66	70c
Sales	69,334	50,418.36	85c
Baskets, 47% Commission; 63% Sales.			
Money, 41% Commission; 59% Sales.			

Export Pears vs. Local

The next figures I wish to show are the amount of export pears and the difference on the pool for pears exported against those sold on local markets. Altogether there were exported 18 cars—5 cars of Bartletts, 5 cars of Duchess, Anjou and Louise Bonne, and 8 cars of Keiffers, all of which were packed through a central packing house, which is the only possible way to pack our fruit and get a standard, so that we are not ashamed to put our brand on it and stand by it. Bartlett pears average, export and local, figuring by the pound, practically the same price, but what would have

happened if the five cars had been put on our local market, especially when they had all they could dispose of at the time? The same thing applies to the five cars of Duchess and Anjou—the export prices for 20 lb. boxes of No. 1's, 74c; No. 2, 59c; while local averages, No. 1's, 60c, and No. 2's, 45c. The Keiffer export average was 3.24c a lb. net, while Keiffer local average was 2c, including container. Export price was f.o.b., with wrapping, boxing, handling, wiring, all paid for. Basket price on local market was still worse with No. 1's at 40c average.

Pint and Quart Berry Boxes

The next figures that I have prepared are the difference between pint boxes and quart as it now stands. This is something of vital importance and will come before the Dominion Fruit Conference at Ottawa on the 22nd of this month, when we will have radical changes recommended in the standardization of our packages. If we do not

do something to get a more attractive package than what we have at the present time, and a package that will stand shipping, we cannot compete with British Columbia and the states to the south of us, and might as well get off the market, as they are most certainly making a big effort to ship right into our local markets and, furthermore, they will continue to do so unless we awaken to the fact that our packages are inferior and will not hold up on long distance shipments, and before it is too late, make a change. We have superior fruit—why put it in the inferior container? Let us start this season in box packing through central packing houses. We have the chance. With the government behind us, why should we not take the opportunity? Our averages on fruit shipped in pints and quarts are as follows, in cents:

	Quarts.	Pints.
Raspberries	17.24	12.16
Red Currants	11.00	8.00
Black Cherries	14.00	16.00
Black Currants	21.00	15.00

Of course, there is one big disadvantage in adopting the full quart: It will take some time on our local markets to educate the consumer that he is getting a fifth more than he used to in our old box. However, this can be accomplished and, as far as the factories are concerned, it will make no difference, as they practically all figure by the pound.

Average on Each Kind of Fruit

I have also had averages on every variety of fruit taken off by our auditing department and, while the average on several varieties may not compare with the growers' average he received, it shows the price of the early sale to the last.

Our strawberries average 11.65c. If we had not have had an organization, what would the grower have received for his berries? Nearly every factory started with a very low price, but, going the rounds, we were at least able to make a contract for at least 15 or 16 cars at a good price, which was the salvation of the strawberry crop. Furthermore, I do not hesitate in saying that, hadn't it been for the poor quality of the berries this season, our average would have been much higher, as the American market would have taken so much larger quantity at higher prices, provided we could have shipped. This is one good reason why we should change the standard for our berry box.

Raspberries, 17.24: That average is below the price asked at the beginning, but we find in some cases that it is necessary to take large losses on account of the fruit not carrying and, even at that, I consider the average good.

The next average I wish to remark on are tomatoes at 48c. Are you going to let the factory pay you 30 to 35c per pushel or what price will you basket them for, or, better still, what price will you box them for? At your next local meeting give this information to your director.

Cherries, sour, both Richmond and Montmorency, at an average of 1.20: It is quite right that some dealers paid higher. The answer to this is: What did it cost him? Black, sweet, 6-quart flat average, \$1.30; lenos, \$1.67. A little low owing to short crop, but as I have explained, right in the height of our black cherry season there were sufficient cars of American cherries selling on our local markets, which knocked our markets and lowered the price.

Peaches average all through the season, No. 1, 85c; No. 2, 71c. Our average on our quotation for the season in 20-basket lots

(Continued on page 64)


Niagara Peninsula Growers, Ltd., Balance Sheet, Dec. 31, 1921

Assets.			
Furniture, Fixtures and Equipment		\$ 13,587.03	
Organization Expenses		19,935.39	
		\$ 33,522.42	
Less 20 per cent. absorbed in operating Expenses		6,704.48	
		\$ 26,817.94	
Accounts Receivable	\$95,774.47		
Do, Members' Supplies	5,737.06		
Bills Receivable	260.00		
Cash in Bank	12,508.32		
Cash on Hand	63.53		
Fruit on Hand per Inventory	5,230.60		
Members' Supplies per Inventory	7,146.95		
Stationery and Office Supplies per Inventory	3,363.95		
		\$130,084.88	
		\$156,902.82	
Liabilities.			
Capital Stock Subscribed	\$93,200.00		
Less—Uncalled	74,560.00		
		\$18,640.00	
Members' Credits	\$1,059,498.39		
Less—12 per cent. operating cost	126,930.77		
	\$ 932,567.62		
Less—Payments	838,438.45		
		\$94,129.17	
Accounts Payable	12,074.26		
Reserve for Adjustments	32,059.39		
		\$156,902.82	
OPERATING ACCOUNTS TO DEC. 31, 1921.			
Cost of Sales.			
Sales	\$1,494,770.88	Per cent. to	Sales.
Less—Freight, Commission, Packing and Trucking	79,786.87		5.34
Net Sales	\$1,414,984.01		94.66
Members' Credits (from May 15th)	\$1,059,498.39		
Fruit Purchases including Members' to May 15th	28,834.85		
Niagara District Grape Growers	324,184.73		
	\$1,412,517.97		
Less—Fruit on hand per Inventory	5,230.60		
	\$1,407,287.37		94.15
Sales Reserve for Adjustments	\$ 7,696.64		.51
Operating Expenses.			
	Head Office.	Divisional.	
Salaries	\$39,964.92	\$41,035.70	
Travelling	625.02	1,548.32	
Telephone	4,165.85	1,224.27	
Telegraph	2,293.25	973.43	
Rents	600.00	2,937.60	
Postage	1,706.42	317.52	
Stationery and Supplies	3,297.33	1,727.78	
Advertising	625.45		
General Expense	2,471.84	2,582.69	
Bank Charges	1,376.15		
	\$57,126.23	\$52,347.31	
Total Head Office Expense	\$57,126.23		
Less—Government Grant	9,000.00		
		\$ 48,126.23	3.22
Total Divisional Expense		\$52,347.31	
Less—Refund Loading, etc., of Fruit		4,610.00	
		\$ 47,737.31	3.19
Depreciation 20 per cent. of Organization Expense and Equipment		6,704.48	.45
Adjustments		\$32,059.39	
Less—Sales Reserve		7,696.64	
		\$ 24,362.75	1.63
Total Cost being 12 per cent. of Members' Credits		\$126,930.77	8.49

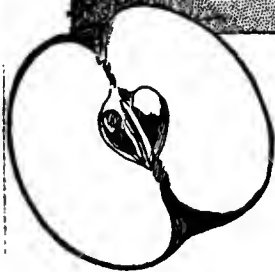
Gunns

SHUR

MAKING TWO BLADES GROW




Barrels on the left represent yield from fertilized trees. Those on the right show yield from unfertilized. Gain, 145%.—From Ohio Experiment Station Bulletin No. 301.



Orchard Rejuvenation

has been accomplished over large areas in Ohio by fertilization.

Here is a picture from bulletin 339 (1920) showing two rows of 12 Ben Davis trees.

REPORT 1914.

12 Fertilized trees yielded 49 bbls. apples,
12 Unfertilized trees yielded 20 bbls. apples,

Gain from Fertilizers.... 29 bbls. apples.

REPORT 1915.

12 Fertilized trees yielded 46 bbls. apples,
12 Unfertilized trees yielded 9 bbls. apples,

Gain from Fertilizers 37 bbls. apples.

12 to 15 lbs. of Shur-Gain Fertilizer per tree early in spring will make big gains in your orchard.

Yearly Crops of COME Well Ferti

Fertilizers supply well balanced desirable wood-growth.

Fertilizers cause fruit to fill and

Fruit borne by trees that have superior in size, color and flavor.

Fertilizers cause great increase

Fruit borne by trees properly size, color and flavor.

Gunns

LIMITED

REPRESENTATIVES W.

SHUR-GAIN FERTILIZERS

THE ONLY ONE BLADE GREW BEFORE

High Quality Fruit ONLY FROM Fertilized Orchards

Food for orchard trees. This means
uniformly.
When properly nourished with fertilizers is
fields.

Fertilized by SHUR-GAIN is superior in

West Toronto

IN UNALLOTTED TERRITORIES



A Recent Discovery

Your crop next summer and for 1923 is very largely determined by what twig and bud growth takes place this spring.

If there is plenty of suitable plant-food, the fruit blossoms develop and set fruit abundantly, also the young buds which should bear fruit in 1923 develop.

If there is a lack of plant-food, many of the flowers for 1922 fail to set fruit, and the buds for 1923 do not develop.

This is why so many orchards have "off" years.

Make sure of this year's crop and next year's by feeding your trees abundantly with Shur-Gain fertilizers. Fertilizers affect both seasons' crops.

G&R Hardy Roses

On their own roots. Sure to bloom. True to name.



Rainbow Collection
8 Hardy Roses. Different Colors
Columbia—Rich pink
Crusader—Velvety crimson
Gladys Holland—Buff and orange
Madam Butterfly—Pink, apricot
and gold
Alexander Hill Gray—Ivory-
cream-flushed

Mailed postpaid \$1
to any address. Guaranteed to reach you in good growing condition.

All G & R roses are grown in large quantities, which enables us to sell them at moderate prices. Over four million roses sold by us last year.

SPECIAL OFFERS

- 6 Hardy Chrysanthemums—embracing all colors.....\$1.00
- 6 Gladioli—Creations of newer sorts, selected colors.....\$1.00
- 6 Liberty Iris—Choice colors—assorted.....\$1.00
- 3 Decorative Ferns—New sorts, Roosevelt, Teddy Junior and Ostrich Plume.....\$1.00
- 4 Dahlias—A very select list which includes the most desirable colors: SPRINGFIELD—Salmoo Pink, Cactus. KING OF AUTUMN—Buff, Decorative. MINA BURGAL—Richest Red, Decorative. FLORADORA—Oxblood. CRIMSON, Cactus.....\$1.00

Special Offer—The 6 collections mailed postpaid for \$6.00. Complete catalog mailed on application.

The Good & Reese Co.

Largest Rose Growers in the World

Box 107

Springfield, Ohio

NIAGARA PENINSULA

(Continued from page 61.)

was, No. 1, 97c, and No. 2, 75c, against a 1920 quote for 20-basket lots of No. 1, 84c, and No. 2, 61c.

Plums average, 11-quart flat, 97c; medium, 82c; Damsons, 11-quart flat, \$1.51. A good average on 79 cars. These are a few of the averages. I can give you more, if required.

There is one question to which I wish to refer, which has been asked at several of our previous meetings, regarding the difference between No. 1 and Select lenos in peaches. This is something that can and will be rectified, but last season when a car of peaches was sold including, No. 1 and Select, they were pooled together, which we find was an error.

The True Co-operative Idea

One thing more: I ask you members to work with the organization with a true co-

operative idea and not make it any harder than possible for the Sales Department. Give the district manager your estimate for the day. If he does not call you, call him. This is most essential. Also remember that we are trying to make a name for the Niagara Peninsula Growers, and the way to do it is honest pack and loyalty to the company.

Someone might think that I did all the work myself. This is not so. I have some very able assistants on our sales staff. Mr. A. E. Carpenter is assistant sales manager, and carried on his duties as well as assistance in other departments with entire satisfaction. Then, Mr. J. W. Hewitson, the "father of us all." Too much cannot be said about Jack, as he certainly did all in his power to make our end of it a success. Also assisting in office as well as platform, Mr. Frank Galloway. He has had lots of experience and steady work. Next, Mr. Arch. Dixon, who, while not having the experience of the other members of the staff, carried on his work satisfactorily.

New Officials Elected

At a meeting of the new directors of the N.P.G., Ltd., held at Grimsby, on Feb. 27, T. J. Mahony, the general manager, was elected to the presidency. A resolution, voicing the deep appreciation of the members of the good work of the retiring president, Lt.-Col. H. L. Roberts, during the organization's first and therefore most precarious year, was unanimously passed. The retirement of Col. Roberts was much regretted by the board. The election of Mr. Mahony to the presidency met with general approval. As general manager Mr. Mahony had given good service in guiding the business of the company throughout its first year.

A. A. Craise, St. Catharines, was re-elected vice-president, and G. G. Bourne, Grimsby, was reappointed secretary-treasurer. J. P. Bridgeman, Winona; Harry K. Griffith, Grimsby East, and Col. Roberts were elected to the executive committee.

The new president expressed his keen satisfaction at the splendid results of the past season, and noted the fact that many new members were applying for admission to the privileges of the N.P.G., Ltd. He expected, he stated, that the company would do double the business in 1922 that it did in 1921. The officials had profited by the hard experience of the past season, and expected to conduct the affairs of the company with still greater efficiency this year.

At a directors' meeting of the Niagara District Grape Growers, Ltd., held on Feb. 18, G. A. Welstead, St. Catharines, was chosen president to succeed T. J. Mahony, who has been president for the past two years. Other officers elected were: Vice-pres., F. B. Cole, Louth; sec., W. C. Thompson, Beamsville; treas., R. G. Montgomery, St. Catharines.

Annual Meeting, N.D.G.G., Ltd.

F. G. H. Pattison, Winona.

THE annual meeting of the Niagara District Grape Growers, Limited, was held at St. Catharines, Feb. 10, with President T. J. Mahony in the chair and a large attendance of shareholders from all parts of the Niagara District. In opening the meeting President Mahony gave a brief resumé of the large amount of work done through the central office, and paid a high tribute to Sales-Manager Montgomery and the directors for the excellent manner in which they had conducted the company's business. Owing to the increase in freight

ALEXANDER'S DAHLIAS

Unless you happen to be one of those who value a Dahlia for its rarity and wish to pay from \$5.00 to \$25.00 each for that attribute, you will find that many of the older varieties are just as beautiful and just as satisfactory.

This is your opportunity to obtain a few first-class varieties at a reasonable price, a price that you can afford to pay.

A Collection of Tried and Tested Dahlias
for \$2.00 prepaid. (Tubers)

Madonna, white Decorative. Maude Adams, pink and white Show.
Mina Burgle, scarlet Decorative. W. B. Childs, purple-maroon Cactus.
Zeppelin, lavender Peony-flowered.

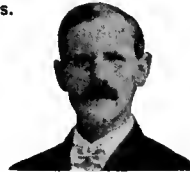
MY CATALOG will tell you the complete story of the Dahlia: when and how to plant, how to fertilize, stake, prune and disbud. Fully illustrated and well worth looking over whether you decide to buy or not. Send for your free copy.

J. K. ALEXANDER

Largest Dahlia Grower in the World.

310-320 Central St.

East Bridgewater, Mass.



"The Dahlia King"

Irises, Peonies and Gladioli

The Flowers that Bloom from April until October

Order now for early spring delivery. We are growers and importers of the choice varieties. Over 600 varieties of Irises. Our ideal soil conditions enable us to grow the finest of roots and bulbs. Our selected varieties of Irises and Peonies withstand our extremes of weather and are therefore acclimated to grow well in all parts of the United States and Canada. Our Gladioli are selected from the best varieties. We ship with the idea to please, and that we succeed in this respect is shown by the number of repeat orders received.

Send to-day for our new Free Illustrated Catalogue 4th Edition

RAINBOW GARDENS

701-2 COMMERCE BUILDING

ST. PAUL, MINN.

Kunderd's New Gladiolus Catalogue

For 1922 describes nearly 400 varieties in Ruffled, Plain Petaled and Primulinus Types, all of them originated by A. E. Kunderd. 29 varieties are shown in beautiful colors, and many others are illustrated in half-tone. Most complete cultural information is also given, with special directions for the growing of show flowers. **Mailed Free**

Kunderd's Gladioli

are now so well known as the BEST in the world that no garden is complete without a choice collection of them. No other grower has ever produced so many nor such wonderful kinds. Send for the beautiful free catalogue which shows in colors these new Ruffled strains of Gladioli.

A. E. KUNDERD

The Originator of the Ruffled Gladioli
Box 60 Goshen, Indiana



GREENHOUSE FOR SALE

Complete Lord & Burnham greenhouse for sale, in perfect condition, at very low price, including glass house, 18' x 25', and potting house, 25' x 25'. Highest grade hot water heating system and furnace; would cost about \$3,500 new; will sell at sacrifice.

L. COSTELLO

73 ADELAIDE STREET WEST
TORONTO

Gladioli

LIST
UPON
REQUEST

- Louise 60c each, \$6.00 per doz.
- Le Maréchal Foch .20c each, 2.00 per doz.
- Evelyn Kirtland 20c each, 2.00 per doz.
- Lily White 20c each, 2.00 per doz.
- Mary Fennell 20c each, 2.00 per doz.
- Herada 20c each, 2.00 per doz.
- Gretchen Zang 15c each, 1.50 per doz.
- Pride of Goshen 15c each, 1.50 per doz.
- Red Emperor 15c each, 1.25 per doz.
- Prince of Wales 8c each, .75 per doz.

\$1.00 Postpaid Each Item.

- 10 Begonias, Tuberos, Single, Mixed.
- 10 Hardy Phlox, Named, All Different.
- 5 Dahlias, Named.
- 30 Gladioli, Named, 6 Var., Separate.
- 4 Paeonies, Named.

Six Packets of Vick's Rochester Asters, Shell Pink, White, Rose, Lavender Pink, Lavender and Purple.

15 Packets Burpee's Sweet Peas. Leaflet on Culture. Add 10c postage extra.

Mornington Gladiolus Gardens
STRATFORD, ONT.

rates, amounting to 20 per cent., and also in-icing charges, etc., the grape growers did not receive as much as they had expected. The wine manufacturers, he said, had realized last season the great benefit of friendly relations with the grape growers.

Sales-Manager Montgomery presented the financial statement, which was considered by the shareholders to be very satisfactory. Growers had received \$85 a ton for bulk grapes and 40c a basket for those sold in baskets, the highest price ever paid for an average grape crop, and this was largely due to the efforts of the company. The wine manufacturers, however, did not buy nearly their usual amount, and the Welch Grape Juice Co. did not open their factory at all. In 1920 the premium on exchange on grapes sold in the United States was 14 to 15 per cent., which offset the American duty of \$17 a ton. In 1921, however, the premium averaged a little over 8 per cent., making a difference of \$8 a ton. Between Sept. 15 and 20 last, the company had lost from \$100 to \$200 on every car sold, but this was more than made up at the end of the season. Late in September, the company placed \$50,000 worth of grapes in cold storage at Hamilton, and on these when sold in the United States a profit of over \$20,000 was made. The company begins the 1922 season in good financial standing, and is to-day one of the strongest co-operative companies in Canada.

Replying to questions regarding trade in the Canadian west, Mr. Montgomery said that 40c a basket at the point of shipment here was a little too high, as the spread of prices between here and the west was large, freight charges to Winnipeg being 16c a basket, and to Calgary 20c, making cost of grapes in west 80c to \$1 a basket. Fluctuations in price were very unsettling, and



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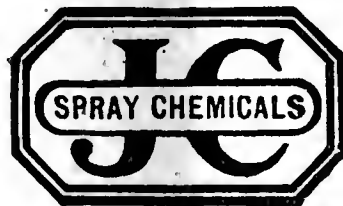
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a uniform price throughout the season is needed for the western trade. All grapes shipped to points west of Winnipeg should be pre-cooled, to prevent molding. Pre-cooling and better packing were needed to recover the lost western trade. Jobbers in the west are making no profit on Ontario grapes, but find it to their advantage to handle grapes from California. Growers here are not likely to get more than \$75 a ton on the American market next season. California shipped 4,000 cars more to the east last year than ever before, and will probably ship 5,000 more in 1922. American growers are planting grapes heavily, and we must pay more attention to our own market. A box package is needed for grapes going to the west, as all those shipped to Alberta the past season arrived in bad condition.

Out of 334 cars shipped in the States only three cars were subjected to any reductions. During the past season the Canadian market was higher by nearly \$3 a ton than the American market.

A. M. Cocks, of Winona, proposed that it be made compulsory that all growers who sold their grapes through the company become shareholders. The proposal met with the approval of the meeting, and it was left to the directors to work out a scheme that would be equitable to all.

The shareholders passed a resolution commending the Hon. Manning Doherty, Minister of Agriculture, for his interest in the fruit industry of the Niagara Peninsula, the encouragement given by his department to the co-operative movement, and to the establishment of central packing houses and cold storage plants.

For the purpose of assisting and maintaining a cold storage plant to be erected at St. Catharines, the directors were given authority, if expedient, to make a call of 10 per cent. on the stock.

The following directors were elected for 1922: T. J. Mahoney, W. C. Thompson, F. D. Cole, W. W. Armstrong, A. W. Smith, A. B. Gullinger, G. A. Welstead.

The ice and snow storm that swept the Niagara Peninsula on Feb. 22 apparently did not materially influence the prospects for a fruit crop. The greatest damage was in orchards where pruning had not been done. There was considerable breakage of limbs in some sections, especially on old trees, and fruit buds were injured to some extent. Shade trees with long limbs and branches were badly broken. Early in March the outlook in general for a bumper crop of fruit was good.



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Niagara P.F.G.A. Convention

THE annual convention of the Niagara Peninsula Fruit Growers' Association, held at Grimsby and St. Catharines, March 1 and 2, not only was well attended, but was one of the most interesting and most important in years. The various sessions were conducted by the president, A. Onslow, Niagara-on-the-Lake, assisted by the secretary, C. E. Fisher, St. Catharines. The programme comprised both cultural and business topics, and several important resolutions were adopted. W. H. Bunting presented the various transportation reso-

lutions that had been adopted at the Dominion Fruit Conference. These concerned matters affecting minimum express weights, a carriers' protective service for the east, car equipment, carload commodity rates, experimental shipments, rate classification of fruits and vegetables, freight and express rates in general. All these were approved unanimously.

Resolutions Passed.

The Dominion Department of Agriculture was petitioned by resolution to continue and extend, through its Fruit Branch, its investigations into the best methods of transporting fruits and vegetables under the supervision of G. E. McIntosh, transportation specialist, and to undertake further shipments from the Niagara district during the coming season, with a view to the solving of several pressing problems as to the best methods of reaching distant markets.

A resolution recommended that the convention of the association in future be extended in period of days and expanded to include exhibits of implements, fruit growers' supplies and accessories. Following the adoption of this resolution, a committee to arrange next year's convention was named by President A. Onslow as follows: W. H. Bunting, St. Catharines; S. H. Rittenhouse, Vineland Station; J. B. Fairhairn, Beamsville, and G. W. C. Brown, Fonthill.

Another resolution pointed out the urgent need for immediate and substantial reductions in the present railway rates on the transportation of fruits and vegetables, which at present were discouraging planting, curtailing consumption and interfering with the free movement of supplies.

A tariff resolution asked the Federal

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Government not to make any change in custom regulations respecting fruits and vegetables, without first giving an opportunity to present their views in connection therewith.

The association put itself on record as expressing in a resolution its hearty appreciation of the work being carried on and the interest in the industry which is being shown by E. F. Palmer and his associates at the Horticultural Experiment Station, by Geo. Wilson, district representative for Lincoln County, and by Dr. Rankin and W. A. Ross, local representatives, for insect and disease investigations respectively, of the Dominion Department of Agriculture.

Transportation Matters.

A better refrigeration service for Niagara Peninsula fruit shipments was suggested in an address by George E. McIntosh, Fruit Branch, Ottawa. In six months the railways of Canada had paid claims, loss and damage, of about \$6,000,000 he said, \$1,000,000 of which was concerned with fruit and vegetables. By proper advance attention on the part of both railways and shippers, 75 per cent. of this condition could be avoided. Three requisites for proper fruit shipping were mentioned: First, the fruit must be in proper condition when shipped from picking to packing; second, refrigerator cars must be available, so constructed and so equipped that best results may be secured; and third, the initial and transiting must be efficiently performed. Prospects for a marked improvement in all these essentials for Niagara District fruit were very bright. For one thing, the railways were planning to put in special sidings at Grimsby, where re-icing of all fruit cars will be performed at the Grimsby cold storage plant.

Mr. McIntosh was convinced that, for the

western markets, the Niagara District must adopt better methods of packing, using crates and boxes, instead of baskets, and see that the cars are properly loaded when leaving the shipping points. British Columbia already had adopted these practices. Because of this fact, the speaker would not

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be surprised, he said, to see British Columbia strawberries marketed this coming season in Montreal and other eastern cities.

That something should be done to get Ontario fruits back on the western markets was advised by Mr. McIntosh. Most important was improved methods of packing and loading for shipment. Packages should be spaced in the cars to facilitate ventilation. Tomatoes and peaches should go forward wrapped in the four-basket crate; cherries also in that kind of package, and plums in the plum crate, instead of all these fruits in Climax baskets, as now practised.

Turning to the east, Mr. McIntosh contended that the railway companies should give carload rates for fruit from Ontario points to Prince Edward Island, with opening-in-transit privileges on the mainland. This was an immediate necessity. The abolition of distributing privileges to the Maritime Provinces in general should be rectified. An express carload rate into Northern Ontario and into the large distribution centres of old Ontario was needed, also through carload rates to United States points. Other essential changes concerned minimum weights and icing conditions.

Eastern Fruit in Western Markets.

That the Western Canada Fruit Jobbers, which embraces all the jobbers west of the Great Lakes, stood for Canadian fruits first, if packed right in packages that the market requires, was averred by Sam Savage, of Calgary, in an address on "Eastern Products in the Western Market." It was not always possible, he said, to get fruit in that manner. The Niagara District must improve its methods in this direction if it hoped to secure any permanent hold on western markets. Mr. Savage's firm did not handle one basket of Niagara District grapes last year, because they could get no guarantee of delivery in proper condition. The speaker advised the growers to wait until the grapes were mature before picking; to send Concord, and Concord only, when that variety was ordered; the same with other sorts, and always to stamp the name of the variety on the package.

Mr. Savage contended that Niagara tomatoes could compete with the product of any other section if they were packed uniformly. He did not favor the 11-quart basket for shipment of tomatoes, or even peaches or plums. Crates and boxes were advised. If baskets were used at all, they should be 6-quart.

Better transportation facilities and lower railway rates were an emphatic need of the fruit industry at this time, concluded Mr. Savage. It was unfair, a shame, that fruits could be brought into Canada from Texas and other distant points in the United States at much lower rates than Ontario fruits could be moved to Calgary and other points in the western provinces.

Modern Marketing Methods.

That Niagara District fruit growers must standardize their products in quality, grade, package and name before they can expect to reach success in co-operative marketing was impressed upon the gathering by C. E. Bassett, Director of Field Organization, North American Fruit Exchange, New York. No organization should even attempt to sell a product, Mr. Bassett contended, without first making sure that it had something fit to sell. Standardization was the most important factor in marketing and standardization in grade and pack was possible only through the central packing house system. Next

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	per 6	per 12	per 6	per 12	per 6	per 12
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B. J. Hulot, blue40	.75	.30	.55	.25	.45
Brenchleyensis, red30	.55	.25	.45	.20	.35
Gandavensis, super mixed30	.55	.25	.45	.20	.35
Glory of Holland, pure white ..	.45	.80	.40	.75	.35	.65
Halley, salmon orange, early..	.30	.55	.25	.45	.20	.35
Gloire de Kennermerland rose..	.30	.55	.25	.45	.20	.35
Loveliness, creamy .....	.40	.75	.30	.55	.25	.45
Niagara fine yellow .....	.30	.55	.25	.45	.20	.35
Pink Beauty, pink, very early..	.30	.55	.25	.45	.20	.35
Swaben, very strong yellow ...	.30	.55	.25	.45	.20	.35
Prince of Wales, light salmon..	.30	.55	.25	.45	.20	.35
L'Immaculee, pure white .....	.60	1.10	.50	.90	.40	.75
Panama, deep pink .....	.40	.75	.30	.55	.25	.45
Peace, white, rose spotted....	.40	.75	.30	.55	.25	.45
Willy Wigman, white and pink..	.40	.75	.30	.55	.25	.45
White Giant .....	.75	1.40	.60	1.10	.50	.90
Pink Perfection50	.90	.40	.75	.35	.65
Wilbrinck, rose, early30	.55	.25	.45	.20	.35
War, deep scarlet50	.90	.40	.75	.35	.65

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N.B.—Order at once from this advertisement and make sure of the best stock.

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1,000 or more Good Roots.
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Senator Dunlop, \$6.00 per thousand; Williams, \$7.00 per thousand, \$1.00 per hundred.
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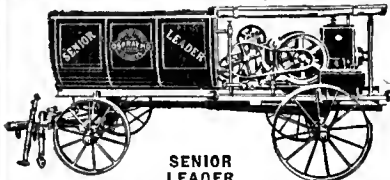
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Ahore is a popular style of power sprayer for general orchard spraying. Investigate our mounted traction Red Jacket and Yellow Jacket Sprayers for beans, potatoes and vegetables. Also Barrel, Bucket, Knapsack and Hand Sprayers.

Send today for our latest catalog. Don't buy any sprayer until it comes. We have local dealers at many points, but write direct for catalog to the address below.

FIELD FORCE PUMP COMPANY
Dept. C. H., Elmira, N. Y.
40 Years at Sprayer Building

after standardization in the success of co-operative marketing was advertising. Mr. Bassett continued. Competitors in fruit production and selling, America over, were telling the public about their products through the daily and periodical press and making the public want and buy them and spending millions a year, while this district was not spending a nickel. The Niagara District must face the matter of advertising its fruits sooner or later. It should face it and do it now. Merchandizing was the last factor, observed Mr. Bassett, but too often it was considered first. Once an association had the right kind of goods to sell, and told the trade and the consumer about it, merchandizing was comparatively easy, but it must be done sensibly. Dumping was not merchandizing. F.O.B. selling, with a well-directed distributing system at both ends, was the satisfactory way.

Some Loose Screws.

"Loose Screws That Need Tightening in the Fruit Business" was the subject of another interesting address by C. E. Bassett. There were too many fruit men who said that they believed in co-operation, he said, and they did, if the other fellow would take all the trouble and meet all the difficulties. A big organization would be lucky in making a profit in two years. It would take the trade alone that long to get acquainted with it. There should be a five-year trial at least. Men who would not go in on that basis would aid the organization by staying out. Associations did not die from co-operation; they died from lack of it.

Organize, standardize, advertize and merchandize were the four "izes" of marketing. All these factors must be observed if organization is to succeed. The speaker in-

identally stated that better Concord grapes were produced in the Niagara District last year, as sold in the United States, than any produced across the line. Grapes of that kind deserved every attention possible when being marketed. Speaking of other fruits, Mr. Bassett contended that grades and grade names should be uniformly standardized between Canada and the United States.

Importance of Co-operation.

In an address on "The Importance of Co-operation Among Producers," President J. B. Reynolds, of the O.A.C., Guelph, said

NORWAY SPRUCE.

For Hedges and Windbreaks.
Healthy, well-rooted plants 3'-3½',
transplanted three times. Price F.O.B.
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80 acres of ornamental shrubs, evergreens,
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Alpine and perennials, unique collection; many new varieties unobtainable from any other source.
Hardy and adapted for Canadian climate.
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ARTISTIC Planting will help to make your home beautiful. We grow the stock, and will cheerfully give you the benefit of our experience,

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A limited quantity of the finest bench-grown hybrid tea rose bushes

VARIETIES

Columbia—a wonderful new pink variety.

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White Killarney—a pure white rose.

Dunlop—of the dark pink variety.

Cecil Bruner—the sweetheart rose of the polanthus variety.

These rose bushes will flower the first season.

Per bush, 60c, or \$6.00 per dozen bushes, prepaid.

As the varieties are limited, please order so as we may substitute, and to avoid disappointment, order early. Delivery will be made either in April or May.

D. O. MacDONALD

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that, while there were many men in Ontario who were both good business men and good farmers, the majority, including most fruit growers, were individualistic in a world of business amalgamations and co-operative activities. The individualistic and indifferent grower was the big obstacle to progress in co-operation. A great industry like farming could not afford to continue in the individual class. The only hope for a progressive and satisfactory agriculture in Canada at the present time was that the farmer should adopt the methods of big business and amalgamate. The only style of amalgamation that was practicable was co-operation. Prof. Reynolds congratulated the growers on the large measure of success attained by their new co-operative organization in its first year. He hoped that the organization would not be required to spend money in keeping its members "converted" to the project.

The results of deliberations at the recent Dominion Fruit Conference were outlined briefly by C. W. Baxter, Fruit Commissioner, Ottawa. The many resolutions and recommendations respecting packages, grades, grade names, tariff, markets and transportation were explained. Regarding cold storage, Mr. Baxter assured the association that Hon. W. R. Motherwell, Minister of Agriculture, was prepared to furnish every aid that was practicable. The founding of a Canadian Horticultural Council, the speaker announced, had been well received by all interests approached since the conference.

The various addresses and discussions on cultural matters will be reported in next issue. These included talks on insects and diseases, by W. A. Ross, Vineland Station, and Dr. Rankin, St. Catharines, respectively; on varieties of fruits to plant, by J. P. Bridgeman, Winona, Cameron Husband, Toronto, and E. F. Palmer, Vineland Station; "Substitutes for Barnyard Manure," E. F. Palmer; and "How to Secure Annual Crops," Prof. J. W. Crow, O.A.C., Guelph.

PROVINCE of QUEBEC

Chinese Gardeners

CHINESE gardeners are numerous in the Pacific Coast province, but few are aware that practically the entire vegetable demands of Montreal's Chinatown are being supplied by Chinese farmers. That these men are succeeding is quite evident. The labor employed is largely Chinese, and the crops grown are largely those that the Chinese have been accustomed to eating in their own native land.

Other evidences of the success of the Oriental gardeners are seen in the volume of total production, the class of crops grown and the fact that the erstwhile laundryman is in many cases making a good tiller of the soil. The crops grown include Chinese cabbage (or Pe-Tsai), Chinese turnips, Chinese parsley, peppers, tomatoes, and some are growing cauliflower and cabbage of the ordinary varieties.

Labor applied to the crops is largely manual labor after the land is once prepared. As one grower, Lee Yung, near Mount Royal, expressed it, as regards other labor—women, who were then in the fields—"two dollars, one day, too much!"

Another factor in the Chinese farmer's success without doubt is that he eliminates the middleman in his marketing, and either hauls direct to the public markets most patronized by his countrymen or sells through the Chinese stores of Chinatown direct to his customer. In many cases

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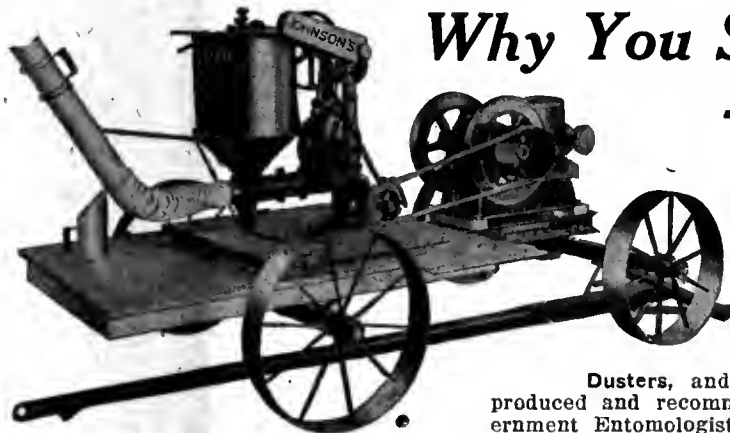
It shows many photos of well-known homes, parks, golf clubs, cemeteries, colleges, etc., where the lawns are cared for the "Ideal Way." It tells about the Ideal Junior, a moderate-priced power mower for medium-sized lawns, the 30-inch Ideal Power Lawn Mower for large lawns, and the Ideal Triplex Power Mower for large parks, golf clubs, etc. Write for this book to-day—learn how to keep your lawn in better condition at less cost.

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World's Largest Builders of Power Lawn Mowers.
Dealers in all principal cities.

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Why You Should --- Buy

Johnson Dusters. — Results obtained by the Canadian Agricultural Department in Nova Scotia and New Brunswick with Johnson Dusters, and Dust Mixtures produced and recommended by Government Entomologists, have demonstrated that dusting is most effective.

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Manufactured by
DUST SPRAYER MANUFACTURING CO.

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**Most Practical, Economical and Reasonable in Price,
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Government dusting reports show better control of orchard pests and at a considerable saving of time and money—two good reasons why you should buy Johnson Dusters—recommended for 20 years by growers. Send to-day for catalogue and full information.

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Send us your inquiry. We will save you money.



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MANUFACTURERS

GREENSVILLE, ONTARIO

The Fruit & Produce Market

The Commission firms undertook wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. - Toronto, Ont.
CONSIGNMENTS OF FRUIT AND VEGETABLES SOLICITED.

Shipping Stamps furnished on request.

MANSER, WEBB CO.

83 Colborne Street - Toronto
Wholesale Fruit and Produce Merchants.

Consignments Solicited on Commission.

STRONACH & SON

33 Church St., Toronto, Ont.

All shipments of Fruit and other produce consigned to us receive our personal attention.

Shipping stamps furnished.
Phone Main 2390.

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 Front St. E., Toronto, Ont.

See Advertisement on another page.

the Canadian farmer's product passes through two or three hands before reaching the consumer, and each dealer has his charges for the service.

Still another instance of the Chinese thrift is found in that in many cases he is his own seed grower. Plants that here and there go to seed in the annual crops are used, and with that seed that takes two years to produce our Chinese farmer grows that, too.

Operations are as yet largely confined to rented land, and this involves economy and good management, but it is safe to say that a few years will see the hard-working Oriental owning much of the land he uses. He usually runs his land on a good economic basis, often grows his own hay, too, and uses every square inch of land available. The size of the holdings varies, but the average acreage is anywhere from 30 to 40 acres.—Family Herald and Weekly Star.

BRITISH COLUMBIA

The 1922 Berry Crop

T. B. Windross, Victoria.

It is claimed that there will be some reduction in the acreage for strawberry crops in British Columbia this year, but a very great increase in the acreage in raspberries, owing to the fact that statistics kept by the British Columbia Berry Growers' Association have proved that the growers receive more value out of raspberries than strawberries.

Special marketing last season on the prairies and in the eastern provinces had the effect of disposing of a large part of the crop that in other years has been difficult to unload. Another feature of the year's operations which brought in monetary returns was that of taking care of the surplus fruit by means of a special process in cold storage and canning arrangements.

Since the first of the year, partly frozen strawberry pulp has been greatly in demand all over the Western States, where the growers were unfortunate in not having their surplus taken care of in the same way as the British Columbia producers. California, in spite of its vast fruit-growing resources, has been one of the best purchasers, and some of the pulp has gone as far southeast as Pittsburgh, Pa. In January, a shipment of British Columbia strawberry pulp was sent to Great Britain on one of the ships which ply between Victoria and Europe.

The Berry Growers' Association expects to be able to ship every ounce of strawberry and raspberry pulp grown in the province this year. Prices have been good this last year for canned goods and, with increased

HARDY PLANTS

PERENNIALS, PAEONIES, IRIS, DAHLIAS

Ceraniums, Fuchsias, Cannas, Heliotrope, Salvia and Begonias from 4 inch pots

Everything in the line of bedding plants.

Shrubs, Evergreens, Roses and Azalea Mollis. Write for Catalogue.

Our Paconics and Iris will be inspected this season, and be true to name.

Douglas Gardens Nurseries

OAKVILLE - ONTARIO



FLORAL BARGAINS

Special Introductory offers from our tried and proven Canadian grown hardy flowers, bulbs, etc.

\$1.00 Trial Collections.

- 10 gorgeous Iris, named, all different ..\$1.00
- 3 beautiful Paeonies, 3 colors 1.00
- 5 lovely new Phlox, named sorts 1.00
- 10 hardy flowers, perennials, named 1.00
- 30 choice Gladioli bulbs, imported, mixed 1.00
- 1 Hydrangea (2 yr.), 1 climbing rose, new (2 yr.), 1 Hibiscus 1.00
- 5 rare Cactus plants, correctly named . 1.00

FREE—1 flowering YAM climber, with every order for two above collections.
1 YAM and 1 nice fern free with an order for 3 collections.
Or the entire 7 collections, including YAM and Fern for \$6.00.

Orders filled at right time to plant in spring.

J. H. CALLANDER Peterboro, Ont.
575 Weller St.

Strawberry Plants FOR SALE

Standard varieties and Everbearing varieties. Free delivery. List Free.
ONTARIO NURSERY CO.
Wellington, : : Ontario.



SMALL FRUIT PLANTS

Herbert! Herbert!! Herbert!!
Red Raspberry, Plum Farmer!
Plum Farmer! Black Raspberry,
Lawtonberry (Black),
Asparagus Roots, Rhubarb
Roots, etc. Send for price list.
WILLIAM FLEMING
Owen Sound Ontario

PLANT McCONNELL'S PLANTS

A FULL LINE OF

WE HAVE THEM

Strawberry Plants.
Everbearing Strawberries.
Raspberries.
Blackberries.
Currants.
Gooseberries.
Grapes.

Asparagus Roots.
Rhubarb Roots.
Horseradish Roots.
Ornamental Shrubs.
Ornamental Vines.
Hedge Plants.
Bulbs.

YOU NEED THEM

Send for Free Illustrated Catalogue.

H. L. McCONNELL & SON

Port Burwell, Ontario

marketing facilities, the British Columbia Berry Growers' Association expects to be able to take care of any increase in the acreage or enhanced crops.

Preparations are being made for the 1922 crop and, with last year's experience behind it, the Association expects to place the small fruit industry of the province on a sound commercial basis.

Some B.C. Insects

EXAMPLES of the natural control of one insect by another were a feature of the discussions at the annual meeting of the British Columbia Entomological Society. An important case was dealt with in a paper read by E. P. Vonablow, Vernon, on "Hemisarcoptes Malus, a Small Mite, and Its Relation to Oyster-shell Scale on Apple Trees." The entomological branch of the Department of Agriculture have been sending the mite to various parts of the province to be used in combating the work of oyster scale in the orchards.

The year 1921, it was said, was marked by no great insect outbreak on the mainland. Some interesting facts about economic insects of the year in the Lower Fraser Valley were dealt with by R. Glendenning, of Agassiz. The satin moth and the elm-currant aphid were specially noticeable. The latter was a new menace to black currants.

A paper of particular interest to orchardists in the upper mainland was read by Prof. A. L. Lovett, of the Oregon Agricultural Experiment Station, on the use of spreaders in spraying operations.

The life history of the poplar sawfly, which has done so much damage to the trees in Victoria, was described by W. Downes, of Victoria. The teaching of entomology in the Public Schools was taken up by J. W. Gibson, director of elementary agricultural education, and he enlisted the support of the members of the society in extending the teaching of elementary entomology in the schools.

Officers were elected for the ensuing year as follows: Pres., L. E. Marmont, Mailardville; vice-pres., R. S. Sherman, Vancouver; 2nd vice-pres., M. H. Ruhman, Vernon; sec.-treas., R. Glendenning; advisory board, E. H. Blackmore, W. H. Robertson and J. W. Gibson, Victoria; W. H. Lyne, Vancouver; Eric Hearle, Vernon.—T. B. W.

The 1922 spray calendar for British Columbia is now available to anyone desiring a copy. This edition is thoroughly up-to-date. The information is given very clearly and in such a manner that it is easily comprehended.

The varieties of tomatoes that British Columbia canneries ask for are Landrath, John Baer, Chalk's Early Jewel and Earliana if smooth, says R. H. Elmer, of Summerland. The first three are smoother than Earliana as a rule, not quite so early, but good croppers.

Penalization of producers of low-grade fruit was proposed in the directors' report presented at the annual meeting of the Penticton Co-operative Growers, held last month. The report suggested the adoption of some plan whereby the grower who sends to the packing house a large percentage of culls would be charged extra for the handling of the same, and an extra charge in all cases where the culls exceed 10 per cent. was proposed.

Exhibition Quality Seeds

START your prize garden right by sowing our Prize Strains of Seeds, which are grown from exhibition strains. May we help you in your selection by suggesting the following specialties:

BEET, DOBBIE'S SELECTED GLOBE.—Perfect shape, good color, excellent quality, fine for exhibition. Pkt. 10 cts.; Oz., 40 cts.

BEANS, SURE CROP STRINGLESS WAX.—Perfectly stringless, and of finest quality. Pkt. 10 cts.; ¼ lb. 20 cts.; lb. 50 cts.

BEANS, FERGUSON'S CANADIAN WONDER.—We have known our selection being awarded the first place in a competition of 40 lots. Pkt. 10 cts.; ¼ lb. 20 cts.; lb. 70 cts.

CORN, FERGUSON'S GOLDEN GIANT.—Grows faster, matures earlier, and is three times as large as Golden Bantam and is the sweetest and juiciest of all varieties. Pkt. 10 cts.; ¼ lb. 25 cts.; lb. 75 cts.

LETTUCE, FERGUSON'S PEERLESS.—Most distinct and largest "Crisp-head." Pkt. 15 cts.; Oz. 50 cts.

NEW MELON "OKA."—The richest flavored Melon in the Market. Pkt. 25 cts.

ONION, "CRANSTON'S EXCELSIOR."—For exhibition it stands unrivalled. Pkt. 25 cts.

PEA, LAXTON'S PROGRESS.—The finest new early dwarf we have ever offered. Pkt. 15 cts.; ¼ lb. 50 cts.; ½ lb. 75 cts.

NEW MARROW "RUTHERSIDE ORANGE."—The most prolific and best flavored variety yet raised. Pkt. 25 cts.

RADISH, GIANT BUTTER.—Grows to a large size without getting pithy or hollow, and of finest flavor. Pkt. 10 cts.; Oz. 25 cts.

NEW BEAUTY ASTER.—In five separate colors. Pkt. 20 cts. each. See page 4 of our Catalogue for description.

ASTER, "HEART OF FRANCE."—The best pure Red Aster ever introduced. Pkt. 25 cts.

ASTER, "PEERLESS YELLOW."—By far the most satisfactory yellow Aster yet produced. Pkt. 25 cts.

ASTER, "BALL'S WHITE."—A sphere of pure white Petals of flawless color. Pkt. 25 cts.

Ask for particulars of prizes to the value of \$30 we offer for collection of Asters.

BLUE LACE FLOWER.—Of charming pale blue color, the more the flowers are cut the more the plants will bloom. Pkt. 25 cts.

New Sweet Peas

"ANNIE IRELAND."—White with distinct edge terra cotta pink. A new shade. Pkt. 20 cts.

CECILY.—Fine salmon pink for exhibition. Pkt. 20 cts.

DOBBIE'S MAROON.—Finest reddish maroon to date. Pkt. 20 cts.

EDITH CAVELL.—A very fine rose-pink on a cream ground. Pkt., 20 cts.

HALLMARK PINK.—The richest colored Sweet-Pea ever seen. Pkt. 20 cts.

MASCOTS WHITE.—The finest and most solid of all white. Pkt. 20 cts.

MRS. T. J. WAKEFIELD.—Cream edge, rose-pink. Pkt. 20 cts.

PINK PEARL.—Clear pearly pink. Very chaste. Pkt. 20 cts.

NEW DAHLIA FLOWERED ZINNIA.—Most beautiful Zinnia grown, blossoms 5 to 7 inches across. The greatest novelty of the times. Pkt. 20 cts.

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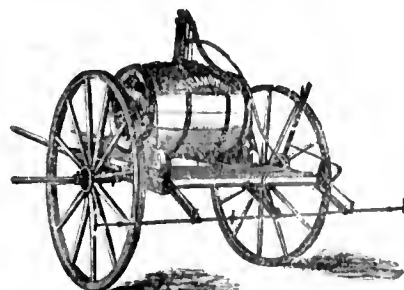
Spramotor
It isn't a SPRAMOTOR unless we made it

THE DEATH-DEALING ENEMY OF
BUGS, SCALE OR BLIGHT

When spraying is done with the Spramotor there is no passing over. Nothing can escape the powerful spray that is directed on the crops. Potatoes should be sprayed from below as well as from above—the outfit illustrated will do this.

There is one effective way to spray—that's the Spramotor way. If you are not spraying that way, you are losing more each year than the cost of the Spramotor.

Write now for catalogue and guide to spraying.
SPRAMOTOR CO., 14 King St., LONDON, ONT.



Fruit Growers

Write for circular describing the new and only lime and fertilizer machine which fills your needs.

W. J. BUCHAN,
Beamsville Ontario

Pack Your Fruit In Good Wood Boxes

Made by
Firstbrook Bros.
LIMITED
TORONTO CANADA

"Wood is best beyond dispute
For boxing every kind of fruit."

Paint Without Oil

Remarkable Discovery That Cuts
Down the Cost of Paint
Seventy-five Per Cent.

A Free Trial Package is Mailed to Everyone
Who Writes

A. L. Rice, a prominent manufacturer of Adams, N.Y., discovered a process of making a new kind of paint without the use of oil. He named it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof, sanitary and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to A. L. Rice, Inc., Manufacturers, 37C North St., Adams, N.Y., and a free trial package will be mailed to you, also color card and full information showing you how you can save a good many dollars. Write today.

CROPS and MARKETS

Fruit Situation in Ontario

At the convention of the Ontario Fruit Growers' Association in Toronto, last month, directors from various parts of the province reported on present conditions of the fruit industry in their localities. W. T. Macoun, Dominion Horticulturist, reporting for Carlton, Renfrew, Lanark, Russell and Prescott, said that little apple planting was being done and the fruit industry generally was neglected. Three reasons were given:—1, Men inclined toward horticulture usually moved to more favorable districts; 2, Winter-killing in some Winters; 3, injury from mice very prevalent. R. W. Ireland reported likewise for Lennox, Addington, Hastings and Prince Edward.

Reporting for Northumberland, Durham, Peterboro and Victoria, H. Sirrett, Brighton, stated that only along the lake shore were orchards being cared for and progressing. Varieties more suitable for export than those commonly grown should be introduced. In Halton and Peel, H. T. Foster, Burlington, stated, orchards were not being neglected as much as elsewhere, but there was not much replanting. A. A. Craise, St. Catharines, thought that apples should be grown more extensively in Lincoln. The peach industry was not as extensive as '0 years ago. There was scarcely one orchard clean of pests, especially of canker.

Norfolk, according to Jas. E. Johnson, Simcoe, soon would show a marked development in apples, there being large numbers of young orchards now coming into bearing. For the Georgian Bay district, W. L. Hamilton reported that orchards there also were being neglected, and there was no new planting.

Proposed Legislation

In order to assist Ontario apple producers to compete on even terms in the markets of the world, and particularly the British market, the Ontario Government has formulated a policy of giving provincial aid in the establishment of grading and packing plants. Legislation with this end in view will be introduced in the House during the session by Hon. Manning Doherty.

The Ministers' proposal provides for a Government grant of 25 per cent. of the cost of erecting and equipping a grading and packing plant. While these plants would be available for the packing of all

sorts of fruit, the primary purpose is the promoting of apple grading. At the present time apples from British Columbia and the western states have a preference in the British market, due largely to the better appearance they make when displayed to the trade and the public. Where Ontario apples are packed in more or less haphazard fashion—with some exceptions—and chiefly in barrels, the western apples are carefully selected as to size and carefully boxed. The idea back of the new legislation is to encourage Ontario exporters to handle their fruit in the same way. The high standing attained by Ontario

M. A. BRUSH for MERRYWEATHER'S English Roses

32 Lowther Ave., Toronto, Ont.
Price list on application.

GLADIOLI

Maiden's Blush—Prim, Enchantress Pink, dainty, wiry strong stem, usually three to bulb, 1 1/2 in.—\$10.00.
Orange Brilliant—Prim (Gold Medal) a standard variety—\$8.00.
Kitty Grulemans—Orange and clear yellow spikes, tall flowers, great size, 3/4 in.—\$6.00.
Majestic—Orange Salmon, a new shade, a favorite, 3/4 in.—\$4.00.
Le Marechal Foch—The finest cut flower glad, ever sent out from Holland, 3/4 in.—\$5.00.
Rose Pearl—One of the finest pinks, 1 1/4 in.—\$8.00.
L'Immaculee—Splendid pure white flower, 3/4 in.—\$3.00.
White Giant—The white, extra large, 3/4 in.—\$3.00.
Other sizes and varieties.
Price all per 100. 25 at 100 rate.
H. P. VAN WAGNER,
R. R. No. 5. Hamilton, Ont.



Carters Sunrise Collection

of early vegetable seeds is the result of 120 years' selecting and testing. Earliness and quality combined.
SUNRISE TOMATO—The earliest, most productive, good sized, scarlet fruit, very even, of fine quality, with solid meat and few seeds.
16 DAY RADISH—Oval, white-tipped, crimson, crisp and tender.
CRIMSON BALL BEET—Very early, round, bright crimson, good size and fine flavor.
SPRINGTIDE or ALLHEART CABBAGE—A dwarf variety maturing in early spring. Quality unsurpassed.
PERPETUAL LETTUCE—All season head lettuce.
LITTLE MARVEL TURNIP—The earliest white globe turnip, crisp, solid flesh of delicious flavor.
Try this collection at our expense. The money you send will apply on your first order. Send 25c and ask for Sunrise Collection No. 349 and we will send by return mail the 6 packets of Earliest and Best vegetable seeds, our Illustrated Catalog and a 25-Cent Rebate Check to apply on your first order of \$1.00 or more.
Catalog Free—Our 85th annual Catalog of Carters Tested and Selected Seeds will be mailed free to anyone mentioning this paper.
CARTERS TESTEE SEEDS, Ltd.
133 King St. E., Toronto, Ont.

NIAGARA PRODUCTS

THE ONES THAT GIVE RESULTS

SOLUBLE SULPHUR
ARSENATE OF LEAD
POWDERED BORDEAUX

BLACK LEAF 40
SULPHUR
LIME SULPHUR
CALCIUM ARSENATE

BLUE STONE
DUSTING MATERIALS
LIME

NIAGARA Products are all Guaranteed—Highest Quality Only.
NIAGARA Products are not experiments—They are the results of years of experience.
We were the pioneers in the business—NIAGARA always leads.
Our prices are right—Our Calendars and Information are free.
Remember—Wherever Fruit Excels, NIAGARA Spray is used.
Everything for Spraying or Dusting—MATERIALS, MACHINES, ACCESSORIES, SUPPLIES.

NIAGARA BRAND SPRAY CO., LTD.

Burlington, Ontario

apples in competitive exhibits is evidence that, so far as quality is concerned, the apple from this province has nothing to fear from competition if properly marketed.

The proposed grants, of course, would be limited to co-operative organizations, either to growers' associations or to local groups of growers organized to handle their own crop.

At the Port of Toronto

WHILE tonnage of almost all commodities entering the port of Toronto by water in 1921 showed a decided falling off, in no case was this more noticeable than in that of fruit, which in 1921 amounted to only 3,013 tons, as compared with 8,204 tons in 1920. These receipts compiled by the harbor master show a reflection of the receipts of fruit at Toronto by all methods of transportation, also of the comparative bulk of the fruit crop throughout the province in the two seasons considered. So far as water-borne receipts at Toronto are concerned, the tender fruits from Niagara district are almost entirely responsible for the tonnage.

Another feature of the most recent report by the Toronto harbor master is with regard to the water levels. These, when compared with levels of recent years, seem to bear out the recollection of the majority of the farmers and fruit growers in Western Ontario as regards the comparative dryness of the seasons. With zero datum for water at Toronto 245 inches above New York sea level, Toronto water levels in 1920 showed plus 29½ inches at high water, and minus 4 inches at low water, as compared with plus 24½ inches at high water, and minus 3½ inches at low water in 1921. High level in 1920 was 27½ inches lower than in 1919, and low level in 1920 was 8½ inches lower than in 1919. In all, this indicates a decided lowering of the mean water level in the three years.

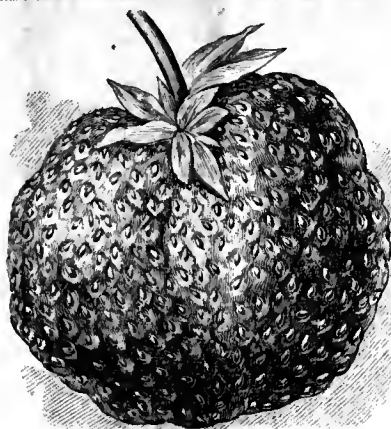
Sapiro on Co-operation

ON March 6, at St. Catharines and Hamilton, large audiences of fruit growers heard Aaron Sapiro, the guiding genius of the great farm commodity marketing associations of the American Pacific slope, tell of the success of co-operative marketing in California and suggest means whereby a similar success might be achieved in the Niagara Peninsula of Ontario. At both meetings, Mr. Sapiro was accompanied by Hon. Manning Doherty, Minister of Agriculture.

At the St. Catharines meeting in the afternoon, Hon. Manning Doherty, in introducing the speaker, stressed the need for co-operation among the farmers of this province. Mr. Sapiro, in the course of his address, said that the first thing that they learned in California was that the association must have control of the grades. "You can get people to eat an article once, by advertising," he said, "but after that you must have quality plus advertising. The grading must be done by outsiders and the growers must be penalized for low and rewarded for high gradings." A good package was another essential. "Watch the quality," he continued, "then pack and extend the markets; see what the market can absorb at a fair price, and then get the people to eat the product.

"You don't advertise enough in this country. Your peaches are better than the California peaches, but you cannot get the people of the United States to believe that, because we advertise.

"Make your association a non-profit



Buy Your TREES, SHRUBS, VINES

of L. J. Farmer "The Strawberry Man"

We make a speciality of supplying everything to plant about the suburban or country home, such as Fruit Trees; Ornamental Shrubs, Plants and Vines; Berry Plants; Garden Roots and Vegetable Plants; Seed Potatoes; Berry Crates and Baskets; Eggs and Baby Chicks, &c., &c. Send for our beautifully illustrated 48-page catalogue and let us talk it over before the rush season comes on. We have had 39 years of experience and are known everywhere as the introducer of the Fall or Everbearing Strawberries, which we specialize in. Send 50c for our 112-page book—"Farmer on the Strawberry." 25,000 copies have been sold. Our catalogue is free. Write for it today. Address

L. J. FARMER
Dept. C.H. PULASKI, N.Y.

TRY THEM IN YOUR GARDEN

DE LUE'S GOLDEN GIANT

SWEET CORN, one to two weeks earlier. Ear half as long again and 12 to 14 rowed where Golden Bantam is 8 rowed. Better quality, more productive. Pkt. 25c. ¼ lb. 40c. ½ lb. 65c. 1 lb. \$1.00 postpaid.

NEW ALBINO TOMATO. Pure white in color, containing no acid. Pkt. 25c. postpaid.

New York Head Lettuce

A leader as a summer head lettuce. Pkt. 10c. oz. 50c. 2 ozs. 85c. postpaid.

BRUCE'S SPECIAL FLORAL COLLECTIONS

in Asters, Sweet Peas, Tall and Dwarf Nasturtiums, Floral Gems. 6 Pkts. in each. 50c. each postpaid.

FARMERS, LOOK!

Hubam Annual White Blossom Sweet Clover.

It is the greatest fertilizing plant known, a wonderful hay and pasture crop, and unsurpassed as a honey producer. 1 lb. \$2.10. 10 lbs. \$18.50 postpaid.

Write for copy of our big catalogue. Free for the asking.

JOHN A. BRUCE & CO.

HAMILTON, LIMITED CANADA

ESTABLISHED 1850

"SEEDS THAT GROW"

246

Sprayed Fruit Brings Big Profits

Go at spraying in a whole-hearted way. Spray, not just the leaves, but into every crack and crevice where there is insect or blight life. The farmer who last year invested



Spramotor
It isn't a SPRAMOTOR unless we made it!

in a Spramotor showed increased production that more than paid for the extra expense. This year he is working on a clear profit basis—every cent of profit goes into the farm coffers. That's what we shall be able to say of you next year, if you buy your Spramotor now.

A Spramotor is equally good for whitewashing hen-houses, stables, etc.

Over 100 gold medals have been awarded the Spramotor. Write for illustrated catalogue and guide to spraying.

SPRAMOTOR CO.

14 KING ST. - LONDON, ONT.

Easy Now to Rid Your Farm of Rats

Wonderful Discovery by Noted Scientist Kills
Every Rat Within a Week's Time
—Not a Poison.

Rats cost farmers over two hundred millions of dollars a year, through the destruction of grain, poultry and buildings. Farmers need no longer suffer this loss because they can now kill off all the rats on their farm in less than a week's time. This is possible through the remarkable discovery of E. R. Alexander, a chemist, who has perfected a virus which kills rats, mice and gophers as though by magic. This product is not a poison—it can be eaten by human beings or any animal on the farm as safely as their regular food, but means quick, sure death to rats.



This wonderful rat virus, which is known as Alexander Rat-Killer is merely mixed with bread or meat scraps and placed where rats, mice or gophers can get to it. Within a few hours after a rat has eaten Alexander Rat-Killer he gets a high fever and suffers a terrible thirst. He leaves the barns and nesting holes and goes to the open fields in search of pure air and running water. Rats and mice affected always die away from the barns and houses, so there is no odor.

It is a scientific fact that one rat affects others and soon the whole colony leaves the buildings and dies. And though this virus is absolutely deadly to rats—chickens, hogs, cattle or any farm animal can eat it and not be affected at all.

So confident is Mr. Alexander that Alexander Rat-Killer will kill every rat on your farm in less than a week's time that he offers to send, as an introductory offer, a regular \$2.00 tube for only \$1.00. Give it according to directions, and if at the end of a week's time you are able to discover any rats, mice or gophers on your farm, your money will be refunded. A big Toronto bank guarantees that Mr. Alexander is reliable and will do as he says.

Just send money order, check or currency for \$1.00 to E. R. Alexander, Alexander Laboratories of Canada, 2005 Terminal Bldg., Toronto, Ont., and the tube will be mailed at once on the guarantee that if not absolutely satisfactory your money will be returned without question. Write today and stop your rat losses now.

Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable.

Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

WILSON EAR DRUM CO., Incorporated
537 Inter-Southern Bldg. LOUISVILLE, KY.

organization composed of growers only," advised the speaker. "We make the tightest contract we can draw. The members must deliver or we force them through the courts. Our contracts are usually for seven years without withdrawal, and then permanent with the right of withdrawal."

Mr. Sapiro was confident that the Niagara Peninsula growers would solve their problems in less than three years. By co-operation everything was possible. The association should have its own distributors at the primary points, and its own warehouses, cold storage and pre-cooling plants and central packing houses.

At the Hamilton meeting in the evening, Mr. Sapiro repeated the address. He was introduced by T. J. Mahony, president and general manager of the Niagara Peninsula Growers, Ltd., who occupied the chair. Hon. Mr. Doherty again discussed organization among farmers in general and fruit growers in particular.

In Defence of Ben Davis

(Mrs.) H. Farecomb, Newcastle, Ont.

THE Ben Davis tree is a strong and vigorous grower, and, in ten years after planting, will bear a fair number of clean and healthy apples, which year after year will increase in numbers until the branches touch the ground. The branches do not require supporting with props, like other apple trees, because the branches of the Ben Davis are tough and will bend without breaking.

After close observation, I find the Ben Davis the best of our many good varieties of Ontario apples. It can be used for nine months in the year and can be cooked in more attractive ways than any other fruit that grows. The apples are sweet, have a small core and thin skin, make excellent jelly and preserve like pears.

I would advise anyone who is unacquainted with the good qualities of the Ben Davis apples for household use to try them. If you do not have good results, I would be pleased, on request, to forward my method of cooking them.

Apple Grading in England

THE British apple growers have recently been devoting considerable attention to the establishment of grades for their product and much progress has been made in this development. The chief reason for the movement is the desire to place on the large British markets an apple grown in England which will compare favorably in price with the best American and Australasian product. It has often been stated in England that the market advantage of the American apple is entirely due to the fact that it is correctly graded and packed. In this connection the American Agricultural Commissioner at London observes that the shippers in the United States, Canada, and Australasia have the advantage not so much because their stock is graded to perfection but because they have large supplies of apples adapted to meet the grading requirements.

There is no large supply of British apples which could be closely graded for market. The British growers generally have not paid much attention to market requirements in the selection of their trees, nor to the care and cultivation of orchards. It has been estimated that in the ordinary run of ungraded home-grown apples not 20 per cent. would reach fancy or extra fancy grade.—U. S. Department of Agriculture.

Wireless Market Reports

THE wireless is now being used by state and federal agencies in the United States to broadcast national and local agricultural market reports throughout virtually the entire country. Reports on the national markets are dispatched daily by the United States Department of Agriculture from wireless stations of the post office department at Cincinnati, Omaha, Washington and four other places. These reports are received by hundreds of amateur wireless operators, among whom are many farmers and farmers' sons. National market reports are also received by state bureaus of markets and agricultural colleges, supple-



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mented with local market reports, and relayed by wireless telegraphy and telephone to farmers, shipping associations, newspapers, banks and other agricultural interests.

The St. Louis University at St. Louis, Mo., was perhaps the first among educational institutions to broadcast market reports by wireless. Others followed. The Minnesota College of Agriculture has assigned an extension representative to instruct the farmers in the use of wireless receiving apparatus. The College of Agriculture of Cornell University has assigned an expert for similar work, and to assist rural radio clubs that are being organized in New York. Demonstrations intended to interest farmers, dealers, and shippers in installing the

necessary wireless receiving apparatus will be held in various rural communities of the State of Missouri. In many other states, the dissemination of market reports by wireless and instruction in wireless installation and operation has been effected or is being planned.

GRADED and CULLED

FOR the first time in the history of Ontario, the fruit industry was mentioned in the Speech from the Throne by His Honor the Lieutenant-Governor. Speaking of the Department of Agriculture, reference was made to the success that had attended the efforts of co-operative companies to stimulate and revive the fruit industry. His Honor predicted that co-operative marketing would be the power that would elevate agriculture, in all its branches, to the high place which it should occupy as the fundamental industry of the province.

A meeting of the Forest Fruit Growers' Association was held at Forest, Ont., on Feb. 21, and was a decided success. The chair was occupied by Vice-president A. J. Clark. The feature address was given by Prof. L. Ceasar, O.A.C., Guelph, on various aspects of fruit culture.

A press despatch a few weeks ago from Buenos Aires stated that the Argentine Republic was desirous of supplying the United States with fresh fruits and vegetables in winter. A sample consignment, consisting of five tons of selected peaches, plums and grapes, was being shipped. The seasons south of the equator being directly the reverse of those north, it was thought that some reciprocal trade arrangement might be made accordingly.

POINTERS on POULTRY

FOWLS for breeding purposes should be strong, healthy, vigorous birds. The comb, face, and wattles should be of a bright-red color, eyes bright and fairly prominent, head comparatively broad and short and not long or crow-shaped, legs set well apart and straight, plumage clean and smooth.

Prepare now for a good crop of chickens. Hatch early—avoid late summer stock. Early winter layers should be out of the shell early.

A pullet hatched now is worth three in June.

Darken the incubator to keep chicks quiet and induce sleep.

Remove chicks from the incubator when all are dry and do not feed for 36 hours.

Keep hens free from lice and the house free from mites.

Chickens never wash, as many other birds do, but cleanse themselves of insects

by wallowing in soil. For this reason every poultry house should be provided with a dust box.

After the eighteenth day do not open the incubator door until the chickens are hatched.

If possible, locate the brooders on ground that has recently been cultivated, thereby eliminating the danger of tainted soil and possible disease.

Eggs from hens that have made a fair showing in laying this winter will be more fertile than those that did heavy laying.

If you have windows in the hen house, keep them clean, as the hens need all the sunlight they can get these days.

The value of skim-milk as a feed for poultry cannot well be overestimated. It not only has a high nutritive value, but keeps the digestive tract in sharp, clean condition.

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Planting Number

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It will be the type of issue that will be kept for reference during the rest of the spring—therefore especially valuable for advertisers.

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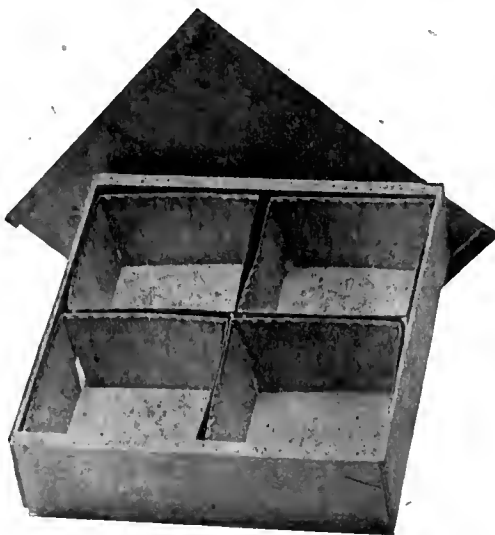
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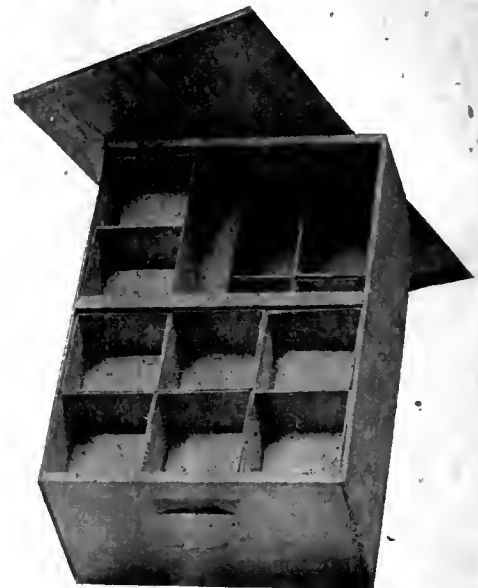
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Garden Planning

W. E. Groves, Hamilton, Ont.

SPRING is the time for building. For this reason these notes will probably apply more particularly to home making rather than garden improving, though the same lines of treatment will be applicable in both cases.

It would be an advantage were it possible to design the garden before the house is built. This is practically out of the question in the towns and cities, where street lines have to be so carefully followed. The owner or the gardener has usually to take things as they are and plan the garden after the house is completed. It is wise to make a plan of the area to be treated. A quite simple drawing is all that is necessary. It should show boundary lines, drives or walks, existing buildings, trees that are to be retained, a note as to direction of views to be preserved and those to be shut out, not forgetting the points of the compass. The front garden is naturally important, yet not always the most important. Community has to be considered in this connection, and for the sake of community uplift the best effect possible should be produced here. A town front garden is usually only large enough to provide a proper setting for the house and to take it back a little from the street with its dust and noise.

Foundation Planting.

Bare foundations and straight lines are always noticeable features of a home as yet unplanted. What is called foundation planting is the attempt to hide or soften the severity of a bare house, and to provide a pleasing link between the building and the ground. Shrubs will fill this need admirably and with little difficulty. The planting should extend out at the corners receding to the face of the building. A few principles to be followed may be helpful. Do not plant tall growing kinds under windows, but take advantage of the spaces between, and this will relieve any possible monotony. Make the planting irregular. Where the tallest shrubs are used, the bed should be the widest. A double row of plants is always the most effective, and if the distance between house and road

is not too limited even three rows is possible, always having the dwarf kinds in front. A brief selection for this kind of planting could be made from the following:—Tall growing varieties: Syringa, lilac, snowball, weigelia, Forsythia. Medium height varieties: Cydonia, Rosa rugosa, lonicera, kerria, Spiraea Van Houttei, deutzia, almond, snowberry, buddleia. Dwarf varieties: Spiraea A. Waterer, Amorpha canescens, Deutzia gracilis, golden syringa, Berberis thunbergi.

In the garden at the side or rear of the house the objects to be kept in mind are the preserving of views that are worth while, the securing of a certain amount of seclusion, and the shutting out of unattractive features. Where it is not possible to completely cut off bad features, the object to be aimed at is to hide them from the points



Two Fine Peony Blooms.
These specimens of James Kelway, white, and Eugene Bigot, red, were grown by J. Walsh, Trenton, Ont.

most used. Whilst general rules are usually worth considering, individual taste in arrangement, the kind of plants to be used, the color schemes and seasons of blooming should each be kept in mind, especially at the time of initial planting.

Grading.

In grading a few principles should be remembered. Ground near a house must be as level as possible. Broken surfaces are permitted as lawns recede from a

building until, if necessary, they merge into natural irregularities of field or wood. The ground surrounding walks should also be tolerably level for at least a few feet, beyond which it may slope up or down. The points from which to grade are steps to the house floor level and the path or paths in the rear or front of the house. The land at the rear of city houses is often sloping away from or towards the house and some care is necessary. If the grade is but slight, it may remain much the same. If, however, there is a real sense of slope it is best to level for a short distance back from the house, making then a small terrace from which the remaining ground can assume the natural grade. Artificiality in grading must be avoided. This need not prevent the making of a sunken garden or the leveling of a portion of the ground for games. Where the latter is desired and the surrounding ground is either higher or lower the difficulty can be got over with a terrace.

Walks.

Walks should be carefully provided for, and not be more in number than necessary. There should be a reason for every path that is made. A walk going to a garden seat is allowable, but one leading nowhere is out of harmony. Paths when they are provided should be of sufficient width for comfortable use; a path of thirty inches being much more satisfactory than two paths of fifteen inches in width.

The Back Garden.

The layout of a back garden depends largely upon the chief purpose for which it is to be used. Where there are children sufficient grass should be provided for playing, which means that the planting area is at the sides and end. If ornamental gardening is intended it is wise to set aside a portion for flowers and group some shrubs in the corners and, if there is room, at one or two other spots. The front of the border can be quite irregular and parts might be planted to roses, hardy flowers, annuals or bulbs, as is suited to the taste of the owner. If the area allows a tree or two they are real ad-

ditions. Select varieties that will eventually develop in proportion to the size of the garden, remembering that trees are planted for permanency. These can be used to act as wind-breaks or screens if necessary, as well as to provide a little shade. A specimen shrub or two in the grass is allowable, but in nearly all cases it is best to keep the centre quite open unless the owner is particularly fond of some such flower as roses, when a bed or two for the particular favorite adds a real note of distinction.

Where part of a garden is to be used for vegetables this should be set apart either at one side or the end, and partially screened off from the rest of the garden. There is nothing untidy about a well-kept vegetable garden, and there is no need for complete hiding, but a group or two of shrubs or a small perennial border at this spot adds to the layout. Geometry should be largely forgotten in modern gardening. Unless carefully designed it is apt to be artificial in appearance and the tendency to-day is rightly towards the natural and free. Do not over-plant a small area or it becomes stuffy. Aim to keep all planting in harmony with the building, and also aim at simplicity and restfulness. The ideal garden should be a picture, not a collection of merely interesting objects. It is not enough to plant; the plants must be in the right place.

Growing Gladiolus Cormels

Dr. F. G. Brethour, Toronto, Ont.

THOSE who have a few cormels of some choice gladiolus might try the following method with success. I had some cormels of a notoriously difficult variety to increase, and whose cormels are hard to get to germinate, namely, "Madame Mounet Sully." I peeled off the skins and planted them indoors in four-inch boxes, in soil containing an excess of leaf mould, and a good deal of coarse sand. This was done early in March, and I left them in a cellar near a window, with north light. As soon as the ground was a bit warm in early May I planted them outdoors. They had leaf growth from two up to eight inches. Some of them bloomed the same year, and many of the corms are one and a quarter inches. They will give good bloom this year. I think by this method you can get much bigger bulbs than by planting outdoors, and have many more germinate.

This method may be applied to montbretias, only you do not need to peel off the outer skin. Bloom will come much earlier and the growth will be much taller. Montbretias require plenty of leaf-mould even outdoors, and they keep on coming for a long time, giving lots of bloom for cutting.

The Newer Irises*

W. E. Saunders, London, Ont.

AT the time of our last remarks on irises, the list of quality was headed by such varieties as Alcazar and Isoline, introduced by Vilmorin, Andrieux et Cie, Paris. Since that time there has been a wonderful improvement in the species, and a whole new gamut of wonderful varieties has been introduced. The Frenchmen are still in the forefront, but some of their varieties on put on the market by English firms. There are also notable contributions by Americans as well, though their flowers are usually held at prices that none but dyed-in-the-wool fans are willing to pay. The result is, that most of their varieties are unrepresented in Canadian gardens. There is also the impression that the American varieties do not possess the same superfine quality that is found in France; indeed, some recent American introductions have been adversely criticized by officers of the American Iris Society.

The following remarks are therefore necessarily confined to varieties of European origin, and as some of them have been available for only a year or two, opinions now expressed are subject to revision in the near future. All we can say is that the following statements express the opinions of several iris growers up to the present.

The firm of Vilmorin stands, perhaps, at the head of the iris world, and shall therefore receive first consideration. Their new varieties have been fairly tested in the London district, and Ambassadeur, Ballerine, Cluny, Grevin, Magnifica and Moliere have been found worthy of the highest praise. Ambassadeur is a noble Squalens of fine habit, with large and substantial flowers of the richest tints. Ballerine, Cluny, and Magnifica are bicolors that arouse enthusiastic comment from every beholder. Moliere so far appears to be rather dwarf, but with enormous flowers in which the blue is modiled by red. Grevin is of the deep rich garnet color found in Opera, previously introduced by the same firm, an exceedingly rich color and a flower of great beauty.

The Outstanding Irises.

Perhaps the outstanding iris of the world to-day is the product of the skill of Bliss, the celebrated English hybridizer, and is named Dominion. It is unfortunate, though perhaps unavoidable, that Wallace and others who offer it for sale have not yet been able to recede more than a trifle from the introduction price of five guineas. The flower is a marvellous blue of a richness previously unequalled, and an

*A report presented by the Names and Varieties Committee at the recent Ontario Horticultural Association Convention.

American visitor reported that the stock at Wallace's was "much depleted, owing to the enormous demand."

From the garden of Millet and Son, in France, comes the great iris, Souvenir de Mme. Gaudichau, said by some expert growers to be the finest iris they have ever seen. Ochracea Coerulea, by the same men, is one of great promise.

Mlle. Schwartz, by M. Denis, is the choice of another enthusiast as the best, so it will be seen that while opinions differ, all unite in thinking that one of the new ones is the finest.

Lent A. Williamson is the fourth of the new rich blues that are acclaimed at the top. It is an American variety, and the plants so far reported have not yet bloomed.

Wallace & Co. are the distributors of a large group of new irises by Denis, Bliss, Van Hort and Yeld, and from this group we may look for many fine things. They are all, or nearly all, in Canada, but some of the young plants have not yet bloomed, and no opinions can be definite as yet. Crusader and Lord of June are certainly very fine bicolors of great stature, and fine substance and color, bearing many magnificent flowers on a spike, and in that respect lies one great point of superiority of the new irises over the old ones. Lady Foster is a lovely pale mauve, practically self-colored. Clematis opens after the style of a Kaempferi with beautiful markings on the lavender petals. Deuil de Valery Mayet is a splendid wine red, and seems to be one of the coming kinds. Dimity is one of the new frilled ones, probably better than Mme. Chereau, and it takes no mean flower to eclipse this old variety. Sunshine, Viola, Tomtit and Sweet Lavender may easily be worth while, but Yeld's Dawn seems to lack sufficient character to make it sure of a grower.

Preparing Soil For Dahlias

J. K. Alexander, Bridgewater, Mass.

The preparation of the soil in which you put your dahlia tuber is just as important as the fertilization and cultivation you give your dahlia after you have them planted.

The soil should be thoroughly cultivated; plowed or spaded 8 to 10 inches deep, well pulverized and thoroughly worked over, thus affording an opportunity for rapid expansion, and making an easy path for the tiny rootlets. To secure exceptional results, have your soil thoroughly plowed or spaded in the fall or early spring; then just before planting have it plowed or spaded again.

Gladioli of Recent Introduction*

H. L. Hutt, Georgetown, Ont.

1. Anna Eberius (Diener, 1917)—Dark velvety purple, throat of deeper shape; large flowers on tall spikes.
2. Anthony B. Kunderd (Kunderd, 1918)—Large ruffled flowers of deep cream color, overspread with a pink blush; lower petals primrose-cream, flushed-pink at edges.
3. Byron L. Smith (Kunderd, 1917)—Lavender-pink on white ground, colored like a cattleya orchid.
4. Bertrex (Mrs. Austin, 1914)—A beautiful glistening white; tall and vigorous.
5. Catherina (Velthys, 1916)—An excellent light grey-blue, lower petals a little darker with brownish-red spot; tall spikes.
6. Crimson Glow (Betscher, 1916)—A deep, brilliant crimson; flowers large on tall, graceful spikes.
7. David Starr Jordan (Diener, 1917)—Very large, bright red or flame-colored flowers.
8. Evelyn Kirtland (Mrs. Austin, 1916)—A beautiful shade of pink deepening towards the edges; large, wide open flowers on tall, graceful spikes.
9. Flora (Velthuys, 1917)—A large, light, golden yellow; ranks next to the famous Golden Measure as the best yellow.
10. Gretchen Zang (Mrs. Austin, 1915)—A glistening rosy-pink; stems grew crooked during the hot weather last summer, but in the cooler season, later, the blooms were exceptionally fine.
11. Herada (Mrs. Austin, 1916)—Another of Mrs. Austin's "Big Four"; pure mauve; large flowers; a vigorous grower.
12. L'Immaculée — An early pure white, which does not tint in the sun. Many flowers open at once.
13. Jack London (Diener, 1917)—Bright salmon with flame-colored stripes and yellow throat. A good grower and great multiplier.
14. Lady Borden (Gilchrist)—A Canadian variety; large, creamy-white flowers with large crimson blotch in the throat; blooms late.
15. Liebes Feuer (Velthings, 1912)—A brilliant scarlet; tall spikes and many flowers out at once.
16. Le Marechal Foch (Van Demsen, 1919)—A Holland variety said to be a seedling of America; flowers much larger than American, of about the same shade of lilac-pink. As early as Halley, and as good a multiplier.
17. Loveliness (Van Kongnenburg, 1912)—Large, creamy-white flowers tinted pink. A beauty, appropriately named.
18. Mrs. Dr. Norton (Kunderd)—Large silvery-white flowers tinted with pink, deepening towards the edges, with sulphur-yellow centre; an aristocrat among the gladioli.
19. Mrs. Watt (Crawford)—American Beauty rose, solid self-color.
20. Myrtle (Kunderd) — Delicate rose-pink, shading to creamy-white in centre; very dainty.
21. Prince of Wales—A clear, salmon pink; large flowers, blooming very early.
22. Pride of Hillegom—Another fine variety from Holland; large, bright scarlet flowers on tall spikes.
23. Summer Beauty (Kunderd)—Clear, salmon-pink; long spikes; a strong grower.
24. Violet Glory (Kunderd)—A self-colored, deep, rich violet; flowers large and slightly ruffled.
25. White Giant—Very large, pure white flowers, with pointed spreading petals. Lily-like in appearance.

Planting Strawberries

W. S. Blair, Kentville, N.S.

Planting strawberries is done by pushing a spade into the soil, pressing it to one side and dropping a plant with roots spread fan-shape into the opening. Hold the crown of the plant to the top of the level soil and press the earth firmly around the plant with the heel. Finally level with loose earth around the crown of the plant. This is quickly done. The importance of pressing the soil firmly around the plant is great. The plant should be sufficiently firm, so that if it is pulled by a leaf, the latter will break before the plant will pull out.

Only young plants should be set; that is, plants of the previous season's growth. The planting should be done early, in fact, the earlier the better. Much of the failure with strawberries is due to late planting. This is a job that can be done in the early spring. The sooner the plant becomes established, the earlier the formation of runner plants. The earlier the runner plants form, the larger and better developed are the crowns, without which strong stalks of well formed fruit are impossible.

The growth on all newly purchased climbing roses usually requires to be well cut back when planted, leaving only about twelve to eighteen inches in length of the base of three or four main stems. Cut out any small weakly shoots to their base.

To prune bush roses, remove all dead wood first. Cut out all weak shoots that start from the ground, leaving sufficient of the stronger ones. Then cut back about two-thirds of the length of the last season's lateral or side growth, leaving short spurs a few inches long at the base of the last season's growth. Leave one or two strong, young, one year canes, that start from near the ground each year, to keep the bush supplied with young, strong, vigorous growth. Very old wood three or four years old may be cut out to make room for the young growth.



A Well-planned Flower Border.

G. W. Downer, Peterboro, Ont., separated his lot from his neighbor by a low cement curb, which also forms the outer edge of the flower border shown. In this border last year were grown petunias, nicotiana, geraniums, verbenas, nasturtiums and Canterbury bells. The bed along the wall of the house is planted to perennial phlox.

Starting Vegetables Outdoors

C. B. Alden, Toronto

IN most parts of Canada, the first of May is early enough for planting vegetables outdoors. Plants started at that time usually will reach maturity as quickly as those started earlier. The variable weather of April of most seasons is apt to interfere with growth. It is always better to wait a few days and thus employ good weather as an aid. Important points in garden planning are:

(1) Make every foot of land work all the time. When one crop is harvested another should take its place if there is room for its proper growth. Practically all of the garden should grow two crops and part of it ought to produce three. Warm season crops, such as beans and tomatoes, and late seeded crops like turnips may follow early, cool season crops such as lettuce, spinach, radishes and onion sets.

(2) Vegetables which can be stored for winter use should be given preference in the plan because they will be more appreciated when the supply is low and the price high.

(3) First plan for the long season crops; the short season ones will take care of themselves. Grow short season crops (lettuce, radishes, spinach) between the rows of long season crops. Globe radishes may be grown in the rows of carrots, parsnips and beets or between young cabbage and tomato plants or between hills of corn.

(4) Crops requiring a large amount of space, such as potatoes, corn and vine crops, should usually be left out of the very small garden. If these are grown, however, smaller, quick-growing crops should occupy the space until the larger crop needs it.

(5) Foliage crops, such as lettuce and spinach, usually grow better in partial shade than do the fruit crops, such as tomatoes and beans. Every crop, however, needs to have light at least part of the day.

(6) Do not plant high-growing plants (corn, or tomatoes to be staked) where they will shade sun-loving plants. Shading can be decreased by having the rows run north and south.

(7) Crops such as cauliflower, peppers and egg-plant often fail because of weather conditions or slight errors in culture. Give their space to more certain crops or limit the area given them unless you are experienced.

(8) In a small garden there is plenty of "up and down" space, but it is limited sidewise. Tomatoes should be trained to trellises or stakes. Tall-growing peas, trellised and planted between rows of smaller vegetables, take no more space than do dwarf varieties and

can usually be grown on a trellis in the small garden.

(9) Provide for as wide a variety of vegetables as practicable.

(10) Leave enough space between rows to make good tillage possible. Slightly more space than is needed is better than too little, especially for the beginner.

(11) The suburban gardener should plan to use the horse cultivator. The long rows are better when the horse cultivator is used as it lessens the amount of turning necessary. When one does not want an entire row of a particular vegetable, two or more vegetables that require about the same space and time for their growth may be planted with advantage in the same row.

Varieties of Vegetables

TASTES differ greatly in choosing varieties of vegetables. In many classes there are a dozen or more well-known varieties that are reliable and well worth having in any garden. There are many new varieties also that seem to be as good as some of the old, but it is always safest for the home gardener to select the standard sorts. The following list comprises some of the best for table use:

- Asparagus.—Argenteuil, Palmetto.
- Bean.—Bush: Stringless Green Pod, Early Golden Wax, Wardwell's Kidney Wax, Valentine, Bush Lima. Pole: Caseknife, Kentucky Wonder.
- Beet.—Egyptian, Edmand's Early, Detroit Dark Red.
- Brussels Sprouts.—Dalkeith, Long Island Improved.
- Cabbage.—Early: Jersey Wakefield, Winningstadt. Mid-season: All Seasons, Succession. Late: Danish Ball Head, Late Flat Dutch. Red: Mammoth Rock. Savoy: Chester.
- Carrot.—Early Scarlet Horn, Chantenay, Danvers.
- Cauliflower. — Snowball, Dry Weather.
- Celery.—Early: Golden Self-Blanching White Plume. Late: Giant Pascal.
- Corn, Sweet.—Golden Bantam, Early Cory, Bantam Evergreen, Stowell's Evergreen.
- Cucumber.—Early White Spine, Improved Long Green, Boston Pickling.
- Eggplant.—Black Beauty, New York Improved.
- Kohl-Rabi.—White Vienna.
- Lettuce.—Leaf: Black-seeded Simpson, Grand Rapids. Head: Iceberg, Salamander, Big Boston.
- Muskmelon.—Emerald Gem, Paul Rose, Osage.

Onion.—Sets: White or Yellow. Seed: Danvers, Southport White Globe, Red Weathersfield, Prizetaker, White Queen (for pickling).

Parsley.—Moss-Curled.

Parsnip.—Hollow Crown, Guernsey.

Peas.—Early: Excelsior, Thos Laxton, American Wonder. Late: Gradus, Strategem. These are all bush varieties. Among tall sorts are Telephone and Champion of England.

Pepper.—Sweet: Ruby King, Neapolitan, Chinese Giant. Hot: Red Cayenne.

Potatoes.—Early Eureka, Early Ohio, Irish Cobbler.

Pumpkin.—Sugar, Quaker Pie, Large Cheese.

Radish.—Scarlet Globe Turnips, French Breakfast, Chartier, White Icicle. Winter: Black Spanish, Rose China.

Rhubarb.—Linnaeus, Victoria.

Salsify.—Sandwich Island.

Spinach. — Victoria. A type of spinach, known as New Zealand, will furnish greens throughout the summer months.

Squash. — Bush: White Scallop, Crookneck. Vine: Essex Hybrid, Delicious, various Hubbards.

Swiss Chard.—Lucullus.

Tomato. — Earliana, Bonny Best, Chalk's Jewel, John Baer, Stone.

Turnip, garden.—Milan, Snowball, White Globe. Swede: Hazard's Swede, American Purple Top.

Watermelon. — Cole's Early, Ice Cream, Kleckley's Sweet.

Spading Garden Land

SMALL garden plots cannot be plowed. They must be spaded. There are a few wrinkles that make the work more easily done and most effective. A considerable area can be spaded if the work is done a little at a time, so that it does not become tiresome.

The land should never be turned when it is extremely wet. The plowman's test is to squeeze together a handful of freshly turned earth, and, if it sticks together in a ball with the imprint of the hand upon it, it is too wet for plowing or spading; but if it crumbles when the pressure is released, the soil may be considered dry enough to spade or plow.

Do not turn the land up in large spadefuls. Begin at one side of the plot and work back and forth across the plot, maintaining a straight line, cutting the soil in thin spadefuls and turning completely over. If the soil does not crumble readily, use the edge of the spade and break up each spadeful immediately after it is turned. For this work the ordinary square-pointed spade is considered the most desirable.

On loose soils and on land that was

spaded or plowed during the autumn, a four-tined spading fork is often preferable to a spade. While the fork will not turn the bottom soil to the surface quite as well as the spade, this complete turning is not desirable on land that was plowed or spaded last fall, and the fork leaves the soil in a more finely divided condition.

The remaining lumps that escape breaking during the spading process should be pulverized within an hour or so after the land is turned over. This can be done either with a steel rake or with a hoe, care being taken to go deeply enough into the soil to break up all clods that will interfere with planting.

Thorough preparation of the soil is the keynote to success in gardening. Spade reasonably deep and loosen the lower strata without bringing very much of the subsoil to the surface. English gardeners spade two or three lengths of the spade in depth, working manure into the subsoil to a depth of 12 to 14 inches. Half the work of cultivation may be done before the seeds are planted in the garden.

Perennial Crops

Plantings of perennial fruit and vegetables add to the interest and value of every home garden. One of these is asparagus, which will thrive almost anywhere, provided it is planted in good soil. A plot of ground 15 to 20 feet square in one corner of the garden will supply all of the asparagus needed by an average family.

A few hills of rhubarb in sections where it will grow can be planted along the garden fence and furnish the family supply. The same is true of horseradish and of a number of the herbs, including thyme and sage.

To Stimulate Growth

TRUCK farmers in some districts have a little trick in the culture of vegetables for the market that the amateur might well copy. In early cultivation, until the plants are several inches high, they plow or cultivate the soil away from the plants, getting as close to the row as possible without injuring them. Then on subsequent cultivations, they plow the soil toward the row, throwing it up around the plants.

The principle involved in this trick is easily explained, so that the advantage is apparent. Early in the season, when the plants are beginning to grow, the element most necessary to plant development is not moisture, of which there is usually an abundance, but heat. What holds back plant growth at this period is lack of heat, and any method which introduces greater heat is naturally reflected in the rapidity of growth. When the soil is pulled away from the row the effect is to warm the soil which is left, by admitting air, and incidentally drying out the soil; that is not usually objectionable at this period.

After a few weeks, however, it is moisture that is needed, instead of heat, and the earth is thrown back toward the row again to conserve moisture.

Boxes for Early Plants

TOMATO, early cabbage, pepper, cucumber and other plants may be started in a window box. The boxes may be made four to six inches deep, six to twelve inches wide, and of a length to fit a south window in the kitchen or other warm room. Fill the box to within half an inch of the top with a clean rich loam soil, seed in shallow rows and keep the soil moist by frequent watering.

Tomato plants should be transplanted to small flower pots or boxes

when two or three new leaves appear. This will cause them to form a good root system and harden them ready for planting in the garden as soon as there is no longer danger of frost.

Melons, cucumbers, lima beans, and the like may be started in small flower pots or paper cartons a few weeks before it is safe to plant in the garden. The small containers should be sunk in soil or sand in shallow window boxes to keep moisture and temperature uniform.

When danger of frost is past, transfer all the plants of a pot to one hill without breaking the roots or loosening the dirt from them.

Making a Good Lawn

J. A. Clark, Charlottetown, P.E.I.

A GOOD lawn is one of the first essentials in making a beautiful home. There is nothing that can take the place of a beautiful green sward about any house if it is to be really attractive. Those who are planning to build should include the lawn in the original plan for the home. Draw up a plan of the contour of the ground adjoining the proposed site. The area of this will depend upon the amount of land available. In the country this should be not less than four times the area of the house site. In excavating, remove all the rich surface soil separately. The subsoil from the excavation is then used for filling depressions and grading so that the surface water will always flow away from the house. When the house is completed, and the rubbish incident to building is removed, the surface soil is brought back and used to make a seed bed for the lawn grasses.

The lawn should be as permanent as the house, and requires equal care in the making. The autumn is a good time to do the grading and filling. This should be done at intervals, allowing heavy rains to settle the transported soil several times before the final grading, ploughing and thorough tillage of the spring. This will prevent depressions developing afterwards in your lawn and tennis court. Before seeding a finer condition of tilth is required than for any other farm crop. Keep at it until the soil is like a garden or about ready for seeding onions. If the land is not in good heart, a heavy coat of manure should be worked in during preparation, and when necessary, a heavy dressing of fertilizer will greatly help to make the soil as rich as it should be for growing potatoes or roots.

The seeding should be heavy. The best lawns are made by having a great many fine stalks of grass. The best grass for shade and open lawns is the Kentucky blue grass. It is sown at the



Children and Gardening, a Combination Worth White in Spring—or Any Time. By starting young folks early in the game of gardening, they will find life afterwards more full of delights and joy.

rate of about 60 pounds or four bushels per acre. It weighs 14 pounds to the bushel. The seed merchants sell reliable mixtures, which usually contain a large percentage of Kentucky blue grass and white clover. Timothy and red top, when added to the mixture, are satisfactory grasses for making a permanent lawn. To secure a satisfactory seeding, take about one-half of the seed for the area and sow the area one way, carefully by hand. Then take the other half and sow across the first seeding. By this means you would avoid any misses and secure an even stand.

To avoid having the lawn bare during the early summer, sow oats at the rate of from four to five bushels per acre before the last cultivation in preparation for seeding. This will form a dense greensward within three weeks, and though requiring frequent cutting with the lawn mower, will not only make a beautiful lawn, but will serve as a nurse crop for the grasses until they are well established. Cover your lawn seed with a garden rake and roll from time to time after rain.

HORTICULTURAL SOCIETIES

London

MEMBERS will be delighted to know that our membership is going up rapidly. To date (April 3) it is 1,300. By the time this issue is out it will be almost up to last year—1,731. While not bad, it is hardly half way to 4,000.

It is expected that the "dozen gladioli" premiums will be given out about the first week of May. Every member will receive due notice by post card, which must be presented at Morgan's or Dominion Seeds in order to obtain spring premium. Please do not forget to present the premium notice. It will save yourself a lot of trouble and anxiety and the secretary some too.

All being well, next year, two coupons for premiums will be attached to the membership card so that when a member pays for the year his membership card will contain these. This will do away with sending out premium notices twice a year; also every paid up member will be sure of his premiums, as at present some go astray. Notice will be given through the press when the premiums will be ready. This change will, of course, not be till 1923.

A large membership committee of about 150 members is working to bring the membership to 4,000, one sub-com-

mittee for each of the four wards. A competition has been evolved for each ward with a captain in charge. The captains are: Ward 1, J. G. Morrison, 5 Windsor Ave.; Ward 2, W. E. Greenway, 17 St. Andrews St.; Ward 3, A. E. Suter, 88 Chesley Ave.; Ward 4, Sgt. Major W. H. Prowse, 894 Elias St. Committees can canvass any part of the city, but the members must live

in the ward of the committee in which they work. Fees paid by mail to the sec. will be credited to the ward from which they come.

Now everybody! Let's pull together. Those who have not already paid and have a 1922 membership card, kindly remit, now that notices are being prepared for the spring premium. —Ed. Wyatt, 524 Princess Ave., Sec.

The Newer Roses *

Miss I. Preston, Ottawa, Ont.

DURING the summer of 1921 a number of the newer roses were grown at the Central Experimental Farm at Ottawa. Notes on some of the outstanding varieties will be of interest.

Hybrid Teas

Aladdin—Coppery orange to yellow, fragrant; good in autumn.

La Champagne — Chamois yellow with apricot centre; large; good in autumn.

K. of K.—Semi-double; intense scarlet, brilliant color.

Margaret Dickson Hamill — Straw-colored; deeper shade in the autumn.

Pernetianas

Gottfried Keller — Single; apricot; spicy fragrance.

Mrs. Farmer—Indian yellow; reverse of petals, apricot; beautiful color; medium sized flowers.

Climbers

A test of climbing roses is being made at the Experimental Farm, and out of the forty varieties grown in 1921 the following were specially noted:

Christine Wright—Bright pink, medium sized, double flowers.

Leontine Gervais—Salmon rose, very attractive color.

Pauls Scarlet Climber—Strong grower with good foliage; flowers semi-double, vivid scarlet, shaded with bright crimson.

Source d'Or—Buds yellow, fading to cream when fully open; double.

Polyantha Pompons

Polyantha pompon roses, as a class, are successful at the Experimental Farm. They have a longer season of bloom than any others; the first buds show early in June, and the last ones are buried under the snow in November. Some mildew was noticed on a few plants in the fall, but most of the varieties seem perfectly healthy and free from insects all the season. They can be obtained in many colors, and, although the blossoms are borne in

clusters, the shape and doubleness of the flowers are so varied that a collection of them is full of interest. Special mention should be made of the beautiful shape of the buds in a Cecile Brunner, George Elger, Etoile Luisante, and others. Out of the collection of forty-eight varieties tested the following of the newer sorts are recommended.

Eblouisante—Very double, deep red flowers, beautiful, and effective in beds.

Echo—A dwarf form of Tausend-schon, semi-double, pink flower.

Etoile Luisante — Buds vermilion, opening coppery pink.

George Elger — Yellow, opening cream. Large clusters.

La Marne — Semi-double, salmon pink flowers; dark green glossy foliage.

Merveille des Rouges—Bright, velvety crimson.

Renoncèl—Pink, large clusters of Ranunculus shaped flowers.

Rodhatte—Clear, cherry red, large clusters of large semi-double flowers.

Yvonne Rabier—Double white, good foliage.

Older Varieties

The following are some of the best of the older sorts:

Aennchen Muller—Bright pink.

Jessie—Bright orange-red.

Katherine Zeimet—Pure white; free blooming.

Mrs. W. H. Cuthbush—Bright, deep pink; free flowering.

Orleans Rose—Vivid rosy crimson; free flowering.

Hybrid Rugosa

Few hybrid rugosa roses of great merit have been introduced in recent years; but the two following are worthy of mention:

F. J. Grootendorst—Foliage like rugosa; flowers bright red with fringed petals; small double blooms in large clusters; perpetual flowering.

Agnes—A hybrid between Rosa rugosa and Persian yellow, raised at the Central Experimental Farm by the late Dr. W. Saunders; foliage like rugosa; flowers double, pale amber; form good in the bud, not so good when fully open; fragrant; very early.

*From report of Committee on Names and Varieties given before the convention of the Ontario Horticultural Association.

QUESTION BOX

W. E. Groves

Chinese Lily After Flowering.

Can a Chinese lily be kept for a second year after flowering?—M. E. C., Dunnville, Ont.

To avoid disappointment it is always best to throw out the old bulbs and start with fresh stock.

Cultivating Smilax.

How shall I cultivate smilax?—M. E. C., Dunnville, Ont.

This is usually grown in rich soil by the greenhouse men, the small plants previously raised from seed being planted a few inches apart and strings provided for support. Young plants give the best results and it may be that the plants covered by the question are getting old and had better be discarded. Smilax is easily raised from seed and if the plants are potted on as required in good soil and sticks or some other support provided, there should be no difficulty in securing good strings.

Hyacinths.

My hyacinths come up with five or six small spikes of flowers instead of one large one? Do I put them into too large pots?—F. A. P., Port Rowan, Ont.

There are a few varieties of hyacinths that frequently throw up more than one flower, and these are usually known to the bulb dealers. When purchasing it is sometimes possible to detect these by the bulb formation. It is not likely that over-potting or any cultural treatment is the cause, and the best thing to do is to take note of the varieties acting in this way and be careful to try some other kinds.

Growing English Violets.

Kindly give some information regarding growing English violets, as to soil and general treatment. Will they winter in the open in Western Ontario and will they blossom here? Can the seed be successfully germinated by amateur? What variety gives best results?—M. F. A., Glanworth, Ont.

The English violet should not be difficult to grow, if a fairly sheltered and partially shaded position is provided. Good loam with the addition of a little bone-meal, if available, is the soil to use. Seed may be germinated, but propagation by division or by runners is so much quicker in results that either of these is the better method to follow. Unless the plants are in a naturally protected spot some winter protection should be given. For outdoor growing it is best to stick to the old type *Viola odorata*, rather than the better varieties. While such kinds as *Princess of Wales* are much finer, they lack the hardiness of the older kinds and unless grown indoors are not satisfactory.

Making Dahlias Bloom.

Dahlias planted last spring grew five to six feet high, but only a few plants bloomed. Why?—H. P. R., Owen Sound, Ont. Sound, Ont.

It is hardly possible to deal fully with dahlia culture within the limits of a reply such as this. The causes of failure have to be found either in soil, position or general treatment. The fact that the plants grew five feet high proves that the soil is good. Might it not have been manured much too heavily? This is possible even though the plants revel in a good soil. The enquirer's own statement that the roots, planted in a sunny position, bloomed well suggests another possible reason for failure. Were the plants that did not bloom in the shade? The best results are usually obtained by planting in the open. Whilst watering is necessary, it is easily possible to give too much. It is unwise to keep the plants in a constant state of moisture. It never hurts a plant to get dry; the damage is only done when we allow it to stay dry, and there is a great temptation when water is easily obtainable to turn on the hose every day, with no useful results. Another possible cause of failure may be insect pests. Earwigs are very fond of dahlias, and where they are prevalent will keep every bud eaten off unless caught. Some simple system of trapping usually succeeds.

Rubber Plant Losing Leaves.

"My rubber plant is losing its leaves one by one. They become dark spotted and fall off. What is the cause and remedy?"—R. A. H., London, Ont.

The plant may have become too wet, or have been kept in a dark part of the house. Gas might be responsible, or cold would also produce the condition described. The enquirer will know if either of the last two reasons apply. If not, it is more than likely that too much water and bad drainage causes the damage. If the plant stands in a jardiniere it is necessary to guard against allowing water to remain in the receptacle. This not only sours the soil, but affects the general aeration necessary to plant life. See that drainage in the pot is good, and water carefully during the dull days. Give all the light possible, and keep the plant away from draughts.

Ivy with Scale.

Could you tell me what is wrong with the sample of ivy I enclose?—L. B., Owen Sound, Ont.

The leaves have been apparently infested with scale. The plants are likely in pots or tubs and should be cleaned as well as it is possible. The scales have to be loosened and washed off. Any insecticide strong enough to kill the

scale would possibly injure the plant. A simple wash is made of soap and water, about two ounces to a gallon of water and used at a slightly warm temperature. A frequent spraying with this solution followed by washing with clear water should help considerably. A little later, new leaves will begin to show and if the spraying is kept up as a preventive, there should not be much further trouble. In spring give a little fertilizer to secure a strong healthy growth.

Starting Formosa Lily Bulbs.

When and how shall I start Formosa lily bulbs, and care for them after they have started growth?—J. D., Niagara Falls, Ont.

Lilium bulbs should be potted much the same way as followed for hyacinths. The soil would be improved if a little leaf-mould were added. Pot the bulbs so that they are just level with the soil, and it is wise to keep the soil at least an inch below the top of the pot. Liliium root out freely on the top of the bulb, and by following this method a little top dressing can be given, which is a great help. There is no need to keep these bulbs in the dark, as in the case of hyacinths. They should be kept cool until the pots are fairly full of roots, after which a warm room or window can be provided. The only pests to look out for are aphids, which can be easily cleared with a weak solution of soap and water.

Madonna Lily.

When the foliage of the Madonna Lily has died in the fall, what treatment is needed to get the foliage growing in September? Should the bulbs be lifted, cured and planted again in August?—C. L. T., Dutton, Ont.

Just why new foliage is needed in September is not quite clear, but the less these lilies are disturbed the better. They usually form two sets of leaves a year, the first for the support of flower stems and the latter for the manufacture of new bulbs. The best success is usually secured by leaving the bulbs in the ground and not disturbing them until they get over-crowded or are exhausted. If new foliage is made in the late summer, it is well to try and avoid smothering when mulching for the winter. A small branch thrown over before the mulch will prevent this. It is almost impossible to buy these bulbs in the fall quite dormant, and if not to be planted until spring, it is possible to keep them fresh in a box of soil in a cool cellar for early spring planting, even saving the green foliage through the winter.

Prizetaker onions should be started in the greenhouse or hotbed, if large onions are wanted.

Horticultural Research at O.A.C.

IN view of recent criticisms of the horticultural department at the O.A.C., Guelph, and of developments which culminated last month in Prof. Crow's dismissal, a brief record of research and experimental work performed and in progress by that department is of interest at this time. Throughout the past decade, Prof. Crow and his assistants, handicapped as they claim and have been by lack of funds, equipment and men, have not only performed the duties of teaching horticulture in all its branches to the large classes, regular and special, and of maintaining the extensive gardens and ornamental grounds of the college and

campus, but have also either completed or have under way investigations of much importance to the fruit and vegetable growers of the province, whether commercial or amateur, and to a less extent, the flower and ornamental plant growers. The nature of much of this work, with results, was learned by a special enquiry made at the college by The Canadian Horticulturist on March 23 and 24. Some of these facts have been made public this winter and before at fruit and vegetable growers' meetings by Prof. Crow and his assistants; others have not hitherto been published. In the space here available, only a brief synopsis can

be given. Research work in fruits has concerned chiefly biennial and annual bearing, summer pruning and winter injury.

The results of studies in the fruiting habits of apple trees and in methods of securing annual crops of fruit should prove of immense value to the apple industry. It is well known that apple trees ordinarily bear only every other year. The work at Guelph has proven that such habit can be corrected—that most varieties of apple can be made to bear every year. Fruit bud formation in biennial bearing trees is confined to the "off" year. By repeated investigations, Prof. Crow has proven that regular or annual bearing can be secured by preventing the formation of so many fruit buds in that "off" year. How it is done has been told by the professor at many fruit meetings during the

A Fruit Variety Chart for All Canada*

By A. B. Cutting

Class and Kind of Fruit	Distances for Planting				Varieties for Various Purposes and Places				REMARKS		
	Home Gardens		Farm Orchard		Of Widest Adaptability	Of Local Importance	Hardest of the Class	New or Uncommon Worth Trying			
	Rows Apart	Rows	Rows Apart	Rows							
Pome, or Core, Fruits	TREE FRUITS										
	Apple.....	30'	30'	35' to 40'	35' to 40'	Duchess G..... Wealthy G..... Fameuse (Snow) D McIntosh D..... Grimes Golden G. King G..... R. I. Greening C. Wagener G..... Northern Spy G. Golden Russet G.	Crimson Beauty (N.B. Que.) New Brunswick (N.B.) Dudley (N.B.) Gravenstein (N.S., Ont. BC) Blenheim (N.S., Ont.) Delicious (B.C.) Jonathan (B.C.) Baldwin (Ont., N.S.) Yellow Newtown (B.C.) Roxbury (N.S., called Nonpareil) Milwaukee (North)	Blushed Calville C.... Duchess G..... Charlamoff D..... Lowland Raspberry G. Patten Greening C.... Hibernial C.....	Melba G..... Joyce G..... Lobo D..... Patricia G..... Pedro G..... Spiotta G..... Siro C..... Wilgar C..... Cox Orange D..... Rome Beauty G.... Winesap G.....	Many other well-known varieties do well in the various provinces and localities. The hardest kinds are recommended for the most favored situations in the prairie provinces and for the coldest parts of the other provinces.	
	Apple, Dwarf..	12'	12'			Any varieties worked on French Paradise and Doucin stocks.....	Dwarfs are useful for backyard gardens.....	Varieties worked on Doucin Stock.....	Any variety is worth trying.....	Dwarf apples are not recommended for commercial planting, nor for general farm orchards, but are suitable for home gardens where space is limited.	
	Crab Apples..	20'	20'	25'	25'	Whitney G..... Florence C P..... Transcendent C P Martha G..... Hyslop C P.....	Montreal Beauty (Que.) Virginia (Man.)	HYBRIDS: Silvia G..... Jewel G..... Charles G..... Elsa G..... Robin G..... Osman G..... Columbia G.....		Other hybrids and crosses originated at C.E.F., Ottawa.....	Every home garden should have one or more crab apple trees. The hybrids are best for the west and other districts where standard varieties do not succeed.
	Pear.....	15'	15'	18' to 25'	18' to 25'	Bartlett G..... Bosc D..... Sheldon G..... Seckel G..... Duchess G..... Anjou G.....	Clargeau G..... Howell G..... Winter Nelis G.	Clapp's Favorite D... Flemish Beauty G.... Kieffer P..... Lawrence G.....	Bartlett-Seckel..... (A cross)	Various forms of blight interfere in some districts with successful commercial culture, but that should not prevent culture everywhere for home use.	
	Pear, Dwarf...	10'	10'			Duchess and others worked on quince roots.....	Used chiefly for backyard gardens.....	Angers quince stock makes best union.....	Any variety worth trying for experiment	Occupy but little room, easily cared for and usually come into bearing sooner than standards. Besides bush form, may be trained in various shapes.	
	Quince.....	10'	10'	15'	15'	Orange..... Champion.....	Rea..... Meech.....	Orange..... Rea.....	Vandeman..... Bourgeat.....	One or two trees worth having in any garden where climate permits.	
	Apricot.....	15'	15'	20'	20'	Moorpark..... Harris.....	Montgamet..... Royal.....	Gibb..... Budd..... Alexander.....	Stella..... Superb.....	Not much grown in Canada, but will succeed in warmest parts of Ontario and British Columbia.	
	Cherry, Sour...	15'	15'	20'	20'	Early Richm'd CP Moutmorency CP.....	English Morello C P..... May Duke G..... Olivet C P.....	Orel G..... Ostheim G.....	Various hardy sorts imported from Russia	Various native species of cherries might be grown in home gardens of the west.	
	Cherry, Sweet..	20'	20'	25' to 30'	25' to 30'	Governor Wood D Black Tartarian G Napoleon G..... Elkhorn G..... Windsor D.....	Black Eagle D..... Yellow Spanish D..... Bing G..... Lambert D.....	Governor Wood D.... B. Tartarian G..... Schmidt G..... Windsor D.....	Pickering G..... Bing G..... Gold D..... Lambert D.....	Succeed commercially only in British Columbia and Niagara District, but do fairly well in some other localities. Worth taking chances with in home gardens anywhere that fruit grows.	
Peach.....	15'	15'	20'	20'	Greensboro D.... Early Hale D..... St. John G..... Early Crawford G Fitzgerald G..... Elberta C P..... Smock G.....	Alexander D..... Garfield G..... Niagara G..... New Prolific G..... Late Crawford G..... Lemon Free C P..... Salwey C P.....	Sneed D..... Greensboro D..... Champion D..... New Prolific G..... Hill's Chili G..... Crosby C P..... Longhurst C P.....	Mayflower D..... Rochester G..... Carman D..... Belle D..... J. H. Hale G.....	All varieties mentioned are yellow-fleshed free-stones, excepting Greensboro, Early Hale, Alexander, Mayflower, and Sneed, which are white, fleshed clings or semi-clings, and Belle-Champion, and Carman, white free-stones.		
Plum..... (Including the three chief types: European Japanese and American).....	15'	15'	18' to 20'	18' to 20'	EUROPEAN: Washington D..... Bradshaw G..... Lombard C P..... Monarch G..... Grand Duke G..... Reine Claude G..... Damson P.....	EUROPEAN: Yellow Egg G..... Aretic C P..... Italian Prune G..... JAPANESE: Shiro (Hybrid) D..... Abundance G..... Burbank G.....	AMERICAN: Cheney G..... Aitkin C..... Mankato G..... Odegard G..... Assiniboine G..... Bixby G..... Wolf G.....	HYBRIDS: Omaha G..... Waneta G..... Kaga G.....	The American plums are adapted to parts of the west. The hybrids also should be tried in cold districts. European varieties do well in British Columbia and most parts of the east. Japanese kinds are suitable for the milder districts		

past two years. It was explained with special clearness at the meetings of the Niagara Peninsula Fruit Growers' Association in Grimsby and St. Catharines. The fact to record here is that it can be done and that the work of the O.A.C. horticultural department is largely responsible for making the fact known.

The summer pruning of young apple trees as a factor in hastening the bearing period and the effect of such pruning on yield, quality and regularity of bearing has been studied with results entirely contrary to the teaching and recommendations of recent and former years. It has been shown that summer pruning does not hasten the production of fruit; that it results in less growth than that produced by dormant pruning; that dormant pruned trees do not grow as rapidly or come into bearing as early as trees with little or no pruning, either dormant or summer; that unpruned trees have made a larger growth and are now bearing more heavily than either summer pruned or dormant pruned trees, etc., etc.

Studies have been made on winter injury of fruit trees with special reference to hardy and tender varieties, to factors that cause or predispose fruit trees to winter injury, on cultural methods that may be used to prevent or lessen the losses due to winter injury, the effect of stock on scion in relation to hardiness, yield, etc. Experiments have been conducted to determine the best kind of hardy stocks for fruit trees with special reference to apples. Better methods of training and pruning fruit trees have

been under consideration, also better methods of top-working fruit trees.

Investigations are under way respecting the possibilities of nut culture in Ontario, with reference to the location of trees producing superior nuts and to methods of improving and propagating nut trees. The introduction and testing of Chinese fruit and nut trees is in progress.

To obtain a method by which the hardiness of fruit seedlings might be determined without waiting for a test year, both in production of hardy varieties and in the production of hardy stocks, artificial means of determining hardiness are now being studied. With the special apparatus in use, the tests show a marked correlation between the ability of the scions to withstand cold temperatures and the hardiness of the varieties as they are known out-of-doors.

Breeding Apples, Plums and Berries.

Plant breeding work has been conducted with apples, plums and strawberries. Out of a large number of seedlings of apple crosses which have fruited for four years, 10 seem to be of a very superior nature. There are also some 800 apple seedlings about five years of age which have not fruited, but which are all very desirable crosses and which are expected to furnish one or more varieties of promise. There are also some 40 plum seedlings of the Glass variety, a number of which promise well.

The strawberry breeding work was commenced in 1913-14 with imported English

varieties of high quality crossed with standard Canadian commercial sorts. The object has been to combine the flavor and quality of the English varieties with the hardiness and shipping quality of the Canadian varieties. The original number of seedlings raised was 7,500. These have fruited six times. By eliminating each year the less promising seedlings, there are now some 40 seedlings on hand for further testing, of which about 15 have already proven to be varieties worthy of general culture on the basis of utility.

Breeding Work With Vegetables.

The variety tests and breeding work in vegetables that have been conducted during the past five years are little known to growers in general because only now are results beginning to be sufficiently well established for publicity. In some cases, conclusions have not yet been arrived at, but the work is progressing favorably.

In the spring of 1918, seed of Mary Washington asparagus was sown and in the following year 1,400 plants were set out. Plants were selected and marked according to vigor. Cutting tests were started in the spring of 1921 and production records kept. This will be continued this spring. Later all desirable plants will be removed to an isolation bed and allowed to cross among themselves for the production of a superior strain of this excellent variety.

In beans, work has been under way with a view to securing disease-resistant varieties or strains of varieties. During the past sum-

A Fruit Variety Chart for All Canada*

(Continued from page 92)

Small Fruits, or Berries	VINE FRUIT:				BUSH FRUITS:				Notes
	Grape	6'	6'	8'	8'	5'	5'	6'		6'
	Moore's Early G (B) Worden G (B) Concord G (B) Lindley G (R) Agawam G (R) Niagara D (W)	Campbell's D (B) Wildor G (B) Delaware D (R) Vergennes D (R) Catawba D (R)	Early Daisy CP (B) Manito G (B) Moyer D (R) Brighton D (R) Winchell D (W)	Mary D (R) Lincoln G (B) Eclipse D (B) Portland D (W) Ontario D (W)	Outside the district where grapes are grown commercially, it is usually necessary to protect the vines in winter by laying down and covering with soil. This necessitates special training.				
	Victoria (B) Naples (B) Lee Prolofic (B) Fay (R) Perfection (R) Cherry (R) Wildor (R) White Grape	Champion (B) Raby Castle (R) Victoria (R) Large White White Cherry	Saunders (B) Climax (B) Red Dutch Red Grape Pomona (R) White Grape	Kerry and other Saunders's black hybrids	Some varieties can be grown anywhere in Canada. Currants are especially valuable for cold districts, but should receive more attention by home gardeners everywhere. Try some of the newer varieties.				
	Pearl Downing Josselyo (Red Jacket)	Oregon Champion Whitesmith (English) Industry (English)	Carrie Houghton Smith	Mabel Poorman Chataqua (Eng.)	Another fruit of wide adaptability with special value for cold regions. English sorts deserve greater popularity in home gardens.				
	Marlboro Herbert Cuthbert Golden Queen (W)	Loudon St. Regis (Ever-bearing)	Herbert Sunbeam King Minnetonka	Count Brighton Newman No. 23 Latham	In home gardens, better to grow in rows than in hills. In coldest districts, canes require bending down and holding with earth for protection in winter.				
	Hilborn Older Gregg	Conrad Cumberland Smith Giant	Hilborn Older	Honeysweet Farmer	Not quite so hardy as the reds. In purple raspberries, the leading varieties are Shaffer and Columbian				
	Agawam Snyder Eldorado	Wachusett (N.S.) Minnewaski (N.S.) Kittatinoy (So Ont.) Himalayan (B.C.) Mammoth (B.C.)	Agawam Snyder Eldorado	Blowers Joy	Succeed in warmest districts and in many other sections when protected. The dewberry, a trailing blackberry, is still more tender; leading varieties, Lucretia and Mayes. The loganberry, a red-fruited type of blackberry, is important in British Columbia.				
	Dunlap Splendid Warfield X Bubach X Glen Mary Wm. Belt	Parson (Que., Ont.) Sample (Fast) X Buster (Que.) X Marshall (B.C.) Magoon (B.C.)	Dunlap Beder Wood Dakota Lovett Tennessee	Howard No. 17 Minnesota Ophelia Portia X	Varieties marked with X have imperfect flowers, and require planting near a perfect variety of same season for pollination. No home garden should be without strawberries. Choose varieties of local adaptation.				
	Americus Progressive	Superb Minnesota	Minnesota Progressive		Continue to bear and ripen fruit throughout summer and fall. Remove first flowers.				

* This chart was prepared for farm orchards and for small fruit gardens in town or country. Part of it was published last year in the "Canadian Countryman." It considers varieties adaptable to conditions, as indicated, in all parts of Canada. It includes most of the money-making varieties. Distances between rows and plants in rows would be greater in some cases for commercial planting. They vary also for varieties, for methods of culture and for the different provinces. Between apple and pear trees, fillers may be used.

Varieties in each class are arranged mostly in order of season for use. "New and Uncommon" includes some old varieties that might be better known. "Hardest of the Class" suggests varieties for culture in coldest districts where that particular class of fruit (apple, pear, etc.) will grow.

ABBREVIATIONS: G—General, or all, purposes. D—Dessert. C—Cooking. P—Preserving and Canning. (B)—Black or blue. (R)—Red. (W)—White.

mer alone, some 9,000 bean plants were grown from selections and crosses. From these about 450 disease-resistant plants were selected. They include bush, heavy yielding wax and green beans of a stringless nature and high quality, and also high quality and disease-resistant white beans of marrow-fat size. From a cross of the white field bean and the Scarlet Runner, a pea bean has been secured which for the last two years has shown no anthracnose.

The celery breeding dates from 1914. Seed of some of the strains developed have been distributed for the past three years and reports from such well-known market gardeners as F. F. Reeves, Humber Bay, state that they are finer than any variety on the market at the present time.

In lettuce, a strain of Grand Rapids lettuce has been developed that will force in nine weeks. In an effort to obtain a long-standing, large, solid-heading variety, tests started with 78 varieties have dwindled to six of the best, with Iceberg the best of the lot for hot weather. Of this variety, the department now has two strains, one of which heads a week before the other. For test this year, there are some 85 progeny lots of one plant each which will be tested separately.

In 1916, onion breeding work was started with Southport Yellow Globe, Yellow Danvers and Denia. Since then three generations of inbred onions have been secured. The object has been to secure bulbs of uniform type and color, and with heavy yielding qualities. Exceedingly promising results already have been secured.

In five years' work, some exceptionally promising seedlings of rhubarb have been secured for outdoor use and for forcing. The writer saw three seedlings of marked superiority growing in a cellar at the college among a number of well-known commercial varieties. They were of exceptional high color and quality.

Beet work has been under way since 1918. Seedlings of various varieties have been secured. An Early Egyptian beet has been developed of the best flat early type and almost entirely dark red.

The cabbage work has been limited to breeding a superior strain for early forcing. Last year heads of cutting size were secured after the plants had been set out two months.

Flowers and Ornamentals.

The breeding work with flowers has been limited, due to lack of funds and facilities, but it has not been entirely neglected. Several lily crosses have been made and brought to maturity, also crosses of several varieties of iris. For the past two years flowers have been secured in the first generation of Iceland poppy crossed with Oriental poppy. During the past season, crosses were made in rose, peony, gladiolus and lily, and the seed will be sown this year. About 150 crosses of gladioli with montbretia also have been secured, a few of which flowered for the first time last year.

This winter, cuttings of coleus, silver-leaved geranium, carnation and chrysanthemum were treated with varying strengths of chemicals before being placed in the sand for rooting. Best results were secured when the cuttings were soaked in a one to 1,000 normal solution of potassium permanganate for five hours. A remarkably vigorous root action was caused and the number of cuttings ordinarily lost by "damping off" was cut down to nil.

With hardwood cuttings the same effects were noticed. Cuttings of each of root and scion of hardwood shrubs and trees were used for this work to compare the strength of growth made and the ability of the plants to reproduce by the two methods. It was found that many of the shrubs made more

vigorous growth from root cuttings than from scion cuttings and that in some cases root cuttings would succeed where scion cuttings would not. Of special interest is the apple which apparently propagates quite freely from root cuttings while scion cuttings refused to root at all.—A. B. C.

NIAGARA PENINSULA

Grimsby Storage Plant

AFTER several seasons of successful demonstration, the Dominion Department of Agriculture has handed over to corporate ownership its Grimsby, Ont., plant for the pre-cooling and storage of tender fruits. This warehouse, which since 1914 has been operated under the direction of the Dairy and Cold Storage Commissioner, J. A. Ruddick, as an experimental plant, has now been taken over by the Growers' Cold Storage and Ice Company, Limited.

It was from this point that the suitability of properly filled brine-tank cars for the long carriage of tender fruits was first demonstrated in Canada. This fact, combined with the other facilities offered at this warehouse, enabled growers to successfully ship tender fruits to Winnipeg and other western points. Many thousands of dollars were saved to growers, by enabling them to gather carload lots to hold fruit over weekends and temporary market gluts. Loss to canning factories and to growers was likewise obviated in a similar way.

The necessity for cold storage facilities in the successful handling of tender fruits has so impressed itself upon the growers that a strong local organization has been formed to operate the plant. Under the new arrangement the capacity of the warehouse will be quadrupled, and improved refrigeration will be installed, as well as mechanical facilities for the manufacture of ice.

N.P.G., Ltd., to Expand

FOLLOWING its policy of expansion, the Niagara Peninsula Growers, Limited, is making provision for the handling of a large portion of the apple crop of Western Ontario. After the meetings addressed by A. Sapiro, the co-operative marketing expert from California, a few weeks ago, the company was approached by a deputation of apple growers, who are outside of the area now covered by the N. P. G., Ltd., requesting that they be permitted to share the advantages of co-operative marketing enjoyed by members of the association. The matter, President T. J. Mahony stated, has been considered by the company, and it is probable that apple units will be formed in the western and southern sections of Wentworth, and in apple-growing districts adjoining the area embraced by the company.

Apple growers have for many years been at a disadvantage owing to poor grading and packing—and in many cases from neglected orchards producing poor fruit—in the local markets. Fruit from British Columbia has in many instances taken precedence over home-grown apples. The British market has, on account of the care taken in marketing and packing British Columbia and maritime province apples, almost become a closed door to the Ontario apple. It is claimed that the apples produced in Ontario can be of a better quality than those grown in any other part of the world, and a strong effort will be made to recapture the local, British, American and foreign markets for the Ontario apple.

Better shipping facilities are assured the fruit growers of the Niagara peninsula this season. Recently representatives of the shipping companies operating in the district visited the several shipping points in company with President Mahony, Sales Manager Carpenter, and other members of the executive, and results that will mean much to the growers will undoubtedly obtain therefrom. Arrangements are being made for adoption, by the railway companies, of the use of the sidings at St. Catharines, Vineland and other shipping points. Shipping platforms will be built at other points, and arrangements for utilizing to the extreme limit the pre-cooling plants and refrigerator cars are being rapidly completed.

Pear Blight Prevalent

E. F. Palmer, Vineland Station, Ont.

PEAR blight is very prevalent this year and, unless drastic steps are taken, it is likely that there will be further severe losses in remaining healthy and diseased trees.

Pear blight is caused by microscopic bacteria spread by insects from diseased wood to healthy shoots and blossoms, where it grows and develops beneath the bark. For this reason, spraying as a control is worthless. The only remedy is to cut out the infected parts.

During the winter and spring at pruning all infected parts should be removed. The symptoms of this disease are: On the trunk or branches, a blackish color of the bark; on twigs, discoloration and shrivelling; also probably some leaves will still be attached. To make sure that the blackened areas on the trunk are really caused by blight, take a knife and cut down the bark. If there is a reddish or brown appearance beneath the surface, the trouble is blight. Unless these infected parts are removed, the disease will spread very rapidly, and in two or three years at the most the tree will be dead or useless. In the meantime, if left, this tree is serving as a source of infection to all healthy pear and apple trees in the vicinity.

The bacteria winter over at the lower margin of the infection and, while the trees are dormant, cuts can be safely made two inches below the diseased part without the necessity of disinfecting the tools. If the trunk has become infected, the whole tree should be removed. Once growth begins, cuts must be made six to eight inches below any outward signs of injury. At this time the pruning tools must be disinfected thoroughly after each cut with corrosive sublimate, 1-1,000. (See Bul. 257, Ontario Dept. of Agr.)

In the spring, insects and ants particularly feed on the exudate caused by the bacteria and then carry it to the flowers and from there the disease is spread by honey-seeking insects. Ten thousand bacteria could find room on a pin head, and each is capable of increasing to a million or more in 24 hours. Shortly after infection takes place, the blossom spurs will wilt and droop. Go through the orchard again after blossoming and break off with the hands all such drooped parts before the disease can penetrate to the main branches.

Control, therefore, is only by prevention. Cut out all infected areas during the dormant period. Again after blossoming break off all drooped spurs and remove any later infections. Disinfect the tools with corrosive sublimate 1-1000 after each cut. Burn all infected branches and cultivate just sufficiently to keep the tree in moderate vigor.

Pruning Young Fruit Trees

E. F. Palmer, Vineland Station, Ont.

THE practice usually advocated in Ontario for young trees, (whether apple, pear, peach or other fruit) until they come into bearing, has been to give regular, fairly heavy annual dormant prunings on the theory that such pruning induces vigorous growth and makes for a larger, stronger tree. Experimental work in England, in the United States and at the Horticultural Experiment Station, Vineland Station, Ont., has shown conclusively, however, that the less pruning the young non-bearing tree is given, the larger, stronger tree it makes and the sooner it comes into bearing. Growth is only apparently induced by pruning. The long, thick, sappy growth in the young tree resulting from heavy pruning does not total as much, however, as the normal growth and extension of large and small branches in the unpruned tree. Careful measurements demonstrate this.

The reason for the unpruned or lightly pruned tree being larger than the tree receiving more severe treatment is in reality very simple and logical. The soil may contain an abundance of plant food, but this "raw" food must first go to the leaves and be there turned into "manufactured" food before the tree can make use of it for further growth and fruitfulness. Pruning, by removing part of the possible leaf area of the tree, reduces by just that much the ability of the tree to manufacture plant food, and hence inhibits growth.

With reference to pruning delaying fruiting, it has lately been shown that before there can be fruitfulness there must be a partial storing up of manufactured food in the branches, twigs and fruit spurs. This storing up of surplus food

naturally takes place first in the unpruned tree with its greater leaf surface and the unpruned tree is therefore the first to come into bearing.

Pruning Recommendation.—Head back the young tree at planting time, as is the present practice, to counterbalance the root pruning incident to transplanting. Limit subsequent pruning of the non-bearing tree to the removal of undesirable branches and even then thin out too little rather than too much. Head back a branch only when necessary to shape the tree and then head back preferably to a side branch. Prune lightly, recognizing that light pruning for the peach would be moderate pruning for the apple. As the tree reaches maturity and bears heavily, heavier pruning will have to be given to maintain a proper supply of new growth. We would appreciate growers writing for further information.

The snow and wind storm of March 30 and 31 did much damage to old orchards in Southwestern Ontario, many trees being badly broken, especially in Brant, Middlesex and Norfolk. Even young orchards suffered in Norfolk. Very little damage was done in the Niagara District.

The directors of the Niagara Peninsula Growers, Ltd., last month appointed C. W. Baxter as general manager and J. R. Hastings as secretary-treasurer of the organization. Mr. Baxter is now Fruit Commissioner at Ottawa, and Mr. Hastings, Chief Fruit Inspector for Western Ontario. Mr. Baxter's appointment to the position of general manager of the N. P. G., Ltd., followed the resignation of T. J. Mahony from the post. Mr. Mahony was elected president in February.



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MARITIME PROVINCES

Varieties for N.B.

At a meeting of the executive committee of the New Brunswick Fruit Growers' Association, held last December, it was considered advisable to urge the necessity of limiting the plantings of apples to not more than five or six commercial varieties, namely, those that have proved to be of the best general value.

For the St. John River Valley the executive recommends the following: Duchess or Dudley (either one for an early fall apple), Wealthy, Alexander, Fameuse, McIntosh and Bethel. Plant more McIntosh than the other varieties.

For the extreme lower end of the St. John Valley, that is, in the Long Reach section and in the Kennebecasis, it was felt that perhaps one or two other varieties might be used in preference to Fameuse and McIntosh.

It must be pointed out that this list is of course for commercial or shipping varieties and does not include varieties that are doing well in the St. John Valley and which, although all right for local markets, are not really suitable for outside markets; for example, such varieties as Yellow Transparent, Crimson Beauty, Red Astrachan, and Bishop Pippin, but the plantings of these should be very limited.

It was the unanimous opinion of the executive that as far as the St. John Valley was concerned the planting of such varieties as Baxter, Wolf River, Stark, Milwaukee, Ribston Pippin, Bishop Pippin, Gravenstein, Canada Baldwin and Ben Davis, should be strongly discouraged, with the exception that possibly the Bishop Pippin might be used to advantage in the Long Reach district.

For the section around Moncton and Shediac, including the Petitcodiac Valley, Welling Bros., Shediac Cape, offer the following suggestions: "We think it advisable to encourage the limiting of varieties of apples especially for commercial trade. As far as our selection goes for this district for commercial purposes, we would choose the same varieties which the executive recommends for the St. John Valley. All grow well here with the exception of Fameuse and McIntosh, which usually scab freely, but probably this can be overcome by spraying."

Possibilities of Bethel.

At the convention of the N.B.F.G.A., in February, Secretary Turney said: "What is needed to complete a list of first-class commercial varieties for New Brunswick is a real winter apple—a red variety of good quality, attractive appearance and a good shipper; the fruit to keep in good condition until the end of March, and the tree to be a vigorous grower, thoroughly hardy and an annual bearer.

"The only variety that we have at the present time that comes close to these requirements, is the Bethel. Its record so far shows that it is very hardy and the tree is vigorous, well-shaped, strong-limbed, in fact, as sturdy as an oak, and grows to a large size. The fruit is well colored, very attractive in appearance, of more than ordinary size, of good uniform shape, and ships well. The two points of doubt that have been raised concerning this variety are its quality and bearing record. That standard work, "The Apples of New York," has this to say of the Bethel.

"This shows its kinship to the Blue Pearmain in the quality, texture, form, con-

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spicuous dots and color of its fruit. Sometimes it has a rather dull appearance, but it may attain a bright and attractive, though dark red, color. The quality is fairly good. It will not bear rough handling, and is suitable rather for local markets than for shipping long distances. The tree shows a rather weak development of roots in the nursery, but in the orchard becomes moderately vigorous and generally quite productive. It has proved very hardy in Northern New York, and is recommended for planting for home use and local markets in that section and in the more elevated regions of the State, where varieties of the grade of hardness of Baldwin are apt to show winter injury. In such localities some prefer to grow it on warm soil or sod, to favor the development of better color. It is locally profitable. It is healthy, long-lived and a reliable cropper, usually comes into bearing rather young and bears annually. There is apt to be considerable loss from dropping of the fruit.

"Flesh—Yellowish, firm, coarse, crisp, moderately tender, moderately juicy, mild subacid, fair to good. Season—November to mid-winter, or possibly March. Uses.—Baking, dessert and local market."

"W. T. Macoun, Dominion Horticulturist, in his description of this variety, lists the tree as a strong grower. He gives the season of the fruit as mid to late winter, and describes the flesh as whitish with traces of pink, juicy, mildly subacid; core of medium size; quality good."

Apple Experiments in N.S.

INTERESTING and valuable experiments with English varieties of apples are being made at the Dominion Experimental Station at Kentville, N.S. As a large proportion of the Nova Scotia crop crosses the sea, it is, of course, important that varieties should be grown that best suit the British consumer. As a matter of fact, some of the best apples cultivated in the Annapolis Valley are of British and European origin, such as Blenheim, Ribston and Gravenstein, all well known in the British Isles. Out of the large collection of varieties at Kentville it is hoped a few others may prove to be well adapted to the Maritime Provinces. Some samples shown at a meeting of the American Pomological Society in Columbus, Ohio, attracted much favorable attention.

An outstanding feature of tests at Kentville with orchard fertilizers is that nitrate of soda should be used with care, as otherwise there is danger of the trees growing too late in the season and being winter-killed.

Outlook in Nova Scotia

IN discussing some of the factors that seemed to assure continued prosperity for the fruit industry of Nova Scotia, President Manning Ellis, of the N.S. F.G.A., whose address at the recent convention was read by Secretary Frank Foster, thought that one of the greatest was the continued downward curve of production all over America, and this in the face of greater consumption and increased demand.

"The largest crop of apples ever produced in America was in 1896—over 25 years ago," the address pointed out. "During that 25 years, the crop in Nova Scotia has shown a good steady growth, although for 10 years we have rested on our oars as far as new planting is concerned. Since 1910, the United States has shown a decline in acreage of about 65,000,000 trees. Ontario and Quebec are to-day barely growing enough apples to supply their own local

markets in an average crop year, and only in British Columbia, besides Nova Scotia, has there been a large increase in production. If these figures mean anything, they mean that for a good many years to come we can look forward with confidence to eager markets and profitable production.

"Another factor that I have never heard spoken of, but to my mind is of fundamentally great importance, is the changed marketing and monetary conditions in Great Britain, brought about during the Great War. In the years preceding 1917 we grew our produce in a country of high values and sold it in a market of low values. In other words, the dollar in Canada meant very much less in terms of what it would buy than its nominal equivalent, four shillings, in England. To-day this condition if not on a reversed basis is at least on a parietary. The English market will to-day pay from thirty to fifty shillings for a barrel of apples as readily as it would pay fifteen to twenty shillings before the war. This ratio of values, I believe, will continue. England will never return to pre-

Something Different

METZNER'S
GLADIOLUS ROSE ASH

(A blending of old rose and ashes of roses.)

A wonderful novelty, both by reason of its beautiful color and general fermentation.

IN A CLASS BY ITSELF

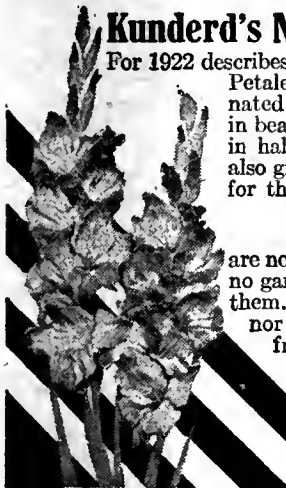
Every buyer an admirer. Many commendatory letters on file from pleased customers who invariably pronounce it "a jewel" or "a gem of the first water."

Its intrinsic value justifies a much higher price than we ask but we want every lover of the Gladiolus to enjoy its beauty.

Price, large corms, \$1.00 each or \$10.00 per dozen. Planting size (average 3/4 in.) \$6.00 per dozen.

Our catalog of new and rare varieties, all our own original production, now ready.

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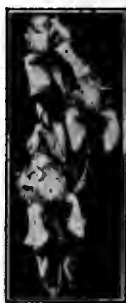
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For 1922 describes nearly 400 varieties in Ruffled, Plain Petaled and Primulinus Types, all of them originated by A. E. Kunderd. 29 varieties are shown in beautiful colors, and many others are illustrated in half-tone. Most complete cultural information is also given, with special directions for the growing of show flowers. **Mailed Free**

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Standard varieties and Everbearing varieties. Free delivery. List Free.
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war conditions along these lines, and with sterling returned to par and a reasonable reduction in cost of transportation and production, we should be able to show as good a profit even if prices do not stay at the present level.

"The third great factor that assures the continued prosperity of our fruit growing industry is the splendid growth of the co-operative movement. The fruit warehouses originally constructed only for the storing and packing of apples are rapidly becoming distributing centres for all the feed, fertilizer, and supplies of all kinds needed on the farms, and while conducted on lines that do not constitute a hardship on any legitimate dealer serve as a safety valve of prices and values and assure that all buying in the neighborhood, whether co-operatives or not, will get a fair deal. Through co-operative marketing of the fruit the grower is assured of the full value of his products whether it is pooled with the growers or handled direct through a shipping company in smaller units."

BRITISH COLUMBIA

Strawberries in B.C.

A BULLETIN on "Strawberry Culture," issued this winter by the B. C. Department of Agriculture states that on Vancouver Island and the lower mainland, the growers have come to the conclusion that Magoon is the most satisfactory variety which they can grow for shipping purposes. Its great advantage is the way it stands long-distance shipment, and the way it holds its color and firmness when opened for sale on the prairie provinces. For an early berry, Marshall is most largely grown. For a late variety to continue the season after Magoon, Paxton usually is grown. In the Hammond-Haney district this variety is commonly called Campbell. Besides these three varieties, a few others, such as Sharpless, Gold Dollar, Senator Dunlap, Royal Sovereign and Goddell, are grown in the coast districts to a limited extent but are not generally recommended for commercial planting.

For most parts of the West Kootenay district, the varieties recommended for shipping are Magoon and Dunlap. "At Wynndel, however," states the bulletin, "40 per cent. of the acreage is planted to Parson's Beauty, 40 per cent. to Dunlap, and 20 per cent. to Magoon. Magoon is the leading variety planted in most other sections in the Kootenay and it is the variety that is being planted most at the present time. A new variety called Van Sant is gaining some favor among growers at Erickson and Wynndel. This variety is a good shipper and of good quality. It is being tested out further by the growers for yields before being recommended as a variety to grow."

In the Salmon-Arm district, Magoon is by far the most widely grown. Other varieties have been tried with varying success. Of these, Pocomoke has proved a very heavy cropper and is a very good shipper, but needs an abundant supply of moisture, and is, therefore, no use on soils which are inclined to dry out. Oregon Improved has been found by a few growers to be a heavy cropper, very vigorous, and with drought-resisting properties. Paxton is grown for its lateness. Parson's Beauty, Marshall, Magic Gem and Williams give good results on rich soil.

In the Okanagan Valley, the varieties planted are chiefly Glen Mary and Magoon. Magic Gem is gaining in popularity.

In the Terrace district, which is situated

95 miles east of Prince Rupert, the varieties principally grown are "Magoon, Premier, and Hood River (Clark's Seedling), Magoon and Hood River being considered two of the best. Other varieties that are occasionally found are Magic Gem, Dr. Burrill and Skeena Wonder, the last named being a local production by Mechaud Bros., and is believed to be a cross between Magoon and Premier, having the foliage of Magoon, and the size, color, and smoothness of Premier. As this is a new district, it is advisable for growers to still further try out varieties."

Fruit Union and O.U.G.

VERNON Fruit Union affairs were given but little attention at the annual meeting of the shareholders of that body held March 24. Selling agency problems occupied the centre of the stage. The co-operative idea was not challenged, but rather the methods and details of its organization. The growers spent little time on the directors' report and financial statement of the Union, but as many said, "they were there to get control of the O. U. G."

That there is general dissatisfaction amongst the growers of the Okanagan who shipped through the O. U. G. last season is apparent, and under the circumstances it is not surprising that some of them are bent on finding out the reason. If there is room for criticism of the methods employed by the central selling agency, the growers can set machinery in motion to probe into the company's affairs and tell their fellow shippers the results of their findings.

The co-operative organizations throughout the valley must be maintained; they proved successful from 1915 to 1920 and because the machinery seems to have got out of gear, is no reason why the whole machine should be scrapped.

There are far too many rumors and counter rumors circulating throughout the valley, and even much further afield, about the unions and the O. U. G. These reflect not only on the particular associations in question but on the valley as a whole. It should be the business of the growers and

ASTER PLANTS

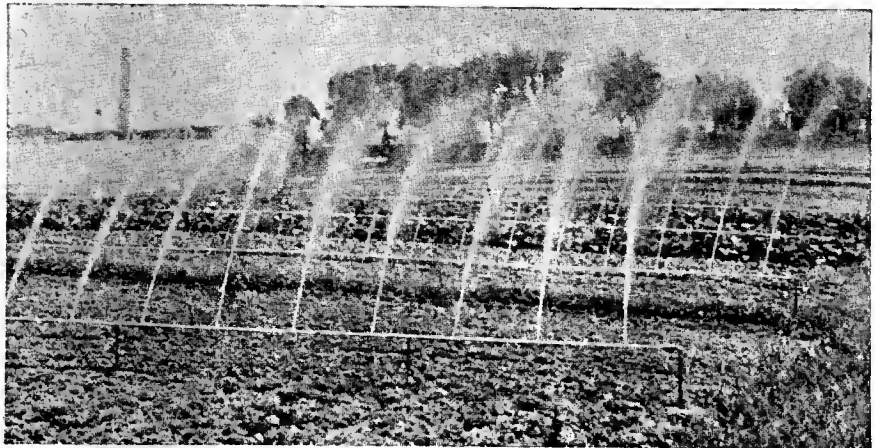
Vick's Rochester White, Lavender Pink, Shell Pink and Purple, Perfection, White and Rose, Branching White, Pink, Violet, and Peach Blossom, Heart of France, Pink Enchantress, Crimson Giant, Autumn Glory, Peerless Pink, White Mikado.

These are the cream of the best asters in existence. \$1.50 per hundred. Try a collection, 20 of each five colors. Strong plants. Add postage if wanted by mail.

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By an arrangement of straight rows of galvanized piping, drilled and tapped every three feet in our Factory, to absolutely accurate measurement, and fitted with the C. W. Skinner patent nozzles, with other patented attachments that accompany every equipment. The water is pumped directly into the system from your water supply by gasoline or electric pump, or from town pressure.

What does it do?

It provides the best possible insurance against loss. If you insure your crop in an Insurance Company, you get the COST of your crop in the event of loss. By Overhead Irrigation you make sure of a good crop, and get your PROFIT over and above your cost. It eliminates all possible loss from drought.

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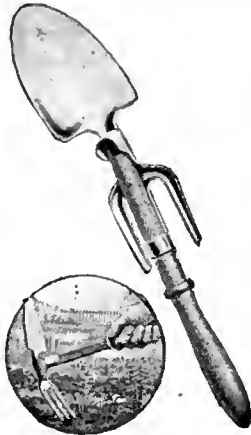
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Gardeners find it easy to work with, as it practically turns work into play—the "HANDY" being the acme of labor and time saving.

One tool only for potting, transplanting, weeding and hoeing, with no need to look around for the others and find them gone. Splendidly made of the best carbon steel, with ground blade and all metal fully protected from rust.

Handle one-piece polished, hardwood. Closed 17 inches long; open 10 inches long.

If not at your Dealers, send us seventy-five cents in stamps and we will mail you one post paid by return mail. Money back if not satisfied.

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the directors of the different organizations to take cognizance of this fact and set at rest these disquieting stories, which do much harm and no good. Good healthy criticism is always in order but when criticism gets beyond the criticizing stage something must be done.

And whatever action is decided upon it should be taken with caution, foresight and good judgment. The fruit business in the Okanagan is not the only branch of commercial life that is feeling the pinch. Many substantial concerns which have been carrying on for years have failed while others are struggling on as best they can. We are passing through a period of readjustment and times like these demand that careful and considerate action guide the ships of commerce through narrow and tempestuous channels.—Vernon News.

Shippers Name Officers

BEFORE the B. C. Traffic and Credit Association members adjourned their recent meeting, E. Doberer, Salmon Arm, the president, was honored by fellow members and was asked to accept a handsomely engraved silver tea service as a token of appreciation. W. H. Smith, Vernon, made the presentation and referred in the most laudatory terms to the high place in which Mr. Doberer was held by the shippers. Mr. Doberer thanked the donors in his usual happy style.

Officers elected at the meeting for the ensuing year were: Pres., E. Doberer, manager Salmon Arm Farmers' Exchange; vice-pres., B. McDonald, B. C. Growers, Kelowna; executive, F. Landry, B. C. Berry Growers; D. McNair, Armstrong; C. L. Lowe, Vernon; E. C. Skinner, Vernon; L. Hayes, Kelowna; H. B. Armstrong, Keremeos; E. Norman, Nelson; Guy Constable, Creston. R. M. Winslow was re-appointed manager and secretary, with W. M. Scott as his assistant.

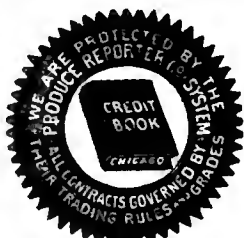
The fruit industry of Canada as well as of the United States, sustained a heavy loss in the sudden death of G. Harold Powell, general manager of the California Fruit Growers' Exchange, at Pasadena, Calif., on Feb. 18. To Mr. Powell, more than to any other one person, the fruit industry of America is indebted for ideals in the co-operative marketing of fruit.

Many of the readers of The Canadian Horticulturist learned with regret also of the death in January of Dr. John P. Stewart, who for 12 years was head of the department of pomology of Pennsylvania State College, and more recently engaged largely in experimental work in farm fertilization. Dr. Stewart frequently addressed meetings in Canada and was always welcome.

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BIGGER flowers, more brilliantly colored—more delightfully fragrant and more of them if you feed them Stim-U-plant tablets containing the nitrogen, phosphoric acid and potash that all plants need. Use it for all flowering plants, vegetables, fruits, trees and shrubs. You will get larger blooms, wonderfully gorgeous colors and delicious flavor. Great for lawns.
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It isn't a SPRAMOTOR unless we made it
"GETS"
Every Insect, Grub or Blight
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mercial Agencies.

CROPS and MARKETS

Standardizing Varieties

TO the Editor: The article entitled "Fruit Grading Problems," February issue, was very interesting. It seems to me that there is but one way of solving the troublesome problem of standardization. But this will take several years. I believe that Prof. Crow gives a hint of its solution in the subtitle of the said article, "Marketing Begins at Planting."

The growers of Oregon and Washington are solving this problem, if they have not already solved it, by planting only the varieties that eminently succeed in those regions. But in all other regions where fruit is commercially grown, the planting is haphazard; and too often traditional sentiment predominates in the choice of varieties.

I believe that the planting of a few varieties in a district where such varieties are successful will in time solve the problem. Charles W. Mann, who is an up-to-date orchardist of Massachusetts, and who is now president of the Massachusetts Fruit Growers' Association, was recently asked: "If you were to plant an orchard to-day what varieties would you plant?" And he quickly answered: "Baldwins for main crop." This man has learned that, owing to climate or other conditions, he can grow Baldwins to perfection. He has also learned that it would be more than unwise to try to compete with those western states by attempting to grow Delicious or Stayman Winesap.

It has been sufficiently demonstrated that the seedlings of the old Canadian Fameuse are eminently successful in the northeastern regions. Let the growers of those regions grow the McIntosh and others of its kind for the general market.

But this will be a work of patient education. Mr. Macoun and other pomologists of Canada are doing a wonderful work. And when these men have gone the length and breadth of the fruit districts of the country, recommending and urging the planting of varieties that succeed in given districts for commercial purposes, an encouraging beginning will have always been made in a workable standardization.

There will always be fruit growers who prefer to cater to a local trade, and such a trade may have peculiar local requirements. But we are now discussing the subject in a broadened sense. Prof. F. C. Sears, of Amherst, Mass., is an advocate of standardization. Yet because their trade is a local one, he and his associates grow several varieties that ripen successively through a long period. This not only meets a peculiar local demand, but it also helps in the solution of the labor problem. I believe, however, that if these men had a market such as we are now discussing, they would soon plant the varieties that would best meet those requirements.—Louis Graton, Whitman, Mass.

Products Standardization

ONE of the most encouraging signs in these days of depressed farm product values is the effort that is being made to improve our methods of marketing and distribution, and one of the first steps towards this end is the establishment of grades or standards," said C. W. Baxter, Dominion Fruit Commissioner, at the Dominion Fruit Conference. If we would extend and maintain our overseas trade in

ROSES, FINEST HOLLAND IMPORTED

Big two year plants. Assortment including Red, White, and Pink, selected from hundreds of varieties. Twelve, \$3.60; twenty-four, \$7.00; forty-eight, \$12.00, f.o.b. Niagara Falls, Ont. Cash with order.

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	Top Size		2nd Size		Flowering Size	
	per 6	per 12	per 6	per 12	per 6	per 12
America, soft rose30	.55	.25	.45	.20	.35
B. J. Hulot, blue .....	.40	.75	.30	.55	.25	.45
Brenchleyensis, red .....	.30	.55	.25	.45	.20	.35
Gandavensis, super mixed .....	.30	.55	.25	.45	.20	.35
Glory of Holland, pure white ..	.45	.80	.40	.75	.35	.65
Halley, salmon orange, early ..	.30	.55	.25	.45	.20	.35
Gloire de Kennermerland rose ..	.30	.55	.25	.45	.20	.35
Loveliness, creamy .....	.40	.75	.30	.55	.25	.45
Niagara fine yellow .....	.30	.55	.25	.45	.20	.35
Pink Beauty, pink, very early ..	.30	.55	.25	.45	.20	.35
Swaben, very strong yellow ...	.30	.55	.25	.45	.20	.35
Prince of Wales, light salmon ..	.30	.55	.25	.45	.20	.35
L'Immaculee, pure white .....	.60	1.10	.50	.90	.40	.75
Panama, deep pink .....	.40	.75	.30	.55	.25	.45
Peace, white, rose spotted .....	.40	.75	.30	.55	.25	.45
Willy Wigman, white and pink ..	.40	.75	.30	.55	.25	.45
White Giant .....	.75	1.40	.60	1.10	.50	.90
Pink Perfection50	.90	.40	.75	.35	.65
Wilbrinck, rose, early30	.55	.25	.45	.20	.35
War, deep scarlet50	.90	.40	.75	.35	.65

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Strawberry Plants

Senator Dunlap, \$6.00 per thousand; Wil-
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Good plants and well packed.

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SMALL FRUIT PLANTS
COOSEBERRIES—Josselyn, Downing,
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fruit, or for that matter in any of our farm products, this is very evident, for it is only by maintaining uniform excellence and reliable standards in such products that we

can hope to obtain and retain such markets. If it were only local markets that we had to rely upon, differences of opinion between shippers and consignees, Mr. Baxter stated, could be easily adjusted; but if we would grow and occupy any place commercially among the nations of the world we must look farther afield. To this end the standardization of our products and proper inspection service have proved, he stated, to be essential. Such regulations should be national rather than provincial, as is indicated by the experience of our neighbors to the south, who have different grading laws in different states, which sometimes conflict one with another. These laws are also liable to frequent change, causing endless confusion. One difficulty we have to overcome is the wide expanse of our producing area, the difference in climatic conditions, and in the nature of our products. However, it has been demonstrated that minimum standards can be established which, while working no hardship on the producer, stimulate him to improve the quality of his product, from which should follow better and more assured returns.

To Boost Grape Trade

A conference held at Buffalo, on March 28, under the auspices of the New York State Farm Bureau, Federation, R. J. Montgomery, manager of the Niagara District Grape Growers, Ltd., was chosen as chairman of a committee to investigate the advisability of establishing a central selling agency and a co-operative advertising campaign for the Concord Grape Belt, including New York, Pennsylvania, Ohio, Michigan and Ontario.

A realization that the establishment of a central association is the necessary foundation to the stimulation of grape consumption, through the medium of advertising campaigns and centralized selling agencies, resulted in the unanimous adoption of a resolution that a central association be created. A committee of seven was appointed with power to act in perfecting plans for the formation of the organization. Because of the multiplicity of details it is expected that it will take a few months before the organization is completed.

The committee includes R. J. Montgomery, St. Catharines, chairman; Frank T. Cupp, Saint Joseph, Mich.; Fred Johnson, West-

field, N. Y.; E. C. Gillette, Penn Yan; P. O. Schlender, Sheridan; L. E. Pratter, Paw Paw, Mich., and W. Y. Velle, Marlboro.

Duties of the committee are to perfect

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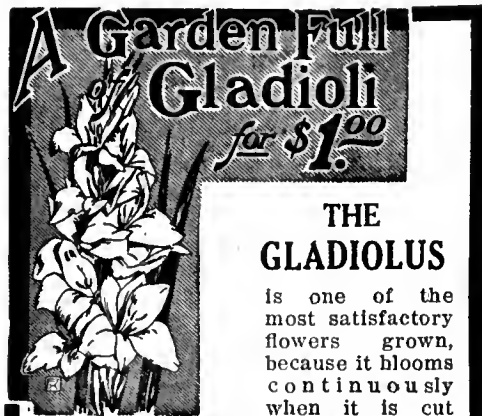
Over 20 years in the Canadian trade. Each year adds to our customers among Horticultural Societies, Park Commissions, Hospitals, Schools and individuals. Import orders only; accepted up to September 1st. Orders for Fall delivery of Roses accepted

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is one of the most satisfactory flowers grown, because it blooms continuously when it is cut

and put in water, just as well as when in the ground.

There is no reason why every family cannot enjoy this grand flower, for the simple reason that it is as easy to grow as the potato.

You can have them in bloom from July to frost, if you plant a few bulbs each month from April to July.

For only one dollar we will send 25 bulbs of our EXHIBITION mixture, which covers every conceivable shade in the Gladiolus kingdom.

Last year we sold 50,000 of the bulbs, and have received hundreds of testimonials as to their merits.

ORDER YOUR BULBS NOW so as to have them to plant when you begin making your garden.

Write to-day and secure this splendid collection of Gladiolus bulbs for only \$1.00, prepaid to your home, anywhere in Canada, with our 1922 Spring Catalog.

Also ask for list of named Gladioli covering over 75 varieties.

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The most practical book on strawberry growing ever published. 68 pages of money-making information and art--34 pages in natural color. Written by America's most successful strawberry grower. Tells how he makes poor soil rich without manure or fertilizer. Gives his secrets for growing the big crops of fancy strawberries that won him fame and fortune. Send for this book right now and learn the KELLOGG WAY. A postal will do. It's FREE.



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YOU don't have to climb a Ladder when you use this Pruner, made in sections 4 feet long. It joins together easily to make an 8, 12 or 16 foot pole. The Compound Leverhead makes the large limbs cut as easy as the small. Only best of material used in its construction.

PRICE
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Ask for circular of Hand Pruners, Saws, Lopping Shears and Long Pole Pruners.

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Without cost, you may have the advice of the J-C Spray Expert as to the best methods and materials to use in spraying. A graduate of Macdonald College and a Specialist in Economic Entomology, he has had several years' experience in orchard and field work. Do not be puzzled or uncertain—



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J-C SPRAY CHEMICALS:

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CEDAR POSTS FOR SALE

About 6,000 dry, unpeeled Cedar Posts, assorted in different sizes to suit purchaser. Also some Anchor posts and lumber in pine and hemlock. Apply to

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Cookstown -:- Ontario

**IMPORTED ROSE BUSHES,
Boxwoods, Rhododendrons,
Hardy Shrubs, Etc.**

Catalogue ready around middle of March.
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NORWAY SPRUCE.

For Hedges and Windbreaks.
Healthy, well-rooted plants 3'-3½', transplanted three times. Price F.O.B. Clarkson Stn., \$25.00 per 100—\$225.00 per 1,000. An asset to any fruit farm or garden. 80 acres of ornamental shrubs, evergreens, roses and perennials.

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PERRY'S SEEDS

Alpine and perennials, unique collection; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate.
HARDY PLANT FARM, ENFIELD, ENGLAND

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The Best in Canada

Large list of true to name Roses at attractive prices.

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Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

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"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

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We have a large stock of all sizes

FLOWER POTS

FERN OR BULB PANS

AZALEA POTS
and Rimless Pans



Order Filled Promptly. Send for Prices

THE FOSTER POTTERY CO., Ltd.
HAMILTON, ONT.

plans as to the type of the proposed organization; to maintain strong local organizations; to develop plans for an adequate system of market reports with relation to prices at markets and at shipping stations and to the distribution of cars; to make a study of the most desirable packages for grapes with a view toward standardization of grades and to investigate the various methods of co-operative merchandising and advertising.

"There are numerous problems in connection with the organization of the central association that must be worked out," declared Jay Caryell, secretary of the farm federation. "There is the question of whether it is better to organize in the United States or Canada, and, if the former, in what state. The formation of this organization naturally precedes steps toward a centralized selling and advertising plan. It is a question of whether it would be preferable to merchandise the product and conduct an advertising campaign through one of the existing selling and advertising agencies or through the central association. There is no question, however, that tremendous progress has been made at the conferences toward development and extension of the grape industry."

At the morning session, Charles E. Bassett of the North American Fruit Exchange and William Baggs of the American Fruit Growers explained their selling plans. Bassett now sells grapes for some local associations in the United States and Baggs for Canadian growers. Their argument that merchandising through an agency would profit the growers because of the elimination of speculators and of overlapping of shipments convinced the growers that some selling agency is needed.

George A. Cullen, vice-president of the North American Fruit Exchange, submitted samples of advertising to the growers which were viewed with much favor. He declared that co-operative advertising was essential to the broadening of the grape consumption. Growers agreed with him in this. Other plans for an advertising campaign were presented by William Starck of the George Batten Company.

Western Marketing War

EARLY in February the North-western Fruit Exchange, with headquarters at Seattle, one of the largest distributors of commercial apples in the world, passed into new hands with the resignation of the men who helped form the exchange 11 years ago. The change, which is said to place the fruit exchange in the hands of the American Fruit Growers, Inc., came as a surprise to the growers of Washington.

The old directorate which resigned included: W. F. Gwin, president; Reginald H. Parsons, chairman of the board; D. H. White, treasurer; A. A. Prince, secretary; Worrall Wilson, general counsel, and John W. Langdon.

On Feb. 20, these men incorporated at Olympia a new organization, the North American Fruit Exchange, with a capital of \$100,000. It was stated that this selling body will be a rival of the one from which the organizers resigned. The North American officers are: Reginald H. Parsons, chairman of the board; W. F. Gwin, president; A. R. Rule, vice-president; D. H. White, secretary-treasurer; A. A. Prince, sales manager; J. Curtis Robinson, traffic manager. These officers, with Worrall Wilson, compose the directorate.

New officers placed in control of the North-western Fruit Exchange, at the time the old officers went out, are these: J. A. Meade, president; H. G. Fletcher, vice-pre-

"INTENSIVE STRAWBERRY CULTURE"

A new book by an expert grower for more than 40 years. Highly commended by eminent authorities. Written for men and women, having but small holdings, but would nevertheless grow strawberries by most approved methods.

Write for free Prospectus, or send \$1.00 for the book.

LOUIS GRATON

WHITMAN - - - MASS.

GLADIOLI

50 varieties. Cut rate prices. Mixed ¼ from \$15.00 per 1,000; 1 to 1½, \$20.00 per 1,000.
List Free.

O. SANSBY

7 Waverley Road, Toronto, Ontario.

The Fruit & Produce Market

The Commission firms undernoted wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. - Toronto, Ont.

CONSIGNMENTS OF FRUIT AND VEGETABLES SOLICITED.

Shipping Stamps furnished on request.

MANSER, WEBB CO.

83 Colborne Street - Toronto

Wholesale Fruit and Produce Merchants.

Consignments Solicited on Commission.

STRONACH & SON

33 Church St., Toronto, Ont.

All shipments of Fruit and other produce consigned to us receive our personal attention.

Shipping stamps furnished.

Phone Main 2390.

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 Front St. E., Toronto, Ont.

See Advertisement on another page.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes

A. L. Rice, a prominent manufacturer of Adams, N.Y., discovered a process of making a new kind of paint without the use of oil. He named it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof, sanitary and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to A. L. Rice, Inc., Manufacturers, 37D North St., Adams, N.Y., and a free trial package will be mailed to you, also color card and full information showing you how you can save a good many dollars. Write today.

sident and sales manager; J. E. Mestor, secretary, and H. H. King, treasurer. Fletcher, Keith L. Bullitt, a Seattle lawyer, and Walter B. Congdon are the other board members.

A third development came Feb. 23, at Wenatchee, when members of the Skookum Association, which has always marketed entirely through the North-western Fruit Exchange, voted to permit its units to market where they please. This was accompanied by organization of a third marketing body, called the United Apple Growers. The off-

cers are: W. S. Trimble, Entiat, president; F. H. Moses, Cashmere, vice-president; F. C. Palne, Omak, secretary; Harry J. Kerr, Okanogan, treasurer.—Better Fruit.

Transportation of Fruit

REDUCED to definite terms, the advice given by G. E. McIntosh, transportation specialist of the Dominion Fruit Branch, to the fruit growers at various annual conventions this winter, was organize and co-operate. The counsel is good for every line of agriculture everywhere, but is especially applicable to the fruit industry, which deals not only with perishable goods, but with goods the value of which depends to a vital extent on the methods of handling in picking, packing, and purveying, or transporting. The conclusions arrived at by Mr. McIntosh in his addresses were:

That there should be inspection of refrigerator cars for defects at all railway terminals before delivery at loading points. That all refrigerator cars should be equipped with false floors; that cars should be equipped with insulated bulkheads; that cars exceeding 39-ft. in length inside should be avoided; that long cars are harder to refrigerate than short ones, and that over-loading should be avoided. Much good fruit is forwarded in over-ripe condition, stated Mr. McIntosh, and strict grading as well as careful handling is necessary. Shippers and carriers should get together to fix safe minimums and adjust rates.

With regard to temperature, his opinion was that a carload five crates wide and nine crates long and piled eleven crates high cannot be properly refrigerated; that brine tank cars not fully insulated are unsuitable for fresh fruit transportation, and that over-ripe or carelessly handled fruit cannot be successfully marketed at distant points; that brine-tank refrigerator cars properly equipped and re-iced in transit will successfully transport fresh fruit and vegetables; that the practice of lining four-basket crates with paper and folding it over the top of the fruit is not one to be commended; that high piling of crates is a wrong practice, and that eight packages high is sufficient with a space between to permit of air circulation; that as high as 15% of salt can be safely used in brine tank refrigerator cars loaded with fruit direct from field or orchard when moved by express; that opening cars for partial unloading, if judiciously done, does not affect the fruit; that for freight shipments 15% of salt can be used for initial icing and for first and second re-icing, but should then be reduced according to climatic conditions and the nature of the fruit or vegetables being handled; that investigations have proven that the rapid cooling of fruit shipments is desirable, and that the brine-tank car is best adapted for this. The fitting of tanks in these cars with screen tops was not recommended.



Write for Grower to Planter priced catalogue.

CENTRAL NURSERIES

FRUIT TREES AND PLANTS, SHADE TREES, EVERGREENS, ROSES, ETC.

It is not what you pay but what you get, that makes you a satisfied customer. We have what you want, "The best that grows." A particularly fine lot of apple trees.

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

Your Money Last Year Went to the Bugs

The actual damage done to your fruit and potatoes by insects last year ate up in profits far more than the cost of a Spramotor. This year let some of your money go to buying the only effective combatant of the bugs that steal your profits. The Spramotor drives the chemical everywhere the bug can get—cracks and crevices provide no protection when it is used. Over 100 gold medals have been awarded the SPRAMOTOR. Write for complete catalogue and spraying guide.

Spramotor

It isn't a SPRAMOTOR unless we made it

SPRAMOTOR CO.

14 King Street - - London, Ont.



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Every one interested in the care of large, beautiful lawns should have a copy of this book which tells all about Ideal Power Lawn Mowers.

It shows many photos of well-known homes, parks, golf clubs, cemeteries, colleges, etc., where the lawns are cared for the "Ideal Way." It tells about the Ideal Junior, a moderate-priced power mower for medium-sized lawns, the 30-inch Ideal Power Lawn Mower for large lawns, and the Ideal Triplex Power Mower for large parks, golf clubs, etc. Write for this book to-day—learn how to keep your lawn in better condition at less cost.



IDEAL POWER LAWN MOWER CO

R. E. OLDS, Chairman.

433 Kalamazoo St. Lansing, Mich.
World's Largest Builders of Power Lawn Mowers.
Dealers in all principal cities.

AIKENHEAD LIMITED

17 Temperance St. Toronto, Ont.

The Ideal Junior

N.B. Apples Sold Early

A. G. Turney, Provincial Horticulturist.

CONTRARY to the practise of previous seasons, when most of the shipments were made on consignment, the bulk of the past season's crop was sold outright f.o.b. the orchards and contracted for as early as the first week of August. The fact that buyers came so early and with the determination to secure the best packs in the province, at a time when the long drought had not been broken and a good size to the fruit seemed rather improbable, speaks well for the reputation which our apples have achieved on the Montreal market within the last four years.

The crops of these orchards were pur-

chased at a straight price per barrel with no specification as to the number of barrels of each grade and the prices paid ranged from \$3.25 to \$3.75 for fall varieties, to \$4.25 for Golden Russets and as high as \$4.75 and \$5.00 for orchards with a high percentage of Fameuse and McIntosh. In this way the best orchards sold early in the season, without risk to the owners at prices equal to the preceding year's returns on consignment and naturally these growers are very much pleased with such returns.

MacLennan for Guelph

PRESIDENT Reynolds, of the O. A. C., announced on April 10 that A. H. MacLennan, B.S.A., who for the past three or four years has been vegetable specialist and potato specialist in Ontario Department of Agriculture, has been appointed to the position of professor of horticulture to succeed Prof. J. W. Crow.

Prof. MacLennan is a native of Bruce County, but has resided in both Halton and Lambton Counties. He is a graduate of the O. A. C. of the class of 1908, and immediately following his graduation went to Grand Rapids, Mich., where he was employed in the selling department of the Fuller and Rice Lumber Co., remaining there for a year, and then returned to the college as a demonstrator in horticulture and later as lecturer. He remained there until 1914, when he went to Macdonald College, Quebec, where he was in the horticultural department, and while there he spent two summers lecturing at the agricultural school at Amherst, Mass. In 1916 he accepted a position at the Heinz Co. of Pittsburg, and was placed in charge of their horticultural work, and travelled all over the United States. He then came back to the O. A. C. as lecturer in horticulture, and in 1918 was appointed as vegetable specialist in the Ontario Department of Agriculture, and was later appointed potato expert.

[Note.—Page 90, Fruit Edition, with comments on successor to Prof. Crow, was printed before this announcement was made.—Editor.]

Premier Drury recently promised a deputation representing the Meadowbrook Farm Commission that the Government would make a grant of \$60,000 toward a farm, which the commission is developing near St. Catharines for returned soldiers. The Government will take a first mortgage on it as security. The purchase of the farm has already been arranged for. It contains 300 acres in the best section of the fruit belt, and is expected to accommodate between 200 and 300 ex-soldiers, being particularly for those so severely wounded that they cannot undertake continuous employment.

The agricultural committee of the legislature recently endorsed Hon. Manning Doherty's bill to permit the province to contribute 25 per cent. toward the cost of establishing co-operative warehouses for the grading and packing of fruit. Under the plan the maximum grant in any case is placed at \$1,500, and associations of growers containing at least 10 members owning 100 acres of fruit land are eligible.

A branch of the Niagara District Grape Growers' Association was organized at Vine-mount last month, when a large representation of the grape growers on the mountain, in Salfleet, was present. Wesley Brand was elected president and James Bertram, secretary. After the meeting, all those present signed contracts with the Niagara District Grape Growers, Ltd., for the disposition of the 1922 crop.



**Why You Should
---Buy**

Johnson Dusters. — Results obtained by the Canadian Agricultural Department in Nova Scotia and New Brunswick with Johnson Dusters, and Dust Mixtures produced and recommended by Government Entomologists, have demonstrated that dusting is most effective.

JOHNSON DUSTERS
Manufactured by
DUST SPRAYER MANUFACTURING CO.
KANSAS CITY, MO.

**Most Practical, Economical and Reasonable in Price,
In Fact---Best at Any Price.**

Government dusting reports show better control of orchard pests and at a considerable saving of time and money—two good reasons why you should buy Johnson Dusters—recommended for 20 years by growers. Send to-day for catalogue and full information.

Woodworth Bros. - Berwick, N.S.
Distributors for Maritime Provinces

D U S T I N G



NIAGARA HAND BLOWER

This Duster strpts to the shoulders of the operator and is easily worked. Weighs 8 pounds. It will dust 3 or 4 acres a day. It is the ideal machine for Potatoes, Tomatoes, Onions, Melons, Strawberries, Cabbage, Flowers or Shrubs. No grower can afford to be without one. Give Dusting a trial this year with this little machine. The results will please you.

MODEL F Orchard Duster—will dust 40 acres a day.
MODEL F22P Potato Duster—will dust 30 acres a day.

NIAGARA DUSTING MACHINES AND MATERIALS—control insect pests and fungus diseases better than liquid spray. They will do it with less cost, less labor and in ¼ the time. Write for our descriptive catalogues, Bulletins and Calendar.

EVERYTHING FOR DUSTING AND SPRAYING—MACHINES, MATERIALS,
ACCESSDRIES, SUPPLIES.

NIAGARA BRAND SPRAY CO. LTD. BURLINGTON, ONTARIO



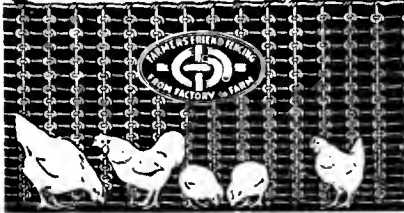
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The Canadian farmers and ourselves have been friends for more than eight years. Our business relations have been very intimate and profitable both ways — to the farmer and to us. We have given full measure of service—real fence value. That means repeat orders. Once a Sarnia fence customer, always a Sarnia fence customer. That is especially true of Sarnia poultry fence. You get real fence value, durable and strong, with all extra profits eliminated, when you deal direct with us on our Factory to Farm one profit plan.

We Save You Money

Buy no Poultry fence any part of which is made of light wire. The life of the fence will only be the life of the lightest wire. A chain is no stronger than its weakest link. The Sarnia knot—in fact all parts of our fence are made of the same size wire. We guarantee the Sarnia fence to be made from Government gauge, high grade wire that stands the acid test, and to be the most perfectly woven Poultry fence on the market. Western Canada supplied from Winnipeg. Get our low price list and descriptive literature before you buy Poultry Fence. Address nearest office.

THE SARNIA FENCE CO., Limited
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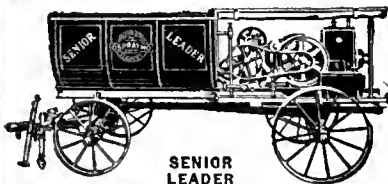
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GET
BETTER
FRUIT AND
TIP-TOP PRICES

There is no market for knotty, gnarled fruit and wormy apples. Spray with the right material at the right time and give nature a chance to grow her finest. You will find just the spraying appliance you need in our famous line of

OSPRAYMO High Power Sprayers

An Ospraymo Sprayer means a high-power sprayer, and high power is most important. You are sure to make your spraying job effective.



SENIOR
LEADER
Gasoline Engine Orchard Sprayer

Above is a popular style of power sprayer for general orchard spraying. Investigate our mounted traction Red Jacket and Yellow Jacket Sprayers for beans, potatoes and vegetables. Also Barrel, Bucket, Knapsack and Hand Sprayers.

Send today for our latest catalog. Don't buy any sprayer until it comes. We have local dealers at many points, but write direct for catalog to the address below.

FIELD FORCE PUMP COMPANY
Dept. C. H., Elmira, N. Y.
40 Years at Sprayer Building

POINTERS on POULTRY

A Few Don'ts for Beginners

DON'T forget to keep a record of your operations. If you want a good form, write Poultry Division, Central Experimental Farm, Ottawa.

Don't feed poultry at irregular times.

Don't think that good chicks can be obtained from poor stock.

Don't forget that grit is the hen's teeth.

Don't forget that a broody hen sitting a few hours on fertile eggs spoils them for eating.

Don't forget that eggs are porous and will absorb bad flavors if they are placed near them.

Don't think spoiled feed can be fed laying hens and still have good flavored eggs.

Don't keep a male bird with hens not intended for breeding.

Don't fail to keep the poultry house clean, dry and sanitary.

Don't have filthy nest boxes; see that they are cleaned and have fresh litter occasionally.

Don't let any of the stock get lousy. Keep them free from lice.

Don't keep the loafers; they make better soup than anything else.

Don't nail roosts to the wall, have them so they can be removed for cleaning.

Don't fail to let plenty of sunlight into the poultry house.

Don't say your chicks died of white diarrhoea when it was your carelessness that killed them.

Don't buy a cheap incubator and think it should hatch every egg.

Don't blame the weather when you find that leaky brooders are full of dead chicks.

Don't think you can make a success of poultry because you have failed at everything else.

Don't give up hope, however, without a fair trial; it may be just where you belong.

The size of the flock which can be kept most efficiently will depend upon the space available and upon the amount of table scraps and other waste available for feed. It is a mistake to overstock. Better results will be obtained from a few hens in a small yard than from a large number. The back-yard flock rarely should consist of more than 20 or 25 hens, and often not more than 8 or 10. For 20 or 25 hens one should have a yard 25 by 30 feet in size.

Success with Incubators

Follow the manufacturer's directions in setting up and operating an incubator.

See that the incubator runs steadily at the desired temperature before filling it with eggs. Do not add fresh eggs to a tray containing those which are undergoing incubation.

Turn the eggs twice daily after the second and until the nineteenth day. Turn them before caring for the lamps. Cool them once daily, according to the weather, during this period.

Attend to the machine carefully at regular hours.

Keep the lamp and wick clean.

Test the eggs on the seventh and fourteenth days.

Do not open the machine after the eighteenth day until the chickens are hatched.

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

REAL ESTATE

ALL KINDS OF FARMS—Fruit farms a specialty. Write, stating requirements. W. E. Calder, Grimsby.

EMPLOYMENT

FOREMAN GARDENER wishes situation in Canada or B.C.; 12 years' experience in all branches; good discharges from all past employers. Full particulars from Murtough Dwyer, The Gardens, Tilburn Towers, Alnwick, Northumberland, England.

SEEDS, BULBS, PLANTS

SEEDS—Vegetable, garden, flower, field, French grown. Import orders only. J. E. Shoemaker, 33 Fifth Ave., Ottawa, Ont.

BULBS—Lily of the Valley and Gladioli of all descriptions. Write for prices. C. Keur & Sons, Hillegom, Holland. New York address—5625 Mosholu Ave. The trade will be visited by us in due time as usual for 1922 spring and fall orders. Lily of the Valley and Gladioli can be shipped immediately direct from our warehouse and Canadian farms.

STRAWBERRY PLANTS FOR SALE—Senator Dunlap only, splendid roots, well packed, \$6.00 per thousand, \$3.50 per five hundred, \$1.00 per hundred. Leavens Orchards, Bloomfield, Ontario.

STRAWBERRY PLANTS—Williams, Sen. Dunlap, Glen Mary, and other varieties, \$6.00 per M., tied in bundles of 25, packed in moss. Gordon Herries, Port Burwell, Ont.

FINE HEALTHY PLUM FARMER AND CUTHBERT RASPBERRY PLANTS, grown in Muskoka district, where healthy plants grow. Send for free descriptive catalogue. Glen Mallory, Gravenhurst, Ontario.

Berry Boxes

Baskets



Send us your inquiry. We will save you money.



HYSLOP & SONS

MANUFACTURERS

GREENSVILLE, ONTARIO

The Canadian Horticulturist

Floral Edition

Vol. XLV.

TORONTO, MAY, 1922

No. 5

Beautifying the Home Surroundings*

A. H. Tomlinson, O.A.C., Guelph, Ont.

THE improvement or beautification of home surroundings means not only planting a few flowering plants or a tree adjoining the house, but bringing about the beautification of the whole neighborhood.

The Creator has given us a wonderful landscape rich in streams, trees, meadows and flowers. The progress of industry often causes the removal of these, and we have instead crowded industrial centres where such as flowers and trees have little chance.

Mankind has always been associated with the beauty and wonder of the sky and the earth's surface. The human family cannot remain healthy in body and soul if the direct sun's rays, fresh air and restful scenery are excluded. Crowded conditions result in an inferior generation. We are indebted to the Creator for these first gifts, and restoration of some kind is needed.

This suggests that a working plan is necessary for any constructional or reconstructional scheme. There is a right location for homes, public buildings, factories, parks and playgrounds. Furthermore, all must be planned with due consideration for traffic.

Responsibility of Individual.

The work of improvement rests with the individual as well as public bodies. One enthusiastic lover of the beautiful, after making his own immediate home surroundings worth while,

may create, largely through his example, community interest in improving home grounds, streets and well-ordered open spaces. Nowadays much greater attention is being given to this movement, but there is a great need for further education and development. Ugliness and unhealthy conditions must give way to the beautiful and healthful.

Follow a Definite System.

One may consider the advisability and scope of home ground improvements to a degree; but with these schemes, whether small or large, some definite system should be followed. The aim should be to create a harmonious whole, even though there may be many units. From a landscape gardening point of view two great styles predominate, viz., the naturalistic or landscape style and the formal or architectural. These include many subordinate styles or systems. Where the buildings are of marked architectural importance, the formal style should be followed particularly at the main entrances. A naturalistic arrangement of trees and evergreens may form the background and proceed also from the immediate front lawn or terrace. The formal style should be of definite design, and may be complete or a part of a larger scheme. It may be adopted for a flat area where space is limited, or slopes. Variety may be introduced with statuary, terraces, still water, enclosures and accentuations made with planting material.

The naturalistic style is brought about with uneven surfaces, open lawns, group planting, vistas, running water and an absence of apparent boundaries. Extensive grounds may have various minor gardens, such as Italian, Dutch or sunken, a rosarium, a rock and wild flower garden, and yet the style of the whole be naturalistic.

Whatever style predominates in any system there must be a definite theme characterizing the whole; variety ought to be featured, yet dignity and expression must be paramount.

Let's Plant Something.

With all due regard to styles in landscape art, systems, plans and designs, let's plant something! Trees for beauty and shade; evergreens for shelter in winter and for a restful effect in summer; flowers for a continuous blooming from spring until fall; open spaces for grass and playground! Furthermore, the scheme should have a local expression. It should be Canadian in particular. Our expanse of country must be considered. We should never crowd in planting. The beautiful should be the aim, but attention must be given to protection from the sun's rays in summer and from the wind storms of winter.

What to Plant.

What to plant may concern us! Our native flora and sylva ought to be planted in the right places, and must not be forgotten! Many indigenous varieties are hard to beat. Amongst



Display of Delphinium in Garden of Judge Reynolds, Brockville, Ont.

The Delphinium (perennial larkspur) is one of the most beautiful of all flowers, and exhibits splendidly the various shades of blue. It is invaluable for either cutting or outdoor display.

many, the following may be planted:

Deciduous trees—White or swamp elm (*Ulmus Americana*), a most majestic tree; tulip tree (*Liriodendron tulipifera*), a handsome tree in flower and foliage, not hardy north; cucumber tree (*Magnolia acuminata*), like the foregoing, and has very attractive cucumber-like red fruit; black walnut (*Juglans nigra*), attractive foliage and form, with edible nuts.

Conifers or Evergreens—White spruce (*Picea Canadensis*), has very attractive glaucous foliage and form; white pine (*Pinus strobus*), long lived and picturesque; red cedar (*Juniperus Virginiana*); and common juniper (*communis*); both splendid in groups or singly; of conical shape; white or swamp cedar (*Thuja occidentalis*); fine for hedges or windbreaks, and stands trimming well.

Ornamental flowering shrubs—Burning bush or strawberry tree (*Euonymus atropurpurea*). It has most interesting red and tango-colored fruit in fall; highbush cranberry (*Viburnum opulus*); splendid in fall when covered with purplish-green foliage and scarlet berries.

Deciduous climbers—Bittersweet (*Celastrus scandens*), wonderfully attractive in fall with red and yellow-winged fruits.

Wild Flowers—The hepaticas, trilliums, orchids (lady's slipper and moccasin flower); adder's tongue (*Erythronium Americanum*); marsh marigold (*Caltha palustris*) and *Lobelia cardinalis*; these and many more are worth planting, and are more beautiful than many exotic plants.

Exotic or Foreign.

Deciduous trees—Maiden-hair tree (*Ginkgo biloba*), Oriental and classical; copper beech (*Fagus purpurea*), the best colored foliage tree, but only hardy in warmer districts; cutleaf birch (*Betula laciniata pendula*) and cutleaf maple (*Acer laciniata*), the two best weeping trees; Schwedler's Red Norway maple (*Acer Schwedleri*), a splendid tree with compact head and red foliage in early summer, later purplish-green; Norway maple (*Acer platanoides*), a fine street tree.

Conifers—Silver fir (*Abies concolor*), a most graceful conifer; blue spruce (*Picea pungens*), splendid for formal planting; dwarf mountain pine (*Pinus mugho*), excellent for foundation use; pyramid and globe cedar (*Thuja pyramidalis* and *globulus*), for formal and foundation planting.

Shrubs—There are so many varieties which are deservedly popular, as spiraeas in variety, new types of lilacs (*Syringa vulgaris* variety); many honeysuckles, as *Lonicera fragrantissima*; weigelia, as *Diervilla* *Eva*

Rathka; *deutzia*, as *Deutzia Lemoine* and *crenata* variety; Japanese barberry (*Berberis thunbergia*), the best dwarf shrub for hedges or effect; also, varieties of *Forsythia*, *cydonia*, *prunus*, *philadelphus*, *Chionanthus Virginica*, *althaea*, and others.

Perennial climbers—The following are worthy:—Boston ivy (*Ampelopsis veitchii*) is the best self climber. *Clematis Jackmanii* is first-class. *Wis-*

taria sinensis, with its long racemes, is a great acquisition in warmer sections like Niagara.

Roses.—The best climbers and hybrid teas are indispensable.

Perennials.—Plant the best varieties of *paconies*, *iris*, *phlox*, *delphiniums* and *asters*.

Annuals.—These have a place whether it be for formal or informal planting.

Roses for Best Bloom

Ella C. Morton, Niagara Falls, Ont.

THERE is no secret about rose culture. The first requisite is rich, deep ground. The next is to keep the ground rich. If these points are observed, there will be less complaint about diseases. Sturdy, well-fed plants are seldom attacked by disease, and suffer less from the deprivations of insect pests than their weaker neighbors.

The rose bush should be planted in a wide, deep hole, in soil that has been thoroughly worked over to a depth of at least two feet, and well enriched with rotted stable manure. If the soil is sandy, it is well to work in a little clay. A mulch of old manure should be applied each fall, and spaded into the soil each spring. Frequent applications of manure water during the summer will help to keep the plants blooming continuously—if they are the right varieties. If stable manure is not easy to get, wood ashes and bone meal may be dug into the ground to good advantage. Keeping the plants well fertilized is the first point in the successful growing of roses.

Prune First at Planting Time.

The next thing to remember is the fact that rose bushes need severe pruning back. Vigorous cutting back each spring will result in strong shoots, which will produce fine crops of flowers. The first surgical operation should be performed when the plants go into the ground. Let us say that they should be cut back to the third bud, probably leaving them about nine inches above the ground. Sounds like drastic treatment, doesn't it? Ask your neighbor, who always has a wealth of roses, and see what he says about it. If you want to grow really fine blossoms, you will continue to cut the bushes back in the same proportion every spring. That is an elementary rule in rose growing, and yet not one amateur in forty practices it. No one has a right to expect good flowers on straggly old plants that are expending all their energies on wood growth. It

isn't wood you want, or leaves, but blossoms. Then, prune!

Roses are thirsty plants. They need a lot of water, but you will not need to carry it all. Cultivate the ground around the plants, instead. Cultivation forms a dust mulch, which keeps the water in the ground, where the roots can get it. If the surface of the ground is allowed to become baked hard in the sun, the soil moisture is lost by evaporation. Water must be given, and given freely; but cultivation is just as necessary. When you give water, put it on by the gallon. You waste your time otherwise. Make a little barricade of earth, so that the water will not run off, but sink into the ground. As soon as the ground is dry, stir the surface with a hoe. Really, it is worth while to feed and water roses carefully.

About Choosing Varieties.

Even with this carefully given attention, there will be comparatively little satisfaction in growing roses unless the kinds are chosen which have a long season of bloom. With the right sorts, however, roses tended in the fashion described above, will surely provide a full season of the most exquisite delight. There is no reason why amateurs should not have blooms from spring until the icicles form.

Of course, the man who has extensive gardens will set aside one section exclusively for roses, and will grow a hundred varieties, including those which give a brief, but unparalleled, show in the spring. There are rose sensations—wonderful blossoms which lift the expert rosarian into the seventh heaven of ecstasy. They are not for the average man. Most of us want roses which will produce large, handsome flowers all the season through. We may have but half a dozen plants, anyway, and we want every one to count. We want blossoms which we can cut by the dozens and carry into the house. We want fragrant blossoms, in which we may bury our faces and find a blessing in their perfume.

Planting Dahlias

J. K. Alexander, Bridgewater, Mass.

THE time for planting dahlias varies according to the locality; whether your spot is sheltered or open, early or lateness of the season, and the time when the general crop of flowers is desired. Dahlias can be planted any time after danger of frost is over, and under ordinary conditions will blossom in from six to eight weeks after they have been planted. A good rule to follow is to plant at the same time you would plant your vegetables. I do not recommend planting too early, as I find dahlias give better results if one waits until the ground becomes warmed.

Plant tubers in hills or drills, laying flat down, six inches deep. Do not stand the tuber on its end. I have found that if you do this the sprout near the top of the ground, all the new tubers which form will grow near the top of the ground. Then, when a dry spell comes the plant becomes stunted. If the tubers are planted flat down six inches deep, no matter how dry the season, they will receive sufficient moisture to keep them growing.

By planting the tuber first, then covering an inch or so with soil and applying your fertilizer or manure, your plant receives the entire benefit of the dressing. The dressing is above the tuber and every rain carries the plant food down to the roots; if below, each rain takes it further away from your plant?

Either fertilizer or manure will burn the sprout, so it should be placed so that it will not come in contact with the sprout, when it comes through the soil.

The preparation of the soil is important. The ground should be thoroughly plowed or spaded eight to

ten inches deep, well pulverized, and thoroughly worked over. This affords an opportunity for rapid expansion, and makes an easy path for the tiny rootlets.

Fertilization is one of the most important factors. For best results, I recommend that fertilizer be used at both time of planting, and during the flowering period. You can use dressing, either horse, cow, sheep, or hen, or any commercial fertilizer, such as you would use on your vegetable garden.

Gladiolus Hybridizers

Mrs. G. A. Bonisteel, Belleville, Ont.

THE gladiolus has been known as a garden flower in Europe for three centuries. Although many species seem to have been native to Europe, others were brought from Western Asia and Africa by various explorers and travellers.

Many of these early species were treated as insignificant flowers and only tolerated, because they bloomed in midsummer when other blooms were scarce. During this time various scientists endeavored to improve this plant, but it was only within the last hundred years that marked progress has been made.

A Belgian gardener in Ghent was one of the first to make a decided advance, his hybrids being known as the *gandensis* type. These were followed by the Lemoine strain, a type with an attractive blotch on the throat, and the work of a Frenchman. A little later came a German hybridizer who improved on the work of the former men.

This strain of gladiolus was sold to Childs of Rochester, N. Y., and was henceforth known as the Childsii gladioli. They were noted for their tall,

vigorous growth. The flowers had a wide range of beautiful coloring. These gained much popularity in America and are still on the market. Just how far this Childsii strain has figured with hybridizers of today would be difficult to say, but no doubt they have given their characteristics to many flowers.

Luther Burbank experimented with gladioli for several years and produced a strain of great substance that withstood the dry atmosphere of California. Mathew Crawford also did excellent work. About this time, H. H. Groff of Simcoe, Ont., began to eliminate weak points of existing types, and produced one known as Groff's hybrid, which is noted for daintiness, beauty and purity of color and which shows a long line of select breeding behind it. Many of our standard varieties were originated by Mr. Groff, but in several instances were introduced by a Mr. Cowee, an American grower. It is said that the gladiolus owes its popularity as a garden flower to the latter's work. Childs, Crawford, Cowee and Groff were the pioneers in raising the gladiolus to its present standard.

A. E. Kunderd, Goshen, Indiana, has produced a new type with ruffled or fluted petals which are distinctly different from previous originations.

Richard Deiner, of California has to his credit a strain which is of great substance and practically a giant in the gladiolus family. This hybridizer has gone in for mixed colorings and peculiar stripings, which make his work different from the others.

America therefore does not depend on foreign novelties; as hybridizers of this continent have produced the most beautiful varieties and those that are better suited to our soil and climate. It would seem that this plant has reached its highest point of perfection but we may be assured that it will take on many new characteristics in the next few years, as many people are giving it undivided attention.

The Best Bearded Flag Iris

THE following is a list of the best sixty late May and June flowering bearded flag iris prepared by the Central Experimental Farm, Ottawa, arranged in thirteen color groups.

1. White predominating on standards and falls:—Florentina, Mrs. H. Darwin, White Knight, Bridesmaid, Innocenza.

2. White feathered or suffused with bluish-lavender and bluish-purple:—Ma-Mie, Madame Chereau, Mrs. G. Reuthe (Lord Seymour and Maid Marion are very similar), Fairy.

3. White, or white and purple standards and purple falls:—Clio, Rhein Nixe, Victorine, Duc de Nemours.

4. Yellow predominating on stan-



An Attractive Verandah at the Home of W. Tudlam, Toronto, Ont.

A verandah box runs from post to post and contains Geraniums, Pelargoniums and Ferns. The surrounding foliage is from two trained cobeia plants.

dards and falls:—Mrs. Sherwin Wright, Mrs. Neubronner, Flavescens.

5. Pale yellow standards and violet purple falls:—Princess Victoria Louise, Loreley, Darius, Graecus.

6. Yellow standards and brownish or maroon falls:—Iris King, Maori King, Mithras, Honourable.

7. Lavender blue and bluish-purple predominating on standards and falls:—All pallida varieties. Albert Victor, Celeste, Juniata, Mary Gray, Tinaea Imogen, Dalmatica has a very fine flower but is a shy bloomer.

8. Bluish purple standards and bluish-purple or deep purple falls:—Oriflamme, Amas (*Macrantha*), Chester Hunt, Blue Jay, Alcazar.

9. Pale purple standards and purple falls:—Perfection, Walneri, Salvatori.

10. Purple standards and purple or dark purple falls:—Kharput, Black Prince, Sappho (Othello is very similar), Pare de Neuilly, Areheveque, Monsignor.

11. Lilac and rose predominating on standards and falls:—Queen of May, Coquette, Her Majesty.

12. Violet and reddish-purple predominating on standards and falls:—Caprice, Edouard Michel, Lohengrin, Mandraliseae, Madam Paequette.

13. Dusky or dull coppery standards and rich maroon falls:—Jaquesiana (*Jaquiniana*), Prosper Laugier, Arnols, Red Cloud, Nibelungen.

Best Twelve Varieties

Florentina, Mrs. H. Darwin, Ma-Mie, Perfection, Princess Victoria Louise, Iris King, Albert Victor, Alcazar, Chester Hunt, Kharput, Caprice Jaquesiana.

Best Twenty-four Varieties.

Florentina, Mrs. H. Darwin, White Knight, Ma-Mie, Madame Chereau, Mrs. G. Reuthe, Rhein Nixe, Mrs. Sherwin Wright, Princess Victoria Louise, Iris King, Albert Victor, Celeste, Pallida Dalmatica, Juniata, Alcazar, Amas (*Macrantha*), Chester Hunt, Perfection, Kharput, Pareede Neuilly, Black Prince, Caprice, Edouard Michel, Jaquesiana.

In planting, the roots of all trees should have a mellow bed of good soil, so that the roots will resume their function and form new rootlets in the shortest possible time. The roots should be spread out in a natural position, and the soil pressed firmly into contact with every fibre, leaving no air spaces around any of them; this will encourage the new rootlets to start at the earliest possible moment.—C. F. Clark, Toronto, Ont.

Root and Salad Crops

C. B. Alden, Toronto

WHERE garden space is limited, plant food and salad crops. No garden, large or small, is complete without them, but they are particularly adapted to small backyard gardens. Among the root crops are radishes, beets, carrots, parsnips, salsify, or vegetable oyster, and turnips. Salad crops include lettuce, endive, cress, dandelion, cos lettuce, or romaine, Chinese cabbage, and others. They require little space, because they can be planted in rows from 12 to 18 inches apart, and cultivated with hand tools. Many gardeners make only one planting of these crops, but the best plan is that several plantings of some of them be made a week or so apart in order to have a succession of those vegetables.

Radishes are one of the finest and best vegetables that come from the garden in spring. They should be planted as early as possible, whether for market or home use. For the home supply small amounts should be planted, and at least two or three plantings made with varieties that mature at different times. The small turnip-rooted varieties will mature in 15 to 20 days. Varieties which are long and slender are best for later use, but the seed should be planted early. Radishes should be used when they are small. Left in the ground too long they become pithy, especially in warm weather.

Food Value in Beets.

Beets are one of the most important crops for the home garden. Seed can be planted just as soon as the soil is in condition to work. When the plants crowd one another in the row, thin them out when they are young, and cook them as greens. Later, when they are about an inch in diameter, both leaf-stems and young beets can be cooked together. When the beets are larger, the leaf-stems become tough and woody. As a rule, two plantings should be made, one extremely early and another in about four weeks. On rich soil, garden beets will make an enormous yield. There is perhaps no other crop, unless it is carrots, that will give so much real food value to a given area.

Carrots should be planted just a little later than beets, and as soon as the plants are up they should be thinned. A second thinning will leave the plants one and a half to two inches apart in the row, and give a supply of small carrots, known as baby carrots, for use on the table. The tops of the carrots cannot be used as greens.

Parsnips and salsify are more in the nature of winter crops; that is, they are grown during the summer and kept for winter use. A section of row 20 to 30 feet long generally will produce all the parsnips or salsify that the average family will want. They are planted and cultivated in the same manner as carrots, only in the case of the parsnips they should stand fully three inches apart in the row. Both parsnips and salsify may remain in the ground over winter, but it is better usually to dig the roots in the fall and store them in moist sand in a cool cellar.

Lettuce of Various Kinds.

While it is true that too much lettuce often is planted at one time, not enough attention is given to keeping a continuous supply. Lettuce plants grown in hot-bed or cold-frame, or in a box in the house, can be planted in the open ground just as soon as the danger of the last frost is past. It may be necessary to cover the plants with paper or with straw during chilly weather, but lettuce is quite hardy, and if the plants are not too tender when set out they will stand considerable cold. Another seeding should be made in the open ground just as soon as the soil can be worked. Romaine or Cos lettuce is better adapted for growing in the summer as also is Pestsia, or Chinese cabbage, and endive.

Thousands of bushels of wild dandelions are gathered from the pastures and meadows for greens every spring. Some gardeners cultivate them, and get the finest quality for salad by covering them with a light coating of fine straw which causes the hearts of the plants to develop into a cluster of bleached and tender leaves.

Fresh Things all the Year.

By making a study of the different kinds of salad crops offered in seed catalogues one can easily have a continuous supply from the earliest springtime until the late autumn, and even into the winter. Water cress, for instance, is grown commercially in ponds or spring-fed streams in sections where the water naturally contains large amounts of lime. By starting water cress from seeds sown in a box in the house or by getting a bunch of cress in the market and using the stems for plants, it is easy to grow a bed of water cress without the aid of a stream or pond. To do this a very level bed of rich soil surrounded by six-inch boards similar to a cold frame should be prepared, or the cress may

be planted in one end of the cold-frame. The plants are set about four or five inches apart in each direction, and an abundance of water is given them. To give the cress its natural condition a little lime should be mixed with the soil while preparing it or a tablespoonful of lime should be put in each pail of water used for sprinkling the cress bed.

The secret in producing tender cress for salad is to maintain the plant growth, and keep them cut back so they will not produce seed. Cress is especially recommended for use as a salad where it can be combined with some other salad such as lettuce, romane, or Chinese cabbage. It has a peculiar, pungent flavor which, when eaten alone, is a little objectionable, but is especially desirable when combined with something else.

Chickory is one of the finest of the winter salads. The roots are grown during the summer, and then dug in the fall and placed in the cellar in boxes of moist sand, the roots being placed rather close together in the box with the crowns or tops near the surface. A covering of straw is placed over the box, and the soil around the roots kept moderately watered. Fresh, young leaves will be formed beneath the straw, and as they are grown in comparative darkness, these are white, crisp and tender.

Before planting rose bushes budded or grafted on the briar or manetti stock, examine the plant carefully. If there are any buds or young growths to be seen below the junction of bud or graft, cut them off close to the stem. If left, they will be a source of annoyance, and eventually destroy the rose growth proper.



A Fine Specimen of *Paeonia Moutans*.
The Moutans are low shrubs branching near the ground, and bear many large flowers in shades of red running to white.

QUESTION BOX

W. E. Groves

Bulbs After Flowering.

How shall one keep narcissis and hyacinth bulbs after flowering, and will they bloom as well next season? Are outdoor hyacinths treated in the same way?—E. T. P., Freeman, Ont.

Both bulbs, after blooming, should be allowed to dry off gradually. When the foliage is completely dried, the bulbs may be shaken out, cleaned and stored in any cool, dry place until the following September or October. Not often are the blooms the second season as good as the first, thus it is wise to procure new bulbs for pot culture, using those previously grown in pots for garden planting. Bulbs already in the ground may be treated in the same way, if they have to be removed to make room for summer plants. They may be left for two or three years before removal.

Outdoor Window Boxes.

What is the proper way to make an outside window box?—E.T.P., Freeman, Ont.

So much depends on the kind of window that general rules do not always apply. If there is a sill, the length and width would naturally determine the size of box. The front could be made to slope outwards, making the top of the box one or two inches wider than the bottom. The depth should be six to eight inches, this being also a good size for width. A couple of strips should be nailed on the bottom to keep the box up an inch or so from the window sill, and allow the water to drain away. Holes about three-quarters of an inch in diameter

should be made at least every eight inches along the bottom for drainage purposes. It is presumed that the question applies to the making rather than the planting of a box.

Transplanting Trees.

How and when shall I transplant a number of small walnut and butternut trees that have grown up beneath the parent trees? In what is the best location to put them till large enough to plant permanently?—R. A. F., Walkerton, Ont.

These could be transplanted at any time when the leaves are off. April, early May or October are good months. The transplants could be set quite close together, say, twelve inches apart, in rows in some spare-corner of the garden, and, after a year or two, may be given a little more room, or planted in permanent quarters.

Pine Bark Aphis

TREES infested with pine bark aphis may be cleaned by thorough and, if necessary, repeated spraying with kerosene emulsion; one part stock solution to seven parts of water or nicotine sulphate, 1 to 600 or even stronger.

Repeated sprayings with a strong stream of water, when this is available, will assist greatly in removing the cottony masses, and keeping down the infestation. After a thorough hosing the insecticide has a better opportunity of reaching the insects and effecting more thorough control. The stock solution of kerosene emulsion is made as follows:

Kerosene (Coal Oil)—2 gallons.

Rainwater—1 gallon.

Soap— $\frac{1}{2}$ pound.

Heat the water, cut the soap into fine shavings and add them to the water, stirring till all is dissolved, then pour this into the kerosene and churn the whole violently with a syringe or force pump for about five minutes or until a thick creamy emulsion is produced. This makes the stock solution which as it cools thickens into a jelly-like mass. When required for use dilute with ten times its measure of warm water. The stock solution when perfectly made will keep for months if kept from the air.—Division of Botany, C. E. F., Ottawa.

Onion seeds should be sown just as early as it is possible to get the land into condition, as onions need a long season of growth to bring them to maturity.—W. T. Macoun, Ottawa.

A deep, heavy, clay loam, well drained, is the ideal soil for cauliflowers.—T. M. Mulligan, Harbord, Ont.

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London

OLD Father Time has brought the spring around to us again with its April showers and May flowers. What a grand place this old world is after all. And there is nothing like getting down to the garden and turning up a few fishworms for good exercise and an appetite thrown in for good measure. Now I want to talk about the L.H.S. Those letters stand for London Horticultural Society, and hereafter, when your many readers see these letters, they'll know that they stand for the largest horticultural society in Canada. We even have St. Thomas, the suburb of London, beaten for the first time in history and we intend to keep on doing it. Congratulations, eh, Dr. Bennett? He's a pretty good head, and he'll be glad to hear this bit of news.

The memberships are coming in fine—more new ones than old ones. By the time this issue is out our spring premiums will have been distributed. These will be well worth looking after, six Peace and six Flora gladioli. These are two excellent varieties, the first a Canadian production by H. H. Groff, Simcoe, Ontario, and the second a good Holland production.

The fall premium has not yet been decided upon, but will be shortly when the premium committee gets time to meet again. Members can still pay their 1922 dues and get this spring's premium at Morgan's or Dominion Seed Co.

Do not forget the American Pacony Show to be held in our Armories next month. It's going to be the best ever. Just think of it, the American Pacony Society going to hold its show in London, Canada, in June. This is the first time it has ever been held in Canada, and the first time in a city of less than 500,000 people. "Nuff said."—E. Wyatt, Sec'y.

N.B.—The L.H.S. not only gives its members spring and fall premiums, but this nice monthly magazine. Figure it out, and see if it's not worth while joining the L.H.S.—E. W.

Hamilton

The Hamilton Society has just issued its spring flower show prize list. This will be held in the armories on June 21-22. The usual Show will also be held in the autumn. At this two unusual competitions will be listed, one for "garden photographs" the other for a "leaf collection." In the first, three classes have been provided: 1, before and after views; 2, three garden views, (all different); 3, a single plant or group of one variety of flowers.

For the leaf collection Dr. D. G. Storms, President, is giving three prizes of \$15, \$10 and \$5, to the pupils of the public, private and separate schools of the city for the best mounted collection of leaves of our native and cultivated trees.

Belleville

The Belleville Horticultural Society was recently reorganized, elected officers and prepared plans for the coming year. It was found, however, that it did not quite conform to the Horticultural Act. Accordingly another meeting has been held since, at which the necessary changes were made. The society is planning this year under the leadership of President T. Blackburn, to make its work mainly educational and the acquirement of funds. The membership is now over five hundred.

Welland

The Welland Horticultural Society, which has been practically dead for three years, was re-organized on April 13, with the enthusiastic support of many prominent citizens and flower lovers. The plans which were put forward, have in view not only the beautification of the homes of the members, but of the town as a whole. B. Coleman was elected president.

Fertility in Garden Soils

Manure is scarce in and around cities. Commercial fertilizers must be depended upon primarily for adding fertility to garden soils. It pays to use the best grade of commercial fertilizer. When the home gardener buys fertilizers he pays for nitrogen, phosphoric acid, and potash, and if he can secure the required amount of these elements in a small quantity of material, so much the better, as he will avoid the handling of a greater weight upon which freight and

other costs have been paid. A fertilizer containing from 4 to 6 per cent. nitrogen, 8 to 10 per cent. of available phosphoric acid, and 3 or 4 per cent. potash, is generally satisfactory for use on home gardens.

One pound to 30 feet of row is equivalent to 500 pounds to the acre. One pound to 15 feet of row is equivalent to an application of 1,000 pounds to the acre, and an application of 1 pound to 8 feet of row is practically equivalent to 2,000 pounds of fertilizer to the acre.

Care must also be taken in the application of fertilizers, as there is constant danger of burning the roots of the plants, especially where the fertilizers are applied directly in a row. The best results are generally secured where the fertilizers are applied and raked in a few days before sowing the seeds or setting the plants. In this way they become more or less mixed with the soil and there will be little danger of doing the plants an injury.

Test Held Over Seed

Some time soon, bring out the left-over seeds and those saved from last year's garden, spread them on a table, examine them closely, and see how many are worth planting in the garden this year. As a rule, it does not pay to plant old seeds, and unless those left over from last year are in first-class condition, they had better be discarded. Even though they look all right, nothing but a germination test will determine their value. The test may be made in two or three ways, the easiest being by means of a small box of sand in the window or in a warm place in the house. From 50 to 100 seeds of each sample to be tested should be counted out and carefully planted in the moist sand. After the sprouts have appeared another count can be made to determine the percentage that have germinated. If less than 65 or 70 per cent. have grown, the seed, by all means, should be discarded.

It is unwise to attempt to grow such vegetables as corn, squash, pumpkins, melons or similar plants in a small garden, they take up too much room.

To grow asparagus successfully, the ground should be deeply spaded, and well-fertilized until the soil becomes rich and fine. The young plants should be placed four inches below the surface and 18 inches apart. The stalks should not be cut the first season.

M		Date		Date	
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Date		M		Our membership for 1921 was almost 1,700. Can we not double this number for 1922? Why, yes. How? Will each paid-up member get a new member and send the attached slip to any director, or to the Secretary. A membership ticket for the year 1922 will then be sent to the new member.	
M		Address		4,000 MEMBERS IN 1922,	
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Date		M		M	
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Membership ticket used by the London Horticultural Society. These tickets are made up in books. The stub at the left hand side is retained by the canceller, the second portion sent to the secretary with the fee, and the main portion left with the new member.

European Currant Rust

WHITE-PINE trees and currant or gooseberry bushes should not be permitted to grow near together. This is because the two form a rotation for the white-pine blister rust, a fungous



White Pine Blister Rust. A young white pine stem on which the spore-filled blisters are showing. These appear during the last of April and throughout May.

disease imported from Europe about 20 years ago. The disease is also called "European currant rust." No case has ever been found where the blister rust organism completes its life cycle on the white pine or the gooseberry or currant bush alone. In its first period, the disease appears on the bark of the white pine. The dust spores are carried by the wind and if they fall upon a currant leaf the next two periods of development take place there, to the damage of the currant bush. They may reproduce the same kind of spores on the currant or gooseberry bush, but the disease will not be perpetuated unless other spores so bred find their way back to the pine tree. For this reason, as an important control measure, white-pine trees and currant or gooseberry bushes should be kept from 600 to 900 feet apart.

On March 21, an Order-in-Council was passed at Ottawa dealing with this disease. The importation into Canada of the following is prohibited: "All species and varieties of currants and gooseberries (*Ribes* and *Grossularia*) but not including the fruits of these, from all foreign countries. Provided, however, that the importation of said vegetation shall be permitted without any restriction into the province of Ontario from the state of New York."

In view of the fact that white pine blister rust has now been discovered in the Pacific Coast area of the U. S., it has been found necessary in the interest of the public to close the Canadian border to all importations of vegetation carrying this disease, except as above provided. Growers of currants and gooseberries are advised by H. T. Gussow, the Dominion Botanist, to propagate their own stock.

Nitro-Culture Distribution

EXPERIENCE seems to indicate that the application of nitro-cultures to the seed of leguminous plants results in considerably increased yields, besides aiding in restoring fertility to the soil. The legumes particularly concerned are: The clover group, including red, crimson, white, zigzag or alsike; the alfalfa group, comprising alfalfa, medick, and sweet clovers, white or yellow; also the pea, vetch and bean.

To enable farmers to treat their seeds, nitro-cultures are prepared and distributed in bottles free to farmers applying to the Division of Botany, Central Experimental Farm, Ottawa. Each bottle contains an

average sufficient bacteria to inoculate about a bushel (60 pounds) of seed of the particular kind specified by the farmer in his application.

By aid of the contents of the bottle, millions of bacteria are transferred to the seed, giving it more vitality and additional productiveness, and enabling the plant to store nitrogen taken from the air in the nodules which form on its roots. The superintendents of several of the experimental stations where tests have been made testify to the improvement that has taken place in the resulting crops.

NIAGARA PENINSULA

Bumper Crop Expected

ENCOURAGING reports were heard from the different sections of the Niagara Peninsula late in April, when enquiries were made regarding the possibilities of the fruit crop this season. There was every indication of a good crop. The frosts of April did not affect the fruit buds, and the slow development of the latter was working to the advantage of blossoming.

When the season is not forced, crop prospects are much improved, stated T. J. Mahony, president of the Niagara Peninsula Growers, Ltd. If May is dry and warm, the Niagara district may be expected to produce one of the largest crops for years.

The Niagara Peninsula Growers, Ltd., and the Niagara District Grape Growers, Ltd., were busy preparing for the season. A large percentage of the growers had contracted to sell through these two companies. Plans had been made for handling and distributing the fruit and garden crops of the Peninsula to the greatest possible advantage.

Cabbage Root Maggot

W. A. Ross, Vineland Station, Ont.

WE would urge all gardeners to acquire the habit of treating their early cabbages and cauliflowers every year with corrosive sublimate, in order to prevent the ravages of the white maggots, which burrow into the roots and only too frequently destroy thousands of plants. The treatment outlined below is a simple one, and in the hands of commercial growers has proved to be almost 100 per cent. effective.

The roots of the plants should be saturated with corrosive sublimate solution—1 oz. to 10 gals. ($\frac{1}{4}$ to $\frac{1}{2}$ cupful to every plant). The solution may be applied by means of a watering can with a long spout, the end of which should be plugged to allow only a small stream to issue; or by means of a wooden pall and ripper or cup; or, in the case of large fields, by means of a wooden barrel with two lines of thin rubber hose.

If the plants are set out before European plums blossom, the first application should be postponed until the plums are almost in full bloom. If the plants are set out later, the first application should be made four days after planting. Two more applications should then be made at intervals of a week.

Corrosive sublimate may be procured from any druggist. Some men who grow seedlings, make a practice of buying sufficient corrosive sublimate from wholesale druggists to supply the need of their customers.

Corrosive sublimate is deadly poisonous to man and animals, and for this reason,

great care should be exercised in using it. It should be dissolved and kept in glass or wooden containers, as it will corrode metal.

In cases where only a few plants have to be treated, it would be advisable to buy the corrosive sublimate in tablet form, and use one tablet to every pint of water.

Plant Breeding Problems

E. F. Palmer, Vineland Station, Ont.

IN a previous circular letter, we asked for suggestions for new experimental work which we might undertake to advantage. Similarly, we would appreciate the views of fruit and vegetable growers as to plant breeding projects, which should be worked on. By plant breeding projects, we refer to the production of new and improved varieties of fruits, such as are indicated in the list below. Briefly, the improvements that we are now striving for, and on which the work is more or less advanced, are as follows:

1. A late-keeping red winter apple.
2. Blight-resistant varieties of pears.
3. Hardier varieties of yellow-fleshed apples.
4. Better quality early and late varieties of peaches of the Elberta type.
5. In grapes, earlier and better quality varieties, and particularly main season varieties of red Rogers type, but self-fertile and of good shipping quality.
6. Drought-resistant gooseberries; varieties which will hold their foliage throughout our hot dry summers.
7. General improvement in strawberries and raspberries, particularly in early and late varieties, and in varieties of improved shipping quality.
8. Earlier and smoother early tomatoes.
9. Early and large cob yellow sweet corn.
10. Free-setting varieties of tomatoes and cucumbers for greenhouse culture.

In addition, a considerable amount of work of lesser importance is under way with other fruits and vegetables. The above, however, constitute the main breeding projects. On some, little progress has been made as yet, and in fact little progress can be expected for many years, due to the time it takes for seedlings to reach bearing age. In other lines, progress has been more rapid, and definite results have been achieved, notably with strawberries, raspberries, peaches and greenhouse cucumbers.

We would appreciate careful study of the projects under way, and advise as to other projects which should be undertaken. We ask for advice at this time so that new work can be started with the present blossom season.

N.D. Grape Growers, Ltd.

"HERETOFORE the Niagara District Grape Growers, Ltd., has only taken from the growers contracts for each season, but this year we have changed our policy," said R. J. Montgomery, the manager, to The Canadian Horticulturist recently. "Beginning Jan. 1, we started making a new canvass of the whole territory, getting the growers' signatures on a permanent contract, which goes on automatically from year to year with a cancellation clause giving the grower the privilege to cancel the contract in any year within a certain period.

"Since Jan. 1, we have signed, up to May 1, 603 growers on the new permanent contract, controlling 3,417 $\frac{1}{4}$ acres of grapes,

\$1.00 BUYS THIS Garden Collection

postpaid. ORDER IT TO-DAY

We want you to know the value of KEITH'S SEEDS, therefore, we offer you this splendid collection of Vegetable and Flower seeds at an exceptionally low price.

- 1 pkt. Swiss Chard—Lucullius.
- 1 oz. Beet—Crosby's Egyptian.
- 1 pkt. Carrot—Chantenay.
- 1 pkt. Cabbage—Copenhagen Market.
- 1 pkt. Cucumber—Keith's Perfection.
- 1 pkt. Lettuce—Big Boston.
- 1 oz. Onion—Yellow Globe Danvers.
- 1 pkt. Parsnip—Hollow Crown.
- 1 oz. Radish—Scarlet White Tip.
- 1 pkt. Parsley—Curled.
- 1 pkt. Sweet Peas—Choice Mixed Spencers.
- 1 pkt. Nasturtiums—Choice Mixed Dwarf
- 1 pkt. Tomato—Earliana.
- 2 oz. pkt. Beans—Improved Golden Wax.
- 2 oz. pkt. Peas—American Wonder.
- 2 oz. pkt. Corn—Golden Bantam.

GEORGE KEITH & SONS
124 King St. East, TORONTO
ESTABLISHED 1866.

which is approximately 75% of the entire crop. We expect to have 95% of the entire acreage of the Niagara Peninsula under contract to this company by July 1, which will be approximately 800 growers controlling 4,500 acres of grapes.

"Up to the present time our standing and work is much ahead of any previous year. We are in a position to handle their entire crop to an advantage. We have 430 shareholders who have subscribed approximately \$43,000 of stock, 10% of which is paid up at the time the stock is subscribed, the balance on call.

"We work in conjunction with Co-operative Grape Associations in Michigan, New York Pennsylvania and Ohio on a great many matters pertaining to the welfare of the grape growers, and have found that we have here a much stronger co-operative grape company than anything we have yet seen in the United States, excepting California.

"Another change in our policy this year is that we are selling grapes in car-lots direct on Canadian markets this season, something we have never done before. Last year our Canadian business was handled through the Niagara Peninsula Growers, Ltd., while this year they handle L.C.L. shipments and we also supply any straight carloads they require. Our arrangements with the United States are the same as last year. We operate through the American Fruit Growers, Inc., Pittsburg."

BRITISH COLUMBIA

B.C. Prices in 1921

THE growers will hereafter have a permanent committee working with the shippers in the discussions and arranging of marketing policies. This was the outcome of a meeting of growers, held at Kelowna, April 11, to hear the report of their special committee on the 1921 market-

15 Per Cent Reduction

ON APRIL PRICES DURING MAY ON GLADIOLI

See advertisement in April issue on page 96.

Mornington Gladiolus Gardens

R. R. No. 1, STRATFORD, ONT.

GLADIOLI

Final offers 1 1/4 to 1 1/2 in. bulbs, mixed varieties, \$2.00 to \$3.00 per 100; named varieties from \$2.50 per 100; Prince of Wales, Schwaben, Niagara, Childs, Hybrids, Halley, 25 for \$1.00; Baron Hulot, Kunderd, Glory, Panama, Peace, 20 for \$1.00; War, Wine King, Mrs. Pendleton, 25 for \$1.50. 3/4 stock 1/2 above prices. Postage extra. Lists free. SANSBY, 7 Waverley Road, Toronto, Ont.

GLADIOLI

We are offering an excellent collection of the finest American and Holland grown Gladioli bulbs at reduced prices. Descriptive price list gladly furnished on request.

G. WOODALL

BOX 395, ELMIRA, ONT.

Paeonies and Gladioli

We have the best varieties. Order now.

H. P. VAN WAGNER

R.R. No. 5 Hamilton, Ont.

Have the first look at "Firstbrook" when buying Apple Boxes.

Firstbrook Bros., Limited

Manufacturers of Boxes and Shooks, TORONTO, ONT.

SAVE MONEY

Hundreds of thousands of dollars are burned up every year as a result of

DROUGHT

Drought is the dread phantom that haunts every Market Gardener, every Strawberry Grower, every Florist, every Grower of all vegetables, flowers or small fruits.

Why not escape from all worry regarding drought by installing our

OVERHEAD IRRIGATION EQUIPMENT

Such an equipment will give absolute assurance of bumper crops.

It gives you RAIN whenever needed, and in a dry summer will save thousands of dollars.

Lines supplied for small gardens as readily as for large areas.

Portable lines, irrigating by one operation an area of fifty feet wide, made to order.

We invite investigation. Write for Catalogue.

CANADIAN IRRIGATION LIMITED

146 JARVIS ST. - - - TORONTO, ONT.

BOXED APPLES

Bring Better Prices

when packed in quality boxes

IN addition to large orders, we are especially equipped to supply

APPLE BOXES

either made-up or in shooks, in small quantities to the individual grower.

Let us quote you our attractive prices on your needs for this season.

Barchard & Co.

Limited

135 Duke St. - Toronto, Ont.

ing policies. The B.C. Traffic and Credit Association extended the invitation to the growers to name a committee to confer with the shippers, which was accepted with considerable satisfaction.

After hearing a number of speakers, chief of whom was R. M. Winslow, manager of the B.C. Traffic and Credit Association, and E. Doberer, president, the valley shippers were invited to the stage, and the meeting then developed into a debate between the representatives of the Okanagan United Growers and the B.C. Growers. It was evident from the tone of the meeting that the growers were not satisfied with last year's deal, and wanted to know "who cut the prices."

R. M. Winslow, of the B.C. Traffic and Credit Association, Vernon, an organization representative of nearly every fruit shipping concern in the province, was the spokesman for the shippers, and was on the stand for nearly three hours, during which time growers fired all manner of questions at him, which he handled like a politician on the stump.

He reviewed the season's marketing difficulties and showed how the drop in the price of wheat last October and the decreased value of farm produce generally had cut down the purchasing power of the prairie provinces by three hundred million dollars, resulting in a poor demand for B.C. fruit. There never had been such a small consumption of apples on the prairie provinces as in 1921, he declared.

It was felt by most of the growers that the meeting had done a great deal in showing to their number the reason for the poor prices for the 1921 crop. While the meeting was rather stormy at times, much good resulted, for it cleared the air.

The Tomato Situation

R. H. Helmer, Summerland, B. C.

EVERY year a large acreage of tomatoes is grown in the Okanagan Valley and only a few realize enough from the crop to claim a plus wage income. A short review of the situation may throw some light on the case and prevent some people actually making a cash loss on the year's work.

A few years ago the hothouse tomato was not a very serious competitor with our earliest crop, and during that period the demand and prices realized for our early tomatoes warranted the growers putting considerable expense on the crop to get it early. When we say early we mean the last week in June. It was soon found that the tomato gave a good yield per acre if forced with commercial fertilizer and that, when the early market was off, the canneries which followed the tomato into the valley would take the main crop. This gave, for a time, a reasonably good return, but today some changes have taken place; the hothouse tomato is practically on the market during the whole late winter and early spring, coming from across the line and coast sections. This tomato has a very attractive appearance and at all times sells above the price paid for field tomatoes, with the result that what we consider early tomatoes are no novelty on the consumers' market and the price at once begins to decline.

Usually the Earliana is selected to sup-

APPLE BOXES,

A "Firstbrook" Box is bought
When the Very Best is sought.

Firstbrook Bros., Limited

Manufacturers of Boxes and Shooks,
TORONTO, ONT.

ROSES, FINEST HOLLAND IMPORTED

Big two year plants. Assortment including Red, White, and Pink, selected from hundreds of varieties. Twelve, \$3.60; twenty-four, \$7.00; forty-eight, \$12.00, f.o.b. Niagara Falls, Ont. Cash with order.

Holland Canadian Import Company
449 River Road - - - - - Niagara Falls, Canada
N.B.—Order at once from this advertisement and make sure of the best stock.

D. SPENCE, TORONTO

Now has for sale at 23 Bloor St. West, the largest assortment of Flowering Shrubs, Rose bushes, Evergreens, and Boxwoods ever imported into this country.

Inspection invited.

Catalogues on application.

Phone North 7818

ALEXANDER'S DAHLIAS

Unless you happen to be one of those who value a Dahlia for its rarity and wish to pay from \$5.00 to \$25.00 each for that attribute, you will find that many of the older varieties are just as beautiful and just as satisfactory.

This is your opportunity to obtain a few first-class varieties at a reasonable price, a price that you can afford to pay.

A Collection of Tried and Tested Dahlias
for \$2.00 prepaid. (Tubers)

Madonna, white Decorative. Maude Adams, pink and white Show.
Mina Burgie, scarlet Decorative. W. B. Childs, purple-maroon Cactus.
Zeppelin, lavender Peony-flowered.

MY CATALOG will tell you the complete story of the Dahlia: when and how to plant, how to fertilize, stake, prune and disbud. Fully illustrated and well worth looking over whether you decide to buy or not. Send for your free copy.

J. K. ALEXANDER

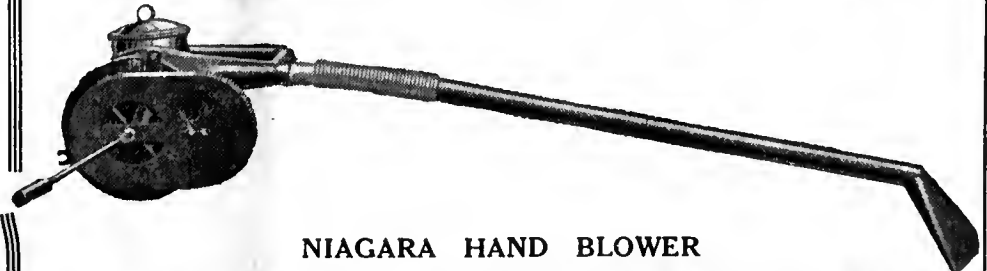
Largest Dahlia Grower in the World.

310-320 Central St. East Bridgewater, Mass.



"The Dahlia King"

D U S T I N G



NIAGARA HAND BLOWER

This Duster straps to the shoulders of the operator and is easily worked. Weighs 8 pounds. It will dust 3 or 4 acres a day. It is the ideal machine for Potatoes, Tomatoes, Onions, Melons, Strawberries, Cabbage, Flowers or Shrubs. No grower can afford to be without one. Give Dusting a trial this year with this little machine. The results will please you.

MODEL F Orchard Duster—will dust 40 acres a day.

MODEL F22P Potato Duster—will dust 30 acres a day.

NIAGARA DUSTING MACHINES AND MATERIALS—control insect pests and fungus diseases better than liquid spray. They will do it with less cost, less labor and in 1/4 the time. Write for our descriptive catalogues, Bulletins and Calendar.

EVERYTHING FOR DUSTING AND SPRAYING—MACHINES, MATERIALS, ACCESSORIES, SUPPLIES.

NIAGARA BRAND SPRAY CO. LTD.

BURLINGTON, ONTARIO



THE GLADIOLUS

is one of the most satisfactory flowers grown, because it blooms continuously when it is cut

and put in water, just as well as when in the ground.

There is no reason why every family cannot enjoy this grand flower, for the simple reason that it is as easy to grow as the potato.

You can have them in bloom from July to frost, if you plant a few bulbs each month from April to July.

For only one dollar we will send 25 bulbs of our EXHIBITION mixture, which covers every conceivable shade in the Gladiolus kingdom.

Last year we sold 50,000 of the bulbs, and have received hundreds of testimonials as to their merits.

ORDER YOUR BULBS NOW so as to have them to plant when you begin making your garden.

Write to-day and secure this splendid collection of Gladiolus bulbs for only \$1.00, prepaid to your home, anywhere in Canada, with our 1922 Spring Catalog.

Also ask for list of named Gladioli covering over 75 varieties.

DUPUY & FERGUSON

38 Jacques Cartier Sq., Montreal

ply this early market and this variety has become very rough, in fact, most of the crops the writer saw last year were not salad tomatoes at all and really too rough for good cannery stuff. Now, if we want the public to take field tomatoes in preference to those grown in the hothouse, the quality and especially the appearance must excel the hothouse product. This can only be done by growing the choicest seeds of smooth, medium sized tomatoes. Whether or not the price at that time would warrant all the trouble involved, we are doubtful. On the other hand, the canneries are not at all in sympathy with the rough, mis-shapen, wasteful product being grown and we advise growers who hope to sell to a cannery to make a contract for their entire output and grow tomatoes which the canneries want.

B.C. Fruit News

W. H. Robertson, Provincial Horticulturist.

THE winter was a rather hard one on small fruits in the Lower Fraser Valley. Growers are figuring on a smaller crop of strawberries than in 1921. Loganberries also were affected. Raspberries came through fairly satisfactory, although there is some winter injury. The small fruit production in all districts will be lighter than during the previous year.

Shipments will be late and this year the Gordon Head Fruit Growers and the Saanich Fruit Growers, of Vancouver Island, will make carload shipments together. Both Vancouver Island and Lower Fraser Valley growers are making their sales this year through one sales organization on the prairie. Prices for jam berries have not yet been established.

In the tree fruit districts of the Okanagan and the Kootenay, the trees have come through the winter satisfactorily, and indications are that the crop will be satisfactory, although not as heavy as in 1921.

The weather has been very cold and backward and has delayed spring work. Considerable planting is being done, particularly in the Southern Okanagan. This district is 40 miles south of the Okanagan Lake and is being developed by the British Columbia

Government who are installing an extensive irrigation system. In this area, which is the earliest in the province, approximately 800 acres will come under cultivation for the first time this year, and of this, 600 acres will be set out to trees. Canning crops will also be grown, one of the larger canneries having contracted for 100 acres of tomatoes.

Dutch Bulbs for Canadian Gardeners

Grower to Grower

Tulips, Hyacinths, Narcissus, Crocus, Etc. The choicest bulbs guaranteed at moderate prices. To accredited customers payment not required until bulbs are delivered. Catalogue ready in April. Booklet on Bulb Culture for Garden and Winter Bloom on request.

Over 20 years in the Canadian trade. Each year adds to our customers among Horticultural Societies, Park Commissions, Hospitals, Schools and individuals. Import orders only; accepted up to September 1st. Orders for Fall delivery of Roses accepted.

VAN'T HOF AND BLOKKER

Bulb Growers and Exporters.

AKERSLOOT, HOLLAND.

Write our Canadian Office,

430 Brunswick Ave., Toronto, Ont.

APPLE BOXES,

Fifty-four Years learning how Make "Firstbrook" Boxes finest now.

Firstbrook Bros., Limited

Manufacturers of Boxes and Shooks, TORONTO, CAN.

Strawberry Plants

Senator Dunlap, \$5.00 per thousand; Williams, \$7.00 per thousand, \$1.00 per hundred. Good plants and well packed.

T. W. DARLINGTON

Southampton Ontario.

VAN GINHOVEN & CO.

116 Broad St., Room 40, New York, N. Y.

Your address for Holland-grown Hyacinths, Tulips, Crocus, Gladioli, Iris, Paeonies and all miscellaneous bulbs and roots. Please write for illustrated catalogue.

IMPERIAL

MICA AXLE GREASE

The ground mica in Imperial Mica Axle Grease smooths the spindle by filling the minute crevices in the steel. Over this the grease works easily, eliminating friction, heat and wear. Eases the strain on horses and harness. It goes twice as far and lasts twice as long as other greases.

IMPERIAL

EUREKA HARNESS OIL

Fills the pores and protects the fibre of leather from the action of dust, sweat, moisture and heat. Keeps harness strong, flexible and new-looking. Doubles its life and gives it a rich, black finish that lasts. On sale everywhere in sizes from a pint to a barrel.

IMPERIAL OIL LIMITED

Canadian Company Canadian Capital Canadian Workmen

Berry Boxes

Baskets



Send us your inquiry. We will save you money.



HYSLOP & SONS

MANUFACTURERS

GREENSVILLE, ONTARIO

MARITIME PROVINCES

N.S. Apples in Britain*

W. S. Blair, Kentville, N.S.

ONE of the objects of my visit to Great Britain was to find out whether Nova Scotian apples as at present packed are likely, in the future, to return profitable prices to the grower. Because other sections have not had a surplus of barrel apples to ship, the British market in this trade has been left almost entirely to Nova Scotia. The small shipments sent from other sections were very closely watched to determine if possible just where improvements, if any, might be made.

When your fruit lands in Great Britain all of it is not just what you would wish it to be. The appearance is very often unattractive, both as to barrel and fruit, but fortunately the quality of the fruit is satisfying to the consumer. You have had remarkably good distribution and the shipments have not been more than the markets could readily use; consequently, prices remained uniformly good and will continue so until the balance of your crop is marketed.

Must Improve Appearance.

If we are to secure top prices an improvement in appearance is necessary. The offerings of Virginia, Maine and Ontario apples in barrels was small indeed, but when these were put up for sale there was no uncertainty as to preference. Their superiority centred largely around appearance both as to color and freedom from bruises. We can improve very much by giving more attention to the handling of our fruit. We sustain a great loss on the farm, on the road to the packing house, and in the packing house. This loss is not just due to one person lacking in efficiency, it is because too many of us lack in efficiency.

The bulk of our fruit has a dull appearance, not the bright, highly-finished look of that from many other places. This finished appearance may in a large measure be due to spraying with sulphur preparations but doubtless our maritime climate does not

*From an address delivered at the convention of the Nova Scotia Fruit Growers' Association.

admit of the fine maturity so evident on more inland grown apples.

Varieties Recommended.

It is necessary, therefore, for us to give all the attention we can to appearance and we should consider whether we are not now at the point where work should be started looking toward the development of varieties of high color more suitable for our country than those we now have. There is a lack of firmness to much of our fruit which should be overcome and varieties having firmer fruit with good appearance should be aimed at. We know it is not desirable to increase plantings of Ribston and Blenheim, and other than Cox's Orange there is not, as far as we can see, any variety of English apple we can advise. King is one of our outstanding sorts but we all know it is not by any means perfect and certainly it is not always attractive. The Crimson Gravenstein should be planted in preference to any other strain of this variety. We can hope for good prices for our fall fruits one year with another by supplying highly-colored apples of good quality.

In seasons when the English apple crop is short apples for cooking will be in demand, but otherwise the quality required

Make Your Garden A Wonder Garden

It's easy. Market growers knew the secret. Follow it and have the largest crops of fruits and vegetables, an abundance of the biggest and sweetest scented flowers of the most intense and vivid colors. Here is the secret!

The better grades of commercial fertilizers contain only 3 to 5 per cent nitrogen; 6 to 10 per cent phosphoric acid and 3 to 5 per cent potash, combined in material that has no fertilizing value. Most fertilizers are far below this average. Science has produced a tablet, rich in plant food, containing 11 per cent nitrogen; 12 per cent phosphoric acid and 15 per cent potash—clean and odorless.

For crops in rows, set the tablets a foot apart, along the row. In Flower Beds and Borders, place tablets a foot apart. Three tablets, one every ten days, in the hills make Cucumbers, Squash, Melons and vines fairly jump.

For Bush Fruits and Shrubbery, use three to five tablets, placed in the soil about each plant.

Fruit or Ornamental Trees, place tablets two feet apart, extending from the trunk as far as the longest branches.

Fine also for greenhouse benches and pot plants. Four tablets dissolved in a gallon of water, used in place of liquid manure, is less trouble and gives better results than objectionable manure water. Makes velvety lawns.

Each tablet contains highly concentrated, immediately available plant food. They increase production, heighten color and improve quality. Their use is highly profitable.

The name of the tablet is Stim-U-plant. No matter how fertile the soil, Stim-U-plant is effective in feeding and forwarding crops. Market Gardeners use them in large quantities. Order by name—there is no substitute.

Price delivered: 100 tablets, 75 cts.; 1,000 tablets, \$3.50. If your dealer hasn't it, order from the makers—

EARP-THOMAS CULTURES CORPORATION
80 Lafayette St., New York

Sprayed Fruit Brings Big Profits

Go at spraying in a whole-hearted way. Spray, not just the leaves, but into every crack and crevice where there is insect or blight life. The farmer who last year invested in a Spramotor showed increased production that more than paid for the extra expense. This year he is working on a clear profit basis—every cent of profit goes into the farm coffers. That's what we shall be able to say of you next year, if you buy your Spramotor now.



Spramotor
It isn't a SPRAMOTOR unless we made it

A Spramotor is equally good for whitewashing hen-houses, stables, etc.

Over 100 gold medals have been awarded the Spramotor. Write for illustrated catalogue and guide to spraying.

SPRAMOTOR CO.
14 KING ST. - LONDON, ONT.



Why Are the Annapolis Valley Apple Growers Dusting?

It is because these successful orchardists know dusting is the modern, time-saving method of crop protection. It is because their time is precious during the spring rush, and dusting saves hours and hours. That is why their spraying machines are being replaced by dusters.

It is a tribute to J-C spray-chemicals that the United Fruit Companies of N.S. have used them for the last two years. This year again we are supplying their full requirements.

Lead Arsenate, Bordeaux Mixture, Bluestone, Crystals or Powdered, Cal - Arsenate, Bordo - Arsenate, Copper Lime Arsenic Dusts, Dehydrated Copper Sulphate.

J-C COW OIL "Keeps the flies away."

JOHN COWAN CHEMICAL COMPANY
LIMITED

Dalhousie and Common Streets

MONTREAL



"We've used them for years—"

Imperial Farm Lubricants will properly lubricate every farm machine. They are always cheapest in the long run because of the way they cut down operating costs and repair and upkeep expenses. Farmers who once use them seldom change to any other brand.

The same Imperial Lubricant cannot be used for all machines. It is important that you use the right Imperial Lubricant and the right grade for each to obtain the best results. If there is any question about the correct way to lubricate any machine on your farm, the Imperial Oil man will be glad to be of service.

IMPERIAL Lubricants FOR ALL FARM PURPOSES

IMPERIAL POLARINE OIL
IMPERIAL POLARINE MEDIUM OIL
IMPERIAL POLARINE HEAVY OIL

For gasoline-burning engines—automobiles and trucks.

IMPERIAL POLARINE SPECIAL HEAVY OIL
For kerosene-burning stationary engines and tractors.

IMPERIAL POLARINE EXTRA HEAVY OIL
For motors requiring an unusually heavy oil.

IMPERIAL PRAIRIE HARVESTER OIL
IMPERIAL GRANITE HARVESTER OIL
For open bearings of separators, binders, etc.

IMPERIAL CAPITOL CYLINDER OIL
For steam cylinder lubrication—tractors and stationary engines

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For stationary or portable engines, kerosene or gasoline.

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For grease cup lubrication—clean, solidified oils.

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Canadian Company

Canadian Capital

Canadian Workmen

is that suitable for sale on the fruit stand and for which good prices will always be paid. Wagener is probably one of the best apples but it does not entirely measure up to what we want. The Red Stark should be planted rather than the greener colored one. The Delicious apple may be highly suitable for more inland sections, but it is doubtful if it is suitable for our Valley, certainly not for general planting.

Golden Russet may be planted more extensively. This russet apple seems to be increasing in popularity. Color is not looked for in the russet apples and the fact that this apple is yielding in texture and does not show the bruises as do the other varieties, is one of the strong points in its favor.

Too Many Slack Barrels.

You are sustaining a great loss because of barrels arriving with apples slack. There does not appear to be any one cause alone for this, but many factors may contribute. Briefly, they may be stated as follows:

1. Lack of care when harvesting.
2. Over-ripe fruit.
3. Faulty judgment when packing.
4. Rough or unnecessary handling during transportation.
5. Too deep tiering on ship.
6. Too high temperature during shipment.

The relative influence of these can be determined only by experimental work, and it would seem wise to take steps to solve this question and remove the loss now resulting from "slacks."

Go Slow With Fall Varieties.

It seems desirable that we should go carefully in extending plantings of fall apples beyond that required for local markets; except of sorts which, because of appearance and quality will always find a ready market.

The Crystal Palace Fruit Show offered an excellent opportunity for a study of English varieties and a careful survey was made of the varieties now considered to be leading English sorts. The English grown fruit is not what one could call attractive nor is the quality in general very high, except in a few varieties of which the Cox's Orange is an outstanding example and undoubtedly the best dessert English apple. So far as we could determine there are no varieties possessing qualities superior to the Blenheim, and in this we have had a similar experience with the leading English sorts which have fruited at the Kentville Experimental Station. The Worcester Pearmain may be of some value for limited plantings as a fall apple, it being of high color and of fair to good quality.

Outlook For Boxed Trade.

The box apple trade was given considerable attention. Certainly prices of box apples during this season have not been sufficiently above the prices obtained for similar grades in barrels to lead us to think that we could make more out of our fruit in boxes. The box trade has been large from British Columbia and the Pacific States. The box apples seem to drift into a different trade from the barrel apples and it is said that the trade in one is not affected by the other. This does not seem to be possible and if more boxes are offered than the normal box trade can take care of a competition between box and barrel fruit of good quality must result. Crimson Gravenstein and other highly-colored fall apples should go over in boxes, in fact, it is doubtful if they can be successfully transported in any other way if they are allowed to properly mature before picking. On the whole, there is some opportunity for more extended box shipments, but the bulk of the fruit we now have is more suitable for the barrel trade.

Lessons for N.B. from 1921

W. B. Gilman, Fredericton.

THE apple crop of last year suffered from the extreme heat and dry weather in several ways. The drop was exceptionally heavy and continued into August. On old trees, especially, the fruit did not develop its usual size, and came to maturity so much earlier than usual that the shipping and keeping qualities were damaged considerably. Yet, in spite of these disadvantages, the returns from the 1921 apple crop were the best we ever had.

The unusual weather conditions of last summer emphasized several things. First, the great need of maintaining the available supply of moisture and plant food in the soil. Second, the necessity of picking the fruit before it becomes too mature or over-ripe for the best shipping results. Third, the cooling of the fruit quickly to the lowest possible temperature. A good tight storage building that can be opened at night and closed through the day works well in ordinary falls, but conditions such as we had last fall make one wish for something more effective than night air for cooling the fruit quickly.

CROPS and MARKETS

Fruit from South America

TOWARD the end of February a small shipment of about 900 packages of fruit arrived in New York City from Argentina. The lot comprised peaches, plums and grapes, and met with a fairly good demand from the jobbing trade which purchased them in small lots at rather high prices.

The peaches were in small boxes containing 70-90 and the quality was only fair, the fruit showing very little color. They sold at \$2.50-\$5 according to size and quality. The grapes were the Muscat variety, four boxes of uniform size being strapped together. The net weight of the contents was about 32 lbs. and they sold within a range of \$7-\$8. The plums, a red variety, sold best, at a range of \$4.50-\$5.50 mostly \$5 and were packed in the same sized boxes as the peaches. A small lot of each fruit was placed on auction as a trial, but they did not command prices quite so high as the private sales.

A shipment of 13,500 boxes of peaches and 180 boxes of melons from Chile was sold in New York during the first week of March and distributed in part to markets in other

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| LIME SULPHUR | POWER DUSTERS | POWDERED BORDEAUX |
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| DUSTING SULPHUR | HAND DUSTERS | BLACK LEAF 40 |
| ARSENATE OF LEAD | HAND SPRAYERS | SPRAY GUNS |
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NIAGARA Products are all Guaranteed—Highest Quality Only. NIAGARA Products are not experiments—They are the results of years of experience. We were the pioneers in the business—NIAGARA always leads. Our prices are right—Our Calendars and information are free. Remember—Wherever Fruit Excels, NIAGARA Spray is used.

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Get this Valuable Book on Better Lawn Care



Every one interested in the care of large, beautiful lawns should have a copy of this book which tells all about Ideal Power Lawn Mowers.

It shows many photos of well-known homes, parks, golf clubs, cemeteries, colleges, etc., where the lawns are cared for the "Ideal Way." It tells about the Ideal Junior, a moderate-priced power mower for medium-sized lawns, the 30-inch Ideal Power Lawn Mower for large lawns, and the Ideal Triplex Power Mower for large parks, golf clubs, etc. Write for this book to-day—learn how to keep your lawn in better condition at less cost.

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The
Ideal
Junior

Good Prices Always

For Your Fruit and Vegetables

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



We Solicit Your
Consignment

Send for
Shipping Stamp

Branch Warehouses:
Sudbury, North Bay,
Cobalt and Timmins.

PETERS, DUNCAN Limited
88 Front St. East, Toronto



References: The
Bank of Nova Scotia,
King and Victoria
Branch, and Com-
mercial Agencies.

cities. The peaches showed a little decay caused by bruises during the voyage, but their general condition was good and prices

ranged mostly \$1.25-\$1.50 per box of 32. Boxes holding 60 to 70 peaches sold at auction at \$1.65-\$2.60. Most of the melons sold at \$4.50-\$5 per crate. A crate held from two to six melons.

and minimum size or style of pack of the peaches must be stamped on each package. This is a well established practice in handling boxed apples and citrus fruits.

The No. 1 grade is designed to meet the normal commercial needs of the trade and consuming public by eliminating damaged stock which might cause loss in transit. It also provides that the peaches shall be of one variety, firm, mature and well formed and free from growth crack, cuts, skin breaks, worm holes, and from damage caused by dirt, scab, scale, hail, disease, insects or mechanical or other means.

The No. 2 grade includes peaches of one variety which are firm, mature and free

The Fruit & Produce Market

The Commission firms undertook with consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. - Toronto, Ont.
CONSIGNMENTS OF FRUIT AND
VEGETABLES SOLICITED.

Shipping Stamps furnished on request.

MANSER, WEBB CO.

83 Colborne Street - Toronto
Wholesale Fruit and Produce Mer-
chants.

Consignments Solicited on Commission.

STRONACH & SON

33 Church St., Toronto, Ont.

All shipments of Fruit and other pro-
duce consigned to us receive our per-
sonal attention.

Shipping stamps furnished.

Phone Main 2390. See advt. on page 125

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consig-
nments Solicited.

PETERS, DUNCAN Limited

88 Front St. E., Toronto, Ont.

See Advertisement on another page.

Australian Fruit Pool

THE Commonwealth and the State Govern-
ments of Australia are co-operating
in an endeavor to absorb the entire
fruit crop with a view to preventing a repi-
tition of the waste and destruction of sum-
mer fruits which is said to have taken place
last year.

The Commonwealth Government has
undertaken to back an Australian pool to
the extent of £750,000 (\$3,649,875 at par) on
the condition that the State Government ac-
cept proportionate responsibility for half
the loss in case the pool fails. The proposal
is to deal with growers through the canners
and jam manufacturers to whom sufficient
sums would be advanced to pay producers a
first dividend on delivery.

The most important concession made by
the Commonwealth Government is in respect
to sugar. This necessary ingredient of
manufacture is to be supplied for canning
and jam-making at £26 (\$126.53) a ton. The
pool will be formed on condition that all
growers of soft fruits become members and
that all the Australian exportable fruit sur-
plus be disposed of by a single selling
agency in London. A further condition is
that all exportable fruit shall be graded,
packed, and labeled according to a pre-
scribed standard.

U.S. Peach Grades Issued

UNITED States grades for peaches have
been reissued by the United States De-
partment of Agriculture. The grades
contain only minor changes from those
recommended in 1921.

In past years peaches have been graded
chiefly with regard to size. The United States
grades are based wholly on market quality.
Under this term are included such factors
as color, maturity, general appearance and
freedom from insect and fungous injuries.
Minimum sizes have not been specified for
the various grades, but the numerical count



Universal Bushel Basket and Cover

Absolutely the best basket and
cover on the market.

Write Us for Prices

in carload lots, delivered your
station, or smaller quantities
shipped from our warehouse.

QUICK & HOLTGATE

Bowmanville - - - Ontario

CANADIAN DISTRIBUTORS

APPLE BOXES,

"Firstbrook" Construction
Withstands Destruction.

Firstbrook Bros., Limited

Manufacturers of Boxes and Shooks,
TORONTO, CAN.

WE WANT YOUR STRAWBERRIES

You'll soon be preparing to ship your crop. Make
sure that it will be handled in the best way, and so as to
bring you the highest returns.

LET US HANDLE THEM

We are among the largest handlers of strawberries
in Toronto. We have built this business up by careful,
prompt attention to every shipment. We will promise
you good service, best prices, and prompt returns. Can
you ask more?

Ask your banker
about us.

Send for free
shipping stamps.

WHITE & CO., Limited

Front and Church Streets Toronto, Ont.

Wholesale Fruit Importers and Commission Merchants

"INTENSIVE STRAWBERRY CULTURE"

A new book by an expert grower
for more than 40 years. Highly com-
mended by eminent authorities.
Written for men and women, having
but small holdings, but would never-
theless grow strawberries by most
approved methods.

Write for free Prospectus, or send
\$1.00 for the book.

LOUIS GRATON

WHITMAN MASS.

from worm holes or serious damage caused by disease, insects or any other means.

A Fancy No. 1 grade is also provided for those who desire to pack an especially fine product. In this grade will be packed only peaches which are free from all damage by insects or diseases and which in addition have a specified amount of red color. This amount has been fixed at 50 per cent. for such varieties as Carman and Hiley and at 25 per cent. for Elberta and J. H. Hale and other similar varieties.

In addition to the recommended grades for peaches, the bureau of markets and crop estimates has prepared grades for 13 other important fruit and vegetable crops: asparagus, barreled apples, strawberries, cabbage, celery, cauliflower, cucumbers, lettuce, Bermuda onions, Northern-grown onions, white potatoes, sweet potatoes and tomatoes.

White & Co., Commission Merchants, Toronto, were very pleased with the Rochester and J. H. Hale peaches that came to them from the Niagara district last season. Jas. Langskill, the president, told The Canadian Horticulturist that he thought that the growers would be well advised to tear out their Triumphs and plant Rochesters instead for the early market. He favored the J. H. Hale because it was a good keeper, the variety frequently standing up two or three weeks, which was more than could be said of most other varieties grown in Ontario.

APPLE BOXES,

"Wood Boxes are best beyond dispute For carrying every kind of Fruit."

Firstbrook Bros., Limited

Manufacturers of Boxes and Shooks, TORONTO, CAN.

Does Your Orchard Pay?

If your land is being taken up by fruit trees, it is a business proposition to see that that land pays.



Second grade fruit need not be tolerated on any Canadian farm. Keep your trees properly sprayed, destroy the insect life and blight that destroys your fruit—and your orchard will pay! For effective spraying, use the Spramotor—not only because it has a world-wide reputation, but because it actually does the work better than any other sprayer on the market.

Spramotor

It isn't a SPRAMOTOR unless we made it!

Spray the SPRAMOTOR Way—it Pays! Awarded over 100 gold medals.

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We are centrally located in the Fruit Market. Service unexcelled. Prompt returns and a satisfactory deal guaranteed to all.

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Fruit,

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All Shipments of Fruit and other Produce consigned to us receive our personal attention.

Competent salesmen in Fruit Market at all times.

Advice Card mailed each evening.

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Your Shipment Solicited

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PERRY'S SEEDS

Alpine and perennials, unique collection; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate. **HARDY PLANT FARM, ENFIELD, ENGLAND**

Easy Now to Rid Your Farm of Gophers

Wonderful Discovery by Noted Scientist Kills Every Gopher Within a Week's Time—Not a Poison.

Gophers cost farmers over two hundred millions of dollars a year, through the destruction of crops and damage to land. Farmers need no longer suffer this loss, because they can now kill off all the gophers on their farm in less than a week's time. This is possible through the remarkable discovery of E. R. Alexander, a chemist, who has perfected a virus which kills gophers and rats as though by magic. This product is not a poison—it can be eaten by human beings or any animal on the farm as safely as their regular food, but means quick, sure death to gophers.



This wonderful gopher virus, which is known as Alexander Gopher-Killer, is merely mixed with bread or meat scraps and placed where gophers, rats or mice can get to it. Within a few hours after a gopher has eaten Alexander Gopher-Killer he gets a high fever and suffers a terrible thirst. He leaves his pits and nesting holes and goes to the open field in search of pure air and running water.

It is a scientific fact that one gopher affects others, and soon the whole colony dies. And though this virus is absolutely deadly to gophers—chickens, hogs, cattle or any farm animal can eat it and not be affected at all.

So confident is Mr. Alexander that Alexander Gopher-Killer will kill every gopher on your farm in less than a week's time that he offers to send, as an introductory offer, a regular \$4.00 tube for only \$2.00. Give it according to directions, and if at the end of a week's time you are able to discover any gophers, rats, or mice on your farm your money will be refunded. A big Toronto bank guarantees that Mr. Alexander is reliable and will do as he says.

Just send money order, check or currency for \$2.00 to E. R. Alexander, Alexander Laboratories, 3030 Terminal, Toronto, Ont., and the tube will be mailed at once on the guarantee that if not absolutely satisfactory your money will be returned without question. Write to-day and stop your gopher losses now.

Horticultural Pub. Co., Ltd.

THE annual meeting of the shareholders of The Horticultural Publishing Company, Limited, was held in Toronto on April 20. This company publishes The Canadian Horticulturist (Floral and Fruit Editions), The Canadian Florist and The Beekeeper.

The financial statements showed that, in spite of the business depression in 1921, the operations of the company had proved the most successful of any year since the opening of the war. As the four publications of the company draw revenue from all parts of Canada, as well as from the United States and Great Britain, it was felt that the reports indicated that business conditions generally are recovering following the war. The shareholders expressed their approval of the reports presented, by passing a resolution of appreciation to the directors.

The following officers were elected: President, W. E. Groves, Hamilton; managing director and secretary-treasurer, H. B. Cowan, Peterboro; directors, F. G. H. Pattison, Winona; P. W. Hodgetts, Toronto; C. S. Thompson and H. B. Cowan, of Peterboro. Two other directors will be appointed later.

POINTERS on POULTRY

Chickens in Brooders

WHEN chickens are first put into a brooder they should be confined under or around the hover by placing a board or wire frame a few inches outside (this would not apply to the small outdoor colony brooders). The fence or guard should be moved gradually farther away from the hover and discarded entirely when the chickens are three or four days old, or when they have learned to return to the source of heat.

Young chickens should be closely watched to see that they do not huddle together or get chilled. They should be allowed to run on the ground whenever the weather is favorable, as they do much better than when kept continuously on cement or board floors. Weak chickens should usually be killed as soon as noticed, as they rarely make good stock, while they may become carriers of disease. Brooders should be disinfected at least once a year, and more frequently if the chickens brooded in them have had any disease.

Fowls stand cold better than dampness. One can build a good henhouse with two piano boxes, the backs taken off, and set back to back. Small windows, screened for summer, and provided with glass or cloth for winter, should be provided. It is wise, also, to have these boxes raised off the ground a few inches to prevent rats making their homes under the house. This kind of house should do for 20 hens.

It is known as a matter of experience and observation that town and city people who have to figure costs of food closely have not been accustomed to use eggs freely except in the season of flush production and low prices. Many such families can keep a few hens in the back yard and even

Be sure your Apples receive no knocks
By Packing them in a "Firstbrook Box."

Firstbrook Bros., Limited

Manufacturers of Boxes and Shooks,
TORONTO, CAN.

with low production get many more eggs than they have been accustomed to use.

It is not necessary to build expensive poultry houses, but they should be serviceable, fairly roomy, well lighted, and well ventilated without drafts.

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

REAL ESTATE

FRUIT FARMS FOR SALE—All sizes, Niagara District properties of all kinds. Write Caldwell & Hazlewood, Grimsby, Ontario.

SEEDS, BULBS, PLANTS

BULBS—Lily of the Valley and Gladioli of all descriptions. Write for prices. C. Keur Sons, Hillegom, Holland. New York address—5625 Mosholu Ave. The trade will be visited by us in due time as usual for 1922 spring and fall orders. Lily of the Valley and Gladioli can be shipped immediately direct from our warehouse and Canadian farms.

CEDAR POSTS FOR SALE

About 6,000 dry, unpeeled Cedar Posts, assorted in different sizes to suit purchaser. Also some Anchor posts and lumber in pine and hemlock. Apply to

R. J. McAFEE

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Ontario



SARNIA POULTRY FENCE

The Canadian farmers and ourselves have been friends for more than eight years. Our business relations have been very intimate and profitable both ways—to the farmer and to us. We have given full measure of service—real fence value. That means repeat orders. Once a Sarnia fence customer, always a Sarnia fence customer. That is especially true of Sarnia poultry fence. You get real fence value, durable and strong, with all extra profits eliminated, when you deal direct with us on our Factory-to-Farm one profit plan.

We Save You Money

Buy no Poultry fence any part of which is made of light wire. The life of the fence will only be the life of the lightest link. A chain is no stronger than its weakest link. The Sarnia knot—in fact all parts of our fence are made of the same size wire. We guarantee the Sarnia fence to be made from Government gauge, high grade wire that stands the acid test, and to be the most perfectly woven Poultry fence on the market. Western Canada supplied from Winnipeg. Get our low price list and descriptive literature before you buy Poultry Fence. Address nearest office.

THE SARNIA FENCE CO., Limited
Winnipeg, Manitoba Sarnia, Ontario



The Canadian Horticulturist

Floral Edition

Vol. XLV.

PETERBORO, ONT., JUNE, 1922

No. 6

Notes on the Gladiolus

W. E. Saunders, London, Ont.

THESE notes make no pretence to include any fraction of the desirable varieties in commerce. For one thing, the prices are much too long for the moderate purse to compass many of them, and after one has purchased a hundred or so of the named varieties, he becomes deeply impressed with the truth of a remark of a friend last year, that many of the named kinds should never have been offered. Even the men who have introduced the really great things of the gladiolus world are conspicuous sinners in this respect. One man who got most of the new introductions of a certain prominent grower pronounced them "90 % junk!"

Personally, I have been much amused at the nerve of some growers. Some months ago, a firm offered through "The Flower Grower," a set of "World Beaters," at about \$7 per "beater!" One looks in vain for the names of those illustrious kinds in the prize-list of the latest shows, and why? Doubtless because they are not of the supreme excellence that is claimed.

And therein lies a lesson. Do not bite at expensive varieties at the first offering. If they are good, they will be heard from later, and if poor no one wants them. One needs to be the more particular on account of the attitude of some of the magazines. One of my reports on the gladioli of the past season was emasculated on account of the unfavourable criticism of varieties offered by prominent men who were advertisers!

The following list is treated alphabetically for convenience of reference, and refers only to good ones, or those that might be supposed to be good, whether from the price, or the originator.

Adeline Kent, similar to Pride of Goshen, and inferior to that variety.

Anna Eberius—A fine red-purple; good spike, and good flowers.

Armistice, (Groff)—Bought under the number 855. A splendid deep dark carlet. The finest of its color that I have seen. Five feet high with five rich flowers.

A. W. Hunt (Christy)—The best light red; A wonderfully fine and bright color. My spikes have not been tall, but a great variety nevertheless.

Badenia—Again failed to bloom, to my great disappointment. Others had

the same experience. The blues are not always sturdy.

Baronne d'Ivoley, (Vilmorin) — A lovely white, but it seems to dislike heat. Perhaps later planting will produce better flowers; Worth experimenting with; of great promise, if one can succeed with it.

Carmen Sylva—The most promising of the new whites. (Have not flowered White Wonder, though I have now bought it). Color, spike and size, good.

Challenger —Holding its position as the best of the cheaper reds in my garden; popular in London.

Colonial (Metzner)—The only one of a dozen Metzner varieties that seems worth keeping; colors as in Byron L. Smith, and they blend better.

David Starr Jordan—Good color, but much inferior to Armistice, so why grow it?

Dawn (Groff)—Unequaled as yet in the salmon colors. Not enough is heard of this grand variety, and we, Canadians should give prominent place to the creations of one of ourselves who was the pioneer on the continent in the

advancement of the gladiolus.

Diener's White—Not a white at all. A near white, suffused with an ugly tinge of dull magenta pink.

Dominion—Very fine; Glowing red.

Etendard (Lemoine)—White, lower petals lemon, and the cardinal blotch is absolutely the most brilliant thing in the gladiolus world.

F. J. Symmes—A fair-sized flower of a fresh color; Orange salmon.

Flora—Fine yellow, now getting very cheap.

Herada—Not too easy to attain success, but a fine color.

Ina Collins—unworthy of name; poor color.

Le Marechal Foch—My spikes have not been fine but the color is splendid, and others may have better success.

Lily White—Fancy that one must pick this as soon as it is opening to save it from the purplish tinge that overcasts it so soon.

Louise—Certainly a grand color and of good size, but the spike leaves considerable to be desired. Still, it is one of the real additions to the list.



A SPLENDID SPECIMEN OF WHITE CLEMATIS

The Clematis is a climber which is much prized for its handsome and often showy flowers. There are several white-flowered varieties, such as Henryi, Mrs. George Jackson and Lanuginosa Caulida. They, however, are not very hardy in some parts of Ontario.

Lucie—Light yellow, and of value for its season; The earliest in my garden of light colors, and a fairly good flower too.

Majestic—The color is ordinary, and the spike poor. Fire it, brothers.

Mary Pickford—A rather peculiar white with lemon tints in the throat but still quite nice.

Mrs. Bothin—The finest in color of all the Diener varieties that I have grown. Lighter than Mrs. Pendleton, and of the same type, with colors that blend better. Mrs. Walsh of the same grower looked better at St. Thomas, but I do not fancy the colors so much, and the price is an obstacle.

Mrs. Norton—One of the great ones, but none too easy of attainment. Next year it ought to be cheap, and a well-grown spike is something to be proud of.

Nymph (Coleman)—Flesh pink, with lighter throat. A tempting description and better than it sounds. The best of Joe Coleman's that has bloomed for me; A great spike, two feet long, with flowers up to five and a half inches.

Pres. C. C. Moore—Lots of name, but there would have been no loss, if it had never been disseminated.

Princepine—When this flowered, it was Princeps, which is a grand flower, but not easy, and never a good spike.

Prim Beauty—Very fine again, though some of my friends are derisive of my enthusiasm; five feet high with a fine spike of good flowers. The best of the primes with me.

Purple Glory—Another of Kundred's great ones. At St. Thomas, this took the award for, "Finest spike in the show." Some praise! It is not purple though, but a dark garnet, with a little purplish tinge.

Pythia,—Not a good color, but one whose flowers open exceptionally wide, and makes a fine show. Probably not worth the high price.

Rose Luisante—A lemon flower with extensive rose edgings. A pretty combination, and good enough to grow in spite of its small size.

Snow Glory—A pretty good one, that would doubtless become more popular if offered at a more moderate price.

Superba—A grand red flower, but the color seemed dull against some others. When I first saw it at Detroit show, it was outstanding, and the fact that Joe Coleman introduces it is strong evidence, but it developed no enthusiasm in me in 1921. If we had more men like Coleman, there would be less money wasted on novelties that belong in the ordinary mixture. Pretty soon it may be time to discuss originators with the same candor that we apply to varieties. Might do them good too. Some of them have put out some really great things, and, trading on their reputation, have sold a lot of worthless stuff, with here and there a good one thrown in. The men who refrain from such practices deserve our heartfelt commendation

Success with Dahlias

W. E. Groves, Hamilton

LIBERAL culture, well drained soil, with sufficient moisture are each indispensable to success, but given these, there are no great difficulties. The tuber of green plant whichever is chosen should be planted about five to six inches deep according to soil texture, May, June and early July being suitable times. It is well to avoid too early planting, and June is possibly the ideal month for this operation. Deep digging before planting is more essential than heavy manuring, planting in a hard pan being a complete waste of time.

If best results are looked for, a handful of a cool fertilizer may be given each plant, bonemeal being a safe and ideal food to apply. It is surprising how much bonemeal the dahlia will absorb and being slow in action the soil is improved for more than one year by its application. The phosphoric acid contained in bonemeal provides a steady, safe supply of this essential element. For intensifying the color of blooms potash in some form is helpful, and there is perhaps no better medium for this purpose than wood ashes. This may be given to the plants just when coming into bloom, and can be easily raked in.

Deep cultivation is necessary, a depth of four inches being about right. Weeds are kept down and moisture conserved by this method. When the plants are coming into bloom shallower cultivation should be practiced, the feeding roots at this time being near the surface. One to two inches should be the rule from then on. Cultivation will help largely to produce good dahlias in any soil. Neglect in this connection spells failure though every other condition be provided. Some varieties may need support during the growing season, and for this purpose a strong stake should be provided to which the plant may be loosely tied.

Ferns for the Shady Corner

A GROUP of fine ferns makes a splendid display in the flower garden where a suitable place can be found. Make the conditions as near as possible under which the fern lives in its native haunts. The ideal place for ferns is where the tree tops are sufficiently thick to merely break the direct rays of the sun during the early part of the day. Where the shelter of trees cannot be obtained, an east or north-west exposure may be used. In these locations they may be protected by a fence from the biting north and east winds.

Ferns should be lifted while the ground is wet, either early in the spring before the ground is dried out or immediately after a rain. Select the fern

most pleasing to your fancy and after cutting the top off, if it has grown to any size, lift carefully with a spade, leaving as much of the soil as possible around the roots. Wrap immediately in a piece of burlap to keep earth and roots intact until you are ready to plant. After planting, give a thorough watering, and put on a two-inch mulch of pine needles, moss, sawdust, or anything that will prevent the rapid evaporation of the moisture. Ferns may be removed any time during the summer though spring is best.

To prepare a bed for ferns dig out the space to the depth of 12 or 16 inches and fill with a compost of two parts leaf mould, three parts meadow soil or well-rotted sod, one part well-rotted cow-manure and one part sand. Add one pint of charcoal to each bushel of the mixture.

After the plants are well started, they may be given liquid foods in considerable quantities, such as pulverized cow or sheep manure, one ounce to two gallons or potash one ounce to five gallons of water.

Sweet Peas

FREQUENTLY in warm weather, sweet peas are attacked by the red spider and green fly and to keep these down there is nothing better than the use of tobacco extract (which is sold under various trade names.) A teaspoonful to a gallon of water, used in a sprayer will be found very satisfactory. A small quantity of whale oil soap thoroughly dissolved in warm water (and strained) added to the solution is helpful as it better adheres to the plants.

If there is a protracted period of damp weather, the leaves may show a tendency to mould and for this a dusting with a mixture of two parts of lime and one of sulphur will be found of good service.

The cause of the blighting of sweet peas, using the word blighting in the general sense, can be summarized as follows:

- Sour soil.
- Shallow top soil.
- Shallow ploughing or spading.
- Use of green manure.
- Excessive use of fertilizers.
- Wrong use of fertilizers.
- Too late planting.
- Improper watering.
- Improper location.

The remedy lies in the observance of these causes.—The Flower Grower.

The best time of the year to plant peonies and iris is during the latter part of August and September. When planted at this time, new roots are made before freezing weather, and when spring arrives the plants are ready to begin their growth

Dividing Iris Clumps

F. H. Byshe, Forestry Branch, Ottawa.

THE best time for dividing tall-bearded irises appears to be soon after flowering. They then seem to get squared away in preparation for the next season's blooming, and you give them their best opportunity when you make any necessary re-arrangement before this process is far advanced.

"Why divide them?" you say. Well, there may be several reasons. You may want to give a rhizome or two to a friend, or you may want to move the clump or a portion of it to another part of the garden. Again, the clump may have been in place long enough to have exhausted the food value of the soil, or it may have grown so large that for the sake of its own health and symmetry it should be lifted and reset. You will appreciate this the better if you recall the fact that the iris, like other plants, draws upon the food elements of the soil in which it grows and that in time the soil becomes impoverished. When this condition arises, the growth becomes less vigorous and the flowers less numerous and smaller in size. I do not know to what extent irises "foul their own nest" or contaminate the soil in which they grow, as other plants are known to do, but it is a possibility to be considered.

Rhizomes Lift Themselves

Again, you will have observed in an old clump of iris that the rhizomes have apparently lifted themselves above the ground level. To account for this we should understand that the rhizome flowers only once. If you look at a clump of iris in the spring you will discover the dried up stalks which bore last year's flowers. These stalks will be found growing out of the "neck" or end of the rhizome, and if you break off the stalk, you will find that the rhizome

has already begun to callous at the point of breaking. That rhizome will not usually flower again but will send out "offsets" which will develop into rhizomes that will flower in their turn. In time the old rhizome will decay and disappear. Incidentally, this decay is a natural process and should not be confused with the disease known as "Iris rot" (*Pseudomonas iridis*). In a long established clump these new rhizomes, not having sufficient ground space, often grow on top of each other, which accounts for their appearing above ground. This condition will be found in clumps three to five years old, the time varying according to the vigour of the growth.

Replanting

Assuming then, that you are going to lift and reset an old clump, with a shovel or spading fork, remove it entire. Continue shovelling until considerable earth has been removed and refill with fresh soil. Then take the clump and, after shaking it free of earth, pull the rhizomes apart. In replanting, whether in the old or the new location, select only those rhizomes which have not flowered, and cut away the old rhizomes that have fulfilled their purpose. These may be discarded unless they give promise of producing additional offsets, in which case they may be planted in a separate location. It is not advisable to replant iris in large unbroken clumps. It is, of course, unnecessary to lift a clump solely for the purpose of removing a rhizome or two. Take a spading fork and loosen the roots at a point on the edge of the clump. Then with the hand, pull away what rhizomes you require. A chisel is a good instrument with which to sever a stubborn member from its family group.

There has been considerable discussion as to the proper depth to set the rhizomes. Shallow, even surface planting has been advocated to avoid rot, but I have found rot active in fully exposed rhizomes as well as in those covered with soil. In a mild climate and with an old variety, I doubt if it matters how shallow the rhizome is planted, so long as the feeding roots get down. Under our conditions at Ottawa where during the past three winters we have occasionally had temperatures of 18 to 25 degrees below zero without the protection of snow, and where we have in addition to the older varieties many new ones whose hardiness is still undetermined, I have found that a good inch of soil over the rhizome affords some protection without inducing conditions favorable to rot.

QUESTION BOX

W. E. GROVES

Rhododendrons

"My rhododendron has had two buds on it since last fall. These are not blighted. When may I expect it to bloom?—Mrs. A. S., Niagara Falls.

Rhododendrons, like azaleas form flower buds on the shoots made this year, the buds opening next year. This means that the buds on the plant will mature during the early summer, and if they are still firm, there is no doubt about the opening to full bloom. After blooming, all seed pods should be cut off making it possible for new growth in just the same way as previously described for azaleas.

Green Gage Plum

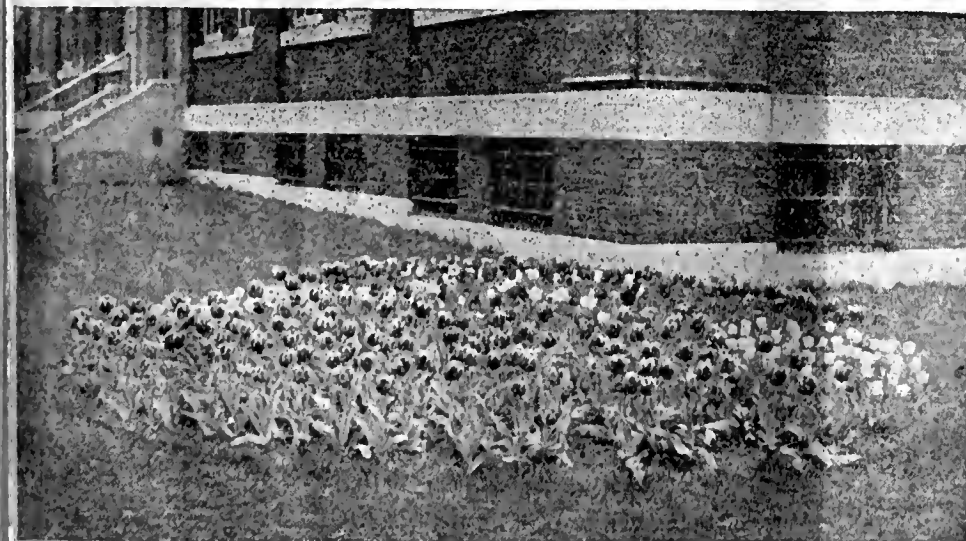
"A clean, healthy Green Gage plum tree about ten years old blossoms well but sets little fruit. What is the reason and remedy?—F. B. L., Longbranch, Ont.

This is probably a case of self-sterility. If no other variety of European plum is growing nearby, I would recommend planting one for cross-pollination purposes. Japanese or American varieties will not fertilize the European sorts which classification includes most of the commercial varieties.—J. W. Crow, B.S.A., Guelph.

Keeping an Azalea

"How shall I keep from year to year an azalea purchased last month from the greenhouse? Should I put it in the cellar after flowering for a rest?" Mrs. A. S., Niagara Falls.

The azalea described should have no resting period, but should be kept growing all the year. All flower stems should be cut off, and the new growth will start away from the base of the stems, and it is on the new shoots made that the buds form for next year's bloom. For a time the plant should be kept in a good position in the house, and be



HOW BUSINESS FIRMS CAN IMPROVE THE COMMUNITY

One of several tulip beds in front of the offices of John Bertram & Sons, Ltd., Dundas, Ont.

frequently sprayed to keep down red spider. About the end of June it could be placed out of doors, but must be provided with a shady position during the hot summer months and the spraying should be kept up at least until September. By this time the buds will have formed, and if the plant is taken inside before frost, there should be no difficulty in bringing the blooms to perfection.

Saving Sweet Pea Seed

IN saving your own seed from sweet peas, do not try to get flowers and seed from the same vine. Pick out the sturdiest vines and cut out the poorer flowers, leaving the best with three or four flowers to the stem to seed. When ripe, pick the pods which will contain about seven seeds each. Those at each end of the pods will be smaller. Discard these and keep only the large seeds for next year. You will probably secure improved plants and flowers from them. The earliest flowers are the best for this purpose, as those which mature in hot weather do not seem to have the same vitality and strength.

Disease of Gladiolus

Mrs. G. A. Bonisteel, Belleville

THE only disease which affects the gladiolus is a dry rot, although this is not very prevalent; bulbs so affected are recommended to be soaked in a solution of formaldehyde, one ounce to four gallons of water, for twelve minutes; however if we find a bulb we are suspicious of carrying disease it is best to burn it unless a valuable variety, when we might give it a chance.

Occasionally a bulb may appear rather scabby and stunted one season and entirely recover the next. The writer had practical experience with this a few years ago when having only two bulbs of a choice variety, the end of the first season they looked hopeless, but after nursing them along for two years they developed into a rank growing, large bulb variety. It is quite possible that the first year these bulbs were burned from the application of fresh fertilizer.

The only enemy that I have ever had attack Gladioli was the cut worms, last year, when they were bad in our section. After applying the poisoned bran, we lost no more plants.

While the propagation and growing of the gladiolus require a certain amount of care, there is no flower so worth while for the cost of the bulb and attention needed to bring to maturity.

A vigorous growth of clover in a lawn is a good thing. It enriches the soil in nitrogen and humus, rendering it in the best conditions for a succeeding crop of grass.

The Kitchen Garden in June

C. B. Alden, Toronto

WHEN planning and planting the home garden, plenty of seed should be sown to provide a surplus of certain kinds of vegetables for canning. Crisp young radishes and lettuce are best eaten fresh from the garden; whereas the succulent string bean, the prolific tomato, the iron-rich spinach, to say nothing of carrots, beets, peas, corn or asparagus, will delight the palate and enrich the diet many months after they mature in the garden, if properly put up in cans or jars and stored in pantry or cellar.

It is not enough to enjoy these vegetables when they are fresh. From October to June the storage cellar and the grocery store are likely to yield only potatoes, turnips, old carrots, cabbage and onions, and the use of these vegetables is likely to prove monotonous without occasional reminders of the summer garden. It may take a little more time to plant and cultivate two rows of beans or two dozen tomato plants instead of one, but if it furnishes these vegetables for winter as well as summer use, it is worth the while.

The amount of each kind of vegetable to be canned depends on the preference of the household, and the garden must be planned, accordingly. A family of five—mother, father and three children—or four adults—may well use 70 pounds a week of fruits and vegetables weighed fresh or uncooked. This would be the equivalent of such a combination as eight pounds canned, three pounds dried, and 44 pounds of fresh material. Of this allowance, half, or 35 pounds a week, may well consist of fresh or canned vegetables. Four pounds, or two quarts, of canned vegetables are considered a minimum weekly allowance for the winter months.

To Grow Good Tomatoes

EVEN though tomato plants have been hardened after starting in the hotbed, it may be necessary to cover them for a few nights with several thicknesses of newspaper to protect them from the cold after they are set in the garden. Tomatoes require a moderately rich soil, not too rich, but such soil as will grow a good crop of corn or potatoes. A little well-rotted manure can be worked into the spot where each plant is to be set, and a tablespoonful of high-grade fertilizer, sprinkled over a space about one foot in diameter and mixed with the soil, will aid in giving the plant a good start.

Planting distances will depend upon whether the plants are to be pruned to a single stem and trained to stakes or are to be allowed to grow according to their natural habit of spreading over

the ground. If the plants are to be trained, they may be set in rows as close as two and a half feet or three, and spaced 18 inches in the row. If they are not to be trained, the plants should be set three or four feet apart in each direction

Eggplants and Peppers

EGGPLANTS are very sensitive to frost. They should not be set in the garden until all danger of frost is over. They require a warm rich soil; well-manured and of fine texture. Plant in rows 30 to 36 inches apart, allowing 18 to 24 inches between the plants. Give same general cultivation as for tomatoes and cease when the fruits reach about medium size.

Peppers are another crop that will not stand frost. The soil should be a sandy loam, well-drained and warm. On heavy soil the plants will produce an abundance of leaf but usually only a few fruits. Set in rows two feet apart allowing one foot between the plants. Peppers also require the same cultivation as for tomatoes.

Watering the Garden

WHENEVER the moisture content of a garden soil falls below a certain point the crops suffer. There is a right and a wrong way to remedy this condition. The two best ways are by irrigation, or applying water, and by placing a "blanket" over the soil to hold the moisture. This blanket may consist of fine manure, fine straw, lawn clippings, leaves or a thin layer of finely divided soil, called a dust mulch, such as is produced by hoeing and cultivating. Such a blanket tends to stop the flow of moisture through the capillary tubes, or pores of the soil and thence into the air. Plenty of manure or organic matter in the soil also adds greatly in holding the moisture.

When watering a crop, the first essential is to soak the soil thoroughly. After doing so, do not put on any more water until the land has partially dried and one or two good cultivations have been given. The method of applying the water will depend upon local facilities, conditions and established practices. Any other method is better than frequently sprinkling just a little with the hose or other sprinkler. Sprinkling is all right if plenty of water is applied at one time, after which no more should be given for several days.

Running water in small furrows alongside the rows of plants is one of the best methods of irrigating garden crops. After the water has soaked into the

oil, the furrow may be filled with dry soil and the surface cultivated.

Water intelligently, no matter what the method of application. Do not water too often, but water thoroughly when you do.

Pointers on Thinning

GARDENERS usually sow more seeds than are necessary, under the expectation of getting a fuller stand, or at least of having enough. This results in no particular harm, excepting the waste of seed, provided the plants are thinned before they begin to crowd each other.

Peas very seldom need any thinning, as they will thrive when planted quite close together. Beans planted five seeds to the hill and the hills 12 inches apart will not need to be thinned, but if six or seven seeds have been dropped, it will be desirable to thin them, leaving only four or five in a hill. Corn should always be thinned to three or four stalks in a hill, the weaker being pulled out, leaving only the best. If beans and corn are planted in drills instead of hills, they will not need much thinning unless carelessness in sowing has produced too thick a stand.

Radishes, unless too thick, can be allowed to stand, thinning being accomplished by pulling up plants for table use as they reach edible size. Lettuce is generally sown entirely too thick. To thin the bed, the small or medium-sized plants can be pulled out and used. Some of the plants may be lifted and transplanted, spacing them four to six inches in each direction, so that they will develop into distinct heads or later use.

Beets are usually planted too thickly, partly due to the fact that each seedball contains two or three seeds, and,

as a rule, every one of these seeds grows. They should be thinned to stand not closer than two inches in the row. Still later, every other beet should be pulled out. This last thinning can be postponed until beets are large enough to use.

Carrots and parsnips also often are sown too thickly, and must be thinned. The thinning should be done just as soon as the plants are large enough to pull out, and as they are thinned, a little loose soil should be worked in around the plants that are left. Two or two

and one-half inches is about the right distance to leave the carrots and three to five inches for parsnips. If the seed has been sown in a rather broad drill, the plants can be left a little zigzag or irregular in the row, and a larger number of plants accommodated. The distance between individual plants, however, should not be less than two inches. Even then, some of the carrots should be pulled as soon as they are large enough to use, in order to give the remainder a chance.

How to Grow Celery

T. W. Sheward

ALL the cultivated varieties of celery are descendants of the wild celery, *Apium graveolens*, a native of England, where it grows wild in damp places near the coast. Celery is a profitable crop to grow, as there is always a good demand in winter. One grower near Montreal clears \$1,000 per acre from celery alone. The varieties most grown are,—White, Plume, Suttons A, I, Giant Pascal, and Winter Queen

Seeds are sown in hotbeds for early crops, and in the open in rich soil for late winter and spring use. The seedlings are planted out any time from June to the first week in August, the planting being done on dull days. There are several ways of growing celery. The old way of planting in trenches and filling them up with earth, (I), and (G), in the accompanying diagram, and then banking up each side of the row with earth (H), is very good for garden use. When planting in trenches, good soil should be placed at the bottom of the trench to give the young plants a start as shown at (D). Then, as the plants grow, they are tied up (E), and later,

about October, are banked up with soil to cause them to blanch. In November, if the celery is to be left outside all winter, leaves are placed over the bank 1 foot thick to protect it from frost.

Other ways of growing celery are shown at (A) (F) and (J) in the diagram. (A), shows a way of growing on the level, between rows of peas or other tall crops. This is blanched by tying brown paper around the stalks as shown at (A). Some self-blanching sorts, (Golden Self-blanching), can be grown close together (F), in blocks, and blanched by placing boards around the sides as shown at (J).

Timely Reminders

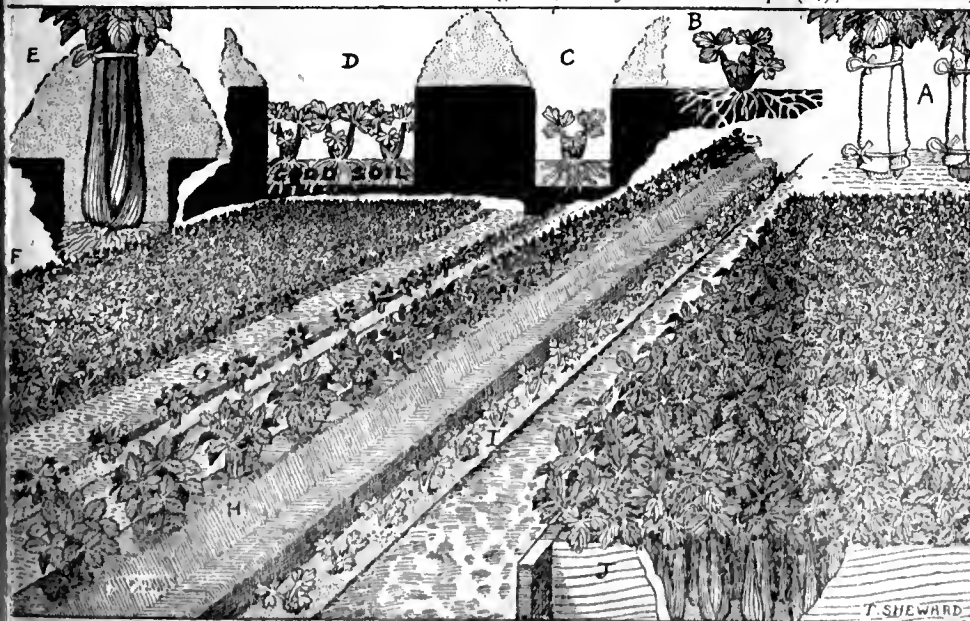
For roses, a general purpose fertilizer is good. Well-rotted manure is best. If this is not available, use a blood and bone combination.

Rose bushes should be trimmed real early in the spring. Cut the Bush back at least one-half of the growth it made the year before.

Phosphate of potash is a good stimulant for sweet peas at blooming time. To every 25 feet of the rows, apply one ounce dissolved in two gallons of water.

Aster plants from which seed is to be saved should be selected early in the season, when the first flowers have developed. Select the best types possible and keep the small blooms cut off. Save seed only from the largest and best developed flowers. Cut the flower heads when the seed is nearly ripe, dry them thoroughly before putting away for the winter. Keep seed in a dry cool, place.

The essential thing for the new patch of brambles, during the first season is to provide moisture and promote a vigorous growth. This is best done by tillage. Cultivate shallow for all brambles of shallow rooting. Deep cultivation increases suckering. Tillage should be stopped after the first of August to ripen the cane.



METHODS OF GROWING CELERY

Celery may be grown in several different ways especially such as are shown in the above diagram. The explanation of the diagram is given in the article, 'How to Grow Celery.'

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HORTICULTURAL SOCIETIES

Ontario Gladiolus Society

AT a recent meeting of the Ontario Gladiolus
Society, it was definitely decided to hold
the first annual meeting and show in
Alma Ladies' College, St. Thomas, August 23
and 24. Many Horticultural Societies have
signified their intention of exhibiting and quite
a number of splendid prizes have been offered.
With the fast growing popularity of the gladiolus,
it is in the interest of gladiolus growers to get
behind the Ontario organizations.—P. S. Dobson,
Secretary.

American Paeony Society

The 19th Annual Exhibition of the American
Peony Society in co-operation with the Ontario
Peony Society and the London Horticultural
Society will be held at the Armouries, London,
Ontario, about June 14 and 15. The exact date
will be announced later. A goodly list of open
classes and prizes is being offered.

Hastings

Under the direction of the Hastings Horti-
cultural Society, Arbor Day, May 5, was made
one of lasting memory to the municipality by
the planting of a Memorial Avenue of maple
trees in memory of those who died in the Great
War. The actual planting of the trees by a
selected list of veterans was followed by an
interesting and varied program of speeches
and music.

St. Thomas

The Horticultural Society has enjoyed a most
successful year to date and the membership
objective of 3000 is nearing a reality. The
purchases of shrubbery, roses and gladioli,
though greater than in former years has hardly
been sufficient to meet the demand, so deeply
have the citizens become imbued with the spirit
of beautification. The landscape and city
beautification department is in the hands of
Wm. Potterfield, formerly of Toronto, as super-
intendent with a staff of six men. The Society
trial grounds are being replanted and will
present a much better appearance than in 1921.

A special effort is being made to produce
enough bloom throughout the season to keep

the city churches decorated on Sunday and to
supply the hospitals. The portion of the society's
trial grounds, planted with gladioli has been
officially proclaimed the American Gladioli
Society's Trial Plot for Canada.

The Cabbage Root Maggot

Wm. A. Ross, Vineland Exper. Station,
Vineland, Ont.

WE would urge all gardeners to acquire the
habit of treating their early cabbages
and cauliflowers every year with cor-
rosive sublimate, in order to prevent the ravages
of the white maggots, which burrow into the
roots and only too frequently destroy thousands
of plants. The treatment outlined below is a
simple one, and in the hands of commercial
growers has proved to be almost 100 per cent.
effective.

The roots of the plants should be saturated
with corrosive sublimate solution, 1 oz. to 10
gals. ($\frac{1}{4}$ to $\frac{1}{2}$ cupful to every plant). The
solution may be applied by means of a watering
can with a long spout, the end of which should
be plugged to allow only a small stream to issue;
or by means of a wooden pail and dipper or cup;
or, in the case of large fields, by means of a
wooden barrel with two lines of thin rubber hose.

If the plants are set out before European
plums blossom, the first application should be
postponed until the plums are almost in full
bloom. If the plants are set out later, the first
application should be made four days after
planting. Two more applications should then
be made at intervals of a week.

Corrosive sublimate may be procured from
any druggist.

It is deadly poisonous to man and animals,
and for this reason great care should be exer-
cised in using it. It should be dissolved and
kept in glass or wooden containers as it will
corrode metal.

In cases where only a few plants have to be
treated, it would be advisable to buy the cor-
rosive sublimate in tablet form and use one
tablet to every pint of water.

Many gardeners use nitrate of soda as a
stimulant to force the growth of the plants after
they are started. Nitrate of soda is a concen-
trated fertilizer furnishing nitrogen, that ele-
ment which makes the green and vigorous
growth in plants, and should be used sparingly
to avoid injury. The usual custom is to scatter
a little (1 lb. to 100 feet) nitrate of soda along
the rows of plants and mix it with the soil by
means of a rake or hoe. Another method is to
dissolve a tablespoonful of the nitrate of soda
in a pailful of water, and use this solution for
watering around the plants, taking care that
only a small quantity of the water is applied
around each plant. It is vastly better to make
frequent light applications of the nitrate rather
than supply too much at one time.

To control cutworms, scatter poisoned bait
thinly over the infested area after sundown.
For bait, use the following formula proportion-
ately in whatever amount is required:—
Bran..... 20 lbs.
Paris Green or White Arsenic..... 1 lb.
Molasses..... 1 quart.
Water..... 2 or 2½ gal

Mix the dry bran and poison in a tub. Dis-
solve the molasses in the water and wet the bran
and poison with the same, stirring well so as to
dampen the bran thoroughly.

Color of Ground and Plant Growth

Some curious experiments as to the effect of
the color of the soil were recently described in
the French journal *La Traction Moderne*.
These experiments were made in a vineyard.
The surface of the soil was lightly covered with
reinforced concrete, a suitable space being left

vacant around each vine stock. One-third of
this concreted surface was painted white, another
third ochre red, and the remainder black.

The results were remarkable, since in those
plots which had been painted red and black, the
vines were twice as vigorous as on the white
plots. The reason for this is that the tempera-
ture of the ground is considerably higher in
those areas having either a red or a black color,
and this increase of temperature has an imme-
diate effect upon the growth of the plants. These
studies throw light on the superiority of the soil
of certain territory, such as the black earth of
Morocco. It has been noted too, that the earth
in some of the best grape-bearing localities,
in the South of France is either reddish or black
and this no longer appears as a mere accident.
Scientific American.

The Care of Lilacs

I AM frequently asked by my gardening friends
to explain the reason why their lilacs are
reluctant to bloom. In a few cases the delin-
quencies are due to wrong position or unsuitable soil,
but in most instances the failure to produce
normal supply of blossom has been due to lack
of pruning and omitting to cut away the dead
flowers. I have seen gardens where old lilac
blossoms have been allowed to stay on the bushes
indefinitely, and I have often been tempted to
enter such gardens and relieve the poor bushes
of their unwanted progeny. The formation of
new growth during the summer is indispensable
to the development of bloom the following
season, and as this growth is considerably checked
by the process of maturing seed, it becomes
necessary to remove the flowers as soon as they
are over. When the bushes have ceased to
flower is also the correct time to do any neces-
sary pruning. This operation consists in cutting
away weakly shoots and removing all the suckers
—if the plants have been grafted—from the
base of the shrubs. It is well to remember that
lilacs bear their blossoms on wood of the previous
summer's growth, so that the encouragement of
this growth is best given by the judicious use
of the pruning knife. The centres of the bushes
must be opened up, so there be a free circulation
of air and a full play of sunshine on the new
growth. The formation of healthy summer
shoots may be further advanced by giving the
shrubs a generous top-dressing of rotten manure
at the same time the pruning is undertaken.
The delightful fragrance which hovers around
bush laden with blossoms is one of the most
pleasing of the numerous delights of the spring
garden, and any extra care bestowed on the
bushes is undeniably worth while.—Gardening
Illustrated.

Dandelions, plantain, and other perennial
weeds may be cut out of the lawn with a sharp
narrow-bladed trowel or knife, and chickweed
ground ivy, and the like may be pulled up
cut out with a hook-bladed tool. Cut out the
tap-rooted plants deep below the crown or they
will grow again.

The best time of the year to trim such trees
as Maples, oaks, elms and particularly Norway
maples is in June. It is at this time of the year
that the new Cambium bark is being formed
and the sap is returning and the wound will
be quickly healed. Trees may be trimmed at any
time. It is well to cover the wound with a pair
of some sort. Care must be used in trimming
trees so that the beautiful form of the natural
tree will be maintained. In most cases the dead
or broken branches are the only ones which
ought to be cut from the tree. Trees should be
left as nearly as possible in their natural form
and beauty. We cannot usually improve the
nature. It is a mistake to cut the limbs of
Norway maple. Norway maples usually trim
themselves. They are low headed trees with
round tops and ought to be left as such. When
trees are trimmed do not leave a stump. Save
the limb close to the body of the tree.

WESTERN PROVINCES

Ontario Apples In West

TO the Editor.—I have read with deep interest the various articles and letters, relative to boxed apples, that have appeared recently in The Canadian Horticulturist. As a westerner, by recent adoption, I wish to present briefly a Saskatchewan dealer's opinion of the box package and of the Ontario versus the British Columbia apple.

In April I went into a store in the City of Saskatoon to purchase some apples. This was a mere repetition of what I had done frequently during the previous six months. I had observed that apples only from British Columbia were handled by this firm, and on this particular occasion I took the liberty of asking the manager to explain the non-appearance of Ontario apples in his store. He replied that Ontario growers could not find a market for their fruit through him until they adopted the box package and put up an honest pack. He maintained that the Ontario grower is using an undesirable package and that the dealer who buys his apples is never sure of obtaining a barrel of apples uniform in quality throughout. He accused the Ontario grower of facing the barrel with apples of high quality and using "rubbish" between the faces. The British Columbia grower he commended for using the box package and for putting up an honest pack.

The quality of the Ontario apple, he asserted, was much superior to that of the British Columbia apple. He concluded by saying that the Ontario grower, by using the box package and by ceasing to employ a deceptive pack, could monopolize the western market.

The case cited is not exceptional. On the other hand, it is fairly representative for the prairie provinces. The British Columbia grower

finds a ready market for his goods, owing to his employing the box package and to the uniformity in pack maintained. The Ontario grower often finds his apples not in demand, owing to his employing the barrel package and to the lack of uniformity in pack maintained.

Judging by the evidence obtainable, the time is ripe for a change. If the Ontario grower wishes to compete favorably with the British Columbia grower on the western market he must adopt the box package. Before discarding the barrel package he need not wait until his so-called non-box varieties are replaced by so-called box varieties. It is true that some varieties are more suited to the box package than are others, but the British Columbia growers have no hesitancy in marketing in boxes



We have a large stock of all sizes

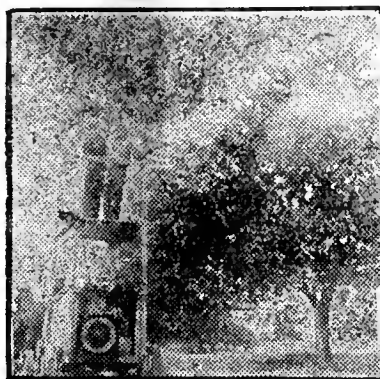
FLOWER POTS
FERN OR BULB PANS
AZALEA POTS
 and Rimless Pans

Orders Filled Promptly Send for Prices

THE FOSTER POTTERY CO., Ltd.
 HAMILTON, ONT.

Does Your Orchard Pay ?

If your land is being taken up by fruit trees, it is a business proposition to see that that land pays.



Second grade fruit need not be tolerated on any Canadian farm. Keep your trees properly sprayed, destroy the insect life and blight that destroys your fruit—and your orchard will pay.

For effective spraying, use the Spramotor—not only because it has a world-wide reputation, but because it actually does the work better than any other sprayer on the market.

Spramotor
 It isn't a SPRAMOTOR unless we made it

Spray the SPRAMOTOR Way—it Pays !
 Awarded over 100 gold medals.

SPRAMOTOR CO.
 14 King Street, London, Ont.

PEONIES

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DISTINCTION AND SUPERIOR MERIT

Alsace Lorraine.....	\$ 4.00	Mme. Em. Lemoine.....	\$ 1.50
Aviateur Raymond.....	7.00	Mme. Jul. Deasert.....	6.00
Baroness Schroeder.....	1.50	Marie Crousse.....	2.00
Cherry Hill.....	20.00	Martha Bulloch.....	20.00
Elwood Pleas.....	5.00	Mary Brand.....	7.00
Enchantresse.....	8.00	Mary W. Shaylor.....	25.00
Faribault.....	8.00	Moos Mar. Cahuac.....	4.00
Georgiana Shaylor.....	8.00	Mont Blanc.....	6.00
Frances E. Willard.....	6.00	Nymphaea.....	10.00
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Harriet Farnsley.....	4.00	Opal.....	8.00
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Karl Rosenfeld.....	2.00	Rosette.....	10.00
Kelway's Glorious.....	35.00	Ruth Brand.....	2.00
Kelway's Queen.....	16.00	Sarah Berchardt.....	5.00
Lady A. Duff.....	8.00	Solange.....	7.00
Le Cygne.....	18.00	Standard Bearer.....	20.00
Longfellow.....	8.00	Therese.....	5.00
Lora Dextelmer.....	4.00	Tourangelie.....	7.00
Loveliness.....	5.00	Vici de Marne.....	7.00
La France.....	8.00	Walter Faxon.....	8.00

Prices are for strong divisions, f.o.b. Chicago, payable at par on Chicago or New York. No charges for packing.

"ONE EYE" DIVISIONS AT HALF ABOVE PRICES

The above varieties are for the connoisseur. We also grow the better standard varieties and offer LARGE ROOTS IN ASSORTED SHADES AT \$5.00 PER DOZEN.

Clarence W. Hubbard
 GROWER OF
PEONIES & IRISES

6144 Lakewood Ave., Chicago, U.S.A.

Tallman Rotary and Oscillating Sprinkler



DOUBLE THE ATTRACTIVENESS OF YOUR HOME

Your place looks twice as attractive when the lawn and shrubbery are fresh and green. A Tallman Rotary and Oscillating Sprinkler will keep your grounds attractive in the driest weather. Its soft spray is like an April shower.

Simple and durable this sprinkler lasts indefinitely. Ask your hardware dealer or write us.

Tallman Brass & Metal Limited
HAMILTON, ONT.

SPRAY

NIAGARA PRODUCTS

THE ONES THAT GIVE RESULTS

LIME SULPHUR	POWER DUSTERS	POWDERED BORDEAUX
RAW SULPHUR	POWER SPRAYERS	BLUE STONE
DUSTING SULPHUR	HAND DUSTERS	BLACK LEAF 40
ARSENATE OF LEAD	HAND SPRAYERS	SPRAY GUNS
CALCIUM ARSENATE	SOLUBLE SULPHUR	HOSE, ACCESSORIES

NIAGARA Products are all Guaranteed—Highest Quality Only. Niagara Products are not experiments—They are the results of years of experience.

We were the pioneers in the business—NIAGARA always leads. Our prices are right—Our calendars and information are free. Remember—Wherever Fruit Excels, NIAGARA Spray is used.

EVERYTHING FOR SPRAYING OR DUSTING

NIAGARA BRAND SPRAY CO., LTD., Burlington, Ontario

Buy Your Bulbs

Direct From the Actual Grower.

Hyacinths, Tulips, Daffodils, Crocus and all other kinds of Bulbs and Roots.

Descriptive List upon Application. Best Quality at Reasonable Prices

PAPENDRECHT-VANDERVOET

Bulb and Plant Growers
Dahlia Specialists

Sassenheim,

Holland

BULBS, PAEONIES, ROSES, GLADIOLI

Send for 1922 lists. Orders for bulbs and Paeonies accepted up to September 1st. Import orders only. Roses and Glads. imported in Spring.

Several Societies sent in orders too late last year. ORDER EARLY.

VAN'T HOF & BLOKKER
HEILOO, HOLLAND

Canadian Office, 430 Brunswick Ave., Toronto

It Pays To Spray the *Spramotor* Way

(It isn't a SPRAMOTOR unless we made it)

You will cultivate and assist your land in every possible way the coming season. Why not go a step further and, when you have a promising crop, start in early on the pests and blights that will try to undo all your good work of cultivating?

Spraying needs no argument. Your best friends and the most progressive, prosperous farmers throughout the world will tell you it pays—and pays BIG. The same people will tell you that the world's foremost spraying apparatus bears the name Spramotor.

Proved Best by Government Test

SPRAMOTOR CO., 14 King Street, London, Ont.

Over
100
Gold Medals.



Prices down. Write for complete catalogue and spraying guide.

apples of varieties from the Ben Davis to the Delicious and McIntosh. Many of the varieties being grown in Ontario at the present time, and which are considered unsuited to the box package, could be marketed to great advantage in this style of package. Why delay longer in adopting the box as the standard package?—Prof. C. F. Patterson, University of Saskatchewan, Saskatoon.

BRITISH COLUMBIA

THE Dominion Government has made provision to continue the experiments in the transportation of B. C. fruits and vegetables under ventilation and heat, and under refrigeration. An assistant in fruit transportation will devote all his time to B.C. problems.

Frost in May damaged crops on Vancouver Island and the gulf islands to the extent of 30 to 50%, in some cases heavier, according to government reports.

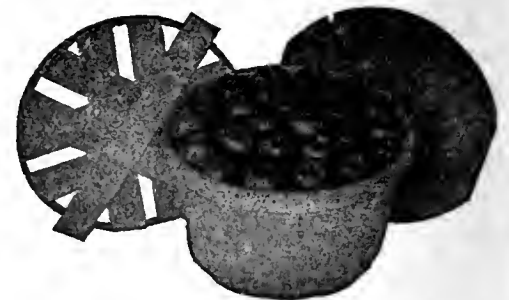
At the end of May, a good set of fruit of all kinds was expected in the Okanagan Valley. On most varieties of apples the showing of bloom was as good as last year.

The coast jam factories will this season pay 10c. a pound for strawberries. This price is 4c. higher than that paid last year.

It is reported that the apple growers of the Wenatchee district of Washington are narrowing their activities to seven chosen varieties, to the gradual exclusion of all others. Winesap is the most popular, with the others following in the order: Delicious, Stayman Winesap, Rome Beauty, White Winter Pearmain, Winter Banana and Jonathan.

Representatives from almost every portion of the Wenatchee fruit district of Washington have endorsed a proposition to create an advertising fund of from \$250,000 to \$500,000 for the purpose of promoting the distribution and sale of the 1922 crop. One special brand name will be featured in all advertising.

An English fruit weekly claims that the best flavored apple is Cox's Orange Pippin, as grown in England. Next to an English Cox, in its opinion, is the Cox from New Zealand.



Universal Bushel Basket and Cover

Absolutely the best Basket and Cover on the Market.

Write Us for Prices

in carload lots, delivered your station, or smaller quantities shipped from our warehouse.

QUICK & HOLGATE
Bowmanville - - Ontario

CANADIAN DISTRIBUTORS

MARITIME PROVINCES

Tent Caterpillar Control

Horticultural Division, Fredericton

THE simplest and best way to control tent caterpillars is to spray the trees with some form of stomach poison before the caterpillars have grown to any size or done any damage. In orchards where the regular New Brunswick spray calendar is being applied, the first spray as there recommended will control these caterpillars. It consists of poisoned Bordeaux mixture made of 3 lbs. of bluestone, 10 lbs. of either water-slaked stone lime or hydrated lime and 1½ lbs. of arsenate of lime to 40 gallons of water. Where this formula is not used the caterpillars may be controlled by spraying thoroughly about five days before the blossom buds open with 2 lbs. of dry arsenate of lead to 40 gallons of water, or Paris green, 8 ounces lime; 3 or 4 pounds; water, 40 gallons. (Keep well agitated).

Where spraying is not practised, the caterpillars may be destroyed in clusters and nests by crushing with a thick cloth swab on a stick. It is not recommended to try and destroy the caterpillars in this manner by the use of a kerosene torch, as generally more damage is done by the burning of the limbs than good is accomplished by destruction of the caterpillars. Most of the cocoons on trees are within easy reach of the ground and can be pulled off and burned. The destruction of these before the 1st of July prevents the eggs being deposited. After the 1st of July, it is useless to bother with them, as they will be nearly all empty, the adult mother having emerged.

An "Apple Day" For N.S.

IN the troubled days of prohibition, when California raisin grape growers feared utter ruin by the passing of the vineyard industry, an enterprising publicity man, now running a news bureau in Vancouver, conceived the idea of holding a state-wide "Raisin Day" to boost the grape. The raisin was boosted widely. It was acclaimed as a health-giver, a death-defier and the most delicious thing that ever tickled the palate of a dyspeptic. Soon everyone was eating raisins. And the fad spread. The vineyards men are now raising grapes, for the world, and business never was better.

Something like this might prove a great success in Nova Scotia. Let us have an "N.S. Apple Day." Let it be an education, a revelation of the qualities of the apple and other orchard products. Any medical man or drugless healer will tell you there is not enough fruit eaten. The old adage about "an apple a day drives the doctor away," has much truth. An apple taken daily on arising is a true health giver. The human system craves fruit acids. Apples and other orchard fruits are rich with nature's own tonics to upbuild the body, enrich the blood, build the bone, aid the growth, fortify

the forming development of adolescence, help healthy maternity, defer the ravages of old age, and keep the Grim Reaper further in the background.

By all means, let somebody organize "Apple Day in N.S." Let us start a wide campaign and encourage everyone to eat fruit in abundance on the day. Then the orchard product will receive its boost. People will learn to like fruit. They will make every day fruit day. And the result will be, better general health, with, incidentally, a greater demand for our orchard products.—Wolfville Acadian.

JUTE BOARD BERRY BOX

4/5 QUART



Approved by Dept. of Agriculture, Ottawa

Supplied to Government Experimental Farm

Proven successful and economical, season 1921

Not affected by moisture, sun's heat, reasonable handling, shipping, etc. Fits standard crates. Requires no tacking, wiring, etc. Folds up and is ready to fill. Weight 75 lbs. thousand, packed flat, ready for shipment.

Price, \$6.50 per Thousand. F.O.B. Toronto. Cash with order.

STOCK ON HAND. IMMEDIATE SHIPMENT.

Dominion Envelope and Cartons Limited

Duchess and Ontario Streets, Toronto

OTTAWA LADIES COLLEGE RESIDENTIAL AND DAY SCHOOL FOR GIRLS

Founded 1870

Matriculation Course, Music, Art, Household Science, Games, Gymnastics and Riding.

For particulars apply to the Principal, MISS I. J. GALLAHER, Ottawa Ladies College, New Fireproof Building

Re-opens September 13th. OTTAWA.



If You Grow Potatoes You Must Spray Them

Don't matter whether you grow 100 acres or only a garden patch—you'll have bugs and blight unless you spray! No other crop is so subject to insects and diseases.

J-C BORDO-ARSENATE

is a combined spray especially made for use on potatoes and other garden truck. It is a combination of Arsenate of Lime and Bordeaux Mixture made by a special process to insure scientifically correct proportions of insecticide and fungicide: May be used for either liquid spraying or dusting.

Lead Arsenate, Bordeaux Mixture, Bluestone—Crystals or Powdered, Cal-Arsenate, Bordo-Arsenate, Copper Lime Arsenic Dusts, Dehydrated Copper Sulphate.

J-C COW OIL—"Contentment in the Cow Stable."

JOHN COWAN CHEMICAL COMPANY

Dalhousie and Common Streets,

LIMITED

MONTREAL

CROPS and MARKETS

Exports to be Inspected

A NUMBER of farmers and market gardeners in Ontario have had difficulty in disposing of some of their crops in the United States on account of the quarantine which was placed on the province of Ontario by the United States Department of Agriculture in July, 1921. The quarantine places an embargo on celery, green beans in the pod, beets with tops, rhubarb, spinach, oat and rye straw, chrysanthemums, asters, cosmos, zinnias, hollyhocks, gladioli and dahlias on account of the European corn borer. The above mentioned plants may be imported into the United States only if accompanied by a certificate of inspection. To facilitate matters, the Dominion Minister of Agriculture will station officers of his department at Windsor, Sarnia, Niagara Falls and Port Stanley, in Ontario, and intending exporters of the above-mentioned products, who require shipments inspected and certified, should notify the Dominion Entomological Laboratory, Port Stanley, Ont., which is the headquarters for this work and thus secure prompt inspection service.



Protect Your Young Fruit Trees from damage by mice in early spring by using PEDLAR'S "PERFECT" TREE PROTECTORS

Mice will "girdle" any fruit tree up to six inches in diameter, in the early spring. When the snow at the base of the trees melts the hungry rodents gnaw the tender bark close to the ground. Thousands of valuable young trees are injured in this way every year, involving an enormous loss to orchardists. But you can easily circumvent the mice by using Pedlar's "Perfect" Tree Protectors. They are made from strips of galvanized metal lath, with a mesh only three-eighths of an inch—too small for the smallest mouse to squeeze through.

Supplied in bundles of 25. Write for prices.

THE PEDLAR PEOPLE LIMITED

Established 1861

EXECUTIVE OFFICES: OSHAWA, ONT.

Factories: Oshawa, Ont., and Montreal, Que.

Branches:—Montreal, Ottawa, Toronto, Hamilton, Winnipeg, Calgary, Vancouver

Have you renewed your subscription? If not, do it to-day and so make sure your name will not be discontinued.

Horticultural Council

THE Canadian Horticultural Council that has been under way for some time was duly organized at a meeting held in Ottawa on May 17. The meeting was called by Lt.-Col. H. L. Roberts, Grimsby, Ont., who had been elected provisional president at a preliminary meeting held a few months ago. The Council, which will consist of 14 members, shall represent the various allied industries on the following basis: Fruit growers, three; vegetable growers, three; wholesale fruit and vegetable dealers, two; and one each for the package manufacturers, florists and gardeners, jam manufacturers, canners, nurserymen, and amateur horticulturists. In geographical distribution fruit growers shall be represented by one member for the Maritime Provinces, and for Ontario and Quebec, and one for the Prairie Provinces and British Columbia. The vegetable growers representatives shall be similarly distributed. The two representatives for the wholesale fruit and vegetable dealers shall be appointed one from Manitoba and west and the other from Ontario and east. As far as possible all of these representatives shall be appointed by the advisory boards of the industries concerned.

It was announced at the meeting that the Dominion Government would provide \$5,000 for organization purposes. The funds for future work shall be levied on the various industries concerned on the following basis: Representatives of fruit growers' and vegetable growers'

organizations, 50 cents each. The following interests as a whole shall each contribute an annual lump fee sum: Package manufacturers, \$500; florists and gardeners, \$200; nurserymen,

The Fruit & Produce Market

The Commission firms undertook wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. Toronto, Ont.

CONSIGNMENTS OF FRUIT AND VEGETABLES SOLICITED

Shipping Stamps Furnished on Request.

MANSER, WEBB CO.

83 Colborne Street Toronto

Wholesale Fruit and Produce Merchants

Consignments Solicited on Commission.

STRONACH & SON

33 Church St., Toronto, Ont.

All shipments of Fruit and other produce consigned to us receive our personal attention. Shipping stamps furnished.

Phone Main 2390.

See advt. on page 141

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 FRONT STREET, EAST, TORONTO, ONT.

See Advertisement on Another Page

Tulips, Hyacinths, Daffodils, Paeonies, Etc.

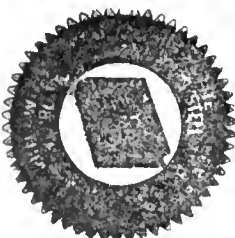
Import and Retail. Write for List.

MORNINGTON GLADIOLUS GARDENS Stratford, Ontario

Fruit and Vegetables Solicited

WE GET BEST PRICES

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



We Solicit Your Consignment

Send for Shipping Stamp

Branch Warehouses: Sudbury, North Bay, Cobalt and Timmins.

PETERS, DUNCAN Limited 88 Front St. East, Toronto



References: The Bank of Nova Scotia, King and Victoria Branch, and Commercial Agencies.

\$200; wholesale fruit and vegetable dealers, \$1000; jam manufacturers, \$500; canners, \$500; horticultural associations, \$200; seedsmen, \$200. Any person is entitled to associate membership in the Council by paying an annual fee of \$5.

The following officers were elected: Pres., Lt.-Col. H. L. Roberts, Grimsby, Ont.; 1st vice-pres., F. W. Bishop, Kentville, N.S.; 2nd vice-pres., R. R. Scott, Winnipeg, Man.; sec-treas., L. F. Burrows, Assistant Fruit Commissioner, Ottawa. Directors: W. E. Groves, Hamilton, Ont.; W. H. Stewart, Aylmer, Que.; Jas. Wagstaffe, Hamilton, Ont. Chairman of standing committees: Publicity, E. B. Luke, Montreal, Que.; legislation, C. W. Baxter, Fruit Commissioner, Ottawa; transportation, G. E. McIntosh, Fruit Branch, Ottawa; plant registration, W. T. Macoun, Dominion Horticulturist, Ottawa.

Federated Fruit Growers

A UNITED STATES national organization, to be known as the Federated Fruit Growers, was formed in April to centralize the work of all co-operative fruit marketing associations. Temporary offices have been established at 608 S. Dearbourne St., Chicago. The secretary is C. E. Durst, and the acting manager, J. S. Edwards.

The memberships will be held by co-operative fruit marketing associations and not by individuals. No regular employee of the national sales agency can be a member of the board of directors: The organization is completely grower-owned and grower-controlled. Representation on the governing board is by both commodity and district. The nation will be divided into some 16 districts, according to the importance of the various sections in producing fruits and allied perishables. Each commodity, such as citrus fruits, apples, grapes, etc., will be entitled to representation on the board and the districts will be recognized according to the importance of the industry there.



“Mr. Grower,—Remember, we are at your service. TRY US.”

Stamps and information mailed on request.
Prompt returns Weekly settlements.

UNION FRUIT & PRODUCE CO.

82 FRONT STREET, EAST,

TORONTO, ONTARIO

Phone Main 1996 and 3498

If You Ship Fruit to Toronto

LET US HANDLE YOUR SHIPMENTS

We are centrally located in the Fruit Market. Service unexcelled. Prompt returns and a satisfactory deal guaranteed to all.

Write To-day for Shipping Stamps

JOSEPH BAMFORD

72 Colborne St.

COMMISSION MERCHANT

Toronto, Ont.

Phones: Main 6036 and Main 3085

Reference: Canadian Bank of Commerce, Market Branch

“FRIEND” POTATO SPRAYER
A NEW DEVELOPMENT CATALOG FREE DEALERS WANTED
“FRIEND” CO.
GASPORT, N. Y.

PERRY'S SEEDS
Alpine and perennials unique collections; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate.
HARDY PLANT FARM, ENFIELD, ENGLAND

SHIP YOUR FRUIT TO TORONTO

TORONTO is recognized as the best market for Fruit and Vegetables in Canada. Best of all, it is situated close to the fruit districts of Ontario, which means

low transportation costs and larger profits.

When you ship to Toronto, let **WHITE & CO.** handle your shipments. You will get real service and the best returns, promptly.

This Month Send Us

Strawberries and Early Vegetables

SEND FOR SHIPPING STAMPS

WHITE & CO., Limited

Front and Church Streets

TORONTO,

ONTARIO

Wholesale Fruit Importers and Commission Merchants

Stronach & Sons

33 Church Street

TORONTO, ONTARIO

Fruit,
Produce,
and
Commission
Merchants

All Shipments of Fruit and other Produce consigned to us receive our personal attention.

Competent salesmen in Fruit Market at all times.

Advice Card mailed each evening.

Shipping Stamps mailed on request.

YOUR SHIPMENT SOLICITED

Long Distance Phone: Main 2877

IMPERIAL MICA AXLE GREASE

An old standby with farmers and teamsters. Even if it contained no mica it would still be a good axle grease—but the mica makes it better, because it fills in and smooths up the microscopic roughness of spindle and hub, enabling the grease to wear longer and do its work better. Use only half as much as of ordinary grease. Comes in sizes from 1-lb. tins to barrels.

IMPERIAL EUREKA HARNESS OIL

Equally well known and a great favorite. Puts new life in old harness and doubles the life of new harness. Fills the pores of leather, protecting it from the effects of dust, sweat, moisture and heat. Keeps harness strong, flexible and new looking. Prevents cracking, breaking of stitches, and reduces repair bills. Sold in convenient sizes by dealers everywhere.

IMPERIAL OIL LIMITED

Canadian Company
Canadian Capital
Canadian Workmen

Renew Your Subscription Now.

Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunk Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

WILSON EAR DRUM CO., Incorporated
880 Inter-Southern Bldg. LOUISVILLE, KY.

GRADED and CULLED

FOR the purpose of carrying out the provisions of the Destructive Insect and Pest Act, and the regulations thereunder, and also recommend such changes or additions to the said regulations as may be deemed necessary from time to time, an advisory board has been appointed by the Dominion Minister of Agriculture. The members of the board are: Arthur Gibson, Dominion Entomologist, chairman; E. S. Archibald, Director of Experimental Farms, vice-chairman; J. H. Grisdale, Dominion Minister of Agriculture; H. T. Gussow, Dominion Botanist, and L. S. McLaine, Chief, Division of Foreign Pests Suppression, secretary.

Special attention is to be paid this season by the N.P.G., Ltd., to the local market in Hamilton. The company will have increased space for handling its products and special attention will be paid to the matter of quality.

The Niagara Fruit Company, which has been doing business at St. David's for the past five or six years, was absorbed last month by the N.P.G., Ltd. Under the management of Hudson Usher, that company proved a successful venture. Mr. Usher is now divisional manager of the larger concern into which it now passes.

C. H. K. Baillie, for several years manager of the nursery department and in recent years in charge of the fruit sales department of E. D. Smith & Son, Ltd., Winona, has resigned his position with that firm to become divisional manager at Grimsby East for the N.P.G., Ltd. He assumed his new duties on June 1.

The N.P.G. Ltd., made its first shipments of the season during the first week of May, when a few small lots of rhubarb and asparagus were handled. Later in the month, asparagus was handled in large quantities, as much as 1000 baskets a day being shipped occasionally. Lettuce and some other early vegetables were taken care of.

During the season of 1921-22, about two cars of apples were shipped from the box apple sections of the United States for each car from barrel sections. The state of Washington alone

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

EMPLOYMENT

COMPETENT, RELIABLE, married man as gardener; greenhouse, flowers, fruit and vegetables. Good references. Age 36. 6½ years in Canada, now in England. Harrison, Wilton Park, Beaconsfield, Bucks., England

REAL ESTATE

FRUIT FARMS FOR SALE—All sizes, Niagara District properties of all kinds. Write Calder & Hazlewood, Grimsby, Ontario.

18,000 ACRES CALIFORNIA FARM LANDS. Orange groves and vineyards in the heart of Southern California. Permanent irrigation. Moderate prices. Easy terms. Write for descriptive booklet. Canadian Sales Department, Fontana Farms Co., Brockville, Ont.

SEEDS, BULBS, PLANTS

BULBS—Lily of the Valley and Gladioli of all descriptions. Write for prices. C. Keur & Sons, Hillegom, Holland. New York address—5625 Mosholu Ave. The trade will be visited by us in due time as usual for 1922 spring and fall orders. Lily of the Valley and Gladioli can be shipped immediately direct from our warehouse and Canadian farms.

shipped more apples than all the barrel sections combined and more than all the other box states combined. Oregon ranked second and Idaho a close third.

The production of apples in the United States in 1921 was only 96,881,000 bushels as compared with 223,677,000 bushels in 1920. The value of the crop sold as fresh fruit in 1921, a poor year for apples, had an estimated value of \$163,000,000.

The average yield of grapes in Erie and Chautauquay Counties, New York, in 1921 was about 610 pounds an acre, according to reports made to the New York agricultural statistician by 41 large growers, dealers, and officials of shipping associations.

Easy Now to Rid Your Farm of Gophers

Wonderful Discovery by Noted Scientist
Kills Every Gopher Within a Week's
Time — Not a Poison.

Gophers cost farmers over two hundred millions of dollars a year, through the destruction of crops and damage to land. Farmers need no longer suffer this loss, because they can now kill off all the gophers on their farm in less than a week's time. This is possible through the remarkable discovery of E. R. Alexander, a chemist, who has perfected a virus which kills gophers and rats as though by magic. The product is not a poison—it can be eaten by human beings or any animal on the farm as safely as their regular food, but means quick, sure death to gophers.



This wonderful gopher virus, which is known as Alexander Gopher-Killer, is merely mixed with bread or meat scraps and placed where gophers, rats or mice can get to it. Within a few hours after a gopher has eaten Alexander Gopher-Killer he gets a high fever and suffers a terrible thirst. He leaves his pit and nesting holes and goes to the open fields in search of pure air and running water.

It is a scientific fact that one gopher affects others, and soon the whole colony dies. And though this virus is absolutely deadly to gophers—chickens, hogs, cattle or any farm animal can eat it and not be affected at all.

So confident is Mr. Alexander that Alexander Gopher-Killer will kill every gopher on your farm in less than a week's time, that he offers to send, as an introductory offer, a regular \$4.00 tube for only \$2.00. Give it according to directions, and if at the end of a week's time you are able to discover any gophers, rats, or mice on your farm your money will be refunded. A big Toronto bank guarantees that Mr. Alexander is reliable and will do as he says.

Just send money order, check or currency for \$2.00 to E. R. Alexander, Alexander Laboratories, 3030 Terminal, Toronto, Ont., and the tube will be mailed at once on the guarantee that if not absolutely satisfactory your money will be returned without question. Write to-day and stop your gopher losses now.

POINTERS on POULTRY

Suggestions on Brooding

F. C. Elford, Dominion Poultry Husbandman

NATURAL brooding need not be such a trouble if:—1. The chicks are healthy, bred from heavy, clean parents. 2. The chicks are free from lice. The setting hen should be dusted before setting and again before coming off the nest with the chicks.

3. The hen makes a good mother. This can be ascertained during incubation. If a hen proves clumsy and cross, she should not be used to mother the chicks.

4. Suitable arrangements are made for broody coops. These may be just large enough for one hen and her family or a small colony house that will hold several hens. They should be repaired and disinfected, and placed in a sheltered location upon new ground.

5. The chicks are fed often but not too much at a time and kept away from the rest of the flock.

Artificial brooding may be made successful if in addition to what is said above, which applies to artificial as well as natural, attention is given to the following:—

1. Good brooding conditions are provided. This is more important in artificial brooding than in natural. The brooder should be heated to 95 or 100 degrees before the chicks are put in it and that after a thorough disinfecting of the brooder and house.

2. The brooder must have plenty of ventilation without draughts. Too many of the box-like brooders sold are only death traps.

3. Not more than 50 chicks to any small brooder.

4. The colony brooder stove is the best for large numbers but even it should never be crowded.

5. Feed little and often. This is more important in artificial than in natural. For the first week, or two, a hungry chick is a healthy chick.

6. The essentials in artificial brooding may be summed up in healthy chicks to start with, clean brooders with plenty of fresh air and no draughts, fed little and often, and fresh ground upon which they should be allowed as soon as they can be let out.

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TORONTO, CANADA

The Canadian Horticulturist

Floral Edition

Vol. XLV.

PETERBORO, ONT., JULY, 1922

No. 7

Some of the Newer Peonies*

Miss M. E. Blacklock, Meadowvale, Ont.

THE numbers following the name of the originator denote the ranking of the variety in the American Peony Society's Symposium, based on the votes of the members. The voting is upon a scale of ten; in which a grade of ten represents the highest excellence.

Auguste Dessert (Dessert)—This has not been planted long enough to give typical flowers, but the color is brilliant and pleasing, and one feels it has great possibilities.

Ginette (Dessert) 8.8 — Another choice early blooming variety of delicate coloring. It is difficult to predict accurately which will prove the finest of these three, Ginette, Jeannot, or Rosette, as they have not been planted long enough to give typical blooms, but the odds are in favor of Jeannot.

Jeannot (Dessert, 1918) 8.9 — A charming bloom, large and of delicate coloring. Probably it will prove to be one of the choicest of the newer peonies.

Mme. Jule's Dessert (Dessert, 1909) 9.4—This is an older peony than any of the above, but it has been much grown in Canada. It is a beautiful thing, opening a delicate pink and fading to almost pure white.

Philippe Rivoire (Riviere, 1911) 9.2—This ranks the highest of any crimson peony; so in the mass it must be very beautiful. The color is a peculiar shade of deep purple-crimson. American Beauty boiled down to a deep color would perhaps convey a fair idea of it. The only blooms I have seen have not been very large. It does not convey the impression of being a showy landscape variety, as the color is soft rather than brilliant.

Raoul Dessert (Dessert) 9.0—Enormous, full flower.

Longfellow (Brand, 1907) 9.0—This variety was procured from the Peterson Nursery, Chicago, and as they guarantee their stock true to name, I have every reason to believe it is the true variety, but, after the plaudits it has received from all sources, I must confess that it has not come up to my

expectations. It is a good peony, but not so good as Karl R. or Mary B., which both rank several points lower in the symposium. It may be that my soil does not bring out its full beauty.

Walter Paxon (Richardson) 9.3—A wonderfully pure and lovely shade of pink of medium size and inclined to be bomb-shaped, the texture delightfully soft, as in *La Tendresse*; fairly free bloomer, but not especially robust in growth.

Rosette (Dessert) 8.9—Scarcely as beautiful as *Jeannot*, but a desirable early variety.

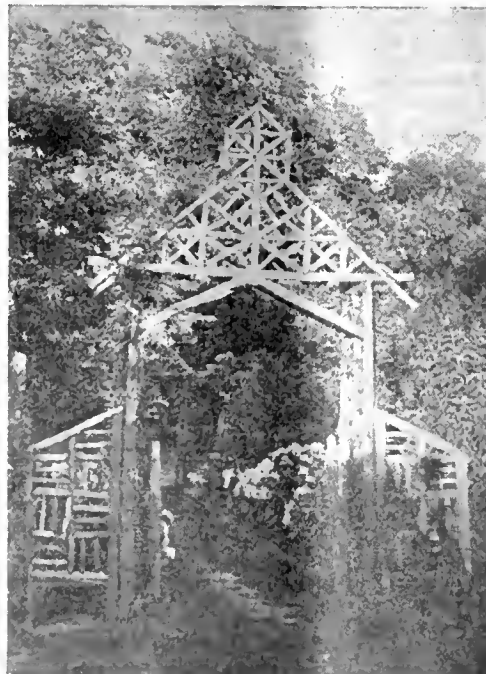
Solange (Lemoine, 1917) 9.7 — The coloring of this variety is quite unique, a creamy-pink deepening at the heart. Large, beautifully formed; flowers

Elizabeth B. Browning (Brand) 9.2—This is a fine variety that promises well, and its high rating in the symposium shows that it is likely to prove worth having. It is not as good a grower as *Frances Willard*.

Frances Willard (Brand, 1907) 9.1—A large free-flowering white, that promises to become very popular. It is a free grower and bloomer.

Karl Rosenfield (Rosenfield) — A brilliant and attractive red variety with fairly large flowers in clusters; a vigorous grower.

Mary Brand (Brand, 1907) 8.7—This is a little richer and more brilliant in color than *Karl Rosenfield*. Both are better, in my estimation, than *Longfellow*, which ranks 9.0 in the peony symposium, while *Mary Brand* only ranks 8.7 and *Karl Rosenfield* 8.8. *Mary Brand* is a fairly large flower, and in shape, growth and fragrance leaves little to be desired in a crimson peony.



An Attractive Entrance

A rustic rose arch forms the entrance to the peony walk in the garden of W. H. Scott, Dundas, Ont.

freely produced. Fairly vigorous grower. Generally conceded to be one of the most beautiful peonies at present in existence, as its rank indicates.

Tourangelle (Dessert, 1910) 9.4 — This charming variety is a delicate, pure, almost flesh-pink with no hint of the objectionable magenta in it. Its flowers are of fair size and pretty shape, and to see it is to love it.

Water Lilies in Ponds

A HAPPY feature in the gardening of the present day is the increasing use of hardy aquatics. By their aid many a sheet of water or little pond is being brightened and made a most charming feature of the garden. No hardy aquatic can compete in value for this purpose with the newer *Nymphæas*, the creations of M. Latour-Marliac and other raisers. These are among the most delightful of all flowers and their cultivation should be encouraged in every possible way.

It is necessary, however, to employ them with discretion. I observe a tendency to overcrowd the plants—a tendency due to the natural desire to make as much of their beauty as possible by growing as great a number as can be used in the space at command. In consequence, in the course of a few years the plants become too large and crowded together, with the result that the water is covered by the leaves, and the latter are so thick that the flowers do not come so freely. I have found that *Nymphæas* bloom much more freely when the sun has access to the water and its rays are not cheered to too great a degree by the foliage. In a

* Prepared for the report of the committee on Names and Varieties of the Ontario Horticultural Association and presented at the last convention.

large pond or lake large plants are not an objection, but in a small one or a tank, the leaves quickly cover the entire surface, to the detriment of the plants.

It is therefore advisable to undertake a periodical thinning out and division of the water lilies in small ponds or tanks, and this should be done in early May. The task is a difficult one unless the pond can be drained off, when there is little difficulty. The plants may be cut through with a spade or strong, sharp knife, and will soon make growth and flower the same year. The work

ought to be performed about the times mentioned, a good deal depending on the climate of the district, and it may be carried out in milder places as soon as the plants show signs of growth.

Where it is not easy to undertake this task or it is necessary to delay it as long as possible, much may be done by thinning out the foliage of the *Nymphaeas*. This should be done annually, at more or less frequent intervals, in small tanks where there are several plants, or tubs occupied by one or more plants.—Gardening Illustrated.

around for weeks in the summer on the surface of the soil, which, if replanted, will soon grow. There is more danger of the iris being killed by apparent kindness than by apparent neglect. It can be readily seen that when the roots of the iris need to be exposed to the sun, which they become by this shallow planting, it is important to plant them where they will be in bright sunlight most of the day. Where shaded they will not bloom well.

The bearded flag iris multiplies rapidly and after a few seasons, the centre of the clump becomes weak. If the most and best bloom is to be obtained from the area of ground it occupies, it is necessary to divide the clump and replant it. The old clumps may be left for a season or two, after pieces have been taken off them, until these new clumps are large enough to ensure a good display of bloom. It is even more important to divide the clumps of Japanese iris than it is the bearded flag iris, especially when they are grown in the average garden and have none too much moisture. The tufts or clumps soon become thick and there is apparently not that free flow of sap, which is essential, if there is to be free blooming. Hence the clumps should be divided at least every three years. When growing along a stream or in springy places, they may be left longer without dividing.

The Iris and Its Cultivation *

W. T. Macoun, Dominion Horticulturist

IT does not seem so long ago, to those of us who are getting past middle life, since about all the irises we had in our gardens were few, such as *Iris pumila*, the delightful fragrance of which is to, at least, some of us, a glad reminder of the first spring days in the gardens of our childhood. There was also the old reliable, but beautiful, *Iris florentina*, and the large purple-flowered *Germanica*. These, with *Iris flavescens*, completed the list, as far as my memory serves. Outside of these few what other iris had we in Canadian gardens?

Now all is changed and hundreds of lovely varieties are available to make our gardens more delightful and interesting. So popular has this charming flower become that it has its own American Iris Society, with a great test garden at the New York Botanical Gardens and several supplementary ones. Books have been written about it, the two most noted being "The Book of the Iris," (Lynch), and "The Genus Iris," (Dyke).

We who are iris enthusiasts think that there is no group of plants which affords more delight than the iris. There are more shades of colour than in most other kinds of flowers, and the light, delicate texture of the flowers, combined with their graceful form, and delicate fragrance, are points much in their favor. The Greeks gave the iris an appropriate name when they called it the Rainbow Flower, for there must be all the colors of the rainbow in it. As cut flowers they are most useful, the buds opening readily indoors. They have a long blooming season, beginning almost as soon as the snow is away and continuing until the end of July. And, finally, many excellent varieties can be obtained at a low cost, and will multiply rapidly.

But it is upon the more prosaic side of culture that I write, and one can say briefly that they are of easy culture, succeeding in a great variety of soils.

For the bearded flag iris or German iris, a rather dry soil is desired, but they have succeeded well on both very light and very heavy soils at Ottawa. A sandy, loam well-drained, and well-enriched, ensures perhaps the most satisfactory results. The roots of these iris are near the surface, hence a soil which will not often heave with frost is desirable, as they will become too shallow, and the clumps have to be renewed oftener than they otherwise would.

Siberian and Japanese Iris

The Siberian and Japanese irises need a moist soil to be at their best, and look well by ponds or streams. In a good garden soil one can have these succeeding well with the bearded flag iris. The bulbous irises, such as the English and Spanish, also do well in the average garden.

Time of Planting

In our experience, iris may be planted successfully at any time from early in the spring until the ground is frozen in late autumn. Perhaps the most satisfactory time for the bearded flag iris is between the time when they have done blooming and early autumn. If planted then, they will become well-rooted before winter sets in, and there will be good bloom in the spring. Spring is a good time to plant the Japanese iris, or they may be planted with good results in autumn also. The bulbous iris are planted in the autumn as soon as bulbs can be obtained.

How to Plant

Bearded flag iris should be planted quite shallow, the fleshy roots being barely covered with not more than an inch of soil. Great losses have occurred from planting these iris with several inches of soil over the top of them, especially in damp soils, as the roots rot under these conditions. It is natural for them to have the fleshy roots close to, or even on the surface of the soil, where they are subjected to the summer sun and heat. Pieces of roots may lie

Enemies and Disease

The iris has few enemies and the most serious seems to be a rot disease which, however, in over thirty years' experience at Ottawa, has given us little trouble, but which has destroyed many plants in some places. The following method of treating iris affected with this rot is employed by one of our Ottawa iris enthusiasts. The affected plant is dug up, and the diseased part cut away until healthy tissue is reached. When this is done another clean knife is used to cut off an additional thin slice, after which the roots are soaked in a two per cent. solution of formalin for a time, which should not exceed ten minutes.

This two per cent, which should not be confounded with other and perhaps better known two per cent solutions, is made up by using about two teaspoonfuls of formalin to a pint of water. No doubt soaking the soil with this formalin would also be beneficial, if it is necessary to re-plant in the same place. Where only a small part of the plant is affected the disease could be cut away and then the injured part sprayed with formalin.

The leaves of iris often are spotted with disease which is most noticeable after the blooming season. At Ottawa, this has not been found to affect the blooming for the following year to any appreciable extent, and the plants are not treated for it.

The Time for Planting Perennials

W. E. Groves, Hamilton, Ont.

IN the growing of hardy flowers we have rather unfortunately got the impression that planting has to be done only during the spring. Though it may be conceded that the two planting months of April and May are suitable for a large number of varieties, it does not follow that even these varieties may not be planted at some other time and further it should be remembered that the early autumn months are much more suitable for some of our favorite flowers. The more enthusiastic we are in our garden work the more evident it is that there are really very few ironclad rules to be followed. The plants we grow are usually so accommodating that planting with ordinary care can be done at dates that would shock the worker who governs his operations by worn out theories, or possibly the state of the moon.

More Time in Fall Season

More than one reason might be advanced in favor of doing all the fall planting possible. One is that there is usually more time. In any garden there are of necessity a number of details that have to be attended to in the spring; no other time will do. In the fall, the general garden operations are cleaning up and preparing for winter. As planting is possible for quite a number of weeks before things freeze up, there is never so much need for haste as at other times. Then as planting is often done by way of development or improvement, it naturally follows that with the summer effect of the garden fresh in the mind, it is much more easy then to decide on alteration or necessary improvement than

some months afterward. When favorite flowers such as roses or peonies are in bloom is always the time when the specialist decides on the new kinds he needs. This same principle applies to the subject under consideration. In September the garden lover will have a mind photograph of the summer effect and with this quite fresh he may well set about his plans for the future.

Divisions More Easily Made

There is a still further reason. If the planting is being done to increase a variety and well-established stocks are being divided, there is an advantage in doing this in the fall. The old plants have not completely died down, and divisions are more easily made, and made with less haste than at other times. There is also no risk in buying from a nurseryman at this season, for plants will at least be quite as robust, if not more so, than those purchased in the spring.

There is, of course, no intencion of advising the planting of any and every kind of hardy plant at this season of the year, as there are some kinds that resent the treatment. The exceptions are few and roughly speaking are chiefly the kinds that root very near the surface, with a few other varieties that have fleshy roots. Early autumn is of course the accepted time for planting paeonies and iris, though the latter may be handled at almost any time after blooming. Divisions of pyrethrums might be made when the flowering season is over, and if these are kept in a semi-shady spot for the summer months they may be planted out safely in the fall. The same treatment applies to such

things as Phlox subulate, and doricum, with this exception; both these could be transplanted to their permanent quarters after blooming if watched carefully for a little while during extreme heat. There are few other hardy flowers that resent handling during the fall months. If the work is attacked sufficiently early there is time for the plants to settle down before the winter weather arrives, and many will positively make some roots right away.

These notes are not intended to deal with the operation of planting, but a word or two on division of old roots might be allowed. Strong growing kinds such as sunflowers, helenium, aster and phlox, take much food from the soil, and should be divided quite frequently. The best method to follow is to dig the old stool up, selecting a few healthy looking bits to plant back. If they are to go in the same place the ground should be thoroughly dug and manured. Much better results are secured by just planting single stems, even if it means the discarding of a large part of the old root.

Two Precautions

There are just two things to specially bear in mind when fall planting is done. Do the work when the soil is in good condition, and not wet, planting firmly. It is obvious that a little extra care should be taken in protecting during the first winter, especially in the case of the more tender varieties. With these simple precautions and the ordinary care given by any flower lover there is no reason for hesitation when the autumn season comes around.

QUESTION BOX

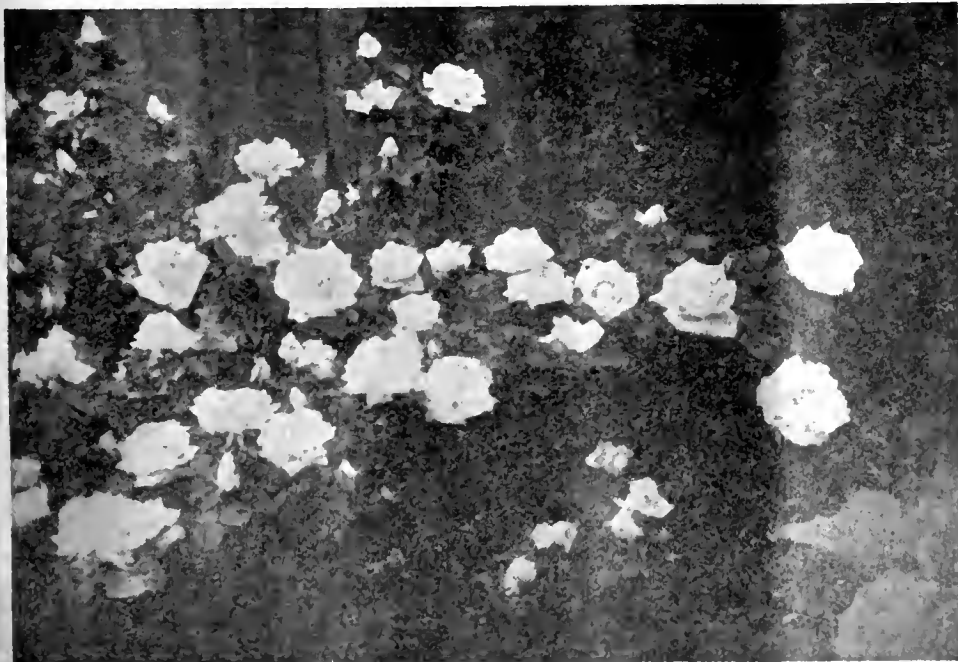
W. E. GROVES

AT this season of the year there are usually all kinds of problems and difficulties facing the gardener, and it should not be forgotten that this column is open in an honest effort to help any and every enquirer. Will readers who need advice have no hesitation in writing. It would also help someone else if any reader who has met and solved a growing problem of any kind would give us the advantage of his experience. Will you for the sake of the other garden lovers send us your notes along these lines. The column is being run for the mutual benefit of everyone. Please let us have your enquiries freely.

Rhododendron Outdoors

"Can rhododendrons be grown outdoors in, say, Toronto? Are there any varieties hardier than others, and is any particular care, or cultivation necessary?"—F. R. J., Toronto.

The hardier kinds of rhododendrons do quite well in this district if given a fairly good position. Those most suitable are grafted on the Catawbiense stock, this type being quite hardy. Soil with lime



A Splendid Specimen of Frau Karl Druschki.

This was secured by J. Eaton of London as a premium from the local Horticultural Society, five years ago. It is cut down to a few inches each spring, is a strong grower and flowers twice a season.

has to be carefully avoided for which reason it is well to use peat or decayed leaves for planting. A position sheltered from cutting winds should be selected. With these simple precautions the plants should do well.

Larkspur Turning Yellow

"Some of my larkspurs, tiger lilies and hyacinths are turning yellow on the tips of the leaves, this yellow eventually becoming a dark brown shade, which I presume is dead. I am unable to find any reason for this except that I have watered them early in the morning. The hollyhocks also had the centre eaten out. Please give reasons and suggest a remedy."—H. L. C. Toronto.

The larkspurs, lilies and hyacinths are possibly attacked by one of the fungoid diseases similar to potato disease, and this would not be the result of morning watering. A badly drained soil is favorable to any fungus, however, and it might be well to do even a little extra cultivation as a partial remedy. The hyacinths will probably be past blooming by this time, and dying down, unless the variety is candidans. Spray the other kinds with an ordinary Bordeaux mixture if the bloom is not too far advanced. A little cool fertilizer will help to increase the vigor of the plants. They will possibly grow out of the pest. The hollyhock trouble is likely to be earwigs. These can be easily trapped with a little moss or excelsior laid near the plants, or if some of this material is placed in the bottom of some small pots, it provides a fine hiding place for these little pests from whence they can be easily destroyed.

Madonna Lilies

Last fall I planted Madonna Lilies 12 inches apart. Would it be advisable to plant tall annuals between the lilies after they have finished blooming in order to have continuous bloom, or would it affect the future growth and blooming qualities?—K. J. M., Picton, Ont.

For the first season it may not be harmful to fill up with annuals, but when these are cleared away in the fall, a light dressing of well-decayed manure should be forked in. If the lilies thrive, they will be gradually filling up the ground in a year or two, and thus make it unwise to inter-plant. A few gladioli bulbs would probably serve the purpose best. The roots do not run about so very far and if necessary, they could be easily planted. This method of planting, however, calls for all the cultivation possible without disturbing the lily bulbs.

Worms on Raspberries

How shall I get rid of small white worms which attack the fruit of raspberries. They are about $\frac{1}{4}$ inch long, and may have a black stripe, but are mostly white. They live entirely on the berries, seemingly to suck out the juice and leave the seeds bare. They leave no web and do not seem to affect the bushes at all.

—Mrs. W. L., Preston, Ont.

It is impossible in the space allowed to enter into a description of the life and mischief wrought by this nasty little pest. The method to follow is to spray

at the time of fruit setting with a bordeaux solution. This usually succeeds in keeping off the pest and is in fact the remedy generally used. Bordeaux mixture can be purchased in convenient form at the seed stores, the packages carrying full instructions.

Insecticide for Garden

"Please name a simple insecticide for ordinary garden spraying."—L. R. D., Hamilton.

Soap and water, an old-fashioned cleansing material is also quite applicable to a large number of plants. There is perhaps a favorite kind in the mind of every user of this simple remedy, but any good laundry soap is suitable. Dissolve in warm water at the rate of one to two ounces to a gallon and apply with either syringe or spray. The solution sticks and chokes the little trouble makers, being easily washed off with clean water afterwards. On the principle of prevention being more wise than trying to cure, it is suggested that an occasional washing of both garden and house plants with this simple solution would secure more healthy growth and appearance.

For general spraying purposes nicotine has for years formed the foundation of a large number of commercial insecticides. Any of the 40% forms are safe, though they need to be used as directed. In every case a little dissolved soap in the solution adds to the effectiveness. The usual strength is one teaspoonful of nicotine to a gallon of water, and if to this is added one or two ounces of any good soap, there is a sure destroyer of any of the ordinary garden aphides that so quickly show themselves at this time of the year.

Raspberries

M. B. Davis, C.E.F., Ottawa.

AT this season of the year, continuous cultivation of the raspberry plantation should be practised, at least, up until the time the ripe fruit is hanging on the canes.

Some attention will need to be paid to insect control, also. Occasionally the raspberry sawfly will cause considerable damage to the foliage, and when noticed can be controlled by the use of arsenical sprays, such as arsenate of lead or arsenate of lime, used at the rate of two pounds of the powdered form to forty gallons of water, and sprayed on the bushes. A couple of thorough sprayings will generally suffice to control this pest.

Every year there are numerous requests asking why tips of young canes are wilting. Upon close examination it will be seen that the cane has been girdled at one point where it has commenced to wilt. This is the work of the raspberry cane borer, and when this wilting is first noticeable is the time to institute control. Cut well below the wilted portion and destroy the cut portion. If these are not

removed the young larvæ, hatching from the eggs laid in the girdle, will work down the cane and practically destroy it.

As soon as the fruiting season is over, remove the old canes by cutting them off close to the ground, and destroy them. This gives the new canes a better chance and assists in insect and pest control.

TIMELY REMINDERS

Sweet Peas should never be grown in the same ground two years in succession. If a change is impossible, replace the soil.

A good fertilizer for gladioli is bone meal. Apply one pound to ten square feet, though double the quantity may be used advantageously. Apply to the surface of the ground and rake in.

Fine sweet peas cannot be secured in a shady garden. They thrive best with plenty of air and sunlight. Many of the orange and red varieties burn and discolor easily under a hot sun. Hence to secure pure colors for exhibiting it is a good plan to throw a few yards of cheese cloth over the vine when the sun is striking them strongly.

The cucumber beetle is usually ready for business at least a week before the vine crops appear, feeding this time on other foliage, but deserting it as soon as the vine crops come. Many gardeners take advantage of this and plant early squashes as "traps," killing the beetles by pouring on pure kerosene or sealding water.

The highest quality of raspberries is secured by not picking the fruit too early. Commercial growers must pick them rather early to insure their safe arrival at market. The amateur grower can afford to allow the fruit to remain until well matured.

To secure good leeks, they should be planted in a trench so that the earth may be drawn around them for blanching. Leeks grown in this way are considered by many to be far superior to onions when boiled.

There is less trouble from insect pests with the dahlia than with many favorite garden flowers. In town gardens earwigs are sometimes troublesome, but they are easy to tramp with a little patience. A few small flower pots with a little moss or excelsior in the bottom placed near the plants or turned upside down on the top of the stakes invariably prove a tempting nest for these troublesome creatures. A visit once or twice a day by the grower to clean out the captives is usually sufficient.

The Kitchen Garden in July

THE vegetable garden should be kept working at full capacity throughout the entire season. Seed-sowing need not stop with the final planting for the first series of crops. Companion cropping and succession cropping will keep the land busy from spring to fall.

There are a number of crops that lend themselves to companion cropping. Radishes, spinach and lettuce may be drilled between the rows of late onions and other late crops and be off the ground before the latter need the space. Beans of quick-maturing varieties may be sown between the rows of tomatoes. Sweet corn or late cabbage may be planted between the rows of any crops that are soon to be harvested. Companion cropping is better practised, however, with a start earlier in the season. Succession cropping will prove more satisfactory during midsummer and early fall.

A few crops that will withstand the heat should be planted for mid-summer use. Swiss chard will produce greens throughout the greater part of the summer. New Zealand spinach is adapted for the production of greens during the heated period. Endive is easier to grow in hot weather for salad than lettuce.

In warm sections, early peas may be followed by late cabbage, potatoes, snap beans, beets or turnips. Early potatoes may be followed by turnips, snap beans or by sweet corn, especially when the latter are planted between the rows of potatoes that are soon to be harvested.

Fall gardens should in no case be overlooked. Plantings of practically all the early spring vegetables may be made in July and August, according to locality, and be brought to maturity before early autumn frosts. By proper attention to the garden, fresh vegetables may be had through a period of about six months.

Most crops mature in a shorter period in the late summer than in the spring. This is due to the shortening of the days and the tendency of the plant to "hurry up" to produce its seed before winter overtakes it. It pays to take a chance on late plantings of beets, carrots, lettuce, spinach, snap beans, sweet corn and turnips, if you like them. As a rule, early or quick maturing varieties are best for late planting.

First Aid to Seedlings

AS garden soil generally is very dry in mid-summer, seeds that are sown at this time may fail to germinate or, if they germinate, they may not have enough moisture to keep them alive.

There are two or three ways of preventing loss. One is to use the sprinkling can and keep the surface lightly watered until the seeds are up. Another is to lay boards directly over the rows of seeds

until they sprout and are just about ready to come through the ground. It does not do, however, to leave the boards over the rows too long, as the little seedlings on coming up against the boards will be bent out of shape and weakened.

Still another method is to scatter a little fine, sifted manure over the row of seeds. Lawn clippings, where available, will answer the same general purpose, but are not so good as fine manure. Here, also, care must be taken that the covering is not too heavy, or the seedlings will be injured when they come through the ground.

For cultivating after the seedlings appear, a steel rake is one of the best tools. Use it frequently along each side of the row to keep the soil loose and mellow.

Grow Your Own Pop Corn

POP corn from one's own garden will be appreciated by the children next fall and winter much more than the kind purchased ready popped in the stores. Even grown-up folks enjoy the popping of corn at the fire-place or even a stove, and the enjoyment is greatest when the corn has been home-grown. If pop corn was not planted last month, there is still time for planting and growing with a reasonable chance of success. While pop corn can be sown even earlier than sweet corn the first of July is not too late to try it.

Sow the kernels in a place that is warm and well-drained. Have the soil spaded deeply and pulverised thoroughly before planting. The rows should be about three feet apart. Even one short row will furnish enough ears for pleasant recreation during a few evenings at least. In furrows two or three inches deep drop the kernels about eight inches apart and cover them first only about one inch. Plant while the soil is moist in the furrow. Keep the weeds down and, whether weeds appear or not, keep the surface of the soil loose by frequent hoeings.

Cultivating Melons

FEW crops respond as readily to frequent and thorough cultivation as muskmelons. It is injurious to the growth of the plants to allow the formation of even a slight crust about the plants unless it is broken very soon after forming. The cultivation should continue at frequent intervals and as long as is possible without danger of injury to the vines. As the growth of the vines proceeds, the cultivation should be kept at a safe distance from the plants, so that the vines will not be injured. All cultivations, after the first one or two, should be shallow.

Water melons are more difficult to grow to perfection in this country than

musk-melons, but the cultivation is similar. Draw a little earth around the plants during the early stage of growth and keep a fine mulch of surface soil on the area planted. While cultivating or hoeing, care must be taken not to move the vines any more than absolutely necessary.

To Control Cabbage Worms

THE green cabbage worm often appears in gardens in numbers large enough to destroy all the cabbage and cauliflower plants that have been set or at least render them valueless for human food. Methods of controlling this pest consist in using a spray made by dissolving an ounce of arsenate of lead paste (or half an ounce of powder), in a gallon of water; to this mixture should be added one-half cubic inch of soap so that the spraying mixture will better adhere to the leaves of the plants. A dust mixture of one part arsenate of lead to 15 parts of hydrated lime also is effective.

If the worms persist in attacking the cauliflowers after the heads have been formed, pyrethrum may be used, as the poison qualities of this powder disappear about three days after application; hence, the heads are safe to use much sooner than if arsenic poison were used.

Saving Bean and Pea Seed

SOME gardeners make a practice of selecting and saving seeds of various crops for planting the following year. The best seed of peas and beans, for example, is obtained by marking a few of the finest plants with a bit of cloth at the beginning of the harvesting season and allowing the crop of these plants to ripen completely.

In making such selections it is best to choose plants alike in varietal character and earliness. When ripened until dry, pull these plants in the early morning, in order to avoid shattering, and hang or spread them in an airy dry place until the seed is quite hard. Then shell the seed, spread it out not over two or three grains deep, and when thoroughly dry store it for the winter in bags of coarse open-meshed fabric hung in a cool, dry place.

Pods which for any reason have been overlooked when picking beans or peas for the table should be saved, since they can be shelled for seed, though inferior to the selected stock described above. In saving seed from remnant crops of this kind, it is well to discard all pods containing only one or two seeds, as these may have come from plants with a tendency to produce poorly filled pods.

Give plenty of water to sweet peas, so that the moisture will penetrate deeply. Just wetting the ground daily is about as unsatisfactory as none at all.

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landscape gardening, floriculture, fruit and vegetable
gardening—and to the work and progress of Horticultural
Societies.

Subscription Rates.—60 cents a year; \$1.00 for two
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Devoted entirely to the interests of commercial fruit
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THE CANADIAN HORTICULTURIST,
Peterboro, Ontario.

HORTICULTURAL SOCIETIES

A Successful Peony Show

Edward Wyatt, London, Ont.

THE American Peony Show held in London,
June 16-17, was a huge success from every
point of view including the number of
exhibitors from the United States and Canada,
the number of visitors and their entertainment,
and lastly the attendance. It was the first time
the Show was ever held in a Canadian city and
the first time in 19 years, in a city of less than
500,000 population. The international aspect
of the Show will be realized when it is known
that growers from the States of New York,
Massachusetts, Pennsylvania, Ohio, Michigan,
Wisconsin, Minnesota and the provinces of
Ontario and Quebec were represented. Over
1000 feet of table space was required to stage the
exhibit.

J. S. Middleton headed the Show committee,
assisted by Wm. Lawrence who knows well how
to artistically stage an exhibition. Some 50,000
blooms were placed, representing the finest
peony acreage on the continent. Avalanche, a
wonderful white ball of pearly perfume was con-
sidered the best peony. This was placed by
Thurlow of Massachusetts. The second prize
went to J. G. Fairley of London with a beautiful
specimen of Solange. Experience has proven
that cheaper varieties can be as well grown as
the more expensive ones. Avalanche is one of
the cheaper varieties but nevertheless one of
the best. Another good variety that was freely
commented upon was Baroness Schroeder, a
snow white, very rich and profuse.

From the revel of color it was possible to make
a personal acquaintance with a few. Walter
Faxon, a wild-rose pink, which stands up well,
claimed many admirers. It is one of the new
rare ones that has come to stay. Grace Lomis a
seedling by Dr. A. P. Saunders, a close, full,
pure, white peony, had many admirers. The
writer bought one of these roots from Dr.
Saunders last fall, paying \$25.00 for it. It has a
bloom on it now equal in size to those exhibited
in the Show.

Another good seedling was 20-27 by Brand.
It resembled Walter Faxon somewhat in color
but with lonser bloom. A couple of roots were
sold to Londoners at \$15.00 each.

Lady Alexander Duff was the proudest peony
in the Show with her wings of rose and her rose-

tipped sprayed petals. There is no other peony
just like this one.

Sarah Bernhardt was popular as ever, easily
crowning the pink peonies. It appeared in
almost every collection.

Other good varieties that deserve more than
mention are Claire Dubois, a good peony and
a cheap one too, Marie Lemoine, Rapne Dessert,
Mont Blanc, Pride of Essex.

Class 14 brought out some good specimens of
Kelway's Queen, La France, Guinette and
Tourangelle. These are all different shades of
the most beautiful pink.

Some points were cleared up and settled, for-
ever it is hoped, regarding correct nomenclature.
La France, a peony that is scarce and the true
variety being in doubt, came in for much dis-
cussion. Three good specimens were shown
which one was by S. F. Wood, London, and
another by Thurlow. The writer has a two-year
old plant from one grown by Miss Rose Mc-
Ilvenna of London, who showed one bloom at
the local peony show three years ago. This
captured the prize for the best peony at that
time and was named La France by Dr. Saunders
who was judge. A rather poor specimen of the
same plant was compared with those on exhibi-
tion at this Show by A. M. Brand, Dr. Berthour
and others. Though they appeared identical,
the faded specimen lacked the crushed appear-
ance of those exhibited. I think myself they are
all the same.

Among special peonies of interest were
blooms from a plant 87 years old shown by Mrs.
Jos. Marshall, London. The variety was called
Fragrans.

Philippe Revoire, a new dark red originated
by a Frenchman of that name, had two speci-
mens. While not large, they had color, shape
and perfume.

President Wilson, a \$50.00 bloom, had many
interested spectators, on account of the price.
It is a nice bloom of light pink.

Among the exhibitors were—Dr. Brethour,
Toronto; Treasurer Scott of Chester, Pa.; Dr.
A. P. Saunders, Clinton, N.Y.; Miss M. E.
Blacklock, Meadowvale, Ont.; A. M. Brand,
Faribault, Minn.; Henry S. Cooper, and Mrs.
Cooper, Kenosha, Wis.; R. Bonnewitz, Van
Wert, Ohio; W. H. Thurlow, West New Bury,
Mass.; F. C. Green, Greenwood, Ontario; Jas.
H. Howarth, Toronto; Dr. R. W. Schnarr,
Kitchener; H. M. Rolph, Markham, Ontario;
J. M. Peachey, Brantford, Ont.; G. F. Donohue,
Newton Lower Falls, Mass.

The following acted as judges—B. H. Farr,
Wyomissing, Pa.; H. A. Norton, Ayres Cliffe,
Que.; Pres. A. H. Fewkes, Newton Highland,
Mass; Jas. Boyd, Haverford, Pa.; A. M. Brand,
Faribault, Minn.; and Dr. A. P. Saunders,
Clinton, N.Y.

At the annual meeting and banquet held at
the Tecumseh House, A. H. Fewkes, was elected
president and W. E. Saunders of London,
President for Canada. The Show next year will
be held at St. Paul, Minn.

St. Catharines

That St. Catharines has well earned the name,
The Garden City of Canada, was borne out by
the recent annual rose show, held on June 20.
A wonderful collection of roses was placed on
exhibit, in the local armories. While essentially
of roses there were also many fine displays of
peonies and other cut flowers.

Grimsby

The popular annual rose show was held on
June 20 in the local arena. A very large exhibit
of bloom was staged, the condition and arrange-
ment being excellent. The show attracted a
large attendance of enthusiastic flower lovers.

Mildew is a fungus which attracts the leaves
of rose bushes and can be distinguished by the
white appearance of the leaves. It can be easily
controlled by spraying with Bordeaux mixture.

Town-spirit Improves Child

Magistrate Fry, president of the Dundas
Horticultural Society, recently said that in
past years he had frequently to discipline
children who sought to destroy and injure civic
and private property. Since the spirit of im-
proving the town had been developed, by the
horticultural society, however, this wasteful
sort of petty mischief had largely disappeared
and the children were co-operating in the good
work. This is a form of endeavor that could
be more largely fostered.

A Grafting Experience

To the Editor:—On May 7, 1921, a friend of
mine put six Northern Spy grafts on a
Golden Russet tree. They were watched all
summer but no sign of life appeared. They
were given up for dead but left in branches.

In May this year, when cutting off a dead
limb on same tree, I was surprised to see some-
thing green in the end of one of these grafts. To
make sure, I took a step-ladder over and sure
enough there were two leaves on a stem, coming
out of the end of last year's graft. To-day it has
as healthy a bunch of leaves as any one would
wish. Have shown this to a number of persons
and it was a surprise to all. The question is,
will it bear Spys or Russets? It will be carefully
watched until it fruits.—E. W. Moyle, Langstaff,
Ont.

The Western Fair

The interior of the Horticultural Building at
Queen's Park will be re-arranged this year with
a view to making it better for both exhibitors
and visitors. The tables in the centre for fruit
and flowers will be placed crossways of the build-
ing, leaving an aisle on each side of every table.
With the present prospects for a good fruit crop
this building should be very attractive this year.
Special interest is being taken in the display of
Flowers, and extra editions of the Prize List in
this Department were issued to all prospective
exhibitors through the London Horticultural
Society. The dates are Sept. 9th to 16th. All in-
formation will be promptly given on application
to the Secretary, General Offices, London, Ont.

Give the Child Vegetables

VEGETABLES and fruits are now con-
sidered a necessary part of the diet of
the child. The reasons are many, but
most of them may be summed up by saying that
they furnish material needed to form bone
and tissue and to regulate body processes. The
mild acids which some of them contain help to
prevent constipation; so, too, does the cellulose
or fiber, especially when it is raw, though its
value for this purpose may have been exagger-
ated in popular literature.

Green vegetables are also a valuable means
of introducing into the diet mineral matters,
particularly iron, in a form in which the body
can utilize them. Even at city prices, green
vegetables have been shown to be an economical
source of iron. Leaf vegetables, like spinach,
beet greens, kale, etc., have recently been found
to contain some of the growth-promoting sub-
stances that are found in milk.

The uses of fruits in the diet are much the
same as those of green vegetables, though, un-
like most vegetables, they have a considerable
percentage of sugar, especially when they are
dried, and sugar is a quickly absorbed fuel food.
Like vegetables, they have value because they
contribute some of the nitrogen required for
tissue building and repair, and some energy.
However, they are valuable chiefly because they
supply growth-stimulating and body-regulating
substances and also mineral matter needed for
bone and for many other purposes. The quantity
of these materials in fruits and vegetables is
small, it is true, but large in comparison with
the amount in many other common foods.

BRITISH COLUMBIA

Okanagan Fruit Notes

IN the Vernon district, early in June, Duchess apples in the aggregate promised lighter than last year's crop and Wealthy very much so. It is rather difficult at present to decide how McIntosh will turn out on account of the quantity of young trees this year coming into bearing. Some of the older orchards which bore heavily last year are carrying a considerably lighter crop. Jonathan and Grimes Golden are going to be heavy and there is apparently a good set of Delicious. Newtowns, Spitzenberg and Rome Beauty vary considerably.

For the Kelowna district, the consensus of opinion is that the crop will be somewhat lighter than last year. Around Summerland, apples set well.

In the Kootenay district, there are hopes of a heavy crop with prospects of having to thin all the early varieties.

The horticultural branch of the B.C. Department of Agriculture held strawberry packing demonstrations at various places last month.

IRIS IRIS

Forced to dig a large block of fancy Iris in August, I offer a special bargain of

12 Named Varieties \$1.00

By Express, collect; or postage paid for \$1.30

August is best time of year to plant Iris. Try this collection.

J. H. CALLANDER 575 Weller St.
PETERBORO

Eliminate the Culls

R. H. Helmer, Summerland, B.C.

PAST experience points to the wisdom of taking precaution to eliminate culls and small sizes; these have been the stumbling block in the past and will be in future. Let us consider for a moment how culls and small sizes occur. If our trees are making a poor growth it is likely that they will have a heavy crop and furthermore if this is the 'on year' for bearing, our trees will be over-burdened. Both of these conditions crowd the fruit, one against the other, causing rubbing or poor color and the tree with such a heavy crop cannot make growth and form and feed fruit spurs for the 1923 crop. Therefore if the trees are left over-loaded, we are only exaggerating the "off year" habit and increasing culls and small sizes. We believe the British Columbia orchardists are now fully alive to the fact that soil building and plant food have a tremendous influence on returns per tree and have taken this up in a whole-hearted way.

The method of the thinning of the fruit should now be considered. Where trees are heavily and evenly loaded the rule should be one fruit every eight inches and spurs that are apt to interfere with others should be relieved allowing other spurs to rest and mature for 1923. Where trees are not heavily laden, good judgment must be used to get the best quality apples at the minimum risk of making them into culls.

"The wonderful success of the Australian apple shipments, after the first few years of troubles and failures, is attributable," says an English fruit weekly, "to the perfecting of pre-cooling arrangements, so that fruit for shipment would go into the hold of the vessel at practically the same temperature at which it was desired to be carried, when it was possible for the marine refrigerator engineer to keep his holds at an equal temperature without much difficulty."

WESTERN PROVINCES

Western Fruit Jobbers

THE following terms of sale, adopted by the Western Canada Fruit Jobbers' Association, will interest shippers of fruits and vegetables to the Prairie Provinces:

1. All goods are sold at seller's warehouse or distributing point at buyer's risk of delay, loss or damage in transit.

2. Berries of all kinds and cherries are sold entirely at buyer's risk of deterioration, after seller delivers same to transportation company.

3. All orders are subject to approval of seller's credit department on date of shipment.

4. On any commodity that transportation company refuses to accept, only at owner's risk, the buyer be considered the owner from the time seller receives receipt for such goods from transportation company in good condition.

5. If heated cars are not available, seller shall ship in box cars at buyer's risk, unless instructed in writing by buyer to ship in heated car only; and in case buyer so instructs, seller shall have right to either ship at seller's risk or cancel order.

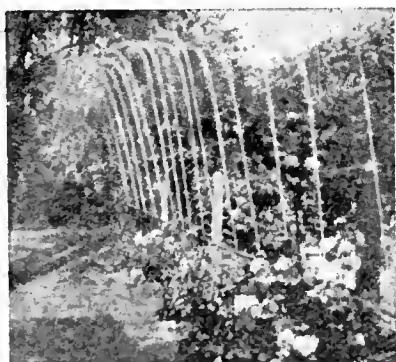
6. All orders received by the seller from the buyer which cannot be filled on date named in order, will go forward on arrival of the goods, unless distinctly specified on order.

7. All orders must be signed by the buyer when given in person, or when order given by telephone, must be so noted on order sheet.

8. All orders shall be considered as sold on regular terms unless so noted on the order or contract. Any deviation from regular terms would be subject to acceptance by seller's office, in writing.

9. Rejections or Refusals.—Buyers shall not unjustifiably refuse fruit and vegetables. Delay

The Garden Beautiful



To those who love flowers and are growing them, whether commercially or just because they do love them an

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IS A REAL BOON

It is the only system of irrigation that gives proper and permanent service.

Lines can be carried along your fence, or concealed behind your hedge, or placed wherever desired.

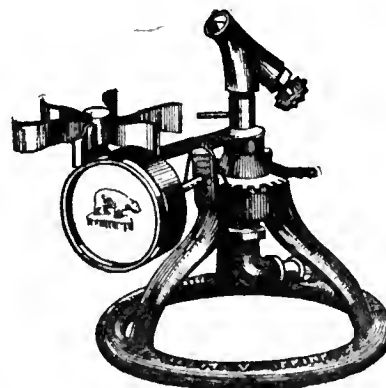
One line serves a width of fifty feet on each side of the line.

Write for circular giving all details.

Canadian Irrigation Limited

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Tallman Rotary and Oscillating Sprinkler



Lack of rain need not wither your lawn this summer if you have a Tallman Rotary and Oscillating Sprinkler. Its spray like natural rain keeps your lawn and shrubbery fresh in the driest weather.

Tallman Rotary and Oscillating Sprinklers are adjustable, simple and durable. Sold by hardware dealers. Price \$10.00.

For Pipe Line Installation for Market Gardeners, Sprinklers are sold without base. Price \$8.00.

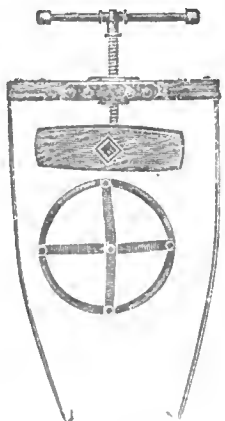
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HAMILTON, ONT.

OTTAWA LADIES COLLEGE **RESIDENTIAL AND DAY SCHOOL FOR GIRLS**
 Founded 1870
 Matriculation Course, Music, Art, Household Science, Games, Gymnastics and Riding.
 For particulars apply to the Principal, MISS I. J. GALLAHER, Ottawa Ladies College, New Fireproof Building
 Re-opens September 13th **OTTAWA.**

Buy Your Bulbs
 Direct From the Actual Grower.
 Hyacinths, Tulips, Daffodils, Crocus and all other kinds of Bulbs and Roots.
 Descriptive List upon Application. Best Quality at Reasonable Prices
PAPENDRECHT-VANDERVOET
 Bulb and Plant Growers
 Dahlia Specialists
 Sassenheim, Holland

PAEONIES
 IMPORT ORDERS
 The stock of high-priced varieties of paeonies is very limited even in Holland and when a variety is sold out it is almost impossible to replace it. I have about 25,000 paeonies growing at Stoney Creek and in the lot a number of high priced varieties in limited quantities—But the paeonies I sell are small one year, one eyed Holland roots. By the time an order arrives in Holland some varieties may be sold out. It is therefore advisable to place orders early. Again, growers hope that the U.S. will remove the quarantine which forbids the importation of paeonies to the U.S. If this quarantine is removed, prices will double. Send for price list—"Alsace Lorraine" \$2.00, etc.
H. P. VANWAGNER
 R. R. No. 5, Hamilton, Ontario.

THE WESTERN FAIR
 LONDON, ONTARIO
September 9th to 16th, 1922
 Growers of **FRUITS** and **FLOWERS** Send for a Prize List
 Liberal prizes—good classification. Interior of Horticultural Building changed this year, giving more room for display.
 Send for prize lists, entry forms, etc., to the Sec'y.
J. H. SAUNDERS, President **A. M. HUNT, Secretary**

DAISY APPLE PRESSES
 FOR BOXES AND BARRELS.

THE DAISY APPLE BARREL PRESS.
 is one of the most satisfactory and efficient presses made. It is used by the leading fruit growers in Canada, the United States and England, because every grower who wishes to handle his crop economically should have one.
THE DAISY BOX PRESS
 is the fastest and only automatic press on the market. Works simply by pressing with the foot, thus leaving both hands free.
 WE ALSO MAKE
THE DAISY FOLDING APPLE SORTING TABLE.
 This is another of the famous "Daisy" apple packers' outfits. It is light, but strong, being built to meet rough usage. Folds compactly for carrying about the orchard.
 Send now for our Descriptive Circular, and let us Quote You Prices.
J. J. ROBLIN & SON
 BRIGHTON ONTARIO

in transit, pilferage, or other damage shall not of itself justify a refusal.

10. The seller does not undertake to deliver goods to buyer on a certain date. The question of delivery is in the hands of the transportation company.

11. Complaints or Adjustments.—The buyer shall notify (the seller in writing or wire within 24 hours after arrival of shipment. Failure to give such notice shall constitute acceptance, except that it will be proper to determine (as may be customary) the loss or waste which can be attributed to the seller. This, however, does not apply to highly perishable goods, such as berries, cherries and early green vegetables, which must be accepted at shipping point.

12. On all orders given without definite instructions, the seller will exercise his best judgment regarding the best means of transportation.

13. All orders given travellers and other employees are subject to confirmation and to goods being unsold. Sellers are not to be held responsible for failure to deliver any order as a result of anything unforeseen at time of sale.

14. Interest is to be charged on overdue accounts at the rate of 1 per cent. per month.

MARITIME PROVINCES

Fruit Prospects in N. S.

W. S. Blair, Experimental Farm, Kentville.

It is yet too early to more than forecast the possible fruit crop in the Annapolis and Cornwallis Valleys. The reports are very conflicting. The bloom on the whole was good and the weather at blossoming time was warm and generally bright. The temperature for the week during full bloom averaged 77 degrees as the maximum and 57 degrees as the minimum. The 3rd of June, when trees were in full bloom, was dark with a light shower of .14 inches and there was a further shower of .34 inches on the 4th. The 4th cleared up bright, which weather continued during the week. It will be seen that the conditions were on the whole favorable for pollination. The bloom lasted but a few days on all the later blooming varieties and the high temperature on the 5th apparently prematurely dried up the petals and by the middle of the week the bloom was practically all off the trees.

A general survey would indicate that Gravenstein, Ribston, Greening, Fallawater, Wagener and McIntosh are a good set. King, Ben Davis, Stark, Gano and Golden Russet fair. Baldwin and Blenheim entirely off; the latter blossomed in abundance but the set is light. The early varieties, as Crimson Beauty, Duchess and Wealthy, are a good set. The crop is variously estimated by growers at from 40 to 75% of last season. It is probable that the crop will run about 65% of last season's harvest.

The plum crop is likely to be good, also cherries. The first ripe cherries, "Early Purple" or "Early Purple Guigne," were picked on June 21. This is the earliest cherry we have in our plantation.

The first strawberries were harvested on June 17. The season is early and the prospects are that only a light crop will be harvested. The weevil has made its appearance in places and will reduce the crop somewhat.

N. S. Apples in 1921

THE apple crop of the Annapolis Valley was the most successful ever grown, both from a financial and quality standpoint. It is understood that the average net price realized from the entire crop outside of the cheaper apples used in the factories, was around \$3.50. This means that the amount of foreign money brought into the valley for apples the past year amounted to around six million dollars.
 The total production of Nova Scotia apples in

1921 was 2,033,901 barrels and 6,494 boxes. The United States received 98,354 barrels, West Indies 4,683 barrels, Newfoundland 13,377 barrels, while the remainder were consigned to various English ports. New Brunswick points received 30,481 barrels of the total crop, Nova Scotia 22,840 barrels and other Canadian points 296,042 barrels. Provincial canning factories consumed 31,800 barrels and cider and vinegar plants 36,000 barrels.

Many new apple warehouses are being erected in the Annapolis Valley. Among the places where construction is going forward are Aylesford, Weston, Billtown, and Hillaton, in King's County.

Meetings will be addressed throughout Canada this summer by J. Forsyth Smith, Canadian Fruit Trade Commissioner, Liverpool, England. Mr. Smith is now in British Columbia and will address meetings there in July. The Ontario meetings will start on or about August 10 and will continue for a period of probably 10 days. Later, meetings will be conducted in New Brunswick and Nova Scotia. Dates and places for the eastern meetings will be announced in next issue. Mr. Smith will speak on "Canadian Fruit on the British and Continental Markets."

Ontario Gladiolus Society

1st ANNUAL EXHIBITION and CONVENTION
Wednesday and Thursday, August 23 and 24, 1922
Alma Ladies' College, St. Thomas, Ont.

Splendid prize list. Finest display of Gladioli in America in the Trial Garden of St. Thomas Horticultural Society (official test plot A.G.S.) Music, sight seeing trips and other entertainment. For further information write
Dr. F. E. Bennett, Pres., or Rev. P. S. Dobson, Sec'y

— ST. THOMAS THE CITY OF FLOWERS —

CANADIAN NATIONAL EXHIBITION

TORONTO

SATURDAY, AUGUST 26

—TO—

SATURDAY, SEPT. 9

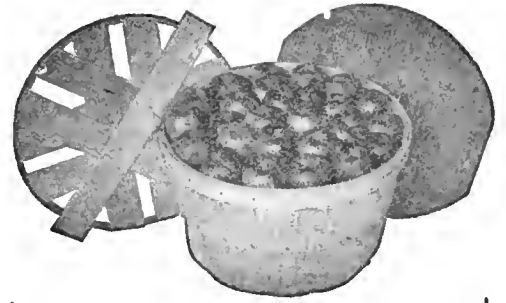
NEVER ON A BIGGER SCALE

CROPS and MARKETS

Potato Inspection

IN the May-June number of the Agricultural Gazette of Canada, the Division of Botany, Dominion Experimental Farms Branch, tells of the work that has been carried on in potato-field inspection and certification. Most of the seed-growing districts were inspected twice.

An analysis of the figures for 1920 and 1921 given in the article shows an increase in the percentage of acres passed last year over those of the preceding year, a fact that is attributed to the employment of improved methods of seed growing and to the more general use of certified seed. Ontario showed up best in 1921, having a percentage of acres passed of 88.6 as compared with 54.2 in 1920, when Nova Scotia was on top with a percentage of 78.6 as against last year. Manitoba came second in 1921 with a percentage of 84.8 against 46.3 in 1920. Nova Scotia was third and New Brunswick fourth in 1921. Prince Edward Island was second in 1920 with a percentage of 59.0 but in 1921 fell a little behind, the percentage being 56.2. The other provinces came in this order last year: Alberta, Saskatchewan and Quebec. The two first mentioned of these three had no fields inspected in 1920, but Quebec increased from a percentage of 21.7 in 1920 to a percentage of 42.0 in 1921, an improvement which is the more marked because



Universal Bushel Basket and Cover

Absolutely the best Basket and Cover on the Market.

Write Us for Prices

in carload lots, delivered your station, or smaller quantities shipped from our warehouse.

QUICK & HOLGATE

Bowmanville - Ontario

CANADIAN DISTRIBUTORS

ROBERT McCULLOCH

FRUIT MERCHANT and COMMISSION AGENT

Consignments Solicited.

65 MAIN STREET, AYR, SCOTLAND

BOXED APPLES

Bring Better Prices

When packed in quality boxes

In addition to large orders we are especially equipped to supply

APPLE BOXES

either made-up or in shooks, in small quantities to the individual grower.

Let us quote you our attractive prices on your needs for this season.

Barchard & Co.

LIMITED

135 Duke St., Toronto, Ont.

the acreage inspected in that province last year was greater than in the previous year. In Quebec also the number of acres inspected is much larger than in the other provinces. It is

PEDLAR'S "PERFECT" TREE PROTECTORS



Protect Your Young Fruit Trees

from damage by mice in
early spring

Mice will "girdle" any fruit tree up to six inches in diameter, in the early spring. When the snow at the base of the trees melts the hungry rodents gnaw the tender bark close to the ground. Thousands of valuable young trees are injured in this way every year, involving an enormous loss to orchardists. But you can easily circumvent the mice by using Pedlar's "Perfect" Tree Protectors. They are made from strips of galvanized metal lath, with a mesh only three-eighths of an inch—too small for the smallest mouse to squeeze through.

Supplied in bundles of 25. Write for prices.

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Established 1861

EXECUTIVE OFFICES: OSHAWA, ONT.

Factories: Oshawa, Ont., and Montreal, Que.

Branches:—Montreal, Ottawa, Toronto, Hamilton,
Winnipeg, Calgary, Vancouver

thought that if the weather had been more propitious in the early part of the season last year, the general improvement shown would have been still more impressive. Roguing, advised by the inspectors in New Brunswick in 1920, owing to the presence of mosaic among the Green Mountain variety, had the effect of increasing the percentage of that province from 46.8 to 67.2 last year. Wilt was responsible for the slight falling off in Prince Edward Island, and the hot dry season particularly affected Nova Scotia.

Transportation Matters

Fruit Branch, Ottawa

SPECIAL express commodity rates will be effective on carload and less carload shipments this season on fruits and vegetables moving from points in the Bowmanville-Belleville and Picton-Consecon districts in Ontario to Winnipeg, Man., and to Eastern Canada points.

Reduced carload express rates have been agreed upon for fruit moving from Ontario points to Prince Edward Island.

Express rates somewhat lower than a year ago will be effective this season from points on the Port Rowan Branch of the Grand Trunk Railway.

The railway and express companies operating in Canada will co-operate with the Fruit Branch this coming season in compiling daily records of arrivals of deciduous fruits, also tomatoes, potatoes and onions at the larger distributing centres. This information will be extremely helpful in bringing about a more even distribution of these conditions.

The Dominion Express Company have extended application of special fruit tariffs from British Columbia points to cover additional points in western Canada and have made a reduction in rates to Cardiff, Alta., St. Boniface, Man., and Yorkton, Sask.

The Canadian National Express Company have consented to join the Dominion Express Company in joint rates from Dominion Express points in British Columbia to Canadian National Express points in western Canada, the basis of rates to be decided later.

Old Grades Still Stand

IT is quite certain that the new apple grades will not be effective this season, and it is possible that they may not be for next season, if the experience with some other farm products is any criterion. There is some proposed legislation with regard to potatoes, which has now been waiting its turn for more than two years.

With regard to the amendments of the Fruit Marks Act, the difficulty is more apparent. The Fruit Branch points out that many other changes to the Act were contemplated, which could not have been put through this session in view of so much other legislation ahead of it. At the Fruit Conference, in February, several amendments were suggested.

For the present season, fruit will be marketed under the same conditions as last year. Even if the Act could have been put through, it would have been necessary to allow a certain time to elapse before applying it in order to allow the public to become educated. There will likely be a fall session and it may be brought in then.

On the Toronto Market

THE summer market at the foot of Yonge Street opened for this season's business on Monday, June 12. The change of location from their permanent warehouses to this market is made each year by the commission firms soon after the local strawberry season starts. The first consignment of Ontario strawberries arrived on June 7, and sold at 25 to 35 cents; they came from Queenston. A top price of 30 and 35 cents was secured for fancy berries, which were scarce, with the average going at 10 cents less, until June 12, when prices commenced to go down rapidly. The bottom was reached on Tuesday, June 20, when the bulk of arrivals moved at 8 to 10 cents. From that date, prices advanced a cent or two a day until the end of the month, when 14 to 16 cents were received for the average run.

A noticeable feature of the berry market all through the month was poor quality and condition. While there were daily exceptions in the case of odd lots of prime goods, the bulk of arrivals was poor in one or more respects—too many green tips; berries sandy, wet or bruised; no attention paid to facing the boxes, hulls instead of fruit often being the first thing seen; boxes slack, sometimes only two-thirds full. The reference to "facing" the boxes should not be confounded with "topping" which means putting the best berries on the top. A box of berries can be faced honestly, and one of the essentials is not to face with stems up. Better quality and condition prevailed on this market during the last 10 days of the month.

Cherries commenced to arrive about the 10th, but they were small and immature. Not until about the 20th did sweet cherries of good grade

Tulips, Hyacinths, Daffodils, Paeonies, Etc.

Import and Retail. Write for List.

MORNINGTON GLADIOLUS GARDENS
Stratford, Ontario

VAN GINHOVEN & CO.

32 Pearl Street

New York, N.Y.

Your address for Holland-grown Hyacinths, Tulips, Crocus, Gladioli, Iris, Paeonies and all miscellaneous bulbs and roots. Please write for illustrated catalogue.



We Solicit Your
Consignment

Send for
Shipping Stamp

Good Prices Always

For Your Fruit and Vegetables

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

Branch Warehouses:
Sudbury, North Bay,
Cobalt and Timmins.

PETERS, DUNCAN Limited
88 Front St. East, Toronto



References: The Bank
of Nova Scotia, King
and Victoria Branch,
and Commercial Agen-
cies.

begin to arrive in noticeable quantities. The first good sweets brought as high as \$3 in sixes. While berries lasted in large supply, the demand for cherries of any kind was weak.

On June 30, a day preceding two holidays in succession—Dominion Day and a Sunday—cherries were a glut. Sour cherries sold at 30 to 50 cents, and sweets from 50 cents up.

The demand for green vegetables was active all through the month. Lettuce, spinach and radishes frequently were in over-supply, but best quality always found buyers. Hothouse tomatoes and cucumbers sold strong. Outdoor tomatoes arrived from Leamington first about the 20th. The first Ontario new potatoes, grown near Hamilton, arrived on the 22nd, and sold at \$2.75 a bushel.

Fruit Crop Outlook

AT the end of June, the Acting Fruit Commissioner, Ottawa, issued the following summary of the outlook for fruit crops in the eastern provinces:

Ontario: Apples—70 per cent, larger crop than last year, or 1,150,580 barrels; Spy, Greening, Baldwin, light. Peaches—Heavy crop. Plums—Japanese, light; others exceptionally heavy. Pears—Below average; Keiffers and Bartlett, fair. Cherries—Sweet, full crop; sour, light in western Ontario, but a good crop in eastern districts. Grapes—Fair crop. Raspberries—Fair, but less than 1921. Currants—Full crop.

Quebec: Apples—75 per cent, in excess of 1921, or 61,600 barrels.

New Brunswick: Apples—25 per cent, in excess of 1921, or 41,250 barrels; Spy and Stark—light.

Nova Scotia: Apples—75 per cent, of crop 1921, or 1,527,000 barrels.

Readers are requested to send for reproduction photographs of their orchards or gardens.

If You Ship Fruit to Toronto

LET US HANDLE YOUR SHIPMENTS

We are centrally located in the Fruit Market. Service unexcelled. Prompt returns and a satisfactory deal guaranteed to all.

Write To-day for Shipping Stamps

JOSEPH BAMFORD

72 Colborne St.

COMMISSION MERCHANT

Toronto, Ont.

Phones: Main 6036 and Main 3085

Reference: Canadian Bank of Commerce, Market Branch



“Mr. Grower,—Remember, we are at your service. TRY US.”

Stamps and information mailed on request.

Prompt returns Weekly settlements.

UNION FRUIT & PRODUCE CO.

82 FRONT STREET, EAST,

TORONTO, ONTARIO

Phone Main 1996 and 3498

PERRY'S SEEDS

Apple and perennials unique collections; many new varieties unobtainable from any other source.

Hardy and adapted for Canadian climate

HARDY PLANT FARM, ENFIELD, ENGLAND

APPLE BARRELS

New, standard-machine made, best quality. Delivered anywhere in Ontario and Quebec. Write for prices.

Contracts made with Fruit Associations and others.

JOHN HAYNE

SARNIA,

ONTARIO

Stronach & Sons

33 Church Street
TORONTO, ONTARIO

Fruit,
Produce,
and
Commission
Merchants

All Shipments of Fruit and other Produce consigned to us receive our personal attention.

Competent salesmen in Fruit Market at all times.

Advice Card mailed each evening.

Shipping Stamps mailed on request.

YOUR SHIPMENT SOLICITED

Long Distance Phone: Main 2877

GROWERS and SHIPPERS

Give Our Selling Service
a Trial

All Kinds of Fruits and Vegetables Handled on Commission

Shipping Stamps Supplied

Prompt Advice and Returns

Satisfactory Results

Correspondence Invited

W. J. McCART & CO., Ltd.

78-80 Colborne Street
TORONTO

Telephones: Main 784 and Main 715

References: Imperial Bank, Markets Branch

The Fruit & Produce Market

The Commission firms undernoted wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. Toronto, Ont.

CONSIGNMENTS OF FRUIT AND
VEGETABLES SOLICITED

Shipping Stamps Furnished on Request.

MANSER, WEBB CO.

83 Colborne Street Toronto

Wholesale Fruit and Produce Merchants

Consignments Solicited on Commission.

STRONACH & SON

33 Church St., Toronto, Ont.

All shipments of Fruit and other produce consigned to us receive our personal attention.
Shipping stamps furnished.

Phone Main 2390.

See advt. on page 157

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 FRONT STREET, EAST,
TORONTO, ONT.

See Advertisement on Page 156

BULBS, PAEONIES, ROSES, GLADIOLI

Send for 1922 lists. Orders for bulbs and Paeonies accepted up to September 1st. Import orders only. Roses and Glads. imported in Spring.

Several Societies sent in orders too late last year. ORDER EARLY.

VAN'T HOF & BLOKKER

HEILOO, HOLLAND

Canadian Office, 430 Brunswick Ave., Toronto



We have a large
stock of all sizes

FLOWER POTS

FERN OR BULB PANS
AZALEA POTS
and Rimless Pans

Orders Filled Promptly

Send for Prices

THE FOSTER POTTERY CO., Ltd.
HAMILTON, ONT.

CANADIAN HORTICULTURAL COUNCIL

Various Activities

L. F. Burrows, Secretary-Treasurer.

THE various standing committees appointed at the general meeting of the Council, May 17, have been very active and each has accomplished considerable to date. The publicity committee have had several articles regarding the Council published in the press, and this is undoubtedly giving it the advertising which is most necessary at this stage in the organization. Arrangements have been completed with THE CANADIAN HORTICULTURIST, whereby that publication will be the official organ pro tem. of the Council. A column will be conducted, in the interest of the Council, in each month's issue. The chairman of the transportation committee prepared a memorandum which was submitted to the special committee of Parliament on transportation costs. The chairman of the legislation committee was most active in the preparation of the memoranda prepared regarding the enforcement of regulations and the proposed tax on fruit juices. Considerable progress has also been made by the registration committee; the chairman advises that he expects to be in a position to submit a full report on or about Oct. 1.

Although a representative of the Council did not appear, personally, before the special committee of the House of Commons, that has been investigating railroad freight rates, arrangements were made whereby a memorandum from the Council would be accepted as evidence. A memorandum was therefore submitted which fully set forth the position of the Canadian fruit and vegetable interests as affected by the Crows Nest Pass agreement.

A letter was addressed to the department of health, regarding candied citron peel, it being represented that melon peel was being placed upon the market as Canadian citron peel and therefore constitutes an infraction of the misbranding clause of the Food and Drugs Act. An investigation is being conducted in this connection by the department.

A communication was received from the president of the Ontario Horticultural Association advising that their association desired to have a representative on the Council, and as provision was made in the constitution for a representative of the amateur horticulturists, he named J. E. Carter, Guelph, vice-president of the O.H.A. The amateur horticulturists of Ontario, having a membership of 32,000 in the O.H.A., are materially interested in the registration of horticultural plants, shrubs and trees, one of the objects of the Council.

Under separate headings in this column, various other activities of the Council are explained in detail. The constitution and by-laws are published in full on page 147 of the Fruit Edition.

Readers of THE CANADIAN HORTICULTURIST are requested to use the facilities which the Council at present affords of having the difficulties of the industry in which they are engaged settled. The secretary, whose address is 21 Cliff St., Ottawa, is always ready to give his attention to even the smallest matter which may be brought before him.

Important Resolutions

AT a meeting of the Canadian Horticultural Council, held at Ottawa, May 17, when the Council was formally organized, an appreciation of the services of C. W. Baxter, who was retiring as fruit commissioner to accept the position of general manager of the Niagara Peninsula Growers, Ltd., was expressed in a resolution. The Council recommended as his

successor, G. E. McIntosh, fruit transportation specialist, Fruit Branch, Ottawa.

A resolution was adopted urging the Dominion Government to enforce rigidly the regulations with respect to pure foods as applied to beverages, and that, if such regulations do not afford full protection to consumers, producers and manufacturers, these be amended accordingly. The resolution pointed out that many of the advertisements appearing in public with respect to non-intoxicating beverages are deceptive in character, inasmuch as they convey to the prospective purchaser the impression that said beverages are made of pure fruit juices. The Council believed that many of these beverages do not contain any fruit juices whatever, and that the Federal Government have confirmed this belief by analyses.

Another resolution recommended that the administration of the laws governing the adulteration of jams, jellies, canned fruits and vegetables, fruit beverages, etc., be transferred from the department of health to the department of agriculture.

Apple Barrel Shortage

THE secretary of the C.H.C., after having made a complete survey of the amount of apple barrel stock and made up barrels available for this year's crop, announces that there is every probability of a serious shortage. In a few of the barrel sections, the stocks held by the coopers may fill the possible demand, but in the majority of districts, where a large crop is forecasted, there does not appear to be sufficient stock to meet more than half of the requirements.

In explanation of the shortage of stock it is claimed that the barrel manufacturers, having suffered severe financial losses last year, have not made as large purchases as usual, and that on April 1, 1922, there was only about 58% of the available supply of cooperage stock in sight as compared with the same time in 1921. Therefore, there is not nearly sufficient on hand should the cooperage turn out as at present prospect. This condition also applies to the barrel apple sections in the United States, where official reports from Washington, D.C., state that the crop will be at least, 200% greater than that of last year.

The barrel manufacturers point out also that the apple growers are in the habit of holding back their orders for barrels until picking starts, thus causing a demand which overtaxes the capacity

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

EMPLOYMENT

COMPETENT, RELIABLE, married man as gardener; greenhouse, flowers, fruit and vegetables. Good references. Age 36. 6 1/2 years in Canada, now in England. Harrison, Wilton Park, Beaconsfield, Bucks., England.

REAL ESTATE

FRUIT FARMS FOR SALE—All sizes, Niagara District properties of all kinds. Write Calder & Hazlewood, Grimsby, Ontario.

18,000 ACRES CALIFORNIA FARM LANDS. Orange groves and vineyards in the heart of Southern California. Permanent irrigation. Moderate prices. Easy terms. Write for descriptive booklet. Canadian Sales Department, Fontana Farms Co., Brockville, Ont.

SEEDS, BULBS, PLANTS

BULBS—Lily of the Valley and Gladioli of all descriptions. Write for prices. C. Keur & Sons, Hillegom, Holland. New York address—5625 Moshulu Ave. The trade will be visited by us in due time as usual for 1922 spring and fall orders. Lily of the Valley and Gladioli can be shipped immediately direct from our warehouse and Canadian farms.

of the mills in a year of heavy production, with consequent delay and disappointment to many.

In order to avoid a possible repetition of the disaster of 1920, due to shortage of packages, the Council strongly urges apple growers to immediately place their orders for at least half of their barrel requirements. By so doing, the growers will not only avoid disappointment and delay at the picking season, but will give the coopers a fair chance to meet the requirements of their customers as far as possible.

Duty on Fruit Juices

ACTING on instructions from the C.H.C., Secretary L. F. Burrows waited on the Hon. W. S. Fielding, Minister of Finance, early in June, with regard to the elimination of the proposed tax of 10 cents a gallon on pure fruit juices used in the manufacture of beverages. It was pointed out that the Budget resolutions proposed to tax the natural, unfermented product the same as substitutes, thus placing the imitation article on a par with the pure product. The demand for healthful fruit beverages was on the increase in Canada, and in order to meet it, the acreage devoted to small fruits was being increased. The public, it was maintained, should be protected against substitutes, and the use of the natural product encouraged. The minister promised consideration.

The tax of 10 cents a gallon on soft drinks, which include those made from fruit juices, was later changed by the minister to five cents a gallon on bottled goods. In the case of the soda fountain man, a tax of five per cent will be levied ad valorem.

Although the general tax on all beverages has been decreased, no preference has yet been shown to the pure product. Further representations are being made and there is a possibility that the request of the Council will be conceded.

Basis of Representation

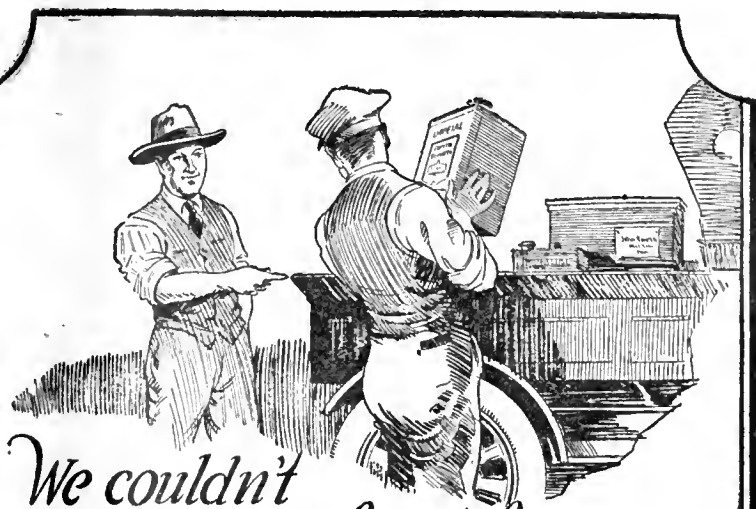
THE Canadian Horticultural Council, recently organized, is made up of 18 representatives instead of 14, as appeared in the report of the organization meeting published last month. The various interests concerned are represented as follows: Fruit growers five, vegetable growers four, wholesale fruit and vegetable dealers two, and one each for the package manufacturers, florists and gardeners, jam manufacturers, canners, nurserymen, amateur horticulturists, and seedsmen.

As far as possible, all of these representatives shall be appointed by the associations of the industries concerned. The geographical distribution of fruit growers provides for one member each for Nova Scotia, New Brunswick and Prince Edward Island combined, Quebec, Ontario, and the Prairie Provinces and British Columbia combined. The vegetable growers' representatives shall be similarly distributed, with the exception that there is but one representative for the three Maritime Provinces.

Registration of Plants

THE Council has already taken steps toward the organization of a system for the registration of new varieties of plants. Through the agency of W. B. Lobjoit, Controller of Horticulture for Great Britain, the secretary of the C.H.C., will be kept informed of the efforts being made, not only in England but on the Continent, to provide a means for the registration of horticultural plants, shrubs and trees. The secretary has also got into touch with the horticultural authorities in the United States who are interested in this matter. It is expected that a conference on the subject will be arranged for during the present year.

Readers are invited to use the columns of THE CANADIAN HORTICULTURIST for discussing any and all matters of general horticultural interest.



*We couldn't
Farm without them—*

Prosperous farming depends upon smooth working machinery—and smooth working machinery is usually the result of proper lubrication with the right grade of Imperial Lubricants.

Imperial Farm Lubricants have been developed to meet the needs of every type of machine used on Canadian farms. The use of the right grades insures maximum service and profit from all of your implements. Make your selection from the list below, or ask the Imperial Oil man.

IMPERIAL Lubricants FOR ALL FARM PURPOSES

IMPERIAL POLARINE OIL
IMPERIAL POLARINE MEDIUM OIL
IMPERIAL POLARINE HEAVY OIL

For gasoline-burning engines—automobiles and trucks.

IMPERIAL POLARINE SPECIAL HEAVY OIL
For kerosene-burning stationary engines and tractors.

IMPERIAL POLARINE EXTRA HEAVY OIL
For motors requiring an unusually heavy oil.

IMPERIAL PRAIRIE HARVESTER OIL
IMPERIAL GRANITE HARVESTER OIL
For open bearings of separators, binders, etc.

IMPERIAL CAPITOL CYLINDER OIL
For steam cylinder lubrication—tractors and stationary engines

IMPERIAL GAS ENGINE OIL
For stationary or portable engines, kerosene or gasoline.

IMPERIAL POLARINE CUP GREASE
IMPERIAL THRESHING HARD OIL
For grease cup lubrication—clean, solidified oils.

The Imperial Charts of Recommendations show exactly what grade of Imperial Polarine Motor Oils will give the best results with your type of truck, tractor or automobile. Further information will be gladly supplied by the Imperial Oil man—an expert on lubrication.

IMPERIAL OIL LIMITED

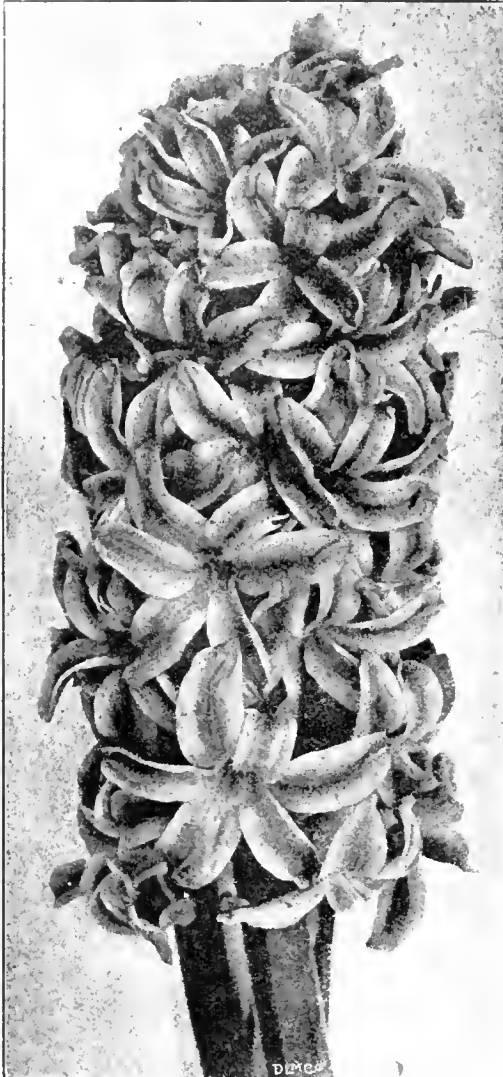
Canadian Company

Canadian Capital

Canadian Workmen

BEAUTIFY YOUR HOME AND GARDEN

RENNIE'S SUPERB BULBS



HYACINTH—LADY DERBY

To succeed with bulbs it is necessary to begin right, by getting sound bulbs of good size, and we would warn intending purchasers against buying cheap, undersized bulbs and expect the fine results obtained from such as we offer. Our sources of supply are the best in this country and abroad, the leading growers of the world having for years supplied us with their choicest stock.

To the lover of flowers there is no class of plants so much prized as those which are produced from bulbs. The reason is easily found, because within the bulbs are stored all the future glory of leaves and flowers, only requiring the simplest culture to develop them in their highest perfection. Success is, therefore, the rule.

A FEW CULTURAL HINTS

WHEN TO PLANT.—To the beginner we would emphasize the fact that **AUTUMN** and not **SPRINGTIME** is the time to plant all kinds of spring-flowering bulbs. The larger part of the bulbs offered in our Catalogue are ready to ship by the second week in September, and the sooner they are planted after that the greater will be the measure of success, more particularly those for indoor culture; therefore, **ORDER EARLY.** A few sorts, which are noted in the Catalogue, do not mature until October and November, and are forwarded as soon as ready.

DUTCH HYACINTHS—Fancy Quality

Add 3c. each, 25c. per dozen, for postage.

THE HYACINTH is so well known and esteemed that any description of its many good qualities is needless. The list now offered includes nearly every shade of red, white, blue, yellow, etc.

20c. each, \$1.95 per dozen, \$13.00 per 100

Lady Derby, (Bright Rose Pink); Charles Dickens, (Pink); La Victoire, (Deep Carmine, Rose); Gertrude, (Deep Rose); Gigantea, (Light Pink) Morena, (Pink); King of Belgians, (Deep Red); Robert Steiger, (Dark Red); Garibaldi, (Crimson Red); Albertine, (White); Madame Van Der Hoop, (Pure White); Grandeur a Merveille, (Blush); Arentine Arendsen, (Pure White); L'Innocence, (Pure White); Grand Maitre, (Pale Blue); Queen of the Blues, (Pale Azure blue; King of Blues, (Dark Blue); Sir. Wm. Mansfield, (Mauve); Yellow Hammer.

DARWIN TULIP—1st Quality

Add 10c. dozen, 50c. per 100, for postage.

The most beautiful section of the Tulip family, increasing in popular favor every year, and deservedly so, not only on account of their length of stem, size of flower and lasting quality, but also from the fact that blooming as they do, in the latter part of May, they lengthen the season of bloom of the regular early flowering varieties and should be planted by everyone who wishes to get bulbs and plants that will fill in the season from the beginning of April until the later part of May when other hardy perennials are starting to bloom.

	Doz.	100
Mixed Colors, (Superfine) .....	..60	\$3.75
Mixed Colors, (Fine) .....	..55	3.50

MINIATURE HYACINTHS

ALSO CALLED "DUTCH ROMANS"

These little Hyacinths are excellent for growing in pots, pans or boxes; they bloom very freely; often producing 3 or 4 spikes. They are equally desirable for culture out-doors; they should be planted closer together than the "Dutch Hyacinths." Culture is the same as recommended for the Roman Hyacinths, and they come into bloom after the Roman Hyacinths are exhausted.

Per Doz. .70, Per 100, \$4.25. (Postage extra)

Grand Maitre, (Light Blue); Gigantea, (Light Pink); Gertrude, (Deep Pink); L'Innocence, (Pure White); Lady Derby, (Delicate Pink); La Victoire, (Dark Pink).

Send your name for a copy of Rennie's Catalogue, which includes Poultry Supplies, Planet Junior Implements, Sprayers, Insecticides, Fertilizers, etc.

THE
WILLIAM
KING AND MARKET STREETS

RENNIE COMPANY
LIMITED

TORONTO

The Canadian Horticulturist

Floral Edition

Vol. XLV.

PETERBORO, ONT., AUGUST, 1922

No. 8

The Newer Varieties of Iris*

Miss M. E. Blacklock, Meadowvale, Ont.

AFTERGLOW (Sturtevant)—This and Nothing are very much alike, but Afterglow, with me, at least, is taller and has a little more brilliance. It is a beautiful and striking iris, mauve-grey throughout, with soft, but brilliant, yellow in the style, arms and crests; fairly tall, and the flowers well set on the stem, and of good size; well worth having.

Alcazar (Vil.)—A tall, vigorous, very fine iris. S. a pinkish mauve with F's a reddish purple. While the colors are not brilliant they are very soft and beautiful. The whole plant, with its stately growth and immense flowers, is striking.

Ambassadeur (Vil.)—This might be described as a larger, deeper colored Alcazar, very imposing in height, size of bloom and coloring. It is said to be rather shy flowering, but this remains to be proved. It appears to be of vigorous constitution.

Ann Page (Horts.)—This is a truly delightful iris. The color is nearly as beautiful and pure as that of Pallida Dalmatica, but the shape is quite different, though almost equally attractive. It is a large spreading flower of wonderful effect in the garden with its tall branching stems and stately mien.

Anne Leslie (Sturtevant)—S delicate pink, F carmine. The coloring of this variety is pretty, but it is not free enough flowering, or tall enough to be very effective.

Archeveque—A wonderfully rich, pure purple throughout, but too short in growth to be imposing, and the flowers are on the small side. Its deep color and velvety texture are its greatest assets.

Ballerine (Vil.)—This iris is very promising. Fine large mauve-blue; Growth, tall and stately.

Black Prince—The coloring of this iris is still the most beautiful, to my mind in the richness of the deep violet purple of its velvety falls, and it is decidedly the latest to flower with me. Its gaping standards leave a good deal to be desired as to form, and its poor constitution and low growth are decidedly against it.

Dawn (Yeld)—This is described as sulphur-yellow, but is really barely off

white; it is a good iris, but not specially wonderful in any way.

Dominion (Bliss)—The high price of this variety should not be taken as a positive proof of its desirability. Having only flowered it once, it is too early to say much about it, but compared with the performances of Magnifica, Ambassadeur, and a number of other new ones planted at the same time, it is a little disappointing. The colouring of the bloom is not as beautiful as that of Black Prince, the S being a pinkish lavender, and the F's more of a plum purple (not indigo, as stated in description), but the flower appears to be of

mauve pencillings near the throat. Probably it will be an improvement on that good old variety in size and bloom and in the looser setting of the flowers on the stem. Time will tell.

Ed. Michel (Verdier)—This is supposed to be a taller and richer colored Caprice, but, with me, it has proved a poor grower and though the color is darker, the blooms are smaller. It is a little taller, but not nearly as effective, as it does not appear to be free-flowering. Perhaps my soil does not suit it or else it has been greatly over praised.

Eldorado (Vil.)—A wonderful combination of yellow, bronze, heliotrope and violet purple, with orange gold beard. Seeing it at close range one is filled with admiration for the exquisite contrast of its colors. The bloom is of weak structure, though large, and the stalks are short, therefore, from a short distance it is scarcely visible, as the prevailing colors are too brown to be noticeable, at least on my sandy soil.

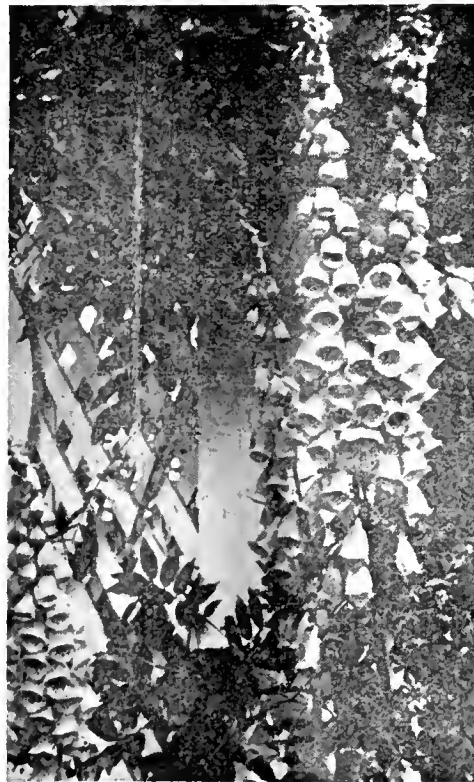
Isoline (Vil.)—A tall, large-flowered, most beautiful variety. S lilac-pink, F purplish old rose, with gold at the throat, and speckled with molten gold along the haft; so wonderfully metallic is this gold that you feel you could pick out the grains with a needle. With me it is not a very strong grower.

Magnifica (Vil.)—Huge flowers. S light and F darker violet-blue, on tall, strong stems. The leaves are broad and glaucous and suggest great vigor of constitution. This is a most promising variety, and in no way belies the description given of it.

Ma Mic.—A pretty little iris a la Mine. Chereau, without as decided a lavender edge. The flowers are a little larger, and do not hug the stem so closely, but it is not tall enough to be very effective.

Marsh Marigold (Bliss)—A most brilliant variety. Though the yellow standards are not so deep a color as those of Maori King, and the falls are very much the same, the flowers are so well placed and the stems so much longer, that the whole effect is very much better.

Mlle. Schwartz (Denis)—If this magnificent iris only proves to be hardy and fairly vigorous in our climate (a matter of great doubt, as it is from a Ricardii cross), it will be a great acquisition, as it has every other virtue. The large



A Three-branched Foxglove.

The foxgloves are old fashioned and dignified, clean of growth and suitable for the choicest garden. They are seldom strong enough to branch. The one shown has three spikes from the one flower stalk.

much better form. It may be that when well established, it will prove the marvel of beauty we have been led to expect. It is not always possible to judge of a flower's capabilities for a year or two. Unfortunately it appears to be a weak grower.

Dimity (Bliss)—This reminds one of Mrs. H. Darwin, being white with

* A report presented by the committee on Names and Varieties, before the recent Convention of the Ontario Horticultural Association.

shapely flowers are of the most delicate and delightful shade of lavender-blue, paler than celeste, on tall stately spikes.

Medrano (Vil.)—Fair sized flowers of a most peculiar and striking brown-crimson color. Medium height. Decidedly attractive.

Monsignor (Vil.)—This variety, in my opinion, is much overrated, or else there is something in my soil that prevents it doing it selfjustice. It is in two shades of purple, the falls especially being splashed with a deeper purple. It is short, very floriferous, and has medium-sized flowers.

Nothung (G. & K.)—So like Afterglow that it is needless to describe it; possibly another year it may be taller, but the spikes in 1921 (from August, set plants of 1920) were not long enough to be effective; Large blooms; An attractive variety.

Parisiana (Vil.)—Large flowers, well placed on tall stems of the Mme. Chereau type, but of pinkish-lilac instead of lavender, and the color carried over the flower by minute dots and veinings; quite effective.

Rodney (Bliss)—A lovely pure blue with large well formed flowers; Good constitution.

Sweet Lavender (Bliss)—S pale lavender; F's deeper with a rosy glow. The coloring is charming, far more beautiful than it sounds. Remarkably free flowering with tall branching spikes; A very beautiful variety.

Tristram (Bliss)—S pure white, F's deep black-purple. This is supposed to be an improvement on Thorbeck. It is very free flowering, but the flowers hug the stem too closely to be effective or graceful; Strong grower.

Rubini—This was one of the surprises. I had grown it before but without enthusiasm, but, on the second day of glads in 1921, it opened a gorgeous five and a half inch flower of exquisite tints that everyone liked immensely. It is a Dutch introduction, and if it can do as well again it is assured of a place in my garden.

Phyllocacti

J. H. Callander, Peterboro, Ont.

IT is interesting to listen to the comments made by visitors to the home or conservatory, where a cactus collection or even a few specimens are grown. Nine out of ten pronounce them ugly, yet they spend more time looking them over than they would other plants of more ordinary appearance. The ugliness, when examined closely, is found to be a most striking oddity of form, every formidable spiny guard, having a regularity as apparent as the arrangement of the kernels of corn on the cob.

Nature has followed out a wise plan in providing the wicked-looking spines to protect the desert plants, but there are cacti that grow in damper regions,

where vegetation is abundant, which are unprotected by spines of any kind. The latter are the Phyllocacti, a flat branched smooth-skinned genus, that is partly orchidaceous in habit. They are found adhering to tree trunks and in the moss on fallen logs. The shade of the forest appears to be suitable to their best development.

This class of cacti has more friends than any other. The common King cactus (*Phyllocactus Ackermannii*) and the Queen cactus (*Phyllocactus latifrons*) are met with quite frequently. The plants themselves, are uninteresting, but the flowers well repay holding the plant all the year round till its blooming season.

Hybridizers have taken the Phyllocactus and produced many marvellous new colors, just as all other wild flowers that show merit, have been cultivated, and improved till they far surpass the original flower. For instance the large red bloom of the King cactus, has, by breeding and crossing, produced a more open flower of deeper, richer red, the throat being given a dazzling tint of violet. It is a flower so striking that it has been named *Phyllocactus brilliant*. Another instance of the change made is seen in the bloom of *P. Cleopatra*, which is a salmon flesh shade, that somehow seems to be appropriately named after the famous Egyptian beauty.

A fortunate find placed the writer in possession of a collection of about 28 or 30 varieties, a number of which have flowered, and proved fine additions to any assortment of house plants. In fact, the Phyllocacti are the most satisfactory of all cacti as house plants and when in bloom are the pride of their owners'.

Don'ts with Peonies

Do not plant in the spring.

Do not plant the crown any deeper than three inches.

Do not crowd the plants. Allow a distance of three feet or you will retard proper development.

Do not allow dampness to remain at the roots through lack of proper drainage.

Do not make soil so poverty stricken that it will dry out with the first gleam of sunshine.

Do not disturb them.

Do not cut away foliage after blooming, as the leaves are their lungs.

Do not leave foliage on during winter, as it harbors disease. Cut all off and burn it.

Do not worry over ants on the buds, as they are harmless.

Early celery may be blanched by standing boards 10 to 12 inches with one edge at each side of the row close up to the plant. Late celery is blanched usually with earth.—Prof. W. S. Blair, Kentville, N.S.

Foundation Planting

W. E. Groves, Hamilton, Ont.

HOUSES which set close to the ground should have little or no planting at the base. The grass might extend up to the porch or verandah and group plantings be made at the corners. Where the floor level is slightly off the ground or where it is three or four feet high what is called foundation or base planting is correct and artistic. The purpose in this kind of planting is to soften and to some extent hide the straight severe lines and angles so obvious in an unplanted home, or in other words to provide a pleasing connection between the home and the surrounding ground. The average Canadian home, especially in towns and cities, is so constructed that it is approached by steps, and the kind of garden decoration suggested makes it possible to turn what may easily be common-place into a pleasing attraction. To accomplish this is not difficult. Where the whole front of the house is used for verandah and entrance, plants that will grow up to the height of verandah rail may be used for background. A row or rows of lower growing kinds in front of these will finish the planting.

To plant against a house where there is no porch or verandah demands slightly different treatment. There are nearly always windows to be considered, and it is well to avoid planting tall growing varieties under the windows. The place for them is between the windows. It is quite obvious that this arrangement allows for more freedom in the planting and less of the uniformity which does not always bring softness or artistic effect. If the window-sills are five to six feet from the ground varieties growing about four feet should be planted directly under the windows, and advantage could be taken of the spaces between to use kinds growing from six to eight feet high.

A double row of plants is always wise, the practice being to stagger the rows or to avoid planting one shrub directly in front of the other. Unless the distance between the house and sidewalk is very limited parts of the planting might be extended forward, making the front irregular rather than formal. A little extra massing near the corners and at the steps can be achieved in this way. Remember that the extra width of the planting should always occur where the tallest shrubs are used at the back. Usual distances to plant are three feet apart for varieties that do not usually grow over five feet in height; three and one half to four feet apart for larger growing kinds.

Do not neglect the small fruit bushes. The result will be an increased crop next year after the fruit is picked off. Keep them well cultivated.

Transplanting the Perennials*

R. P. Brotherstone

It needs not to be said that hardy plants become too big to fulfil the object of having them in a garden—the object of producing a profusion of flowers of good quality—and before they become so crowded with growths it is important to divide and replant them. At this season the chief plants that demand attention in this way are pyrethrums, irises and herbaceous peonies.

I grow single pyrethrums only, and these are ready first to operate on. The soil of sizable clumps is apt to become hard and dry by the time flowering is over, unless a more than usually copious rainfall moistens it. Usually it may be necessary to soak the clumps for 24 hours previous to dividing them, when it is easily accomplished without damaging either foliage or roots. Each clump should be torn into halves by means of two forks working against each other. Then the soil can be washed from the roots, and the pieces separated by hand and into sizes according to the wish of the operator. They should be planted, according to the nature of the soil, from $\frac{1}{2}$ inch to 1 lower than the spring of the leaves, and a reasonable quantity of manure should be worked into the soil when planting. One soaking of water will generally be sufficient. In beds for cutting not less than nine inches should be allowed for interspaces.

Iris

In northern gardens, June planting of irises is not possible, because they are, unless of the earlier sorts, still in flower

*From Gardeners' Chronicle (Eng.)

nor are their new roots formed till the next month, so that, at the earliest, division must not be attempted until July. I have established them successfully with all the old rhizomes and their roots removed, but probably most will incline to leave an inch or two of rhizome with its roots, which, however, superfluous otherwise, at least helps to steady the young plant until new roots in sufficient number are produced to effect that object. Sometimes a quite short stick may be required for ensuring stability, especially when the blades are very strong.

The soil, if at all loose, should be slightly firmed before planting, and, as the rhizomes run along the surface, planting should be only deep enough to give the pieces a grip of the soil. When set, all that is needed to firm them is a slight pressure with the tip of one's boot, the pressure being a little forward as well as downward, so firming each tightly. The distance to plant should be not less than one foot apart. As to watering, that, of course, depends on the weather, but never more than a very slight application to each set is required, and that only till root action has become vigorous. A thick mulch of rotted manure should not be omitted, and renewed annually.

Peonies

Later than these, peonies are ready to be divided. It may be found necessary to soak old plants in water similarly to pyrethrums, and in any case it is worth while to wash most of the soil off the roots previous to breaking them up.

Here, again, two forks should be employed, not only to halve them, but also to subdivide them into smaller pieces fit to plant. Peonies are gross feeders, and the ground for a fresh plantation should be manured to a depth of six inches with rotted cow-dung, and in addition to that a thick layer applied to the surface and worked in while the operation is proceeded with. The stems of the leaves should be tied together to prevent breakage, and every care taken to save the roots, the washing of which will be found of great advantage to that end. Once planted, a stout stake is needed to which to tie the plants, and an abundant supply of water poured about each to moisten the ground all round and to a fair depth.

A thick mulch of cow-dung should be applied to the plants each spring before growth pushes, an inch or two of soil being previously scraped on and returned on top to prevent birds from scratching and to hide the dung. I should have added that at least three feet should separate the plants when setting them out, and to preserve the flowering stems from growing crooked a ring of string supported on sticks should be run around the large plants before the stems are much in evidence.

August Notes

The oriental poppy is not dead just because its foliage has dried up and disappeared. Now is the time to take up the plants to transplant. The roots may be cut up for propagating purposes.

Constant clipping or spudding on the lawn and hoeing in the garden will keep the weeds within bounds.

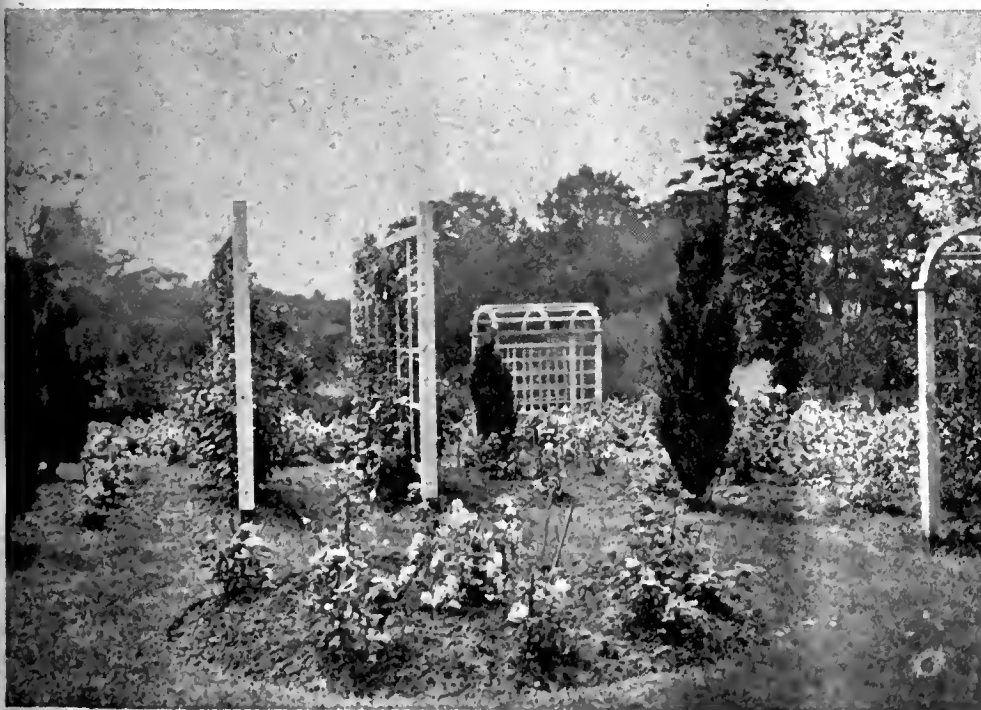
Mildew may be kept off phlox by using sulphide of potassium one ounce to a gallon of water sprayed over the plants.

Dahlias should be fertilized once a week while the buds are swelling. They are gross feeders.

Seed pods should be removed from shrubs and perennials as fast as the flowers ripen and wilt. This will make stronger plants for next year.

Tulips which have been planted out in ripening beds after they were through blooming, should now be lifted, cleaned off and packed in shallow boxes until thoroughly dry. Do not expose to the sun.

Aster plants from which seed is to be saved should be selected early in the season when the first flowers have developed. Select the best types possible and keep the small blooms cut off. Save seed only from the largest and best developed flowers. When the seed is nearly ripe, cut the flower heads and dry them thoroughly before putting away for the winter. Keep the seed in a dry, cool place.



A Well-planned and Attractive Rose Garden

Prairie Queen occupies the trellis, while the round bed in the centre is planted to General McArthur, Ophelia, American Beauty, with Madame Plantier for centre piece. Part of the fine rose garden of Henry Bertram, Dundas, Ont.

QUESTION BOX

W. E. GROVES

Name of Pale Pink Rose

What is the name of a pale pink rose, similar to Dorothy Perkins but earlier?—Mrs. R. W. L., Wheatley, Ont.

Both Tausendschon and Lady Gay are similar in color, and often come a little earlier into bloom. We think that the question refers to one of these varieties

Growing Ginseng

"Can Ginseng be grown successfully in Saskatchewan, or is the climate too cold?—Clavet, Sask.

W. T. Macoun, the Dominion Horticulturist, has a bulletin on this subject which will give full information. A letter to the Department of Horticulture, Ottawa, will be sufficient to secure a copy post free.

Asters and Blight

My asters are infected with blight in which the leaves curl and get full of dimples. What kind of insect would be infesting them?—biting or sucking? Is kerosene emulsion a good insecticide to use?—Enquirer, Collingwood, Ont.

The common plant bug is a sucking insect that gives trouble to aster growers continually. Kerosene emulsion is the most effective remedy, though even this does not always kill the mature insect. Keep the area where the plants are grown clean and well cultivated, encouraging as vigorous a growth as possible. Spray once or twice a week with the emulsion using fairly strong, but with special care to keep the solution well mixed whilst spraying.

Obconicas

Are flowers of *Obconica fimbriata* as large as those of *Obconica grandiflora*?—F. B. D., Branchton, Ont.

Primula fimbriata is merely a kind with the blooms slightly fringed. The blooms are generally nearly as large as *grandiflora gigantea*.

Unusual Canterbury Bell

A Canterbury bell has produced what is presumably a double flower, at least one bell or flower is perfectly formed inside the other. Is this unusual or is it a new variety?—J. R., Toronto.

The Canterbury bell bloom is probably just an unusual flower, the reason for which it is not easy to discover. It may be well to watch and see if all the blooms on the plant come the same or if later flowers revert to type. If the whole plant produces the same kind of flower, it might be interesting to try and save it or save seed.

Hollyhocks

What shall I do for my hollyhocks? I have many beautiful varieties, but I had to cut them down before flowering because of the unsightly foliage. The undersides of the leaves are covered with tiny black specks, insects or blight, which

turns the leaves rusty."—E. P. L., Belleville, Ont.

The hollyhocks are probably infested with the rust to which these plants are susceptible. Bad plants should be removed, and a bordeaux spray given to the others. It is well to spray occasionally during the season and care should also be taken to keep the ground clean and well cultivated. Plants that are growing strong are not so readily attacked, as those that are weaker.

Coal Ashes for Garden

Would sifted coal ashes be harmful to my flower garden. The soil is heavy clay, and I thought the ashes might lighten it up. I used wood ashes last spring, but took care not to put it near the plants. I wonder if I might use coal ashes freely near the plants.—Mrs. S., Norwich, Ont.

The action of coal ashes on the soil is purely mechanical, but it certainly does break up the clay, and used in moderation, is very helpful. To get the best results, it should be used at a time when the ground is in a decent condition for digging, so that the ashes can be well mixed with the soil. Wood ashes carry a fair percentage of potash, and can be safely used in addition to the coal ashes.

Dark Pink Peonies

Please give me list of very deep peonies in late variety, also names of some inexpensive kinds suitable for Horticultural Society.—Mrs. R. W. L., Wheatley, Ont.

Among the best late pink varieties are *Modeste Guerin*, *Livingstone*, *Marechal Vaillant*, and *Claire Dubois*. Some standard kinds suitable for Horticultural Society would be *Duchess de Nemours*, *La Rosiere*, *Festiva*, *Madame Calot*, *Edulis Superba*, *Felix Crousse*, *Victor Hugo*, and *Augustin d'Hour*.

Salpiglossis

Is it better to sow *salpiglossis* seed in flats and transplant or sow directly in ground and leave without transplanting?—F. B. D., Branchton, Ont.

It is best to treat *salpiglossis* in much the same way as aster. If sown in flats and transplanted, earlier blooming and stronger plants result.

Begonia Leaves Dropping

We have a back-yard garden which when everything comes up, will I am sure be a sight. We have 71 varieties of flowers, annuals and perennials, 25 Prize dahlias, 30 rose bushes, some of which are now in bloom. I have a tall begonia which seems healthy, but the leaves are dropping one by one, and am enclosing leaf which has just dropped showing the condition. Can you tell me the reason? There does not seem to be any blight. Could I slip off the stem, and make two or three other plants.—Mrs. G. H. R., Toronto.

Our correspondent's letter is interesting reading, and we wish her every success in her garden efforts. The begonia condition is apparently brought about by a check of some kind. It is not stated if the plant is in the house or planted in the garden. If the former, we advise

cutting back hard, and when the plant begins to make new shoots, repot breaking away some of the old soil, potting back into the same or a little larger pot. The cutting back would do no harm if the plant is in the garden. The cuttings would be rooted readily in light soil, and the young plants should speedily grow away from the trouble mentioned.

Celery Rotting

Last year our celery was a failure. It seems to be of good quality and in good condition when packed in root cellar, in dry earth, but shortly it commenced to decay at the heart and we lost most of it. Our celery is grown in trenches. Could you give us an idea of the cause of our failure. Would you recommend leaving it outside all winter?—Hospital, Petrollea, Ont.

We have found that celery rotting at the heart is caused by the tarnished plant bug which punctures the stem and allows the bacteria to enter. The best remedy found so far is tobacco dust impregnated with Nicotine to 1%. We generally use this in combination with Bordeaux, sulphur and lime, all being used in the dust form. This dust has proved satisfactory over a period of three years with commercial celery growers, and may be obtained from the Niagara Brand Spray Company, Burlington, who make it up.—Prof. A. H. MacLennan, O.A.C., Guelph.

It is possible to keep celery outside by replanting close together in a pit covering the top with boards. Ventilation must be provided and soil kept away from the tops of the plants.

Jerusalem Cherries

When should Jerusalem cherries set in garden in spring, be taken up and how treated for best results?—F. B. D., Branchton, Ont.

Jerusalem cherries may be lifted in September by which time the berries should be well set. They should be taken up and potted carefully and kept in a shady sheltered place or in a cold frame until established in the pots. Take indoors as soon as there is danger from frost and if then kept in a light airy place they will gradually ripen berries without shrivelling.

Rose Bushes

Are rose bushes that have been grown in greenhouses by florists any good for planting out in the garden.—Mrs. R. W. L., Wheatley, Ont.

These plants are used in numbers by rose growers, and are usually found well-worth growing. There is no reason why they should not be planted freely, the only difficulty being that it is impossible to secure more than a few varieties.

Grape Vine

My Rogers grape vine (fruit is sort of brown color), is not fertile and few grapes set. What variety should be grown to fertilize it?—F.B.D., Branchton, Ont.

Any strong growing variety favored by the enquirer would be suitable for this purpose.

What Shall We Plant in the Fall

W. T. Macoun, Dominion Horticulturist

THERE is such a rush in the spring to get seed sowing and planting done in good time that anything that can be accomplished in the fall to lessen the work in the spring should be done and particularly where fall planting is preferable.

At the Experimental Farm, Ottawa, it has not been found satisfactory, taking one year with another, to plant trees of any kind in the fall. Exposure to the long, cold winter beginning shortly after transplanting is not favorable to the trees. Any which will be below the snow-line, however, have a much better chance, although in soils where there is danger of heaving, late fall planting is unsafe.

Shrubs and Perennials

When low-growing shrubs and herbaceous plants are planted in the fall, which is a good time, the sooner it is done the better after the soil becomes moist enough to ensure their not dying from lack of moisture. When set out early, the plants have a chance to take root again before winter; and in the case of herbaceous perennials to make some growth.

Raspberries

Raspberries, gooseberries, and currants may be planted successfully in September. The advantage over spring planting is, if any die they may be replaced in the spring, whereas if planted in the spring it is too late to replace them,

and a season's growth is lost. If strawberries are planted in the fall they should be planted in September or before to ensure their rooting well and lessening danger from heaving.

Bulbs

As soon as bulbs can be purchased in the stores they should, if desired, be procured and planted at once as the longer time they have in the ground before winter the better the bloom is likely to be in the spring. The bulbs referred to include tulips, narcissus, hyacinths, crocus, squills, and other hardy kinds.

Rhubarb and Asparagus

The fall is a good time to plant both rhubarb and asparagus. They may be planted with success any time between now and winter.

Seeds

Usually there are good results from planting seeds of herbaceous perennials, trees, and shrubs in the fall. The action of the frost, especially on tree and shrub seeds, makes germination easier. When seeds of perennials are planted in the fall it is best to wait until just before winter sets in to make sure that the seed will not germinate before winter as if seed germinates a short time before winter the seedlings are liable to be killed. Seeds of trees and shrubs, however, and especially of fruits, should be planted as soon as ripe so as to prevent their becoming dry. Usually fall planted seeds germinate very early in the spring.

Repairing the Wounded Tree

IN the case of really large trees that demand attention it is perhaps wise to secure some professional assistance. For the owner doing his own work, or who likes to have something to say as to how it shall be done, a little knowledge on the principles of repairing is of great assistance in the actual work. Wounds heal by means of a callus forming on the growing tissue between bark and wood. The old wood takes no part in the healing process, but is just covered when healing is complete. Dressing will not hasten the process, but will keep the wood from decay, or in other words, the whole object in dressing a wound is to protect it. Simple methods of treating a tree wound are cleaning and trimming.

In cutting away stubs or diseased branches, cut close to the base of the branch and wherever possible let the cut be parallel to the axis of the trunk or limb. If the repairing is demanded by the splintering of a branch the same kind of cut should be made. To help the formation of the callus previously mentioned it is a good plan to trim the

margin smooth with a sharp knife. That the actual shape of the wound being treated has some effect on the time required for healing is a point insisted on by some tree experts, but this is rather a matter for expert than amateur attention. In the case of damage by accident or the biting of animals all ragged pieces of bark should be cut off and the margin trimmed smooth; in every case take away any projecting strips of dead bark.

Waterproofing is the operation that chiefly concerns the amateur repairer, care or neglect in this connection having a great deal to do with the healing process expected. It should be remembered that quick-growing trees heal more rapidly than, say, an oak, and as it is more particularly the latter kind of tree that we usually want to save, it follows that the greatest care should be taken. Small cuts if properly done need no treatment, but all larger cuts on trees that are valuable should be given some covering, the obvious reason being to keep out the wet. The paint merchants insist that pure paint

is sterilizing in its action. If this be correct a coat of paint on a tree wound after trimming not only waterproofs but disinfects. In any case, a simple paint made of lead and linseed oil makes a satisfactory coating for any but large wounds, and if renewed occasionally, is all that is necessary. Coal tar is perhaps more permanent; grafting wax is sometimes used, though this is usually counted out on the score of expense.

Boards or flat stones placed under melons will cause them to ripen more evenly. Occasional turning of the melons will also cause more even ripening.

Watering the Gladiolus

Mrs. Geo. A. Bonisteel, Belleville, Ont.

AS the gladiolus is a hot weather flower it is usually necessary to provide water at some parts of the season to get best results.

Water is most needed as the blooming period approaches, and if showers are not sufficient to satisfy the plant's needs, apply water, giving a thorough wetting. Cultivate a few hours later, to prevent a crust forming. If done in this manner, it is not necessary to water again for several days.

After blooming, unless a severe drought occurs, little water will be required.

TIMELY REMINDERS

Now is a good time to prune up currants and gooseberries. Old canes of raspberries should be removed and burned now.

Towards the end of August, pinch the growing ends off tomato plants, to force all the nourishment into the growing and ripening of the fruit, which has already formed.

Keep the aphid in check on nasturtiums, asters, etc., by spraying with tobacco preparations like black leaf 40, nicotine, etc.

Sweet pea flowers should be continually picked. If seed pods form the plants will stop producing. Keep the vines well watered.

Most of the plants intended for winter growing will now need re-potting. Those in the garden should be gone over and prepared for lifting in a few weeks.

In the fall a dressing of well decomposed manure may be spread over the lawn to stimulate the next season's growth. A good substitute is commercial fertilizer, 300 pounds to the acre. If the lawn suffers from drought the former is recommended. Occasionally an application of nitrate of soda in spring is worth while, using 250 pounds to the acre in two sowings a few weeks apart. —A. H. Tomlinson, O.A.C., Guelph, Ont.

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HORTICULTURAL SOCIETIES

Ontario Gladiolus Society

THE first annual exhibition of the Ontario Gladiolus Society is being held at Alma College, St. Thomas, on August 23 and 24. This is a new venture but one which is worthy of the support of the gladiolus growers of Ontario. The first exhibition is being held under the auspices of the St. Thomas Horticultural Society, which is doing a great deal to put this new society on its feet. There are about 50 classes for exhibitors and nearly \$600 being offered in prizes. Not only amateur growers but societies are asked to take an interest and cooperate in this exhibition. Prize lists may be secured from P. S. Dobsou, Secretary, Alma College, St. Thomas.

Welland

Over 400 entries marked the inauguration of the first annual Rose Show of the Welland Horticultural Society. It was quite a successful event. The silver cup for the best single rose and the Rotary Club cup for the best display of roses were awarded to T. J. Dillon. The Cooper cup for the School Children Exhibit went to a country school. The marvellous and abundant display of roses was a substantial foundation for Welland's claim to the title of Rose City.

St. Thomas

THE local horticultural society will have as its guests on August 23 and 24 the Ontario Gladiolus Society and flower lovers generally. Those who attended the A.G.S. exhibition in 1921, will have pleasant memories of the profitable and pleasant time that they had. The Ontario show should be equally as good. The same beautiful parlors and class rooms at Alma college, will be used, thanks to the public spiritedness of the board of directors.

The St. Thomas Society gladiolus garden has been doubled in capacity and will contain innumerable new varieties donated by growers, from Canada, the United States and Europe. The social aspect has not been overlooked and it is planned to have an even better time than in 1921, including a banquet at Port Stanley and a drive through the city under the auspices of the Kiwanis Club. A hearty welcome is extended to every visitor.

Hardy Phlox

THESE great gorgeous panicles of flowers are now appearing in almost every garden. Phlox has wonderfully improved within the past few years. Some real flowers are now available. The old time Hardy Phlox gave us more of the dark colors while the newer varieties run almost together to the lighter and softer shades of color. On account of the fact that Phlox have such glowing and vivid colors it is necessary to use great care in planting. The colors must be placed in such relation to each other that harmony will prevail in the color scheme. One would not use a scarlet and a pink in combination. The pink and white together with the mauve can all be worked out in beautiful combinations of color, which will make a delightful view to the eye and produce a beautiful and cooling landscape.

In selection of Hardy Phlox one should pick out the varieties best suited to individual taste and to fit the particular place in the garden, where the plants are to be set. The proper time to plant Hardy Phlox is during September and early October. It is a very good idea to plant Phlox in the Fall because they will then produce good flowers the following summer.

Dividing Perennials

Many people will be splitting up old clumps for increase this time of the year, and the method usually recommended is to transfix the clump with two forks placed back to back and so wrench it in two without risk of cutting the roots. Some clumps can be broken up very easily in this way, but others prove very obstinate and for such I find it an excellent plan to split with a knife down the centre of one of the old flowering stems, extending the split right down as far as possible. In this way it is easy to divide the most obstinate clumps without harming the roots. I was dividing some old clumps of *Inula glandulosa* the other day and found the two-fork plan almost useless. The new growths, being very brittle, were easily broken off by the forks, but by splitting down the old stems, division was easily effected.—Gardening Illustrated.

Control of Cucumber Beetle

THERE have been so many remedies recommended for striped beetles that I hesitate about adding another one to the list, but as we got fine results last year, I will mention the mixture we used.

The flea beetle is more or less of a nuisance with us and last year we tried a mixture of lime, Bordeaux and arsenate of lead as a dust for this beetle. The mixture was made up of 65 pounds of hydrated lime, 20 pounds of powdered Bordeaux and 15 pounds of arsenate of lead and applied with a dusting machine.

The first application was put on just as the cucumbers and cantaloupes broke through the ground and was followed by two other applications about ten days apart. This mixture not only handled the flea beetle but was equally as effective in handling the striped cucumber beetle.

Several other growers tried the same mixture and reported that they were able to keep the striped beetle in check. As may be well known, the beetle will attack the young plants just as soon as they break through the ground and for that reason it is necessary that the first application be at this time. It is also a good scheme to firm the soil around the small plant with the foot or a hoe to assist in keeping the beetle from getting under the small leaves.

We have tried other mixtures and other methods, but this mixture has been most satisfactory.—Market Grower's Journal.

The Japanese barberry, snowberry, and coral berry are good dwarf shrubs that do well in the shade. Bush honeysuckles, elderberries and nine bark are tall shrubs to be used in the shade.

Kerosene for Lawn Ants

To get rid of lawn ants entomologists of the United States Department of Agriculture suggest drenching the nests with boiling water or pouring in a small quantity of kerosene oil. Similar treatment may be applied to nests between or beneath paving stones. Spraying the lawn with kerosene emulsion or with very strong soap wash is also recommended. For large ant nests bisulphid of carbon injected into the nest by means of an oil can or a small syringe is recommended to kill the ants. The fumes of bisulphid of carbon have a very disagreeable odor and are inflammable, but they are not injurious to higher animals in the open air.

Kerosene emulsion made up of fourteen parts soap suds and one part kerosene is the best spray for green aphids. Black Leaf 40, or any nicotine preparation will also usually kill them with one or two applications.

A strong application of arsenate of lead is better than Paris green for potato bugs, as it does not burn the leaves.

CORRESPONDENCE

Editor, THE CANADIAN HORTICULTURIST:—

There is a species of poppy called Ryburgh Hybrid, a *Ranunculus Shirley*. I have had it in bloom from the first of June and those transplanted are still at it. They were planted in early March coming up strong and thrifty. The flower is the most delicately beautiful pink seen in poppies and no insects trouble them.

It is a sorrow to me, however, to find honey bees swarming over them in the early forenoon. Where the green aphid is abusing every flower that benefits our bees, these poppies with no enemies are so damaging to these workers. What can we do about it. A. Kunder Glory is growing beside a poppy with five open flowers and this morning a poor drunken bee was trying to get a hand hold of the ruffle of "Miss Glad." It was pitiful.

These poppies bloom so well and come between the iris, roses and other perennials and the asters, dahlias, cosmos and gladioli. It is up to us flower growers to find a way to grow them without injury to our friend bee, but if they are a danger they must go with the weeds.

My future experiments, so far as I am concerned will be to prepare my onion bed this fall, planting three rows of onions and then one row of poppy as a neighbor told me that onions are free from the onion root maggot, grown with poppies. Then probably the onion odor being too strong for the fine sensibility of the bee, she will shun "Miss Poppy" as she ought. However this is only a surmise yet and must be worked out.

The asters I planted with tobacco stems under their feet are looking great. That is where I would keep the tobacco: make it a servant of mankind instead of a slave master. My first "glad" was open Saturday, July 15. Four are open now and one is due to-morrow.

—Mrs. Clara-L. Taylor, Dutton, Ont.

In sowing lawns, for ordinary purposes use the following in the proportions required. The quantities given are for the acre.

Kentucky Blue, grass, (<i>Poa pratensis</i>)	.....	50 lbs
Red top, (<i>Agrostis alba</i>)	.....	20 lbs
English rye, (<i>Lolium perenne</i>)	.....	10 lbs
White clover, (<i>Trifolium repens</i>)	.....	2 lbs

The first two grasses are quite tenacious and persistent. These possess creeping rootstocks which produce runners and leafy growth. The rye is quicker in growth and makes a good sward readily, but dies usually in the second year. White clover aids in making a thick mat-like surface and crowds out weeds. For tennis courts it should not be sown, as it readily holds moisture after rains or dews and makes the courts wet and slippery.—A. H. Tomlinson, O.A.C., Guelph, Ont.

**CANADIAN
HORTICULTURAL COUNCIL**

Current Activities

L. F. Burrows, Secretary-Treasurer, Ottawa.

IN refusing to consider the representations made, requesting the omission of the tax of 5 cents a gallon on pure fruit juices used in the manufacture of beverages, the minister of finance did not recognize the horticultural industry as a factor in Canadian agriculture. It was previously pointed out that pure fruit juice was the only agricultural product to be taxed. It appears therefore, that the Canadian Horticultural Council must become more impressive before it can hope to obtain the recognition it deserves.

Probable Barrel Shortage

From the information received from the barrel manufacturers, it does not appear that the apple growers in the barrel sections have given sufficient consideration to the suggestion of a possible shortage of barrels for the coming crop. The prospects for the apple crop have not materially changed since the survey of the available barrel material was made and the possibility of a shortage still exists. Growers are therefore again urged to immediately place orders for at least a portion of their barrel requirements.

Standards for Jams and Jellies

After considerable correspondence the secretary is still endeavoring to secure a definite statement from the department of health and from the department of agriculture as to their policies regarding the enforcement of the standards for jam, marmalade and jelly. It appears that the present standard cannot be enforced, but their non-enforcement, as long as they are upon the statutes, is working very considerable hardship, not only upon the manufacturers of these products, but upon the Canadian fruit industry.

The Council takes the stand that if definite standards were set and rigidly enforced the demand for fruit by the manufacturers would be very materially increased.

Edmonton Potato Growers

The following resolution was unanimously passed by the Edmonton District Potato Growers Association, at its annual meeting in Edmonton, on July 8:

"That we heartily endorse the recommendation of our board regarding securing representation on the Canadian Horticultural Council, and do nominate W. F. Broadstock as our representative."

Mr. Broadstock writes that considerable interest is being manifested in his district in the work of the Council and that he is making every effort to place the objects and principles of the Council before associations in other districts.

Potato Freight Rates

The secretary feels that the reduction in the freight rates on potatoes, which comes into effect on Aug. 1, is a direct result of the representation made by the Council to the special committee of the House of Commons which investigated freight rates. In the report of the committee it was announced that potatoes were to be considered as a basis commodity and would therefore benefit under the reduced freight rates for such commodities. The terms of the judgment in this connection handed down by the Board of Railway Commissioners are as follows:

"On the articles, other than grain and flour, hereinbefore referred to as basic commodities, namely—forest products, building material, brick, cement, lime and plaster, potatoes, fertilizers (other than chemicals), ores, pig-iron, blooms, billets, wire rods, and scrap iron, a decrease of 7 1/2 per cent, from the increase given by General Order No. 308 and any other orders affecting the said commodities issued since that date, which will hereafter leave the increase granted by said General Order No. 308, in Western Canada, at 12 1/2 per cent., and, in Eastern Canada, at 17 1/2 per cent."

PEONIES AND IRIS

I have to move a large block of Iris in August, and Peonies in September and October. While digging I will fill orders at special low prices.
12 IRIS, my choice, all different, named, good assortment, by express. \$1.00 or sent post paid for 30c extra.
3 PEONIES—Fine cut flower, perfumed varieties. Red, White and Pink, good strong divisions, post paid for..... \$1.00
10 NAMED PEONIES—A really choice assortment, would total \$10.00 value elsewhere, by express, for \$5.00
Plant Iris in August, and Peonies from September till freeze-up for best results.
Fine stock of all climate tested Perennials. Grown in Canada, priced low.

J. H. CALLANDER

"The Flower Bargain Man"

575 WELLS STREET, PETERBORO, ONT.

VAN GINHOVEN & CO.

32 Pearl Street

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Your address for Holland-grown Hyacinths, Tulips, Crocus, Gladioli, Iris, Paeonies and all miscellaneous bulbs and roots. Please write for illustrated catalogue.

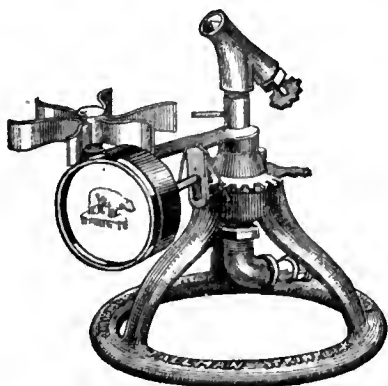
Franklin Peonies

Our own Mabel L. Franklin, W. F. Christman, June Day, Ball O'Cotton, A. M. Slocum, E. W. Becker, and Serene, all prize winners; also all the newest European and American introductions. Send for new price list or catalog if you do not have a copy.

FRANKLIN NURSERY

200 W. 58th Street, Minneapolis, Minn.

Tallman Rotary and Oscillating Sprinkler



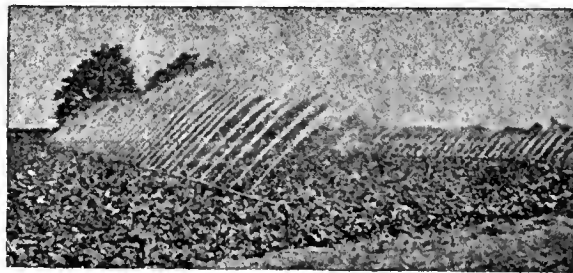
Lack of rain need not wither your lawn this summer if you have a Tallman Rotary and Oscillating Sprinkler. Its spray like natural rain keeps your lawn and shrubbery fresh in the driest weather.

Tallman Rotary and Oscillating Sprinklers are adjustable, simple and durable. Sold by hardware dealers. Price \$10.00.

For Pipe Line Installation for Market Gardeners, Sprinklers are sold without base. Price \$8.00.

Tallman Brass & Metal Limited
HAMILTON, ONT.

INDEPENDENCE



The one thing that a Grower or Gardener cannot rely upon with absolute confidence, is that Nature will distribute her gifts with lavish hand.

How often is it true, that just when a crop needs rain to bring it to maturity, or to save it from failure, the rain refuses to come?

Why Not Be Independent of Nature ?

Independence of Nature on the part of the Grower or Gardener can only be provided by

OVERHEAD IRRIGATION

Which Gives

RAIN WHEN NEEDED

A method which never fails, never disappoints, but which, coupled with proper planting and proper cultivation absolutely assures a bumper crop.

Write for Catalogue

CANADIAN IRRIGATION LIMITED

Builders of Overhead Irrigation Equipment
146 JARVIS STREET, TORONTO

ONTARIO LADIES' COLLEGE

WHITBY, ONT.

COURSES: — Academic, — Public School to second year University. Music — Piano, Singing, Violin; Domestic Science, Commercial, Art, Elocution, Civics.

Established nearly fifty years; ideal city—country school, 28 miles from Toronto; 100 acre property; gymnasium, swimming pool, etc; all outdoor sports.

For calendar and booklet apply to, Rev. F. L. Farewell, B. A., Principal.

A School of Ideals and an Ideal School

RE-OPENS
Sept. 12, 1922
Golden Jubilee Year
1924

OTTAWA LADIES COLLEGE RESIDENTIAL AND DAY SCHOOL FOR GIRLS

Founded 1870

Matriculation Course, Music, Art, Household Science, Games, Gymnastics and Riding.

For particulars apply to the Principal,

MISS I. J. GALLAHER, Ottawa Ladies College,

Re-opens September 13th

New Fireproof Building

OTTAWA.

PERRY'S SEEDS

Alpine and perennials unique collections; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate
HARDY PLANT FARM, ENFIELD, ENGLAND

APPLE BASKETS

Ship your early apples in baskets, avoid the barrel shortage.

PORT HOPE BASKET FACTORY,
Port Hope, Ontario.

THE WESTERN FAIR

LONDON, ONTARIO

September 9th to 16th, 1922

Growers of FRUITS and FLOWERS Send
for a Prize List

Liberal prizes—good classification. Interior of Horticultural Building changed this year, giving more room for display.

Send for prize lists, entry forms, etc., to the Sec'y.

J. H. SAUNDERS, President

A. M. HUNT, Secretary

A-1 QUALITY

Standard Apple Barrels

We can make prompt shipment of properly manufactured, high grade apple barrels, delivered in car lots, freight prepaid your station.

340 Barrels Make a Car Load

Place your order now and protect your requirements by writing, phoning or wiring.

TRENTON COOPERAGE MILLS

TRENTON, ONTARIO

LIMITED

Nursery Stock Shortage

AFTER a very careful investigation and as a result of information gathered from nurserymen in both Canada and the United States, the secretary of the Council advises that the supply of fruit trees, particularly apple, pear, plum and cherry, for planting this fall and next spring will be the lowest for a number of years, and considerably less than for last fall and this spring, when there was not an adequate supply to meet the demand.

In view of the time it takes to propagate fruit trees, nurserymen are still in the high priced period. The fruit trees that nurserymen are selling this year represent the highest cost of any trees produced within the last 30 years.

In the case of apple trees, the greatest shortage will be felt in commercial varieties most used in Ontario and Nova Scotia, such as King, Stark, Wagener, Gravenstein, Golden Russet, Grimes Golden, Baldwin, R.I. Greening, and Red Astrachans.

To Jam Manufacturers

A CIRCULAR for the information of jam manufacturers was issued from Ottawa on July 4, over the signature of J. A. Amyot, Deputy Minister of Health. As the instructions therein contained indirectly concern the welfare of the fruit industry of this country, the circular is here reprinted in full:

"In the amendments to the regulations under the Food and Drugs Act which have just been passed by Council, paragraph 10 of Standard IX. "Fruit and Fruit Products" (Page 18, regulations under Food and Drugs Act), is cancelled and the paragraph given below substituted:—

"When jam, marmalade, fruit, butter or jelly contains other fruit or fruit juice than that which gives its special name to the article, the fact of the presence of such other fruit shall be stated upon the label, in lettering as large and as distinct as that used in naming the fruit principally present. The requirement does not apply to the use of 10% of other fruit juice, such fruit juice having a pectin content of not more than .75% (or the equivalent in pectin preparation or fruit juice of pectin content other than above) as may be determined by analysis."

"This Regulation is now in force."

Fruit Beverages

IN the opinion of the Council the regulations of the Dominion Department of Health are not being enforced which require that, "when a beverage bears the name of a fruit, without limiting words, it is understood that the actual juice of such fruit has been used in its preparation. If instead of the actual fruit juice, artificial flavor has been used, the beverage must be labeled as imitation or artificial, and the lettering must be plain, legible and conspicuous, and on the main panel of the main label. "If artificial color has been used, the word colored or dyed must similarly appear on the label."

The Council is of the opinion that such regulations as were given wide publicity by the department of health in a circular letter under date of March 14, 1921, should be rigidly enforced and the following resolution was therefore, passed at its meeting:—

"Whereas many of the advertisements appearing in the public press and in various other publications, also on billboards with respect to non-intoxicating beverages, are deceptive in character inasmuch as they convey to the prospective purchaser that said beverages are made of pure fruit juices, and

"Whereas we have reason to believe that many of these do not contain any fruit juice whatsoever, and that the federal government have confirmed this belief by analyses, and

"Whereas such practices are detrimental to the best interests of the consumer, the fruit industry and manufacturers of pure fruit beverages;

"Be it resolved that we respectfully urge

upon the federal government that the regulations with respect to pure foods as applied to beverages be rigidly enforced, and if such regulations do not afford full protection to consumers, producers and manufacturers, that these be amended accordingly."

The resolution was forwarded to the minister of health and considerable correspondence has since taken place in an endeavor to have that department definitely state that the regulations will be strictly enforced, or otherwise changed as requested in the resolution.

The secretary has now been assured by the department that the Act and regulations will be enforced as far as it is possible. The Council believes that if the regulations are enforced and all beverages bearing fruit names contain fruit juices, the demand for fruits will be very materially increased.

BRITISH COLUMBIA

Fault of B.C. Growers

THE importation of American berries when B.C. growers can easily supply all needs of the market, especially when those importing such berries must take a loss, is a situation that calls for caustic comment. We feel it our duty to lay the blame for such a situation where it properly belongs. Careful analysis compels us to lay the blame primarily on the growers of B.C., who are shipping independently a large quantity of uncontrolled L.C.L.'s, not only to the jobbers, but to the retail trade as well. The trade could easily absorb more berries but these L.C.L.'s so affect the price, that the jobbers maintain they cannot pay the amount asked for pre-cooled car lots. The bringing in of American berries seems like an endeavor to force the price of B.C. pre-cooled to a point where the wholesaler can compete with these local shipments. This is how a prominent dealer here puts it: "As long

as we cannot make a profit by handling B.C. berries, we claim the right to import from the United States."

The danger of further importations, despite occasional loss, still remains. The effect upon B.C. berries must always be a tendency to glut the market, use up purchasing power, and last, but not least, to demoralize prices. Again we emphasize the fault lies with the independent shipper of the L.C.L.'s and we see no remedy in sight until all the B.C. "Growers" unite, stop indiscriminate shipments, ship in car lots and thus give the jobbers a chance to make a profit in handling our produce.—B.C. Markets Bulletin (Calgary).

Grading of Apples

THE new grades for apples adopted at the Dominion Fruit Conference held at Ottawa, in February, which proposed to do away with the No. 1, No. 2 and No. 3 grade names for box apples, substituting Extra Fancy, Fancy and "C" grade in their place, will not be enforced this year. We will publish the requirements of the new grades as soon as the information is available. This change will mean more uniformity in pack and color. The change was long past due. Growers will adapt themselves to the change very quickly. It would be well to practice on this season's pack. Following are the American grades which are similar to what the Canadian will be:

Extra Fancy apples are defined as sound, mature, clean, handpicked, well-formed apples only, free from all insect pests, diseases, blemishes, bruises and holes, spray buras, limb rub, visible watercore, skin punctures or skin broken at stem, but slight russetting within the basin of the stem shall be permitted.

Fancy or second grade apples are defined as apples complying with the standard or Extra Fancy grade, except that slight leaf rubs, scratches, or russetting shall be permitted up to a total of ten per cent. of the surface, and provided that

PAEONIES

Paeonies and Gladioli are our principal crops. Of these we grow about seven acres. In Paeonies we have a number of the newer varieties, such as Lady Alexander Duff, Baroness Schroeder, Lord Kitchener, Alsace Lorraine and others.

List on Application

CAMPBELL BROS.

Simcoe,

Ontario

APPLE BARRELS

New, standard-machine made, best quality. Delivered anywhere in Ontario and Quebec. Write for prices.

Contracts made with Fruit Associations and others.

JOHN HAYNE

SARNIA,

ONTARIO

Buy Your Bulbs

Direct From the Actual Grower.

Hyacinths, Tulips, Daffodils, Crocus and all other kinds of Bulbs and Roots.

Descriptive List upon Application. Best Quality at Reasonable Prices

PAPENDRECHT-VANDERVOET

Bulb and Plant Growers

Dahlia Specialists

Sassenheim,

Holland

CANADIAN NATIONAL EXHIBITION

TORONTO

SATURDAY, AUGUST 26

—TO—

SATURDAY, SEPT. 9

NEVER ON A BIGGER SCALE

BOXED APPLES

Bring Better Prices

When packed in quality boxes

In addition to large orders we are especially equipped to supply

APPLE BOXES

either made-up or in shooks, in small quantities to the individual grower.

Let us quote you our attractive prices on your needs for this season.

Barchard & Co.

LIMITED

135 Duke St.,

Toronto, Ont.



The Imperial Oil brand represents reliability and uniform high quality. No matter where Imperial Farm Lubricants are sold or who buys them, every gallon will give the greatest amount of good lubrication which can be bought for its price.

Binders, trucks, mowing machines, automobiles, tractors—all farm machines—will run better and work better, will need fewer repairs, will cost less to keep up and will last longer if the right Imperial Farm Lubricant is used for each of them

IMPERIAL Lubricants

FOR ALL FARM PURPOSES

IMPERIAL POLARINE OIL
IMPERIAL POLARINE MEDIUM OIL
IMPERIAL POLARINE HEAVY OIL

For gasoline-burning engines—automobiles and trucks.

IMPERIAL POLARINE SPECIAL HEAVY OIL
For kerosene-burning stationary engines and tractors.

IMPERIAL POLARINE EXTRA HEAVY OIL
For motors requiring an unusually heavy oil.

IMPERIAL PRAIRIE HARVESTER OIL
IMPERIAL GRANITE HARVESTER OIL
For open bearings of separators, binders, etc.

IMPERIAL CAPITOL CYLINDER OIL
For steam cylinder lubrication—tractors and stationary engines

IMPERIAL GAS ENGINE OIL
For stationary or portable engines, kerosene or gasoline.

IMPERIAL POLARINE CUP GREASE
IMPERIAL THRESHER HARD OIL
For grease cup lubrication—clean, solidified oils.

The Imperial Charts of Recommendations show exactly what grade of Imperial Polarine Motor Oils will give the best results with your type of truck, tractor or automobile. Further information will be gladly supplied by the Imperial Oil man—an expert on lubrication.

IMPERIAL OIL LIMITED

Canadian Company

Canadian Capital

Canadian Workmen

scab spots not larger than one-quarter inch in diameter in the aggregate shall be permitted in this grade.

"C" or third grade is to include all other merchantable apples free from infection except apples with bruises in which the skin is broken or bruised larger than one-inch in diameter. Healed stings to be allowed. Apples showing effects of freezing will not be admitted under this grade. Apples of this grade must not be marked "Choice."—B. C. Markets Bulletin, (Calgary).

Practically all the apple wrapping paper used in Australia is imported from Norway and Sweden. A thin tough white tissue paper is used. The size is 20 by 20 inches, not to exceed 8½ pounds per ream, packed in bales containing 24 reams of 480 sheets. About 2,500 bales are required for a normal season.

Since the announcement by the American Farm Bureau Federation that the Federated Fruit Growers had established a national sales agency which would be ready to handle the business of co-operatives next Jan. 1, Manager A. R. Rule, 603 S. Dearbourne St., Chicago, has been in receipt of a large number of telegrams from growers' representatives endorsing the contracts and assuring a profitable tonnage from the very beginning.

MARITIME PROVINCES

United Fruit Companies

THE tenth annual meeting of the United Fruit Companies of Nova Scotia was held at Kentville on June 27. There were about 300 in attendance. President F. W. Bishop was in the chair. The United Companies now number forty-nine, there being an unusual increase in new companies during the year. Seven co-operative companies applied for and were granted stock, becoming members of the shareholding concern.

President Bishop gave his annual report reviewing the year's business, its successes and shortcomings. Where conditions were adverse he drew particular attention to the more satisfactory business conducted in Great Britain with the firm of J. and H. Goodwin, Manchester, and the placing through that port of over 25 per cent. of all apples exported. He reminded the apple growers present that the Annapolis Valley was without doubt the most desirable apple district in Canada and the acquiring of large orchard areas by foreign capital and speculators is an index to that fact and should increase the faith of all fruit growers in the future of the industry.

N. A. Osborne, of Waterville, called attention to the pre-cooling of fruit as mentioned in the president's report, and he spoke of this new operation for use at Waterville when the fruit season opened in August. General Manager

READERS

If you have more Iris, Peonies or other perennials of good varieties than you need for your own use, why not advertise them for sale through THE CANADIAN HORTICULTURIST. Some other readers may want just what you have.

A classified advertisement would not cost much—5c per word, each word, initial letter or group of figures counting as one word. For classified advertisements, cash must accompany order. Try one for September. Let us hear from you by August 20.

A. E. McMahon said the companies had no responsibility financially for the pre-cooling station to be constructed. Two thirds of the cost was being paid by the federal and the balance by the provincial government.

General Manager McMahon presented his annual report. He dealt with market conditions, shipments made, transportation, etc. As regards the latter, he stated that the Furness Withy Company had during the last year provided the best transportation that the companies had ever enjoyed during any season since incorporation. The companies exported the large quantity of 527,397 barrels, nearly half of the apples exported

and over one quarter of all fruit grown. Better packing had been maintained and only six per cent. of all fruit exported was reported as slacks. The United Fruit Companies brand is now well established on the export market and is in good demand.

Reports were presented by S. S. Selfridge, representative sent out to the Western Provinces, Inspector Ramsey, Inspector Westcott, on potatoes, and R. N. Clark, representative who annually visits Havana looking after the potato shipments. Captain J. W. Salter was able to report a very good year in the business of the canning factory and cider plant.

W. S. Blair, director, Experimental Farm, Kentville, was called upon to give his report on fruit conditions as he found them while in England attending the Imperial Fruit Show, and he most satisfactorily dealt with the subject.

All the officers were re-elected as follows: Pres., F. W. Bishop, Lawrencetown; vice-pres., E. H. Johnson, Wolfville; sec.-treas., K. L. Pineo, Kentville; auditors, Oxley and Johnson, Halifax.

Berwick usually leads the rest of the Annapolis Valley in the early shipment of seasonable fruit. This year this great apple producing section established a record in marketing the first apples of the 1922 crop on July 25. On that date, H. B. Iilsley shipped to Halifax, one barrel and 15 baskets of Astrachans. Can any other fruit section of the Valley beat this?—

Berwick Register

Apple Crop in N.B.

THE apple orchards of New Brunswick give promise of an excellent general crop this year, according to A. G. Turney, Provincial Horticulturist. Early apples such as the Duchess, Wealthy and Dudley, will be a good crop. Fameuse and McIntosh, the dessert varieties which brought fame to New Brunswick at the Imperial Fruit Show at London, last year, will also bear well.

The winter varieties will be half a crop. This, however, is not unusual, as on account of climate conditions such varieties as Bethel, Ben Davis and Bishop Pippin never yield heavily in New Brunswick. Unfortunately, scab has been caused by continued rainy weather, and the appearance of the fruit will cause lower grading on the market.

PLANT PEONIES THIS FALL

	Each, Post Paid
Albert Crousse, Shell-pink.....	\$0.80
Asa Gray, Lilac.....	0.75
Avalanche, White.....	1.00
This is the Peony that took First Prize for Best Bloom, at the Peony Show at London this Spring	
Dorchester, Hydrangea Pink.....	0.60
Floral Treasure, delicate Pink.....	0.60
Golden Harvest, Pink, Yellow and White.....	0.60
L'Eclatante, Crimson Red.....	0.50
Mme. Lehon, Cherry Pink.....	0.60
Mar' Gerard, Hydrangea Pink.....	0.80
Modeste Guerin, Solferino Red.....	0.75
Mme. Ducl, Silvery Pink.....	0.75
Mme. Mechla, Purplish Garnet.....	0.75

STRONG 3 TO 5 EYE DIVISIONS

- 25 Single Early Tulips
- 25 Darwin Tulips
- 18 Mixed Iris
- 12 Hyacinths
- 15 Trumpet Daffodils
- 15 Forcing Narcissus
- 4 Mixed Peonies

Each Item \$1.00, Post-paid. Six for \$5.00 Post paid
Write for Catalogue

Mornington Gladiolus Gardens
STRATFORD, ONT

VAN'T HOF & BLOKKER

HEILOO, HOLLAND

Dutch Bulbs, Paeonies, Roses, Gladiolus.
Fall and Spring Importations.
Write Canadian office for lists.

430 BRUNSWICK AVE. TORONTO, ONT.

ONTARIO GLADIOLUS SOCIETY

1ST ANNUAL EXHIBITION

ALMA COLLEGE, ST. THOMAS, ONTARIO
"The Flower City"

AUGUST 23 and 24, 1922

50 Classes for Growers, Dealers, Amateurs and Horticultural Societies—Nearly \$600.00 in Prizes.
See the Trial ground (official A.G.S. Gladiolus Plot) of the St. Thomas Horticultural Society. 100,000 bloom in 500 varieties. Band concert, organ recital, Kiwanis fun, sight-seeing trip, banquet. Prize list and information upon application to
Frank E. Bennett, Perry S. Dobson, Alma College,
President. St. Thomas Sec.-Treas.



We have a large stock of all sizes

FLOWER POTS

FERN OR BULB PANS

AZALEA POTS
and Rimless Pans

Orders Filled Promptly

Send for Prices

THE FOSTER POTTERY CO., Ltd.
HAMILTON, ONT.

APPLE BARREL SHORTAGE

Will not effect the grower who packs exclusively in

GOOD WOOD BOXES

APPLES IN BOXES

Sell Readily
Return Best Prices
Return Sure Profits

We make them—made up or knocked down

FIRSTBROOK BROS. LIMITED

283 KING STREET EAST, TORONTO, ONT.

THREE GOOD QUALITIES

Every grower who sends us his shipments of fruit and vegetables can count on three things:—

- Care in handling his shipments ;
- Promptness in paying his accounts, and
- Lack of mistakes in making payments.

This is the kind of service we consider a commission firm should give its customers. In addition to that, however, you can be sure that we will get you the best prices going, because we supply the best trade in Toronto.

There is one good way to test us—by sending us a trial shipment. If we do not give you good service, naturally we cannot expect you to continue. But we're willing to risk that.

For August send us **P**eaches
Pears
Plums

Send for Shipping Stamps to-day.

WHITE & CO., LIMITED

Front and Church Streets, Toronto, Ontario

Wholesale Fruit Importers and Commission Merchants

Wrapped Fruit

Brings
Better Prices



A well packed box of apples, attractively wrapped, appeals strongly to the city dweller who has not the facilities for keeping a barrel. He is willing to pay a better price for them because he knows they are carefully graded and selected and will keep much longer.

The fruit grower who wants the highest prices will wrap his fruit with

"Safety" Fruit Wraps

8x 9.....	17c.	per ream of 500 sheets
10x10.....	20c	" " " " "
12x12.....	30c	" " " " "
20x30.....	\$1.20	" " " " "
24x36.....	\$1.80	" " " " "

Discounts in quantities.

Other supplies required by Fruit Growers carried in stock at Hamilton. Prices on application.

Buntin, Gillies & Co.
Limited

67-71 John St. South
HAMILTON CANADA

CROPS and MARKETS

On Toronto Market

WITH the exception of a week during the middle of the month and odd days now and then, which were quite brisk, business on the Toronto commission market during July was rather slow, some days being almost dead. In comparison with other lines of trade throughout the city, however, the fruit and vegetable business, as one of the commission firms pointed out to THE CANADIAN HORTICULTURIST, was good. Much unemployment and a lower buying power on the part of most of the employed have curtailed the demand for fruits and vegetables other than the actual necessities. Fancy fruits for eating out of hand or as table desserts seem to be considered this summer as luxuries more than usual. Retailers and hucksters have been cautious in handling fruit in large quantities' and prices generally have suffered accordingly.

Cherries, which slumped badly at the end of June, did not recover much until after the middle of the month. While some were wasty at times, quality and condition was not always responsible for the low to medium prices. The buyers simply would not handle them, excepting at the low figures. After the middle of the month, with sweets about done and sours well on in season, prices picked up spasmodically. At the end of the month, Morellos were selling at \$1 to \$1.50 in elevens.

The peaches during July were mostly of white-fleshed varieties and not much wanted, although occasionally they brought fair prices; on Aug. 1, some extra fancy whites brought \$1.75 to \$2 in elevens. Yellow peaches commenced to arrive during the last week of July and sold around 75 cents in sixes and \$1.25 to \$1.50 in elevens.

A feature of this market is the fact that most buyers prefer to handle peaches in sixes than in elevens. Other factors being equal, sixes usually are snapped up first. The same applies, during the first part of season for each fruit, of most other kinds, especially cherries.

The first pears arrived on July 18, but small and useless. Not until the end of the month were the pears of good enough quality to command attention. Early plums were quite heavy from middle to end of month and sold low. The market was waiting for the better plums of August. Apples in baskets mostly were poor in variety and quality. Good apples sold readily.

Raspberries of good quality and condition sold well all through the month. Blackcaps were in poor demand, and always brought 5 cents or more less than the reds. Blackberries (Lawtons and Kittatinny) came in first about July 20 and sold at 25 cents, and prices ranged between 18 and 25 cents to end of month. Good currants of all kinds and gooseberries constantly were in

strong demand and sold at satisfactory prices. The vegetable market in general was slow. While lots of stuff was moved, only occasionally

PEDLAR'S "PERFECT" TREE PROTECTORS



Protect Your Young Fruit Trees

from damage by mice in
early spring

Mice will "girdle" any fruit tree up to six inches in diameter, in the early spring. When the snow at the base of the trees melts the hungry rodents gnaw the tender bark close to the ground. Thousands of valuable young trees are injured in this way every year, involving an enormous loss to orchardists. But you can easily circumvent the mice by using Pedlar's "Perfect" Tree Protectors. They are made from strips of galvanized metal lath, with a mesh only three-eighths of an inch—100 small for the smallest mouse to squeeze through.

Supplied in bundles of 25. Write for prices.

THE PEDLAR PEOPLE LIMITED

Established 1861

EXECUTIVE OFFICES: OSHAWA, ONT.

Factories: Oshawa, Ont., and Montreal, Que.

Branches:—Montreal, Ottawa, Toronto, Hamilton, Winnipeg, Calgary, Vancouver



We Solicit Your
Consignment

Send for
Shipping Stamp

Fruit and Vegetables Solicited

WE GET BEST PRICES

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

Branch Warehouses:
Sudbury, North Bay,
Cobalt and Timmins.

PETERS, DUNCAN Limited
88 Front St. East, Toronto



References: The Bank
of Nova Scotia, King
and Victoria Branch,
and Commercial Agen-
cies.

was trading active. Beans and cabbage were almost dead most of the month. Good cauliflower sold well. Good head lettuce sold well in small quantities, but lettuce in general was always drabby. Beet and carrots were hard to sell at anything like good prices. Most of the early corn had been picked too soon; good corn was scarce right to end of month. Early in month, cucumbers sold well, but during the last week they slumped to 25 to 40 cents. Prices for tomatoes, both hothouse and field, stood up well until the 20th, when they turned; after the 24th, the decline was rapid; at end of month, they were selling at 40 to 60 cents. Learnington sack onions arrived toward end of month and sold at \$4 to \$4.50. The potato price on July 31 was around \$1.50 a bag.

Transportation Matters
Fruit Branch, Ottawa

RULE 21 of the Express Classification of Canada provides as follows: "Each package, bundle or loose piece in a shipment must be plainly, legibly and durably marked, showing the name of only one consignee, and of only one station, town or city and province to which destined." Avoid delay, dissatisfaction, tracing, claims, and perhaps loss of a customer by starting your shipments right. Correct marking of packages helps to improve transportation service for Canadian fruits.

Fruit commodity express rates are now effective from Creston, B.C., Vernon, B.C., Sackville, N.B., and Winona district, Ont., to Chicago, Ill., Boston, Mass., Detroit, Mich., Minneapolis, Minn., St. Paul, Minn., Kansas City, Mo., New York, N.Y., Cleveland, O., Philadelphia, Pa., Pittsburg, Pa., Scranton, Pa., and Milwaukee, Wis.

Rates are also effective on fresh or green vegetables in carloads from Winnipeg, Man., to Chicago, Ill., and St. Louis, Mo. The refrigerator charge to the former point is \$45 per car and to the latter \$50 per car.



"Mr. Grower,—Remember, we are at your service. TRY US."

Stamps and information mailed on request.
Prompt returns' Weekly settlements.

UNION FRUIT & PRODUCE CO.

82 FRONT STREET, EAST, TORONTO, ONTARIO
Phone Main 1996 and 3498

SHIP YOUR APPLES TO SCOTLAND

We solicit consignments of Canadian fruit this season, and promise shippers satisfactory service.

ROBERT McCULLOCH

65 Main Street, Ayr, Scotland
Established 1888

If You Ship Fruit to Toronto

LET US HANDLE YOUR SHIPMENTS

We are centrally located in the Fruit Market. Service unexcelled.
Prompt returns and a satisfactory deal guaranteed to all.

Write To-day for Shipping Stamps

JOSEPH BAMFORD

72 Colborne St. COMMISSION MERCHANT Toronto, Ont.

Phones: Main 6036 and Main 3085

Reference: Canadian Bank of Commerce, Market Branch

Stronach & Sons

33 Church Street
TORONTO, ONTARIO

Fruit,
Produce,
and
Commission
Merchants

All Shipments of Fruit and other Produce consigned to us receive our personal attention.

Competent salesmen in Fruit Market at all times.

Advice Card mailed each evening.

Shipping Stamps mailed on request.

YOUR SHIPMENT SOLICITED

Long Distance Phone: Main 2877

GROWERS and SHIPPERS

Give Our Selling Service
a Trial

All Kinds of Fruits and Vegetables Handled on Commission

Shipping Stamps Supplied
Prompt Advice and Returns
Satisfactory Results
Correspondence Invited

W. J. McCART & CO., Ltd.

78-80 Colborne Street
TORONTO

Telephones: Main 784 and Main 715

References: Imperial Bank, Markets Branch

The Fruit & Produce Market

The Commission firms undertook with consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

H. J. ASH

44-46 Church St. Toronto, Ont.

CONSIGNMENTS OF FRUIT AND
VEGETABLES SOLICITED

Shipping Stamps Furnished on Request.

MANSER, WEBB CO.

83 Colborne Street Toronto

Wholesale Fruit and Produce Merchants

Consignments Solicited on Commission.

STRONACH & SONS

33 Church St., Toronto, Ont.

All shipments of Fruit and other produce consigned to us receive our personal attention.

Shipping stamps furnished.

Phone Main 2390.

See advt. on page 177

DAWSON-ELLIOTT CO.

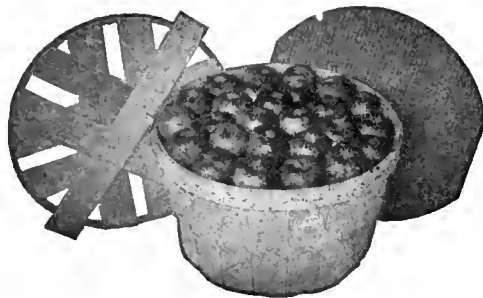
32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 FRONT STREET, EAST,
TORONTO, ONT.

See Advertisement on Page 176



Universal Bushel Basket and Cover

Absolutely the best Basket and
Cover on the Market.

\$2.60 to \$2.85 per doz., f.o.b. carload lots,
delivered different places in Ontario.

Standard Apple Barrels, carload lots,
65c. each, f.o.b. Bowmanville.

QUICK & HOLGATE

Bowmanville - Ontario

CANADIAN DISTRIBUTORS

W. C. Bunt has been appointed an assistant in fruit transportation for the province of British Columbia and commenced his duties July 22, with headquarters at 209 Duncan Building, Vancouver, B.C.

Canadian Crop Prospects

Fruit Branch, Ottawa

BRITISH COLUMBIA: Apples—75% of the crop of last year or 793,120 barrels (2,379,360 boxes). Wealthy, Wagener light; Delicions, Jonathan heavy. Pears—75% of last year or 1,575 tons. Peaches—Equal to last year or 1,315 tons. Elberta heavy. Plums and Prunes—85% of last year or 2,720 tons. Apricots—100% of last year or 632 tons. Onions 559 acres. Onion maggots doing considerable damage. Potatoes—Slight increase in acreage of last year or 16,500 acres; decreased yields due to drought.

Alberta: Potatoes—85% of the acreage of last year or 43,670 acres. Fair condition.

Saskatchewan: Potatoes—94% of the acreage of last year or 56,621 acres. Fair condition.

Manitoba: Potatoes—98% of the acreage of last year or 37,300 acres. Fair condition.

Ontario: Apples—30% larger crop than last year or 1,150,850 barrels. Spy, Greening, Baldwin light. Scab developing rapidly. Pears—90% of a full crop; 20% heavier than last year. Peaches and Plums—Full crop; 40% heavier than 1921. Onions—Full crop; 30% increase in acreage over last year or 1,807 acres. Potatoes—162,000 acres. Early planting yielding heavy crop.

Quebec: Apples—75% in excess of 1921 or 61,600 barrels. Early varieties heavy. Potatoes—235,000 acres. Good crop expected.

New Brunswick: Apples—25% in excess of 1921 or 41,250 barrels. Potatoes—74,000 acres. Condition good but misses numerous.

Prince Edward Island: Potatoes—35,400 acres. Early potato acreage considerably increased over last year.

Nova Scotia: Apples—75% of the crop of 1921 or 1,527,00 barrels. Fruit sizing well and generally clean. Potatoes—38,400 acres. Condition excellent.

Crops in London District

W. H. Mundy, R.R. No. 6, London, Ont.

THE strawberry crop in London district was a moderate one, and prices on this market would have been high had it not been for the loads brought in from long distances by motor truck. On June 10, several truck-loads of strawberries from Delhi sold on London market, quality medium, at 27 to 30 cents. On same day, a lot of imported berries were being sold in competition with home-grown fruit. By June 20, prices had dropped to 10 to 15 cents a box, but that was the lowest.

The cherry crop has been fair, with quality good. They have been fairly profitable, although the birds took a heavy toll. Currants and gooseberries have been a good crop. Raspberries were light, old patches being badly winter-killed. The prospect is good for a heavy crop of plums, unless brown rot prevails. Early apples, such as Duchess, are a good crop; Wealthy, medium; winter apples promise light.

Packages for Export

PACKAGES for export must be strapped or wired. In view of the fact that a number of shipments of tender fruits will undoubtedly be made to England during this season, shippers are reminded of the order of the steamship lines that packages must be strapped or wired or a guarantee given against damage caused by breakage, pilferage, etc.

Last season the steamship lines, thought it better to be rather lenient in connection with the strapping of packages, but the Fruit Branch, Ottawa, is advised that these regulations will be enforced. It was found that where packages were strapped or wired that there was consider-

able less damage from breakage or pilferage, and the shipments therefore arrived in a considerably more satisfactory condition.

There are various ways of strapping or wiring packages and the Fruit Branch recommends that a band of strap or wire be securely and firmly placed at each end of the package inside the cleats.

GRADED and CULLED

That the apple crop of the Oshawa district would be less than half that of last year, with quality as bad or worse, was stated by Elmer Lick at the apple growers' conference in Toronto last month.

According to Dr. Webster, of Thornbury, Ont., only about 10,000 barrels of marketable apples are now being produced in the Thornbury-Clarksburg district, in comparison with some 75,000 barrels 15 or 20 years ago.

Director P. W. Hodgetts, of the Ontario Fruit Branch, announces that plans for building apple packing houses are now available from the Department of Agriculture, Toronto. To take advantage of government assistance financially for establishing such packing houses, associations may either buy or build. Those contemplating such establishments are advised by Mr. Hodgetts to apply as early as possible for the required assistance.

A good crop of apples all around is expected in the Georgian Bay district, according to W. L. Hamilton, Collingwood, excepting Baldwins, which will be light. Orchardists who purpose marketing have been giving their trees better attention than for some years, especially around Clarksburg, Thornbury and Meaford.

A prominent apple man of Trenton told THE CANADIAN HORTICULTURIST at the end of July that the apple crop from Belleville to Brighton would be less than last year, and that the apples would be quite "dirty" excepting in orchards that had been well looked after, "not only sprayed," he said, "but sprayed at the proper time and otherwise well cared for." Many orchards already had been sold at prices ranging from \$1 to \$2 on tree. Pears in that section would be heavy.

Apple Barrels and Barrel Stock

We have a large quantity of Barrels and Barrel Stock for sale, and invite enquiries.

Berwick Cooperage Company, Ltd.

Berwick,

Nova Scotia

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

REAL ESTATE

\$5000.00 DOWN BUYS BEAUTIFUL FRUIT FARM— Twenty-five acres planted; fine buildings; conveniences; Apply to Calder & Hazlewood, Niagara Peninsula Farm Agents, Grimsby, Ont.

18,000 ACRES CALIFORNIA FARM LANDS. Orange groves and vineyards in the heart of Southern California. Permanent irrigation Moderate prices. Easy terms. Write for descriptive booklet. Canadian Sales Department, Fontana Farms Co., Brockville, Ont.

SEEDS, BULBS, PLANTS

TRIAL GROUNDS—Byron, London, Ontario. Perennial and Rock plants my specialty. Write for list and prices to Walter Smith.

BULBS AND PLANTS OF ALL DESCRIPTIONS, as Hyacinths, Tulips, single and double early, Mayflowering, Darwin, Breeder, Rembrandt and Parrot, Narcissus, Crocus Valley Pips, Spiraea, etc. Write for prices to C. Keur & Sons, Hillegom, Holland. New York address: 5625 Moshulu Ave. Catalogue on application. The trade is invited to inspect our gladioli now in bloom at Oakville, Ont., and New York farms.



"Daisy"
folding
apple-sorting
table.

"DAISY" APPLE PACKING AIDS Save Time and Labor

Time and labor are two very important factors in the production of fruit at minimum cost to-day. Every device which will enable more efficient work to be done in less time and at less cost should be favorably considered.

"Daisy" Apple Box Press"

The illustration shows the way "Daisy" Apple Box Press works. A simple pressure of the foot brings the arms up over the ends of the box, automatically draws them down and holds them in place while being nailed. The fastest and only automatic press on the market.

If you pack apples in boxes, this machine will be a great convenience to you, and will save you time and money.



An article every packer should have this season. Quick and easy

"Daisy" Apple Barrel Press

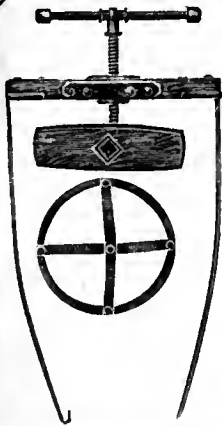
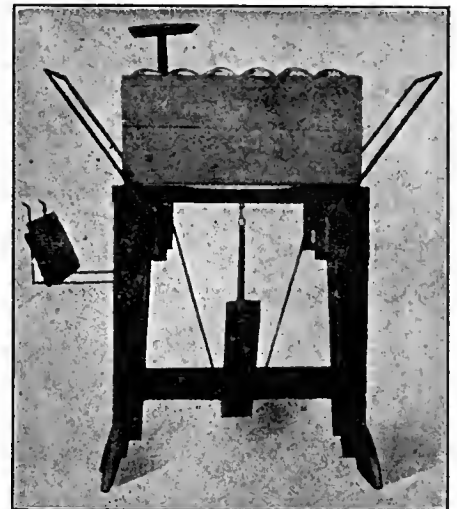
Used by all leading apple packers in Canada, United States and England. It is equipped with a new improved foot, which allows of catching the lapped hoops.

All fruit growers' supplies carried. Ladders, felt pads, rackers, etc. Write for prices and complete information. Special quotations to associations.

"Daisy" Folding Apple-Sorting Table

This is one of the famous "Daisy" Apple Packers' Outfits. It is light, yet strongly built to meet rough usage. It folds compactly and can be readily carried from place to place in the orchard. It is thoroughly tested for strength and efficiency.

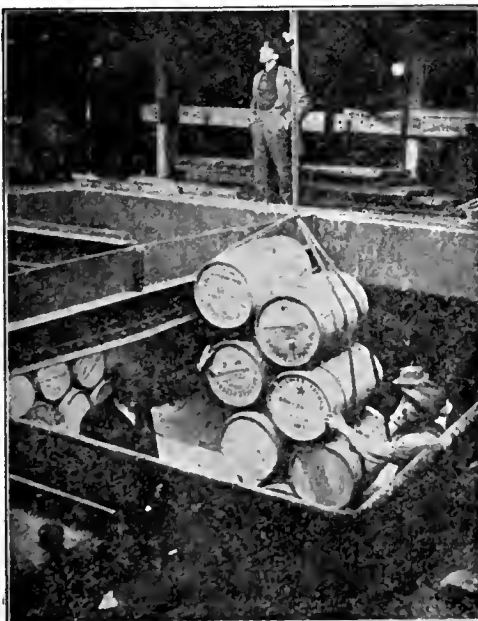
The table frame is of oak, and all metal parts are of first-class malleable, thus being interchangeable in case of breakage. The cover is of No. 10 canvas.



J. J. ROBLIN & SON

BRIGHTON

ONTARIO



Apple Barrel Stock

STAVES—Soft Wood or Hardwood

HOOPS—Coiled Elm, finest made

HEADING—Basswood or Hardwood

LINERS—Straight, or curved and bent

Apple Barrels Bushel Barrels

Having mills at various points, we are able to give our customers the benefit of shipment from nearest point, saving time and freight.

The Sutherland-Innes Company

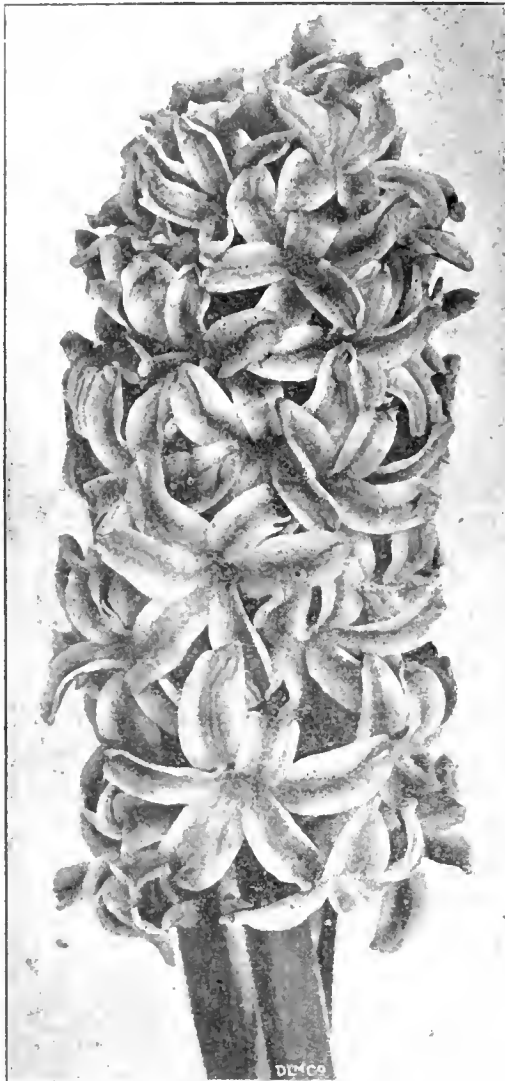
LIMITED

Chatham,

Ontario

BEAUTIFY YOUR HOME AND GARDEN

RENNIE'S SUPERB BULBS



HYACINTH—LADY DERBY

DARWIN TULIP—1st Quality

Add 10c. dozen, 50c. per 100, for postage.

The most beautiful section of the Tulip family, increasing in popular favor every year, and deservedly so, not only on account of their length of stem, size of flower and lasting quality, but also from the fact that blooming as they do, in the latter part of May, they lengthen the season of bloom of the regular early flowering varieties and should be planted by everyone who wishes to get bulbs and plants that will fill in the season from the beginning of April until the later part of May when other hardy perennials are starting to bloom.

	Doz.	100
Mixed Colors, (Superfine).....	.60	\$3.75
Mixed Colors, (Fine).....	.55	3.50

To succeed with bulbs it is necessary to begin right, by getting sound bulbs of good size, and we would warn intending purchasers against buying cheap, under-sized bulbs and expect the fine results obtained from such as we offer. Our sources of supply are the best in this country and abroad, the leading growers of the world having for years supplied us with their choicest stock.

To the lover of flowers there is no class of plants so much prized as those which are produced from bulbs. The reason is easily found, because within the bulbs are stored all the future glory of leaves and flowers, only requiring the simplest culture to develop them in their highest perfection. Success is, therefore, the rule.

A FEW CULTURAL HINTS

WHEN TO PLANT.—To the beginner we would emphasize the fact that **AUTUMN** and not **SPRINGTIME** is the time to plant all kinds of spring-flowering bulbs. The larger part of the bulbs offered in our Catalogue are ready to ship by the second week in September, and the sooner they are planted after that the greater will be the measure of success, more particularly those for indoor culture; therefore, **ORDER EARLY**. A few sorts, which are noted in the Catalogue, do not mature until October and November, and are forwarded as soon as ready.

DUTCH HYACINTHS—Fancy Quality

Add 3c. each, 25c. per dozen, for postage.

THE HYACINTH is so well known and esteemed that any description of its many good qualities is needless. The list now offered includes nearly every shade of red, white, blue, yellow, etc.

20c. each, \$1.95 per dozen, \$13.00 per 100

Lady Derby, (Bright Rose Pink); Charles Dickens, (Pink); La Victoire, (Deep Carmine, Rose); Gertrude, (Deep Rose); Gigantea, (Light Pink) Morena, (Pink); King of Belgians, (Deep Red); Robert Steiger, (Dark Red); Garibaldi, (Crimson Red); Albertine, (White); Madame Van Der Hoop, (Pure White); Grandeur a Merveille, (Blush); Arentine Arendsen, (Pure White); L'Innocence, (Pure White); Grand Maitre, (Pale Blue); Queen of the Blues, (Pale Azure blue); King of Blues, (Dark Blue); Sir. Wm. Mansfield, (Mauve); Yellow Hammer.

MINIATURE HYACINTHS

ALSO CALLED "DUTCH ROMANS"

These little Hyacinths are excellent for growing in pots, pans or boxes; they bloom very freely; often producing 3 or 4 spikes. They are equally desirable for culture out-doors; they should be planted closer together than the "Dutch Hyacinths." Culture is the same as recommended for the Roman Hyacinths, and they come into bloom after the Roman Hyacinths are exhausted.

Per Doz. .70, Per 100, \$4 25. (Postage extra)

Grand Maitre, (Light Blue); Gigantea, (Light Pink); Gertrude, (Deep Pink); L'Innocence, (Pure White); Lady Derby, (Delicate Pink); La Victoire, (Dark Pink).

Send your name for a copy of Rennie's Catalogue, which includes Poultry Supplies, Planet Junior Implements, Sprayers, Insecticides, Fertilizers, etc.

THE
WILLIAM
KING AND MARKET STREETS

RENNIE COMPANY
LIMITED

TORONTO

The Canadian Horticulturist

Floral Edition

Vol. XLV.

PETERBORO, ONT., SEPTEMBER, 1922

No. 9

Plant Breeding*

Henry J. Moore, Islington, Ont.

BEFORE plant breeding can be intelligently performed, a knowledge of several essentials is necessary. These essentials are: (a) A knowledge of the natural orders. Plants cannot or can rarely be crossed with others outside of the natural order to which they belong. (b) A knowledge of the structure of the flowers and the functions of their parts. The breeder must know what constitutes the male and the female organs of reproduction. (c) The meaning of self-pollination, cross-pollination, and fertilization. (d) A knowledge of the cultural requirements of plants. This from a practical standpoint.

Instruments.

The instruments required are of a simple and inexpensive nature. Finely-pointed scissors, fine-pointed forceps, a small bottle of alcohol to sterilize instruments, a number of small tags, to record data, and small envelopes to contain the seeds.

Structure of the Flowers.

Flowers are sometimes composed of the four parts, petals, sepals, stamens or male organs, and the pistil or female organ. The pistil is composed of style, stigma, and ovary; examples are primula and geranium. Other flowers may have either the male or female organs, but not both. The begonia is an example, though both male and female flowers may be borne on one plant. Still another form may have the male flowers on one plant and the female on another of the species; example is the Tree of Heaven.

Pollination.

There are two forms of pollination: self-pollination, when the pollen naturally reaches the stigma. A flower may also be said to be self-pollinated when its pollen is artificially placed on its own stigma; cross-pollination, the act of placing the pollen of the flower of one plant upon the stigma of the flower of another plant of another species or variety.

Fertilization.

This is the act of impregnation of the ovule (female cell) within the ovary by the male cell from the pollen grain.

Seedlings like the parent are produced by self-pollinated plants. Hybrids are the result of cross-pollination, when species are crossed with species, as for instance, geraniums, with geraniums. They are known as species hybrids. When, however, plants of different genera are crossed the progeny are known as generic hybrids.

Selection.

This is the practice of selecting seeds from the most desirable plant or plants of the hybrids with a view to improving them.

Mendel's Law.

Mendel crossed a tall and a dwarf variety of a culinary pea. The progeny of the first generation were all tall. He allowed these plants to produce seeds, and when sown they produced plants of two kinds, tall and dwarf in the proportion respectively of 75 and 25 per cent (three-fourths tall and one-fourth dwarf). In the third generation, the dwarfs produced 100 per cent pure dwarf. Of the tall, one part was found to breed pure in the third generation. The other two parts which were impure-

ly tall, gave, as did the original hybrid of the first generation, pure dwarf, pure tall, and impure tall.

Mendel called the factor for tallness, a dominant factor, and that for dwarfness a recessive factor. He also discovered that a dark color is dominant over a light color, and that in crossing, darks and lights will be produced in exactly the same proportion in the same generations as the tall and dwarfs. Mendel's work was looked upon with disfavor by the scientific societies of his day, and so he hid his manuscript. It is to Professor Balison of Cambridge University, that we largely owe the re-discovery of Mendel's Law and all that it means to civilization.

Divine Guiding Hand

This law, scientific though it is said to be, but proves the existence of a divine hand in guiding and controlling the production of life. Marvellous, yet constant in its application, we are forced to ask ourselves, why we should ever doubt the existence of a divine and controlling hand. Darwin, great scientist as he was, was badly off the track in



The Hand Wheel Hoe is an Effective Labor-saving Device.

Frequent cultivation of the garden destroys the weeds and maintains the best growing conditions in the soil. The wheel hoe allows for frequent applications at a minimum of labor.

* An address given before the Canadian Florists' and Gardeners' Association.

some respects, and in the light of the present revelations, some of his statements will of necessity, be greatly discounted by thinking men.

Experiments conducted by the writer with fibrous white begonias have borne out Mendel's results. *Begonia gigantea rosea* crossed with *B. gracilis alba* gave all pinks in the first generation. One plant of these gave seedlings as follows: seven dark pure pinks, fourteen light or impure pinks and seven whites, or three-quarters pink and one-quarter white. In the second generation, the whites bred pure, as did the dark pure pinks, while the impure pinks bred in the same proportions of one part pure pink, two impure pink, and one white.

Something New.

One of the impure pink-flowered plants gave 72 seedlings: 18 dark pinks, 36 impure pinks, and 18 whites. It may be that in relation to the size of the flowers of these, a discovery of a factor previously unnoticed by scientists may have been made. The largest flowers of each of the plants were measured on three occasions. The eighteen dark pink flowers measured when placed end to end on August 1, 26 11-16 inches, on August 21, 27 11-16 inches, and on September 2, 29 1/8 inches. Of the impure pinks 36 measured 50 5-16 to 51 inches, and 56 inches. Of the whites 18 measured 26 5/8, 27 7/8 and 28 inches. The flowers of the seedlings of the white recessives (the pure whites from the second generation), measured 21 1/4, 19 15-16 and 22 1/8 inches. Upon comparison, it will be observed that the flowers of the pinks and impure pinks, and of the whites of the third generation bred from the impure pink of the second generation, while fairly constant in size, were on an average approximately (in fact almost exactly), 25 per cent larger than those of the white recessives.

Mendel's law teaches us that plants of the first generation should not be thrown away because they may not be as good as their parents. Rather, seedlings should be raised from them. These will probably have inherited desirable characteristics which may be put to good use in practical horticulture.

Storing Gladiolus Corms

Mrs. Geo. Bonisteel, Belleville, Ont.

IMMEDIATELY after a gladiolus corm is planted and growth begins, a tiny new corm starts to form from the different eyes, these usually number from one to three, each absorbing nourishment through the old bulb, and each producing a stalk of bloom if conditions are favorable. At blooming time these new corms are about one inch in diameter. It is from this stage on that the new bulb is matured for next year's planting.

If the flower stalks are not used for

cut flower purposes, but left blooming for garden effect, remove them when the last individual flower is gone. An old stalk going to seed means deterioration of the new corm, because it is robbed of its strength.

After bloom is over the new corm fills out rapidly, but should have from four to six weeks to mature and ripen.

Late blooming corms should be given as long as possible, but digging should be done by the last of October. For the writer, from the 15th to 20th of October is the time set for digging.

Planting for Winter Effect

W. E. Groves, Hamilton, Ont.

IN planting, sufficient attention is not always given to the autumn and winter effects that are possible with a little extra care. There is a beauty of form and color that is pleasing and restful even during the dull winter days. Though it is not suggested that planting only for these effects be done, it is a real truth that a garden attracting attention for but a brief period in summer, beautiful though that may be, does not possess half the charm necessary to make it what a real garden is designed to be, a continuous source of surprise and beauty. The grace of the birches and the willows, the bold outline of the elm, the distinctness of the maple and poplar, the appearance of dignity and strength given by the oak, each have their special significance and stand out in detail against the sky, even though seen only through the house windows. In thinking of form, mention might be made of the large number of evergreens of fine pyramidal habit that in appearance give such a note of definiteness.

Warm Colors Effective

Of the trees already named, both the birches and willows are very attractive where there is sufficient room to plant, the warm colors of some of the willow varieties being quite effective. Planted in small groups and pruned hard every spring a clean fresh growth is secured that usually puts on the highest color. Quite a number of shrubs are well worth planting in this connection and these will appeal more strongly to the city gardener than will trees. *Cornus* with red, yellow, grey or brilliant green bark are easily procurable and used with discrimination give fine results. *Eleagnus* with its silvery foliage has a reddish brown bark that makes it a fine winter plant. *Kerria*, though green, has such a shining appearance that it is well worth planting for this effect alone. Some of the native roses are also equally valuable on account of their red stems.

Berry Producers

In addition to the color of bark there are quite a number of varieties that are berry producers, these being of special interest to bird lovers. Varieties with

After digging, cut tops off three quarters of an inch above the corm spread the corms in a dry, airy place for a few days after which they can be removed to cellar, and left to dry about three weeks longer. When the old exhausted bulb can be broken off and thrown away.

When thoroughly dry put in shallow boxes or any receptacle not too deep and store in a dry cellar or closet away from frost, heat or light.

A temperature of forty degrees is right and they require a slightly drier place than dahlias.

red berries are *berberis* in two or three kinds, *Cornus florida*, *eleagnus*, *euonymus*, *Viburnum opulus*, *Symphoricarpos vulgaris*. Those with berries blue or black in color, include *Amelanchier*, *Ligustrum*, *Rhamnus cathartica*, *Viburnum lantana* and *dentatum*. *Symphoricarpos racemosus* bears quantities of white berries well earning its better known name of Snowberry. Some of the Hawthorns retain their berries all winter as also does the mountain ash, the latter with its clusters of rich, orange colored berries being very attractive. *Rosa rugosa* is also a valuable addition, the orange scarlet fruit lasting a long while after frost comes. There are a number of other berry-bearing shrubs but as they are chiefly at their best during the summer they do not come within the scope of these notes.

Vines with Attractive Fruits

Vines with attractive fruits are ample in variety, *Celastrus scandens*, *Euonymus radicans* and *Lycium chinense*. For purely winter decoration they are not so attractive as shrubs but they may be made to serve a useful purpose in some locations.

Many shrubs with no particular color of bark or berries to recommend them are not without value, even for winter and more especially might this be said of plants made to serve as specimen. In group planting if varieties retaining their foliage until late in the Autumn are planted with kinds producing showy berries and vivid bark a pleasing effect can easily be secured for the winter. And if it is possible to have some evergreen in association, the effect will be intensified.

Early celery is best bleached with boards or paper. Earth may be used on late celery. Earth is likely to cause early celery to rust and decay.

Buy bulbs now for planting this fall. Tulips, hyacinths and daffodils make good house plants. Tulips and crocus may be planted in the yard or garden to advantage. Get both Darwin and early flowering sorts.

Retarding and Forcing Roses

A. Forsyth, Hamilton, Ont.

It has been said by some growers of roses that it is impossible to successfully force varieties such as General Jacqueminot, J. Hopper, M. P. Wilder, Gruss Au Teplitz for Christmas bloom. That has not been my experience. While some of the varieties are not quite amenable to Christmas forcing, I have had General Jacqueminot to cut at that time for eleven consecutive years, while associated with my father in business. Before my time, my father's boast was that for fifteen years previously he had never missed, and had never had a blind crop, which is easy to get with these varieties.

I see no reason why any grower of roses should fail to get General Jacqueminot to a Christmas cut, and John Hopper, Marshal P. Wilder, John Laing, Mrs. Sharmon Crawford, La France, Caroling Testout, Capt. Hayward, Ulrich Brunner, etc., etc., for January and February cutting, as it has been done for years in the greenhouses in England and is still being done where the conditions are not so favorable as here for successfully retarding them. While trying to retard them in England, the greatest difficulty is experienced in trying to dry the plants off, owing to the rains for which that country is noted. Often after drying them for a week, another week of rain follows, which starts all the buds growing again, so that it is rather a trying time to get them retarded without losing one's temper at the weather man.

The following advice, if followed out, I think would give any grower a good cut

of reds for Christmas, and for fragrance and color, Old General Jacqueminot has yet to be beaten, when properly grown. Of course, let it be understood that success depends on the care and attention given. Also close attention to forcing heat is necessary as it is a simple matter to have 80 per cent of the cut come blind, if not properly attended to. For best results, I recommend that these should be grown in six or eight inch pots. Say for example, you receive plants in the spring. Pot these into eight inch pots and plunge outside till August, keeping them in water till the second week in August. Lift them and stand nearly pot thick outside and gradually dry them off. The first week, water three days, the next week two days and so on, diminishing the water each week without letting them die, till the leaves have mostly fallen off, or shrivelled up; time, about one month.

Shake Out and Pot Back

The second week in September they should be ready to shake out and pot back in the same sized pots in a compost that should be mixed at least three weeks previously of one-third heavy loam, one-third stable or cow manure, well rotted and one-third sand. A good dressing of bone meal and any good artificial manure, as dried blood, crushed hoofs and horns (we use sea-gull manure), or Peruvian guano. I would recommend dried blood for anybody not used to guano, as it is safer, not being so liable to burn. The plants should be

potted firmly, given a good watering to ensure a thorough wetting of the soil and allowed to stand outside till the end of October. Then bring them into a cold house, keeping them from time of potting on the dry side. Prune back to three or four buds and space out through the house. Loosen up the top soil when pruning and weed them on November 5. Use a gentle night heat, increasing week by week, till 55° or 60° is obtained, but your glass should show 45° every morning till buds are formed.

Plenty of Ventilation

After getting well started 80° sun heat won't hurt them. Give plenty of ventilation to keep down mildew, taking care that wind does not blow directly on the plants. Water with can and keep the house fairly dry, as mildew is more to be feared at this time of the year than red spider. Water only the pots that require it, and see that they obtain it once a week. Give a liquid manure watering. A little soft coal soot now and then will work wonders if given as a liquid. In this way, you should obtain a good cut for Christmas and be finished cutting by the end of the second week in January. You can now place the plants fairly close and obtain half the house or thereabouts to run some other crop along, dropping your heat considerably to rest your roses, which should be brought on steadily for another crop or kept as dormant as possible till you can put them in a cold house or outside. I used to, after Christmas forcing, drop the heat down and grow them along very slowly, nearly pot thick, till I could get them in a cold house or outside, flowering inside the third week in April, and outside in May.

If at time of potting, in September you don't find them drying off just to your liking, you can still ripen them by laying them on their sides for a few days in a wet season, but I personally don't like it unless forced to do so by weather results.

Forcing Bulbs in Winter

A FEW pots of tulips, hyacinths, or narcissi in the living rooms, in winter and early spring, help to make them more cheerful and pleasant. By making a careful selection it is possible to have a great variety of flowers in the window-garden all winter. Such things as hyacinths, tulips, narcissi, freesias, Chinese lilies, crocuses, snowdrops, scillas, etc., could be forced gently in the living room and would give a large variety of bloom all winter.

Planting

Tulips, narcissi, and Roman hyacinths could be planted three to five in a pot in good soil, or if for cutting, in boxes (C); small bulbs, such as snowdrops, crocuses, freesias, etc., several in a pot or pan (F), to look well, and the large hyacinths singly in four-inch pots. The bulbs are



Methods of Growing Bulbs in the House.

There is no class of plants for house blooming that gives more satisfaction, with so little skill, than the various bulbs. They need occupy no space in the window until in bud or bloom, and are easily managed (see accompanying article on this page).

stored in a dark place free from frost, till a good root system is formed, then taken into the living room to force.

The most important thing in forcing bulbs is to see that there is a good root system before bringing into the heat. (A) and (B), show two bulbs with not enough roots to force well. To get best results the bulbs should have a good root-system as shown at (D), and (G). After taking inside all that is necessary to get a good supply of flowers is to water when necessary and keep the room free from frost.

QUESTION BOX

W. E. GROVES

Transplanting Seedlings

Are seedlings of annuals and perennials better transplanted when rather small? What size should they be and how soon after germinating should they be transplanted? I thought I left some seedlings in flats too long this season as they did not seem to make growth after certain age.—F. B. D., Branchton, Ont.

A general rule for transplanting seedlings is when they begin to make the third and fourth, or rough leaves. Seeds are often sown much too thickly with the result that if they are not handled promptly they become stunted. Thinner sowing would allow for the plants to remain a little longer before transplanting, but it is well not to leave the seedlings longer than suggested above.

Climbing Roses

Is there any climbing rose not subject to disease. We have Excelsa and Dorothy Perkins, both supposed to be mildew proof, but in spite of spraying ours are covered each year.—Mrs. R. W. L., Wheatley, Ont.

There are practically no roses that are positively disease resisting, but Excelsa and Paul's Scarlet Climber are more free from mildew than any other. Spraying with a soap and sulphur solution or Sulphide of Potassium should go far to keeping mildew away from the bushes. Are they planted right in the line of cutting winds? This will tend to develop mildew as quickly as anything.

Peonies

Will peonies not bloom if planted in the Spring?—Mrs. R. W. L., Wheatley, Ont.

Whilst early fall is theoretically correct for peony planting, the work can be done in the spring with little or no effect on the blooming. It must not be forgotten that the peony divisions sent out by nurserymen do not always bloom the first year, and this applies to both fall and spring planting.

Propagating Sweet Briar

How can one propagate sweet briar, to have it growing in my garden. Digging up the roots is a rather difficult undertaking.—E. G., Collingwood.

Sweet Briar should not be difficult to propagate. Save some seed which should

be sown as soon as ripe. The seeds should be washed out and under these conditions they germinate the first year. Hardwood cuttings in the fall could be tried or cuttings from nearly ripe wood during the summer. These latter should be put under glass and kept close. Root cuttings made of pieces of roots three inches long and planted two inches deep in the spring is still another method.

Cutting Asparagus Back

Should garden asparagus tops be cut back in late summer or fall? When can old roots be moved?—F. B. D., Branchton, Ont.

The correct time to clean off asparagus tops is in the fall when they have got quite brown. The usual method followed is to clean up the bed at this time, giving a dressing of manure for the winter. Roots may be transplanted either in the fall or spring. Care is necessary where the roots are old to save as much fibrous root as possible, and to avoid any drying out.

Primulas

What causes leaves of Chinese primulas and obconicas to curl and the blossoms to blight. Would turning plants to light cause the curl?—F. B. D., Branchton, Ont.

White fly, a bad primula pest would be sufficient to cause the curl mentioned. If the plants are clean the only other reasons would be soil condition or starvation. Watch the watering carefully, and give a little fertilizer if the plants are at all potbound.

Grevilleas

Are grevilleas and *Cyperus alternifolius* difficult to raise from seed? How do they compare with Chinese and obconica primulas? Have been successful with them.—F. B. D., Branchton, Ont.

Neither grevillea or cyperus are difficult to raise from seed. All that is required is a fairly decent soil with a little patience, especially in the case of grevillea which comes up irregularly. Cyperus may easily be increased from leaf cuttings if any old plants are available. If the leaf is taken off with about one inch of stem and in some sand or light soil so that the leaf rests on the soil, roots are readily formed and young plants started from the crown.

Blackberry Plants

Please describe how to secure new blackberry plants.—E. G., Collingwood.

Blackberries are not usually difficult to propagate. Suckers are often produced in great numbers and these may be dug out and transplanted singly. Root cuttings may be made from pieces of root three inches long. These may be planted in rows three inches deep, and grown in this way for one season when they are usually ready for planting in permanent positions.

Gloxinias

What soil is best for gloxinias? What causes leaves to curl under at the edge, and brown spots on leaves? They are in the east window of sun-

room and have no insects. I never spray while sun is on them.—F. B. D., Branchton, Ont.

A good fibrous loam is best with a little leaf soil if loam is heavy. Error in watering may account for leaf curl. The plants should not be allowed to get dry, and water should be kept off the leaves.

Chinese Primula

What is the best variety of Chinese primula of a compact growth?—F. B. D., Branchton, Ont.

Compact primula is entirely a matter of seed selection. The aim of all hybridizers is to get plants with the flowers well set above the leaves, and if seed is purchased from any reliable seed house, it should produce this kind of plant. The section usually offered as giant-flowered is the best.

Transplanting Black Currants

I have some young black currant plants, well rooted from cuttings. Would you advise transplanting these to their permanent position this fall or next spring?—E. G., Collingwood.

The best time to plant black currants is in the autumn though if this is not convenient early spring is possible. The only danger of delaying the planting lies in the fact that growth may have started in the spring before it is possible to do the work. If this occurs, growth the first season is sometimes checked.

Gladiolus Corms

Should the outside husks be left on gladiolus corms until time to plant?—F. B. D., Branchton, Ont.

In cleaning gladioli when in storage, the old flower stem usually comes away easily. There is nothing left then but the old corn which should be removed. The loose skin does no harm but might easily be rubbed off if wished.

Bowling Green

"We are planning a bowling green 80 by 90. How much seed would we require? Also what kind of seed? The cold in winter here goes to 14° and 16° below zero. What fertilizer should we use?—J. T., Sydney Mines, C.B.

One to one and one half bushels is a good quantity to use. This may appear more than necessary, but for your purpose, a thick growth is the object, and nothing is gained by sparing the seed. In sowing it is wise to go over the area twice for the sake of more even distribution. To make this doubly sure it is worth while to divide up the space into say 10 lots, dividing up the seed in the same proportion. A good mixture from any reliable seed firm is much the best to use. In ordering, state for what purpose the seed is to be used.

Bone meal is perhaps the best fertilizer. A dressing of this could be harrowed in before sowing. It is safe to use on grass at any time. In the district named, basic slag should be easily procurable. This is a good grass food, but being slow in action, it is best to apply in the fall. If in the following spring a light dressing of nitrate of soda is given good results are secured.

Home Storage of Garden Products

C. B. Alden, Toronto

THE main factors in the successful storage of garden products are temperature, ventilation and humidity. After devoting care and labor during the summer to the raising of vegetables, and other things that may be stored, it is only good business to give careful attention to these factors. Properly stored vegetables are almost as good as those gathered fresh from the garden. About 75 per cent of the vegetables that are in the garden at the end of the season may be kept for at least a few weeks, and many of them all winter.

The ideal temperature for vegetables tubers and roots is around 35 degrees F. It should never be allowed to fall below 32 degrees, and should be kept as uniform as possible. For best results, a thermometer should be kept in the storage room and the temperature observed constantly.

Good ventilation is essential because it prevents heating and excessive dampness, and therefore checks sprouting, decay and the growth of molds. Root crops should be kept away from the walls. Large piles may have wooden pipes placed upright in the centre for ventilation. These pipes can be made very simply by nailing three boards together so as to form a triangular tube.

The humidity of the storage room need not be high, but absolute dryness is not desired, as this would lead to a serious shrinkage and deterioration in size and quality respectively. If there is a furnace in the cellar, the portion of the latter devoted to root storage should be partitioned off. Excessive dryness may also be prevented by covering the roots with slightly moist sand. It may be necessary to sprinkle this occasionally with water. On the other hand if there is too much dampness, it is a sign that the ventilation is deficient. More harm is done to vegetables by having the air too dry than too damp.

Storing Potatoes and Roots

When potatoes are stored in crates or in shallow piles they usually lose too much moisture and shrivel. They are best stored in covered barrels or small bins. They should not be piled or enclosed in quantities where any one potato will be more than four feet from the air. The best temperature is between 32 and 40 degrees F. Care should be taken to keep earth out of the pile, as much of it in any one place may prevent ventilation and cause heating and rotting. Potatoes should not be kept too dry however, or too well ventilated. The storage conditions should be moderate. Above all, see that the potatoes when stored are sound and not frozen, and that they are kept absolutely dark to prevent greening by light.

Turnips, kohlrabi, carrots, parsnips,

salsify and winter radishes will keep right through the winter if given only ordinary care in storage. Evaporation must be prevented and the roots kept cool. If the storage room is dry, pack these things in clean, dry sand, either in a pile or in boxes or bins, and take out when wanted. Where conditions are exceptionally dry, it may be necessary to moisten the sand occasionally, but never do this if the storage place is warm as well as dry. Be sure also, that the roots are kept dark. In sections of the country where alternate freezing and thawing during the winter is not too pronounced, or freezing in itself too severe, most of the root crops may be stored in pits in the garden and covered with straw and earth. Parsnips and salsify may be kept in the ground where grown all winter and used before the tops have grown again two inches in the spring.

Cabbages, Celery, Onions

Cabbages keep the best when piled not too deeply on slated shelves, so as to permit airing. A temperature just above freezing point is the ideal. Late varieties, perfectly sound and not too ripe, are the only ones fit for storage. Small numbers may be kept by hanging them by the roots from the ceiling. As cabbages are not injured by moderate frost, they also may be stored in garden pits.

Celery keeps best in a moderately dry, cool, well-ventilated place. The bunches should be rooted in earth in a cellar or cave or box. The tops should be kept dry and the soil moist; hence, there should be care in watering, so as not to wet the foliage, and make conditions favorable for the development of disease.

Onions should be thoroughly cured when harvested. Dryness is a first requisite of storage and coolness comes next. Spread the onions not more than 10 inches deep on slated shelves, so as to permit of free air circulation. The best temperature is just about freezing.

Miscellaneous Crops.

Squashes and pumpkins should be well ripened and cured. They should be free from bruises and the stem or stalk end should be left on. They will stand a considerably warmer temperature than most other vegetables, preferably from 50 to 60 degrees; hence, a room in the house usually will be found better for storage than a cellar. They keep best on shelves in a dry place.

Endive and head lettuce may be had fresh for some time after frosts come, if stored like celery. Citrons will keep for a little while, if stored in the same manner as squash. Parsley and horseradish may be kept in the ground where grown all winter. Parsley may also be

transplanted, if desired, to boxes and grown in the house.

Tomatoes may be kept for some weeks by bringing the well-matured green tomatoes or the vines with the tomatoes on, into the house or cellar before frosts come. Most of them will ripen and be very acceptable as soon as they color. The tomatoes may be placed on shelves or in boxes where it is fairly dry, and the vines may be suspended from the ceiling or on a wall.

How to Keep Fruits.

If fruits are to be kept in storage, only the proper varieties should be selected, and the specimens should be firm and free from bruises and disease or insect injury. The storage room should have a temperature at as near freezing as possible, but not below and it should be moderately moist. Apples and pears keep longer when wrapped in paper, placed in boxes and covered. They keep well also in barrels, if stored in a place that is fairly well ventilated.

If conditions are right some of the hard-skinned late varieties of grapes may be kept for a considerable time with success. The bunches do best when wrapped in paper and packed in boxes or baskets that are shallow and covered.

Flower Bulbs and Tubers.

Tuberous rooted plants and various kinds of flower bulbs may be preserved quite easily if extremes of temperature and moisture are avoided. The bulbs or corms of gladioli may be stored on shelves or trays in any cool cellar or convenient place that is free from frost. Dahlia tubers will keep wherever potatoes will keep safely. The proper temperature is about 50 degrees. Keep them dry and not too damp. Canna roots require more care than the gladiolus or dahlia. If kept at a lower temperature than 50 degrees, they are apt to rot, particularly if too damp; if kept too warm, they are apt to grow, although a little growth will not hurt them. Store in a warm corner of the cellar, out of draft, leaving the soil on the clumps, or store covered with sawdust in boxes a couple of feet from the ground, as the dampness and coolness of the soil is apt to rot them. Tuberous begonias should be placed in boxes and the soil and tubers allowed to dry together. About 50 degrees is the right temperature. For these and all other bulbs and tubers, the main secret of success is to keep free from frost.

Lime should be used on sour or acid soils, either at the early stages of making the lawn, or in fall, applying 1000 pounds of ground lime to the acre. For extremely acid soils like muskeg, apply 1000 to 1500 pounds of hydrated lime or 1000 pounds of caustic or quick lime is best. These act more quickly than ground lime. Several years may elapse before results will be seen from the latter form. —A. H. Tomlinson, O.A.C., Guelph, Ont.

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HORTICULTURAL SOCIETIES

Ontario Gladiolus Show

THE first Ontario Gladiolus Show which was held at Alma College, St. Thomas, August 23 and 24 was an outstanding success. As Dr. Bennett of St. Thomas remarked, "there never was a finer collection of gladioli. Not only were all the old favorites on display but dozens of new creations, that had never been exhibited before." This opinion was endorsed by the many prominent horticulturists and gladiolus hybridizers from all parts of the province and the United States.

The wonder flower of the Show was "Dr. Bennett," Diener's new creation, the blooms of which are very large and of a unique flaming scarlet shade, with traces of heliotrope in the centre.

Among the many exhibitors were M. F. Wright of Sturgis, Mich., creator of "Louise," who had a large collection of this flower; W. L. Hutt, Georgetown, Ont., with a collection of over one thousand blooms; John F. Marr, Guelph, Ont., one of the largest amateur gladiolus growers in Ontario; Rev. W. McKay, Weston, president of the O.H.A.; Peter Vos & Son, Grand Rapids, Mich.; Campbell Bros., Simcoe Ont.; consisting of several thousand of Groff's hybrids in charge of Miss Annie Campbell. This was by far the largest exhibit in the show, the display occupying the entire west section of the hall. S. A. Haist, Fenwick, Ont.; The Mimico Horticultural Society, with 600 blooms of 100 varieties. These flowers were picked from the members' gardens in all parts of Mimico; James Ogilvie, Hamilton gaol; C. W. Ward, F. V. Smith and Lyman's Flower Shop, St. Thomas; Dick's Flower Shop, London. In addition to the large trial ground adjacent to the college, St. Thomas also had a large exhibit.

Among the prominent visitors was V. R. Hinkle, St. Joseph, Mich., president of the American Gladiolus Society.

Annual Meeting

At the first annual meeting of the Ontario Gladiolus Society, which was held August 24, the city of Guelph was selected for the 1923 convention and show.

Officers were elected as follows; President, Dr. F. E. Bennett, St. Thomas; First Vice-president, W. Brown, Elora; Second-Vice President, T. Ward, St. Thomas; Secretary-Treasurer, J. F. Marr, Guelph; Regional Vice-Presidents

W. B. Carley, Ottawa; J. W. Crow, Guelph; J. E. Brown, Kingsville. Directors: William Hartry, Seaford; F. S. Wood, London; Dr. A. C. Lester, Hamilton; V. V. Trull, St. Thomas; Professor H. L. Hutt, Georgetown, E. H. Caughell, St. Thomas; Mrs. E. Ecker, St. Thomas; J. H. Bennett, Barrie; Mrs. G. Symington, St. Thomas; John F. Marr, Guelph; A. P. Conley, St. Thomas and Miss E. Lewis, St. Thomas.

H. H. Groff, Simcoe, Ont., the pioneer hybridizer of Canada was elected honorary president of the Society.

It was decided to institute a vigorous membership campaign during the coming year with the view to increasing the membership by several hundred. It is now one hundred which is satisfactory for a society that has been in existence for less than one year.

Niagara Falls

The first annual flower show of the local horticultural society was held in Queen Victoria Park on August 12 and 13. Despite its being a first show the number of entries and the attendance of visitors was splendid.

Entries for the various classes were not numerous, but competition was keen. Among the exhibitors were The Horticultural Society of St. Thomas, with a large exhibit of gladioli; Dobbies Florists, Niagara Falls, an exhibit of wedding bouquets and flower baskets and vases of cut flowers; G. Emery with a splendid display of cut annuals. Much interest was also taken in the Children's Section. The show was formally opened on Saturday afternoon accompanied by music by the Scotch Pipers and an orchestra was in attendance in the afternoon and evening.

Canada's Three Iris Shows

Fred H. Byshe, Forestry Branch, Ottawa.

IT does not seem fitting that the events indicated by the above caption should be allowed to pass without some comment in our leading Canadian horticultural magazine. So far as I am aware no iris exhibition has been held by a horticultural society in Canada previous to this year, though this statement is open to correction.

The first of these three exhibitions was held by the Westboro Horticultural Society on June 2, last, at Woodroffe, a suburb of Ottawa. The second was held at Ottawa on June 3, by the Ottawa Horticultural Society, and the third on June 8 and 9, by the Toronto Horticultural Society. It would thus appear that Ontario has led the way and it is to be hoped that next year will find other provinces, as well as other Ontario societies, emulating and surpassing the efforts of the societies above named. In view of the extraordinary development of the tall bearded iris within the past five or six years, and the beautiful forms now available of this, one of the most exquisite of our hardy garden flowers, no progressive society can afford any longer to fail to provide for the iris in its exhibition programme.

Now a word about each of these three shows. For the Westboro show the Woodroffe Club placed their club house at the disposal of the society. As there are but few amateurs in Ottawa or vicinity who have as yet large collections of irises, the classes were arranged for the benefit of those with modest collections, and the result was competition in each of the twelve or thirteen classes provided. The committee had done its local advertising well, and there followed the most largely attended show in the history of the Westboro society. Many of these visitors saw specimens of the better sorts of irises for the first time, and were obviously impressed. Such persons are the stuff out of which iris "fans" are made, and the iris exhibition is one of the best means of developing such fans.

The Ottawa show was held in the Normal School Hall the night following. Here, having a larger membership to draw upon, the exhibition was larger and the competition keener.

Many really excellent specimens were shown, and both exhibitors and officers of the society were aroused to enthusiasm by the obvious success of the experiment. When I say that in both of these shows ribbons were given as prizes instead of cash, the success achieved, is the more impressive.

The show at Toronto in Jenkins' Art Galleries was of an entirely different order, and was conceived and executed on a much larger scale. The few days elapsing between the Ottawa and Toronto shows made available many other flowers than irises. These were employed freely to create many fascinating floral effects. I shared the privilege with my friend, W. E. Saunders of judging this show, and I shall not soon forget the large floral exhibits staged in the several recesses along the walls, with indirect illumination to heighten the general effect.

The individual irises were the great attraction to iris lovers, and here the amateur whose knowledge of the new varieties may have been confined to the catalogues had a rare feast. There were—Tristram, Marsh Marigold, Dimity, Dora Longdon, Knysna, Clematis, (Bliss' seedlings), Mme. Gaudichau (Millet), Alcazar, Medrano, Raffet, Moliere, Ballerine, Ambassadeur, and Magnifica (Vilmorin) all in splendid form. A single specimen of the latter shown by Professor Milner justified its name, and was without doubt the most striking iris of the show. The wealth and variety of material shown by Miss Blacklock was a distinct contribution to the success of the exhibition, and one was impressed by the vast amount of work that can be accomplished with a slight physique, when urged by an indomitable spirit.

Another outstanding item was Dr. F. G. Bethour's new iris seedlings, four of which were selected by the judges for the American Iris Society's award of Honourable Mention. It will interest iris growers to know that these seedlings were produced without hand pollination. Dr. Bethour grows only the best irises, and allows natural agencies to pollinate his plants.

Altogether, the exhibition was full of interest and made a beautiful picture to place in one's gallery of memories. If the picture is shadowed in so far as the two judges are concerned, it is by the untimely death of J. S. Wallace, one of the enthusiastic supporters of the exhibition, than whom I have met no more engaging personality in a decade. To have been his guest and to have enjoyed his friendship was a privilege and an inspiration. His friends will miss him.

Funkias

These are shade loving perennials, noted for the beauty of their foliage as much, if not more, than their Lily-like blossoms. The winter, however severe, affects them scarcely at all, and, as sure as April comes, they give evidence of new growth. Then is the time when they can be divided, and this is really necessary every two years or so, inasmuch as they grow rapidly. Soil is not of very great importance in the case of Funkias, as they will grow in any moderately good material, but shade and moisture are important if one desires to have them at their best. April is a most suitable period to remove them, and they are not long before they become established. Some of them are noted for noble-looking foliage, and can be planted with good effect in conjunction with ferns.—Gardening Illustrated.

If your soil is heavy, dig in plenty of sifted coal ashes. Use the same around the roots of perennials to keep out slugs. Lime is also good to prevent loss from slugs. These pests cause the mysterious disappearance of many seedlings. They work during the night when the ground is cool and damp; then hide under stones, boards, etc., during the daytime. In the evening they can be hunted with a flash-light, hat pin and old pan; and during the day by turning over the objects under which they are concealed.

Readers are requested to send for reproduction photographs of their orchards or gardens.

CANADIAN HORTICULTURAL COUNCIL

Various Activities

L. F. Burrows, Secretary-Treasurer

At the Dominion Fruit Conference held in Ottawa, Feb. 22 to 24, 1922, the Hon. W. R. Motherwell, Minister of Agriculture, expressed the following opinion regarding the formation of the Canadian Horticultural Council:

"I have always been a great believer in organization, and that there is no feature in society that is so helpful to governments as that of each particular vocation organizing and expressing its wants collectively. The government likes to see your horticultural interests in Canada organized so that when your executive speaks to the government it speaks for the entire industry. The government wants to know your needs and it is in the interest of every government not only to know, but to carry out your desires. If the members of any industry are a unit in regard to certain adjustments having to do with their interests, and are willing that these proposals shall become law, the hands of the minister are strengthened when he goes before parliament and presents his case. Therefore, we find these bodies very valuable in the making and administration of laws."

Dr. J. H. Grisdale, Deputy Minister of Agriculture, spoke at the Dominion Fruit Conference with reference to the Canadian Horticultural Council as follows:

"I hope you may find it possible to make some recommendations looking to the establishment of a sort of horticultural parliament, or as you have it here, a Canadian Horticultural Council, which shall serve as a board of last resort, or of reference, and to which shall be referred the present and future problems of the industry. It has been found in other branches of agriculture in Canada that through such organization as is here suggested, more prompt, direct and effective action is possible. Through such an organization close and quick contact with legislative bodies is possible and effective."

A Publicity Scheme

At the request of the Horticultural Society of Guelph, Ont., the secretary arranged with the post-office department to have the words "Protect the Birds and Save the Crops" placed upon the cancelling machine at the Guelph post-office. The above was therefore stamped on every letter going out of the Guelph post-office during the month of June. This appears to be a most satisfactory method of keeping before the public the objects of the horticulturists in Canada.

For Fall Planting

- 25 Single Early Tulips
- 25 Darwin Tulips
- 18 Mixed Iris
- 12 Hyacinths
- 15 Trumpet Daffodils
- 15 Forcing Narcissus
- 4 Mixed Paeonies

Each item, \$1.00 postpaid; six for \$5.00 postpaid.

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Plant Registration

A satisfactory system of bringing plant registration into effect in Canada is gradually being evolved. The co-operation of those interested in this matter in the United States and Great Britain has been secured and useful material is being collected. Arrangements have been made for a meeting of the plant registration committee of the Council in Toronto on Sept. 5, when it is expected that definite arrangements will be made for the furtherance of the objects of the Council to have plant registration brought into effect at as early a date as possible.

Florists Enthusiastic

On Tuesday, Aug. 8, the secretary attended the annual meeting of the Canadian Florists' and Gardeners' Association in Montreal and placed before that body the objects of the Council and told of the work at present being carried on. The association unanimously endorsed the Council and desired to continue representation thereon.

Nursery Stock Inspection

E. B. Luke, representative of the nurserymen of Canada on the Council, together with several of those interested in the importation of nursery stock from the Canadian Florists' and Gardeners' Association, interviewed L. S. McLaine, Acting Dominion Entomologist, in Montreal, with regard to the proposed changes in regulations under the Destructive Insects and Pests Act. The nurserymen of Canada are desirous of securing the following two amendments to the proposed changes:

"1. All nursery stock originating in any foreign country other than the United States of America shall be imported only through the following ports:—Halifax, N.S., St. John, N.B., Montreal, Que., Ottawa, Ont., (for scientific purposes only), Niagara Falls, Ont., Windsor, Ont., Vancouver, B.C.

"2. That consignees shall be allowed as under the regulations of March 21, 1922, to have examination of imports made on their premises."

Mr. McLaine gave the assurance that the entomological board would give every consideration to the suggested amendments, but in the meantime arrangements are being made to carry the suggestions of the nurserymen direct to the entomological board, in order that no opportunity may be missed of having the desired amendments made in the regulations.

Incorporation of Council

The application of the Council for incorporation was favorably received and on Aug. 17 the charter was signed by the secretary of state. The Council is now, therefore, a fully incorporated body under the constitution and by-laws, as printed in the July issue of THE CANADIAN HORTICULTURIST.

Fruit Prices Very Low

THE Canadian fruit crop is abundant, and current prices for preserving fruits are lower than they have been for a number of years, according to Secretary Burrows, who recently completed a survey of the fruit-marketing conditions throughout Canada.

Mr. Burrows states that fruit shippers in the United States, where the crop is also larger than usual, are consigning large quantities to the Canadian markets. The result is, says Mr. Burrows, that fruits are now being offered at prices considerably less in most cases than the actual cost.

Saving Fruit Crop

A statewide campaign to save this year's big New York state fruit crop, in danger of loss because of car shortage and early ripening, has been launched by the New York State Farm Bureau Federation. In co-operation with newspapers of the state, motorists are being appealed to to buy their fruit at the farms during trips through the country.

Publicity is being sent to newspapers twice a week pointing out to city residents the economic importance of saving the year's peach, pear and plum crop.

The campaign is aided by the co-operation of county farm bureau managers, who are furnishing information where fruit can be secured in the different counties.

Just for the Asking

You may have one of our "Clip Coupon" gladiolus bulb offers. We are sending them out by the hundreds. Don't delay—send for your's to-day and save many dollars in buying gladiolus novelties. Bulbs are guaranteed. Get to know us. Our new catalogue will be ready in November.

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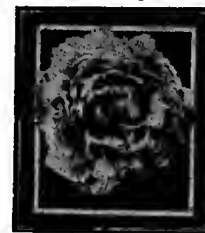
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 - Auguste Lemonier, red... .75
 - Charlemagne, lilac... .75
 - Duchess de Nemours, white... .75
 - Fragrant, red... .75
 - Jenny Lind, light pink... .75
 - Queen Victoria, white... .50

This entire collection for - \$3.75

Mother's Collection

Livingstone, lilac-rose, \$1.50; The Bride, white, \$1.50; Madame Forel, deep pink, \$1.00; Marie Lemoine, ivory-white, \$1.00; Rubra Superba, deep crimson, \$1.00; Sultanea, yellow, \$1.50; Total, \$7.50. This entire collection for \$6.00.

America's Supreme Collection

Aurora, white, \$2.00; Carmen, pink, \$2.25; Madame Auguste Desert, carmine, \$3.00; Madame Fould, white, \$2.00; President Taft, pink, \$2.00; Eugene Bigot, red, \$2.50. Total, \$13.75. This entire collection for \$10.00.

World's Best Collection

Ede Chevalier, Tyrian rose, \$3.50; Ella Wheeler Wilcox, pink, \$3.00; Glamoode, pink, \$4.00; Grover Cleveland, crimson, \$3.00; Marie Crousse, pink, \$4.00; Lord Kitchener, cherry-red, \$3.00. Total, \$20.50. This entire collection for \$17.00.

Hardy Climbing Roses

One year old—field grown. All will bloom next season. Should be planted this fall before freezing weather.

- American Pillar, apple-blossom pink... \$0.75
- American Beauty, red—everybody's favorite... .75
- Silver Moon, pure white... .75
- Aviateur Bleriot, saffron yellow... .75
- Christine Wright, wild-rose pink... .75
- Rosaire, the darker pink Tausenshoen... .75
- Dr. W. Van Fleet, silver pink... .85
- Dorothy Perkins—red, 75c; white, 75c; pink... .75

Any 6 of above Climbing Roses for \$3.75.

Paula Scarlet Climber, dazzling scarlet; a great favorite, \$1.00. Dr. Huey, deep crimson; one of the latest creations, \$1.50.

Darwin Tulips—The Long Stem Kind

Clara Butt, apple-blossom pink; Faircomb Sanders, brilliant red; La Tulipe Noir, jet black; Pride of Haarlem, violet rose; Painted Lady, creamy white; Philippe De Commynes, purple; Wedding Veil, soft lilac; Reverend Ewbank, flushed lilac; Mrs. Potter Palmer, bright violet; Gretchen, delicate flesh color; Kate Greenaway, lilac rose; Nura Ware, silver lilac. One dozen, your choice, \$1.00; 50 for \$4.00; or 100 for \$7.50.

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BRITISH COLUMBIA

B.C. Apples in Britain

IN the course of the addresses on the British and Continental apple markets, given in British Columbia, J. Forsyth Smith, Fruit Trade Commissioner for the United Kingdom, made various special references to the apple industry and export trade of this province. Some of these are included in the following partial report on the information given at the various meetings:

British Columbia apples have only in the past four years been sent to the United Kingdom in quantities sufficient to be taken into serious consideration by the fruit trade, and even of late they have formed a comparatively small proportion of the 2,000,000 or more western boxed apples that are imported annually. The quantities received have, however, made an excellent impression upon the trade, the best brands are rapidly building up a clientele of appreciative purchasers, and all that is necessary to establish them firmly in the favorable estimation of the buyers, is the carry out of a steady policy in the direction of maintaining grade and pack standards at the highest possible level. It is gratifying to note that where they are best known, they are most appreciated, and that it is in Glasgow, which, has so far received the greatest proportion of our shipments, that there is the strongest call for more and the greatest disposition to accord to B.C. apples the foremost place deserved by their general excellence. It must be emphasized, however, that they have to meet very keen competition from American brands of the highest quality and long established on the market, that they have not yet fully won their proper status in Great Britain, and that, therefore, special efforts to give satisfaction by turning out a first-class

product are imperatively needed at this first stage in the exploitation of a comparatively new export field.

The 1921-1922 Season

The season of 1921-1922 was an abnormal one, and particularly unsatisfactory in its effects upon box apple values. English apples blossomed heavily, and, though there was a heavy drop on account of the prolonged drought, there still remained a good crop, and, more important still, in its effects on the general situation, the apples were of exceptionally good quality and, therefore, able to compete, more directly than is usually the case, with trans-Atlantic supplies. The coincidence of an unusually favorable English season with a period of industrial depression and lessened purchasing power was unfortunate, and coupled with the disinclination of the retailer to re-adjust his undoubtedly excessive scale of profits to changed conditions had an effect never experienced before on the English market. The mass of consumers found it im-

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possible to pay the comparatively high prices they had been paying without question since the end of the war, the retailer found it impossible to sell boxed apples at attractive prices while retaining the large profits he had been accustomed to, and there was consequently a slackening of demand for boxes, which, eventually re-acted against its original object, by creating such a run upon barrel apples, and, at the same time such a lowering of box apple prices during October, November and December, that the curious anomaly was seen of such barrel varieties for example, as Baldwin No. 1, selling at 45 to 49 shillings at the same time that Jonathans, a superior variety, and of course, still more superior in grade and selection, were selling at 13 shillings a box or the equivalent of 39 shillings a barrel.

Various Price Levels

During October, and the first half of November, British Columbia apples had the box apple field practically to themselves, and yet made prices approaching the pre-war level. During the last half of November and the month of December, American boxed apple arrivals were heavy, but the greatly lessened supplies of English apples, and the briskening of demand due to the Christmas trade maintained values at a higher level than had been anticipated. After the turn of the year, however, prices improved greatly and were well maintained throughout February and March.

A curious anomaly, this season, has been the strong preference accorded during December, January and February to red varieties such as Jonathans, Spitzenbergs and Winesaps over Newtowns. For the first time in an experience of seven years, the Newtown, usually the highest priced staple variety on the market (Cox's Orange which has actually returned the highest prices can hardly be considered a staple) sold at consistently lower prices than the red varieties only regaining its supremacy in March, when Winesaps began to show marked deterioration. British Columbia apples throughout the

season maintained a satisfactory standard of quality. Condition, also, was generally satisfactory, and color particularly good.

Box Apple Grades

At the fruit meetings addressed in July by J. Forsyth Smith, Canadian Fruit Trade Commissioner, Liverpool, the speaker made, in substance, the following remarks on the proposed change in grade names for boxed apples:

"It is very satisfactory to note that the recommendations that have been repeatedly made during the past four years have at last been given effect in the decision of the Dominion Fruit Conference to adopt the American grades. No single step that could be taken by British

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	Per Doz	Per 100	Per 1000
SINGLE EARLY TULIPS—Grand mixture.....	.50	4.00	28.00
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MAY FLOWERING TULIPS—Superfine mixed.....	.70	5.00	40.00
SINGLE NARCISSUS—Mixed, many varieties.....	.50	3.75	32.00
DOUBLE NARCISSUS—Mixed, many varieties.....	.65	4.50	36.00
CROCUS—Mixed, all colors.....	.15	1.00	8.00
BEGONIA—Mixed, single.....	1.00	8.00	68.00
BEGONIA—Mixed, double.....	1.20	9.50	80.00
DUTCH IRIS—Mixed.....	.75	5.00	30.00
ENGLISH IRIS—Mixed.....	.65	4.50	25.00
SPANISH IRIS—Mixed.....	.50	3.00	20.00
GERMAN IRIS—Mixed.....	.75	5.00	30.00
IRIS KAEMPFERI—Mixed.....	1.35	12.50	90.00
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Columbia will have such an important effect as this on the acceptability of B.C. apples on the British market. The news of the decision was received with much enthusiasm by the fruit trade, who will be, correspondingly, disappointed to learn that it has been found impossible to pass the necessary legislation to legalize the new grades before the coming season.

"British Columbia apples in the past have been under a steady handicap as compared with their American competitors. While the grade names Fancy and Choice have been constantly suggestive of excellence and quality, No. 2 and No. 3 have just as constantly suggested identity with the inferior barrel grades. Boxes and barrels are essentially different products with different grade requirements corresponding to different demand conditions on the market. This is particularly evident as regards size. Small-sized apples could not be sold at high prices as packed in barrels. Small-sized boxed apples are regularly so sold. The market does not prefer small sizes as such, but the consumer cannot afford to pay the price required for apples for large sizes in boxes, and is therefore willing to forego large size, itself desirable, if he gets quality in its stead at a lower price per unit. He can afford to pay, and does pay a premium for large sizes in barrels. Size is, therefore, quite properly a main distinguishing factor between barrel No. 1 and No. 2, while it has no logical place as marking the distinction between No. 1 and No. 2 boxes, and will not be given prominence in distinguishing the new grades Extra Fancy and Fancy.

"The unanimous view of the British fruit trade is that the change of grades and grade nomenclature will very greatly strengthen British Columbia's position on the British market."

	<p>SMALL FRUIT PLANTS</p> <p>The Finest Ever—GOOSEBERRIES—Josselyn, Downing, Houghton.</p> <p>CURRENTS—Perfection, Fay, Ruby, Cherry, Boskoop Giant, Lee's Prolific, Champion, Victoria, Naples.</p> <p>RASPBERRIES—Herbert, Plum Farmer, Shaffer's Colossal, Columbia, Cuthbert, Strawberry-Raspberry.</p> <p>ASPARAGUS and Rhubarb Roots.</p>	
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Apple Color Requirements

A CIRCULAR letter has been sent to apple-growing points in Canada showing the U.S. color requirements for extra fancy, fancy and C grade apples. It also shows the O.U.G. color requirements for numbers 1, 2 and 3, and suggestions from eastern points as to color for the new grades they would recommend.

We consider that any color requirement that Canada might adopt that fell short of the Washington color requirements would make a change in grade names abortive. We have a standard pack and package in line with our competitors and any slackness in enforcing a color requirement of our competition will place us at a great disadvantage at the selling end. Of course the difficulty is in trying to set a federal standard. This is not attempted in the U.S. Color and grade are state regulations not federal. We doubt if a federal requirement for color of apples can be made satisfactory in Canada. Anything short of the Washington color requirements will not be of any value to B.C. apple growers in the world markets.—B.C. Markets Bulletin(Calgary)

	<p>Good Prices Always For Your Fruit and Vegetables</p>	
	<p>OUR facilities enable us to realize top prices at all times for your fruit, vegetables or general produce. Aside from our large connection on the Toronto Market, we have established branch warehouses, with competent men in charge, at Sudbury, North Bay, Cobalt and Timmins. In time of congestion on the Toronto market we have a ready outlet through these branches. We never have to sacrifice your interests.</p>	
<p>We Solicit Your Consignment</p> <p>Send for Shipping Stamp</p>	<p>Branch Warehouses: Sudbury, North Bay, Cobalt and Timmins.</p>	<p>PETERS, DUNCAN Limited 88 Front St. East, Toronto</p> <p>References: The Bank of Nova Scotia, King and Victoria Branch, and Commercial Agencies.</p>

MARITIME PROVINCES

N. S. Shippers' Association

At the annual meeting of the Nova Scotia Shippers' Association, held at Kentville, Aug. 7, President S. B. Chute, who was in the chair, reported in part as follows:

"The ocean freight rate on apples was fixed at \$1.25 a barrel, and, on account of the excellent service given us by the various steamship lines it was decided not to bother much with chartering our own boats. Only a few charters were made, and, in some cases, these did not prove very profitable. An effort is being made, both in the States and Canada, to have the rate reduced to \$1.00 a barrel this season.

"The board of railway commissioners met in Kentville last September and several important matters were placed before them by the executive. Up to the present no decisions have been handed down but we are assured that these will be filled before very long. The question of warehouse and siding rentals was one of the matters dealt with and this is now being settled by George E. Graham. A. E. McMahon, on behalf of the association, has devoted a great deal of time and study to this important matter and we are glad to report that a satisfactory settlement is in view.

"The unloading charges at the Halifax terminals were fought over practically the whole season, and, at a hearing before the railroad board held in Halifax in January, the charge was reduced from 1½ cents to 1¼ cents per hundred pounds. In March the railway board sent their Mr. Spencer to Halifax to check up the cost of handling, but did not recommend that any further reduction should be made. It was seen, early in the season, that the method of unloading the cars was proving very unsatisfactory. The work was all done by men employed by the Canadian National Railways, and as unemployment was rife in Halifax during the winter, fresh gangs of men were taken on each day in order to give relief. This meant that our apples and potatoes were continually being handled by green help. The executive decided that this must be remedied before another season began and a meeting was held in Halifax in July. The steamship men were well represented and F. G. J. Comeau was there on behalf of the Dominion Atlantic Railway. As a result of that meeting arrangements have been made to have the cars unloaded by the steamship stevedores as in the old days and the charge is being reduced to 1½ cents a barrel. The executive pressed for a rate of 1 cent a lb. which we feel is quite enough, but the steamship men would not agree to this. However, they have agreed to make tests of the actual cost during the first two months of the shipping season and have promised to reduce the charge if the tests warrant it.

"Another effort was made by the Dominion Atlantic Railway to put into effect the switching charge of 1½ per hundred pounds on cars handled at Deep water terminals. We brought the matter before the Railway Board at Halifax last January and were successful in having the tariff suspended."

The following officers were elected for the ensuing year: Pres., Herbert Oyler; Vice-Pres., Harris H. Blight; Sec., Stanley Craze; Exec. Com., W. H. Chase, S. B. Chute, and A. E. McMahon.

Apple trees in the Annapolis Valley seem to be striving for honors as ever-bloomers as well as ever-bearers, in season. During three weeks recently, the office of the Berwick Register was favored no less than 16 times with fragrant apple blossoms from different orchards.

The Canadian Horticulturist will be pleased to receive for publication, items of interest from Maritime province readers.



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CROPS and MARKETS

Shipping Apples in Bulk

TO THE EDITOR:—Please note enclosed copies of our letters of to-day, Aug. 24, to the Honorable Minister of Health, Ottawa, to P. W. Hodgetts, Toronto, and to the Federal Fruit Branch. This action was taken as the result of our observations of the condition of bulk apple shipments as marketed in Western Canada, and their effect on the demand for good apples.—R. M. Winslow, B.C. Traffic and Credit Association, Vernon, B.C.

To Minister of Health

The Honorable Minister of Health, Ottawa:—At a meeting of the fruit growers and shippers of British Columbia, with representatives of the wholesale fruit trade of Western Canada here last week, all interests agreed that the shipment of apples in bulk in freight cars to be sold in the fresh state to consumers was not only detrimental to the apple industry in a commercial sense, but was sufficiently unsanitary to warrant bringing the matter strongly to your attention. The resolution passed by the convention was as follows:—

"That this convention represent to the Minister of Health at Ottawa, the menace of bulk apple shipments to the health of the consuming community by reason of the unsanitary conditions inseparable from this traffic, and that we ask for the prohibition of this traffic on these grounds, and that until such prohibition becomes effective the minister shall provide for compulsory permits to ship, also for inspection on arrival."

You will note that they ask for the prohibition of this traffic on the ground of its unsanitary character, and further requests that until such prohibition can be made effective, your ministry should require compulsory permits for such shipments, and for inspection on arrival at destination.

We might add that experience has shown that the sale of apples shipped in this manner greatly decreases the consumption of apples, which we attribute largely to the fact that they usually reach the consumer in a dirty, bruised and often more or less decayed condition. This unfortunately creates with the purchasers a revulsion against all apples.

Our interest lies in having the consumer receive fruit in a sanitary, edible and appetizing condition. We ask your heartiest cooperation in this matter.—B.C.T. and C. A.

To Ontario F. G. Association

P. W. Hodgetts, Secretary, Ontario Fruit Growers' Association:—At a conference of British Columbia fruit growers and shippers with representatives of the wholesale fruit trade of Western Canada, held here last week, a strong resolution was passed, asking the Federal Minister of Health to move against the shipment of apples in bulk in freight cars intended for the ultimate consumer, which communication to the Minister is as per copy enclosed.

A further resolution was passed asking the co-operation of the apple industry of Ontario, and we would ask that you, as the official body representing this great industry, place this communication before the growers and their shipping representatives.—B.C.T. and C.A.

To Dominion Fruit Branch

G. E. McIntosh, Acting Fruit Commissioner, Ottawa:—At a conference of British Columbia fruit growers and shippers with representatives of the wholesale fruit trade of western Canada, held here last week, a strong resolution was passed, asking the Federal Minister of Health to move against the shipment of apples in bulk in freight cars intended for the ultimate con-

sumer which communications to the Minister is as per copy enclosed.

We are also asking P. W. Hodgetts, secretary of the Ontario Fruit Growers' Association to place this matter before the members of his association and the apple industry of the province with a view to their co-operation.

A further resolution of our convention specifically requests the co-operation of the Federal Fruit Branch to end the movement of apples in bulk.

We trust that you will be able to give some publicity to our views and afford us the weight of your influence with the Minister of Health to strengthen our request.—B.C.T. and C.A.

Crops at End of August

THE following fruit and vegetable crop estimates, prepared by the Fruit Branch Ottawa, cover commercial production only:

Ontario:—Apples—Equal to last year, or 885,065 barrels. Baldwins very light; Greening, Spies light. Considerable fungus. Peaches—Full crop, 60% heavier than 1921. Plums—Full crop, 200% heavier than last year. Pears—90% full crop; 20% heavier than last year. Potatoes—Good average crop, slightly in excess of last year. Onions—Total crop 100% larger than 1921; quality excellent.

British Columbia:—Apples—2,215,000 boxes, or 70% of last year. Delicious and Jonathan heavy, Wagener light. Peaches—85% of 1921, 1,122 tons. Plums and prunes—85% of 1921, or 2,720 tons. Pears—75% of 1921 or 1,575 tons. Potatoes—75% of normal. Onions—Increased acreage but only slight increase in total crop of last year; considerable onion maggot and failure of onions to size.

Alberta:—Potatoes—85% of 1921.

Saskatchewan:—Potatoes—95% of average crop; approximately, 10,000,00 bushels.

Manitoba:—Potatoes—Yield per acre lower than last year; quality fair.

Quebec:—Apples—75% in excess of 1921, or 61,600 barrels; early varieties heavy. Potatoes—Average yield, fair quality.

New Brunswick:—Apples—25% in excess of 1921, or 41,250 barrels. Potatoes—Slightly less than last year; much damage by excessive rains.

Prince Edward Island:—Potatoes—Normal yield; considerable certified.

Nova Scotia:—Apples—80% of 1921, or about 1,625,000 barrels. Potatoes—Good average crop, but affected by excessive rains.

In the London District

W. H. Munday, R.R. No 6, London, Ont.

PLUMS thrive around here to perfection, especially the Japanese varieties. London market just now (Aug. 15) is full of Burbanks of good quality, although some have been shipped in from Forest that were half green and therefore slow sale. We find that people want well-ripened fruit. Take the Bradshaw, of which I have seen fine samples on well loaded trees right near London. They should be fairly well-ripened because when ripe they are sweet and attractive, and one sale creates a demand for more.

Lombards, Reine Claude and Monarch are a good crop, but are rotting considerably. I have tried pulling off the rotted plums, but my conclusion is that there is nothing like keeping them covered with either lime-sulphur or Bordeaux.

Grapes are badly affected with rot in this district. This is: rather d'souragin as the prospects for a big crop have been good.

Greenhouse Insects

IF greenhouse pests are not as numerous and as much in evidence as the outdoor insect vagrants, they are equally as insidious and destructive, if afforded the opportunity. Fortunately they are more easily controlled. The life history of each and every insect of the green-

house is told in Bulletin 7 of the Dominion Department of Agriculture, entitled "Insects Affecting Greenhouse Plants," by Arthur Gibson and W. A. Ross. Methods for the application of insecticides and for fumigation by hydrocyanic-acid gas and tobacco are set forth.

There are three kinds of greenhouse insects; namely leaf-eating, sucking, and boring or root destroying. There are in addition what are known as animal pests, such as various sorts of mites, bugs, slugs, and earthworms. There are also predacious enemies and internal parasites, which are nature's aid towards control. The bulletin is profusely illustrated, and the text and directions are in plain language. As showing the extent of greenhouse cultivation, it is stated that the estimated value of such crops in Canada is upwards of \$3,000,000 and that these crops occupy 6,000,000 square feet of space under glass.

An Experiment Suggested

THE problem of getting the Northern Spy to the British market in satisfactory condition remains still unsolved, and shipments continue to come forward which sell at from half to two-thirds of the value of sound fruit. As this variety is one of the most highly appreciated on the market, and as the loss per barrel, compared with possible returns for fruit in good condition, not infrequently runs from 15s.

to 20. per barrel, it would appear that there is a strong case for systematic experiment to determine a more desirable method of shipping. One possible solution, of course, is the box pack, but not only is it scarcely feasible for packers shipping almost entirely in barrels to make special arrangements for box-packing Spys, but the Spy hardly lends itself to box-packing for this market, on account of its large size.

It is suggested that an interesting commercial experiment for the next season would be to pack Spys, McIntosh Red, or any other high-class soft varieties, in barrels in a special way—i.e., with corrugated paper pads between each layer of apples, carefully packed in as when barrels are headed and tailed.

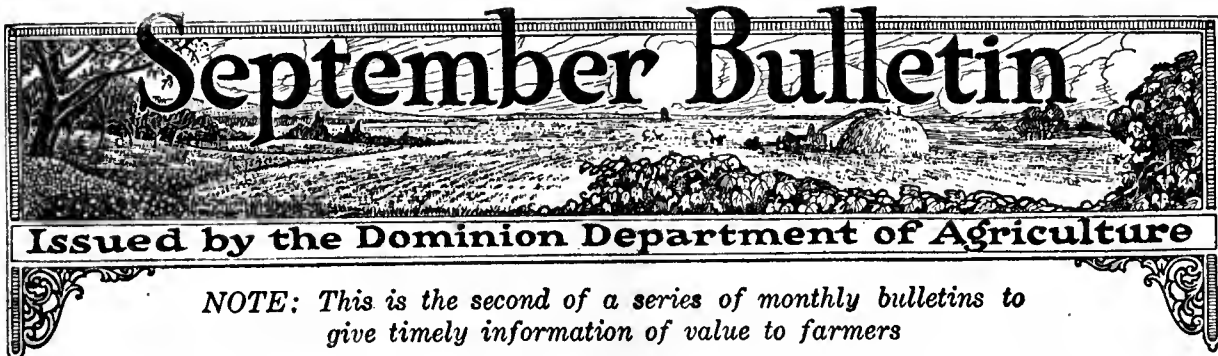
This idea is suggested by the remarkable success of New Brunswick in packing the apples in this way for their Government exhibit in connection with the Imperial Fruit Show. Canadian representatives in this country were amazed when they received a cable announcing that apples for exhibition purposes were coming barrel-packed, and felt that a great mistake had been made by the senders. However, the experiment was fully justified by the result. The apples, which included a considerable proportion of the soft variety, McIntosh Red, arrived in perfect condition, without a bruise mark, and when displayed on the stand were among the best shown.

Extra labor and extra cost in packing would, of course, be involved, but such extra cost could not conceivably be as much as is now regularly lost on a large proportion of shipments, on account of condition on arrival, and if it is proved that apples so packed can be landed sound, in a commercial way, it is quite certain that the increased values received would much more than compensate for all extra trouble taken.

Nova Scotia Gravensteins are another variety in connection with which it would be interesting to try out such an experiment. Gravensteins, as generally sold on this market, are always lacking in color, as they cannot safely be allowed to color if they are to be conveyed in the ordinary pack. The high prices received for well-colored California Gravensteins in boxes are an indication of possibilities in this connection.—J. Forsythe Smith, Fruit Trade Commissioner, Liverpool.

Apples East of Toronto

APPLE orchards along the Lake Ontario front and particularly in that section of the front between Brighton and Whitby, have not yet recovered, as a whole, from the lack of attention and one or two exceptionally trying seasons which occurred during the war, says Trenton Advertiser; and, while possibly a third are in better condition than ever before, the



Issued by the Dominion Department of Agriculture

NOTE: This is the second of a series of monthly bulletins to give timely information of value to farmers

Beware Corn Borers

The European Corn Borer has infested thousands of acres in Western Ontario. To control, cut corn soon as ready close to the ground. Plough corn stubble deep in the fall and burn all dry fodder left over in the spring.

Contagious Diseases of Animals

Every owner of animals and every breeder of or dealer of animals, and everyone bringing animals into Canada shall, on perceiving the appearance of infectious or contagious disease among the animals give immediate notice to the Minister of Agriculture and to the near-

est Veterinary Inspector of the Department of Agriculture.

Eat More Canadian Fruit

Canada grows large crops of the finest fruits and Canadian fruits have always received the highest awards wherever exhibited. Don't purchase foreign-grown fruit, when Canadian-grown fruit is far better. This year there is an abundance of Canadian fruit.

Demand and accept only Canadian-grown Fruit.

Winter Finishing of Steers

Twenty-five years of experimental work on winter finishing of steers, carried on by The Dominion Experimental Farms, has derived information that will be of exceptional value to farmers. These experiments show that the selling of farm-grown feeds as finished beef gives a much greater return than if sold as cash crops. That with proper management the winter finishing of steers is highly profitable. Finished steers command top prices.

Valuable pamphlets on this subject will be sent free if you

write the Dominion Experimental Farm nearest you.

Co-operative Shipping of Live Stock.

Co-operative shipping always nets full market value for each grade when marketed. Sale according to grade improves the breed and results in higher average prices. In Grey County, Ontario, where improvement propaganda in sheep was undertaken the first shipment of extra choice lambs brought \$13.50 per hundredweight. On the same day best lambs from other districts brought only \$11.50 per hundredweight. Good breeding and finishing will bring the best prices.

New Publications.

The Control of the European Corn Borer.

Preservation of Fruits and Vegetables.

Care of Rams and Ewes in Breeding Season.

Advantages of Dipping.

Winter Finishing of Steers.

List of Available Publications.

The above publications are sent free on request to:—



Publications Branch
Dominion Department of Agriculture
Ottawa

general appearance is no as good as it was in the early part of the century. Recognized authorities place the crop this year at about equal to that of any one of the last three years or 60 per cent of a real good one, with Spys lightest in yield, Bens and Russets best and Kings good.

Apple growers in Ontario and the united counties of Durham and Northumberland are,

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however, in the happy position of having reasonable assurance as to what they are going to get out of their product. Practically the entire crop has already been sold and at satisfactory figures. Barring disastrous wind or hail storms, producers are, therefore, justified in feeling as if their money is even now in the bank. The general range in prices has been from \$2 to \$2.75 per barrel for No. 1, 2, and 3, the seller to supply barrels and pick, but the buyer to grade and pack. One sale of 2,000 barrels is reported at \$2.25, the buyer supplying the barrels but producer doing the picking.

Grape Growers' Picnic

(Continued from page 190, Fruit Edition)

marketing and told how his organization was successfully handling the fruit this year. The crop was a bumper one he reported, yet there had been no delay in shipments and there was a general feeling of satisfaction.

Hon. F. C. Biggs interested the growers in another subject when he briefly told of the government's road policy. As some of the highways in the section are in a deplorable state, the message of the minister of public works was particularly interesting. He told of the construction under way and future plans in connection with the good road system. G. A. Welstead, president of the N. D. G. G., Ltd., who is also Wardman of Lincoln County, gave a brief talk in which he expressed his thanks for the co-operation of the members during the year. During the afternoon a sports program was featured for the ladies and children and prizes awarded.

The shipment of 600 cases of peaches by express in cold storage to Covent Garden, London, the first to be made this year from the Niagara Peninsula, was reported from St. Catharines, Sept. 2. Considerable interest attached to the marketing of the shipment by peach growers throughout the district, as the importance of the British market is recognized, particularly this year, when an outlet for surplus production will be welcome.

Short Season Marketing

It is particularly difficult to form any reliable market judgment for quickly perishable, short-season crops like strawberries, peaches, and melons. Markets in such lines are irregular, differing widely at the same time in different cities because the nature of the crop does not admit of safe transfer between distant points and does not allow long keeping in cold storage.

These lines feel quickly and severely the effect of oversupply, whether of car lots or from neighboring sources. As these crops are not strictly necessities, the demand is somewhat uncertain, depending largely upon the buying power of the public, which may vary greatly from season to season.

Fruit In Manitoba

ATTEMPTS to produce a standard apple that would be hardy in the location of the Brandon Experimental Farm have not, as yet, proved successful. Trees have thrived for some time and borne fruit, and no tree has continued to bear fruit in commercial quantities and lived.

"With crab apples, more success has been obtained," says W. C. McKillican, superintendent, in his annual report. "The most satisfactory have been Dr. Wm. Saunderson's cross-bred apples and the wild crab of Siberia (*Pyrus baccata*). Of these, varieties known as Osman and Columbia, and a cross-bred seedling known as Bedford, have given the best results." These trees have proved perfectly hardy in the Manitoba climate, have borne fruit abundantly year after year at Brandon, and while the fruit is small it is large enough and of suitable flavor to make good preserves.

Best results with plums at the Brandon farm have been obtained with varieties of the Mani-

toba native plum. Stevenson's Mammoth and Major are perfectly hardy and bear good crops. Cross-bred plums from South Dakota have been tested but have proved too tender for the Brandon location. Cree, a new cross-bred produced by Prof. Hansen, seems promising. One parent of it is the Manitoba native plum.

Currants, black, white and red; gooseberries and raspberries are grown with reasonable success at the Brandon farm.

GRADED and CULLED

In the apple orchard of James Phillips, midway between Port Hope and Cobourg, Ont., the King, usually a shy bearer and not an annual bearer, are reported as looking good for three barrels to the tree this year, and they bear every year. These Kings were top-grafted on Talman Sweets. The Phillips orchard is one of the largest and best along the entire Lake Ontario front.

Additional restrictions have been placed on the importation of certain rose stocks by the federal horticultural board of the United States Department of Agriculture because of the probability of introducing dangerous insect pests and plant diseases. Rose stocks for propagation including Manetti, Multiflora, Brier rose, and Rosa rugosa, may now be imported into the U.S. only in the smallest sizes possible, the regulations limiting them to plants one to two years old and no more than 18 inches in length. Stems on which to bud standard roses are not permitted entry under any conditions.

Growers placed parchment cones over the hills of cantaloupes to protect the young plants against insects at the suggestion last spring of a county extension agent in New Mexico. It was found that the temperature under the cones remained from 5 to 10 degrees above that of the outside air so that plants under them were not injured by a light breeze which killed unprotected plants in that district. The growers stated that the covers paid for themselves in securing better and more uniform germination aside from the protection against insects and frost.

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The Canadian Horticulturist

Floral Edition

Vol. XLV.

PETERBORO, ONT., OCTOBER, 1922

No. 10

Growing Bulbs in the Garden

J. B. Spencer, Past President, Ontario Horticultural Society

EVERYONE enjoys the beauty of spring flowering bulbs, whether growing in beds or as borders or clumps in the garden. To have these, however, in one's own garden, requires forethought and action some months in advance. When once established, however, the bulbs will remain and multiply if not too much disturbed by cultivation or crowded out with other things. Unless one has plantations established, this is the time of year to secure and plant the bulbs:

Tulips Most Showy

Of the various outdoor bulbs, tulips are the most showy as they present such wonderful colorings and shades. If in well-drained, loamy soil, they may be left undisturbed for three or four years, or until they get too crowded to produce good flowers, or have died out so much that they need to be replaced. As a rule, however, the best flowers are obtained by planting new bulbs each year. Of recent years, the late, tall growing varieties have been greatly improved. These are classed as Cottage, Darwin and Breeder and come in wonderful shades, and of large size.

Of late tulips, the best yellows are found in the Cottage variety, Mrs. Moon and Moonlight being desirable yellow sorts. Darwins have no yellows, but the pinks, reds, purples and violets, are glorious to behold. The Breeders are perhaps finer than any of the others in some respects. They come in the most wonderful shades of bronze, brown, purple, golden bronze, dark reds, mahogany and other tints, difficult to express. All are well suited for growing in the perennial border as many of them last for years and increase rapidly. Some gardeners prefer to lift the bulbs in summer as soon as the tops have wilted, dry them off, and plant again in the fall. This is perhaps the better way because the colors can be kept separate and changed in the border from year to year. However, if such treatment is found too troublesome, the leave-alone plan is all right, even though the colors get mixed up by planting new kinds here and there. The late varieties are as a rule dearer than the early tulips, of which there are hundreds of showy varieties available in the seed stores. The "earlies" come in many bright colors and are particularly

suitable for beds to be followed by annuals after the tulips have bloomed.

Daffodils

The narcissus, or daffodil, is not so well known as the tulip. This may be because it is limited to yellow in different shades and whites. It is a wonderful plant, however, whether for outdoor or house planting. It is quite as hardy as the tulip, and increases well in the border or even in sod that is not subjected to much tramping or cutting during the summer months.

Hyacinths Pleasing

The hyacinth is not used for bedding purposes as much as the tulip, as it is not quite as reliable, but a good bed of hyacinths is a pleasing sight in early spring. The colors of the hyacinths are so delicate, and perfume so sweet, that it well deserves the popularity which it enjoys. For bedding purposes new hyacinth bulbs should be obtained every year. In the border, the bulbs may be left in the ground from year to year where they will often increase and furnish a good supply of bloom of moderate

size. It is well to give some covering of strawy manure or leaves to hyacinth beds late in the fall.

Other Flowering Bulbs

There are many other kinds of flowering bulbs that require to be planted in the fall to secure spring bloom. The snowdrop, crocus, scilla, chinaodoxa, grape hyacinth and eremurus are all early and beautiful. They are also cheap and easily cultivated.

Plant in October

Outdoor planting should be completed in October. Good results are obtained from planting well into November, but it is nicer work planting earlier and the bulbs will develop better roots. If late planting cannot be avoided it is well to put on a covering of straw manure or leaves before the ground freezes so as to prolong the rooting season as late as possible.

Depth to Plant

Tulips, narcissi and hyacinths should be planted from four to six inches deep, to the bottom of the bulb, and about the



Fine Display of Gladioli at Canadian National Exhibition

The St. Thomas Horticultural Society was the only society represented this year. In addition to several fine competitive prize-winning displays in the Horticultural Building, Dr. F. E. Bennett staged this decorative display in the Government Building.

same distance apart, while the smaller bulbs, such as snowdrops, crocuses, and squills, may be planted about two inches apart, and from two to three inches deep. If the soil is clayey, or if there is manure in the soil which is not thoroughly mixed with it, it is advisable to put a little sand under each bulb, which will prevent rotting.

Single rows should be avoided in planting bulbs, as they are much more effec-

tive in masses or groups. Tulips and hyacinths are usually planted in beds in large masses, their place being taken by annuals later on. They can be used with good effect, however, in small clumps in the perennial border, and make a fine show in the spring before many of the perennials are in bloom. Planted in this way, there need be no large bare places in the border without bloom after the bulbs have done flowering.

Place the flats upon on a bench in a light, cool house, or, for the sake of convenience, upon a shelf out of the way and forget them, except to just keep them from drying out. When the little plants are one or two inches high and the old root cutting at the base of each has developed some fibrous roots, they should be potted into two-inch pots. This will be some time during January or February, depending on time of sowing, light and other growing conditions in the greenhouse. In an ordinary good potting soil they will soon start to grow and quickly fill the pot with roots. If there is any danger of them crowding you for room before you can get them planted out, knock them out when they have made a firm potful of root and place them tight together in seed flats with a half inch of soil spread over the bottom and put them back on the shelf or out in a cold frame until you can handle them for planting.

As mentioned for the suffruticosa section, to get the best results they should be planted in the field just as soon as the land is in condition for working. If planted in a good clay or clay loam and kept well worked, they will be good heavy roots for sale the following spring, and with all due deference to our industrious Dutch friends, will put to shame those imported from the light, sandy soils of Holland.

The root cutting method is much preferable to stem cutting of this type of Phlox, for several reasons, of which these are the outstanding ones:—

- 1.—It produces plants of a more shapely type of growth and more vigorous.
- 2.—It makes for less labor and handling because all are struck at once, this also giving a more "even" lot of cuttings.
- 3.—It is a more prolific method.

Either of the latter types can be propagated by division of old roots in the field but this is too cumbersome to be commercially feasible when there are better methods.

Currants from Cuttings

Currants are easily propagated in the home fruit garden from cuttings of the new wood if a few simple directions are followed.

Take cuttings of the currant 5 to 8 inches long in the early fall and set in rows or heel in together in a well drained spot until early spring. Less than an inch of the cutting should protrude above ground and this may be covered with a light mulch of manure after the first frost to keep the cuttings from being heaved out and the roots broken by spring freezing.

To plant make an opening in the ground with a spade, place a cutting behind the spade and press the ground with the foot in order to force the earth tightly against the plant.—Ohio Experiment Station.

Propagating Hardy Phlox by Cuttings

F. Mitchell, Port Hope, Ont.

FROM the propagator's point of view, there are three distinct types of phlox, classified as follows:—

- 1.—Those which are propagated by division in the field after their flowering season.
- 2.—Those which are propagated by stem cuttings.
- 3.—Those which are propagated by root cuttings.

Propagated by Person

1.—Of the first type, the only one receiving much attention in this country is Phlox subulata (or setacea), the Moss Pink in popular nomenclature, which is a gem for "carpeting" in rockeries and which in early spring is literally a solid mass of bloom. This grows much after the fashion of a selaginella or lycopodium, throwing out its creeping, leafy stems in all directions, the stems rooting freely to the ground as they creep along. After the flowering season is over, the "mat" may be cut or chopped up into small clumps and re-planted and with the aid of a little water for the first few days, will root readily and grow into good-sized clumps for the following year.

Propagated by Stem Cuttings

2.—To this type belong Phlox suffruticosa, of which the white variety Miss Lingard is the best known, Phlox amœna and Phlox arendsi, but little appreciated in Canada as yet, and our own native son, Phlox canadensis, or more commonly called in the trade Phlox divaricata, with its much improved form Laphamii.

Roots of these may be lifted in the fall, brought into the greenhouse and potted, or, better still, planted in boxes of five or six inches deep in a light and rather cool house. In the short space of a week or two, growth will start and new shoots will appear abundantly. As soon as they are about three inches long, they may be taken as cuttings and will root freely in two to four weeks in a cool, well-drained propagating bench, when they may be potted into two-inch pots, where they can remain, until planting-out time, which should be just as soon as the ground is in condition to work. Frequent successive batches of cuttings can be taken through the winter and early spring from the stock planted in the boxes, and the tops of

early-potted cuttings can be taken again.

If it is inconvenient to propagate in the winter indoors as described above, cuttings may be taken from field roots outdoor when growth is sufficiently far advanced (say four or five inches high), and rooted either indoors in a propagating bench or outdoors in a well-drained, shaded frame, then grown on in pots as above until well rooted. The great disadvantage of this is that it means just so much extra work on one's already overtaxed shoulders in the rush season and the chances are ten to one that they will suffer through neglect and you will suffer a loss of valuable time and money spent in the attempt. In addition, outdoor cuttings will not be ready for the field until nearly midsummer, they are almost certain to have a hard struggle with the hot summer sun. It also practically means a year's waste of the land, for they will have to be grown on for an additional year before you can conscientiously offer them to your customers as saleable-sized roots.

Hardy Phlox

3.—The third and by far the most important type is Phlox decussata (or paniculata), with its almost unlimited variety of colors, and is what the general public know and speak of as "Hardy Phlox." These may be propagated by stem cuttings, either indoors or outdoors, as described above for the suffruticosa section, but by far the most satisfactory results are to be obtained from root cuttings.

Vigorous, healthy, two or three year old roots are the best stock to start off with. Lift these late in the fall, before the ground is frozen up (about November is a good time), bring into the greenhouse and shake or wash the earth well off. Now attack them with a sharp knife, pair of strong scissors, or, best of all, a good pair of sheep shears, cutting all the fibrous roots up into lengths of about one inch. The hard underground portion of the stems may be cut up as well, but if it is a variety you are short of, pot that up and take top cuttings from it as described for suffruticosas. Spread the cuttings thickly like a mat in an ordinary, well-drained seed flat, press down well and cover with about one-quarter inch of clean sand, firming it down upon them.

Bulbs for Bloom in the House

C. B. Alden, Toronto

BULBS for winter bloom in the house may be grown by anyone who will give attention to certain details, easily learned and easily practised. For bloom at Christmas and New Year's, the bulbs should be potted about the middle of October.

For house culture, the species and varieties differ in some cases from those used for outdoor bloom in spring. Not only should the varieties be carefully selected but good, sound, firm bulbs of the best quality should be obtained. Soft, spongy, ill-shapen bulbs are of little use to produce strong flower spikes. Cheap bulbs are usually very disappointing. Mixed collections also usually should be avoided, as oftentimes many of the varieties in collections are useless or not wanted. Named varieties give the best results, especially in Dutch hyacinths. A good selection of types of bulbs for a beginner is: First, white Roman hyacinths; second, named Dutch hyacinths; third, narcissi in variety. Tulips and crocuses do not give as good results under pot culture as those recommended, but are worth trying.

Best Bulbs for Forcing

ALTHOUGH the pink, rose and blue shades of Roman hyacinth make a pleasing variation in color effect, the white-flowering variety is the best, being freest and earliest in blooming. Roman hyacinths should be planted three in a five-inch pot, or jardiniere, to be most effective. Unless single bulbs are extra good and large, the effect is slim and disappointing.

The selection of Dutch hyacinths is largely a matter of personal taste in colors and shades. All named varieties are usually of standard excellence. They look well planted one bulb in the centre of a four or five-inch pot, and equally well in groups of three, five or seven in bulb pans or jardiniere. If planted in groups, there should be about two inches of space between each bulb. The single-flowering varieties usually give the best results. The following list of singles and doubles is merely suggestive, there being many other varieties just as good, old and new; Single white, Grande Vedette, Grand Vanquer, La Grandesse; single red or rose, Gertrude, Moreno, La Victoire; single blue, Queen of the Blues (light), King of the Blues (dark); double white, Flevo, La Tour d'Auvergne; double red or rose, Koh-i-Noor, (semi-double), President Roosevelt; double blue, Bloksberg, Laurens Koster.

Most varieties of narcissi, which include the daffodils, are suitable for pot culture. Among the double ones, Von Sion, or what is generally known as the English daffodil, ranks first in value.

Narcissus alba plena odorata and N. incomparabilis are other good ones. The single, or trumpet, narcissi afford an almost endless selection of varieties for indoor culture. Among the best are Golden Spur, Horsfieldi, Princeps and Poeticus ornatus. A pot or two of jonquils, a type of narcissus, must not be omitted, their delightful fragrance making them especially worth while for culture in the home.

The bunch, or polyanthus, narcissi are also very acceptable, the early paper white being one of the best on account of its earliness. Gloriosa is another good variety of this type. The Chinese sacred lily is a favorite variety of the bunch narcissi.

Growing Bulbs in Glass

GROWING bulbs in glasses is a very old method. One cannot do better in this article than to quote the practise advised by W. E. Groves, Hamilton, whose advice on floriculture is always so welcome to readers of THE CANADIAN HORTICULTURIST:

"It does not matter whether spring or rain water is used, as long as it is pure and clean. Glasses for the purpose are specially made to hold the bulb, which should not quite touch the water. It is wise to give the dark treatment for a short time as recommended for pots, to facilitate root action and hold back leaf growth. When brought to light, follow the same treatment as would be given for pot culture. A little more care needs to be taken to avoid extremes of temperature. It is easily seen that with the roots in water, changes of temperature are more likely to affect growth than would be the case with the plants in pots. Both for pot and glass culture cool treatment produces a firmer spike, which is likely to last longer than if it were forced."

Bulb Culture in the House

VERY rich soil is not required for the pot culture of bulbs. Four parts well-rotted sod and one part barnyard manure or cow manure, with a one-eighth part of fine sand mixed in, make a good compost, but it is not always readily available, unless perhaps it might be obtained of a florist or at a seed store. If not available, take some good, light, loamy garden soil, and mix with it some pulverized dry cow manure, four parts of soil to one of manure. One quart of fine bone meal mixed with a half bushel of soil also will make a fair compost. If the soil is heavy, include a little fine, sharp sand as already recommended. When used for potting, the soil should be fairly dry.

No broken crockery or broken pots,

charcoal and so on, need be used in pots for bulbs. Care should be taken, however that all pots, boxes or pans used should have holes in the bottom sufficient for drainage.

When potting the bulbs, first fill the pot or box from one-half to two-thirds full—according to size of bulbs—with the soil and press the soil down slightly. Then place the bulbs in position at proper distances apart, so that the top of the bulb is about an inch below the top, or rim, of the pot or box. It may be necessary to take the bulbs out and add more soil, or remove some, perhaps, before the bulbs can be placed at the proper depth. When the latter point is assured, fill the pots loosely full, level to the brim, then press the soil fairly firm around the bulbs until the surface is about half an inch below the edge of the pot, leaving the surface quite level.

Give the pots sufficient water to moisten well all the soil. Two waterings may be necessary for this purpose. Then stand the pots away in a cool, damp, dark place, in a temperature of from 40 to 50 degrees. To secure good roots from the bulbs, this temporary storage in darkness is most important. It is the one "secret" of success in growing bulbs indoors. A cellar floor on a close cupboard or box will suit for the purpose.

In the chosen place for storing, the pot should be buried in sand, sawdust or dry soil. Pack the material closely around the pots and cover them to the depth of an inch or two. The pots seldom require water again until rooted, unless the place they are in is very warm or dry. To root well, bulbs usually take from three to six weeks, according to species. This securing of good roots before bringing the bulbs to the window is absolutely necessary to ensure the best flowering results.

Bringing Bulbs to the Light

AFTER the pots have been in cool, dark quarters for four or five weeks, they should be examined. If their delicate white roots appear through the holes in the bottoms of the pots, the bulbs are ready for placing in the light. If no roots are showing, a closer examination is necessary. This is best done by taking the pot in both hands, one at the bottom and one flat across the surface of the soil, with the fingers conveniently inserted between the top growths, and then turning the pot upside down and striking the edge or rim, of the pot on a solid table or other subject. The pot will then separate from the ball of earth and can easily be removed. If the bulbs are well rooted, they are ready for bringing to the light. Place the pot over the ball of earth while the latter is still inverted and then restore to the proper position. If not well rooted, place back in storage and examine again a week or so later.

Examining the roots of bulbs is a deli-

cate operation, and should be done as seldom as possible, as there is danger of breaking the ball of earth and the roots, which latter would seriously injure, if not ruin, the bulbs altogether. After examination, the bulbs should be watered at once to settle the earth around the roots. The bulbs should be left in their cool, dark quarters for several weeks after being rooted, if desired, but must be brought to the light when the top growth has attained a height of about two inches; otherwise, the flowering results will not likely be as good as they might be. When brought into the window, place the bulbs in a not too sunny position. See that the soil is kept moist by regular enough water to moisten all the soil in the pot.

A Word About Freesias

THE freesia is a bulb in a class by itself. It is not necessary to place it in a cool, dark cellar to develop the root system. It may be started into growth at once in the window. Place seven to nine first size bulbs in a four-inch pot, putting them at least one inch below the surface of the soil. Give a good watering to settle the soil, and then water moderately afterwards. The freesia is one of the best and sweetest bulbs we have for winter use. It is not suited for outdoor culture.

Forcing Roots in Winter

ANYONE possessing a warm cellar can force rhubarb, seakale and other roots all winter if they wish to do so. All that is necessary is to place the roots in warm sandy soil, watering when needed with tepid water. Fig. 1 in Diagram shows a good way to grow the roots. A two-inch by twelve-inch plank is set on edge at one end of the cellar and a bed of sandy soil made in which to plant the roots. Rhubarb roots such as shown at Fig. 5, are placed close together in the bed nearly touching. Seakale roots (Fig. 4), and chicory are spaced about six inches apart. Rhubarb forces better after it has been frozen.

When the bed is made up all the attention necessary is to water twice a week with tepid water; the warm cellar will do the rest. The edible portion of seakale is shown at Fig. 2, and spinach beet at Fig. 3. To keep up a constant supply of rhubarb and salad it is necessary to bring in the roots in small batches, say one root of rhubarb and six each of spinach beet, chicory, and seakale every week, till the supply starts outside in spring.

Two other ways are shown of forcing roots suitable for those who have no cellar. Fig. 6 is a pit three feet deep and covered with planks made in the garden for forcing rhubarb or any other roots. The heat is supplied by manure which is spread on top, four feet thick. To gather the crop it is necessary to remove

some of the manure. Fig. 7 is a box covering several roots set close together in the ground and over this manure and leaves are spread thickly,

How to Store Potatoes

THOUSANDS of bushels of potatoes are lost annually by careless storing —by being put in wet in comparatively warm and illy-ventilated cellars and by being piled in great heaps. Touching on this matter, the Dominion Horticulturist in Bulletin No. 90 of the Dominion Experimental Farms, that is to be had on application to the Publications Branch, Ottawa, furnishes advice that could profitably be well heeded.

In the first place, potatoes should be stored as far as possible in perfect darkness in a cool, well-ventilated cellar. Instead of heaping the potatoes against the wall, slats should be nailed, a little apart, about six inches or more from the wall. A temporary floor should also be laid about a similar distance above the permanent floor with cracks between the boards. This plan will permit air to circulate under and through the pile. If large quantities have to be stored and the piles have to be made very large, square ventilators formed of slats and running from the top to the bottom of the heaps can be placed here and there, which, with the ventilation derived from the spaces below and at the sides, will keep the potatoes in far better condition than if they are packed solidly. Another plan for storing the tubers is to put them in large crates made from slats with small interstices between.

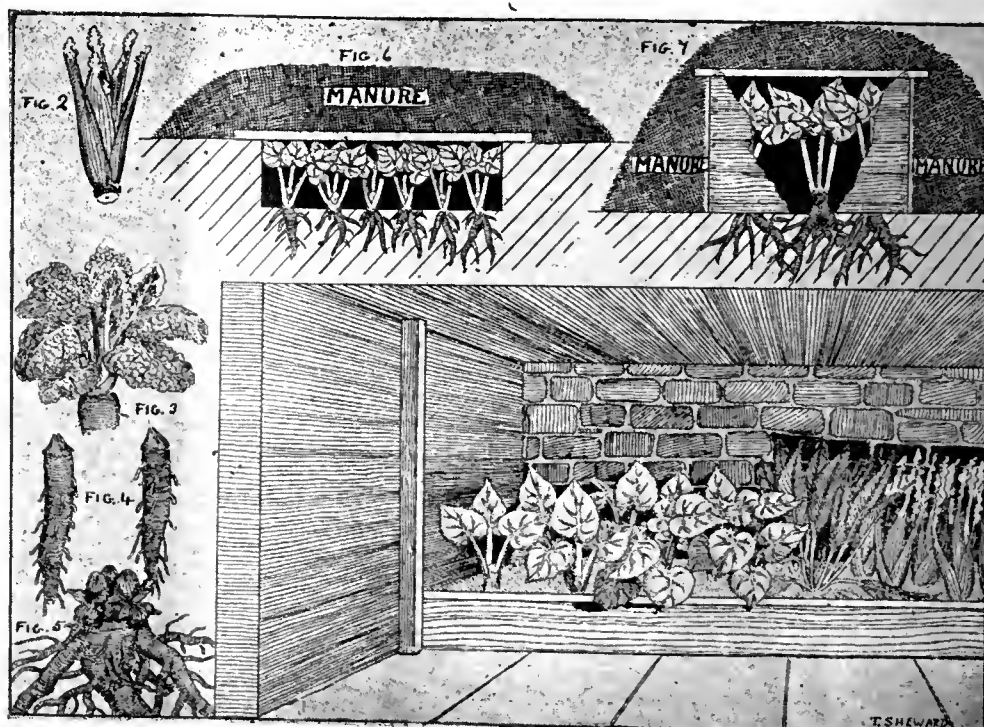
While every precaution should be taken

against frost, the heat should not exceed from 33 to 35 degrees F. A further matter of importance is to provide some means of letting in cool air when spring is at hand to prevent sprouting. The best method is to let the cool air in at night and keep the cellar closed during the day.

TIMELY REMINDERS

Some very destructive bean diseases, including pod-spot, are carried in the seed; so it is extremely important to observe the general rule that no seed should be saved from diseased plants when saving beans for seed. Never save seed from pods which are not bright and clean.

Roses must be protected in most places in Canada to help ensure their coming through the winter alive, and protection is not always successful. The most reliable method of protection is to cover the plant with soil. Where this is not easy or possible, the base of the plant can be mounded up with soil to a height of twelve inches or more, and the top then bent over and held down with soil. Then if boughs or leaves are thrown over the top to help collect the snow and give greater protection it is desirable. In the case of climbing roses, a good plan is to cover them with a box filled with dry leaves, making the top water tight so the leaves will keep dry.—W. T. Macoun, Dominion Horticulturist.



Methods of Forcing Roots in Winter

A warm cellar and a little planning will provide anyone with rhubarb, seakale, and other root crops all winter. The accompanying article tells how.

QUESTION BOX

W. E. GROVES

Snow Ball Leaves Curling

"What is causing the leaves of so many snow ball bushes to curl up and wither this season? How should they be treated?"—M. B., Collingwood, Ont.

It is too late this season to do anything to the shrubs that would be of service. It would be well to prepare for next year's growth by manuring the ground, either digging it in or as a mulch. If this is not convenient, give a dressing of some fertilizers. A dormant bordeaux spray early in the year would be helpful, and if the plants need to make stronger growth, a little pruning might be done in the spring even though this is not quite the right time. It may be better to sacrifice some flower for one year to secure a healthy plant.

Pronunciation of "Cyclamen"

"What is the proper pronunciation of "cyclamen?"—F.M.A., Glanworth, Ont.

The proper pronunciation of "cyclamen" is one of the points where there is difference of opinion. Remembering the way in which such words as *cycas* and *cypridepium* are pronounced it is thought by some that cyclamen should have the same sound. Others claim that the accent we give to "cylinder" is correct. Like a number of other names about which there is dispute—among them being *gladioli* and *dahlia*—it is difficult to decide, for even localities differ as well as individuals. Probably it does not much matter.

Tulips in Porch Boxes

"Can tulip bulbs be successfully planted in porch boxes? I have heard they would rot but have had no experience."—W.H.B., Caledonia, Ont.

The reason for tulips rotting in porch boxes would be the freezing and thawing to which they would be subject during the winter. The boxes if easily moved could be planted and kept in a cool cellar during the winter and placed outside in the early spring. A better method still would be to have some boxes that would fit in the porch boxes. By growing the bulbs in these they could be placed in the porch boxes when coming into bloom.

Double Gypsophila

"How shall I propagate double *Gypsophila paniculata*? I have a fine specimen and have sown quantities of seed from it which seemed plump and all right, but does not germinate. Would it be safe to divide the root or could it be increased by cutting? Please advise proper time and method."—A. T., Queensboro, Ont.

Double *Gypsophila* is not easy to raise from seed for even when seed does germinate a very small percentage of the plants comes double. It is possible to graft the young shoots in the spring on

to roots of the single variety, or if the same shoots are split down a little from the plant and soil placed over the split part in much the same way as carnations are layered, rooting is possible when the little plants may be cut right off. Try the same kind of shoot as cuttings taken off with a heel, or still another way might be tried by taking root cuttings. If the old plant is easily divided there is no easier or surer way of propagation.

Germinating Canna Seeds

"How should canna seeds be treated to induce germination? Have tried several devices but have failed to get results."—Mrs. M., Collingwood, Ont.

Canna seeds should not be difficult to germinate, though they are a little slow. If only a few are needed, the end may be filed off or cut just a little in the same way as is often done with moonflower. This method is tedious if many seeds are to be treated, and the next best way is to soak the seeds for a day or two in water before sowing. Sow seeds in a shallow pan or pot and if possible give some bottom heat.

Violet Plants in Open

"Would violet plants be better left in the open during winter or under protection of a frame with slats nailed over it?"—F.M.A., Glanworth, Ont.

A frame would be the safest place to keep violets, but if in a not too exposed position, they should keep outside with protection similar to that given hardy perennials.

Treatment of Cyclamen Corms

"What treatment shall I give cyclamen corms from seed this spring? Should the corm be entirely covered in the pot or on top of the soil? When will they flower?"—F.M.A., Glanworth, Ont.

Cyclamen raised from seed this spring should be kept growing. Spring is not the best time for raising, and it is probable that the plants will not be very large for flowering this winter. Usually seed should be sown in August and the plants kept growing until the fall of the following year, when they will flower. The plants in question may flower next spring a little, but this will entirely depend on growth made in the meantime. When potting keep the corms about half out of the soil, and by the time the soil settles down, the whole corm is generally uncovered. Whilst this treatment is not absolutely necessary, it is safe and rotting of the leaf stems which sometimes occurs when the corms are buried is avoided.

Hibiscus Ranuncululus

A *Hibiscus ranuncululus* was secured last spring and is now in full bloom. Is this the natural season for blooming? Is it hardy or will it require winter protection?—Mr. J. E. R., Norwood, Ontario.

Hibiscus is a late summer blooming shrub and when once established is hardy,

needing little if any winter protection. If the situation is cold a little mulch round the base of the plant would be wise, and prevent winter killing. Plants should be pruned in the spring in the same way as is done with hydrangeas. The flowers are developed on the current summer's growth.

Flowering Violet Plants

"Would two year old violet plants that have not flowered in the bed, flower in the house during winter? Would they need plenty of root room or would they flower more freely if pot-bound?"—F.M.A., Glanworth, Ont.

Violets are not usually satisfactory house plants, but there is no harm in trying. They should be potted in good soil and there is no need for extra large pots as long as sufficient soil is provided to secure healthy growth.

Potting Heliotrope

"Does heliotrope do better in a large pot or should it be root bound?"—F.M.A., Glanworth, Ont.

Very few plants flower better if pot bound, but it should be understood that there is a happy medium between a very large pot and a size that means too much root for the food content. All plants that bloom will bloom better if kept growing steadily and healthily and the heliotrope is in this class. It is difficult to describe just what size pot to use, so much depending on the size of the plant. A plant, rooted during the spring, and kept growing well, should winter well and bloom in a five inch pot.

English Wallflower

"Will English wall-flower grow outside in this district? When should it be planted?"—Mrs. S. A. Niagara Falls, Ont.

English wallflower is not hardy, excepting in very sheltered positions, and even then they are not very satisfactory. Being a spring flowering plant the growth has to be made before the winter with the result that if this is damaged by severe frost the plant is not much good. They may be grown in the house or cool greenhouse. Seed should be sown in the early summer, and the plants either grown on in pots or in the open ground until early fall when they should be taken in and kept in a fairly cool place until spring. Plants grown in the open ground may be easily lifted and potted in September.

Radishes Running to Tops

"What makes radishes run to tops and go to seed instead of making roots?"—J. G., Brantford, Ont.

Radishes sown too thickly or in ground not very congenial often act in the way suggested by the question. Lumpy soil for any of the small salads should be avoided, and to secure quick growth the soil must be mellow and well cultivated. This soil attention, with thin sowing ought to effectively check the top growth described.

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Ontario Gladiolus Society

THE executive of the Ontario Gladiolus Society is losing no time in getting plans under way for the second annual show which will be held in Guelph, Ontario, in 1923. On September 20, a meeting was held in Guelph of those interested in the Society to prepare initial plans. A strong local committee will assist secretary John F. Marr, consisting of Robt. Patterson, H. Occomore, Miss Stockford, J. M. Campbell, T. J. Hannigan, Albert Reinhardt, Prof. McLennan, A. H. Tomlinson, Dr. N. C. Wallace, Ed. Billings, H. Gumbley, A. A. Duignan, B. Hack, Miss Rose Yeates, Geo. Leadlay, A. R. Hockin, Wm. Harris, Rockwood; G. W. Roberts, Ontario Reformatory; Prof. R. R. Graham and J. E. Carter.

Prof. A. H. MacLennan, head of the Horticultural Department of the O.A.C., has offered to provide all the space necessary for the trial plots. Over 1000 circular letters are being sent to gladiolus growers all over the world offering space in the trial grounds so that the bloom can be placed on exhibit at the time of the show.

At the Canadian National

AMATEUR horticulture was not so well represented this year at the Canadian National Exhibition as last year and some previous years. There was no big display from the horticultural societies of the province, such as was made last year and individual amateur exhibitors were not so numerous as on some former occasions. The St. Thomas Horticultural Society was the only society represented, but it did itself and the work of horticultural societies in general credit in the highest degree. Besides entering gladioli in the competitive classes in the horticultural building and winning many prizes, the St. Thomas Society had a very large display of gladioli in great variety in the government building. This special display, which was staged by Dr. Bennett, again showed the high standard in gladiolus production that St. Thomas not only has striven for, but has achieved. The St. Thomas Society, and Dr. Bennett in particular, well deserved the great admiration and the high praise expressed by the thousands of visitors who saw and enjoyed the St. Thomas exhibits in both buildings.

Beautiful Cut Flowers

The cut flowers staged for competition in the horticultural building were simply wonderful in growth, size, color and variety. The dahlias during both weeks, these and the other cut flowers being changed for a new competition each week, were the finest ever seen in the build-

ing. The marvellous improvement in dahlia types and varieties was exhibited to perfection. The gladioli likewise were exceptionally fine. The asters also were excellent. A number of amateur growers, that is, persons who produce flowers for the love of them rather than as a business, competed with commercial growers in many of the sections and won their share of awards. Space here is too limited to mention each entry in detail. There was some dissatisfaction expressed over the method of judging. The placing resulted, however, as follows:

Asters, 20 plants, first week; 1. G. Toyne, Toronto; 2. R. Cameron, St. Catharines; 3. A. Brearley, Toronto. Second week: 1. Toyne; 2. J. B. Spurr, Aurora; 3. F. C. Foxton, Toronto. Asters, 24 blooms, white, first week: 1. A. J. V. Atkins, Mount Dennis; 2. Foxton; 3. Cameron. Second week: 1. Foxton; 2. Brearley; 3. Toyne. Asters, 24 blooms, pink or red, first week: 1. T. H. P. Hammett, Toronto; 2. Foxton; 3. Brearley. Second week: 1. Foxton; 2. Spurr; 3. Toyne. Asters, 24 blooms, mauve, blue or purple, first week: 1. Toyne; 2. Spurr; 3. Cameron. Second week: 1. Toyne; 2. Spurr; 3. Foxton. Asters, best display, first week: 1. Cameron; 2. Brearley; 3. Toyne; (original placing of the judges, but later changed to two firsts with third moved up to second). Second week: 1. Brearley; 2. Toyne. Dahlias, best display, first week: 1. F. A. Kent, Port Perry; 2. J. W. Trimble, Lambton; 3. Dr. Richardson, Mimico. Second week the same.

Gladioli, 5 varieties, first week: 1. St. Thomas Horticultural Society, St. Thomas, Ont.; 2. Toyne; 3. N. Bryer, Mimico. Second week: 1. St. Thomas; 2. Hammett; 3. Bryer. Gladioli, 12 varieties, first week: 1. St. Thomas; 2. Brearley; 3. Cameron. Second week: 1. St. Thomas; 2. Hammett; 3. Brearley. Gladioli, best display, first week: 1. Georgetown Floral Co., Georgetown, Ont.; 2. Brearley; 3. St. Thomas. Second week: 1. St. Thomas; 2. Georgetown; 3. Brearley. Annuals, best displays: 1. A. Coleman, Toronto. There was only one entry in annuals and none in perennials. Ont would think that the amateur horticulturists of the province would endeavor to make a better showing than that.

An excellent exhibit of "Shell Pink" gladioli not for competition, was placed in the horticulturist building by A. Gilchrist, West Toronto, the originator. This very beautiful and exceedingly useful variety again attracted much attention. Mr. Gilchrist showed also a golden variety of the same type which was much appreciated by discriminating observers. Another special display was a decorative basket of gladioli, set off by green, shown by Mrs. Davidson, Aurora, Ont. The bloom was very fine and the composition exceedingly artistic. Many gardeners who saw this basket thought that a class in the prize list for displays of this kind would make an interesting addition to the floral features of future exhibitions.

Ornamental Plants and Groups

In the sections for big displays of ornamental plants, the groups formerly shown by the late Sir John Eaton and by Sir Henry M. Pellatt were greatly missed by the visitors, as J. R. Hellewell, Superintendent of the building, heard numerous inquiries for same, but there were other groups there to take their place with credit to themselves and satisfaction to the thousands of spectators.

First prize this year for decorative display of tropical and exotic plants went to T. Manton, Eglinton, on a group that was the finest that Manton ever put up, and that is saving much. The grouping was naturally artistic from end to end and the material used was exceptionally fine. Second went to H. Dillemoth, Toronto, on a very nice group in which the colors were especially well arranged and the material well selected. First for display of similar requirements but open only to civic and government institutions went to Exhibition Park, on a group that won by virtue of the art expressed in construction. This group included a stream and bridge effect, with

island and stone steps, that interested the spectators as much as did the beautiful plants that abounded throughout. Second went to Reservoir Park, on a group that was very fine and a great improvement over the one shown by the same park last year. Other awards in groups and plants were:

Group of ferns—1. Manton; 2. Dillemoth. Palms, 3 specimens—1. Manton; 2. Dillemoth. Specimen palm—1. Manton. 2. Dillemoth. Group of caladiums—1. Dillemoth; this group was one of the prettiest in the building. Specimen fern—1. Manton; A. Brearley, Toronto; 3. J. W. Cripps, Toronto. Ferns, 6 specimens—1. Manton; 2. Brearley; 3. Dillemoth. Hanging baskets—1. Brearley. Orchids, best display—1. Dale Estate, Brampton; this exhibit was beautifully arranged and of great merit from the artistic standpoint.—A. B. C.

Peony Divisions

IN peony articles, and in some peony catalogues, it is much the fashion to belittle divisions, and to brag that this catalogue would not offer such inferior stock, but sells only one and two-year-old plants, leaving the inference that any grower who offers divisions is but little better than a fraud. There is no way, of course, to standardize peony plants, as no two are alike, and every grower has his own way of propagating his plants and of selecting his sale stock. The only way, then, to know what a grower is offering, is to buy some of his goods. What he says may mean much or little, or possibly even less.

Any strong, established peony plant is built up of sections, each naturally indicated, and each practically an independent plant; each with its own crown and its own roots, and its own system of fibres and channels connecting crown to root system. Each such section, if perfectly disconnected from the others, is just as strong a plant, and as good to plant, as if it had remained a part of the whole. It is also a plant of the same age as the plant of which it was a part. There are often, to be sure, young off-shoots from the heavier parts of the plant, which can be removed to grow to greater size and strength, or left attached until they acquire size and strength, but these are not divisions. A good term for them, and no insult intended, as they have their value, is "Scraps." There will also other scraps occur in cutting up a plant.

In most cases it is impossible to separate the divisions perfectly. There will be some root tissue broken off and lost. Of this some is not of importance, and some is. Some root tissue will be wholly disconnected from its own crown and left attached to a crown to which its fibres do not connect, and to which, therefore, it is all but useless, not wholly so, probably. In some cases none of the root really belongs to the crown to which it is attached. In the main, however, carefully made divisions are good plants, most of them will bloom the first and every year, and all be strong clumps in three years. This is the unit plant obtaining in the great mass of the peony business.

If a grower prefers to grow these divisions himself a year or two, and offer heavier and proven plants, where can be no complaint. It is my impression, though, that most of the strong talk is not made by these men.

Some growers split up their divisions into parts. These parts are not divisions. When grown a year they are one-year plants, and will not divide, as they do not have divisions. They can be split up again, but the parts from which they grew, and the parts into which they split up, are only scraps, and these scraps have to be grown two years or more before they make a plant equal to the plant which can honestly be called a division. A division from a strong established plant has at least three-year strength and ability,—is a mature plant. A grower who offers plants of one and two years from scraps, and tries to give the impression they are better plants than standard divisions, is not dealing fairly.

—The Flower Grower.

CANADIAN HORTICULTURAL COUNCIL

Can All You Can Can

L. F. Burrows, Secretary-Treasurer, C.H.C.

THIS year we have in the fruit districts of Canada, a bountiful crop of peaches, pears and plums, and by every rule of bygone years the next crop will be light. The thrifty housewife should therefore can this year an abundant supply which will carry her over for two years. In any case the food is cheap and plentiful and now is the time to make good use of what is available. There is really no excuse for any housewife who omits the canning of fruit from her fall program. The following suggestions for canning, given by Mrs. Jean Muldrew, are the result of many years testing and are therefore most practical. The Council recently gave them wide publicity through the press from coast to coast:

The equipment may be elaborate or very simple. That common in use in households is the wash boiler with a rack to keep the jars from touching the bottom of the boiler.

The one-period cold-pack method is most effective, decreases the work, is easily managed, and may be safely tried by any one. Many persons still can by the intermittent method which requires one hour's boiling on three successive days, but for almost all purposes the one-period method serves equally well. All canning needs great care and cleanliness, but by following the instructions given by those who have given years of study and experimenting there is very little chance for failure.

Explanation of Terms

"Scalding" means pouring very hot water over the fruit to loosen the skin and eliminate objectionable acids.

"Blanching," means steaming or boiling in water. The fruit is placed in a cheese cloth bag, or a wire basket.

"Cold-dip" means to chill quickly by dipping into cold water. This assists in removing the skin, and setting the coloring matter, giving the fruit a better color as well as making the fruit more easily handled in packing into the jars.

Containers.—Any jars with sound tops which fit, using new rubbers. The kind of jar does not matter so long as it can be made air tight. All jars used in canning should be put into a boiler in cold water, which should then be brought to a boil and boiled at least five minutes. The rubbers and tops should stand in scalding water until required.

Directions for Canning

Select firm Canadian fruit, not over-ripe, remove any bruises or decayed parts, and grade so that the contents of the jars shall be of uniform size. Blanch or scald the required time, chill by cold-dipping and pack into the jars to within a half inch of the top. Fill within one quarter inch of the top with boiling syrup.

Place a new rubber on the jar, and so adjust the top and the ring that it shall not be quite tight. If rings are used, screw tightly then loosen a little. If perfect seal jars are used do not push down the side wire.

Place the jars on a rack in the boiler with water to come up near the top of the jars. Count the time of sterilization from the time the water begins to boil. See that the boiler lid is tight fitting. When they are sufficiently sterilized, remove from the boiling water, screw the tops on tightly, or seal the perfect seal tightly, wipe off the outside and set away.

Syrup Formula

Thin Syrup—1½ cup sugar, 1 cup water, boil. To thicken further, boil 2 or 3 minutes.

Medium Thick Syrup—Same proportions boiled 5 minutes.

Thick Syrup—Same proportions boiled from 8 to 12 minutes or until soft ball stage.

Note—Stir until you can see that all the sugar is dissolved, and no longer.

Time Table

Apples—Blanch ½ min., sterilize 30 mins.
Fruit Juices—Boil in open kettle 20 mins. with sugar as required.
Grapes and Plums—Do not blanch, sterilize 16 mins.
Peaches—Blanch ½ min., sterilize 16 mins.
Pears—Blanch ½ min., sterilize 20 mins.
Quinces—Blanch ½ min., sterilize 60 mins.
Tomatoes—Blanch ½ min., sterilize 22 mins.
Tomato Juice—Sterilize 20 mins.

Some Recipes

Peaches—Blanch, cold-dip, remove stones, pack in jars, cover with syrup as thick as desired; adjust the covers and sterilize 16 mins.

Pears—Remove the skin, cut in halves or in quarters as desired, or they may be canned whole with the stems on. To avoid discolorization, pare with a silver knife and drop into cold water until all are ready for canning. Pack into jars, add thin syrup, and sterilize 20 minutes. The addition of lemon or cloves takes away the flat taste of the sweet fruit.

Grape Jelly—Pick over, wash and remove stems from Canadian grapes before placing in preserving kettle. Heat to boiling point, mash, then boil 30 minutes. Place in a double thickness cheese-cloth bag and allow juice to drop through. Measure juice and boil 5 minutes. Add an equal measure of heated sugar, boil three minutes then skim and pour into glasses.

Pear Chips—8 lb. Canadian pears, ¼ lb. preserved ginger, ½ tablespoon ground ginger, 4 lbs. sugar, 4 lemons. Select pears which are firm and not overripe. Remove stems, wipe, quarter and core; then chip into small pieces (but do not remove skins). Add sugar and ginger and let stand overnight. In the morning add lemons cut in small pieces, reject seeds, and cook slowly three hours or until thick. Put into marmalade-glasses and cover with paraffin.

Damson Plum Jam—4 lbs. Canadian Damson plums, 4 lbs. sugar. Wash the fruit, place in a kettle with a little water and cook until soft enough to remove the pits. If desired remove the pits. Heat the sugar before adding to the hot fruit bring again to a boil and boil three minutes. Put into glasses and cover with paraffin.

New Nursery Stock

L. F. Burrows, Secretary, C. H. Council

AFTER a careful perusal of the Fruit Statistics of Canada, published each year by the bureau of statistics in co-operation with the Dominion Fruit Branch, one can reach no other conclusion than that the fruit growers of Canada heed but little the advice of the various horticulturists regarding the best varieties to plant. Each year the nurseries report sales in commercial quantities of varieties of nursery stocks absolutely unsuitable to the districts in which they are planted, or, in fact, to any district in the Dominion. Enormous quantities of varieties, on which the yield is light and the quality of the fruit poor, are sold. And this, in spite of the fact that information is obtainable for the asking regarding the most suitable varieties for any part of the Dominion.

As long as growers continue to disregard the first factor in successful fruit culture—the planting of proper varieties—so long will our marketing problems continue. The fact is also clearly shown in the above statistics that the unsuitable varieties, almost without exception, are sold for more than the best varieties. The grower, therefore, not only increases his overhead excessively with his original purchase, but in many cases, considerably more replacements are required than is the case with standard varieties.

Those who contemplate planting fruit trees are advised, therefore, to consult the nearest horticulturist—i.e., the district horticulturist, agricultural representative, provincial horticulturist or department of horticulture at the agricultural college—before placing their orders.

Copies of the statistical report above referred to may be obtained free upon application to the

Fruit Commissioner, Department of Agriculture, Ottawa, Ont., or to the Secretary, Canadian Horticultural Council, Ottawa.

Plant Registration

THE plant registration committee of the Council met in Toronto on Tuesday, Sept. 5. A definite plan of procedure for bringing plant registration into effect was proposed and tentatively agreed upon. A further meeting of the committee will, however, take place in the near future for the purpose of definitely drafting a report to be presented to the Council. The committee have received considerable encouragement from outside sources, and feel satisfied that within a short time Canada will have the honor of providing the first national plant registration scheme.

Insect and Pest Act

THE nurserymen's section together with the florists' and gardeners' section of the Council were most cordially received by the destructive insect and pest act advisory board in the office of the Dominion Entomologist on Friday, Sept. 15, and suggested certain amendments to the proposed Insect and Pest Act regulations. The following were in attendance:—L. F. Burrows, secretary of the Council; Maj. John Connon, Hamilton; E. B. Luke, Montreal; S. E. Davidson, Fonthill, Ont.; Chas. R. Fegan, Fenwick, Ont.; F. J. McKenna, Montreal; S. A. Frost, Toronto; C. J. Hay, Brockville; W. T. Macoun, Ottawa; W. W. Gammage, London.

The chief amendments considered were to section 6, wherein additional points of entry were requested at Halifax and Niagara Falls and to section 7 so that inspection of nursery stock may be made at the warehouse of the importer rather than at the port of entry. Considerable discussion took place, and the delegation left, feeling that a fuller understanding of the problems of both the Insect and Pest Act Advisory Board and the nurserymen had resulted, and that the board would be most sympathetic in their consideration of the proposed amendments.

Potato Growers' Association

A potato growers' association has recently been organized at Aneroid, Sask., with Everitt Baker as secretary. This association will be represented on the Council by W. F. Broadstock, secretary of the Edmonton Potato Growers' Association.

New Celery Disease

ACROWN rot or root rot of celery is causing serious loss in some Ohio celery fields, according to plant pathologists at the Ohio Experiment Station. The affected plants fail to develop, usually have a bleached appearance, brown and rotting root tips, and in badly diseased plants, a dry rot or decay of the inner tissues of the crown. The fungus which causes the disease belongs to the same class as those which cause cabbage yellows and tomato wilt, diseases dreaded by gardeners because of the great difficulties of eradication and control.

The development of an easy-blanching disease-resistant strain seems possible, but until this is accomplished, the pathologists state, much can be done to prevent spread of the disease in infected fields by carefully collecting and burning diseased plants and refuse material. The fact that diseased seed beds were found to be the most prolific source of infection suggests that great care be taken to develop young plants in disease free soil.

A new variety of the Rose potato, called the Early Norther Rose, was planted in the Charleston section of South Carolina last spring. It resembles the Spaulding Rose, but is a little longer and thicker than that variety. The average yield was 80-90 bbls. per acre.

MARITIME PROVINCES

Kentville Exp't'l Farm

THE Dominion Experimental Farm at Kentville, N.S., was the outgrowth of an agitation on the part of the Nova Scotia Fruit Growers' Association for a fruit experimental farm in the Annapolis Valley, and was taken over from the provincial government in 1911. At the beginning the land occupied consisted of 294 acres, but this has been added to until now there are 492 acres within the area of the farm, including 130 acres used as a training farm for returned men. An orchard planted since 1912 covers 47 acres, which with a mature orchard which was purchased makes 63 acres devoted to fruit trees, including 227 varieties of apples grown on 2,616 trees, 55 varieties of pears on 225 trees, 92 varieties of plums on 367 trees, 54 varieties of cherries on 154 trees, 47 varieties of peaches on 106 trees, and 12 varieties of apricots and quinces on 23 trees. Particular attention has been paid to English varieties of

apples, which so far have not shown any superiority to those previously grown. Experiments have been conducted to ascertain the relative cost of spraying and dusting, and the efficiency of various insecticides and fungicides. The cost of spraying and dusting an acre of 40 trees 25 years old last year was with Bordeaux dust \$13.56, sulphur dust \$17.82, 4-8-40 Bordeaux-arsenate spray \$18.39, and lime sulphur 16-40 arsenate spray \$14.34. Three applications were given. Small fruits and vegetables receive a good deal of attention, especially potatoes, which are widely grown in the Annapolis Valley for shipment to Cuba.

Live stock interests are not being overlooked. Feeding tests are being conducted, etc.

Extensive experiments with fertilizers are under way, there being nearly 400 test plots covering 25 acres. Ground limestone has been found especially valuable in increasing production, particularly of clover. Tests covering six years show an annual increase of value of \$15.52 per acre in the area limed over that not limed, but otherwise similarly treated. Sixty colonies of bees are kept, and it has been found that with proper attention each colony averages 100 pounds of extracted honey per year. Fuller particulars of all operations will be found in the superintendent's report.

pressed much pleasure at meeting him prior to the opening of the approaching exporting season.

New Pre-Cooling Plant

AS an experiment in the preparation of fruit for export, there has been installed in the Waterville Fruit Company's warehouse at Waterville, a new and unique process, in the establishment, by the Dominion Department of Agriculture, of a pre-cooling plant, the first and only one of its kind to be introduced in the Dominion. The system is simple but effective.

The plant consists of a large ice tank with a capacity of three tons, air ducts, gasoline engine and large insulated fan with capacity of 4000 cubic feet per minute. The fan, which is propelled at a speed of 700 revolutions per minute, forces the air, drawn from air ducts along the ceiling, through a ten-inch wire screen at the bottom of the ice tank and thence through cold air ducts running between a false floor and the main floor in the storage room. The warm air is drawn off through ducts along the ceiling and comes back cooled as it again passes through the ice tank, thus ensuring continuous circulation and even temperature throughout.

The operation of the plant and the results attained from the experiment will be followed with keen interest by growers and shippers throughout the valley.—Berwick Register.

The farm value of vegetable and flower seeds produced in the United States in 1919 was over \$8,000,000 compared with about \$1,500,000 in 1909.

About half of the east Texas tomatoes are sold through a growers' exchange composed of 2,500 bona fide growers, divided into 31 local organizations. Each "local" elects one trustee, and the 31 trustee chooses the president of the central exchange, together with four directors.

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Sanding Cranberry Bogs

OBSERVATIONS by the weather bureau of the United States Department of Agriculture on the beneficial effect of sanding cranberry bogs have recently been confirmed in a report from the Cranberry Experiment Station, in Wisconsin. The results will interest growers of cranberries in the Maritime Provinces. According to the report there is an average of 58 days between the last spring and first fall frost (June 25 to August 22) over unsanded bog, as against 118 days between the last spring and first fall frost over sanded bog.

This represents a gain of 95 per cent, in length of frost-free season on sanded bog. The item of sanding, therefore, greatly reduces frost hazards and conserves the water supply by eliminating the need for frequent flooding to protect against summer frosts. Sanding not only permits but requires deeper and better drainage, and is an insurance against fires on a bog in dry times. Sanding, together with thicker setting of plants, reduces labor and expense of weeding, besides insuring earlier cropping on the bog.

Broker Visits Valley

EARLY in September, J. O. Sims, the well-known fruit broker of London, England, concluded a very pleasant trip through the Annapolis Valley. Before returning to England, Mr. Sims informed THE CANADIAN HORTICULTURIST that it was 10 years since he last visited the apple growers of Nova Scotia and was returning to England much impressed by the hearty welcome he had received from his many old friends in the Valley and wished to thank them all once again through these columns for their very kind hospitality.

He informed us that shipping conditions have changed considerably during recent years. Today, many growers are again able to ship their own apples. Several small companies of growers have been recently formed; these men have built apple warehouses at various points on the Valley and now intend packing and shipping their fruit to the broker of their choice in Great Britain. Many of these growers were shippers to Mr. Sims as far back as 27 years ago and ex-

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CROCUS, mixed	90c per 100

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BRITISH COLUMBIA

U.S. Fruit on B.C. Market

THERE is something wrong when we allow the American growers to control our market and compel the Fraser Valley ranchers to lose their crops," declared Hon. E. D. Barrow, minister of agriculture, when addressing those present at the annual Agassiz Fair, Sept. 13. "In Chilliwack, Bartlett pears are a drug on the market, and many will no doubt be left on the trees to rot or else fed to hogs. Only last week Wenatchee growers shipped in to Vancouver no less than 26 cars of this variety of pears, five of which were sent back on account of the presence of the codling moth," continued Mr. Barrow. "As a result, the bottom fell out of the market." As a remedy, the member of the provincial cabinet advocated the establishment of a selling agency among the growers while attention should be paid to the canning industry.

Continental Markets

IN the series of addresses given during the past three months, throughout Canada, by J. Forsyth Smith, Canadian Fruit Trade Commissioner for the United Kingdom, reference was made to the conditions and the outlook in the markets of Continental Europe as well as to those of Great Britain, as reported last month. Some of the pointers given respecting the Continent were as follows, with special reference to British Columbia's opportunities:

The Market in France

France is one of the few European countries that does not know the western boxed apple. It is a large producer and exporter of apples, and produces, normally, enough apples to supply all home requirements. Importations have, always, been the exception rather than the rule. French apples may be divided into two classes: (1) Apples which supply the main consumer demand, ungraded, unselected, inferior and sold in bulk by the kilogramme. These are offered in quantity and supply the main demand. (2) An extremely limited supply of "pommes de luxe," grown with extreme care, without spot or blemish, packed for shipment even for distances of less than 100 miles with each apple separated from its fellow by 2 inches of excelsior. These apples, as offered commercially attain the full exhibition standard, and sell to the consumer at 1.50 to 2.50 francs or 12 to 21 cents apiece. Between these two extremes, however, it should be possible to find a certain market for Canadian apples, if their excellences were made known to the trade. One British Columbia firm has already appointed an agent in Paris and expects to do some business next season. It is suggested that it would be a very good idea to trans-ship a part of the exhibit at the Imperial Fruit Show this year, to Paris, display it at the central Paris market, and demonstrate its good points to the trade.

The Scandinavian Market

The market for apples in Norway, Denmark and Sweden, though small as compared with that of Great Britain, (capacity 200,000 to 250,000 boxes per annum) is one which should be exploited by Canada. A good start was made last year, and British Columbia apples have met with much appreciation, though, so far, only negligible quantities have been sent forward as compared with those from American sources. Home and European apples mainly supply requirements till Christmas, and the demand is strongly for late varieties, that can be sold in January, February and March. Jonathans, Spitzenbergs, Winesaps and Newtowns are preferred, and, of these the Winesap, as combining red color with a late season is the favorite. Sales are, on a cash basis through local agents, and sales on shippers' account are practically never made except at the Copenhagen auction. The size preferences are the same as in England,

medium to small. The consumer cannot afford to buy sizes 96 to 138.

British Columbia shippers are under two handicaps in shipping to this market: (1) Norway is the only point served by a direct boat from Montreal, and this service is only one boat per month, while New York offers a weekly service to principal Scandinavian ports; (2) American apples are not exported direct to Scandinavia from American producing points, but are shipped by middlemen in New York, who remove the fruit from near-at-hand storage and are thus enabled to fill cash orders for shipment by designated steamers. Shippers direct from British Columbia points would find it difficult to guarantee delivery date, and this is frequently insisted upon by the buyers, and, often, indeed made an essential part of the contract. The Fruit Trade Commissioner is prepared to furnish some very interesting information to actual shippers as to the comparative standing of the various agents, methods of doing business, difficulties that must be overcome, financial arrangements, etc.

B.C. Fruit on Prairies

THE prairie provinces produce very little fruit. They consume large quantities of it.

British Columbia grows large quantities of the finest fruits in the world. The flow of fruit from British Columbia to Alberta and Saskatchewan is as inevitable as the flow of water down hill. Another example of the complementary character of the two areas—the one providing what the other lacks and needs.

The gathering and shipping of fruits in British Columbia for the prairie market is all the time becoming a more exact and stabilized business. Take for example, raspberries. This delicious small fruit arrived here this season in a state as nearly perfect as scientific methods and good management can assure. The best B.C. raspberries were assembled in cold storage within two hours after picking. They were then

transferred to refrigerator cars of the same temperature. Precautions against changes of temperatures were provided even to the extent of providing a silk-bound passage-way from storehouse to the car. By exercising such minute care the berries were laid down at destination at prairie points almost as fresh and firm as when gathered.

It is this attention to the quality of fruit when

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ROYAL AGRICULTURAL WINTER FAIR

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ROYAL COLISEUM, TORONTO

NOVEMBER 22nd-29th, 1922

\$70,000 IN PRIZES for Live Stock, Agricultural Products, Fruit, Flowers and Vegetables

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Premium List covers all varieties of apples and pears in Canada. Floral and Vegetable Exhibits a feature. British Columbia, Ontario, Quebec, New Brunswick and Nova Scotia—which will have the premier apple display?

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For Prize List and other information write—

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York Building, Toronto, Ontario

W. A. Dryden, President.

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REDUCED FARES ON ALL RAILWAYS

delivered that is so rapidly building up the fruit traffic between Alberta and British Columbia. The people of the prairie provinces are benefiting by the closer cooperation of the B.C. grower, the railway companies, and the wholesale distributors at this end.—Calgary Herald.

Cantaloup Growers' Ass'n

WE have a Cantaloup Growers' Association in Kelowna, and at many points south of Kelowna in the Okanagan Valley fine cants. are grown. We received a standard crate of cants from Kelowna well packed and graded. The contents were smaller in size than the average from the U.S. The flavor about equal, not as good, however, as the best that comes from B.C.

Cantaloupes are being consigned here more than ever this year. The supply has been generous, mostly from Washington. Just as B.C. cants. arrived in volume, American cants. dumped here this week are retailing five for 20 cents. Comment is useless.—Fraser Valley Record.

A careful canvas of the various producing sections in the three northwestern states indicates the following percentages of leading varieties grown during the past season; Wine-saps, 34%; Romes, 16%; Jonathans, 15%; Delicious, 14%; Newtowns, 5%; Spitzburgs, 4%; and miscellaneous varieties, 12%. Such a list is suggestive for British Columbia.

CROPS and MARKETS

Trade in Newfoundland

ALL the dry fruits required in Newfoundland, except dried apples, are imported from the United States. Canadian firms appear unable to offer competition. Canned fruit comes from both Canada and the United States, but the exporters of the latter country receive the preference for the following reasons: Better color of the fruit, more fruit to the can and less syrup, better cans, brighter and cleaner labels; and to the fact that the fruits from the United States are usually bought at more than one cent less per can than the Canadian. Barreled and boxed apples, however, practically all come from Canada.

What has been said regarding canned fruit is applicable to canned vegetables. The canned branch of a well-known United States firm compete vigorously against sellers from that country. A Canadian concern is also supplying a large part of the market with a product cheaper in price than the American. The Canadian grading of vegetables is receiving considerable attention in Newfoundland, and importers appreciate the standardization that is being enforced throughout Canada. They prefer the standardization in selling because they know then exactly what

type of goods is going to each customer, and whether that type is suitable to his needs. With an energetic selling campaign, satisfactory prices, and proper attention to packing and shipping, the Canadian manufacturers should be able to supply the whole requirements of the Newfoundland market.

Canadian jams and preserves became established during the war and at the present time are cheaper than the English. The latter, however, are quickly coming back into favor as they have quality as well as attractiveness. There is a duty of about 120 per cent on some grades of this class of goods; accordingly, no percentage of bad tins can be allowed.—Commercial Intelligence Journal, Ottawa.

Potato Certification

TO the division of botany of the Dominion Experimental Farms, is entrusted the study of weeds, poisonous plants, economic plants, shrubs and trees, and in general plant pathology in relation to diseases that attack vegetation. On this account, the annual report giving the story of the year's activities is of wide interest and importance. The division's report for the year ending March 31 last, has recently been issued and is to be had on application to Publications Branch, Department of Agriculture, Ottawa.

One of the principal phases of the work undertaken, is the potato inspection and certification

October Bulletin

Issued by the Dominion Department of Agriculture

NOTE: This is the third of a series of monthly bulletins to give timely information of value to farmers

Feeds for Winter Steer Feeding

Winter steer feeding is profitable, but the profit depends upon the proper utilization of the cheapest and best farm-grown feeds.

This is the proper time to determine the rotations to be followed next year, and the types of crops to be grown for the production of suitable winter feeds.

From the results of many years of careful study of the growing and purchasing of feeds for winter steer feeding, the Experimental Farms have published their compiled results as special pamphlets on "Winter Feeds for Steer Feeding." Write to your nearest Experimental Farm for these valuable pamphlets.

Ship Live Poultry by Carlots

The co-operative shipping of



live poultry has made rapid progress. A single shipment in Quebec returned farmers \$1,000 to \$1,500 more per car than would otherwise have been obtained. There is no loss through shrinkage by this method; the birds are fed while in transit and are delivered at shipping weight. In a number of instances the birds have actually increased in weight while in transit. Write the Dominion Live Stock Branch, Ottawa, for further particulars.

Finish Your Lambs Before Marketing

With an abundance of cheap grains it should be profitable to feed up unfinished lambs because the public are demanding fresh-killed lamb meat and are willing to pay higher prices for it. Send only the finished lambs to market and retain the others until finished.

Storing Ice This Winter

Plans and specifications for small cold storages suitable for farmers, dairymen,

country storekeepers, summer camps and country homes will be sent free on application to the Dairy and Cold Storage Commissioner, Ottawa. Instruction on the subject of storing ice for summer use will also be given.

Eat More Canadian Fruit

The Canadian fruit crop is unexcelled for quality, flavor and attractiveness, and a bumper crop is now being harvested. Give Canadian children Canadian fruit. Canadian potatoes and onions are now sold by weight only and according to specified grades.

New Book on Insects

An illustrated book on insects affecting greenhouse plants has just been issued by the Entomological Branch. This book will be of particular value to greenhouse men and florists, and will be sent free on application to the Publications Branch.

New Publications

Growing Feeds for the Winter Feeding of Beef Cattle.
Feeds for Wintering and Winter Fattening of Beef Cattle in Eastern Canada.
Crop Rotations.
Preparing Poultry Produce for Market.
Dressing and Cutting Lamb Carcasses.
Finishing Lambs for the Block.
Storage of Ice.
Insects Affecting Greenhouse Plants.
List of all publications available.

Publications Branch
Dominion Department of Agriculture
Ottawa

service carried on under the Destructive Insect and Pest Act. In eight of the provinces, British Columbia not being included, during the year, 2,646 fields covering 7,900 acres, were inspected, and 1,634 fields passed covering 4,290 acres. It is gratifying to know that the percentage of fields passed last year greatly exceeded that of the previous year, as it indicates a healthy improvement of this most nationally important of all vegetables. The acreage inspected was largest in Quebec, but Ontario stands at the head of the fields passed with a percentage of 88.6, Manitoba coming next with a percentage of 84.8 and then Nova Scotia with 75.4, New Brunswick with 67.2, and Prince Edward Island with 56.2. The work was new to Alberta and Saskatchewan, but is being carried on more extensively in those provinces this year.

New Brunswick, stands at the head of the provinces in yield per acre of certified seed, with 283.4 bushels, and in the yield per acre of the general crop with 216.25 bushels. Quebec stands next with 277.4 bushels of certified seed per acre, and 162.5 bushels per acre of the general crop, followed by Prince Edward Island with 247.6 bushels of certified seed and 201.75 bushels of the general crop, Manitoba with 235.6 bushels and 166.5 bushels respectively and Ontario with 233.4 bushels and 163.5 bushels. Nova Scotia stands at the foot of the list in acreage yield, but it is explained that a large proportion of the inspection was confined to the Garnet Chili variety, which does not yield so prolifically as some of the white varieties grown in the other provinces. The general improvement is attributed to the more general use of certified seed, especially in Ontario, Manitoba and Quebec.

Much attention is given by the division to forest pathology, and in the report will be found details of investigations carried on as regards white pine blister rust in Eastern Canada and on leaves of black currants in British Columbia.

It is recorded regarding nitro-culture work at the illustration stations that where the crops have been treated there has been improvement in growth and yield. It should be noted that bottles of the culture are sent out by the division for experimental trials only, but that legume cultures can be had of the larger seed dealers.

Garden Crop Fertilizing

THE chief chemist in connection with the Dominion Experimental Farms voices his opposition to the promiscuous use of fertilizers for flowering plants, vegetables, small fruits and lawns by saying with emphasis in Exhibition Circular 104, which can be had free from the Publications Branch, Ottawa: "If rich garden loam, reinforced with well-rotted manure is used, there is no occasion to apply fertilizers." Otherwise for roses, peonies, perennials and annuals generally he advises, mixed thoroughly and well worked into the soil, four parts ground bone (bone meal) and one part muriate or sulphate of potash, at about four pounds to a square rod. If the foliage is yellowish apply one third to two thirds pound per square rod of nitrate of soda as a top dressing. To enrich soil for potting house plants, use from three quarters to a pound and a half of the mixture to 100 pounds of loam, commencing with the smaller quantity and increasing as found desirable. For the enrichment of the loam used in greenhouses and in frames incorporate two pounds of the mixture per 100 square feet. If not satisfactory follow with a mixture of one pound sulphate (or muriate) of potash and one pound of nitrate of soda to 100 square feet.

For vegetables, small fruits and garden crops generally use a mixture of one part ground bone, one part superphosphate and one part sulphate or muriate of potash at the rate of 500 to 800 pounds per acre, and top dress with nitrate of soda at the rate of 100 pounds per acre after the growth has well started. Before seeding the lawn work into the soil at the rate of five pounds per square rod a mixture of five parts of ground bone and one part sulphate or muriate of potash.

Nitrate of soda at the rate of half pound per square rod can be used as a top dressing and repeated in three weeks' time if thought advisable on account of slow growth. As a liquid fertilizer may be used for house plants, vegetables, etc., a solution of one ounce per gallon of water of a mixture composed of three parts nitrate of soda, one part sulphate of potash and one part phosphate of soda. If the soil is extra rich omit the nitrate of soda. Otherwise use the solution at the rate of five gallons per square rod for garden crops and for potted plants at the rate of one to five fluid ounces per six-inch pot, repeating, if necessary, in each case, every two or three weeks.

New Fertilizer Act

SO far as the farmer is concerned, probably the most important measure passed at the last session of the Dominion Parliament was the Fertilizers Act, 1922. This Act, which takes the place of a measure passed in 1909 and amended 10 years later, is intended to further assure the purchaser of fertilizers that he is getting the article he desires and pays for. The old Act defined a fertilizer as any manufactured

manure that contained nitrogen, phosphoric acid or potash. The new Act prohibits the sale of any article as a fertilizer that does not contain 12% of these elements, singly or combined. It must further include, as minimum quantities, atomic nitrogen, 2%, phosphoric acid 5%, potash 2%. This makes it unlawful to sell, under the name of fertilizer, lime in its various

PERRY'S SEEDS

Alpine and perennials unique collections; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate. HARDY PLANT FARM, ENFIELD, ENGLAND

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New, standard-machine made, best quality. Delivered anywhere in Ontario and Quebec. Write for prices.

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SMALL FRUIT PLANTS

The Finest Ever—GOOSEBERRIES—Josselyn, Downing, Houghton. CURRANTS—Perfection, Fay, Ruhy, Cherry, Boskoop Giant, Lee's Prolific, Champion, Victoria, Naples. RASPBERRIES—Herbert, Plum Farmer, Shaffer's Colossal, Columbian, Cuthbert, Strawberry-Raspberry. ASPARAGUS and Rhubarb Roots.

PRICE LIST ON APPLICATION

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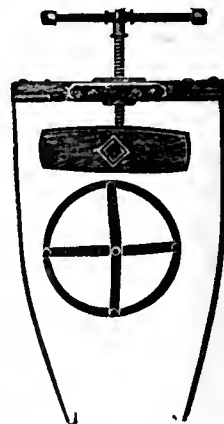
We solicit consignments of Canadian fruit this season, and promise shippers satisfactory service.

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Every grower who is packing apple needs either the "Daisy" Apple Barrel or the "Daisy" Box Press. Used by leading packers in Canada, United States and Great Britain.

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We are prepared to furnish a great many brands of Complete Fertilizers and also have in stock Pulverized Sheep Manure, Hard Wood Ashes and Chemicals.

Try our Bone Meal on your Berry and Fruit crop; nothing better or cheaper, for we now offer Pure Bone Meal at \$40.00 per ton, F.O.B., Norwich.

Any order promptly looked after, either large or small.

forms, or any other soil conditioner that does not conform to the requisite conditions here quoted. Basic slag or natural rock phosphates, or a mixture of both, do not come under these provisions, but they must be guaranteed to be genuine as described by the seller. Annual registration of each brand is required, except the fertilizer be manufactured according to a prescription signed by the purchaser, or the following when sold in a pure state: nitrate of soda, 15% nitrogen; sulphate of ammonia, 20% nitrogen; superphosphate (acid phosphate), 16% phosphoric acid; natural rock phosphate

of stated origin, 25% total phosphoric acid and 80% fineness; sulphate of potash, 48% potash soluble in water, and muriate of potash, 48% potash soluble in water. The registration forms for all fertilizers coming under the requirements of the Act can be had on application to the Seed Commissioner, Ottawa.

Each bag or package must be plainly labelled in not less than 11 point print as to the contents and with the name of the manufacturer or importer. If the fertilizer is sold in bulk similar information must be given on the invoice. If the fertilizer is sold in the province of Quebec the required information must be given on one side of the package in French and on the other side in English. The Act is under the administration of the Dominion Minister of Agriculture, who has the power to make such regulations as he may think necessary in the carrying out of its provisions. Both a copy of the Act and of the regulations can be had free by applying to the Publications Branch, Ottawa.

An important provision is that any inspector acting under the Seed Control Act or the Feeding Stuffs Act can be required to examine any sample of a fertilizer submitted to him that is thought by the purchaser not to be up to specifications; also that applications for such inspection can be addressed, Dominion Seed Branch, Truro, N.S., for the Maritime Provinces; Quebec City, for Quebec province; Ottawa, for Eastern Ontario; Toronto, for Western Ontario; Winnipeg, Man., for Manitoba, and Saskatchewan, and Calgary, Alberta, for Alberta and British Columbia.

Fruit or Vegetable?

It is an old story, that of the waiter's reply to the guest who put it up to him to decide whether a tomato were a fruit or a vegetable. "It's neither," he said, "it's an extra." The question of which of the products of the kitchen garden are fruits and which are vegetables has been going the rounds of the amateur and trade horticultural press for many years, and every once in a while, it comes up anew, says the Gardeners' Chronicle of America, which goes on to point out that the question is seldom settled. Quoting Abraham Lincoln, the writer of the article in the Chronicle says: "Nothing is ever settled in this world until it is settled right."

How the question, as far as the tomato is concerned, was settled, and "settled right," by a judge in a New York City court, follows:—

"A woman was arrested and brought before him for selling 'vegetables in such a way, or at such a time as to violate a city ordinance.' She was selling tomatoes, and in her defence contended that a tomato was a fruit, not a vegetable, and the judge ruled in her favor and discharged her, quoting as the basis of his decision from Joseph Y. Bergen's 'Foundation of Botany.' The passage quoted was essentially as follows: 'A fruit is the ripened ovary of a flowering plant with its contents and whatever parts are consolidated or intimately connected with it.'

"A tomato, egg-plant, squash, pumpkin, cucumber, peach, orange and the like, and also wheat, rye, peas and beans, and the like, are all fruits, because they are the ripened ovaries of flowering plants, with their contents and whatever parts are consolidated or intimately connected with them. An ovary is that part of the pistil of the flower which contains the seed.

"On the other hand, the edible roots of the turnips, beet, onion, carrot and the edible foliage of celery, parsley, mint, lettuce, cabbage, spinach and the like are vegetables, not fruits."

Which is all quite right as far as it goes—botanically—but, as that woman was in the business of selling tomatoes, not of classifying them botanically, the judge still left unanswered the question of whether the tomato was a fruit or a vegetable in the commercial sense, or even in the horticultural sense. Although an old question, what do readers of THE CANADIAN HORTICULTURIST think about it?

The U.S. standard container act limits Climax baskets in that country to three sizes holding 2, 4 and 12 qts., respectively. In eastern producing sections these are practically the only packages used for marketing table grapes, the 12-qt. basket being known as a 20-lb. basket or "jumbo." Lugs or boxes are also used to some extent, and in California the lug is a very common container for grapes, especially those which are to be used for juice. Most varieties of western grapes for table use, however, are packed in 4-basket flat crates, each basket holding about 5 lbs.

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

REAL ESTATE

\$5000.00 DOWN BUYS BEAUTIFUL FRUIT FARM—Twenty-five acres planted; fine buildings; conveniences; Apply to Calder & Hazlewood, Niagara Peninsula Farm Agents, Grimsby, Ont.

SEEDS, BULBS, PLANTS

TRIAL GROUNDS—Byron, Ontario. Perennial and Rock plants my specialty. Write for list and prices to Walter Smith.

BULBS OF ALL DESCRIPTIONS—Now at disposal at our New York warehouse, 110 Duane St. Also specially treated Hyacinths and Narcissus for early forcing, as well as French bulbs. Our prices will be interesting and gladly given on application.—C. Keur & Sons, Hillegom, Holland, New York mail address, 5625 Mosholu Ave.

IRIS—Twelve colors, hardy plants, ten sorts, prices reasonable. Mrs. John Taylor, Dutton, Ontario.

HOLLAND GROWN BULBS—Lowest prices. Send for circular. Geo. Malcolmson, Route 1, Hamilton, Ont.

The Fruit & Produce Market

The Commission firms undernoted wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

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CONSIGNMENTS OF FRUIT AND VEGETABLES SOLICITED

Shipping Stamps Furnished on Request.

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All shipments of Fruit and other produce consigned to us receive our personal attention.

Shipping stamps furnished.

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DAWSON-ELLIOTT CO.

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PETERS, DUNCAN Limited

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WE GET BEST PRICES

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

Branch Warehouses:
Sudbury, North Bay,
Cobalt and Timmins.

PETERS, DUNCAN Limited
88 Front St. East, Toronto



References: The Bank of Nova Scotia, King and Victoria Branch, and Commercial Agencies.

GRADED and CULLED

A NEW style of grafting the tops of fruit trees has been developed in Massachusetts. Experience has shown it to be applicable to any limb six inches or less in diameter, and further experiments are expected to prove its practicability for even larger limbs. It is called the "trunk graft." Instead of making the union where they branch, one or two inches through, is cut off at some distance from the trunk, as in the ordinary cleft graft, the entire limb is taken off and the scion located on the trunk itself. In this position, the scion is said to catch the first run of the sap from the ground, to spring into quick growth and to hasten the healing of the wound above it 50 per cent.

Comparatively few contracts have been made this year with grape growers in the Benton Harbor district of Michigan, according to a representative of the U.S. Department of Agriculture at that point. Prices asked have been too high to attract the dealers. The juice factories are reported to have made some contracts at \$40-\$50 per ton, and there have been a few contracts between growers and dealers at the same range of prices. Many dealers, on the other hand, have made agreements with city buyers to furnish grapes for seasonal shipment at \$50-\$65 per ton, the majority of these contracts ranging \$60-\$65.

The Horticultural Experiment Station, Vine-land Station, Ont., asked fruit growers last month to visit the station and inspect the peach and grape seedlings while in fruit. There is still time early this month to see some of the new grapes.

Good Lecturer Available

AS competent lecturers on horticulture in any of its branches, commercial or amateur, are none too plentiful, the secretaries of fruit and vegetables growers' associations, horticultural societies, gardeners' clubs, etc., are herewith informed that J. W. Crow of Guelph, is available for lectures and also as judge at exhibitions. As professor of horticulture at the O.A.C., Mr. Crow was well and favorably known to the horticulturists of the province. He is thoroughly informed on horticulture in any of its phases—commercial fruit growing, market gardening, home fruit and vegetable culture, floriculture and landscape gardening—and is a pleasing as well as a convincing speaker.

Mr. Crow would be glad to hear from any association or society that desires the services mentioned. His address is 43 Forbes Ave., Guelph, Ont.

Make Your Spare Time Earn Money

We would like to secure the services of a few men or women in the fruit districts of Ontario, Quebec and Nova Scotia, to take subscriptions for THE CANADIAN HORTICULTURIST in their spare time, this fall and winter. Previous experience unnecessary. Good commission given. Only those who can supply references considered.

- Address, Circulation Manager.

The Canadian Horticulturist
PETERBORO - ONTARIO



Friction!
No—

There is no more excuse for friction between wheels than there is for friction between neighbors. Unnecessary friction must be banished. It can be by using Imperial Lubricants for your tractor and automobile, for your harvester, seeder and all other farm machines.

Properly lubricated, all of your farm machinery will last longer and will cost less to operate. Proper lubrication does away with unnecessary farm machinery troubles, worries and repair bills. It is important that you use the right Imperial Lubricant for each purpose. See the list below.

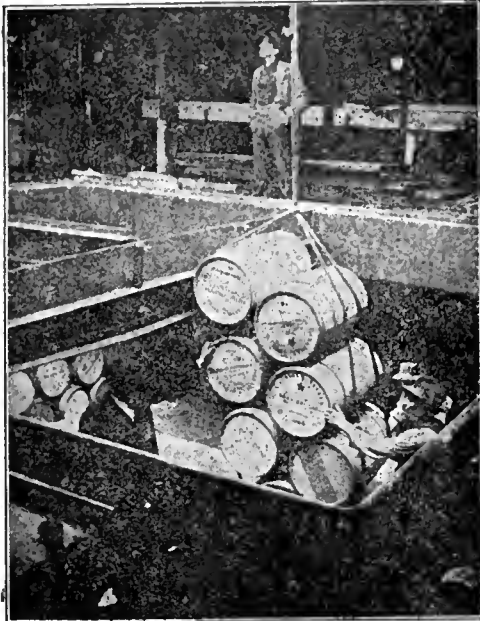
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For gasoline-burning engines—automobiles and trucks.
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For motors requiring an unusually heavy oil.
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For open bearings of separators, binders, etc.
- IMPERIAL CAPITOL CYLINDER OIL**
For steam cylinder lubrication—tractors and stationary engines
- IMPERIAL GAS ENGINE OIL**
For stationary or portable engines, kerosene or gasoline.
- IMPERIAL POLARINE CUP GREASE**
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For grease cup lubrication—clean, solidified oils.

The Imperial Charts of Recommendations show exactly what grade of Imperial Polarine Motor Oils will give the best results with your type of truck, tractor or automobile. Further information will be gladly supplied by the Imperial Oil man—an expert on lubrication.

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Will not effect the grower who packs
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GOOD WOOD BOXES

APPLES IN BOXES

Sell Readily
Return Best Prices
Return Sure Profits

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The busiest, biggest and best market in the West;
affords an unsurpassed outlet for your

APPLES, PEARS

AND OTHER FRUITS

We have a large outlet through the best trade
and stores which we cover fully by competent
and aggressive salesmen. Let us handle your
account on the market.

Sterling Fruit Co.

"The House of Satisfaction"

433 ROSS AVE., WINNIPEG, MAN.

Reference : Canadian Bank of Commerce

The Canadian Horticulturist

Floral Edition

Vol. XLV.

PETERBORO, ONT., NOVEMBER, 1922

No. 11

Protecting Plants Over Winter

C. B. Alden, Toronto

MANY varieties and species of plants that are supposed to be permanent in place and nature, require in this country protection over winter. The tender and half-hardy kinds of ornamental plants seldom will thrive, even live, without special care during the cold months. As these kinds often are the best in quality or attractiveness, the subject of winter protection is one of great importance, and should not be neglected. The amount of protection differs somewhat in different districts and with the kinds of plants concerned. The following suggestions may be adapted to suit one's environment and material:

Protecting Bulbs

Out-of-door spring flowering bulbs, especially the late planted ones or those that have not yet been planted, will benefit by having some protective material put over them some time before very severe weather sets in. Four or five inches of strawy manure, straw, long grass or autumn leaves placed over them prevents, to a very great extent, the bulbs from being lifted or heaved from the ground by sharp frosts and helps them to start into root action during early winter. Some evergreen spruce or pine boughs may be put over the manure, not only to keep the covering in its place, but also to do away with the unsightly appearance the manure presents during the winter when not covered with snow. In exposed places it may be necessary to fasten the covering with wire or pegs to keep it in place.

Bulbs that were planted at the proper time—the second or third week in October—may not need protecting as much as the late planted ones, but even these will benefit by some protection, especially in sections where the snowfall is partial and of uncertain duration. Dutch hyacinths and crown imperials should have some protection, as they are not quite as hardy as tulips, narcissi, crocus and most other spring flowering bulbs. Tulips and narcissi especially, can be planted as late as the weather will permit, but are better planted earlier.

Where Japanese lilies, such as *Lilium auratum*, *L. speciosum album* and *L. speciosum rubrum* are attempted to be grown out of doors, they should be covered with at least a foot in depth of strawy manure. These lilies, however, are seldom a permanent success as border

plants, even in the warmest parts of Ontario. About the second or third week in November is usually about the best time to put winter covering on bulb beds or borders.

Border Plants

Tender border plants, such as hollyhocks, pansies, Shasta daisy, Chinese pinks or any other partially tender border plant that requires protection, must receive very different treatment from that recommended for bulbs and tubers. Too often they are treated exactly the same. Better no protection at all than to treat them in the same way as for bulbs.

A simple but very practical method of protection is to place over the plants first some small pieces of brushwood, old raspberry canes or coarse trimmings from the perennial border. A few leaves may be sprinkled over and among these, and a light covering of strawy manure, about two inches in thickness, over the top of all. This method of covering plants not only collects and conserves the snow around and over the plants, but what is of far more importance, where it is essential to preserve and keep alive the top growth of the plant, the brush or trimmings mentioned allow of a circulation of air—something absolutely neces-

sary to plant life even when dormant in winter—and prevents the plants from being smothered and often rotted and killed as they usually are by a heavy covering of leaves or manure alone. When the latter alone is applied to growing plants alone for protection, it becomes wet and soddened, then freezes solid, thus forming a solid mass of ice over the plant, effectually excluding the air and usually results in smothering and rotting the plant.

In our often changeable weather in winter, and more especially during the vagaries of late winter and early spring weather, the light covering mentioned is of great benefit to tender plant life in borders. Whilst admitting sufficient light and air to sustain plant life, it effectually excludes the hot sun, thus to a great extent preventing the alternate freezing and thawing so detrimental to plant life in late winter and early spring. Banking the snow over tender plants protects them materially during winter, but is of uncertain duration and benefit in early spring. There is no better protective material for plant life than dry light snow as long as it lasts.

Bush Roses and Shrubs

Budded or grafted plants of hybrid



A well kept backyard adds to the attractiveness of the home. It is easy to have a beautiful backyard. A few shrubs, evergreens and hardy plants, can be tastefully arranged at little expense and will produce a charming effect. Annuals may be substituted for the hardy ones.

perpetual and hybrid tea roses usually are benefitted by some protection. A good plan is first to tie the bush up in a bunch, then before severe frosts bank some soil around the plant to about 12 inches in height in the shape of a cone. The base of the cone should be about 12 to 18 inches in diameter and run up to a point near the stem of the plant at the top. The soil should be patted down firmly on the surface to pitch off the rain and moisture. A forkful of strawy manure thrown on the top of the cone of soil around the plant will help it. Roses grown on their own roots are hardier and less liable to be winter killed than are the budded or grafted plants. Own-root roses are a little slower at first in giving flowering results, but are much more enduring than worked or budded stock.

The more tender kind of roses, such as hybrid teas, teas, and the polyantha and souper type of roses, require better protection than the hybrid perpetuals. Tying the tops of these in a bunch and thatching them with straw, or first covering the plants with leaves and placing a sugar or flour barrel or some boards over them, makes a good protection. A nail keg would answer for small plants. Holes one inch in diameter here and there should be bored in side of barrel to admit air. A mulching of leaves or strawy manure six or eight inches in depth put on late in November around bush roses also helps to protect them materially.

The great point in preserving tender roses is the exclusion of moisture, sun and frost as much as possible, and the admission of air to prevent dampness and mould or fungous diseases. Small, tender-flowering shrubs can be treated in the same way as roses.

Climbing Roses

Climbing roses, such as Crimson Rambler, Baltimore Belle and other tender varieties, should be taken down from the supports they have been growing on and the growth tied or pegged down close to the ground to keep the growth below the snow line as much as possible. Throw some straw or strawy manure about three or four inches in depth over the canes or growth so as to cover them about the thickness mentioned. Burlap or the rush matting used as a lining for tea chests are also good materials for wrapping around tender roses or shrubs, instead of using the manure or straw. Avoid putting the covering on too early in the season, as this induces field mice to make a home for the winter in the covering, often resulting in the destruction of the plants from the mice gnawing and eating, the growth of the plant. Covering up too early also prevents the growth from hardening and ripening, the latter being a very essential point to prevent the winter killing of plant life. About the end of November is usually early enough to cover climbing roses.

Keeping Dahlia Tubers

DAHLIAS are among the easiest roots to keep and yet many growers find difficulty in the matter. At this time they are generally blackened by frost and may be lifted at once. The stems should be cut down to about six inches from the tuber. Carefully dig round the roots, saving every tuber possible. More damage is done at this handling than at any other time. To do the work intelligently it is well to bear in mind that the new shoots in the spring do not start from the tuber portion of the plant, but from the part called the crown which really is part of the stem. It naturally follows that if this is broken off too low down there is a danger of losing all the growing eyes.

Another kind of damage to be avoided, is the twisting of the tubers near the stem. In lifting it will be noticed that a large number of varieties are easily liable to break or bruise quite near the stem, causing what the Dahlia growers call "broken necks." In dividing up the roots for the following year these pieces are useless and a knowledge of this will make the work of harvesting easily understood. If without much trouble it is possible to dry out stem downwards for a few days all the remaining sap that rises in the hollow stems will drop out. This is not absolutely necessary but it helps. A frost proof cellar is a good place to keep the roots. Where only a small number have to be cared for, boxes or baskets are wise to protect from damp. With a temperature not falling much below 40 degrees, there should with the kind of treatment advised be few if any losses. To be on the safe side, it is well to look over occasionally during the winter, removing any decaying tubers or parts of tubers.

Preparing the Garden

W. S. Blair, Kentville, N.S.

PROBABLY no effort is so well repaid as that given to the development of a good vegetable garden. It is wise to make preparation for this in the fall, in order to realize the benefits accruing from the early sowing of many vegetable crops. Apply 10 pounds of stable manure to the square yard, which is equal to 24 tons per acre. Plow or dig this six to eight inches deep. The amount of manure to apply will vary according to the way the soil has been previously manured. It is not wise to over-fertilize and if annual applications are made, probably five pounds per square yard will be quite sufficient.

Certain areas should be ridged or mounded, to permit of ready drainage and early drying out of the soil. In these, carrots, beets and lettuce for very early use are seeded. Here also cabbage, cauliflower and celery are started for planting out later. There is often diffi-

culty in getting such plants in the spring and this may be overcome by giving a little thought now to the development of a spot where seed may be sown just as soon as the surface soil is dry to the depth of one or two inches. It is quite often possible to sow seeds outside on such a plot about the middle of April. The only reason why onions are so seldom a success in this country is that the seed is put in the soil the middle of May when it should have been planted a month earlier. For this early spring seeding, surface work of the soil is all that is required, if the land has been fall prepared. This can be done early if good drainage is provided by mounding up strips three to four feet wide as already indicated with a slight surface slope to give drainage.

For spring growth, in addition to heat, a rapidly available food supply is necessary. In old garden areas this is usually present. If the garden plot is new it may be necessary to use a little quick acting fertilizer to give the crops a start. One ounce per square yard of nitrate of soda or other active fertilizer is equal to 300 pounds per acre. This amount is sufficient for any vegetable crop. It is wise not to make the mistake, of applying too large an amount without thoroughly mixing it with the soil. Surface applications of fertilizers like nitrate of soda often kill the young plant just as it germinates. For that reason it is much better to depend upon an application of stable manure well worked into the soil the previous fall.

Cannas

CANNAS should be cut down to about six inches from the ground in the same way as dahlias. The mechanical work of lifting is much more simple and little danger of damage is involved. To get the best results, however, it is wise to try and save a little of the soil on the roots, allowing this to remain for a time. Where the number is not large, boxes might be used to advantage, packing the roots closely in them. Cannas will not stand a temperature as low as dahlias, for which reason a warmer part of the cellar should be chosen for storing. The remaining portion of stem will gradually decay right down to the tubers, and as this occurs it should be removed to prevent the decay spreading to the roots. Unlike dahlias, Cannas do not begin to grow from the stems but from eyes easily seen on the rhizomes or tubers. As the soil left on the roots dries up, it may be removed, but it is well not to do this too soon, the reason for leaving it being to avoid a too quick drying up of the fleshy roots.

A single flower often looks better in a vase than a large number tightly set. Each flower should have a chance to show its individuality. Never crowd if you would have the best effect.

Bulbs in Bowls

BY the time this issue is circulated, it will be getting a little late for potting bulbs, but there is still a way open for those who wish, a way that will provide much interest and pleasure. The culture in mind is the somewhat new method of growing in bowls, using fibre or gravel. By following the simple instructions we will try to give, it is possible to plant at intervals right up to Christmas, especially if a little judgement is used in the selection of varieties. The ideal receptacle to use is possibly a bowl of either china or glass seven or eight inches in diameter and three to four inches deep. These may now be bought in a number of shades to harmonize with the room colorings where fastidious taste demands it. But almost anything in the way of a jardiniere or bowl may be made to serve. It is interesting to use a few glass bowls if they are available, if only for the purpose of watching the root action. To understand the method of flowering bulbs without any apparent nourishment, it is well to know that the bloom is already formed in the bulb before planting and needs the proper atmosphere and moisture only for development. Some element has to be provided to attract the roots, for which purpose the fibre now so much in use is prepared. Gravel to keep the bulbs steady in the bowl with sufficient moisture will serve the same purpose.

Varieties

For the earliest blooming paper white and polyanthus narcissi are used. Daffodils in variety with hyacinths and tulips follow. Scillas and crocus are also good, and being quite small bulbs may be used in the smallest bowls or even saucers. Daffodils are generally impatient to start growth, for which reason it is wise to plant them early. Hyacinths and tulips may be spread over a longer season and can be planted almost up till

the end of the year. Where bulbs are held over for specially late planting they should be kept in a cool dry place.

Planting

If bulb fibre is used, it should first of all be moistened until every part is thoroughly soaked through. All the superfluous water can be squeezed out before using, the correct point of moisture being known when but a little water escapes with a moderately firm grasp of the hand. If a variety of bowls is available select the shallow ones for small bulbs like crocus and scillas and the deeper ones for hyacinths, daffodils and tulips. A little charcoal in the bottom of each bowl will help to keep the mixture sweet. Fill up loosely with fibre, plant each bulb separately, almost touching each other, adding fibre as the planting proceeds, drawing it firmly round the bulbs, leaving only the tops exposed. A little white crushed grit, if available, makes a better finish, but for growing purposes that is not essential.

Growth

As the roots absorb the moisture to be conveyed to the bulb and thence to the leaves and flowers it is necessary that the roots shall be well developed. To encourage this the bowls should be kept in a cool, and, if possible, well-ventilated part of the house and protected from strong light for a time. A cellar or attic are ideal spots, but any odd corner of the home where there is a minimum of heat can be made to serve. A covering of paper will provide sufficient screen from light. The period for root development varies to some extent but is usually not less than six weeks or up until the time when about one inch of top growth is visible. Before bringing the bowls to full light remove the paper for a few days and then give the plants the best light

available. This treatment tends to prevent the foliage from getting too tall. A chief aim in all bulb culture is to have firm foliage with the flowers well set above it. Light and abundance of it, is the only medium to secure this condition and for this reason keep the bowls as close to light as is possible. If a succession of bloom is aimed at it is easily secured by keeping the plants in a cool room, taking a few at a time into a warmer temperature.

This is an important part of the culture described. As no two rooms are of exactly the same temperature it follows that some plants require more water than others. It should be remembered that if the fibre is allowed to dry out after planting, serious damage is done, and even though the plant does not completely die a poor flower is produced. Tulips absorb more moisture than the other varieties named. Personal observation is the only real guide as to when and how much water should be applied. The fibre should be kept from being sodden, but as long as no water collects in the bottom of the bowls there is not so much danger from over-watering as there is in the other direction. On no account have water in the bottom of the bowls to touch the bulbs. It is quite obvious, too, that plants grown in this way in receptacles not usually porous, do not demand as much water as if grown in ordinary flower pots.

Bulbs in Gravel

To grow bulbs in gravel, the same kind of treatment is given. The bulbs are simply packed firmly in the gravel, being almost covered as with the fibre. In this case it is necessary to keep a little water in the bottom of the bowl but this should only barely touch the bottom of the bulb, the principle being much the same as growing hyacinths in glasses. The treatment after planting is similar to that described for growing in fibre.

Succulent Plants or Spineless Cacti

J. H. Callander, Peterboro, Ont.

FLOWER lovers, whose fancy leads them to acquire such odd forms of plant life as the cacti are almost sure to include in their collection, a few varieties of spineless succulents. These peculiar forms of plant life are almost as interesting as the cacti, as they grow in just about as fantastic shapes as their spiny companions. Their number is legion, and because they grow into mature specimens much quicker they are really much more satisfactory house plants than the slow growing cacti.

All have fleshy leaves, in forms that in some cases seem almost impossible for nature to produce. This heavy foliage constitutes their drought resisting feature, and it is just as well to give them the kind of treatment in which they are naturally fitted to flourish.

A few of the families that are commonly found in the fancier's hands, are Haworthias, Sedums, Crassulas, Aloes, Echeverias, Mesembryanthemums, Sempervivums, Rhipsalis, and many others.

The Haworthias are a numerous family of little plants resembling miniature century plants. They form clusters that are much prized by their owners.

Sedums also are a large class, mostly low, quick growing moss like forms. One of the prettiest is *S. pruinaum*, which forms masses of sky blue growth about two inches high, covering the ground quickly.

Crassulas is also a large genus. It covers a great range of forms, from *C. lycopodioides*, an easily grown plant that makes large masses of wiry stems bearing fleshy protuberances that take the place



Growing Bulbs in Bowls

Provides much interest and pleasure. Almost anything in the nature of a jardiniere or bowl together with some fibre or gravel will serve.

of leaves, to the sturdy tree form *C. lactea* or *arborescens*.

Aloes are another class resembling the Agaves or century plants. Many of them are handsomely marked in shades of green.

Echeverias are familiar forms much like the *Sempervivums* or hen and chickens but the several varieties differ distinctly, and are quite interesting.

The *Mesembryanthemums* are quite interesting, most of them bearing splendid flowers, and some in great profusion. *M. acinacifolia* is an instance of this. A

mature plant will be one mass of cinnamon-colored bloom, open wide in sunlight and closed at night. Most of them are adapted to baskets, drooping gracefully and always attractive whether in flower or not. *M. tigrinum*, is very odd, each pair of leaves forming a well toothed jaw. The flowers are a bright yellow, about two inches across. The writer has about 100 varieties of succulents growing in his conservatory, and visitors never seem to tire of looking at them, because they are always discovering one that appears to be the oddest one yet.

autumn this should afford considerable protection.

The most interesting form of protection which I have seen, however, was in the case of a fairly large clump growing under a maple tree. Mother nature took a hand in this operation and did it well. She gently dropped the tree leaves so that they lodged between the sword-like leaves of the iris, where they dried out and curled up as they dried. Finally, a cushion about eight inches thick of dry curled leaves was deposited over that clump, the iris leaves sticking up above the "cushion" and helping to hold it in place. Because of the absence of the owner, that clump was not interfered with, except by my periodical inspection of it, until the 15th of May, when I noticed that the new leaves had pressed their way upward to the sunlight and they looked more fresh and thrifty than any in my own garden that had had the protective material removed and had been caught by late frosts.

Should Irises Be Protected?

Fred. H. Byshe, Ottawa, Ont.

It may be admitted at the outset that there are many good iris growers who consider protection unnecessary, even risky; unnecessary inasmuch as the iris is said to be perfectly hardy, and risky inasmuch as protective covering may induce rot. Any divergence of view in this relation, however, is more apparent than real. It depends to a large extent, first on the variety, and secondly, on the climatic and even on the garden conditions. In some climatic conditions where the winter temperatures are not too low, or in cases where snow comes before and remains until after severe frosts, no protection may be necessary in so far as the older varieties are concerned. Again, the situation of a plant in the garden in relation to soil and to incidental shelter may make it unnecessary to provide protection. But even in such cases a series of late frosts in the spring, if growth has started, may injure the foliage and bring about conditions favorable to iris rot. Though rot may not always develop, it is difficult to believe that such injury is of so little consequence to the prospective bloom that it may be discounted.

Hardiness of Varieties

So much for the "older varieties." When we come to the newer varieties we are on different ground. We Canadians cannot say of any variety that it is hardy until it has been tried out under average Canadian conditions. The fact that a variety is hardy in California is no indication that it will prove hardy in Toronto or Ottawa. My point, then, is that while it may have been appropriate a few years ago to say in a general way that the bearded iris is hardy, it is no longer advisable. In fact, it is misleading, to say so now, in view of the many accessions to the bearded iris family during recent years. It will continue to be inadvisable to generalize until the new varieties have been tried out for a number of years under our own climatic conditions.

It follows then, that the newer irises should be protected, at least until we know more about their behaviour. If there is anything in my contention that late frosts are apt to injure the foliage

and bloom of even the older varieties, and to induce conditions favorable to rot, the only remaining question is, what form of protection will protect without smothering the plant or inducing disease? This is a question about which there is bound to be considerable difference of opinion. If, however, we can get a clear view of what we want to achieve and what we want to avoid, any good gardener may safely be left to work out his own means to the end in view.

Kind of Protection Needed

First, then, let it be understood that the rhizomes of some irises can be frozen, with disastrous results. In the winter of 1919-20, and again last winter, I had quite a number unprotected, which were actually frozen to the point of destruction. These were growing alongside some which, though equally exposed, came through safely. Again, an iris growing in a shallow sensitive soil may survive the winter and start into active growth in the warmth of early spring, only to be caught by late frosts, the foliage injured (and, in exceptional cases the flower buds), which makes a splendid culture for the bacillus which causes iris rot. Apart from this possibility, now that the era of iris shows has commenced in Canada, no wise exhibitor wants his chances of success jeopardized by any setback to his plants in their early growth. What we want then, is such protection as will protect from disastrous freezing during the winter and prevent precocious growth in springtime, without smothering the plant or inducing disease.

Materials for Protection

I previously stated that any good gardener may safely be left to work out some form of protection for himself. I will not venture to dogmatize. I will only state that I know of manure being used successfully, though I would not recommend it, and straw, which, because of its tendency to "mat" and exclude air, should be used with great care. Others have used garden litter with success, and some make a practice of crushing the leaves of the iris down in a protective way over the clump, and with a good growth of leaves persisting until

A Practical Demonstration

Now there you are! That generous covering of dried, curled up leaves, so delicately applied and left on till danger of late frosts was practically over, had brought the clump through the winter in ideal condition, without any of the disastrous results that are often said to follow any attempts to protect irises. There I received a practical demonstration, and that is the plan I am attempting to follow. I see to it first that the leaves are dried to the curling point and then sprinkle them generously among the leaves of the iris clump, pushing them down towards the rhizomes where necessary, without undue packing. Clumps so protected have come through satisfactorily, but many of the new irises not so treated, have been actually frozen to the point of destruction, while others, only slightly nipped, have developed rot.

It is not difficult for a farmer to care for his vegetables in winter, as he has, as a rule, a good cool cellar, but in cities, cellars are usually too warm for most vegetables. Hence, where the main cellar is too warm, a part of it where cool air can be admitted should be partitioned off from the rest for a vegetable room.

In planting the flower garden it should always be kept in mind that green grass is one of the most pleasing sights about a garden. Flowers without grass to set them off may be compared with a picture without a frame. The flower garden then, should be so planned that the grass will not be much cut up by flower beds. See that the places for flowers are along the boundaries, in corners, or close to the house, leaving as much grass as possible in an unbroken area — C. E. F., Ottawa.

QUESTION BOX

W. E. GROVES

Asparagus Turning Brown

My asparagus is kept on a table near a window and is watered once a week by standing the pot in a tub of water, yet the shoots keep turning brown.—Mrs. G. E., Hamilton.

The condition described is caused by either lack of food or a sour condition of the soil. If the pot is fairly full of roots the plant may need repotting or a little fertilizer. If the window gets any sun, the once a week watering is probably not quite sufficient. It is quite safe to water the plant in the ordinary way, though for a thorough soaking the tub treatment is correct. Try watering about twice or three times a week without standing the plant in a tub, and either give a slightly larger pot or a little fertilizer.

Hoya and Azalea

"How can I obtain a hoya and an azalea? The seed houses do not catalogue them."—F. M. A., Glanworth, Ont.

Azalea indica may be easily bought during the fall and winter from any town or city florist, these being always available as Christmas plants. Azalea mollis can be secured from any nurseryman. Hoya is not so easily secured, but some of the florists who grow assorted greenhouse plants are the most likely to be able to supply. Some of them may see this question and reply through the editor, or the enquirer could possibly get in touch with some of the advertisers in THE CANADIAN HORTICULTURIST.

Growing Musk

Can sweet-scented Musk be grown from seed? Describe kind of soil, time of planting and care necessary.—Mrs. A. S., Niagara Falls, Ont.

Musk (*Mimulus moschatus*) can be grown from seed. This should be sown on a fairly light soil in early spring and when large enough to handle, the plants could be pricked out in pots or a box, potting up as they become strong enough. A good way to grow them is to pot several in a five inch pot as in this way a good full pot is secured. In summer, musk may be grown outside, but it is not very hardy excepting in very sheltered situations. A good loam with a little manure is the kind of soil to use.

Pests of Lettuce and Asters

"The roots of my lettuce and asters are covered with a small, white bug about the same size as the green ones on rose bushes. What shall I do for them?"—J. C., Brantford, Ont.

It is late in the season for any effective remedy to be applied. A sour or rather poor soil may be partly responsible for the pests, and it will be wise now to prepare for another season. An application of lime will help, as would also a dressing of manure with specially good digging. Be careful during another grow-

ing season to do all the cultivating possible at the same time trying to induce a vigorous growth. It is just possible that the dull, damp weather of recent weeks helped to provide the right conditions for the pest, but with the precautions suggested, there should be little difficulty in overcoming it another season.

Hyacinth Buds

Why do Hyacinth buds form at the base of the plant and fail to develop?—E. J. C., Brockville, Ont.

The non-development of hyacinth blooms is due almost always to the fact that the bulbs are not sufficiently rooted in the pots or wherever they may be planted. This may be brought about by too much forcing if the bulbs are in pots, or in the case of purchased bulbs it is sometimes caused by heating on the journey from Europe. This does not always reveal itself until the condition implied in the question is seen. Too much feeding is a possible reason, as is also too much water.

Care of Gladioli

How should gladioli be cared for. I notice some little bulblets around the roots. Would these grow if planted in the spring?—B.C.B., Hanover, Ont.

Gladioli should be cut down to within a few inches of the ground. It is wise to spread the bulbs out for a little while to complete drying after which they may be cleaned and stored in any way that is convenient. Almost any place away from frost is safe but care must be taken to keep cool to avoid exciting growth. The bulblets may be saved and planted thickly in the spring in good ground. Cultivate well during the summer and keep clear of weeds. By the end of the season most of these will have grown large enough to easily handle. Though they will not flower the next year, by being grown on again they are likely to bloom the year following.

Culture of Anemones

Describe the culture of anemones, best type to plant, winter protection, etc.—E. J. C., Brockville, Ontario.

There are such a number of anemones that it is difficult to guess just which kind the enquirer has in mind. The herbaceous section, of which Japonica and its varieties are types, are fairly easy to grow and generally hardy. They need good soil, deeply cultivated, a spot sheltered from strong winds being the most suitable. A mulching of strawy manure for the winter not only protects but helps to feed as well. There are several varieties but the old white Japonica Alba with a pink kind like Queen Charlotte will cover practically all the requirements in this class.

Anemone Hepatica is really the old garden hepatica and is one of the most exquisite little spring flowers we have. For the rock garden it is a special favorite.

Patens Nuttalliana is another hardy kind that is well worth growing, the flowers being chiefly blue. Sylvestris, the snowdrop windflower, is still another worth while variety with white flowers. Winter protection similar to that given perennials generally is necessary. The fulgens and St. Brigid class are not so successful as hardy plants, but are really the gems of the whole species. They are well worth greenhouse culture for cut flowers and can easily be raised from seed.

Care of Cannas

How shall I care for cannas after lifting them, and how should they be started in spring?—B.C.H., Hanover, Ont.

Cannas should be stored in a cellar or similar position with a temperature not too low. It is best to leave a little of the soil when lifting, this method preventing the too quick drying out of tubers. Storage could be made in boxes or in a corner of the cellar, as most convenient. As the soil dries out it may be removed. In early April the roots can be divided into pieces with two or three eyes on each. If these are laid on a little light soil in shallow boxes, just covered with soil, and watered they will quickly start rooting and growing. At planting time they can be easily lifted with the soil on the roots and placed where required.

Currant Bushes

Where can I purchase black currant bushes, how soon will they bear, what is the best kind?—E.M.J., Lansing, Michigan.

It should be possible to buy currants from any nurseryman in Michigan, or if the plants are wanted in Canada any nurseryman here would have them. It is not possible to take them over the border in either direction as all currant stock is under embargo. Black Champion, Boskoop Giant and Black Victoria are all good varieties. With good plants to start there should be fruit the year after planting.

Narcissus Fail to Bloom

Several large clumps of Narcissus poeticus have failed to bloom for the past three years, although in a sunny location, and apparently perfectly healthy. How shall I induce them to bloom?—E.J.C., Brockville, Ont.

Narcissus are propagated chiefly by offsets, these forming at the sides of the old bulbs and obviously they have to develop for two or three years before blooming. It is just possible that a rapidly increasing bulb like poeticus, by being left in one spot for several years would become too crowded and blooming spoiled in consequence. It might be wise to lift the bulbs, selecting for replanting those that appear to be large enough to bloom and planting all the small offsets in a bed where they could develop. For the latter purpose a sheltered situation should be chosen and good soil prepared, this ensuring rapid growth. Weeds must be kept down and cultivation done as much as possible.

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Drummond's Phlox

THE original species of the present day charming annual phloxes—Phlox Drummondii—is a native of Texas and was discovered by Thomas Drummond almost a century ago. The many beautiful varieties now in general cultivation are great improvements on the original form, which was of a dark purple color with a darker eye. Numerous varieties have appeared in colors which range through various shades of pink, scarlet, lilac, rose, white, blue and yellow. There are also striped and variegated forms.

The best of the modern strain is the large-flowered or grandiflora section, having very large and perfectly round flowers with distinct eyes, and growing about twelve inches high.

This beautiful and easily grown annual is admirably adapted for summer bedding, and as seed can be purchased in separate colors, any desired effect to harmonize with other near-by plantings can thus be satisfactorily carried out. Seed may be sown thinly in the open when the weather becomes settled, or if an early garden display is wanted we may make a start under glass. Whatever method is followed, a profusion of bloom will be the result, lasting from June or July until October, provided that due attention be given the plants.

Drummond's Phlox does best when grown on a well-drained and fairly rich soil. Heavy soils should be liberally dressed with leaf mold and well-rotted manure, while grit of some sort such as sifted coal ashes may be used with much advantage on very heavy and retentive ground. Light soils can best be improved by the free use of old cow manure, failing which, plenty of leaf mold and old stable manure will be the next best substitutes. They should be planted in full sun and given plenty of room to develop; so the plants should stand at least nine inches apart. During dry weather see that the soil is kept moist, and when the plants are well established a weekly application of a good fertilizer in liquid form will encourage growth and an abundance of flowers. The liquid manure must be applied direct to the soil between the plants. The soil should be moist when manure water is given; if the weather be dry, soak the ground before applying the fertilizer.

To maintain four months of continuous bloom the plants must not be allowed to go to seed; each flower head must therefore be cut out as the blooms fade.

In the vicinity of Philadelphia the annual Phlox is usually sown directly in the open in late April or early May where the plants are to bloom.—Country Gentleman.

Polyantha Roses

THESE pretty little plants have been much in evidence of late years at all the spring shows, and they never fail to attract attention. Plants may be obtained at a reasonable price in full flower from any florist. There are, however, many amateurs who would find much pleasure in growing their own specimens. They would find, too, that home-raised plants are generally much more permanent, for many of those sold are raised especially for immediate effect, being fed up for the purpose, and after the first show of flower they sicken and are of little further value.

To obtain the best results, the plants should be potted up during October or November, although I have had quite a nice show of blossoms from plants potted as late as March. Plants on their own roots are the best for the purpose, but if these are not procurable, plants budded on briar should be asked for. Grafted plants are of little use for pots, and should be avoided. Five-inch or six-inch pots should be used, according to the size of the plants, it being always remembered that flowering is induced if the plants are a little cramped at the roots.

The soil used should be good turfy loam mixed with about half as much old manure, a little gritty soil or silver sand, and a sprinkling of bone-flour. The whole, when well mixed together, should be of a silky texture, and if pressed in the hand should bind together, crumbling again on being rubbed. Soil which will not readily separate after being pressed together is of no use for potting, and should be discarded. About February the growths should be pruned hard back. A very gentle heat should be given at first, starting with about 50 degs. by day and 45 degs. by night. This temperature could be increased gradually as the new growth appears, care being taken to give plenty of moisture.

Like all roses, the polyanthas are liable to attacks of various pests, which can only be combated by using the syringe frequently. Give weak liquid-manure as the flower-sprays begin to appear, increasing the strength as the color develops. Do not allow the heat to run up on sunny days, and at all times give a little air to keep a sweet atmosphere. Directly the first flower opens the plant should be removed to a cooler house, and there the beautiful sprays will mature more gradually until the plant is fit to be taken into the house. The polyanthas, being of a perpetual-flowering habit, should, with proper attention, flower freely throughout the summer.—Gardening Illustrated.

Keeping Pumpkins

Pumpkins and squashes may be kept in good condition all winter if carefully placed in warm, dry storage, say horticulturists of the Ohio Experiment Station.

The proper conditions for their storage differ as to moisture and temperature from those found best for ordinary vegetables and fruits, such as potatoes, roots, and apples which require cool, moist storage.

The furnace room or a warm, dry closet where there is no danger of freezing in extremely cold weather is usually satisfactory. The best temperature is from 50 to 55 degrees Fahrenheit.

Grow Clean Apples

IT is possible for the owner of one or two apple trees to produce fruit as clean as that found in good commercial orchards if a simple spraying program is followed closely.

Experiments conducted in different parts of the State the past season prove that good fruit may be grown in spite of the abundance of scab and other fungous troubles.

Both Bordeaux mixture and lime-sulphur were effective treatments, but the former caused considerable damage to foliage late in the season, and a russetting of certain varieties.

The most effective lime-sulphur treatment

was a spray of one gallon lime-sulphur to 25 gallons of water applied after the leaves appeared but before the blossoms opened. The next application was after the blossoms had fallen, a weaker solution being used, or 1 part to 40 parts of water. This weaker solution was used again two weeks and ten weeks after the blossoms had fallen.

A 3-9-50 Bordeaux solution proved effective, but caused some damage to the fruit.

A secret of the success in this work was the thoroughness with which it was done. An average of 15 gallons of spray material was used to each tree at each spraying.—Ohio Experiment Station.

Tree Diseases in Leaves

Leaf diseases of shade and ornamental trees and shrubs will be much reduced if all the diseased leaves are raked up and burned each year.

The fungi which cause such diseases as maple anthracnose, horse chestnut blotch, elm leaf spot, sycamore blight, rose and lilac mildew remain alive in fallen leaves, the botanists state, and if not destroyed become a chief source of infection the following year.

Protect Trees from Injury

YOUNG fruit trees growing in sod should be gone over carefully in early fall and protected from mice."

Ordinary newspapers wrapped and tied around the trunks of the trees in the fall and removed in the spring make a good protection. Hardware cloth or fine wire screens are also used with a fair degree of success.

Mounding the crowns of the trees with coal ashes will protect the bases but in a few cases injury has been reported from this practice.

It is a question as to effectiveness of a wash against mice, but the following formula is used by some growers: 1 quart concentrated lime-sulphur, 2 pounds of soap, and 1 pound cement all mixed with three quarts of water, and applied to the trunks of the trees with a brush.—Ohio Experimental Station.

Dust Mulch

PEOPLE who grow plants successfully will find it just as necessary to produce a dust mulch about them as does the farmer who grows corn. Very often trees, shrubs or perennial flowers are purchased, planted and begin a very lively career, only to die because the dust mulch has not been produced about them. A dust mulch does not mean to dig the ground deep. To dig deep disturbs and breaks the roots causing the plant to do poorly and sometimes even to die. Only this morning we saw a very beautiful hedge of Japanese Barberry all brown and dying. On investigation it was found that a so-called gardener had spaded all along this hedge, on both sides. His intentions were good, but for lack of knowledge regarding plants he practically killed the hedge by digging up and disturbing the roots. A dust-mulch can best be produced by breaking up the surface of the ground.

It has already been conceded that a good dust mulch around plants is better than all the water that can be used. Referring to the subject of watering plants, it is much better to thoroughly soak the ground around the plants once each two weeks than it is to slightly sprinkle them each evening. It would seem that folks would soon realize that plants cost a lot of money and that whenever one plant is saved it is not only saving the money but at the same time adding to the joy and comfort of the individual as well as making the community more beautiful. A dust mulch around the plants is urged as a horticultural necessity.

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CANADIAN HORTICULTURAL COUNCIL

Current Activities

L. F. Burrows, Secretary-Treasurer

A NUMBER of questions which would, of necessity, have to be dealt with by the Council are being held for discussion at the next annual meeting. In the meantime, however, arrangements are being made for such questions to be discussed at the annual meetings of the various fruit, flower and vegetable growers' and shippers' associations throughout Canada, in order that the Council may have an expression of opinion from them in order to direct the decisions made.

As it is now nearing the time when the annual meetings of the various fruit, flower and vegetable associations will be held, it is suggested that questions affecting the national interests of the horticultural industry be referred to the secretary of the Council at an early date, in order that arrangements may be made to have them discussed at such meetings and recommendations made for consideration at the annual meeting of the Council.

Plant Registration

The report of the plant registration committee has been received by the secretary. It is apparent from the report that a great deal of time has been given by the members to the work of evolving a scheme of plant registration which is altogether practicable, easily workable and provides a means of securing most speedily, the desired result. The president of the Council has decided to call a meeting of the directors, at an early date, to consider the report in order that, if it meets with their approval, it may be brought into operation at the earliest possible date. Detailed information in connection with the report will be given as soon as it receives the approval of the directors.

American Fruit Dumping

A great deal of dissatisfaction has been expressed by the fruit growers' and fruit growers' associations throughout the Dominion during the past season at the inactivity of the Dominion Government in enforcing the anti-dumping law. The markets of the Prairie Provinces have been glutted all season largely by American fruit which, it is claimed, is sold at less than the cost of production.

The retention of Canadian markets for Canadian produce is of paramount importance to every Canadian producer and particularly at present to the producers of fruit. This is a question, therefore, which should be given very considerable thought in order that it may be thoroughly discussed at the coming annual fruit growers' meetings. Copies of the present Act may be had upon application to the Commissioner of Customs, Ottawa.

National Standards for Judging

It has been suggested that the Council take under consideration the advisability of preparing and recommending national standards or score cards to be used in the judging of fruits, flowers and vegetables at exhibitions throughout the Dominion. There is undoubtedly a great need for such standards and an endeavor will, therefore, be made to have suggestions in this connection prepared in time for discussion at the next annual meetings of the fruit, flower and vegetable associations.

Canned Goods for Family

ACCORDING to a recent announcement, certain nutrition specialists of Cornell College of Agriculture are working on a canning budget that will serve as a guide for the amounts of canned fruits and vegetables needed to keep a family of five well nourished for a year. The budget recommends the use of tomatoes four times a week, green vegetables six times,

starchy vegetables three times, and fruits ten times a week. The quantities of food, such as a family might well use are about 80 quarts of tomatoes, 120 quarts of green vegetables, 50 quarts of starchy vegetables, 220 quarts of fruits and 40 quarts of conserve, jam and jellies.

Because of the presence of anti-scorbutic and water-soluble vitamins, the budget says, tomatoes are provided in quantity. Tomatoes are desirable for children throughout the year.

The amount of vegetables stored, it continues, such as cabbage or celery, affects the quantity of green vegetables provided by the canning budget, and the amount of fresh or dried fruits, such as apples, used during the year, must also be considered in estimating the amount of fruit to be canned.

Fall Clean Up Campaign

L. F. Burrows, Secretary, C.H.C.

OLD experienced gardeners advise that the gardens and grounds and orchards be given a final clean up before winter comes in order that diseases and insects may be prevented in so far as possible from finding harbor during the winter.

The importance of the proper preparation of the ground cannot be too strongly impressed upon amateur gardeners because on this, probably more than on any other one factor does the success of the planting depend. It is admitted that the greater part of the losses in planting are due to putting stock that has come out of well cultivated nursery ground into that which has had little or no preparation and then leaving it to shift for itself. Such practice is discouraging and expensive to the gardener, and unfair to the nurseryman who supplies the stock.

Such a clean up also affords the opportunity of making a check of the tree and plant requirements. At such times, and when the matter is fresh in mind, a list should be compiled which may be further reviewed when plans are being made during the winter months. Orders should be placed at as early a date as possible so as to assure the first spring delivery and to make certain that the desired kinds and varieties are obtained before the supply becomes exhausted.

Experienced gardeners invariably plan their spring work and list their trees and plant requirements at this season of the year. This is evidenced by the fact that the landscape departments of the nurseries are always busier in the fall, largely with gardeners who desire to have the matter of spring planting gone into and settled while their requirements are in mind. This provides an opportunity of considerable fall preparation of the ground in order that everything may be in readiness to receive stock when it arrives in the spring.

Vegetables by Weight

THAT it was the intention of the Dominion Department of Agriculture to do away altogether with the gallon and other measures when the new Root Vegetables Act came into force, L. F. Burrows, Assistant Fruit Commissioner, told the Retail Grocers' Association at a meeting in Ottawa, Oct. 27. The Act could not be successfully operated when the system of measures hitherto in force was forgotten and people got used to ordering vegetables by the pound, he said.

In the answer to questions, Mr. Burrows declared that farmers, hucksters and peddlers could not be compelled to carry scales, but that the consumers could demand that the goods they purchased be weighed. The department of agriculture was trying to educate the wholesalers to quote prices on all produce by weight. A motion was passed requesting the department of agriculture to issue cards which grocers could display in their stores which would inform customers that vegetables must be sold by weight.

BOOKS and BULLETINS

Cyclopedia of Hardy Fruits

THE "Cyclopedia of Hardy Fruits," by N. P. Hedrick, recently published, is a comprehensive treatise on varieties of hardy fruits. All of the hardy fruits grown in America and all of their varieties commonly found in the country are described. It is not a compilation, for the author has had fruit in hand and plants before his eyes in making nearly all of the 1200 descriptions. He has had opportunity to go to original sources for names and historical data. The author in this work has put forth his best efforts to put systematic pomology on a solid foundation. The book will be found indispensable to anyone growing hardy fruits, either for the markets or for home use. Certainly, its discussions of the botany of fruits, of their classification, description and nomenclature make it indispensable to all students of pomology.

Ways in which this cyclopedia is useful are:

- (1) To aid in the identification of varieties.
- (2) To guide in the choice of varieties.
- (3) To sort the names now in use for varieties of hardy fruits, and assign them to the varieties to which they belong.
- (4) To tell when and where the varieties originated.
- (5) To state in what regions the varieties described grow best.
- (6) To show the relative hardiness of varieties.
- (7) To set forth the susceptibilities and immunities of these hardy fruits to insect pests and fungous diseases.
- (8) By depicting choice products of the orchard, to stimulate the desire to grow better fruits.
- (9) To indicate the uses of the fruits.
- (10) To show in some measure their value for local, general and foreign markets.

The "Cyclopedia of Hardy Fruits" contains 352 pages and is well illustrated. It is published by the Macmillan Company of Canada, Toronto.

Frost Injury to Tomatoes

SINCE somewhat more than half of the United States tomato crop, exclusive of those grown for canning, is grown in the south and southwest and shipped to northern markets in the winter and spring months, a good part of the product in transit is in danger of freezing. Because of the constant danger of loss from this cause, the United States Department of Agriculture has conducted investigations concerning the freezing points of a number of commercial varieties, both green and ripe, under various conditions. The results have just been published in Department Bulletin 1099, "Frost Injury to Tomatoes," by R. B. Harvey and R. C. Wright. Although tomatoes grown in Canada are not shipped during the freezing months, excepting late fall, the results of these investigations will interest growers in this country.

The tomato plant belongs to a class of annuals that show very little adaptation to low temperatures. On exposure to low temperatures they become somewhat more difficult to freeze, that is, the freezing point is lowered, but as soon as ice formation occurs within the tissues the cells are killed. The experiments conducted by the department showed that the tomatoes themselves may be cooled below the ordinary freezing temperature, which for the varieties tested is a little above 30 degrees, and warmed up again without injury, but when they are in this under-cooled condition a slight disturbance or jar will cause them to freeze immediately. Very little difference was found in the freezing points of different varieties, and little difference between the green and ripe tomatoes.

One of the practical facts brought out by the experiments is that tomatoes with tough skins best stand undercooling. A whole skin prevents ice formed on the surface from inoculating the interior and causing ice to form in the inside tissue. For this reason, varieties that do not have a tendency to crack will withstand frost

better than others. Tomatoes on the vine are more liable to freeze on the stem end first than on the blossom end, partly because the fruit ripens a little slower there and partly because dew accumulates at that end and the ice formed from it is liable to start freezing on the inside.

Economical Ice Storage

NOW is the time to prepare for storing ice. In pamphlet No. 2 of the Dominion Department of Agriculture, the Dairy and Cold Storage Commissioner supplies information on the best methods to follow. The pamphlet contains plans and particulars of suitable structures, some of which are exceedingly simple and inexpensive. The pamphlet describes what is termed an "ordinary ice house," an "insulated ice house," and an "ice well." The latter is used to a considerable extent in the west, but is successful only where no water collects in the excavation. The pamphlet is entitled "Simple Methods for the Storage of Ice," and can be had free on application to Publications Branch, Department of Agriculture, Ottawa.

BRITISH COLUMBIA

B.C. Small Fruit Survey

A REPORT on the cost of growing strawberries and red raspberries in certain coast sections of British Columbia during the season of 1921 is given in bulletin No. 29, entitled "Small Fruit Survey," by A. F. Barse, associate professor of horticulture, University of British Columbia, and published by the B.C. Department of Agriculture. This report shows the factors which make for profit or loss, as the case may be, in the growing of berries. Part I. deals with the cost of producing strawberries, itemizing the various factors affecting this cost. Part II. deals in a similar manner with the cost of producing red raspberries.

The year reported (1921) was a year of high costs for labor and material, excessive rainfall during the harvesting season, unusually low prices and a slow market for the product: hence, the figures in this report for 1921 would not apply for all time. The survey was continued during 1922 and therefore it is expected that a more representative and conclusive report will be made shortly.

The tables presented are not complete, says the bulletin, nor are as many farms included in computing the averages as could be desired. Nevertheless, the material given suggests where improvement may be made in the direction of increasing yields, or decreasing costs with a view to securing greater net returns. The report has been very carefully compiled and is well worth careful study by B.C. berry growers.

Small Fruits Pamphlet

THE small-fruit industry has made notable growth in British Columbia during recent years. An example of this is furnished by the acreage under strawberries which quadrupled in three years. This rapid development has however been accompanied by an equally rapid extension of insect injury, the strawberry root weevil having in some districts assumed serious proportions.

In 1918 an arrangement was arrived at by the Dominion Department of Agriculture with the provincial government for the use of six acres of land in the centre of the strawberry-growing district of Gordon Head, Vancouver Island, with a view to demonstrating systems of crop rotation suitable to strawberry culture and to elucidate if possible the problem of weevil control. The results of the experiments and investigation that have been carried on are told in Pamphlet No. 5, of the Dominion Department.

Bulletin on B.C. Apples

THE "Yields, Grades, Prices and Returns for Apple Varieties in the Okanagan Valley," is the title of a bulletin (No. 90) compiled and written by W. A. Middleton and published recently by the British Columbia Department of Agriculture. The bulletin compares the records of 25 varieties of apple trees in 189 different orchards over several periods of years. It surveys conditions and the situation in a very comprehensive manner and is a credit to both the author and the department.

Variety Choice is Difficult

"In the past," the bulletin says, "the study of the different varieties of apples has received no small share of attention from orchardists and horticulturists, and in the present time this is still one of the most interesting and important subjects connected with the fruit industry. So many arguments can be advanced, both in favor of and against the exclusive production of the numerous varieties of apples now grown, that it is difficult to decide on the relative merits of the outstanding varieties, and to advocate the planting of certain ones to the exclusion of the others.

"Some varieties are markedly influenced by variations of local climatic and soil conditions, whereas others are capable of thriving under quite a wide range of conditions. It is obvious, then, that while some consideration must be given to the results accomplished in the case of a particular variety in any given district, nevertheless the general yielding power of a variety and its market value must always be carefully taken into account if greatest returns are to be expected.

"Yield records collected for the different varieties show considerable fluctuation and this suggests that these same varieties, growing under favorable conditions and receiving good care, are capable of producing much larger crops than the average shown would indicate."

Likely To Increase in Production

After comparing the average yields, grades, prices and returns, the conclusion arrived at is that the varieties likely to increase in production are: Delicious, Duchess, Gravenstein, Jonathan, McIntosh, Rome Beauty, Snow (Fameuse), Stayman, Winesap, Wealthy, Winter Banana, Yellow Newtown and Yellow Transparent.

While those likely to decrease in production are: Ben Davis, Canada, Baldwin, Cox Orange, Gano, Grimes, Golden, Jeffries, Northern Spy, Ontario, Spitzenburg, St. Lawrence, King Tompkins, Wagoner and Winesap.

"In order to be able to take full advantage of the extended marketing season of apples, it is desirable," the bulletin states, "that the Okanagan should be producing early, medium and late varieties. Only those, however, that are generally known and in demand by the public should be considered for commercial plantings. The growing of other sorts not well received on the market tends to reduce the price on the better varieties, because, in order to dispose of them at a fair price they must be sold with the better varieties in mixed cars.

"Over one hundred different varieties of apples are grown in the Okanagan Valley, but the majority of these are not grown in large quantities. The number of varieties grown for commercial purposes would not exceed 25. In the course of time, however, even this number will decrease, until only those are left that are the most profitable; for, in a specialized fruit district like the Okanagan, only the best varieties will survive, the poor ones being eliminated under keen competition."

Onion Maggot Control

THE following statement appeared in the Insect Pest Survey Bulletin of Washington, D.C., relative to the control of the onion maggot under Oregon conditions. Professor A. L. Lovett of the Corvallis Experiment Station states as follows:

"In demonstration plots where the British

Columbia method of using cull onions as a lure for the adult flies was employed field infestation was slight. Cull and volunteer onions of the proper type showed from 50 to 500 eggs, and counts running as high as 437 maggots in a cull onion were made, many showing over 200 maggots. The idea of cull onions in onion maggot control is good."

This matter will be of considerable interest to the growers in the Okanagan where the method of onion maggot control by using volunteer onions was devised by Messrs. R. C. Treherne and M. H. Ruhmann of the Vernon office. It is a great pleasure to think that the work of the Okanagan entomologists is proving useful and successful in other countries than our own.—Vernon News.

B. C. on the Prairies

J. A. Grant, Markets Commissioner

WE have been asked to express our opinion on the storage of winter apples in the Okanagan Valley this season. There is no doubt but storing winter apples will be done by the large shipping organizations on a big scale, and we think this step a wise one. Smaller shippers may not find the storing of apples as profitable for this reason, as they have in the past.

We consider that feeding the market all along the season is the cure for many of our present evils in marketing. We advise winter storage of our best keepers, unpacked. Pack and ship as market demands.

Storage in Transit

As we understand, the new storage in transit privilege for B.C. onions and apples, is as follows: Cars of apples and onions may be placed in cold storage in Calgary, Lethbridge, Regina, Moose Jaw and Winnipeg, providing they are routed after coming out of cold storage to points east of Port Arthur, in United States or Britain. Such stored produce will only pay the balance of the through rate plus 6½¢ per 100 lbs. for terminal service. We think that this storage in transit opportunity should apply to points on the prairies, so that when weather conditions are favorable, outside points without storage could be supplied from nearby cities, when it would be too risky to ship from a B.C. point.

If we read the storage in transit privilege accorded potato growers at points of origin in Manitoba, Saskatchewan and Alberta rightly, they have secured the additional privilege B.C. growers need; viz., to any destination without restriction plus four cents for terminal services.

Why has B.C. been denied this privilege on potatoes, and why does it not apply to onions and apples where the bulk of our market is?

Unsound Business Methods

We are surprised at the action of many B.C. fruit growers in consigning their fruit to wholesalers who are not financially sound. We are daily in receipt of inquiries about firms that fail to remit within reasonable time, and when asked their reasons refuse to answer their letters. Some of these firms that we know (are in business), refuse to answer our letters when we seek an explanation of their conduct.

Several assignments have been made here, (Calgary), recently of wholesale dealers (who were mostly of the fly-by-night kind) who have mulcted B.C. shippers for many thousands of dollars. We have reliable jobbers who are sound financially, and it would pay shippers to inquire about the financial condition of the houses they ship to. Any concern doing a consignment business that will not give a confidential statement of their financial soundness, as well as giving access to their books concerning their sales, to the accredited agent of a shipper, should not be trusted with consignments.

Growers Must Control

The present impossible condition of fruit marketing will do much to convince fruit growers that they must control the marketing of their produce. Reports from every prairie point indicate that prices quoted everywhere are in most cases not sufficient to pay expenses of marketing,

let alone paying for the fruit. Lethbridge reports No. 1 Macks, Wageners, Jonathans, retailing at \$1.75 a box. Similar prices being quoted in Edmonton, crates being offered for \$1.00 to \$1.50. At these prices, red ink will be the growers' returns. It is the remedy not the blame that is needed, and we know that the remedy is in the hands of the growers.

Winter Apples and Onions

We are advised that apple growers in the Kootenay districts are refusing to pick their apples, unless they can be guaranteed 78c per box for them. (The 78c represents the cost of placing them in the box). Also that many onion growers in the Okanagan Valley will not remove their onions from the field because the price does not warrant them doing so.

While there is reason in the attitude, we strongly urge the Kootenay apple growers to pick and store their good winter apples. Signs are not lacking that point to a better market in the near future. If the growers were in control of their output, we would not be selling apples at a price little over freight and commissions.

Onions were not over-produced this year. It is in the prairie markets that conditions are bad. The outside demand will clear the congestion here in a short time. Onions will sell just as well at \$35.00 a ton (which would return a profit to the grower) f.o.b. prairie points, as they will at \$20.00 a ton. We therefore urge growers to pick and arrange to store their apples, also to harvest and store their onions, as we consider the worst in low prices has passed, and long before next June (which is about the extent of the keeping qualities of the above products) fair prices will rule.—B. C. Markets Bulletin (Calgary).

Lethbridge Horticulture

At the Experiment Station, Lethbridge, Alta., the possibilities in horticulture, especially under irrigation, have been determined in large measure by the experiments carried out. It has been definitely shown that small fruits such as strawberries, currants and raspberries can be successfully grown commercially. In connection with raspberries it has been found that winter killing may be avoided by covering the rows of canes with soil instead of manure or straw.

The possibility of tree growth both for shelter and for ornamental purposes has been well demonstrated by the results obtained at the station. Rows and clumps of strong vigorous trees, 30 to 40 feet and more high, now stand where there was bald prairie when the station was started.—Agricultural Gazette.

The original name of the United States organization, Federated Fruit Growers, Inc. was changed last month to Federated Fruit and Vegetable Growers, Inc., so that there would be no possibility of a misunderstanding on the part of growers of the intended scope of the organization.

Warning

Subscribers to the Canadian Horticulturist are hereby notified that certain persons claiming to be representatives of this publication are fraudulently canvassing for subscriptions, especially in the vicinity of Montreal, Que., and London, Ont. If any reader has recently renewed his subscription through such a person, and has not received any copy of the Canadian Horticulturist, he should write the office and forward receipt for verification.

Every authorized subscription agent for this publication carries a credential letter for a limited period, signed by this office. Ask to see it before subscribing. If date has expired, it is without value.

THE CANADIAN HORTICULTURIST
Peterboro, Ontario

PROVINCE of QUEBEC

At Cap Rouge Station

THERE are 79 different projects with fruits, ornamental plants and vegetables being conducted at the Dominion Experiment Station, Cap Rouge, Que., according to the interim report of the superintendent, recently issued. Only these are reported which have given results from which conclusions can reasonably be drawn. The main divisions are testing of varieties, breeding work and cultural experiments.

In apples, of which 90 varieties are under test, the station recommends the following commercial varieties for the district: Yellow Transparent and Lowland Raspberry for summer; Duchess, Okabena and Montreal Peach for fall; Wealthy, Fameuse, Wolf River and Milwaukee for winter. Among the apples originated at the C.E.F., Ottawa, Ripert has been found at this station very good for summer, Petrel for fall and Walton for winter.

Fruit Recommendations

Various varieties of cherries have yielded satisfactorily. In plums, Bonne Ste. Anne, Shipper's Pride and Bixby are recommended. It is interesting to note that these varieties are of the European type, and that a larger percentage of Europeans in general have outlived the Americans at this station. The trouble with the American varieties, the report states, is that the wood breaks too easily. Pears have not done well. According to results, it is doubtful whether pears can be grown in the region, unless it be the dwarfs. Dwarf trees of Doucet and Duchess were planted in 1920, and will be watched with interest.

In black currants, the varieties recommended for the district are, Climax, Saunders and Topsy; red currants, Fay and Perfection; gooseberries, Houghton, Sylvia and Queen Anne.

The work with raspberries shows that, first, to give satisfaction, disease-free canes of standard varieties must be planted, and, second, Herbert is the best main crop variety for central Quebec, while King is a very good early sort. The results with strawberries show that, first, Dunlap is a variety which will give surest results for main crop, while Excelsior may be planted in a small way by persons who desire very early fruit; second, when plants can be had, Cassandra will yield very heavily and is strongly recommended.

In grapes, the varieties recommended for central Quebec are, among the blacks, Champion and Early Daisy; red, Wyoming; green, Winchell, sometimes called Green Mountain. Although Champion is a heavy bearer, it is the poorest grape in quality and should be replaced by Early Daisy. It is not expected that farmers of the district will grow grapes for market, the report states, but it would be quite easy for them to have some for home use.

Vegetable Work and Suggestions

A lot of careful experimental work has been done with vegetables at Cap Rouge, and many projects still receive attention. The variety data for garden beans show that, for central Quebec, in green-podded sorts, Stringless for early, and Refugee for late, are good ones, and, in wax-podded kinds, Pencil Pod for early, and Hodson Long Pod for late, are all right. A comparison of an early variety of garden beans with four of different seasons, the former sown at four intervals of about a week each, and the latter sown the same day, showed that between the two methods there was a difference in yields of only about five per cent, which is practically negligible.

The experiments with varieties and strains of garden peas have shown that, first, in general, wrinkled, semi-dwarf or dwarf green-seeded kinds are the most profitable to grow; second, Gregory Surprise for early and Juco for main crop have done best, where a selection of each is made each year, and are recommended for

central Quebec. A comparison of an early variety of garden peas planted successively with four of different seasons sown the same day showed that the four varieties somewhat lengthened the season during which green peas could be sold, and that they yielded about 12 per cent more. One or two more tests will be made before this project is closed.

In cabbage variety tests, Jersey Wakefield proved the earliest, but was not nearly so good a yielder as Copenhagen market, which is ready for use five or six days later, and Danish Round-head, among the winter varieties, produced the heaviest crops and kept well until late the next spring. For main crop carrots, Chantenay leads, with Hutchinson a close second; for forcing or a very early crop, Oxheart is recommended. The work with onions has shown that, first, for an all around good variety, Red Wethersfield, is hard to beat; second, for a very good looking onion, Prizetaker is unexcelled, while for pickling Barletta (white) is just the article. A comparison of sowing seeds, transplanting and planting sets for onion production resulted in transplanted onions yielding nearly twice as much as those produced from seed, while the sets produced the smallest crop. A comparison of different sizes of

The Fruit & Produce Market

The Commission firms undernoted wish consignments of fruit and general produce. They will be pleased to have you write them for information, shipping stamps, etc., if you have fruit or vegetables for sale.

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All shipments of Fruit and other produce consigned to us receive our personal attention.
Shipping stamps furnished.

Phone Main 2390.

DAWSON-ELLIOTT CO.

32 West Market St., Toronto, Ont.

Wholesale Fruit and Produce Consignments Solicited.

PETERS, DUNCAN Limited

88 FRONT STREET, EAST,
TORONTO, ONT.

See Advertisement on page 218

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N 82 Front Street East O
I TORONTO. ONTARIO M
O Consignments of Apples solicited. Write P
N us for prices Y

onion sets showed, contrary to expectations, that the crop increased with the size of the sets, but the tops were cut before they developed too much as, otherwise, things might have been re-

versed, the larger sets producing seeds and leaving the bulbs at a standstill.

The work with tomatoes has been extensive. From the variety tests, the following deductions may be made: first, for central Quebec, earliness is the prime consideration; second, until other varieties have shown decided superiority, it is safer to grow a good strain of Earliana. In a comparison of different methods of starting tomato plants, plants not pricked out gave practically as much ripe fruit as others pricked out from one to three times. Where no pricking out is done, the report suggests, great care must be taken to grow strong stocky plants, and a great help to this end is to give plenty of space in flats or in hotbeds.

In potato varieties, Green Mountain for general crop and Irish Cobbler for early are, the records show, a very good planting combination which should rapidly be gaining popularity in central Quebec. A comparison of different kinds of potato seed pieces to use for planting showed that probably the most economical kind, year in and year out, is one of generous size, on which are two good eyes. An experiment to determine the effect of land plaster on potato seed pieces resulted in the conclusion that it does not pay thus to treat the pieces when they are put in the ground soon after being prepared.

MARITIME PROVINCES

New Industry for Valley

BIG news for Berwick and the Annapolis Valley in general is the statement that, under new management, the chain of evaporators in the Annapolis Valley, known as the Nova Scotia Evaporators, Ltd., are to be taken over and controlled by the Valley Products, Limited, a syndicate to be incorporated under the provisions of the laws of Nova Scotia. This syndicate, which will have a capitalization of \$400,000, has as its object the manufacture of the various finished products which will be featured as jellies, and dehydrated vegetables, utilizing all the apples and vegetables now going to waste in the Valley, and inducing the growers to make a much greater expansion in production.

The company has established headquarters at Kentville, with P. Addison Demick, as general manager. After a complete survey of the Maritime Provinces along industrial lines, he is firmly convinced that as soon as the apple and vegetable growers of this Province realize they have a domestic market for products now going to waste, at a good price at their very door, then and not until then, will the growers of the Maritime Provinces enlarge upon their present production in a very material manner. G. F. Humphrey, of London, England, who will have complete charge of all the plants and manufacturing of its products, is an expert in all foods.

Hitherto the evaporating plants of the Valley have been in operation for a period of only three or four months in the year. Under the new company, it is anticipated that the plants will be run for a period of 10 or 11 months in the year, and employ in the vicinity of 200 hands. In addition to the Canadian markets, the company has established markets in England, continental Europe and Brazil, which will absorb all the products that the company can manufacture.

The modernizing of the dehydrating plants will enable the company with its new process of manufacturing dehydrated products to use all available vegetables and fruits grown in the Valley. This will be of great advantage to the growers, as the company will be able to absorb twice the quantity now produced.

The plants and equipment will be of the most modern type and very advantageously situated in the following towns: Windsor, Kentville, Berwick, Cambridge, Waterville, Lakeville, Kingston, Middleton, Lawrencetown and Annapolis.

The new company will, it is understood, acquire control of the various plants on the 1st of January next, and will commence at once the

work of modernizing and reconstruction, at the same time giving attention to the provision of proper and up-to-date housing facilities for employees.—Berwick Register.

Nova Scotia's Crop

THE weather conditions throughout Nova Scotia have been satisfactory during the past month and picking, packing and exporting is in full swing, says Berwick Register. The fruit is of large size, of good color and on the whole remarkably clean and free from scab and insect marks. In fact, the fruit appears to be of the best quality that Nova Scotia has produced for some years. The percentage of No. 1 apples therefore will be considerably larger than that of last year and the percentage of No. 2 and No. 3 apples considerably less. The yield of the various varieties in comparison with that of last year will be approximately as follows: Gravenstein, 120%; Stark, 115%; Nonpareil, 100%; Golden Russett, Wagener, Ribston, Spy, Ben Davis, 90%; Blenheim, 40% and Baldwin 25%.

The million dollar advertising campaign on apples from the Wenatchee district in Washington is well under way. One million dollars will be spent the first three years to tell the world to "Eat Wenatchee Apples," the slogan which has been adopted as the keynote of the movement.

Only one-half of the apple crop in New York this season can be classed as "commercial" in the sense that it will be shipped by rail or boat or be sold in the principal markets as fresh fruit, according to estimates of the agricultural statistician of that state. There is a rather small proportion of sound apples in the southern and southeastern counties.

CACTI AND SUCCULENTS

I will send by mail, postpaid, 10 nice little plants. assorted Cacti and Succulents, named, for \$1.00. Most of these grow quickly and stand neglect well, indeed thrive on it.

J. H. CALLANDER

575 Weller Street, Peterboro, Ontario

ROSES

Finest stock, 70 varieties, 12 for \$3.00; 50, \$9.00; 100, \$15.00.

GLADIOLI
In 40 varieties; top size, \$1.00; 1st size, \$3.00; 2nd size, \$2.25; flowering size, \$1.50 per 100.
Delivery F.O.B. Montreal; cash with order.

Lisse, **MIANGELO NURSERIES** Holland

CANADIAN GROWN GLADIOLI

Of the better kinds

We have a nice stock in all sizes of:—Peace, War, E. Kirtland, G. Zang, Herada, Bertrex, Rose Wells, Red Emperor, Flora Norton Youell's Favorite, Scarlano, Lily White, Pride of Goshen, White Giant, Le M. Foch and many others. Get our prices before you buy. It will pay you.

WM. BROWN,

Elora Box 13 Ontario

Franklin Peonies

Our own Mabel L. Franklin, W. F. Christman, June Day, Ball O' Cotton, A. M. Slocum, E. W. Becker, and Serene, all prize winners; also all the newest European and American introductions. Send for new price-list or catalog if you do not have a copy.

FRANKLIN NURSERY

200 W. 58th Street, Minneapolis, Minn.

BON-GLAD GARDENS

Bulbs and bulbets of new Holland and American varieties. Price list ready soon. Write for it.

MRS. G. A. BONISTEEL

73 Highland Ave., Belleville, Ont.

Capitol View Gladioli Gardens

FRED. W. BAUMGRAS, Prop.
Gladioli Grower, Wholesale and Retail

423 Pearl St., Lansing, Mich., U.S.A.

Mailing List on Request

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LANGPORT ENGLAND

Headquarters for

DELPHINIUMS, PAEONIES,
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VAN'T HOF & BLOKKER

HEILOO, HOLLAND

Dutch Bulbs, Paeonies, Roses, Gladiolus.
Fall and Spring Importations.

Write Canadian office for lists.

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VAN GINHOVEN & CO.

32 Pearl Street New York, N.Y.

BULBS—Your address for Holland-grown Hyacinths, Tulips, Crocus, Gladioli, Iris, Paeonies and all miscellaneous bulbs and roots. Please write for illustrated catalogue.

Do We? We Do

Guarantee our Gladiolus Bulbs to be true to name, and if you wish to take advantage of our guarantee, you will need our new Catalog which will be ready in November. Send for your copy NOW, also our "Clip Coupon" offer which expires Dec. 10, 1922. We believe in service.

Get to know us.

CHAS. B. RAFFAUF

Independence, Iowa, U.S.A.

BULBS

High quality Hyacinths, Exhibition size, 20c each, \$1.75 per dozen, post paid.

Darwin Tulips, choice mixed, 60c per dozen \$4.00 per 100 post paid.

Single early tulips, mixed 45c per dozen, \$3.00 per 100.

Ask for Price List

Send for our new Poultry List

GEO. KEITH & SONS

124 King St. E Toronto, Ont.

Seed Merchants since 1866

CROPS and MARKETS

Potatoes, Etc., by Weight

FOR his own protection, every market gardener and farmer should acquaint himself with the provisions of the Act passed at the last session of the Dominion Parliament to regulate the sale and inspection of root vegetables. The Act provides, (except in certain cases) for the sale of potatoes, onions, artichokes, beets, carrots, parsnips and turnips by weight, for the grading of potatoes and onions, and for marking and packing, size of potato barrels, powers of inspectors, and the penalties incurred by the violation of the Act. "The Root Vegetables Act, 1922," may be obtained in pamphlet form by addressing the Publications Branch, Department of Agriculture, Ottawa.

Apple Crop in Northwest

THE extent to which codling-moth damage will decrease shipments of northwestern boxed apples this season is a question of important speculative interest to growers and shippers in that section at the present time, according to a report from the Spokane office of the bureau of agriculture economics of the U.S. Department of Agriculture.

Unusually favorable conditions of temperature and humidity during the growing season and the failure of many growers to spray at the proper control periods are the reasons given for the heavy toll taken by the codling moth this year. The development of the fruit early in the season was so unusually rapid for a time that adequate control of the insect could be obtained only through frequent and complete spraying, a condition which was not fully understood by many growers at the time.

As a result, in some orchards the proportion of "C" grade and cull fruit will run almost 75%, and the general loss from worms and stings is conservatively estimated at 15%-25%.

Michigan Standardizing

THE Michigan Bureau of Foods and Standards, Lansing, Mich., is devoting considerable time to the grape growers of the state and is helping them to place a uniform standard product on the market. With the promulgation of state grades for grapes, an inspection service has been established. Seven inspectors, whose salaries and expenses are being defrayed by the growers themselves, have been placed at the principal shipping points in the state, and under the direction of a supervising inspector furnished by the Bureau of Foods and Standards, are enforcing the new state grades. According to the director of the state bureau, the growers this season are very desirous of placing a pack on the market that can be relied upon for quality.

Federated Growers, Inc.

PERMANENT organization of the Federated Fruit and Vegetable Growers, Inc., was completed at a meeting of the directors in New York on Oct. 21. The following officers were elected to serve until the first annual meeting: President, J. S. Edwards of California; first vice-president, E. P. Porcher of Florida; second vice-president, W. B. Armstrong of Washington; secretary, C. E. Durst of Illinois; treasurer, Alexander M. White of New Jersey. The following executive committee was elected: James Nicol, of Michigan, chairman; E. P. Porcher, of Florida; N. R. Peet, of New York; C. E. Durst, of Illinois; H. W. Jeffers, of New Jersey; J. S. Edwards, of California, ex-officio.

Arrangements for taking over the affairs of the North American Fruit Exchange were concluded. This organization conveys its entire business to the Federated Fruit and Vegetable Growers and agrees to discontinue as a sales and distribution agency after Jan. 1, 1923. The way

is now clear for the new grower-owned and grower-controlled national sales agency for perishables to begin sales service on Jan. 1, 1923. A. R. Rule, formerly general manager of the North American Fruit Exchange, is general manager of the Federated Fruit and Vegetable Growers, Inc. Headquarters will be in Chicago.

U. S. Plant Quarantine

SECRETARY of Agriculture Wallace has approved an amendment to regulation 7 of the regulations under Quarantine 37, providing for the freeing of imported plants from sand, soil, or earth by "washing or other means." The requirement hitherto has been that such plants shall be thoroughly freed from earth by washing. The condition of freedom from sand, soil, or earth is, however, to be strictly maintained. The amended regulation is as follows:—

Condition of Entry

"The importation of nursery stock and other plants and seeds from countries which maintain inspection will not be allowed unless the invoice is accompanied by an original certificate, and unless each container bears a copy of certificate issued by a duly authorized official of the country from which it is exported, stating that the nursery stock and other plants and seeds covered by the certificate have been thoroughly inspected by him or under his direction at the time of packing, and found, or believed to be, free from injurious plant diseases and insect pests.

"All nursery stock and other plants and seeds offered for import must be free from sand, soil, or earth, and all plant roots, rhizomes, tubers, etc., must be freed by washing or other means from such sand, soil, or earth, and must be so certified by the duly authorized inspector of the country of origin: Provided that sand, soil or earth may be employed for the packing of bulbs and corms when such sand, soil, or earth has been sterilized or otherwise safeguarded in accordance with the methods prescribed by the Federal Horticultural Board and is so certified

by the duly authorized inspector of the country of origin. The use of such sand, soil, or earth as packing for plants other than bulbs and corms is not authorized.

"All packing materials employed in connection with importations or nursery stock and other plants and seeds are subject to approval as to such use by the Federal Horticultural Board. Such packing material must not previously have been used as packing or otherwise in connection with living plants and except as provided in the preceding paragraph for bulbs and corms must be free from sand, soil, or earth, and must be certified as meeting these conditions by the duly authorized inspector of the country of origin.

Nursery stock and other plants and seeds from countries which do not maintain inspection



BE A "FIRST" EXHIBITOR

at the

ROYAL AGRICULTURAL WINTER FAIR

in the new

ROYAL COLISEUM, TORONTO

NOVEMBER 22nd-29th, 1922

\$70,000 IN PRIZES for Live Stock, Agricultural Products, Fruit, Flowers and Vegetables

CANADA'S NATIONAL APPLE SHOW

Premium List covers all varieties of apples and pears in Canada. Floral and Vegetable Exhibits a feature. British Columbia, Ontario, Quebec, New Brunswick and Nova Scotia—which will have the premier apple display?

ENTRIES CLOSE NOVEMBER 4th

For Prize List and other information write—

A. P. WESTERVELT, General Manager,
York Building, Toronto, Ontario

W. A. Dryden, President.

E. M. Carroll, Vice-President.

REDUCED FARES ON ALL RAILWAYS

shall not be delivered to the importer or consignee until they have been examined by an inspector of the department of agriculture and found to be free from plant diseases and insect pests, or, if infested, capable in the judgment of

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

REAL ESTATE

\$5000.00 DOWN BUYS BEAUTIFUL FRUIT FARM—Twenty-five acres planted; fine buildings; conveniences; Apply to Calder & Hazlewood, Niagara Peninsula Farm Agents, Grimsby, Ont.

SEEDS, BULBS, PLANTS

BULBS OF ALL DESCRIPTIONS—Now at disposal at our New York warehouse, 110 Duane St. Also specially treated Hyacinths and Narcissus for early forcing as well as French bulbs. Our prices will be interesting and gladly given on application.—C. Keur & Sons, Hillegom, Holland, New York mail address, 5625 Mosholu Ave.

GLADIOLI—America, Baron Hulot, Glory of Holland, Princes, Prince of Wales, Schwaben, Le Marechal Foch, Lily, Louise, Miss Edith Cavell, Catherine, Peace. Post card for prices. H. Attridge, Gladiolus Specialist, Route 7, London, Ont. Winner of 15 firsts, four seconds, Ontario Gladiolus Show, St. Thomas, 1922.

FOR SALE—Cuthbert bushes, large stock, get our price. Gordon Herries, Nurseryman, Port Burwell, Ont.

PERRY'S SEEDS

Alpine and perennials unique collections; many new varieties unobtainable from any other source. Hardy and adapted for Canadian climate

HARDY PLANT FARM, ENFIELD, ENGLAND

Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

WILSON EAR DRUM CO., Incorporated
345 Inter-Southern Bldg. LOUISVILLE, KY.

Make Your Spare Time Earn Money

We would like to secure the services of a few men or women in the fruit districts of Ontario, Quebec and Nova Scotia, to take subscriptions for THE CANADIAN HORTICULTURIST in their spare time, this fall and winter. Previous experience unnecessary. Good commission given. Only those who can supply references considered.

Address, Circulation Manager.

The Canadian Horticulturist
PETERBORO ONTARIO

the inspector of being adequately safeguarded by disinfection. All importations under this paragraph must also comply with the disinfection requirement of Regulation 9. Nursery stock and other plants and seeds inspected as provided herein which are found to be carrying any plant disease or insect pest, and which in the judgment of the inspector can not be cleaned by disinfection or treatment, shall be refused entry. All charges incident to inspection and disinfection, other than the services of the inspector, shall be paid by the importer.

"If a package of nursery stock and other plants and seeds offered for entry includes any prohibited article, or if any of the plants have not been freed from earth, the entire package may be refused entry.

"Each case, box, or other container or covering of nursery stock and other plants and seeds offered for entry shall be plainly and correctly marked to show the number of the permit, the general nature and quantity of the contents, the district or locality and country where grown, the name and address of the exporter, and the name and address of the consignee."

Approved by Nurserymen

This action was taken as a result of an informal conference of the Federal Horticultural Board, Oct. 3, with the advisory committee of the American Association of Nurserymen. It was represented by the conferees that the washing of the roots, particularly of certain classes of plants, as performed abroad, was a source of injury to importations and of considerable losses. Many instances of such injury were presented. On the other hand, it was brought out that this injury was due not to the fact of washing, but more often to the method of washing and more particularly to the subsequent methods of packing and shipping. It was shown that such washing had been done in the case of certain countries without any injury whatever to classes of plants which were supposed to be most susceptible to such injury. Nevertheless, the importers were convinced that it would be more practicable to permit the refusal of earth by shaking or other means where such removal could be thus effectively accomplished. As a result of a full discussion of this subject, the board agreed to the modification of the regulations now authorized.

This is a return substantially to the original requirement under Plant Quarantine 37 with respect to imported plants. The specific requirement of washing was a later one necessitated by the continuing increase of earth with plant importations and the difficulty of setting up a definite standard of cleanliness which would be perfectly clear to the foreign shipper and determinable by the inspector of the United States Department of Agriculture.

Hereafter all importations into the United States must be hitherto as freed from sand, soil, or earth, by washing or other means. In other words, the condition of freedom from sand, soil, or earth is to be strictly maintained. Any importations not so cleaned will be refused entry. The advisory committee of the American Association of Nurserymen has given hearty agreement to this action.

New Style Cooling Plant

A PRECOOLING plant for fruits and vegetables, designed by experts of the United States Department of Agriculture, that does not require the use of expensive refrigerating machinery, has been built by the grape growers at Dinuba, Calif. It is intended to meet the needs of localities where the shipping period extends over only a few weeks and where mechanical refrigeration would not find other profitable uses. In this plant, air is forced through hoppers containing a mixture of ice and salt into rooms holding the fruit or vegetables. It has been possible to reduce the temperature of the cooling rooms from 12° to 15° below freezing. As the work done depends upon melting ice, the cost of the ice at the plant is the important factor in the cost of precooling by this process.

While in the insulated rooms the fruit and

vegetables are brought down to the temperature at which they are to be maintained in the car on the way to market. The cars are cooled with ice, and this precooling takes much of the load of temperature reduction on the ice in the car and leaves it for use in maintaining the low temperature.

About Mice and Rabbits

W. T. Macoun, Dominion Horticulturist

WHILE the depredations from mice and rabbits in winter vary from one year to another, depending on the scarcity or abundance of food, the number of mice which are in the vicinity and the character of the winter, the injury is always greatest when the orchard is in sod, and when there is rubbish lying about; hence, the latter should be removed before the winter sets in. In most cases it is not necessary nor advisable to have the orchard in sod, particularly when the trees are young, although it is highly important to have a cover crop, which also may sometimes become a harbor for mice. As mice may be expected in greater or less numbers every winter, young trees should be regularly protected against their ravages.

Mice usually begin working on the ground under the snow, and when they come to a tree they will begin to gnaw it if it is not protected. A small mound of soil from 8 to 12 inches in height raised about the base of the tree will often prevent their injuring the tree, and even snow tramped about the tree has been quite effective, but the cheapest and surest practice is to wrap the tree with ordinary building paper, the price of which is merely nominal. Tar paper is also effectual, but trees have been injured by using it, and it is well to guard against this when building paper will do as well. After the paper is wrapped around the tree and tied, a little earth should be put about the lower end to prevent the mice from beginning to work there, as if they get a start the paper will not stand in their way. It may be stated, however, that among several thousand young trees which have been wrapped with building paper for years at the Experimental Farm, Ottawa, there have been practically no instances where the mice have gnawed through the paper to get at the tree. The use of a wire protector, or one made of tin or galvanized iron, is economical in the end, as they are durable.

There are a number of washes and poisons recommended for the protection of fruit trees and the destruction of the mice and rabbits, but none of these is very satisfactory, as if the mice or rabbits are numerous, the poison has not sufficient effect upon them to prevent injury altogether. The following method of poisoning has been found fairly successful for mice, but rabbits are very difficult to deal with.

Make a mixture of one part by weight of arsenic with three parts of corn meal. Nail two pieces of board each six feet long and six inches wide together so as to make a trough. Invert this near the trees to be protected and place about a tablespoonful of the poison on a shingle and put it near the middle of the run, renewing the poison as often as is necessary.

Royal Winter Fair

THE prospects for a big fruit show at the Royal Agricultural Winter Fair, Toronto, Nov. 22 to 29, are excellent. All the fruit growing provinces are expected to be represented. Included in the British Columbia displays, will be 1095 boxes of apples from the British Columbia Growers, Ltd., and 1000 boxes from the Okanagan United Growers, Ltd. The New Brunswick Government has arranged for a display of the fruits of that province, and entries from New Brunswick for competition also are expected. Nova Scotia and Quebec also may be considered as likely to be on hand with displays and competitive entries.

As regards Ontario, the outlook for a large showing is good. The management received last

month the following letter from W. F. W. Fisher, Burlington, which may be taken as representative of the attitude of Ontario growers toward the Royal:

"Fruit sections promise to be a huge success. A number of growers here are preparing to enter in the 100 and smaller box lots, as well as in plate exhibits of apples. Burlington, Bronte and Oakville orchardists all are much interested."

It is expected, in fact, that the greatest number of Ontario entries will come from the Hamilton to Toronto district. Exhibits from the Georgian Bay district, from Lambton County and from some other sections also have already been entered. While no definite information as yet is at hand, it is hoped that the famous apple sections of eastern Ontario will join in helping to make the Ontario exhibits the largest and the best ever staged in Toronto.

The vegetable and flower ends of the show are expected to be very fine. The local growers especially are planning to make high class displays. It is planned to have the flower and fruit exhibits intermingled in such way that the general effect of the horticultural department will be most beautiful and striking. Growers and owners of horticultural products, in season, anywhere in the province, are earnestly requested to cooperate in making horticulture at the Royal Fair stand out as the banner agricultural industry of the province.

Judges will be: Fruit—Prof. T. G. Bunting, Macdonald College, Que.; Prof. R. W. Rees, Rochester, N. Y. Vegetables—N. Henderson, London, Ont. Flowers—W. T. Macoun, Ottawa.

Canada at Imperial Show

CANADA again "did herself proud" at the Imperial Fruit Show. At the second event of the kind, held in the Crystal Palace, London, England, Oct. 27 to Nov. 4, Canada won three of the six prizes in the British Empire section, put up a number of striking special displays and made the Overseas section more even than last year a credit to this country. In the dessert class of the British Empire section, H. L. Morse & Sons, Berwick, N.S., won first, with Cox's Orange, and the Quebec Pomological Society took second, (variety not reported at time of going to press). In the cooking class, Morse & Sons also captured first (variety not reported). Specials in this section for best exhibits from certain provinces were won by Nova Scotia, with Cox's Orange, by Ontario, with King, and by British Columbia, with Cox. The Ontario exhibits were sent by the O.F.G.A.

In the Overseas section, Ontario won 11 firsts, nine seconds and one third; British Columbia, three firsts and two thirds; Nova Scotia, three seconds and five thirds; Quebec, one third. Only when the entries in any one class totalled five or more were three placings made; when three or four, only two placings, and when less than three only one. In the following detailed list of awards, that explains why seconds and thirds are omitted in some cases.

Wealthy—1 and 2, Ont.; 3, Que. Snow—1 and 2, Ont.; 3, B.C. McIntosh—1 and 2, Ont.; 3, N.S. King—1 and 2, Ont.; 3, N.S. Golden

Russett—1 and 2, Ont.; 3, N.S. Spy—1 and 2, Ont.; 3, N.S. Blenheim Orange—1 and 2, Ont. Jonathan—1, Ont. Cox's Orange Pippin—1, B.C.; 2, N.S.; 3, Ont. Spitzberg—1, B.C.; 2, Ont. Greening—1 and 2, Ont.; 3, N.S. Newtown Pippin—1, Ont. Stark—1, Ont.; 2, N.S. Any Other Variety—1, B.C.; 2, N.S.; 3, B.C. Special for best Nova Scotia entry was won with Gravenstein; for best Ontario, with King, and for best British Columbia, with Cox's Orange. In the class for pears, British Columbia took first.

Conditions Differed

ON Sept. 9, Miss Olive Cander, who had been visiting Capt. and Mrs. S. H. Anderson for some time, set sail for England on the S.S. Antonia. Capt. Anderson sent with her an 11-quart basket of fine ripe Elberta peaches in perfect condition, each wrapped in paper. These were placed in cold storage on the boat. Three weeks from date Miss Cander left here, the last of the peaches were eaten. Not one had spoiled and all arrived in perfect condition.

On the same boat the Niagara Peninsula Growers, Ltd., had shipped a large quantity of peaches, which had been picked green. When these peaches arrived they were badly spotted and had to be sold cheaply. Capt. Anderson maintains, therefore, that ripe, perfect peaches carefully packed, could be shipped and marketed successfully in England.—Beamsville *Express*.

November Bulletin

Issued by the Dominion Department of Agriculture

NOTE: This is the fourth of a series of monthly bulletins to give timely information of value to farmers

Root Vegetable Grades

ROOT VEGETABLES ACT

The following shall be the grade for—

POTATOES offered for sale in Canada—Canada A, Canada B, Canada C.

ONIONS offered for sale in Canada—Fancy, Choice, Standard, Boilers, Sample.

ALL POTATOES, ONIONS, ARTICHOKEs, BEETS, CARROTS, PARSNIPS and TURNIPS shall be sold by weight.

Cow Testing

Write to the Dairy and Cold Storage Commissioner for blank record forms and full instructions and literature on dairy herd improvement. There is no charge for forms.

Imported Nursery Stock

Importers should note that they are required to notify the

Dominion Entomologist promptly of all orders placed for nursery stock subject to inspection, according to regulations under Destructive Insect and Pest Act.

Wintering Brood Mares and Colts

Animals going into winter quarters in good condition are half wintered—particularly brood mares and colts. They should be stabled every night from now on. Protect the mare and keep the colt growing, if results are wanted.

Import Egg Regulations

On October 7th, regulations become effective governing inspection at port of entry of all eggs imported into Canada in lots of ten cases or more.

Graded Eggs

Consumers may be assured of eggs of prime quality only by buying by grade. Canadian standard grades are being brought to the attention of consumers through newspaper advertising.

Christmas Cattle Market

Three to four weeks' additional feeding on succulent fodder, combined with a liberal grain ration, will put unfinished stock of good type in first-

class condition for the Christmas trade and return an increased profit per pound of grain.

"Canada Approved"

In buying meat and meat food products, look for the "Canada Approved" stamp. It is the consumer's only safeguard. Also, purchase Canned Fruits and Vegetables according to government quality marks: Fancy Quality, Choice Quality, Standard Quality, and Second Quality.

Housing Poultry

Careful attention to housing and feeding of poultry during the early winter months will determine the profit from the flock for the whole winter period when demand is keenest and prices highest.

Valuable publications by the Experimental Farms on poultry-keeping in its different phases will be found in the following list of publications:

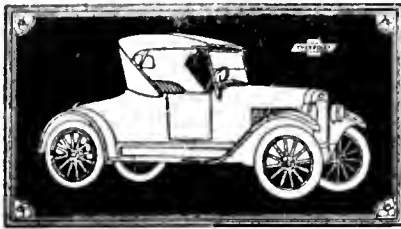
Seasonable Publications

Principles of Poultry House Construction,
Preparing Poultry Produce for Market,
Poultry-Keeping in Town and Country,
Poultry Feeds and Feeding,
The Farm Flock,
Crate Feeding,
The Root Vegetables Act, 1922,
Keeplog Dairy Herd Records,
Horse Breeding and Rearing of Colts.
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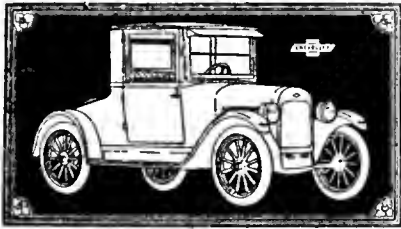


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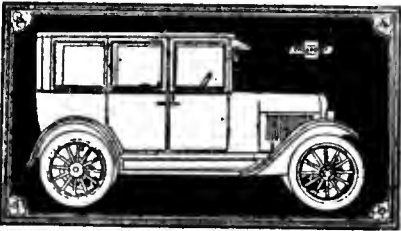
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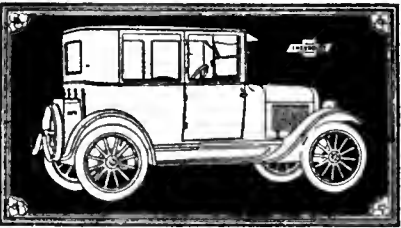
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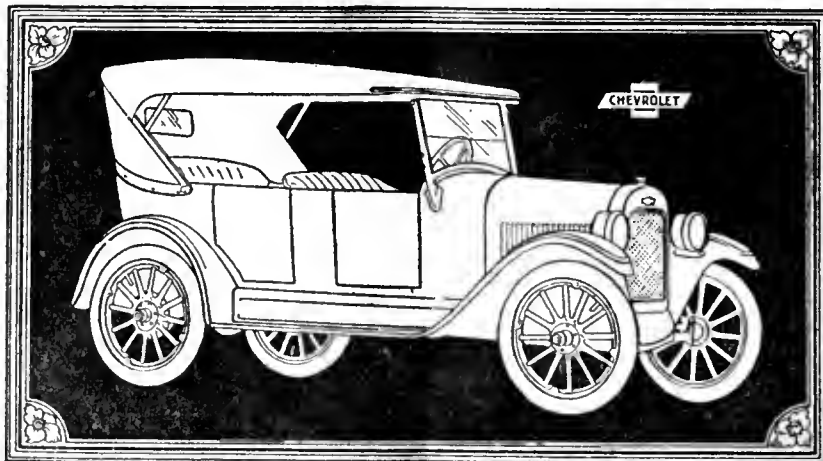
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The Canadian Horticulturist

Floral Edition

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No. 12

The Christmas Tree and Its Uses

A. B. Cutting, Toronto, Ont.

THE most Christmassy of all Christmas greens, or of anything else that has to do with Yuletide, is the Christmas tree. Even "hanging up your stocking on a Christmas night," filled as is it with sentiment then—and with other things later—does not seem to most folks, young or old, quite so Christmassy as the good old tree. Holly and mistletoe and other kinds of greens the family must have, to be sure, if available, as well as wreaths and garlands and lots of other things for decorating, but all these delights and all the feasting and all the merrymaking are not appreciated quite so much as when centred in a tree that bears the gifts of Santa Claus and the home folks. Sweet with the fresh scent of the wild woods, the Christmas tree brings into the home from the outside world deep breaths of sentiment and romance. It is the Christmas green of gladness.

Every Home Its Christmas Tree

We hear much, sometimes, about the cutting and shipping of Christmas trees depleting our forests; but, every home simply must have a Christmas tree, regardless of its origin. It is part of the birthright of childhood and should be denied to none. In its associations and traditions are centred the joys of the day and the memories that are cherished throughout the year. It plays the most conspicuous part in the all-pervading fun and frolic of the occasion. No better use can be found than in giving joy to a little child. If it takes millions of trees to give joy to millions of children, they must be found somehow. But in some places the finding is a problem.

In olden times, each family supplied its own tree directly from the woods. To-day, in the settled parts of the country it is not an easy matter to find the ideal tree—well-shaped and six to ten feet high. But most folks who live in the country will find the way. If a tree is not available at one's own door, or within walking distance, one can take a rig or an automobile and drive to the woods and not only get a tree of some kind—fir, spruce, pine, hemlock, cedar or other species—but also load up with many other wonderful decorative things that may be found there, if one looks well. Branches and clippings from the large evergreens will be useful for general decorating and for making into little imita-

tion trees, for purposes that will be mentioned in a moment. Pine cones and tufts of pine needles may be gathered. A few armfuls of ground pine, or club moss (lycopodium), will be needed for festooning and for making into wreaths. If mountain laurel can be found, a few branches should be included. And one should make a special search for plants and shrubs that have colored, especially red, berries, such as red elders, winter-green (boxberry or checkerberry), winter berry (black alder) and, if one is fortunate enough to be in such a locality, partridge vine (squawberry), a little herb creeping over the ground, with bright evergreen leaves and scarlet fruits. At least some of these things many folks may get by going after them. Other folks, not so fortunate, might send to a friend who lives where they are and ask that a barrel of greens and a Christmas tree be sent.

A Wide Assortment of Greens

City folks have their trees and other greens delivered with the groceries, or from a florist. They have a wide assortment from which to choose. Much of the material comes from the United States, especially from the south. Wild smilax, leucothoe (branch ivy), galax

leaves (colt's foot), and many other things in branches, sprays and sprigs, singly and in bunches, and in wreaths and ropes, to say nothing of trees large and small by the thousand, are in the stores for a month before Christmas waiting for customers. Some of this material is just as useful in country homes as in city homes, if one wants a wider range of decorative material than can be secured in our native woods. And there are many kinds of plants, mostly greenhouse, that may be purchased, if a still wider assortment is desired. Among the most useful at this season are Jerusalem cherry, poinsettias, azaleas, cyclamen, begonias, primulas and potted bulbs. Artificial poinsettias are almost as pretty as the natural, and just as serviceable.

Holly and Mistletoe

But of the Christmas greens not available in the woods, the most important are holly and mistletoe. Holly is pre-eminently the time-honored indispensable evergreen for Christmas. In Canada, we have no true native holly, but a closely allied species is the winter berry, already mentioned. English holly is imported occasionally, but in such small quantities



Happy Hours for the Children

A Wading Pool in the Driving Park at Dundas, Ont. This is an example of thoughtfulness that might well be copied by many other municipalities.

that one seldom sees it. The holly that is so much used at this season comes from the United States. It is found in dry and barren fields from Maine to Florida. It differs from English holly in many respects. It is less handsome; the leaves are more oval and not so waved and crinkled; the fruit is a dull, deep scarlet, and usually solitary, while in the English holly the berries are bright and shiny, and occur in clusters. Mistletoe likewise comes from the United States, being found there from New Jersey to Florida. From legends of the past, which associated the mistletoe with Freya, the goddess of love and beauty, arose the custom continued to the present time, of suspending sprigs of mistletoe in halls and other rooms with the invitation and the privilege that custom confers. So, every home simply cannot do without at least one sprig of mistletoe and a bunch of holly.

Snow and Berry Effects

All these decorative accessories are briefly mentioned in this little consideration of the Christmas tree because their judicious use and arrangement will make the tree all the more enjoyed. And there are still other things that one must secure from the stores for embellishment. For producing snowy effects, one must have cotton batting and diamond dust, called also "winter snow" and "Christmas snow." For red berry effects, bright colored cranberries may be purchased, if other kinds of berries are not available; they are excellent for stringing. Popcorn also sometimes is used for stringing. Colored candles will be needed, and tinsel tissue paper, colored glass balls and ornaments of various kinds.

Assuming that we have at least some of the evergreens mentioned and a few of the ornaments, let us return to the tree and see what we can do with it. But perhaps, for some reason or other, we have not been able to secure a tree. In that case, we will just have to make one. A pole the desired height should first be wrapped with dark brown crepe paper. Then bind on this pole with wire or green cord branches of the spruce or fir that were brought from the woods, placing and spacing them properly, with the largest branches at the bottom and the others graduated in size to the top. At the tip of the pole a sprig can be placed for suitable effect. In this manner one may make a tree of exactly the shape and dimensions required.

Trees for Table Decorations

Not only may one make a regular Christmas tree but also a number of tiny trees for table and other decoration, if desired and if not otherwise available—indeed, one should never gather tiny real trees for the purpose, as that would unnecessarily be robbing nature. The very tiniest of home-made trees may be produced by selecting tips of boughs that look like trees and binding them together on central sprigs

Having a Christmas tree of some kind, and a number of smaller ones, if desired, one can begin to plan their decorations and uses. Nearly every person has helped to dress a Christmas tree at some time in life, if not often, and no two persons would do it just the same, which is a good thing. It is an old custom that seems ever new, and everyone finds keener enjoyment with each indulgence. It would be out of place to give advice on a procedure so personal and so possible of fancy. Some folks, however, may find a few suggestions helpful.

Guard Against Open Candles

Illuminations on a Christmas tree are always dangerous and, as a rule, unnecessary. Evergreens soon dry and burn rapidly. Chinese lanterns and open candles especially should be avoided. Little electric lights, some clear and some colored, are just as effective; or, where such are not available, bright candles or unlighted bright tapers may be used. Some folks consider the tree bright enough with only colored glass balls and tinsel ornaments. Especially should a tree never be illuminated with open flames when cotton batten is used to

represent snow. But in spite of this advice—which we said one should never give—some folks will continue to illuminate their trees in the dangerous manner mentioned. When it is done, a space should be roped around to prevent children getting too close to it. And the tree, which should be firmly placed in any case, should be made particularly solid and steady when to be thus decorated.

Trimming the Tree

For trimming the tree in general, one may use tinsel, strings of red berries, and ornaments of all kinds of shapes and sizes. Then will come the best fun of all—the placing of the presents. Very heavy articles should not be placed on the tree, but arranged around its base. Medium-heavy parcels should be thrust in among the branches, close to the trunk. The lightest gifts should be left for the top of the tree and the ends of the branches. Articles may be tied on with a string, but a better plan is to make a number of hoops with hooks of picture wire, so that the parcels may be suspended from these, and removed easily without cutting.

Keeping Cut Flowers

THE two chief reasons for the short life of flowers are unsuitable receptacles and lack of clean cool water. Whilst the shallow dishes so often used for dinner table decoration are in keeping with the occasion and whilst many of the flowers used will support themselves with 10 to 12 inches of stem out of the water and only two inches under water, it must not be expected that a long life will result for the flowers used under these conditions. Even when vases of proper depth and width are adopted, it does not always follow that the flowers get all the water necessary.

It should not be forgotten that when any flower is cut from the growing plant, it is taken away from its natural source of life, and to be kept alive something has to take the place of the parent plant. The only medium is water applied in quantity and with some little intelligence. The stems of flowers act as a syphon to convey the life giving and life preserving water to the bloom. It naturally follows that if blooms are pressed into a receptacle that only just holds them the water supply must be small. Again, if the stems are cut off squarely and they touch the bottom of the vase the little tubes are closed and the supply is cut off.

There is no intention in this article to deal with the proper arrangement of flowers, excepting to suggest the best kind of vessel to use. Briefly put, this may be said to be the one that will provide the deepest water, consistent

with decorative values. A fairly good rule to follow is to use a bowl or vase from one-third to one-half of the total height of the arrangement. Have water clean and cold; cut all stems with a sharp knife—not scissors—making all cuts at an angle rather than squarely. By this means water can easily find its way into the stem if it touches the bottom of the vase used.

Flowers with woody stems such as roses and chrysanthemums should have deeper vessels if possible, and care should be taken to see that the wood at the bottom is not too hard for water to be absorbed. It is sometimes necessary to shorten these stems on account of this hard wood. Soft stemmed flowers such as carnations, snapdragon, calendula and bulbous flowers more readily absorb water and on this account the bowls used, need not be so deep. It does not take long to change water every day or at least every second day, when all stems should be cut and fresh clean water supplied.

The hot dry atmosphere of many homes makes the long keeping of flowers a little difficult. This condition might be balanced somewhat if at night the blooms could be put in a cool part of the house, where the temperature is not much over 40° to 45°. The recuperative value of this treatment is marked. If on occasion it is necessary for decorative purposes to use shallow receptacles it is wise to stand the flowers very deeply in water for at least 24 hours previously.

The Art of Grafting Trees

THE art of grafting is very old, being mentioned by Pliny, 2000 years ago. By grafting, the nurseryman perpetuates named varieties of fruit-trees and ornamental shrubs which would not come true from seed. Grafting also changes the character of trees as in producing dwarf trees of apples, by grafting on paradise stock, and pears on quince. Grafting also changes the season of ripening in fruits, is the means of adapting trees to adverse soils and climate, makes them more fruitful, corrects poor habits, delays degeneration of variety, increases the size of fruit, changes color of foliage and flowers, and may influence the flavor of fruits, as in some varieties of pears, worked on quince stock.

Sometimes it happens that a tree will not bear fruit because it is sterile. By grafting a scion of a fertile variety on to the branch on the windward side of the tree, it is made to bear heavy crops. When it is desired to change an old tree from one variety to another, the whole tree is grafted over.

Grafting is generally practised in spring, just before the buds begin to open, the scion having been taken a few weeks before the operation, from the most fruitful and desirable tree (if fruit trees are being grafted), that it is possible to get. The scions are made from young year old wood taken from the top of bearing trees when pruning, and these are generally heeled in till needed. In all kinds of grafting the one point to watch is that the cambium layers in

stock and scion lying between the bark and wood meet. Without this no union is possible.

There are many curious ways in which trees and shrubs are grafted, each, the most suitable for the operation being performed. In the accompanying diagram are shown a few in general practice. Cleft-grafting is one of the most common forms in working over fruit trees and is shown at (D). The branch is cut off with a saw, then split open with the grafting knife, (B), the mallet (X), being used to drive the knife (A), into the cut. The scions are made from young wood (F). Then the cleft is opened with the point of the knife (D), and the scion slipped in and the knife withdrawn. When the scions are in position, they are tied in with strips of cloth and wax applied over the exposed parts of the union. (P) and (C) shows how the scions are set in the cleft.

Bark-grafting is shown at (R). The scions are forced down between bark and wood and then waxed over.

In crown-grafting (H), a slot of bark is removed, and scions cut as shown at (H), to put into it, (I). These are waxed over, (J). In another form of crown-grafting, (K), a slot is cut with the inlaying tool (G) instead of removing a piece of bark.

(O) shows root-grafting of young trees (U), with stock and scion in place. This is afterwards waxed over. Approach-grafting is shown at (M). In this stock and scion are two growing plants. Stock and scion are cut as shown at (Y), then

tied together till united, when the tip of the stock is cut away.

Bottle-grafting, (L), is a form of grafting used when stock and scion are a long time uniting. The ends of the scions are extended down into bottles of water, to help keep them alive till a union is formed.

Bridge-grafting (S), is used in repairing trees damaged by Ice and gophers. Scions are made, (Z), and forced into the bark top and bottom to keep the tree alive till the bark grows again.

Saddle-grafting is shown at (V). Herbaceous-grafting (T), in which both stock and scion are growing plants like geraniums or begonias can be grafted together without wax under glass, by the side graft (W).

How to Propagate Gladioli

Mrs. G. A. Bonisteel, Belleville, Ont.

THE gladiolus may be propagated in three ways: by division of bulbs, bulblets, and seed.

In the first two methods we secure a reproduction of what we started with, but in the third method we are likely to get something quite different from the parent. As practical hybridizing is a subject itself, we will not devote attention to it in this paper

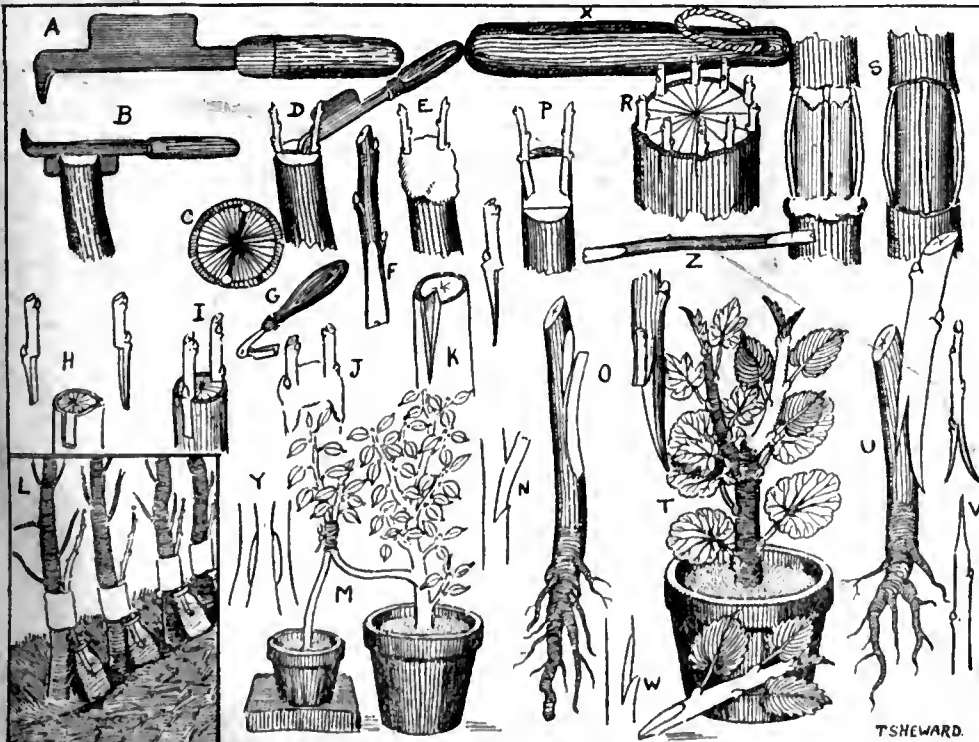
In purchasing corms a young one is always to be preferred: that is a bulb grown from a cormel and about two years old, it will probably range in size from an inch to one and a half inches. Different varieties produce different sized corms when fully matured. Sometimes an ordinary variety produces a very large corm, and on the other hand some choice varieties do not grow large corms. Therefore do not expect all corms to be the same size unless specially graded, particularly when buying a mixture.

Young corms of the age spoken of do not multiply freely by division, but produce many cormels.

Old corms will increase by division, but they do not produce cormels as well as young ones. If we want to increase a variety rapidly, the growing of cormels is the quickest way, although this requires patience

To get the best results from cormels, they may be stored in sand which may be slightly moistened toward spring. Do not allow a mould to form, although I doubt if this storing in sand is usually done. In the spring they are sown thickly in drills to a depth of one and a half inches and kept moist. Excessive moisture for cormels is the whole secret in germinating.

Peeling the hard shell off the cormel also helps, but we can do this only with a small quantity. Soaking in warm water for a few hours is also a help in getting growth started. Another method is to cover the ground after planting with a piece of burlap until sprouts



Methods of Grafting Trees

There are numerous methods of grafting trees, a number of which are shown in this illustration. A short description is given in the accompanying article.

appear. This prevents the sun from drying the surface and consequently helps germination, although this would be impossible with a big planting.

Some experts say that cormels may be planted three to four hundred to the square foot, although never having planted quite so thickly, I am of the

opinion there is nothing lost by thick planting. Cormels should grow in one season into one half inch to three-quarter inch bulbs, and in many cases will produce bloom. Corms this size are called planting stock and produce bloom freely next year, after which they are considered a well-developed bulb.

Pests on Crops Under Glass

Henry J. Moore, Toronto, Ont.

CROPS which are grown under glass, such as radishes, lettuce and tomatoes, are subject to insect pests. Sometimes mistakes are made by growers in their attempts to eradicate them. They may spray or fumigate to get rid of the insects, but may kill the plants, if they do not understand the practice of spraying or of fumigation.

Two Kinds of Insects.

Greenhouse crops are attacked by two kinds of insects. One is the type called the biting insect and the other the sucking insect. Insects which bite the foliage and swallow it, may be killed by applying poison to the plants which they eat. Sucking insects will not be killed in that way, but killed by the odds are in favor of Jeannot. contact poisons which when sprayed thereon will cover them. Biting insects, such as caterpillars, can be killed with arsenate of lead or paris green in water. The writer does not advise the use of paris green if arsenate of lead can be obtained. To five gallons of water add one-eighth pound of arsenate of lead in the powder form, or one-quarter pound in the paste form.

The green and black fly are sucking insects and cannot be killed by arsenate of lead. For these, add two teaspoonfuls of nicotine to a gallon of water. Three teaspoonfuls of Nicotine may be used if occasion demands. The liquor from tobacco stems or cigar wrappers diluted well with water is also good. It is sometimes advisable to add a little castile soap to the solution of nicotine in order to aid in adhering to the insects. Sometimes about half an ounce of pure soap to a gallon of water will help to hold poisonous mixture on the leaves which will kill biting as well as sucking insects, and will not harm the plants. Night is the best time to spray, as there is no danger of the sunlight scalding the leaves while the solution is on them.

Fumigation.

Fumigation is one of the quickest and best ways of ridding greenhouses of insects, and one of the best materials is Aphid Punk. Hang it from wires, light it, then blow out the flame and allow it to smoulder. It is made from paper soaked in nicotine to which is added some substance to keep the paper from actually flaming, but which lets it

smoulder. A case of 12 sheets costs about 75 or 80 cents, and should supply an ordinary sized structure where vegetables are being forced for one year.

There are certain insects such as the white fly on which ordinary fumigating methods or spraying have little or no effect. Sometimes considerable numbers can be killed, but it is impossible to entirely rid the greenhouse of this pest. It may be necessary to use cyanide of sodium or of potassium. The fumes of these are deadly to all breathing things, and may kill a man in thirty seconds. Fumigation should be done in the evening, and everything within the structure should be as dry as possible. The temperature should be about 60 degrees F. Place four ounces of water in saucers on the floor, and add two ounces of sulphuric acid to each saucer. Never use metal dishes as the acid will eat into them. Always use porcelain. Wrap an ounce of cyanide in paper and tie it up, an ounce for each saucer. Do not touch the cyanide with the hands. Place the saucers away from any crops or overhanging foliage. Go to the saucer farthest from the door, drop the cyanide quickly into it and go to the next and then move quickly out and shut and lock the door. As soon as the first ounce of cyanide is placed into the saucer, do not breath until you are outside the structure. Then hang a sign on the door "Poison." You must take this precaution or you will be responsible for any accident that may occur.

After two hours the doors may be opened, as well as any ventilators, but from the outside, and the fumes be allowed to pass out. It is well, however, to allow the structure to remain closed all night. No one should be allowed to enter the greenhouse for twelve hours, except perhaps the operator who is aware of the danger. Fumigation with cyanide will kill the white fly, but will not kill the eggs of the fly. It is, therefore, necessary to fumigate every four or six days in order to kill the young as they hatch. The white fly is about one-eighth inch in diameter with its wings spread, and about one-twenty-fifth with wings closed. Bear in mind that one ounce of cyanide is sufficient for one thousand cubic feet of air space.

Hybrid Cactus Dahlias

J. K. Alexander, East Bridgewater, Mass.

THE Hybrid Cactus type of Dahlia is equal to the Decorative in its popularity, and surely is deserving of this favoritism.

They are not only Dahlias of gigantic size, but produce their blossoms freely upon good long stems. Most every dahlia enthusiast, especially if theirs is an exclusive garden, has the giant scarlet Hybrid Cactus variety "Kalif," and the magnificent blending of old rose, salmon-pink and gold of "George Walters."

There are others of exceptional merit, both for the garden and for exhibition purposes. They blossom abundantly, and have long strong stems, making them very desirable, and worthy of a place in every garden.

From Holland comes the variety "Blanca" an exquisite rose-lilac; and in my estimation the finest Cactus Dahlias for cut-flower purposes. With it, the Dutch have given us "Yellow King" the largest yellow and "Attraction" the largest lavender-pink. The latter has stems as stiff as cane, and bears its flowers well above the foliage.

The Hybrid Cactus Dahlias from California, are among the very best of this type. "Helen Durnbaugh," a blending of pink and white has many friends; "Mrs. W. E. Estes" is considered the finest pure white; "Ruth G. Gleadell" on the amber and salmon shades is a beauty; "La Favorita" which is salmon with darker counter; "California Enchantress" on the deep rose-pinks is a very reliable variety always covered with flowers, and "Tom Lundy" one of the very largest dahlias grown is the best deep velvety red on the market.

Other American creations are, "Louise Slocombe," a long stemmed variety of mauve pink with a silvery sheen, which adds greatly to its beauty. "Colossal Peace" is white with tips of pink, an early and continuous bloomer. "Mrs. Chas. H. Breck," is an exquisite blending of yellow and rose-pink, while "Mrs. Ferdinand Jeffries" is the nearest to black a very rich velvety maroon.

Heralded from Germany, beside "Kalif" are a number of other exceptionally fine creations. "Nibulengenhort" is unquestionably the best of them, a blending of salmon-pink and old-rose; "Wolfgang von Goethe," is a giant salmon-red, by far the best of this color in Cactus Dahlias; "Hoffnung" a blending of old-rose and apricot; "Beloit" the largest deep purple. The English give us "W. B. Childs" a very abundant flowering purple-crimson.

Altho very scarce and difficult to secure "Mrs. Warnaar" is a Dutch creation, that was among one of the first of this type, and still the finest white tinted pale pink.

QUESTION BOX

W. E. GROVES

Dividing Dahlias

Should dahlia clumps be divided before planting in the spring? I have a number of clumps which I lifted this fall and they will be sufficient for my requirements without dividing. Will better results be obtained by dividing?—J.G.H., Hamilton, Ont.

Unless the roots are too large for convenient handling it is not really necessary to divide. If, however, they have a number of stems it is perhaps best to reduce a little, even if the roots not required are thrown away. Dividing the roots generally induces flowers that are a little larger than would otherwise be the case.

Seed of Chrysanthemum

I wish to obtain seed of a hardy double perennial chrysanthemum which comes in various colors, yellow, bronze, etc. Can you advise me the name?—J.G.H., Hamilton, Ont.

The chrysanthemums named belong to a race of small early flowering varieties, frequently used in the more sheltered parts of the garden. The most popular shades are yellow, bronze and white, though there are also one or two red varieties. A much better plan than raising from seed is to buy a few plants in the spring and these quickly increase. The objection to seed is that it is difficult to get the true varieties and quite a number are worthless for the hardy garden.

Club-root on Cabbage

What is the cause of club-root on cabbage and allied vegetables? I have tried every means of eradicating this disease from my garden but have not succeeded.—J. T., Sydney Mines, C. B.

Club-root disease is a fungus one which lives in the soil for many years. I have found after twelve years with no cruciferous crop being grown that the fungus remains alive in the soil. The only thing to do is to give a heavy application of lime about every three years and grow no cauliflower, cabbage, radish or any of a similar family on the ground for about 15 years. This disease can be carried from place to place, on garden tools, on which particles of soil adhere. These particles drop in a new place and the disease begins.

Dahlia Buds Dropping

What is the cause of dahlia buds dropping off before the flower develops and sometimes before the bud is scarcely formed? What is the remedy?—E. J. C., Brockville, Ont.

Insect attack, root trouble or the influence of the atmosphere are three causes, each of which may cause the trouble. Are the buds being partially eaten off by earwigs, a troublesome

dahlia pest? If so, trap them by placing a little moss, or something similar, in a small pot and either put the pot somewhere amongst the foliage of the plant or inverted on the stake to which the plant is tied, if a stake is used. This will attract the little enemies and they may easily be removed and destroyed. A sudden spell of hot weather just about the time blooms are developing will sometimes completely check their development and cause the buds to drop off. A wrong condition of soil may be brought about by too strong feeding with fertilizer or manure water. E. J. C. may probably be able to locate the trouble with these suggestions.

Making Rubber Plant Branch

"My rubber plant has grown tall and spindly. A friend advised me to cut it off about half way and seal over with wax with a view to making it grow bushy. Is this the proper method and when would be the best time to cut it down?"

Cutting back the rubber plant will certainly make it branch out. The object of the wax is just to keep the plant from bleeding. If you have a good top to the plant you could easily root it before cutting right off. Cut the stem where you wish to root it about half way through making a diagonal cut rather than one straight across. Pack a small bunch of moss around the place tying it firmly on with string. Keep this damp and the stem will root out into the moss. When there are a few roots the top may be cut right off and potted. The plant could then be cut back as low as you wish when you will get the branching out as suggested above.

Tulips

What is the distinctive growth and characteristics of the various varieties of tulips, such as Darwin, Cottage, Breeder, Rembrandt and Parrot?—D. J. Thornhill, Ontario.

Tulips, their history and classification, is an interesting subject, and one about which all the authorities do not agree. Briefly it may be said that in 1702 one of the writers enumerated by name over forty varieties of *Tulipa praecoces*, or early flowering tulips; one hundred and forty varieties of *Tulipa medias*, or middle flowering tulips. To these were added a score of French Bizarre and Modes Tulips. Up to this time the late tulips were but few in number.

At the present time the section known as early flowering, comprise those that bloom earlier than the May flowering or Darwin varieties. Belonging to no particular section botanically they are marked with this characteristic and cover a number of both single and double varieties. In bulb catalogues they are always listed as early flowering. The May flowering or florists' tulips are sold as Bizarre and Bybloemen. The former have a yellow ground color striped with purple, crimson or white. The latter have a white ground striped or blotched

with blue, violet, black or purple. These are also sub-divided into flamed or feathered. *Tulipa gesseriana* is by far the most popular of the May flowering section, covering a number of fine varieties suitable for the hardy border.

Parrot tulips are curious and their origin not very clear. The petals are lacinated and the form before the flower opens something like the beak of a parrot. They are not certain as to flowering and are not used freely on this account. Darwin tulips form a distinct class of late flowering self colored tulips of great substance. They were raised by a Dutchman who sold the collection to a Mr. Krelage, who in turn after making a selection named them after Professor Darwin. There are a number of other species and varieties but this probably supplies the information sought.

Grass for Golf Courses

WITH the ancient game of golf becoming more widely played and the number of courses increasing rapidly, the United States Department of Agriculture, in connection with its general work on grasses, is giving attention to the selection of special strains of grasses adapted to the requirements of the links.

A great deal of effort has been wasted in the building up of golf courses because of a lack of understanding of the different kinds of grasses and the methods of establishing a turf. Many men interested in the game have been the victims of seed fakers and self-styled experts. As a result golfers have welcomed information on the subject from the department, and clubs in many parts of the country have called on the department for advice and information.

The best results are obtained by the department with pure strains of creeping bent, a grass of uniform color and texture and resistant to wear. These strains have been selected and increased on the department experiment farm at Arlington Va., and are now grown commercially by two or three companies. These strains of bent grass are grown by the vegetative method instead of from seed—that is, the stolons, or runners, are cut up and spread upon the ground where a turf is desired. The grass is first grown in nursery rows to obtain the increase needed for planting the greens.

If celery has begun to rot, the plants should be gone over and diseased parts of plants removed. When replanted see that the tops are kept dry as long as the plants last. If there is room have a small space between the top of each plant. To keep celery in good condition during the winter, the tops should be dry but the roots in moist soil. Hence if watering is necessary great care should be taken not to wet the tops.

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Horticulture at Royal Fair

THERE was much to interest amateur horticulturists at the Royal Winter Fair in Toronto, Nov. 22 to 29, but not much in the way of amateur competition. The entire horticultural section of the Fair was a wonder-plate of beauty and production. Congregated there from four provinces—British Columbia, Ontario, Quebec and New Brunswick—were fruits, flowers and vegetables that demonstrated the ideals that are striven for by professional and amateur alike. It was the largest horticultural exhibition ever held in Canada and the quality was equal to anything ever seen anywhere.

The floricultural department was not quite so large as at some previous shows in Toronto, so far as number of entries for competition was concerned, but it was very fine at that. The parks department of the city and the Toronto Retail Florists' Club contributed non-competitive displays that made up in extent for anything lacking in numbers of competitive exhibits. Besides lending individual plants for decorating the entire horticultural floor, the parks department put up two large special groups, mostly chrysanthemums and palms, that were beautiful shows in themselves. The Florists' Club had a large booth artistically constructed and beautifully decorated with southern smilax, Boston ferns, cedar and palms, and containing roses, 'mums, carnations, cyclamen and other bloom that delighted and charmed.

Plants and Flowers

In the competitive classes, first for group of chrysanthemums and foliage plants arranged for effect went to W. J. Hoath, Toronto, on a group that was highly praised by the judges for its great variety, its choice blooms and its artistic arrangement. Second went to R. S. McLaughlin, Oshawa, on a group that contained a very fine lot of bloom but not quite so many in variety or number as the first. Third went to S. A. Frost, Toronto, on a display of exceptional originality in design, being after the Japanese rustic type, but too light in quantity of bloom for a display that called primarily for chrysanthemums.

First for group of single and pompon chrysanthemums arranged with foliage for effect also went to Hoath. This display was magnificent in bloom, variety and execution. Second went to Thos. Manton, Toronto, on another very fine group, nicely arranged, but not so profuse in bloom as the display that won first. By winning in this section, Hoath captured also the "H. R. Franklin Trophy," donated by the Toronto Agricultural Society.

In display of orchids with foliage, there was only one entry—Manton—but that entry attracted as much attention as any other feature of the flower show. In arrangement, it was very artistic and original, and in orchid bloom exceedingly high-class.

All the exhibitors in the cut bloom sections, including roses, carnations and 'mums, were commercial growers. Lack of space prevents giving awards. John H. Dunlop and Son, Ltd., Richmond Hill, Ont., won the silver challenge trophy donated by the Rose Society of Ontario for the best vase of 50 roses. This trophy must be won three times before becoming the permanent property of any winner. S. A. Frost, Toronto, won the trophy donated by the Toronto Horticultural Society for the best 50 blooms of carnations. This trophy also must be won three times.

A unique feature of the program in the Coliseum one evening was the christening of a new rose, originated by John H. Dunlop and Sons, Ltd. After a brief announcement that the rose was being named the "Royal," in honor of the Royal Winter Fair, Mr. Dunlop presented to Mrs. W. A. Dryden, the wife of the president of the Fair, a bunch of 25 blooms of the new rose. The Royal, in color of bloom, is a very bright shade of rose pink, diffused with an orange base. It is very beautiful and was much admired by the thousands of visitors to the flower show.

Awards in miscellaneous plants were: Three specimen palms, any size or tub—1, S. Tidy and Son, Toronto; 2, Manton; 3, W. Jay and Son, Toronto. Collection of Nephrolepis ferns, not less than 10 varieties—1, Jay; 2, Argall and Basher, Todmorden; 3, Manton. Six specimen ferns, distinct varieties—1, Manton; 2, Argall and Basher; 3, A. W. Brearley, Toronto. Single house fern, open to amateurs only—1, Mrs. John W. Cripps, Toronto; only one entry. Six cyclamen in bloom—1, Wm. C. Hall, Montreal; 2, Tidy; 3, Jay; 4, McLaughlin. Six primulas in bloom—1, Jay; 2, McLaughlin; 3, Brearley; 4, Manton. Six begonias, Lorraine type—1, Tidy; 2, Hoath; 3, F. H. P. Hammett, Toronto; 4, McLaughlin. Six begonias in bloom, any other variety—1, McLaughlin; 2, Jay; 3, John W. Cripps, Toronto; 4, Manton. Six decorative table plants—1, Manton; 2, Cripps; 3, Brearley; 4, Jay. Three specimen orchids, district varieties—1, Manton; 2, Geo. Thompson, Toronto.

Fruits and Vegetables

The apple show was the largest and best ever held on this continent, with the exception perhaps of one or two of the monster shows held before the war at Spokane, Wash. British Columbia had the largest number of entries. Ontario also was strong in entries, and Quebec and New Brunswick had a few each. Nova Scotia was not represented. New Brunswick had a very attractive non-competitive display that admirably demonstrated the excellence of the apples grown in that province.

British Columbia and Ontario were quite equally honored with awards. British Columbia captured the sweepstakes prize for the best box of apples at the show (Spitzenberg) and Ontario won the premier honor for best 100 boxes (McIntosh). British Columbia trimmed Ontario in Wagener, a leading variety of the latter province, and Ontario won from British Columbia in Jonathans, a leading variety of the Pacific province. Ontario won first, however, in all other varieties commonly grown in the two provinces. New Brunswick had the best box of Golden Russet and won first, second and third in Scarlet Pippin, a variety grown extensively in that province.

The vegetable show was the most complete ever staged in Toronto. All sections were well filled and the quality of the products was high class. Competition was very close in nearly all sections, being especially so in potatoes and onions and in the big collections. Most of the entries came from the districts surrounding Toronto and were from commercial gardens. The hope was expressed by the management

and exhibitors alike that entries from outside points would be much more numerous next year, and that amateur growers of vegetables would enter the competitions as many amateurs were known to be as expert in production as the commercial men.

Moisture in Transplanting

MOISTURE is taken up by plants through their small feeding roots or rootlets, and it is lost by evaporation through the surface of the foliage or leaves. In transplanting, if any of the fine rootlets are lost, the supply of moisture to the foliage is reduced accordingly and necessarily the plants wilt. To prevent this wilting and start growth as promptly as possible water is poured around the roots before the earth is entirely filled in, and sometimes the foliage or tops are partly cut back when the transplanted subject is of a nature to permit it. Other methods are to shade the plants from sunshine, and protect from winds for a few days to reduce evaporation.

Many gardeners, who think they are scientific, do not understand the underlying laws of the chemical and mechanical processes and actions which take place in a growing plant. Water is important because all chemical elements entering a plant must be in solution to be assimilated.

—The Flower Grower

Manurial Loss in Burned Grass

THE nitrogen content of mixed hay is, of course a variable quantity. We should not be far out of the way if we assume an average content of 1½ per cent, or 30 lbs. per ton. It will naturally follow that a quantity of hay equivalent to 1½ tons per acre would contain about 45 lbs. of nitrogen.

The loss incurred by burning would involve the escape of the nitrogen into the air on account of the burning, as well as the destruction of the organic matter. In attempting to place a value on the nitrogen thus lost, it should be remembered that nitrogen in nitrate of soda or sulphate of ammonia can now be bought at about 15c per lb. when carload lots of these fertilizers are ordered. In mixed fertilizers, or in the higher grade ammoniates like tankage or fish, the cost of nitrogen would be greater. Another point to be borne in mind is that the nitrogen in mixed hay is not as available as nitrogen in fertilizer salts or tankage. All told, a value of 10 to 15c per lb. may be assigned to the nitrogen lost. For the 45 lbs. the value would, therefore, be \$4.50 to \$6.75.

Some additional value may be allowed for the organic matter destroyed. If the heat was not intense enough to injure the organic matter in the soil itself, the loss would probably not exceed \$7 or \$8 per acre. On the other hand, if the heat was intense enough to cause the burning out of a considerable portion of the soil organic matter, the loss would be greater.—(Rural New Yorker).

Of late a great many people are growing Strawflower. These flowers make beautiful winter bouquets, but in order to have the best kind of flowers in winter, it is necessary to cut and dry the flower at exactly the right time. The flowers should be cut just as they are completely open or it will even be better to cut them when the buds are about three fourths open. Cut the flowers with stems as long as possible, pick off bottom leaves, tie in loose bunches and hang flower heads down in a dark cool place to dry.

Slugs are said to be very fond of carrots and some gardeners "trap them" by laying pieces of carrot among the plants. Care must be taken to remove the "catch" frequently. Lime and ashes are not to their liking, so that a liberal use of either, will help to keep the nuisances away from your plants.

CANADIAN HORTICULTURAL COUNCIL

Plant Registration

L. F. Burrows, Secretary, C. H. Council

THE plant registration committee, under the chairmanship of W. T. Macoun, attended a meeting of the directors of the Council held in Ottawa on Nov. 13, and presented a report (published in full elsewhere on this page), recommending a procedure to be adopted in the establishment of a bureau of plant registration. In a preamble to the report it was stated that:

Purpose of the Work

"The committee have worked with a view that the purpose of plant registration is twofold:

"1st. To make available the results of the work of the thousands of amateur plant breeders.

"2nd. To provide some means of recognition and protection to the plant breeder as an inducement to him to submit the results of his work.

"Briefly, the committee have been endeavoring to find a means of placing the plant breeder on a plane with the inventor. At present anything new—outside the realm of living matter—may be patented, and the inventor so protected as to enable him to reap the maximum benefits of his invention. The investigator in the field of living matter, however, has so much incentive before him, and although his inventions may be of considerable value to mankind, his own reward, if any, is insignificant. This is true not only in the case of the private individual, but with public individuals as well. We need only mention the case of Dr. Charles Saunders, late Dominion Cerealizer, who, though undoubtedly one of the foremost in his profession in America, received a retiring pension of but \$900 a year, though the work he did in the origination of new varieties meant millions of dollars to the people of Canada while he occupied his position, and will mean millions more in the years to come.

"Since the formation of the committee, each member has expended a great deal of his time in investigating the possibilities of bringing plant registration into effect in the Dominion of Canada. The opinions of a large number of interested persons in Canada, the United States and in European countries have been secured, all of whom are strongly convinced that the scheme is most practical and that if brought into effect untold benefit would accrue, not only to the horticulturists of Canada but, through the incentive given, to horticulturists throughout the world."

Reasons for the Need

In further support of the necessity and value of a plant registration bureau, it was stated that:

"1. Most of the valuable cultivated plants upon which mankind is now dependent for food and clothing have been improved through the discoveries of men who have neither been paid for their work nor honored for their gigantic services.

"2. There are to-day fewer plant breeders in America than there were 20 years ago.

"3. As a career plant breeding offers nothing but a starvation wage at the close of life.

"4. Not a tenth of one per cent of our good varieties of plants have been produced by government paid men. (Experiment stations and colleges, where government officials carry out plant breeding, have been in existence but a short time; whereas, varieties have been originating with private individuals ever since the first settlements in America and with individuals in other countries for thousands of years.)

"5. The very foundation of successful agri-

culture lies in the use of varieties of plants which are adapted to each locality.

"6. Plant breeding more than any other profession requires a continuous application over long years (apples 40 years) to accomplish anything and that it must be done in the country where collections of the plants which are to be bred can be kept.

"7. The keeping of these collections is a very expensive thing and the cost of maintaining them always falls on the individual plant breeder.

"Notwithstanding all these facts, not one single thing has been done to encourage pioneers who because they love plants have sacrificed their fortunes and their lives to produce the luscious fruits, the lovely flowers and the delicious vegetables which fill our gardens, and because the patent laws do not recognize discovery in the field of living matter, the plant breeder is poorer in proportion to the size of his collections and the length of time he has been breeding plants.

"A bureau of plant registration is most urgently needed in order that plant hybrids may be protected and in this way the art of plant breeding be placed where it belongs amongst the highest of arts. It will undoubtedly take plant breeding out of the class of hopeless unprofitable professions and put it where it belongs amongst those which render to society the most lasting and productive benefits—one upon which the future beauty of our flower gardens and the wealth of our orchards and fields depends."

Those to Whom is Due the Credit

The report was signed by the plant registration committee consisting of W. T. Macoun, Ottawa, chairman; H. J. Moore, Islington, Ont.; Jas. E. Carter, Guelph, Ont.; S. F. Davidson, Fonthill, Ont., and F. E. Buck, Vancouver, B.C.

After very careful consideration, the directors of the Council adopted the report and decided to meet the honorable the minister of agriculture and request assistance, financial and otherwise, in order that the plan may be gone on with. Those present were: The president, Lt.-Col. H. L. Roberts, Grimsby, Ont.; F. W. Bishop, Paradise, N.S.; W. H. Stewart, Aylmer, Que.; W. E. Groves, Hamilton, Ont.; C. W. Baxter, Grimsby, Ont., and L. F. Burrows, Ottawa.

Plan Placed Before Minister

Later a memorandum was presented to the minister, and several of the directors and members of the registration committee spoke in support of the project. The minister was much impressed with the necessity and value of a plant registration bureau, and expressed his sympathy and support of the request for assistance. He was unable to state, however, that the necessary assistance would be granted as it was a matter for the government to decide, but in so far as it was possible for him to do so, he gave the directors to understand that the necessary assistance in the administration in the future of such a worthy project would be forthcoming.

The directors instructed the plant registration committee to proceed with the establishment of a registration bureau as provided in the report previously adopted.

Provincial Representatives

At a meeting of the plant registration committee, after the meeting of the directors, the following were named and are being requested to act as provincial representatives of the committee: British Columbia—Prof. F. E. Buck, University of B.C., Vancouver. Alberta—W. F. Broadstock, secretary, Edmonton Potato Growers' Association, Edmonton. Saskatchewan—Dr. C. F. Patterson, University of Saskatchewan, Saskatoon. Manitoba—Prof. F. W. Brodick, Manitoba Agricultural College, Winnipeg. Ontario—H. J. Moore, Islington. Quebec—Prof. T. G. Bunting, Macdonald College, Prince Edward Island—J. A. Clark, Supt., Dom. Experimental Farm, Charlottetown. New Brunswick—A. G. Turney, Provincial Horticulturist, Fredericton. Nova Sco-

tia—W. S. Blair, Supt., Dom. Experimental Farm, Kentville. Yukon—James Farr, Swede Creek, Dawson.

Steps are being taken to prepare an index of the recognized names of all herbaceous horticultural plants, shrubs or trees, and it is expected that the plant registration bureau will be in a position to accept applications for recording and registration at an early date.

NOTE:—It is desirable that particular attention be given to sections 2 and 4 of the report of the plant registration committee, wherein the difference between recording and registration is clearly defined.

Plant Registration Bureau

THE plant registration committee presented to the directors of the Council, on Nov. 13, the following plans and regulations for the establishment of a plant registration bureau:

1. The registration committee named by the Council will name a provincial representative for and in each province. The committee will also name separate committees to advise regarding classes, such as gladioli, peonies, roses, etc., for recording.

Recording and Registering

2. By recording, the registration committee does not establish the particular value or general characteristics of new plants, but only settles the right of priority of the name of the new plant. The registration committee may conduct further investigations and, if satisfied that the new plant is worthy of registration, such registration shall indicate that the new plant is considered to be of outstanding merit.

3. Only horticultural herbaceous plants, shrubs or trees will be accepted for recording.

4. Any variety which is not recognized as being in existence at time of application (that is, which is new) may be recorded, but a variety to be registered must first be tested and found to be of outstanding merit.

Fees and Applications

5. A fee of \$5 shall accompany each application from Canada and of \$10 from points outside Canada. If the variety is not recorded, the fee, less expenses incurred, will be remitted.

6. Each application for recording will be forwarded first to the provincial representative, who will satisfy himself that the application covers a new variety.

7. The description given must not bring into comparison any other variety already known in the trade, in such a way as to discredit this other variety.

Should the committee think that the description given is likely to prejudice another variety, they will ask the raiser to alter the terms of the description. If the raiser refuses to do so, the recording may be refused and the fees returned less the expenses incurred in returning the money and for correspondence.

8. The application will state: (a) The full name of the raiser of the plant. (b) The full name of the seller (if necessary). (c) The name of the new plant. (d) A brief description of the new plant. (e) Conditions under which the raiser wishes to sell or distribute the new plant.

9. The application with supplementary description (and specimens, if possible) will be forwarded by the provincial representative to the secretary of the Council.

To Prevent Duplication

10. An index will be maintained in the office of the secretary on which is recorded the complete name and, where possible, the description of every known variety of horticultural herbaceous plants, shrubs or trees. Each application as received will be checked with the index in order to assure that the name applied for is not already in use.

11. After checking, the application (and specimen, if possible) will be forwarded to the Dominion Horticulturist for a report as to whether, in his opinion, the variety is new and is properly described in the application.

12. The report of the Dominion Horticultur-

ist, with the application and all information regarding it, will be placed before the next meeting of the registration committee which will decide whether the variety shall be recorded.

13. If the registration Committee accepts the application, all information concerning same shall be entered in numerical order in a special book which will be so arranged as to provide for recording: (a) The genus of the plant. (b) The indication of the variety. (c) Name given to the new variety. (d) Name of the raiser, and, if necessary, of the seller. (e) Address of the declarer. (f) Description. (g) Such other information as is deemed necessary.

14. All entries will be posted from the recording book to other secondary books according to the great divisions in horticulture, and subdivided in categories so as to allow proper classification; for instance, the register for arboriculture might be divided in categories as follows: Fruit trees, ornamental trees, forest trees, rose trees, outdoor flowering trees, indoor plants. The division, fruit trees, may then, for example, be subdivided into: Apricot, apple, cherry, peach, plum, etc.

Publication of Records

15. As soon as convenient, following the recording, the secretary of the Council will send to the horticultural papers for the first publication information as outlined in section 8 (a), (b), (c) and (d).

16. If, in the course of six months following the first publication of a name, it becomes known to the registration committee that this name was employed previously for a variety of the same genus, and that this variety is still in existence in cultivation or in collections, the raiser will be invited to change the name, so as to avoid similarity.

17. An endeavor will be made to have horticulturists who publish catalogues or lists that include new plants, to mention during at least the three years following the date on which the plant has been put on the market the name of the registrar of each new plant.

Should a horticulturist publish lists of any new plants without mentioning the names of the raisers, the registration committee will advise him that such a practice does not meet the approval of the committee. If after due notice given as above, a horticulturist still refuses to mention the names of the raisers of new plants included in his list, the committee will have power to decline any further application from him.

18. The raisers will have the right to include, in the conditions of sale of their new plants, the obligation of mentioning their names when the plants are included in catalogues—for a period other than indicated in clause 17 above, or even indefinitely.

The raisers have the right to specify all the conditions which they think necessary to safeguard their interests, present and future, moral and material.

19. When a new plant is put on the market by a person other than the raiser, it is the name of the propagator which should be mentioned.

Must Exhibit or Offer For Sale

20. All the persons who have obtained recording or registration of new plants will be required to exhibit or show these plants at a provincial exhibition, recognized by the Council, within a period of two years from the date of registration. Failing this the registration will be cancelled. The new plants need not be exhibited as mentioned above if they are offered for sale within two years of the date of registration. However, if the plants are not offered for sale within six years of the date of registration, this may be cancelled.

The fees charged for registration which may eventually be cancelled are not returnable. The cancellation of a registration will only be compulsory if it has been demanded by one or several persons interested in the matter.

21. The Council will make the final decision in case of dispute between an applicant, applicants or other parties and the registration committee.

22. In order to avoid duplication of names

and to give international effect to recording and registration, the committee will co-operate with every known horticultural society or agency.

New Assessment Plan

L. F. Burrows, Secretary, C. H. Council

AT a meeting in Ottawa last month, the directors gave consideration to the financial assessment as at present outlined in article 4, section 1, of the constitution, and passed a resolution stating that in view of the unforeseen development regarding the establishment of a plant registration bureau and the favorable consideration of the Minister of Agriculture towards the providing of office accommodation and financial assistance, the above article be amended so as to provide for the following assessments:

Nova Scotia Fruit Growers, \$100; United Fruit Companies, \$300	\$400
New Brunswick Fruit Growers' Association	50
New Brunswick and P.E.I. Potato Growers, each	100
Quebec Pomological and Fruit Growing Society	50
Ontario Fruit Growers' Association, \$100; N.P.G., Ltd., \$400; Ontario Vegetable Growers' Association, \$75	575
Prairie Vegetable Growers	75
B.C., Various Associations, \$100; B.C.F.G.A., \$100	200
Package Manufacturers	500
Florists and Gardeners	200
Nurserymen	200
Wholesale Dealers	500
Canners and Jam Manufacturers	500
Horticultural Associations	200

It is estimated that such an assessment will meet the altered financial requirements of the Council, and is low enough to admit the membership of the maximum number of horticultural interests.

A further resolution to the Council dealt with the application of the Ontario Apple Shippers' Association for membership in the Council. It was recommended that the Ontario Apple Shippers be granted representation in the Council, and that the annual assessment be fixed at \$200.

Medal for Horticulture

IN October, Jas. E. Carter, of Guelph, Ont., was generous enough to offer to donate the sum of \$100 annually to be used for the purchase of a medal to be known as "The Carter Medal," to be given to the person, who, in the opinion of the Council, has done the most valuable work for the advancement of horticulture in Canada, during the year ending Dec. 31, previous.

The directors were most pleased to accept Mr. Carter's generous donation, and a committee will be appointed immediately to bring in a report at the next annual meeting of the council, recommending the person to whom the Carter Medal should be awarded for the year 1922.

J. W. Crow, former professor of horticulture at the O.A.C., has changed his address from Guelph to Simcoe, Ont., where he plans to undertake plant breeding as a commercial venture. He did a lot of work during the past summer on gladioli, and expects to make that his leading line. He intends also to work with irises, as they are becoming deservedly popular and the new varieties are greatly superior to the old standards. He expects to undertake also the production of high class seed of certain vegetable crops, and of farm crops as well, especially grains. From his new address, Mr. Crow will still be available as a lecturer upon horticultural topics, as announced recently, and as judge of fruits, flowers and vegetables. He has a lecture prospectus which will be gladly furnished on request.

PROVINCE of QUEBEC

Horticulture at La Ferme

AT the Dominion Experimental Station at La Ferme in Northern Quebec, various fruit and vegetable projects have been conducted or are under way in accordance with the limitations of climate and the possibilities. The report of the superintendent, Pascal Fortier, for the year 1921, recently issued, states that the growth of apple trees in that year was the best since planting in 1917, because of no winter injury. In the words of the report, "protection with straw of the foot of the trees to delay premature circulation of sap in the spring, and pinching of buds in late summer to ripen the wood, probably explain why the growth of the previous year was not destroyed." Black, red and white currants had begun to bear, but not in sufficient quantity to warrant specific recording. Black currants were the most resistant to cold. Gooseberries do not seem hardy at this station.

Vegetable Experiments

In the vegetable department, garden beans suffered somewhat from frost, but not enough to affect comparison, although yields were not very high. In the variety tests, Refugee led in yield per acre, with Extra Early Valentine second and Bountiful Green Bush third. Valentine was about 10 days longer in maturing than the other two. In a cultural test with beans to compare sowings of one variety at different dates with sowings of early, medium and late varieties on the same date, the results showed it preferable to sow different varieties, which gave a higher yield and pods of better quality. Variety tests of broad beans resulted in Long Pod Green, first, and Taylor's Windsor, second, leading all other varieties tested in yield per acre by a large margin. Peas did not succeed in 1921, owing to an early June drought. Reliance, Dandy, Stratagem and Pioneer stood at the top in yields in order given.

In beets, Crosby Egyptian, Eclipse and Detroit Dark Red topped the list respectively. Beets thinned to two inches, to three inches and to four inches gave much the heaviest yield from those thinned to two inches. In carrots, Improved Nantes and Chantenay were the best yielders. Carrots thinned to one and a half inches, to two inches and to three inches gave heaviest yields from the two-inch thinning. Hollow Crown parsnips thinned to two inches, to three inches and to four inches gave best results from thinning to two inches. The only variety of salsify (vegetable oyster) tested was Long White and it yielded only fairly well.

The best yielding radishes were Early Scarlet Turnip and Icicle. In seven varieties of lettuce, Improved Hanson and New York were the leaders. In parsley, Triple Curled gave nearly three times the yield of Moss Curled. Victoria spinach gave a much heavier yield than New Zealand spinach, but as these are not only different varieties but different types of spinach, and as they usually are grown at different seasons, the comparison is of little value.

Among 13 varieties of cabbage tested, Fottler's Improved Brunswick and Flat Swedish stood at the top and gave about two and a half times the yield of such well known varieties as Jersey Wakefield and Copenhagen Market. In cauliflowers, Early Snowball and Early Dwarf Erfurt gave fair yields. In Brussels sprouts, Dalkeith and Dwarf Gem were the leaders:

Ordinary Sweet Corn Too Late

King of the Mammoth pumpkin gave a much heavier yield than Large Connecticut Field and Small Sugar. In squash, Green Hubbard gave twice the yield of Delicious and two and a half times the yield of Golden Hubbard. The leaders in cucumbers were Improved Long Green and Giant Pera. Out of 13 varieties of corn, including different types, Klöchman gave the highest yield and proved one of the earliest.

Pickaninny was the very earliest and, in the words of the report, "is of great value in the region." Evergreen and Golden Bantam are much too late. Celery was poor in seed germination and no test was made.

Onions were severely injured by white maggots. Eleven varieties were tested with Red Globe and Australian Brown heading the list for yields. Three different varieties were each thinned to one inch, to two inches and to three inches with the result that in each case the one-inch thinning gave two to three times the yield of both the other thinnings.

Muskmelons, citrons, peppers, eggplants and tomatoes were not very successful, the season being too cold. Unless given artificial protection and tended with care, these crops are difficult to grow in the region. Some of them became frosted each year before maturing. A few ripe tomatoes were picked but it was impossible to give the yield because of certain varieties suffering more from the frost than others.

BRITISH COLUMBIA

B.C. Trade on Prairies

J. A. Grant, Markets Commissioner.

THE season of 1922 has been very disappointing to almost all those engaged in agricultural pursuits. Many other lines of industry have had their own troubles, especially those directly connected with the agricultural industry. The signs of the times point to a considerable betterment for next year. There will be much more ready money circulating, especially amongst prairie farmers.

We have noted several things that can be done to make the lots of the farmer easier, especially the fruit farmer. Several matters connected with transportation need adjusting.

Ask for Credentials

SUBSCRIBERS to The Canadian Horticulturist are again warned against giving their subscriptions to any person claiming to be an agent for this publication who cannot produce a letter of authorization.

Certain persons have recently fraudulently canvassed for subscriptions in various parts of Ontario, this having been discovered through complaints regarding non-receipt of copies. If any reader has recently renewed his subscription through such a person, and has not received his copy of The Canadian Horticulturist, he should write this office and forward receipt for verification.

Every authorized agent for The Canadian Horticulturist carries a credential letter for a limited period signed by this office. Ask to see it before subscribing. If date has expired, it is without value.

THE CANADIAN HORTICULTURIST
Peterboro Ontario

Many things that can be absorbed by the prairie markets and easy to grow in B.C. will be discussed during the winter campaign. We welcome the new Greenhouse Men's Organization now formed in Victoria, and we will endeavor to form another organization with head quarters in Vancouver. Carlot shipments to prairie

points of greenhouse vegetables will be rolling in 1923 season. We expect to lay plans for distribution, etc., before greenhouse men in the near future. Our ideal is to have all B.C. producers united in one selling organization.

Apples are firming in price, and winters in storage should sell at a satisfactory price. Figures in our hands from a reliable source indicate that the amount of apples in storage for winter supply is not more than can be consumed at prairie points. We consider that a proportion of these should be stored in distributing points in the prairies, so that in mild weather they can be sent to nearby points that are at present understocked.

November Raspberries

The beautiful Italian skies of the Fraser Valley are further advertised by the arrival of another crate of raspberries from Mr. Eagle, of Dewdney. These arrived in time for Thanksgiving Day and were purchased from the Vernon Fruit Co. by the C.P.R. Palliser Hotel, Calgary, at \$10. Raspberries in November from B.C. speaks well of the mild climate there.

Storage in Transit—A Correction

In a recent Bulletin, we stated as follows: "If we read the storage in transit privilege accorded potato growers at points of origin in Manitoba, Saskatchewan and Alberta, rightly, they have secured the additional privilege B.C. growers need, viz., to any destination without restriction plus four cents for terminal services." Upon consulting C.P.R. Tariff No. W4883, items 127 and 128, we find as follows: "Carload shipments of potatoes originating in Manitoba, Saskatchewan and Alberta may be shipped to Calgary, Edmonton, Moose Jaw, Regina, Saskatoon and Winnipeg, for storage when re-shipped within six months, to points east of Fort William, or Armstrong, Ont., or to U.S." We regret that we did not rightly read the storage in transit privilege.—B.C. Markets Bulletin (Calgary).

Have you renewed your subscription?

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See Advertisement on page 218

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CROPS and MARKETS

Ontario and B.C. Apples

THAT British Columbia apples have captured a large part of the Ontario market is not due either to their superiority or to the perversity of the ultimate buyer, but simply to the fact that they are displayed more conspicuously and in a more attractive way. The best Ontario apples are of finer flavor than the best British Columbia fruit, but the Ontario apple is not pushed forward like its competitor, and the result is that the latter has the advantage, in spite of the drawback of cost of production for several thousand miles.

It is not merely high color that attracts the buyer. He prefers to purchase by the box rather than by the barrel. In buying smaller quantities by the peck or measure there is a risk that the apple may be wormy or otherwise defective. Probably our best and most carefully selected fruit is exported, and the grower may be satisfied with the export market, and be comparatively little concerned about the market at home. But there is no use in blaming the ultimate consumer for not buying that which is so seldom offered. Any fruit dealer who chooses to make a specialty of the native product will speedily find plenty of customers.—Toronto *Globe*.

Apples in Hamilton

FRUIT growers, not only in the Niagara peninsula, but throughout the continent, have been financially handicapped from a depression of the market and crops which amounted to so much over the normal supply that there is a glut. British Columbia apples, of which much has been written of late, are being sold locally (Hamilton), but the prices the growers are getting are very low, \$1 and \$1.25 per box being considered good for the best quality.

Ontario apples are also being sold in large quantities in the local shops. The quality is

excellent and the prices are reasonable, as the purchasers will admit. For local consumption local growers do not pack the fruit as for transportation, and so the high-colored, carefully-packed fruit from the Pacific coast does look more attractive. The knowing housewife buys, however, not for the wrapping and skin, but the fruit inside, and so the Ontario apple, local dealers declare, still holds premier place in the eyes of the local fruit-buying public.—Hamilton *Spectator*.

In November issue, mention was made of sweet potatoes having been grown the past season at Stoney Creek by Sanford Carpenter. Sweet potatoes were grown last year also at Welland. George B. McClellan, manager of the Industrial Home there, tried the experiment and had considerable success. THE CANADIAN HORTICULTURIST would like to hear from others in the Niagara peninsula or elsewhere in Ontario or east who have tried sweet potatoes with or without success.

Elmwood Terrace Gladioli

Consistent prize winners in the Am. Glad. Society and the new England Soc. Fine stock, true to name. Write for complete list including latest novelties.

A large surplus of the following at bargain prices, fat size.

	Doz.	100		Doz.	100
Chicago White	.35	2.00	Wilbrink	.60	4.00
Crim. Glow	1.75	10.00	Mix. finest va-		
Golden King	.50	3.00	rieties	.50	3.50
Gretchen Zang	.75	5.00	Mixed Prims.	.35	2.50
Halley	.35	2.00	Kunderd's Mix-		
Herada	1.00	7.00	ed Prims.	.60	4.00
Ida Van	.35	2.00	Kunderd's Mar.		
Mrs. W. E. Ty-			Foch	4.50	30.00
er	.60	4.00	Scarlet Princ-		
Mrs. Dr. Nor-			eps	1.50	10.00
ton	2.00	14.00	Alice Tiplady	1.50	10.00
Mrs. Watt	.75	5.00	Albion	1.50	10.00
Pink Perl	1.00	7.00	Linton	1.75	15.00
Schwaben	.60	3.50	Myra	2.50	17.00
Techla (Prim)	.75	5.00	Topaz	1.50	10.00

Get your stock for the big exhibit at Guelph next year and be a prize winner.

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Canada at Imperial Show

LAST month in this magazine the Canadian winnings in the Overseas section of the Imperial Fruit Show, London, England, Oct. 27 to Nov. 4, were reported by provinces. Following are names of winners in detail. In the case of Ontario, the entries were made in the name of the Ontario Fruit Growers' Association, but grown and packed in the orchards of the growers here given:

Wealthy—1, W. L. Hamilton, Collingwood; 2, Harry Ryrie, Oakville; 3, Quebec Pomological Society. Snow—1, Hamilton; 2, Fred Schuyler, Simcoe; 3, W. J. Littlejohn, Erickson, B.C. McIntosh—1, Hamilton; 2, W. F. W. Fisher and Sons, Burlington; 3, J. Elliott Smith, Wolfville, N.S. King—1, H. C. Breckon, Bronte; 2, Breckon; 3, F. A. Parker, Berwick, N.S. Golden Russet—1, J. F. Osborne, Newcastle; 2, Hamilton; 3, Elliott Smith. Spy—1, Fisher and Sons; 2, P. W. Hodgetts, Clarkson; 3, Parker. Blenheim—1, Breckon; 2, Breckon; 3, no award. Jonathan—1, W. N. Langell, Point Pelee; 2 and 3, no award. Cox's Orange Pippin—1, Robert Stark, Creston, B.C.; 2, Berwick Fruit Co., Ltd., Berwick, N.S.; 3, J. C. Smith, Burlington. Spitzenburg—1, Occidental Fruit Co., Ltd., Kelowna, B.C.; 2, Smith Bros., Bronte; 3, no award. Greening—1, Breckon; 2, Smith Bros.; 3, Berwick Fruit Co. Newtown Pippin—1, C. W. Challand, Simcoe; 2 and 3, no awards. Stark—1, W. H. Gibson, Newcastle; 2, Parker; 3, no award. Any Other Variety—1, Stark; 2, Parker; 3, Littlejohn.

Best Ontario Exhibit—Breckon (King). Best Nova Scotia Exhibit—Parker (Gravenstein). Best British Columbia Exhibit—Stark (Cox Orange). Northard Prize—Parker. Pears, any variety, six half-boxes—1, Stark; 2 and 3, no awards.

Cooperation in Essex

ESSEX County, which is the most southern part of Canada, has proved to the remaining part of the country that, by a proper system of cooperation, the various industries may be developed on a much larger scale, and also on a much more profitable basis, says the *Mail and Empire* (Toronto). About nine years ago the growers of garden produce depended on selling only on the local markets, whereas to-day onions and tomatoes from Essex are shipped to all parts of Canada and the United States through the Erie Co-operative Co. and sales agents are stationed at Halifax, Montreal, St. John, Toronto, Winnipeg, Regina, Calgary and Detroit.

In forming the Erie Co-operative Co., each member was required to buy one \$100 share, for which he pays \$25 down. From the sales of the crop 10 per cent. of the gross sum is deducted, and this fund supplies the necessary amount for current expenses, and at the close of the year if there is a balance it is paid to the members. A dividend of eight per cent. is paid on the stock each year, and the balance is divided according

to the business transacted through the company. This company has a membership of about 400 growers and handles 95 per cent. of the crop of Southern Essex.

The district of Leamington has a world-wide reputation for early tomatoes and these are on the market from early July until late in the autumn. During the main part of the season about 12,000 baskets are shipped daily, and the Pelee district supplies the country annually with about 150,000 bags of onions. The various markets are studied daily and the good prices realized by the growers through the company are due to distribution to markets not glutted, and not to any holding-up method.

One aim of the Erie Company is to maintain a high standard of quality, and in order to do this each member is required to mark each basket with his stamp. If any complaints are filed, the grower is the responsible party.

Miss S. I. Chase, B.S.A., the first woman to graduate from the Ontario Agricultural College at Guelph, has been winning laurels for herself and her college, by carrying off the first prize at the Annapolis, Kings and Hants Co. annual exhibition. This champion woman fruit farmer did not win her honors lightly, as there were eight competitors in the field and the quality of the fruit shown was very high, special mention being made of the beauty of color in display. Miss Chase did not stop at one prize, for in the best five-plate collection contest she again captured first prize among a large number of

competitors, and added to these trophies, several plate awards. Miss Chase whose home is at Greenwich, has proved by her recent achievement, that well-taught theory is a fine step on the road to successful practice.—Berwick (N.S.) Register.

Capitol View Gladioli Gardens

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Mailing List on Request

ROSES

Finest stock, 70 varieties, 12 for \$3.00; 50, \$9.00; 100, \$15.00.

GLADIOLI

In 40 varieties; top size, \$4.00; 1st size, \$3.00; 2nd size, \$2.25; flowering size, \$1.50 per 100.
Delivery F.O.B. Montreal; cash with order.

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

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References: The Bank of Nova Scotia, King and Victoria Branch, and Commercial Agencies.

FOR SALE and WANT ADS

Advertisements in this department inserted at the rate of 5 cents per word. Each word, initial or group of figures counts as one word. Minimum 50 cents cash, strictly in advance.

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SEEDS, BULBS, PLANTS

BULBS OF ALL DESCRIPTIONS—Now at disposal at our New York warehouse, 110 Duane St. Also specially treated Hyacinths and Narcissus for early forcing as well as French bulbs. Our prices will be interesting and gladly given on application.—C. Keur & Sons, Hillegom, Holland, New York mail address, 5625 Mosholu Ave.

GLADIOLI—America, Baron Hulot, Glory of Holland, Princes, Prince of Wales, Schwaben, Le Marechal Foch, Lily, Louise, Miss Edith Cavell, Catherine, Peace. Post card for prices. H. Attridge, Gladiolus Specialist, Route 7, London, Ont. Winner of 15 firsts, four seconds, Ontario Gladiolus Show, St. Thomas, 1922.

RARE ALPINE 1922 SEEDS—From one of the largest collections in Britain. Lists free. Sample packet 12 varieties, 3/6. Rev. J. F. Anderson, Glenn Hall, Leicester, England.

Felan's Gladiolus Farm

Oakville, Ontario

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Gladiolus Bulbs, Planting Stock, Bulb-lets. Write for Price List.

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North Attleborough, Mass., U.S.A.

Offers Choice Bulbs and Planting Stock of standard and new varieties, at most reasonable prices. Send for Price List. We are never undersold.

PLAYTHINGS

This is the term of one of our customers applies to Gladiolus Bulblets. He writes: "I wish to buy several dozen playthings (bulblets) for my garden next year." It occurs to us that a few Canadian enthusiasts might like to play with a few bulblets of some of the newer varieties. Grow them for two years and you'll have flowering sizes.

Bulblets of Anna Eberius, 25c doz.; Byroo L. Smith, 25c doz.; Carmen Sylva, 25c doz.; E. J. Shaylor, 20c doz.; Fern Kyle, \$3.00 each; Flora, 2c doz.; Golden Measure, \$1.50 doz.; Louise, 40c doz.; Marie Kunderd, 50c each; Prince of India, 30c doz.; Marechal Foch (K), 50c doz.; Violet Glory, 40c doz.; Wm. Kent, \$1.00 each. Send for our New Catalogue.

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JOHN H. McKIBBIN1309 Division Street
Goshen, IndianaDorothy
McKibbin**Box Apple Awards at Royal**

WINNERS in boxed apples at the Royal Winter Fair were as follows. Crowded space demands abbreviation as much as possible but full name and address is given for each winner the first time the name appears:

Single box: Baldwin—1, C. R. Terry, Clarkson, Ont.; 2, H. C. Breckon, Bronte, Ont.; 3, P. A. Fisher, Burlington, Ont.; 4, R. R. Sloan, Bayfield, Ont.; 5, W. L. Smith, Bronte, Ont. Delicious—1, G. M. Stanley, Glenmore, B.C.; 2, R. Stewart, Kelowna, B.C.; 3, E. Dart, E. Kelowna, B.C.; 4, R. Smith, E. Kelowna, B.C.; 5, J. E. Young, E. Kelowna, B.C. Fameuse—1, Woodlands Orchards, Ltd., Bronte, Ont.; 2, W. L. Hamilton, Collingwood, Ont.; 3, New Brunswick Fruit Growers' Association, Fredericton; 4, E. Howell, St. George, Ont.; 5, Breckon. Golden Russet—1, N. B. F. G. A.; 2, M. Blackburn, Collingwood, Ont.; 3, Hamilton; 4, F. J. Watson, Port Credit, Ont.; 5, Breckon. R. 1. Greening—1, W. L. Smith; 2, Breckon; 3, Colin Smith, Bronte, Ont.; 4, Hamilton; 5, Terry. Jonathan—1, W. N. Langell, Point Pelee, Ont.; 2, Coldstream Ranch, Vernon, B.C.; 3, Okanagan United Growers, Ltd., Vernon, B.C.; 4, Thos. Bulman, Kelowna, B.C. King—1, Breckon; 2, Terry; 3, M. W. Fisher, Freeman, Ont.; 4, W. D. Hobson, Kelowna, B.C.; 5, Bulman. McIntosh—1, W. L. Smith; 2, M. W. Fisher; 3, Colin Smith; 4, P. A. Fisher; 5, Hamilton. Newtown, Yellow—1, O. U. G.; 2, Dart; 3, Hobson; 4, R. Smith; 5, Bulman. Ribston—1, Hamilton; 2, W. L. Smith; 3, Colin Smith; 4, Blackburn; 5, Breckon. Scarlet Pippin—1, W. B. Gilman, Fredericton, N.B.; 2, N. B. F. G. A.; 3, Breckon. Spitzenberg—1, R. Smith; 2, W. T. Barber, Rutland, B.C.; 3, Hobson; 4, J. E. Reekie, Kelowna, B.C.; 5, Dart. Spy—1, M. W. Fisher; 2, Woodlands Orchards; 3, P. A. Fisher; 4, P. W. Hodgetts, Clarkson, Ont.; 5, Hamilton. Tolman—1, Watson; 2, Hamilton; 3, Colin Smith; 4, W. L. Smith; 5, Terry. Wagener—1, W. C. Spencer, Kelowna, B.C.; 2, Hobson; 3, O. U. G.; 4, Stewart; 5, Young. Wealthy—1, Hamilton; 2, Breckon; 3, Blackburn; 4, Howell; 5, Gilman. Winesap—1, O. U. G.; 2, Spencer; 3, Stanley; 4, R. Smith; 5, Dart.

Standard Winter Varieties, 5 boxes each: Delicious—1, Young; 2, R. Smith; 3, O. U. G.; 4, Dart. Fameuse—1, Hamilton; 2, Blackburn; 3, Breckon; 4, M. W. Fisher. Jonathan—1, Coldstream; 2, O. U. G.; 3, Mutual Fruit Co., Hamilton; 4, Barber. McIntosh—1, Colin Smith; 2, Vernon, B.C.; 4, Barber. Rome Beauty—1, Hamilton; 3, Watson; 4, W. L. Smith. Spitzenberg—1, Coldstream; 2, Bulman; 3, Hobson; 4, O. U. G. Spitzenberg—1, R. Smith; 2, Young; 3, T. L. Gillespie, E. Kelowna, B.C.; 4, Mutual Fruit, Winesap—1, Dart; 2, Stewart; 3, Bulman; 4, Spencer. Newtown—1, O. U. G.; 2, Spencer; 3, Hobson; 4, R. Smith.

Standard Winter Varieties, 10 boxes each: Baldwin—1, Breckon; 2, W. L. Smith; 3, M. W. Fisher; 4, Colin Smith. Greening—1, Colin Smith; 2, W. L. Smith; 3, Breckon; 4, M. W. Fisher. Jonathan—1, Langell; 2, O. U. G. King—1, Breckon; 2, W. L. Smith; 3, Colin Smith. McIntosh—1, W. L. Smith; 2, Colin Smith; 3, M. W. Fisher; 4, P. A. Fisher. Spitzenberg—1, Stanley; 2, Young; 3, Spencer; 4, R. Smith. Spy—1, Woodlands Orchards; 2, Coldstream; 3, Hamilton; 4, Harry Scott, Theford, Ont. Wagener—1, A. E. Latta, Kelowna, B.C.; 2, Barber; 3, Hamilton; 4, Blackburn. Winter Banana—1, Stanley; 2, Latta; 3, Stewart; 4, R. Smith. Newtown—1, O. U. G.; 2, Spencer; 3, Young; 4, Barber.

Standard Winter Varieties, 20 boxes each: Baldwin—1, P. A. Fisher; 2, W. L. Smith; 3, Colin Smith; 4, M. W. Fisher. Delicious—1, Spencer; 2, Stewart; 3, Dart; 4, R. Smith. Greening—1, W. L. Smith; 2, Colin Smith; 3, Watson. Grimes Golden—1, Coldstream; 2, Hobson; 3, Latta; 4, Bulman. Jonathan—1, Langell; 2, Mutual Fruit; 3, O. U. G. McIntosh—1, Watson; 2, W. L. Smith; 3, Colin Smith; 4, M. W. Fisher. Spy—1, P. A. Fisher; 2, Watson; 3, Colin Smith; 4, Latta.

100 boxes, not more than two varieties—1, Colin Smith, with McIntosh; 2, Hobson, with Spitzenberg and Newtown; 3, W. L. Smith, with McIntosh. Sweepstakes for best single box of any variety—R. Smith, of B. C. Growers, Ltd., with Spitzenberg.

Bushel Hampers: McIntosh—1, M. W. Fisher; 2, Watson; 3, Colin Smith; 4, W. L. Smith; 5, P. A. Fisher. Wealthy—1, Watson; 2, Colin Smith; 3, W. L. Smith; 4, J. B. Guthrey, Port Credit, Ont.; 5, P. A. Fisher. King—1, P. A. Fisher; 2, W. L. Smith; 3, Breckon; 4, Colin Smith. Spy—1, P. A. Fisher; 2, M. W. Fisher; 3, Watson; 4, Hodgetts; 5, Colin Smith.

Apples on Plates—Awards

AWARDS in apples on plates, including dessert varieties, cooking varieties, standard winter varieties and specimen apples, were as follows:

Dessert Varieties, plates of 5: Fameuse—1, Watson; 2, Hamilton; 3, M. W. Fisher; 4, Howell; 5, Breckon. Golden Russet—1, Owen Geiger, Hensall, Ont.; 2, Watson; 3, Colin Smith; 4, W. L. Smith; 5, Breckon. Gravenstein—1, Howell; 2, P. A. Fisher; 3, Horning Bros., Waterdown Ont.; 4, M. W. Fisher; 5, Watson. McIntosh—1, Watson; 2, O. U. G.; 3, N. B. F. G. A.; 4, P. A. Fisher; 5, W. L. Smith. Scarlet Pippin—1, N. B. F. G. A.; 2, Gilman; 3, R. D. Hubbard, Oromocto, N.B.; 4, Breckon. Spy—1, Colin Smith; 2, Sloan; 3, M. W. Fisher; 4, St. John Valley Nurseries, Oromocto, N.B. Wealthy—1, Woodlands Orchards; 2, Watson; 3, Hamilton; 4, M. W. Fisher; 5, Howell.

Cooking Varieties, plates of 5: Alexander—1, N. B. F. G. A.; 2, Gilman; 3, St. John Valley Nurseries; 4, Watson; 5, Guthrey. Baldwin—1, Sloan; 2, Breckon; 3, Watson; 4, Colin Smith; 5, P. A. Fisher. Blenheim—1, Watson; 2, H. C. Breckon; 3, Gordon Breckon, Bronte, Ont.; 4, W. L. Smith; 5, Colin Smith. Cayuga—1, Colin Smith; 2, W. L. Smith; 3, H. C. Breckon; 4, Gordon Breckon; 5, Guthrey. Greening—1, W. L. Smith; 2, Watson; 3, Colin Smith; 4, H. C. Breckon; 5, M. W. Fisher. King—1, H. C. Breckon; 2, P. A. Fisher; 3, Watson; 4, Gordon Breckon; 5, Howell. Ribston—1, Colin Smith; 2, W. L. Smith; 3, P. A. Fisher; 4, Watson; 5, Blackburn. Spy—1, Scott; 2, Watson; 3, Coldstream Ranch; 4, N. B. F. G. A. Standard Winter Varieties 10 plates of 5 specimens

each: Baldwin—1, Breckon; 2, M. W. Fisher; 3, A. H. Davidson, Burlington, Ont.; 4, W. L. Smith; 5, Watson. Ben Davis—1, P. A. Fisher; 2, M. W. Fisher; 3, Sloan; 4, Virgil Hopkins, Burlington, Ont.; 5, Davidson. Fameuse—1, Watson; 2, P. A. Fisher; 3, M. W. Fisher; 4, Howell; 5, H. C. Breckon. Greening—1, W. L. Smith; 2, Colin Smith; 3, Watson; 4, H. C. Breckon; 5, Gordon Breckon. King—1, H. C. Breckon; 2, Watson; 3, Colin Smith. McIntosh—1, O. U. G.; 2, Watson; 3, N. B. F. G. A.; 4, P. A. Fisher; 5, M. W. Fisher. Ribston—1, Colin Smith; 2, P. A. Fisher; 3, Watson; 4, M. W. Fisher. Spy—1, Watson; 2, P. A. Fisher; 3, Colin Smith; 4, Sloan; 5, Hodgetts. Stark—1, M. W. Fisher; 2, P. A. Fisher; 3, Colin Smith; 4, Davidson; 5, W. L. Smith. Wolf River—1, N. B. F. G. A.; 2, St. John Valley Nurseries; 3, Gilman; 4, W. L. Smith; 5, Guthrey.

Single Specimen Apples: Baldwin—1, Watson; 2, M. W. Fisher; 3, H. C. Breckon. Fameuse—1, Watson; 2, Indell Wadell, Hemmingford, Que.; 3, Howell. Greening—1, Colin Smith; 2, W. L. Smith; 3, Hodgetts. King—1, Watson; 2, H. C. Breckon; 3, Colin Smith. Spy—1, M. W. Fisher; 2, Hamilton; 3, Scott. Wealthy—1, Woodlands Orchards; 2, Hamilton; 3, Watson. McIntosh—1, Coldstream Ranch; 2, Watson; 3, Hamilton.

Awards in Pears

THE winners in pears, including plates and baskets, were as follows. With the exception of one from British Columbia, all the winners came from Ontario: Plates of 5: Anjou—1, Robt. F. Cameron, St. Catharines; 2, H. C. Breckon; 3, Horning Bros., Bosc—1, Breckon; 2, P. A. Fisher; 3, Cameron. Clairgeau—1, P. G. Stewart, St. Catharines; 2, Cameron; 3, Breckon. Duchess—1, Cameron; 2, Breckon; 3, Colin Smith. Kieffer—1, Cameron; 2, P. A. Fisher; 3, M. W. Fisher. Lawrence—1, Breckon; 2, M. W. Fisher; 3, P. A. Fisher. Winter Nelis—1, M. W. Fisher; 2, Hopkins; 3, Davidson.

Ten plates of 5 each: Anjou—1, O. U. G., Vernon, B.C.; 2, Breckon; 3, Watson. Duchess—1, Cameron; 2, Breckon. Kieffer—1, Cameron; 2, P. A. Fisher; 3, Colin Smith. Lawrence—1, Breckon; 2, P. A. Fisher; 3, Cameron.

Eleven-quart baskets: Anjou—1, Breckon; 2, Cameron; 3, Watson. Duchess—1, P. A. Fisher; 2, Cameron. Kieffer—1, M. W. Fisher; 2, Cameron; 3, P. A. Fisher. Lawrence—1, Breckon; 2, Horning Bros.; 3, P. A. Fisher.

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A POTATO weighing exactly a pound and a half was produced the past season in the back yard garden of Elmer Misener, Wel-land, Ont. It was a Rural New Yorker. Who in Ontario or east can beat that for weight of a potato of any variety?

What is claimed to be a world's record in potato growing is reported from Ilkerton, Ont. In the presence of a large number of people, a farmer named F. Peel, weighed potatoes totalling 324 pounds six ounces, all of which was produced from one pound of seed.

At a growers' meeting at Fonthill, early in November, Frank Lowrey, of St. David's, said that the Elberta peach, while good for long-distance shipping, was the poorest yellow-fleshed freestone peach grown, and the poorest for canning purposes. He recommended St. John, Lincoln, Fitzgerald and J. H. Hale.

According to latest reports from the United States, the apple crop over there generally has moved slowly due to low prices. Commercial orchards nearly everywhere produced well with quality good. Some damage by freezing is reported from New England. In the middle west the agricultural crop is going mostly into cider or being wasted. A large portion of the commercial crop is going into storage. All

available storage space is reported filled in the northwestern states.

According to a press despatch from Three Rivers, Mich., dated Nov. 21, \$50,000 for a single strawberry plant was paid that day by Frank B. Beatty, president of the R. M. Kellogg Co. The price is the highest ever paid for a strawberry plant, and the purchaser believes that the plant will revolutionize the strawberry industry. The variety is to be known as "Rockhill," in honor of its originator, Harlow Rockhill, of Courad, Iowa. The plant bears in early summer and repeats again in late summer with continual bearing until frost comes.

Besides peaches, South Africa ships pears and plums to England and lands them there in good condition. About Christmas last year, early varieties of plums sold on the London market in trays up to £3 per bushel.

A carload of Concord grapes was shipped to Vancouver, B.C., in October, by the Niagara District Grape Growers, Ltd., St. Catharines. It was said to be the first Ontario grape car to reach Vancouver in 12 years. The fruit was well iced in transit and arrived in excellent condition. A Vancouver paper reported that the grapes were far superior to Washington Concord that were arriving about the same time. There were from two to three pounds more grapes in each basket than in the Washington package. The grapes sold mostly at 80 cents and the demand was keen.

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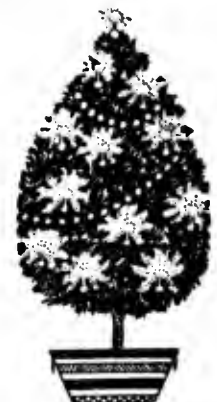
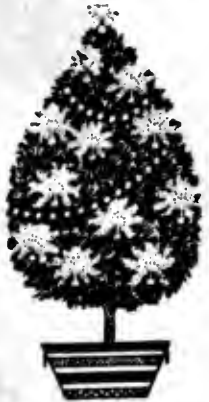
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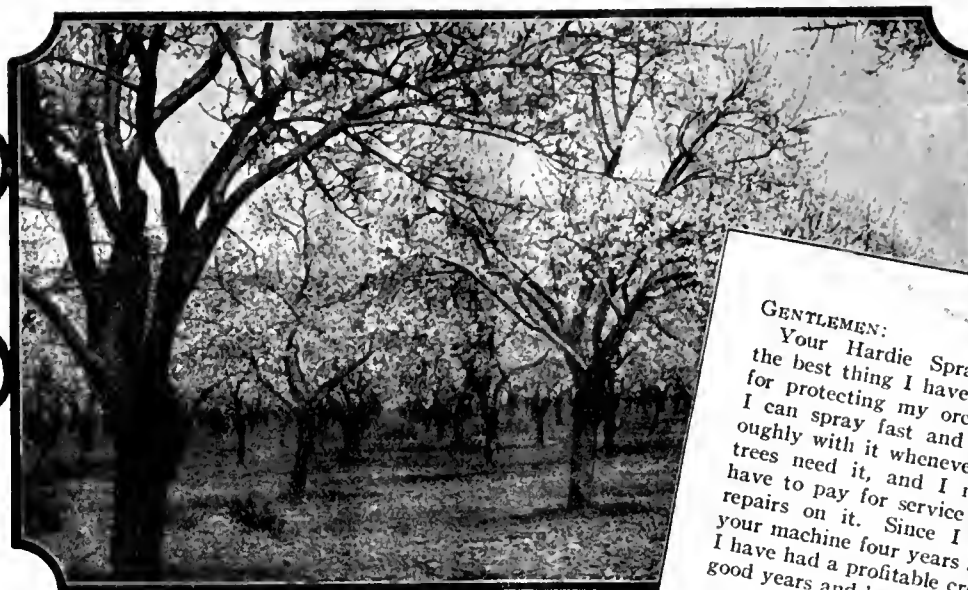
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