

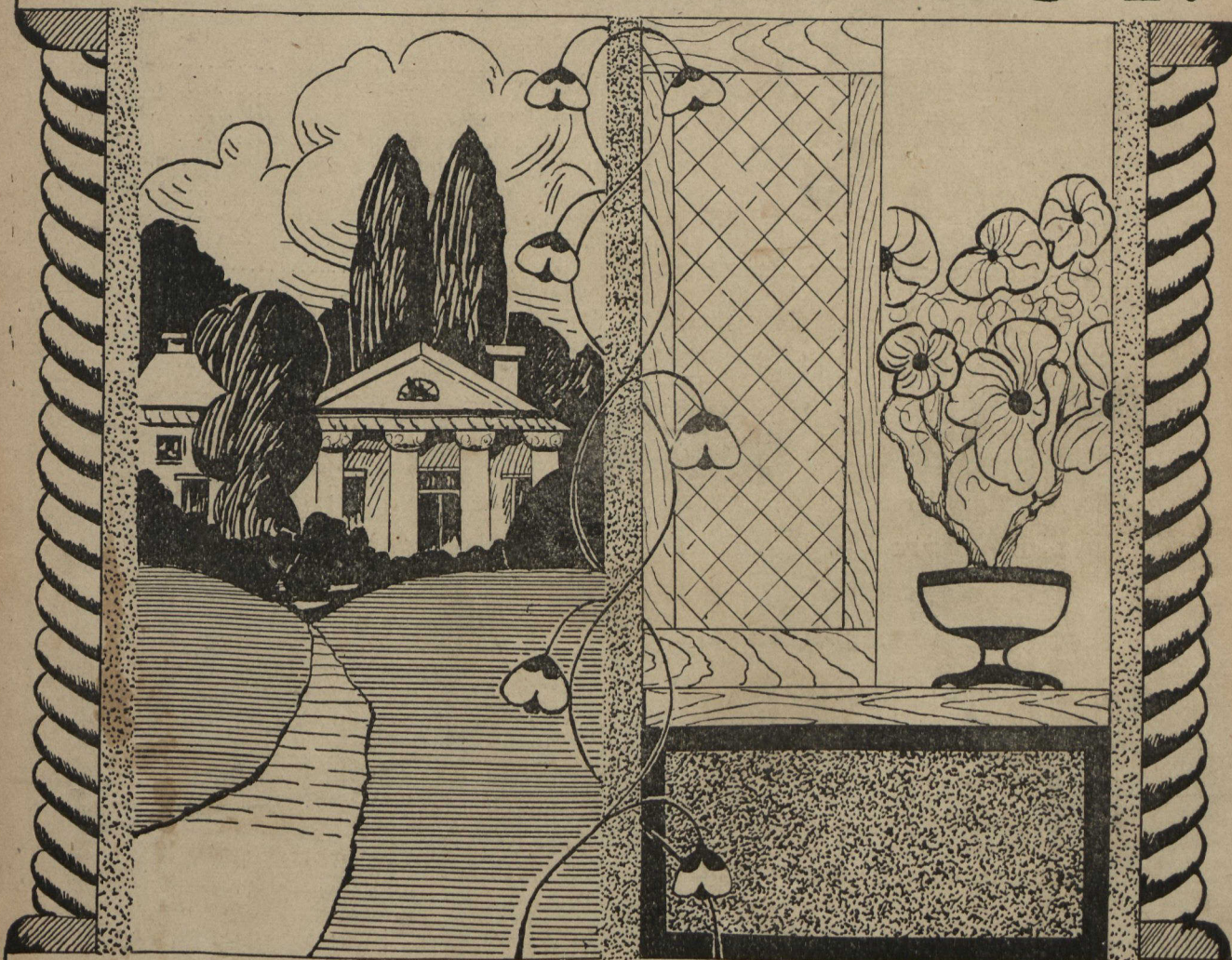
D-243-2-4
10 CENTS

MAY, 1904

\$1 A YEAR

THE CANADIAN HORTICULTURIST.

Scott W G
12
of
Allans Mills
Ont.



Published in the Interests of General Horticulture

— BY —

THE ONTARIO FRUIT GROWERS' ASSOCIATION.

EDITOR, LINUS WOOLVERTON, M.A., GRIMSBY, ONT.

Address all Business Correspondence and Money Orders to H. B. COWAN, Associate Editor and Business Manager, Toronto, Ont.

Office of Publication, HAMILTON, ONT.

Simmers'

Illustrated Seed Catalogue For 1904.

Unlike any other work of its kind. Not only tells what are the best Flower Seeds, Bulbs, Small Fruits, Garden and Farm Seeds, but tells plainly how to get the best results in the growing, whether you plant for pleasure or profit. Many new features this year. It's free.

Address,

J.A.Simmers

Toronto, Ont.

BOOKS FOR HORTICULTURISTS.

FRUIT, FLOWERS, ETC.

Amateur Fruit Growing. Green.....	\$0.50
Apple Culture, Field Notes on. Bailey.	0.75
Bulbs and Tuberous Rooted Plants. C. L. Allen.....	1.50
Bush Fruits. Prof. A. Card	1.50
Canadian Garden. Mrs. A. L. Jack.....	.50
Chrysanthemum Culture. Morton. Cloth..	1.00
Cider Makers' Handbook. Trowbridge.....	1.00
Cranberries, Cape Cod. James Webb. Pa- per	.40
Cranberry Culture. White.....	1.00
Crops, Spraying. Clarence M. Weed.....	.25
Dahlia, The. Lawrence K. Peacock.....	.30
Evolution of Our Native Fruits. Bailey....	2.00
Floriculture, Practical. Peter Henderson...	1.50
Flower Garden, Beautiful. Matthews	.40
Flowers, and How to Grow Them. Rexford	.50
Forcing Book. Bailey.....	1.00
Forest Planting. Jarchow.....	1.50
Fruit Culturist, American. Thomas	2.50
Fruit Grower, Practical. Maynard.....	.50
Fruit Harvesting, Marketing, etc. F. A. Waugh	1.00

Any other book on Agricultural topics will be procured at lowest price.

Address all communications to

H. B. COWAN,
Parliament Buildings, Toronto.



**Don't
Waste
Your
Strength.
Use**

**BAKER'S TRACELESS
HARNESSES.**

No whiffletrees—no traces. Fine for farm work. Has no equal for use in orchard, vineyard, garden, lumbering, etc. Easier on team. Write us now. Catalog free. Agents wanted.
B. F. BAKER CO., 231 Main St., Burnt Hills, N. Y.



LAST CALL FOR SPRING PLANTING PRICES RIGHT.

FRUIT, ORNAMENTAL AND SHADE TREES

SHRUB ROSES, GRAPE VINES, BERRY PLANTS

Just the varieties wanted. If interested send for our free priced Catalogue and order QUICK. A good assortment of select stock yet. Write for special price on Baldwins, Ben Davis, Northern Spy, Wolf River, Snow, Pewaukee and Duchess, in surplus.

SEED POTATOES, choice varieties, EARLY and LATE.

3 Pens of pure bred Wyandottes, 12 each, White, Silver and Buff. A bargain for only \$1.00 each, eggs \$1.00 per 13, P. Rocks same price

A. G. HULL & SON, CENTRAL NURSERY St. Catharines, Ont.

TEN DOLLARS for the Reader who buys Goods to the Greatest Value from Advertisers in this Issue.
See Notice in Advertising Columns.

Bruce's Gladiolus



There are few flowers which produce such a gorgeous effect as this magnificent autumn flowering plant, and they deserve to be still more extensively grown. The great wealth and variety of color, the richness of their markings, the size of the flowers and the profusion of bloom, all combine to make them one of the most effective plants for the garden either for massing or for growing as single specimens.

CULTURE—The bulbs may be planted any time from the middle of May up to the end of June. They will grow well in ordinary garden soil with almost no care whatever. The bulbs may be taken up in the fall and stored during the winter in a dry cellar away from frost.

All colors, finest mixed, per dozen, 30c; 100, \$2.75.
All colors, choice mixed, per dozen, 25c; 100, \$1.75.

LEMOINE'S NEW HARDY HYBRIDS—The odd and fantastic markings of these Gladiolus and their beautiful shape resemble the fascinating beauty of the orchid. Fine mixed, each 5c; per doz. 40c; per 100, \$2.50.

GROFF'S HYBRIDS—This is a mixture of Hybrids of all sorts. Gandeensis, Lemoinei and Childsii, giving in one bed the greatest possible range of colors and varieties. Each 10c; per doz. 50c; per 100, \$3.25.

CHILDsii—A new departure in Gladiolus; in growth they are much stronger and more vigorous than the others, very tall and erect, branching freely, and with immense spikes of bloom. The flowers are of great substance, and of large size, and the coloring cannot be surpassed by even orchids, many colors never before seen are represented in this beautiful class. Each, 5c; dozen, 50c; per 100, \$3.25. Prices postpaid.

Our handsome illustrated catalogue (88 pages), of everything valuable in SEEDS is now ready, and will be mailed free to all applicants. Write for it.

JOHN A. BRUCE & CO.

HAMILTON, - CANADA.

Established Over Half a Century

NORTHERN GROWN TREES

Hardy Fruit and Ornamental Trees,
Small Fruits, Roses, Shrubs, cheap.
Mammoth Prolific Dewberry a specialty.
Send for Free Catalogue. It tells the whole story.
J. H. WISMER, - - Nurseryman,
PORT ELGIN, ONTARIO.

THE DAWSON COMMISSION CO

solicits your
Consignments of Fruit and other Produce.

THE BEST FACILITIES FOR
HANDLING. PROMPT RE-
PORTS AND SALES.

Corner West Market and Colborne Streets,
TORONTO.

Tags, Stamps, Pads supplied on application. Correspond with us.

I Can Quickly Sell For Cash

Without local publicity, your Business, Real Estate or Partnership, no matter where located, Send me full particulars, prices, etc. Address

CHAS. E. POWELL,

19 W. Mohawk Street.

Buffalo, N. Y.

TEN DOLLARS for the Reader who buys Goods to the Greatest Value from Advertisers in this Issue.
See Notice in Advertising Columns.

Small Potatoes

result from a lack of

Potash

in the soil. Potash produces size and quality.

We have valuable books which explain more fully the fertilizing value of Potash.

We will send them free to any farmer who writes for them.

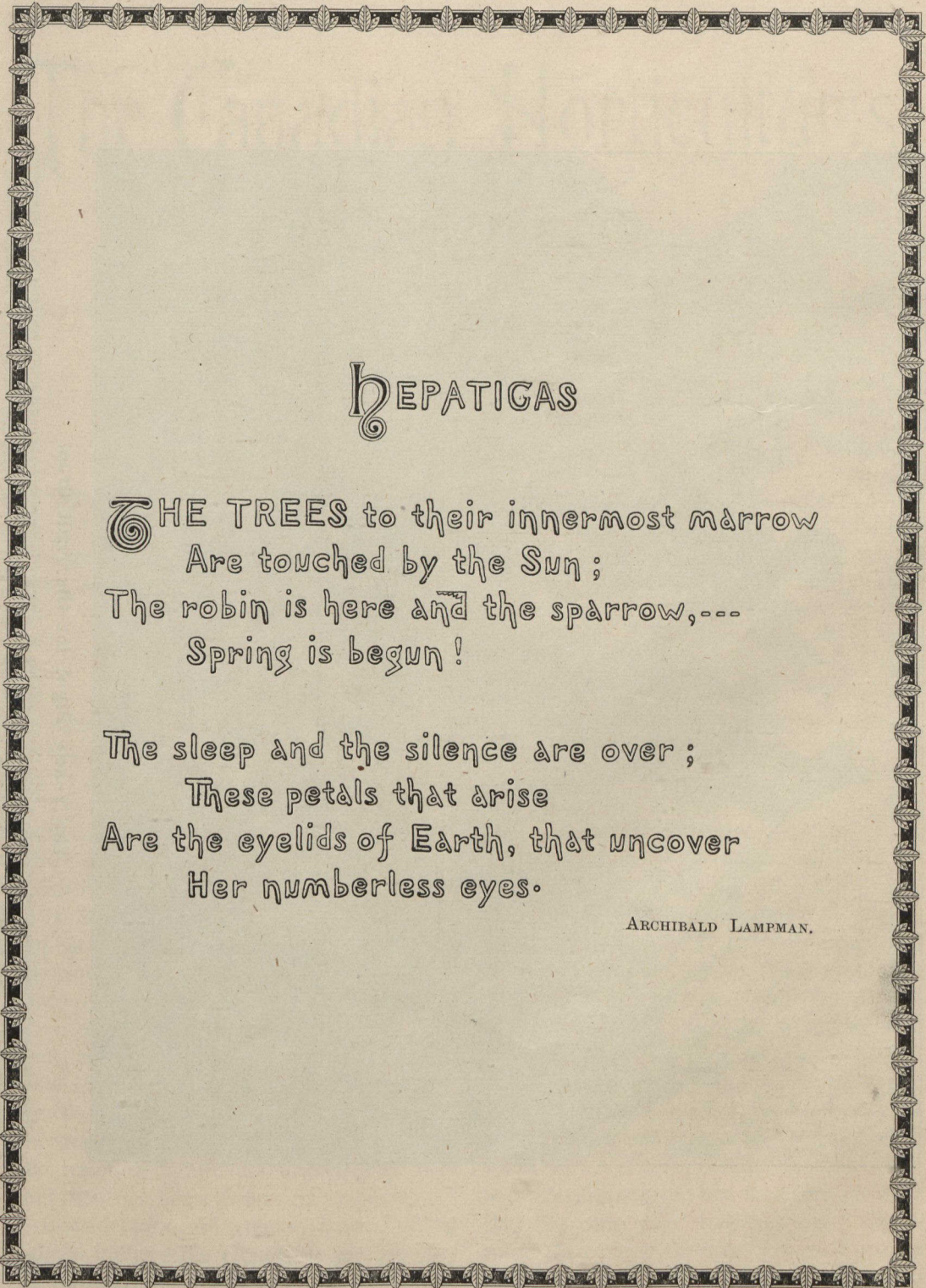


GERMAN KALI WORKS,
93 Nassau St., New York.

THE CANADIAN HORTICULTURIST

CONTENTS FOR MAY

The Yearly Fight for the Fruit Crop (<i>illustration</i>)	Frontispiece.
Co-Operative Power Spraying in Canada	185
Care of Nursery Stock	187
Power Sprayer here to Stay	188
Importance of Spraying and when to do it	189
Ownership of Roadside Trees	190
Advice to Fruit Growers	191
Growing Catalpa Speciosa	191
Planting Fruit Trees	192
Hints on Pear Growing	193
Trees Girdled by mice	193
Black Knot in the Plum and Cherry Plantation	194
Making the Bordeaux Mixture	194
The Fitzgerald Peach (<i>illustration</i>)	195
Spraying the Apple Orchard	196
Work the Peach Trees Require	197
Protecting the Pear Trees	198
Picking Strawberries on an Ontario Fruit Farm (<i>illustration</i>)	199
Growing Strawberries on a Large Scale	199
Spring Work in the Fruit Garden	200
Destroying the Currant Worm	201
The Raspberry Patch	202
A Practical Grape Grower's Methods	203
Best Grapes and Berries to Grow	204
Spraying the Small Fruit Bushes	204
The Vegetable Patch in May	205
Celery Growing	206
How Trouble May be Prevented	208
Ginseng Growing in Ontario	209
What to Grow in the Vegetable Garden	210
How the Flowers like to be Treated	211
Care of Plants from the Florists	212
Flower and Plant Lore	213
Easter Flower Trade	214
Shipping Fruit to the Northwest	215
Promising Method of Co-Operation	216
Marketing Vegetables	217
Prospects for the Currant Crop	217
Editorials	218
What the Societies are Doing	220
Fruit Prospects through the Province	223
Talks with the Fruit Growers	225



HEPATIGAS

THE TREES to their innermost marrow
Are touched by the Sun ;
The robin is here and the sparrow,---
Spring is begun !

The sleep and the silence are over ;
These petals that arise
Are the eyelids of Earth, that uncover
Her numberless eyes.

ARCHIBALD LAMPMAN.



The Yearly Fight for the Fruit Crop.

Now that spraying has come to be generally recognized as a necessity in successful fruit growing, the question what sprayer to buy is a serious one for many growers. The illustration shows a Wallace Power Sprayer at work in the peach orchard of J. W. Smith of Winona, Ont. This Sprayer is highly spoken of by many growers. It is comparatively cheap, secures its power from the rear wheel, does not have to be recharged, requires no fuel, is not too heavy and is reliable and not expensive to operate.

The Canadian Horticulturist

MAY, 1904

VOLUME XXVII



NUMBER 5

CO-OPERATIVE POWER SPRAYING IN CANADA

W. A. MACKINNON, CHIEF FRUIT DIVISION, OTTAWA.

THOUGH the fruit growing public of Canada has had instruction and encouragement in spraying for a number of years, it has begun to appear evident that small owners, as a rule, do not make a success of spraying by the ordinary methods. Many difficulties have combined to bring about this result. Among them may be mentioned the fact that the operation of spraying is unpleasant, inconvenient and highly distasteful to the average farmer.

It is totally different from his usual occupations; requires a plant and chemicals with which he is not familiar, and which must be handled with scientific accuracy if success is to be achieved; the plant remains idle during the greater part of the year, and finally, the work must be done just at a time when many other farm operations are pressing. Even those who have purchased an outfit and devoted much time to working it have sometimes failed to apply the mixture at exactly the right time or to distribute it thoroughly over every part of the tree, and the resulting failure has discouraged them and their neighbors from further effort.

Consideration of these facts, among others, induced the Honorable the Minister of Agriculture, to authorize the conducting

of systematic experiments in power spraying during the spring and summer of 1903. The most successful of these were carried on in the neighborhood of Woodstock, and resulted in the production of almost the only No. 1 fruit in that section. The season happened to be a particularly bad one for fungous diseases in that part of Ontario, and the sprayed orchards, yielding 80 to 90 per cent. of perfect fruit, were in marked contrast to those which surrounded them, in which the yield of No. 1 fruit varied from 20 to 50 per cent.

Without going into details it may be stated that the spraying, which was performed four or five times on each orchard, at a fixed charge to the growers amounting to rather less than actual cost, was found both effective and economical, though the route was long and straggling, and some of the orchards were in by no means perfect condition as regards pruning and otherwise. The operation cost less than five cents per tree for each spraying. One should not speak with too much certainty after a single season's experience, but it seems probable that five cents per "tree spraying" should more than cover the cost for well grown apple trees. A 2½ horse power engine was

used, giving a steady pressure of about 100 pounds, with a 200-gallon tank and two lines of hose, carrying six nozzles each. Quarter-inch hose was used for the sake of lightness and was found very satisfactory. The Bordeaux mixture (with paris green added) was the only one applied, except in one or two cases towards the end of the season.

WORK WILL BE TRIED IN NOVA SCOTIA.

Arrangements are being made for carrying on a similar demonstration this season in the Annapolis Valley, N.S., where Inspector Vroom has charge of the preliminary arrangements; and near Ingersoll, Ont., under the direction of Mr. J. C. Harris. It need hardly be said that the fruit division will not make a permanent business of spraying orchards for owners. The object of the demonstrations is to induce growers to unite in groups, wherever 3,000 or 4,000 trees can be had within a distance of about five miles from end to end. Such a combination of growers could afford to purchase an outfit among them at a cost of something like \$350, or to hire the use of such an outfit from its owner, who might undertake to do the work thoroughly at so much per tree.

Power spraying, it is hoped, will be taken up either on the co-operative basis or by men such as the threshermen, who could give their whole time during two or three months to this work, at a profit both to themselves and to the growers. One efficient man, who understands the preparation of spraying mixtures, who can learn how to manage a gasoline engine, and who can be depended on to do the work thoroughly at all times, will be sufficient for each group of orchards. He may require two or three assistants to drive and hold the lines of hose, but they need not be skilled, as he will direct the entire work.

THE ONLY LIKELY WAY.

It does not seem likely that in any other

way spraying will become general throughout the country, and it is hoped that this method, overcoming as it does most of the objections to spraying either by power or hand, will eventually lead to a great improvement in the average quality of the apple crop of Canada.

Already as a result of the successful operation of the Woodstock outfit at least one fruitgrowers' association has ordered a power spraying outfit, and other groups of orchardists, as well as some large owners, are contemplating such a purchase. Growers appear only too eager to have the work done for them even if it costs them more than they have formerly been able to do it for. Mr. Harris, of Ingersoll, states that he could easily have taken orders sufficient to keep two outfits busy in his immediate neighborhood, though growers are asked to pay the actual cost, about the five cents per "tree-spraying." A group of King's county growers in Nova Scotia have made similar agreements for four sprayings during the present season, and there would have been no difficulty in securing a great many more orchards. It would appear, therefore, that new as the method is, it has appealed to the common sense of the growers, and there can be no doubt that they will very soon adopt it on their own account.

Examine the Apparatus.—Our spraying apparatus is overhauled a few days before we intend spraying. The hose and nozzles are examined carefully, for it does not pay to have "breakdowns" in the spraying season. The Bordeaux and paris green mixture is made very carefully, and the ferrocyanide test is always made to determine whether sufficient lime has been used. The agitator of the spray pump must be carefully looked after to see that it really agitates the liquid and keeps the paris green in suspension in the Bordeaux mixture.—(Prof. W. Lochhead, Ont. Agri. College.

CARE OF NURSERY STOCK

WILLIAM FLEMING, OWEN SOUND, ONT.

IMMEDIATELY on the receipt of packages or boxes of fruit trees, shrubs or plants from the nursery, convey them to some place sheltered from the wind and sun. On opening the bundles lay the goods out on the ground and check them to see that all is correct. Sprinkle them with water and cover with damp straw to keep the wind off. It has a beneficial effect to puddle the roots. Dig a round hole $2\frac{1}{2}$ feet broad and $1\frac{1}{2}$ feet in clayey soil. Half fill this with water and with a hoe or shovel mix clayey earth with the water to the consistency of paint. Dip the roots of the trees in this mud mixture. When partially dry give a second application. This covering of mud greatly protects the roots and stimulates growth.

TRENCH THE STOCK.

Dig a trench deep and wide enough to hold the roots and one-third of the tree trunks. Loosen the bundles so as to ease the roots and lay the trees in the trench, the tops leaning to the north down close to the ground. Cover the roots and one-third of the trunk of the trees with earth, covering the roots thoroughly. If the earth is dry sprinkle well with water and leave so trenched till planted in a day or two.

The ground for planting the stock in should have been prepared and properly enriched the previous year. There should be no grass nor sods to cause trouble after planting. Nothing should be half done.

LAYING OUT THE GROUND.

When laying out the land put a straight stake where each tree is to stand. Dig only one hole at a time and plant the tree in it. When this is done the tree occupies the place of the stake. Pass on to the next hole and plant the second tree, and continue this till all are planted. Doing the work in this way the trees will all be in their proper

places. Planting should be done on a cloudy day if possible.

If the ground has a sandy bottom it matters little how the hole is dug and the tree planted. If it has a clay bottom it matters a great deal. Where the ground is heavy the greatest care is required. The hole must not be sunk in the clay, as the water sours under the tree in the hole and kills or injures the tree permanently.

The hole should be dug wide and deep enough to admit the roots of the tree. The surface earth should be thrown on one side and bottom earth on the other side of the hole so as to be convenient for refilling.

PLANTING THE TREES.

When planting the tree, stand it straight in the hole so it will occupy the exact place of the removed stake and set it one inch deeper than in the nursery. Let the surface earth be put in the hole first and thoroughly packed among the roots so that no crevices are left unfilled. When the hole is two-thirds full pour a pail of water in it close to the tree, and when soaked in thoroughly shovel the balance of the earth in the hole. Do not press or stamp the earth, as it would ruin the chance of the tree thriving.

If the ground is not dry, instead of watering, a barrow of long manure should be put on the ground two feet all round the tree, but not close to the trunk, to keep the ground moist. No manure should be put near the roots of the tree in the ground when planted.

The injured and decayed parts of the roots should be cut carefully off, and half of last year's growth should be removed and the top of the tree balanced. If the trees are allowed to take care of themselves after planting the greater half of them will die the first year and the balance will be permanently injured.



Compressed Air Sprayer Being Loaded. No. 1.

The illustration shows a gasoline engine compressing the air into one of two tanks on the waggon and filling the second tank with the mixture to be used. The tanks contain about 100 gallons each and it takes 10 to 15 minutes to fill them. The air tanks are charged up to 160 to 180 pounds pressure to the inch. When this compressed air is turned into the tank containing the mixture the liquid is forced out in the form of a fine spray. (See article by Mr. J. Tweddle, in this issue)

Power Sprayer Here to Stay

JOSEPH TWEDDLE, FRUITLAND, ONT.

HAVING leased some 60 acres of my neighbors' apple orchards, and knowing the need of thorough spraying, I found the hand sprayer quite inadequate to do the work in the time allowed. A compressed air outfit, as shown in the accompanying illustration, was secured. It has all the latest improvements, including the Owen's spar and a hoist of my own invention for use on high trees.

This hoist does away with the use of the clumsy and dangerous derrick and the heavy labor called for in its use. By the present arrangement the nozzles, which are about 9 inches apart, and in a perpendicular line, can be made to cover the tree thoroughly and at

the same time not overlap any part. This saves at least 25 per cent. in material and enables ten times as much surface to be sprayed as can be done with the hand sprayer with 3 or 4 nozzles.

The horse or team going at a good lively walk can do a large amount of work in a day. Twenty to 30 acres of average sized apple trees can be sprayed, using 1,500 to 2,000 gallons.

I spray only with the wind. The stronger the wind the better the work. The opposite

side of the trees is covered when the wind changes, which usually occurs in good time to finish the work when required.

POWER SPRAYERS.

The power sprayer has come to stay. The past two seasons have been productive of much scab on apple foliage and fruit where no spraying was done. It is not, however, difficult to procure 80 or 90 per cent. of strictly clean fruit by spraying three or four times with Bordeaux mixture and white arsenic or arsenate of lead. Fruit from trees so treated has realized double to treble the net price that unsprayed fruit has brought. Nothing pays such handsome dividends as the power sprayer. It doubles both the crop and the price.

IMPORTANCE OF SPRAYING AND WHEN TO DO IT

W. T. MACOUN, CENTRAL EXPERIMENTAL FARM, OTTAWA.

ONE might suppose that farmers and fruit growers would spray their trees as a matter of course, just as they plough and cultivate their fields, since the advantages of spraying have been so well proven and demonstrated during the past 13 or 14 years by the best fruit growers of Canada and by men employed by the government to do this work. Unfortunately, there is yet a very large proportion of the men engaged in fruit growing who do not spray.

Some men spray their trees but are not satisfied with the results, the reason being that the mixture is not properly made, the trees are not sprayed thoroughly, or the spraying is not done at the proper time. Spraying is an expensive operation, and it is surprising that fruit growers continue to waste hard earned money by not doing the work properly.

The early sprayings are the important ones, and these are too often neglected on account of press of other work. When the spraying is done it is often too late to be of much service. A spraying calendar, with directions for making the different mixtures and solutions, will be sent free, on application to the Central Experimental Farm, Ottawa. A certain number of sprayings are suggested in the calendar and the times when they should be made.

It should be impressed on those who spray that if heavy rain occurs before the mixture has dried on the trees it will be washed off and the work must be done over again. The neglect of this is probably one of the chief causes of poor success in spraying.

THOROUGHNESS IS REQUIRED.

Spraying should be done thoroughly and the underside of the leaves should receive as much of the spray, if possible, as the upper

sides. Every leaf or fruit, or every part of leaf or fruit, missed means a possible foothold for disease or insect pests. The spraying should be done as nearly as possible at the times mentioned in the spraying calendar. A delay of a few days may mean the loss of practically all the mixture or solution used, as there might be no beneficial results.

At the Central Experimental Farm this spring the first spraying will be made during the last few days of April, depending on how far the season is advanced. The aim is to spray the apple trees just as the buds are breaking or have broken. The poisoned Bordeaux mixture (4 pounds copper sulphate, 4 pounds unslaked lime, 4 ounces paris green to 40 gallons of water) is used at that time. The object of this spraying is to prevent the spread of the Apple Spot Fungus and to kill any leaf eating insects.

The first spraying at this season was begun a few years ago when the Tent Caterpillars were very bad, as it was found that the young caterpillars began to work just as the buds were breaking, and could be easily killed at that time.

SECOND AND THIRD SPRAYINGS.

The second spraying will be made just before the flower buds open, which at Ottawa will be about two and a half weeks after the first application, the poisoned Bordeaux mixture again being used. This is to destroy leaf eating insects also, such as the bud moths and Tent Caterpillars, and prevent the spread of the Apple Spot Fungus. A third spraying with poisoned Bordeaux mixture will be made within a week after the blossoms fall.

The two first sprayings are important, but this third spraying is even more important still, as at this spraying the poison is applied

which is to destroy the Codling Moth. It is also a season when the Apple Spot Fungus is usually very active. These three sprayings are the most important and should not be neglected. At the farm we make at least two more for winter apples, and believe that taking one season with another it pays to spray winter apples five or even six times.

WHEN SPRAYING MAY BE DONE.

If a fruit grower feels that he cannot spray more than three times I would suggest making the first spraying just before the flower buds open, the second within a week after the blossoms fall, and the third from 10 to 15 days later. In districts west of Toronto, where there are two broods of Codling Moth, it would be well to make two sprayings of the poisoned Bordeaux mixture in addition to the banding of trees. These sprayings should be made about July 20 and two weeks later.

Plum trees will be sprayed while the trees are still dormant with copper sulphate and water (1 pound copper sulphate to 25 gallons of water), to prevent the spread of the brown or ripe and black knot. A second spraying for the same purpose will be made with poisoned Bordeaux mixture before the flower buds open. A third spraying will be given with the same object and mixture about a week after the blossoms have fallen. This spraying will also destroy the curculio.

As with apples, the early applications are the most important and should not be omitted. Pears should be sprayed at about the same time as apples.

This immediate vicinity has few growers of large fruit, as people became discouraged in the days of darkness. New interest, however, is now manifest, as farmers are putting out new orchards. My brother is setting out 300 trees this spring.—(W. H. Hutton, Smith's Falls, Ont.)

Ownership of Roadside Trees

H. L. HUTT, ONT. AGRIC. COL.

The council of the municipality in which I live is selling the beautiful shade trees along the highways for paltry sums of money and allowing them to be cut down. The trees are principally pines and elms growing wild along the fences. To me this seems scandalous, and if it is not stopped the beauty of our country will be destroyed. Can not the owner of the adjoining land or any ratepayer forbid this cutting?—(E. E. D., Harrowsmith, Ont.)

Public officials elected by popular vote are usually very sensitive to the effect of public opinion, and if the pressure of public opinion can be brought to bear upon such a council probably this would be the best way to deal with them. This, however, may be too slow to prevent their seriously destroying the natural beauty of the highways. It may be necessary to resort to stronger means. If this has to be done, I give below the opinion of a legal friend:

A LEGAL OPINION.

"If the trees constitute an obstacle to the free use of the highway, as such, or are a nuisance, it is the duty of the municipal council to have them removed, and the council may have such trees removed whenever such removal is deemed necessary for any purpose of public improvement. The owner of adjoining property, however, is entitled to ten days' notice of the intention of the council to remove the trees, and the intention of the council must be expressed by a resolution of council regularly passed.

"Compensation must also be paid to the owner of the adjacent lands, but only if he has planted or protected the trees. No pathmaster or other person has any authority to remove any shade tree on the highway without a special resolution of council being first passed.

"Under R. S. O., Chap. 243, Section 2, Sub.-Sec. 4: 'Every growing tree, shrub or sapling whatsoever, planted or left standing on either side of any highway for the purpose of shade or ornament, shall be

deemed to be the property of the owner of the land adjacent to the highway and nearest to such tree, shrub or sapling.

"This property of the adjoining owner in the trees is not absolute, however. It is of a peculiar character. The trees cannot be cut down without notice to him as above mentioned, nor yet can he himself cut them down or remove them, unless a special resolution of the council has been passed, without becoming liable to fine and possibly imprisonment."

Advice to Fruit Growers

"Fruit growers will do well," said P. J. Carey, of Cobourg, to the Horticulturist a few days ago, "If they take long to consider before investing in the method of protecting trees against almost all known diseases advocated by a firm which has operated in some of the western counties of the province. The firm claims that by boring a hole into the trees and giving them a sort of hypodermic injection of a mixture composed in part of charcoal, sulphur, soda and gunpowder, the sap will dissolve this mixture and carry it to all parts of the tree, thereby protecting it against the various pests."

"The firm which is selling this mixture presents its case in such a plausible manner that a large number of fruit growers have been led to adopt the method which I am satisfied is absolutely worthless. In a number of cases parties have actually paid \$200 for townships for the right to sell this mixture. At a number of the meetings I attended during the latter part of March and the beginning of April with Mr. Sherrington, of Walkerton, we found growers who had paid as high as 25 cents per tree to have their orchards operated on in this way. We told them frankly what we thought of the method—that it was no good. It has been tried so extensively in the United States that Prof. Taft, at Washington, has issued a warning to beware of the method."

Growing *Catalpa Speciosa*

H. L. HUTT, AGRI. COL., GUELPH.

I have read contradictory reports concerning *Catalpa speciosa*. Would you as a farmer plant them out for fence posts or shades? Are they hardy? Do they attain sufficient size to wire to in five or seven years? If you recommend them, where can the seed be obtained?—(W. J. C. Franconia, Ont.)

CATALPA SPECIOSA, commonly known as the Hardy or Western Catalpa, is quite hardy in Southern Ontario, and even does fairly well here in Guelph, where we have several species, this, however, being the hardiest of the lot. This species has been largely planted in the west for shade and also for fence posts. It makes a very rapid growth from the seed and usually attains a height of two feet the first year.

On good soil and well taken care of, it should be sufficiently large to support fence wires in five or six years. I have seen it planted for this purpose in some parts of southern Ontario, where it has proved a complete failure, but this was largely due to lack of attention. The trees should not be left to grow in sod without protection of some sort. If they can be kept cultivated, or even heavily mulched, they will make double the growth that they would in sod.

As shade and ornamental trees they are very desirable, not only on account of their large leaves but because of the large showy flowers which appear in July. The seed is listed by J. M. Thorburn, 36 Cortlandt St., New York, at one dollar per pound. If good seed can be procured, the trees can be very cheaply grown from seed. They should be started the first year in nursery rows and kept cultivated the same as corn. In the spring of the second season they should be taken up and transplanted into other rows or where they are to remain permanently. The seedlings form very strong tap roots, and give difficulty in transplanting unless taken at one year.

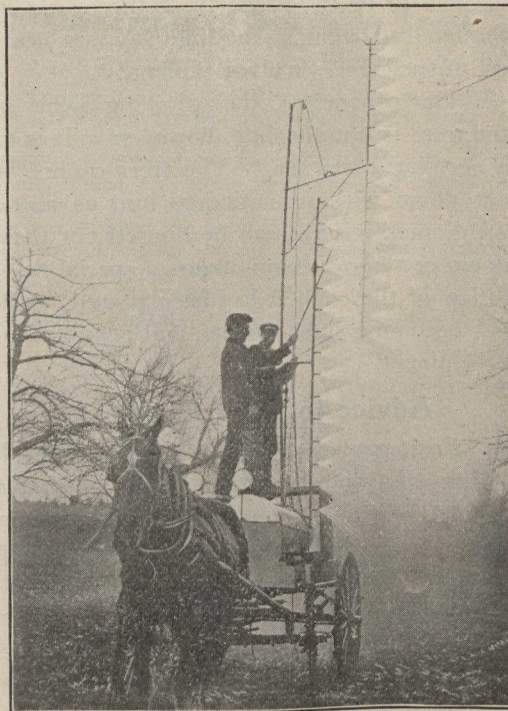
Planting Fruit Trees

SMITH & REID CO., ST. CATHARINES, ONT.

TO beginners in fruit growing a few hints, at this season, on the planting of trees may be of value. There are a number of important points which should be carefully watched. Before the planting is done both the soil and the trees require to be carefully prepared. For fruit trees the soil should be dry—either naturally so or by thorough drainage. It may be well prepared by twice plowing. Manuring is necessary in all cases, except on new land. To insure good growth, the land should be kept in as good condition as for a crop of wheat, corn or potatoes.

PREPARATION OF THE TREES.

Fruit trees as sent from the nursery vary from five to seven feet in height, with the naked stems or trunks and a number of branches at the top forming a head. These branches should all be cut back to within three or four buds of their base. Cut off smoothly all bruised or broken roots up to the sound wood. In case of older trees prune in proportion. When digging the holes for the trees make them large enough to permit the roots of the tree to spread out in their natural position. When the tree has been pruned, as before directed, let one person hold it in an upright position in the hole while a second shovels in the earth. The finest and best soil from the surface should be placed among the roots, care being taken to bring every root in contact with it. In dry weather, when the hole is nearly filled, a pail of water may be used to wash the earth in around the roots. Guard against planting too deep; after the ground settles trees should stand as they did in the nursery. In dry gravelly ground the hole should be dug twice the usual size in depth and filled in with good loamy soil. If the trees are tall and much exposed to winds,



Compressed Air Sprayer at work. No. 2.

A large orchard can be effectively sprayed in a short time by one of these sprayers equipped with a spar as here shown. This spar is adjustable and can be moved when desired, until the upper part is entirely above the lower, thus not duplicating the spray. The gasoline engine, used to load the tanks, is usually kept at the nearest point to the orchard where a good supply of water can be obtained. (See article by Mr. Tweddle on page 188 in this issue.)

tie to a stake in such a manner as to avoid chafing.

MULCHING.

When the tree is planted place around it as far as the roots extend and a little beyond, five to six inches deep of rough manure or litter. This prevents the ground from baking and cracking and maintains an even temperature about the roots.

After they have been set out the ground should be kept clean and loose around all trees, as a growth of grass will stunt their growth.

I spray the ordinary Bordeaux mixture on plums three times a season and several times on apples with good results.—(W. O. Burgess, Queenston, Ont.)

Hints on Pear Growing

R. L. HUGGARD, WHITBY, ONT.

PEARS are not grown as plentiful as that class of fruit deserves. To get the best results the land should be a good clay loam surface, with a stiff clay subsoil well underdrained. No varieties of fruit trees give their best results on wet or soggy soil.

The pear requires less pruning than almost any other fruit tree. Pruning should be done while the trees are young, as very little pruning is required after they come into fall bearing.

I have tried both clean cultivation and growing in grass, simply cutting the grass once during the year. The result showed clearly that cultivation is decidedly the best both in the growth of wood and fruit. There are many varieties that it will pay to thin, especially the Kieffer, Bartlett, Jules Guyatt, and frequently Louise Bonne, Lucrative and others that have a habit of overloading.

VARIETIES THAT NEED THINNING.

I have never found it necessary to thin Clapp's Favorite, Lawrence, Leonard, Anjou or Duchess d'Angoleme, as they generally mature all the fruit that sets each year. For several years past the Seckel, although one of the smallest pears I grow, has brought the highest price per bushel on the market. This, no doubt, is on account of its superior quality. The trees, although slow growers, are quite hardy and seem to be free from pear blight.

About April 1, or as soon as convenient before the buds open, I spray with copper sulphate and lime, and afterwards with the full Bordeaux mixture, adding whale oil soap. The fertilizers used in all the orchards is barnyard manure and ashes. I have tried several brands of fertilizers, but none seem to give as good results as the ashes and manure. No trouble has been experienced from blight for several years.

Trees Girdled by Mice.

H. L. HUTT, ONT. AGRI. COLLEGE.

The mice girdled my trees to a depth of two feet below the snow level. The trees were only put out a couple of years ago. Is there anything I can do to save them?—(B. C. Abbott, Lucan, Ont)

IN the case of young trees only a year or two old they may better be taken out and replaced by new ones if the injury is at all serious. In the case of older trees, which are well established and ready for bearing, it is advisable to try to repair the damage by binding or by bridge grafting.

If the injury is close to the ground, the best thing to do is to bank some earth around the injured part. If the injury is too high for this to be done, the next best thing is to apply a plaster of soft clay or fresh cow dung, which should be firmly bound about the tree with a strong bandage.

In the case of trees which have been entirely girdled, they may be saved by bridging the injured part with long scions inserted beneath the fresh bark above and below the injury. Several of these should be put in so as to convey the cambium from the upper to the lower parts of the tree. The whole injured portion should be covered with the plaster and bandaged as previously mentioned.

If the trees had been protected last fall by wrapping about them a band of felt paper or something of that kind, as was advocated by Mr. Harold Jones and others in these columns last fall, damage might have been avoided.

Loss Through Neglect.—A great deal of damage was done to fruit trees during the winter by mice chiefly in grassy and neglected orchards. If growers would practice clean cultivation and clean up the rubbish around the fences they would not be troubled with this pest. I have met growers who say that they have lost hundreds of trees.—(A. E. Sherrington, Walkerton, Ont.)

Black Knot in the Plum and Cherry Plantation

L. W.

THE black knot has caused such devastation among the plum and cherry trees of Ontario that for a time their cultivation was almost given up. Since the cause and the remedy have both been found no one need fear to plant these fruits. The cause is a parasitic fungus which grows within the bark, and not, as many even yet believe, the oviposition by some gall insect.

The remedy consists in cutting off and burning all knots and infested branches in winter or early in the spring, before the spores of the knot, which live in it over winter, have an opportunity to develop and be scattered. Many people simply cut off these branches and leave them lying about. This is almost as great an evil as leaving them on the trees.

Often a lot of neglected plum and cherry trees in a fence corner are left undestroyed in the vicinity of good trees, the owner evidently being either too careless or too ignorant to have them cut and burned. Such clumps of neglected trees often produce spores of the black knot enough to destroy the orchards of a whole neighborhood.

Where branches of valuable trees are affected with knots which cannot be removed without serious mutilation, the knots may be carefully pared off with a sharp knife and the wound well painted over with kerosene.

Spraying with Bordeaux, just as the buds are breaking, for rot of the fruit is very important, especially with plums and such varieties of cherries as Black Tartarian, Elkhorn, Elton, Napoleon and Yellow Spanish. The sour cherries are not very subject to it. Before the buds open copper sulphate may be used, one pound to 20 gallons of water, but this cannot be safely applied to the foliage.

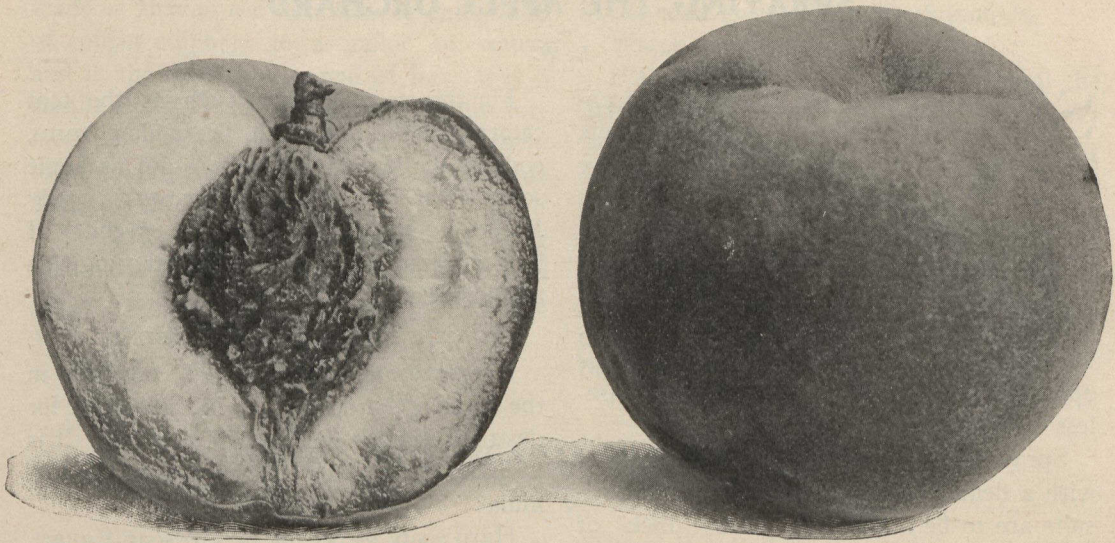
Making the Bordeaux Mixture

PROF. WM. LOCHHEAD, ONT. AGRI. COLLEGE.

THE Bordeaux mixture is so often recommended for application in the orchard and in the small fruit and vegetable garden, requests are constantly being received for information as to how it is made. For fungous diseases use copper sulphate (bluestone), 4 pounds; lime (fresh), 4 pounds; water, 40 gallons.

In making this mixture observe the following precautions and directions: Use nothing but fresh quick-lime. The lime should be slowly slacked by the gradual addition of water. For convenience stock solutions of milk of lime and bluestone should be prepared and kept in different barrels in readiness for spraying operations. In barrel No. 1, 25 pounds of fresh lime are gradually slaked, and barrel made up to 25 gallons of water; in barrel No. 2, 25 pounds of copper sulphate, or bluestone, are dissolved in 25 gallons of water. For rapid dissolving use warm water. These are the stock solutions. Each gallon of milk of lime contains one pound of lime, and each gallon of bluestone contains one pound of bluestone. When we wish to make up a barrel of Bordeaux mixture we take out 4 gallons of milk of lime and 4 gallons of bluestone solution, and pour each separately into the barrel in which are already 32 gallons of water.

Never mix the concentrated stock solutions together. If the milk of lime and bluestone are mixed in the concentrated form, just as they are taken from the stock solution, a precipitate of a flakey nature will soon settle out, and either fall to the bottom or clog the nozzle. Test the Bordeaux to find out whether sufficient milk of lime has been added. This is most easily done by means of the ferrocyanide test. A saturated solution of this substance can be purchased at any druggist's for a few cents. In test-



The Fitzgerald Peach.

The Fitzgerald Peach is a variety which serves to extend the season of high class yellow peaches a few days later than the Early Crawford. It is too tender for very long shipments, but to the taste of many people the flavor is finer than that of the Crawford. ORIGIN: Oakville, Ont; TREE: hardy, healthy and productive; FRUIT: Size, two and a quarter inches in either diameter; Form, roundish, ovate; Color, bright yellow, partly covered with deep red; Down, moderate; Cavity, broad and deep; Apex, a small point in a slightly depressed basin; Suture, distinct; Stone, free. FLESH: yellow, with red at pit; Texture, tender and juicy; Flavor, excellent. SEASON: Sept. 1st to 7th.

ing, place some of the Bordeaux, which has been thoroughly stirred, in a saucer, and add a few drops of the ferrocyanide. If sufficient lime has been used, no discoloration will appear, but if insufficient, a deep dark brown color will be produced.

Always strain the milk of lime to prevent gritty particles from clogging the nozzles. Use a fine nozzle; do not soak nor drench the tree. The stock solutions will keep, but the Bordeaux mixture becomes useless after standing for a day or two.

COMBINATION BORDEAUX AND PARIS GREEN MIXTURES.

This mixture is for fungous diseases and leaf-eating insects. It is prepared like the Bordeaux, but 4 ounces of paris green are added and thoroughly stirred before spraying. Copper sulphate (bluestone), 4 pounds; quick lime (fresh), 4 pounds; paris green, 4 ounces; water (1 barrel), 40 gallons. In small quantities it may be made as follows: Bluestone, 4 level tablespoon-

fuls; quick lime, 4 level tablespoonfuls; paris green, 1 level tablespoonful; water, 1 pail (2 gallons).

Fruit Scions.—At the Central Experimental Farm, Ottawa, a great many requests for scions of different varieties of fruits are received. While W. T. Macoun, the horticulturist, is always pleased to furnish scions where it is possible to do so, a great many kinds, he says, do not succeed at Ottawa which are needed in other parts of Ontario. It is necessary, therefore, to disappoint fruit growers quite frequently. Many fruit growers would like to know where scions can be obtained at reasonable rates, either from nurserymen or from fruit growers.

When I set out my apple orchard twenty-two years ago I committed the mistake many do the first year, of planting too many early bearing apple trees.—(A. Shaw, Walkerton, Ont.

SPRAYING THE APPLE ORCHARD

L. W.

SPRAYING an apple orchard is an expensive as well as a disagreeable job, but in nine years out of ten it brings large returns if done with intelligence.

Some people spray with no definite object in view; they read in the papers that the work should be done, and they do it with a foolish expectancy of magical results. Others, having tried it and failed, go to the opposite extreme and declare spraying a useless operation.

Spraying must be done thoroughly and with a definite object in view if definite results are to be obtained. Every inch of wood not covered is liable to the attack of the enemy. The finest nozzles must be used, and the spray applied to every part requiring protection in such a fine vapor that like a mist it will deposit itself without running off in drops to the ground.

The trees must be prepared for spraying by a most thorough and careful pruning, else much costly material will be wasted upon useless wood. If scab is present, an especially severe pruning is judicious. Old apple trees are often allowed to grow too high to be easily reached by sprayer, pruner or fruit gatherer; these should be topped well back to a reasonable height.

For aphids, oyster shell bark louse and San Jose scale, and all such insects as do not eat the foliage, but simply suck the juices of plants, kerosene emulsion, whale oil soap, or the new sulphur and lime mixture are the standard remedies. The latter is a winter or early spring spray, while the others may be applied in summer, in certain proportions, without injury to the foliage. Not a day of delay should pass after discovery of aphids before the kerosene emulsion is applied, for when once the leaves are curled with them it is almost impossible to destroy them.

For insects that chew, such as the tent caterpillar, the bud moth, the canker worm, codling moth, and for such fungi as apple scab, bitter rot, apple canker, etc., apply Bordeaux, with paris green or arsenite of lime added, which is a combined fungicide and insecticide.

MAY BE USED IN THE GARDEN.

Kerosene emulsion is useful, not only in the apple orchard, but also in the garden for destroying aphids on the rose bushes. It is prepared according to the following formula:

Hard soap, $\frac{1}{2}$ pound, or soft soap 1 quart.

Boiling water (soft), 1 gallon.

Coal oil, 2 gallons.

After dissolving the soap in the water add the coal oil, while still boiling, and stir vigorously for five or ten minutes. This will form the stock solution. When using, dilute with 9 to 15 parts of water.

Bordeaux may be prepared according to the following formula:

Copper sulphate, 6 pounds.

Quick lime, 4 pounds.

Water, 1 barrel of 40 or 50 gallons.

First dissolve the copper sulphate in say ten gallons of water, suspending it in coarse sacking. Use an earthen or wooden vessel for this purpose. When the copper sulphate is dissolved pour the solution into the spraying barrel and half fill the barrel with water. Next slack the lime, diluting it with water to at least ten gallons; then pour this milk of lime into the spraying barrel through a wire strainer to keep out all lumpy bits. Add water to fill the barrel, and stir vigorously.

WHERE TIME MAY BE SAVED.

For large orchards much time will be saved by having stock solutions in readiness; that is a barrel of copper sulphate solution and a barrel of milk of lime. If these are

made so that in the one there is one pound of copper sulphate to a gallon of water, and in the other one pound of lime, it is a simple thing to take six gallons of the former and four of the latter and pour them together in the spray barrel, afterwards filling it with water.

The arsenite of lime is cheaper and better than paris green. The best formula for its preparation is that known as the "Kedzie mixture," which is as follows:

White arsenic, 2 pounds.

Sal soda (washing soda), 8 pounds.

Water, 2 gallons.

Boil together about 15 minutes until the arsenic is all dissolved; replace the water lost in boiling and place in an earthen or wooden vessel as a stock solution. One pint of this is equal in strength to four ounces of paris green and may be used in the same way; that is, add one pint to each barrel of Bordeaux, or if the latter is not used, use one pint of the solution, two pounds of quick lime and say 45 gallons of water.

WORK THE PEACH TREES REQUIRE

L. W.

THE pruning of the peach trees may be done at any time, but preferably just before the spring growth begins, especially if wood growth needs encouragement. Many Canadian peach growers prune in such a way as to produce long sprawling arms with tufts of bearing wood at the extremities. This is a great mistake.

Two-thirds of the young growth should be cut off every year, from the first year after planting, and the tree kept round headed all its life with bearing wood almost to the very trunk. Such a tree will prove more productive, longer lived and fairer to look upon than the sprawlers above described.

AN ENEMY TO WATCH FOR.

The peach root borer is often a most serious enemy of the peach tree, giving it a sickly look and resulting in premature death. The presence of the pest may be detected by the gum and castings about the root at the ground surface. The best remedy is to dig out the grub with a sharp knife and kill it either this month or early in June, before it has transformed into a moth. The grub is easily found and readily identified, being a yellowish color and about an inch in length.

The yellows of the peach is still a mystery even to students of plant pathology, and to the peach grower it is the most formidable and destructive of all diseases affecting his orchard. If diseased trees are allowed to remain, the yellows will soon spread through an entire orchard, first making the fruit useless and afterward destroying the tree.

The only known method of checking it consists in digging out affected trees, and burning them root and branch. Trees having diseased fruit should be "blazed" in fruit season, and early the following spring they can be pulled out by the horses. A log chain is attached as high up as convenient, and if the ground is wet a span of horses pulling first one way and then another will quickly take out a tree, roots and all. If this work has not been done, no time should be lost in attending to it.

I spray peaches once a year with lime and sulphur, using 30 pounds of lime and 30 pounds of flower of sulphur to 80 gallons of water. I find 30 pounds of first-class white lime quite sufficient, as more makes the trees white, which is no gain. An excess of lime increases expenses and clogs the spraying nozzles.—(W. O. Burgess, Queenston, Ont.)

PROTECTING THE PEAR TREES

L. W.

THE spraying hints given in another column for the apple orchard will apply for the most part to the pear. Bordeaux applied before the buds open will go a long way in preventing leaf blight and scab, two very common fungous diseases of the pear tree. A second application ought to be made just before the blossoms open out.

These two sprayings will prove the most beneficial of any that can be given during the season. If the work is omitted during any month of the year, it should not be in the month of May.

For pear psylla or blister mite, use kerosene emulsion when the leaves open, and for codling moth add arsenite of lime to the Bordeaux and apply when fruit is about the size of peas.

In case the Bordeaux is not used after the fruit is formed, use one pint of the stock

solution of arsenic and washing soda, described under the "apple orchard," to two pounds of lime and 45 gallons of water.

PREVENTING THE SPREAD OF BLIGHT.

The blight is the terror of the pear grower and many a fruit grower has become thoroughly discouraged on account of its ravages. For a long time the nature of this disease was a profound mystery, but recently it has been found to be due to a very minute fungus which is present in the sap and in the leaves and blossoms of the blighted portions. The virus is carried chiefly by insects; and bees, when visiting the infected blossoms, often carry the germs of blight to the bloom of healthy trees.

To prevent the spread of blight all infected wood should be cut and burned before the blooming period. If this has not been done, no time should be lost before doing it.

Trees for the Farmers—As provided by the Minister of Agriculture, we have set aside two acres of land at the College farm on which to grow trees for planting the farmers' wood lots. It is estimated that one acre of nursery will accommodate 60,000 seedlings. We are buying this year a large number of small plants, which will be ready for distribution in the spring of 1905-06. In addition we will plant seeds during the coming summer and fall so as to keep up our stock from year to year. We are planting this year Norway Spruce, White Pine, White Ash, American Basswood, Sugar Maple and American Elm.—(G. C. Creelman, Pres. Ont. Agri. College.)

I prune my apple orchard every spring, and some years do some pruning in June. I believe June is the time to cut off any large limbs that should be removed.—(A. E. Bellman, Bowmanville, Ont.)

Spraying Formulas.—In the April and May issues of *The Horticulturist* last year was published an article and spraying calendar prepared by Prof. Wm. Lochhead, of the Ontario Agricultural College. It described fully how the various spraying mixtures are prepared and when they should be applied to control such pests as canker worms, tent caterpillars, mildew, scab, oyster-shell bark lice, curculio, brown rot and many others prevalent at this season. Subscribers desiring such information will do well to look up their back numbers. Copies of these issues will be sent on request if ten cents in stamps is enclosed.

* We planted some Mackintosh Reds this year. They appear to be A. 1 and are proving to be better keepers than we expected. We have some of last fall's fruit which is still in excellent condition.—(Geo. Hutton, Easton's Corners, Ont.)



Picking Strawberries on an Ontario Fruit Farm.

With many Fruit Growers in Ontario, Strawberries are among their best paying crops. On some plantations several acres of these berries are grown yearly. The illustration shows pickers at work in the strawberry fields of Morris & McCullough, Nantyr, Ont. (See article on this page.)

Growing Strawberries on a Large Scale

MORRIS & M'CULLOUGH, NANTRY, ONT.

DURING the last six or seven years we have grown three to six acres of strawberries each year. In preparing the land we like it well manured and worked up in some root crop the year before, such as turnips, potatoes, sugar beets or something of that kind. This sprouts any seeds that may be in the manure and leaves the land clean.

In the late autumn the land is plowed to a good depth, giving the winter and frost a good chance to pulverize the soil. As soon as the land is dry enough in the spring the harrow is put on it every week until planting or near planting time. It is plowed nicely and harrowed and rolled. If it is lumpy the harrow and roller are kept on until the land is in nice condition for setting the plants. The early harrowing keeps the moisture from escaping.

In plants we are not satisfied with anything but the very best of whatever variety

we may desire. Care is taken to see the new plant has the same gland system as that from which it came. It does not pay to be too careful about expense in securing plants.

SETTING OUT THE PLANTS.

Our method in planting has been to set small stakes at both ends of the field 4 feet apart. Some varieties, such as the Clyde, should not be more than 3 feet apart. From these stakes a line is stretched, a man and boy starting with it at one end. If we have help enough the men start at both ends. Two men in this way should put in about 5,000 plants in a day.

After planting, the scuffer should start and go through them at least once a week, or as soon as the ground is dry enough after a heavy rain. This should continue all summer, and also the free use of the hoe among the vines to keep them perfectly clean. Keep all bloom picked off during the first season.

Our mulch is put on in the early winter after the ground is nicely frozen. The rows are covered with pea straw if we can get it, if not we use the next best thing we can se-

cure. In the spring, as soon as the hard frosts and cold winds are over, we go along each row pulling or raking the mulch off the rows and leaving it between them. This answers three purposes: it keeps or holds the moisture in the ground during the dry time, it keeps the berries clean during the heavy rains of the summer, and also answers for a cushion on which the pickers can sit down in great comfort.

Strawberries are a risky crop, but like everything else, a man with plenty of push and perseverance and with good methods will succeed and make money. Several varie-

ties have been tried, but this year we have nearly settled down to the Williams, which will be the principal crop, although some of the William Belt will be grown. The Clyde has been discarded. It shows a great bloom, but only matures a very limited number of berries. Glen Mary and Marshall are fine berries and productive, but are not good shippers, being soft. The Burbach is a preserving berry and a good fruiter, but soft. Several other varieties have been tried, but the Williams is preferred as a commercial berry to any other.

SPRING WORK IN THE FRUIT GARDEN

WM. HUNT, ONT. AGRI. COLLEGE.

EARLY in May is usually the best time to transplant young strawberry plants. The young runner plants are then just beginning to make new roots. For a small garden patch leave 2 feet 6 inches between the rows, and set the plants about 15 inches apart in the rows.

The ground should be dug thoroughly and deep before planting, and should be rich in humus or fertilizing properties. Autumn prepared ground is best for a strawberry patch. Never attempt to make a new patch on land where strawberries have been grown before, unless the ground has been cropped with some other garden crop for three or four intervening seasons.

A garden trowel is the best tool for setting out strawberry plants. Press the soil firmly around the roots of the plant, and see that the roots are all under the soil, and at about the same depth as they were before the plant was taken from the old patch. Water the plants well once, and then pull a little light fresh soil around over the roots. Keep the soil well surface-stirred between the rows and free from weeds all the sum-

mer. If the weather is at all favorable once watering the plants should be sufficient.

SOME GOOD VARIETIES.

A few good varieties for a small garden for a succession of fruit is the Marshal, Clyde, Nick Ohmer, Haverland and Burbach. The two last named have not perfect blossoms, and must be planted only a row or two from some of the other varieties mentioned.

Fork over the soil lightly between the rows of strawberry plants just coming into flower, and remove all weeds. A mulch of straw, or the clippings and grass cuttings from a lawn makes a good mulch for a strawberry patch, as it keeps the fruit clean and free from earth and sand. Work the mulch well in underneath the foliage and bunches of blossoms.

WATCH THE GOOSEBERRY AND CURRANT BUSHES.

Gooseberry and currant bushes will require careful watching toward the end of the month for caterpillars. A weak solution of

paris green water sprinkled on the foliage before the fruit is formed will oftentimes prevent the attack of these pests for a whole season. Avoid using the paris green solution after the fruit has formed. A small teaspoonful of paris green will make nearly two gallons of the solution.

White hellebore powder dusted over the leaves will destroy the caterpillar. This can be used after the fruit has formed if not used too liberally on the fruit itself. Dust the hellebore on when the dew is on the leaves, or after a rainstorm before the foliage is quite dry.

The crop of fruit on raspberry bushes will be increased in quality and weight if a mulch of half rotten stable manure is spread over the ground around the canes, more especially if the weather is very dry and hot when the fruit is swelling. The mulch should be kept an inch or two clear of the canes, and should not be over an inch or two

in depth. I have mulched gooseberry bushes in very dry seasons, and it has prevented to a great extent the fruit dropping from the bushes, as it often does, when the mercury registers 90 to 100 degrees in the shade in July.

In England where the climate is much more moist than here, it is quite a common practice to mulch not only small fruits, but also dwarf pear, plum and apple trees during the hot summer weather that often prevails when the fruit is swelling. In a small garden the mulching process would not be an arduous task, where grass or lawn grass cuttings or trimmings is available.

Never waste the soapsuds. These poured around the roots of fruit trees or on the ground around the roots of most vegetables are very stimulative and beneficial to plant growth of almost every kind, and have a deterrent effect on the increase and attacks of insect pests.

Destroying the Currant Worm

L. W.

THE currant worm is the great enemy of the currant and gooseberry bushes. The female fly deposits her eggs on the under side of the young leaves, in rows on the larger veins. In about ten days they hatch out and feed in companies, soon stripping the bushes of their foliage.

The usual remedy is powdered hellebore mixed in water, in the proportion of an ounce to a pailful. I have found paris green very effective, one teaspoonful to a wooden pailful of water, but of course it can not be used for the second brood, which often appears when the fruit is ripening.

There are far too many branches, in my opinion, left on trees, the result of which is small fruit, and expense in picking and injury to trees.—(A. Shaw, Walkerton, Ont.

There is a good opening for a man who will buy a sprayer and contract with farmers to spray their orchards at a nominal price say 5 cents per tree. Hundreds of farmers are anxious to have their orchards sprayed, but cannot afford to do the work, and do not know how to go about it. A man with a spraying outfit who will do this work can make a handsome income in the same way that the threshers do in the fall.—(P. J. Carey, Cobourg, Ont.

My pruning this spring was done in a drastic manner. Many large limbs were cut off that might split off, and all the lower limbs so that air might pass through the trees, also to permit of better cultivation. The wounds were painted about two weeks after cutting, commencing with those earliest pruned. I have to await the results, but I have no fear of the outcome.—(A. Shaw, Walkerton, Ont.

THE RASPBERRY PATCH

L. W.

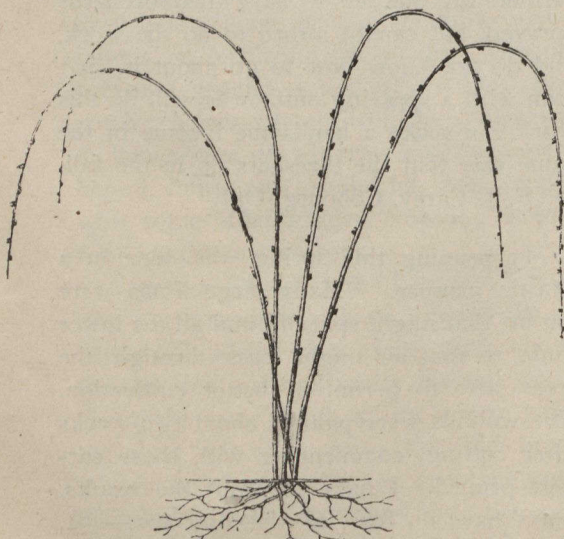
THE raspberry field is considered by many fruit growers the most remunerative part of their plantations. The profit depends largely on the soil; if heavy, or poor, or too dry the best results cannot be expected. On deep, rich, moist sandy loam most satisfactory returns may be counted on.

The pruning out of the dead canes, which fruited last year, is completed by most growers early in April. If not yet finished, the work should be hurried up, and all rubbish burned, so that nothing will interfere with early and constant cultivation.

The planting of red raspberries in April is usual, but some growers prefer to wait until May and move the young growing shoots. If these can be taken up and set immediately after, the plan is excellent, and few failures will result. Take them up with a ball of earth attached and set them at once in holes prepared for them.

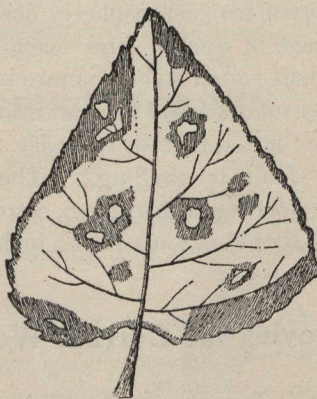
PLOWING INJURES THE ROOTS.

Plowing the small fruit plantations is not



The habit of growth of the young canes of black raspberry plants is here shown.

as a rule to be commended; not even with a one-horse plow, because it is almost certain to cut the roots and lessen the vitality of the bushes. It is better to use a first-class one-horse cultivator and keep it constantly going until the fruiting season. A one-horse disc which will stir the ground to a depth of at least three inches without disturbing the roots is even better still.



Dark brown or reddish spots, sometimes with a light centre as here shown, may be seen on the foliage of raspberry plants when it is attacked by the fungus disease, anthracnose. If not checked by spraying, as described on this page, the disease will soon ruin the plantation.

Blackberries need topping during the growing season unless the object in view is the propagation of young plants. The habit of growth of the young canes is shown in the illustration. With a little encouragement they will reach to the ground and take root.

If the object is to harvest as much fruit as possible, these canes should be stopped at a height of about $2\frac{1}{2}$ or 3 feet, so that they may make a stocky growth and throw out laterals from each bud.

GUARD AGAINST THIS DISEASE.

Anthracnose of the raspberry is a contagious fungous disease which spreads rapidly especially during wet weather. The first



The white pits, surrounded by a dark bluish circle, which form on the young canes of raspberry plants when attacked by the fungus disease anthracnose, are here shown. A remedy is provided by spraying as described on this page.

appearance of this disease, early in June, may be recognized by small white pits on the young canes, surrounded with a dark bluish circle. These pits soon enlarge and spread over the canes, sometimes completely girdling them. The disease may also effect the foliage, appearing in the form of dark brown or reddish spots, sometimes with a light centre, as shown in the accompanying illustration. The spots soon enlarge and cause the foliage to dry and curl up as if a fire had gone over the plantation.

The remedy is a preventive one, viz., to spray in early spring with blue vitriol, one pound to 20 gallons of water, and during May with Bordeaux.

The horse that draws the cultivator through the raspberry patch will do better work if he wears a wire muzzle, so that he will not have his attention diverted from his work while nipping off the young growth. A leathern apron may be provided to protect his breast from scratches. This is especially desirable in cultivating the blackberry plantation.

I would strongly advise all owners of vineyards to spray their vines two or three times a year with the Bordeaux mixture. It not only prevents disease and fungous growth, but gives the vines a healthy appearance, and the fruit will be clean, bright and nice.—(Aaron Cole, St. Catharines, Ont.)

I plant my raspberries in rows about 5 feet apart, with 3 feet between the rows.—(D. Bettschen, Violet Hill, Ont.)

A Practical Grape Grower's Methods

W. F. KYDD, SIMCOE, ONT.

IN growing grapes my method has been to plant vigorous growing varieties, 12 feet apart in the row, with 10 to 12 feet between the rows. Dig a hole about 2 feet square and 1 foot deep. Place the vine at the back of the hole and spread the roots straight out, covering them with several inches of top soil. Tramp the soil down quite firm, then fill the hole with loose earth.

When planted cut the vine back to three buds. After these buds have made a growth of several inches, cut off the two poorer ones, as only one is required for my method of growing, which is called the Kiffen system. In this system only two vines are needed. The first is 3 feet from the ground, the next 2½ feet higher.

A thin stake must be driven into the ground to train the young vine on till it reaches the top wire. Allow no laterals to grow on the young shoot, except two, one on each side as near the first wire as possible. The upright must be tied several times to the stake, for at this stage it is very tender and easily broken by the wind. Never use a hose among vines or young trees without a muzzle, for even with the greatest of care one will sometimes tear off an important arm or branch. Pinch off the upright as soon as it reaches the top wire, then start the upper laterals, allowing the four laterals to grow only 6 feet.

It may take two years to get the four arms, but if every lateral is pinched off as soon as possible it may do this the season it is planted, as mine have often done. About every four years the arms should be renewed. This is done by training a young shoot during the summer for the next year's arm, starting it as near the upright as possible. I would not advise renewing the four arms in one year.

CARE OF THE ARMS.

After the vine is old enough to bear fruit shorten the hanging laterals during the summer. Never permit those on the upper arms to reach the lower ones, as they will make a tangled mess hard to prune. They will also take away strength that should go to perfect the fruit. After frost has set in prune off all unnecessary wood. Most vines have too much bearing wood left on.

The varieties that have given me the best results are Concord, Baden, Niagara, Salem and Moyer. They are vigorous growers and productive. For fertilizers I use barnyard manure, 12 loads to the acre, and about 50 baskets of ashes. Plough the manure under in the spring just as shallow as a plow can be held, and sow the ashes on top and cultivate them in. Cultivate as often as necessary to always keep the soil loose on top. Hoe where the cultivator does not reach so there will be no weeds.

I have had no trouble from insect pests or fungous diseases, as I spray every year about four times with Bordeaux mixture and paris green. Grapes pay me as well as any other variety of fruit.

Best Grapes and Berries to Grow

RESIDENTS of eastern Ontario who are planning to set out grapes or berries this spring will do well to ascertain the varieties that are likely to do the best in their section.

At the Central Canada Experimental Farm, Ottawa, the following kinds have given the best results. In other sections, where the climate corresponds to that at Ottawa, these varieties should do well.

Grapes.—Black varieties, Campbell's Early, Moore's Early, Wilder; red varieties, Moyer, Delaware, Lindley, Brighton; white varieties, Green Mountain, Moore's Diamond.

Strawberries —Buster, P.; Warfield, P.; Enhance, B.; Glen Mary, B.; Beder Wood,

B.; Sample, P.; Lovett, B.; Barton's Eclipse, P.; Bisel, P.; Bubach, P.; Williams, B.

Red Raspberries.—Commercial varieties: Marlboro, early; Cuthbert, main crop. For home use—Herbert, Clarke, Sarah.

Black Caps.—Older, Hilborn.

Blackberries.—Agawam, Snyder.

Red Currants.—Wilder, Pomona, Cherry, Fay's Prolific.

Black Currants.—Victoria, Success, Standard, Climax. The last three are seedlings originated by Dr. Wm. Saunders.

Spraying the Small Fruit Bushes

PROF. WM. LOCHHEAD, ONT. AGRIC. COLLEGE.

WHERE small fruits are being raised at all extensively spraying will frequently prove an excellent investment. Larger and better fruit and more of it will be the result. The following short formulae may prove helpful to some:

RASPBERRY.

Anthracnose, Leaf-Blight and Saw-fly Larvae.—First spraying: Bordeaux mixture and paris green just before growth begins.

Second spraying: Bordeaux mixture and paris green about when first blossoms open.

Third spraying: Bordeaux mixture when the fruit is gathered.

CURRANT AND GOOSEBERRY.

For Worms and Mildew.—First spraying: Potassium sulphide or Bordeaux mixture and paris green before buds expand.

Second spraying: The same 10 to 15 days later.

For worms alone, hellebore or paris green will be effective.

STRAWBERRY.

The Rust or Leaf Blight.—Bordeaux mixture, when it can be applied without disfiguring the fruit, will control this disease. Apply at intervals of two or three weeks on new beds after they begin to make runners.

SHIPPING FRUIT TO THE NORTHWEST

E. D. SMITH, M. P., WINONA, ONT.

ONE of the main requisites for success in shipping fruit to the Northwest is to get good shipping varieties.

In peaches we have nothing until the Elberta is ready. It is as perfect as one can well expect to get a peach, but the tree is defective in that the foliage is weak, being more subject to curl leaf than any variety. Growers are, in consequence, loth to plant it largely.

There is no other variety until the late peaches come on, and they are rather too late. Shippers require four or five Elbertas at different seasons, commencing as early as our earliest and covering the season till Smocks come in. The trees should be perfect as well as the fruit.

In plums we require a kind that will keep well. There is a great difference in the varieties we already have, but even our best are not good enough to compete at all with the long keeping California plums.

Our best sorts are Emerald, Burbank, Purple Egg, Shropshire, Damson, Fillemberg, German Prune and Reine Claude, in order of ripening. These do not cover even half the season of plums, and are not good

enough themselves. They are, however, much superior to most sorts for shipping, and are all good plums.

There are no good all round grapes. The Concord is lacking in shipping quality. As they are usually picked a large part of them are split, and these mould on the journey. Even if carefully picked there is sure to be a considerable proportion damaged before they reach the consumers in the Northwest.

ALL HAVE DEFECTS.

The Niagara is similar in shipping qualities. There are good shippers, such as Vergennes, Agawam, Rogers 4, Rogers 43, Rogers 44, and many others, but all have other defects, and so I might go on over all our fruits.

Here is certainly room for a vast amount of experimenting, hybridizing, and efforts in the line of producing new varieties in every way possible. One perfect shipping sort would be worth hundreds of thousands of dollars to Ontario for that great and growing northwest market. The opening is ready for a large experimental fruit farm in the Niagara district and the work cut out for it at once.

Securing Material for Packages.—As yet I have experienced little difficulty obtaining the necessary material for packages in which to market my fruit. I have an idea, however, that it will be well to hold some elm in waiting until my orchard, which is young, gives its first returns of any consequence. I can get the material sawed and make my own barrels in winter. The box is the best package for fruit, but before it will be practical to make them here the labor problem must be solved.—(E. H. Hut-
ton, Easton's Corners, Ont.)

Ready to Co-operate.—I have held meetings in 20 places this spring to discuss co-operation in the handling and shipping of fruit, and I think there will be a number of associations formed this season for this purpose. There is nothing that is creating so much interest among farmers and growers as co-operation, and the time is ripe for a great movement in that direction.—(A. E. Sherrington, Walkerton, Ont.)

It gives me pleasure to renew my subscription to the Canadian Horticulturist for another year.—(J. B. Bruce, O'Kanagan, B. C.)

THE VEGETABLE PATCH IN MAY

SOWING and planting for a succession of vegetables for summer and autumn use will be one of the main features of vegetable gardening for May. A second sowing of peas can be made. The Horsford Market Garden Pea is a good second early variety. These will crop, and can be cleared off in time to plant late celery on the same ground.

Beans of either the dwarf or climbing varieties can be sown at any time from early in May until July, at intervals of two or three weeks as required. Two good kinds of beans for medium and late crops are the Early Valentine and Tabers I. X. L. The latter is one of the best varieties of late beans. It is a strong grower, heavy yielder, and the pods keep fresh and crisp longer during the hot summer months than any other variety I know. The best pole beans are the Asparagus and Kentucky Wonder.

Corn can be sown at any time during May or June. Two good varieties for a small garden are the Early White Cory and the Country Gentleman. Put a seed or two of the Long White Bush Marrow in every alternate hill of corn. This bush growing marrow is in many respects preferable to the English marrow, but does not produce a crop for as long a period of time as the latter

(Continued on Page 215.)

CELERY GROWING

H. R. ROWSOME, BURLINGTON, ONT.

NEXT to cauliflower, celery is the most difficult of garden crops to grow and bring to a first class condition for market. It is considered to be a profitable crop to grow because by sitting in an arm chair with pencil and paper one can figure on a profit of \$4,000 per acre when grown by irrigation, but practically very few gardeners, one year with another, clear more than \$250.

It is the average profit at Kalamazoo, Mich., where 5,000 acres are grown by the hard slugging of a colony of Hollanders,

variety, which is of a running habit of growth.

The best variety of beet for a small garden is the Dark Egyptian. The long smooth blood beet is best for winter use. For an all season carrot there is none to beat the Chantenay. It is the best flavored carrot grown, comes in fairly early, and is a good cropper.

THE CUCUMBER AND MELON PATCH.

Cucumber and melon seeds can be sown outside toward the end of the month. Plant double the quantity of seed required, as some of the seed may not grow. The plants not wanted can be easily transplanted when the second leaf has developed, or they can be pulled out and thrown away. Four good plants to a hill is sufficient.

A second sowing of lettuce should be made early in May. Nonpareil and Gardeners' Favorite are two good varieties. If you have a nice light piece of fairly rich soil, sow a few turnip rooted or olive shaped radish. The scarlet white tipped and scarlet olive shaped are two of the best kinds. A plate of the first named, fringed with a few lettuce leaves, is not only very appetizing in appearance, but is, from a decorative point of view, quite as effective as a vase of flowers or a plant jardiniere.

who work their women and children. Many gardeners who have commenced growing this vegetable on a large scale have gradually gone out of it because often the crop is a complete failure. As \$200 an acre can easily be thrown away in expenses, the average grower does not want to face a bad year with a large acreage.

Since celery is an aquatic plant it delights in a swamp muck. Some peaty mucks contain a good deal of iron, and it will not grow there. Black sand with a quicksand

subsoil is nearly as good, but will not grow if the subsoil is clay. Other soils will grow celery if enough manure and water are used, but it is too much of a fight against nature to make the culture profitable. At least 40 tons of manure per acre must be applied each year. There must not be any coarse manure near the top of the ground or the plants will die out when set out. Four or five applications of nitrate of soda—100 pounds at a time every ten days or two weeks will hasten growth.

GOOD VARIETIES.

For early fall, summer and early winter use, the following self-branching kinds are used: Paris Golden, Rose Ribbed Paris and White Plume. The Paris Golden is the best; the seed should be grown by the originator in France, as plants from Californian and Chinese grown seed become punky and useless.

For late winter use the red celeries are: London Red, Bruce's Hamilton Red (Nottingham Red in England), must be earthed up often, and Carter's Crimson, which has narrow stalks. Green celeries include several good varieties. The Giant Pascal is brittle and rots at the heart, but its flavor is the best. The Evans' Triumph is soft, but blanches to a beautiful wavy line. It is a great favorite. Perle le Grand much resembles the Triumph. On some muck soils it is very hard, while on other soils it is very punky. Kalamazoo is a perfect celery, with the exception that it rusts. Ewing's Large Ribbed White is much too short and needs lots of earthing up to make it grow compactly.

Mammoth Yellow Spanish or Prizetaker onions should be sown as early in the spring as the ground can be worked, in rows 15 inches apart. Cover the seed with about a $\frac{1}{2}$ inch of earth. When the sprouts are well up, hoe and thin to 2 inches apart. The

For early celery, which is being overdone in a limited market, sow thinly in February in a warm greenhouse on raked soil. Pat the earth with the back of a spade and cover with a cloth; water frequently. As soon as the seed commences to come up remove the cloth. When the plants become 2 inches high, prick them out in good hotbeds $2\frac{1}{2}$ or 3 inches apart each way.

NEEDS PROTECTION FOR BEST RESULTS.

Celery grows better if shaded by thin cotton or cheese cloth. These plants are set out in May with as much earth on the roots as possible in rows 3 feet more or less apart and $5\frac{1}{2}$ or 6 inches apart in the rows. The plants should be sorted into two or three sizes, because if a large plant is placed beside a small one, the larger will grow at the expense of the smaller. After the ground has been marked out, a furrow 50 yards or so at a time may be plowed with an improvised plow made out of a skimmer. This makes a furrow just the depth required, and only a short furrow is made at a time because celery must be set out only in fresh moist earth.

Seed for late celery may be sown in the open field about April 20 or 25, with the seed drill as shallow as possible, covered with say a quarter of an inch of soil, in rows one foot apart. The plants appear in 21 days, and ought to be thinned to about 100 to the foot. They will grow much faster if sub-irrigated by tile one foot or so below the surface, and will become stocky if mown with a scythe when 5 or 6 inches high.

(TO BE CONTINUED.)

ground can scarcely be made too rich or worked too much. By using well rotted manure this crop can be grown continuously on the same ground without rotation.—(D. M. Ferry, Windsor, Ont.)

How Troubles May Be Prevented

PROF. WM. LOCHHEAD, ONT. AGRIC. COLLEGE.

VEGETABLES are often attacked by fungous diseases and insect pests, and unless great care is taken much of the crop will be lost. Many remedies are advocated for most of the more common troubles. The following, if carefully applied, should prove effective:

TOMATOES.

Rot and Blight.—Spray with Bordeaux mixture as soon as rot or blight appears, three times if necessary, at intervals of 10 to 15 days.

POTATOES.

Scab, Blight, and Beetles.—For the scab: Soak the "seed" potatoes or tubers for two hours in a solution of formalin (8 ounces in 15 gallons of water).

For blight and beetles: First spraying: Paris green as soon as the beetles appear (one pound to 100 gallons of water).

Second spraying: Bordeaux mixture and paris green when plants are six inches high.

Third and fourth sprayings: Bordeaux mixture at intervals of 10 to 15 days, if necessary.

Spraying with Bordeaux mixture will prevent the blighting of the plants and the rotting of the tubers.

CELERY.

Leaf Blight.—First spraying: Bordeaux mixture while in the seed bed.

Second spraying: Bordeaux mixture a week after transplanting.

CUCUMBER AND SQUASH.

For the Squash Bug.—Kill the early bugs, and the yellowing eggs on the underside of the leaves; kill the bugs every morning which collect under chips and boards placed near the vines.

For the Striped Cucumber Beetle.—Keep vines well covered with Bordeaux mixture; cleanliness in garden in fall: protect young vines with muslin or cheesecloth netting; in-

sect powder and flour as for cabbage worm; tobacco water and soft soap mixture sprinkled on vines, followed by a dusting of lime.

ASPARAGUS.

For Beetles.—Spray plants after cutting season with paris green; regular cutting of all shoots.

For Rust.—Cut and burn all plants in fall.

CABBAGE.

For Cabbage Worms and Lice.—Pyrethrum applied in solution (1 ounce to 3 gallons of water) or dusted on (1 part pyrethrum to 5 parts flour).

For Cabbage Root Maggots.—No thoroughly reliable remedy is known, but good results have been obtained by using Goff's tarred paper cards. These are pieces of tarred building paper, 3 inches in diameter. In the centre is a hole through which the root of the young cabbage is placed on transplanting. Card lies flat on ground.

The Tomato Plantation

L. W.

EARLY tomatoes for the market are often very profitable. Indeed, the experience of many growers last summer has encouraged them to plant largely. The most desirable variety for early market is the Earliana, which is being grown on a large scale this spring by growers in the Niagara district. The earlier the young plants can be set in the open ground and escape frost the better will be the results. Many gardeners will plant about May 15 or even earlier, and take their chances of a cold spell.

For the factory it is not necessary to plant until June, but even for those plants, it has been found that the early planted give the most pounds of fruit in the season, because at best our season is too short for the plants to reach their full maturity.

The best distance apart is five feet each way, the wide spaces giving room for better

cultivation of the plants, and for walking through the vines in harvesting the crop. If the ground is rich very little barn manure is needed; but, if poor, it should have a liberal application of well rotted manure. Nitrate of soda, applied soon after setting the plants,

will bring excellent results, especially if the soil is rich in vegetable matter. Shallow cultivation should commence soon after planting and be continued for at least four or five weeks, until the vines begin to cover the ground.

GINSENG GROWING IN ONTARIO

W. T. MACOUN, CENTRAL EXPERIMENTAL FARM.

Is much ginseng grown in Ontario, and if so, with what success? I am thinking of growing some.—(A Reader.

FOR information regarding the culture of ginseng I would suggest that reader write to the Pennsylvania state college experiment station, State College, Pa., for a bulletin on this subject. There is also a little pamphlet, published a few years ago, called American Ginseng, by the American Ginseng Gardens, Rose Hill, N. Y. This might also be obtained on application.

As a great many persons are becoming interested in the culture of Ginseng I should like to quote from an editorial in the Rural New Yorker of April 2, 1904. This editorial sums up in a reasonable way the prospects from growing ginseng. It reads:

"We have received a number of letters like the following:

"There is getting to be a sort of craze over the raising of ginseng roots in this part of the state. There are big stories of enormous profits going the rounds. If you could get at the truth of the matter from those who have had experience with it, you would confer a great favor upon many who are about to invest in it."

"'Craze' seems a mild term to apply to the way some people talk about this crop.

* * * Millions of roots and seeds have been planted, and some of the gardens are looking well. Prices for young plants are very high, and fortunes have been made in selling these plants for transplanting. So far as we can learn very little if any of the cultivated root has been offered for sale. We believe that thus far the trade in ginseng has been almost entirely in plants and seeds intended to start new beds.

"If 20 per cent. of the roots thus sold ever grow large enough for commercial purposes the market will be glutted. Why do we say this? Scientific men find little if any virtue in the ginseng root. * * *

"While the Chinese will for years continue to demand ginseng, we think such demand will inevitably grow less. Should any large proportion of the plants now growing come to marketable size the limited market will be overstocked, with no possible outlet for the surplus. We doubt, however, if many of such plants will be heard from. If we had the money that has been paid for seeds and roots that never grew we could feed a good many thousand poor people. Money and care put into some standard crop will in the long run bring better returns for most people."

Plant cucumbers as early in the spring as danger of frost is over, in holes 5 feet apart each way. Fifteen or 20 seeds should be placed in each hole and covered a $\frac{1}{2}$ inch deep. After danger of bugs and worms is

over, thin to four of the strongest plants in a hole. It is desirable to enrich the bottom of the holes with well rotted manure which should be well mixed with the soil.—(D. M. Ferry, Windsor, Ont.

WHAT TO GROW IN THE VEGETABLE GARDEN

IT is often no easy matter, even for the experienced grower, to decide what varieties of vegetables to plant. For the amateur grower the question is a hard one indeed.

There are so many varieties advertised by the seed firms, and their good qualities are so temptingly set forth in the catalogues, the making of a choice of seeds is rendered the more difficult. The following is a list of the varieties which have given the greatest satisfaction in the horticultural department at the Central Experimental Farm, Ottawa:

Asparagus.—Conover's Colossal is the best all-round variety, but this variety is more subject to rust than Palmetto or Argenteuil.

Beans.—Keeney's Rustless Golden Wax or Wardwell's Kidney Wax, for early crop; Early Refugee, for medium; and Refugee or 1,000 to 1, for late crop, are the most satisfactory dwarf varieties. Asparagus, and Lazy Wife and Old Homestead are three of the best pole varieties.

Beets.—Egyptian Turnip, Eclipse and Bastian's Blood Turnip are three of the best varieties.

Cabbage.—Early Jersey Wakefield (early), Succession (medium), Late Flat Dutch, Drumhead Savoy (late), Red Dutch (red), is a select list of the best varieties of cabbage. For extra early use Paris Market is desirable, being a week earlier than Early Jersey Wakefield.

Cauliflowers.—Extra Early Dwarf Erfurt and Early Snowball.

Carrots.—Chantenay is one of the best, but if a good extra sort is required the Early Scarlet Horn can be planted with advantage. It is a small variety.

Onions.—Yellow Globe Danvers and Large Red Wethersfield are two of the best onions in cultivation.

Cucumbers.—Peerless White Spine or White Spine, Cool and Crisp, and Giant Pera are three of the most satisfactory slicing varieties. Boston Pickling is a good pickling sort.

Egg Plant.—New York Improved and Long Purple succeed best.

Lettuce.—Black Seeded Simpson, The Morse, and New York (curled), Improved Salamander, Unrivalled, Tennis Ball. Golden Queen (cabbage). Trianon and Paris Cos lettuce make a good list.

Parsnips.—Hollow Crown and Dobbie's Selected are both good sorts.

Parsley.—Double Curled is as good as any.

Peppers.—Cayenne, Cardinal, Chili and Golden Dawn are four of the best.

Peas.—Gregory's Surprise, Gradus, American Wonder, Premium Gem (early), McLean's Advancer, Nott's New Perfection, Heroine (medium). None of these are tall growing varieties. Stratagem, Juno (dwarf), Telephone (late). Excelsior is a promising second early sort.

Radishes.—Early—Scarlet White-tipped Turnip, Rosy Gem, French Breakfast, Red Rocket (red), Icicle (white). Late—White Strasburg, Long White Vienna. Winter—Long Black Spanish, Chinese Rose-colored.

Rhubarb.—Linnaeus, Victoria.

Salsify.—Long White, Sandwich Island.

Spinach.—Victoria, Thick-leaved.

Squash.—Early—White Bush Scalloped, Summer Crook Neck. Late—Hubbard.

Tomatoes.—Early—Sparks' Earliana. Main crop—Brinton's Best, Trophy, Matchless (scarlet), Burpee's Climax, Autocrat (purplish pink). There are many varieties of tomatoes which are almost equal in excellence and productiveness.

Turnips.—Early—Extra Early Milan, Red Top Strap Leaf.

HOW THE FLOWERS LIKE TO BE TREATED

WM. HUNT, ONT. AGRIC. COLLEGE.

SEED sowing and transplanting will be the first work in the flower garden. It will be too early until about the second or third week in June to plant out the tender varieties of plants such as Coleus, Achyrantes and Alternantheras, etc.

Hardier flowers, such as carnations, chrysanthemums and even geraniums, can usually be planted out of doors early in May, more especially the two first mentioned. Care must be taken with all kinds of plants, either naturally tender or hardy, never to plant them out in the open ground, whether from the window, greenhouse, or hotbed, without first putting the plants through the hardening-off process. This is done by gradually introducing the plants to the altered conditions of out-door life by exposing them for a few hours a day at first to out-door conditions.

This can be done by standing the plants out where they can either be lifted indoors again, or where they can have some temporary protection until the growth has become somewhat hardened to the more trying and altered conditions to be found out of doors in early spring time. A cold frame is a good place to harden tender plants in.

Nasturtium, Balsam and Portulacca seed can usually be sown outside with the best chance of success about the second or third week in May. The Cobea scandens, although a purely tropical climber, succeeds splendidly even in the northern parts of the province if not planted in the open until well on in June, when the ground has become thoroughly warmed up and all danger of frost is over.

A few seeds sown in pots early in May and kept in the greenhouse, window or hotbed until the time mentioned for planting them out will make nice plants for planting sometime in June. About three seeds in a



The Favorite Spring Flowers.

The demand for Easter Lilies this spring was so active, florists in the leading Canadian Cities were unable to fill all their orders. An article on this subject appears in this issue. (Photo by Galbraith Photo Co., Toronto.)

three or four-inch pot is the best way to sow them. They will not need re-potting before planting out, as they do not transplant very readily if separated. It is best to plant the whole pot of plants out together, whether there be one, two or three plants in the pot. Use rather light sandy soil to sow the seeds in, and cover them with about a quarter of an inch of soil. Keep the soil in the pot moist, but not soddened with water. Put the pot in a warm sunny place in the window until the seed is up, when a

slight shading in the hottest part of the day may be beneficial for a few days.

A SPLENDID CLIMBER.

There is no better annual climber for covering a rockery, trellis work, or fence, than the *Cobea Scandens*, if given only fairly good treatment. A light rich soil suits it best. The purple flowering variety is the best and strongest growing. The white flowering variety is more delicate.

Rose bushes should be sprinkled with a strong solution of tobacco water as soon as the leaves have developed, or the leaves and stems of the plant can be sprinkled with dry finely powdered cigar dust or raw tobacco leaves dried well and rubbed into fine powder. This should be sprinkled well all over the underneath side of the leaves when the dew is on the foliage, or shortly after a shower of rain. If this is done early in the season and repeated once a week until the flower buds commence to open, the aphids or green fly, or that still greater rose pest the white thrip, can be kept under during the greater part of the season. For the rose worm or rose slug the paris green mixture or dry hellebore powder, used as recommended for the currant bushes, will effectually stop the attacks of these enemies of the rose garden.

Care of Plants from the Florists

JOHN H. DUNLOP, TORONTO, ONT.

WHEN amateur flower growers receive their packages from the dealers they should unpack them at once and ascertain if the plants are dry and inclined to wilt when exposed. If so, they should place them in damp moss or other material in a shady place, and allow them to stiffen out before picking out or potting off. Never

If it is necessary to dig up the spring flowering bulbs when they are out of flower so as to set out other plants, the bulbs should be lifted and heeled in just under the ground in some place out of the way until July. The bulbs should then be lifted and kept in a dry cool shed until they are required for planting again in the fall.

SETTING OUT GLADIOLI BULBS.

Gladioli bulbs or corms can usually be planted out about the second week in May. Plant the bulbs about 3 or 4 inches underneath the soil, and about 6 or 8 inches apart, whether they are planted in clumps or in rows. Dig the ground thoroughly before planting. Dahlia roots can be planted out about the same time as the gladioli. A rather rich open soil suits the dahlia best. Put a stake in by the side of the roots when planting them; it will often prevent the growth of the plant from being destroyed by the hoe just as the young shoots appear above the ground.

Canna roots should not be planted outside until the second or third week in June. There is nothing gained by planting them too early, as they must have heat to grow and succeed well. If started indoors, fine sharp sand or very sandy soil placed in shallow boxes 3 inches in depth is a good method of starting them into growth.

pot good cuttings inclined to be dry. They will never make thrifty plants.

After plants have been potted they should be thoroughly watered. Syringe the plant to keep it from wilting, shade carefully until growth has started, then remove gradually. Rich soil for cuttings should be avoided. Fresh loam with manure is more desirable, as cuttings are not in a state to take up rich food. When growth has commenced and the plants are stronger they will be benefited by richer food.

FLOWER AND PLANT LORE

EDWARD TYRRELL, TORONTO, ONT.

"THE fascination of plant names has its foundation in two instincts, love of nature and curiosity about language. Plant names are often of the highest antiquity, and more or less common to the whole stream of related nations. Could we penetrate to the original suggestive idea that called forth the name, it would bring valuable information about the first openings of the human mind towards nature, and the merest dream of such a discovery invests with a strange charm the words that could tell, if we could understand, so much of the forgotten infancy of the human race." So wrote Mr. Earl in the preface to his volume on English plant names.

I have found it very interesting and instructive hunting up the history and lore of plants, and I hope some of the readers of the Horticulturist will find something interesting in the selections I present to them. The Tulip will be in full bloom this month, and therefore the following may be appreciated:

TULIP. TULIPA, OR THE DALMATIAN CAP.

The species are found in the Levant, Armenia, Caucasus, Persia, Central Asia and Afghanistan. This gay flower having been obtained from the Turks, was called Tulipa, from the resemblance of its corolla to the eastern head dress called Tulipan or Turban, and from hence our name of Tulip. The resemblance its shape bears to the turban is thus alluded to by Moore in *Lalla Rookh*:

What triumphs crown the rich divan to-day,
With turbaned heads of every hue and race,
Bowing before that veiled and awful face,
Like tulip-beds of different shape and dyes,
Bending beneath the invisible west wind's sighs.

I plant my grape vines 10 feet apart each way. This gives me plenty of room to cultivate them with a team and gather the crop. I prefer trellising with two wires,

From time immemorial this flower has been made the emblem by which a young Persian makes a declaration of his love. The tulip was first seen in Europe at Augsburg, in Germany, in 1559, was sent by Busbec, Ambassador from Germany, to the Porte, with the remark that the Turks charged a very high price for it. It was first introduced into England in Elizabeth's time. Gerard fixes it in 1577. It has been crossed and re-crossed till it has been found almost impossible to refer our present plants to their original type. Owing to the great beauties of the flowers they have been favorites for two or three centuries.

In 1630 the tulip came into fame, and from what I can learn no flower ever created such speculation and gambling. In Holland, hundreds gave up their business, sold their houses, land, horses and carriages to buy and sell tulip bulbs, which resulted in the ruin of many who engaged in it. Three thousand dollars was paid for a bulb of *Sempert Augustus*, \$1,000 to \$1,200 for a *Viceroy*, \$500 for a *Gonda*.

In the register of the city of Alkmaar, 1637, is an entry of a sale of tulips for the benefit of the Orphan Hospital, when 120 bulbs were sold for 9,000 florins, and one of them, the *Viceroy*, brought 4,203 florins, the sale realizing in sterling £1,314. It must be remembered that this Tulipomania of the 17th century was really a form of gambling, in which the admiration of the flower and interest in its culture were secondary matters. The Dutch government at last issued a proclamation to suppress this ruinous excess by the votaries of Flora.

the Kniffen system, a post for every three vines, leaving the arms not more than 2½ to 3 inches long.—(Aaron Cole, St. Catharines, Ont.)

Easter Flower Trade Was Brisk

THE Easter flower trade this spring was unusually brisk in all the leading Canadian cities. The floral decorations in many of the churches were exceptionally elaborate. To this fact was largely due the actual scarcity of plants which existed in some centers. An improvement was also noticeable in the retail demand for home decorative purposes. Many families made pretty displays, particularly of lilies, in their front windows while the season lasted.

In Hamilton there was a scarcity of lilies for some time owing to a disease which attacked many plants. A number of florists were forced to fill their orders through Toronto houses. The Townsend Estate reports that lilies, which in ordinary years would only be worth about 75 cents, sold for as high as \$2 each.

The Ottawa florists, practically without exception, announce their sales this year were the largest on record. When seen, Graham Bros. said they were well satisfied with the Easter business and had sold out completely their stock of Easter lilies. Mr. R. H. Wright remarked: "I never saw trade better. It seemed to me that every one was buying flowers."

TORONTO SALES WERE BRISK.

The Easter demand for flowers in Toronto, according to the well known florist, Mr. E. Grainger, was a great deal better this year than ever before, especially in Easter lilies, which were much lower in price than last year. This was on account of one or two florists, who ordered a large stock before Easter. That they might be sure no stock would be left on their hands they were obliged to lower their prices to dispose of stock. Blooms usually selling for 10 to 12 cents sold for 5 to 8 and 10 cents. Poor ones sold for 5 cents.

By Easter time these were all gone, and retailers advanced their prices for good

blooms. Large stores, such as Eaton's and Simpson's, kept up their prices, and by Easter Saturday there was a great scarcity of Easter lilies.

A great many more azaleas were sold than ever before and at the lowest prices ever known in Toronto. Messrs. Wm. Jay & Son reported flowers for the Easter trade never sold so well as this year. Roses and lilies take the preference, with violets next. Prices were about the same as last year. azaleas, hydrangeas and lily plants were all in good demand.

Boston Ivy on Painted Wall

PROF. H. L. HUTT, ONT. AGRI. COLLEGE.

Will you kindly let me know if the Boston Ivy (*Ampelopsis Veitchii*) will cling to a brick wall after it has been painted?—M. B., Ont.

I think you will find it will cling to the painted brick wall nearly, if not quite, as well as where it is unpainted.

Good for the C. P. R.—A leaflet has been sent to all station agents of the Canadian Pacific Railway system by the flower department, giving instructions regarding the planting and care of flowers and the artistic decoration of gardens and garden plots. To assist in the work the agent is supplied with about 20 different varieties of flower seeds. Practical instructions for planting are also given. The flower department urges the agent to make his house or station the prettiest place in town.

Do not plant beans until the ground is dry, the weather warm, and all danger of frost is over. Light rich soil should be selected and the beans be planted in drills $1\frac{1}{2}$ to 2 feet apart. Plant them 3 or 4 inches apart and cover 2 inches deep. If planted in hills, make the holes $1\frac{1}{2}$ to 2 feet apart one way and 2 to $2\frac{1}{2}$ feet the other, and plant 6 or 8 beans in a hole. Hoe them, but only when the leaves are dry.—(D. M. Ferry, Windsor, Ont.)

THE VEGETABLE PATCH IN MAY

WM. HUNT, ONT. AGRI. COLLEGE, GUELPH.

A sowing of white mustard for salads can be made now. Sow the seed quite thick in drills half an inch in depth. Cut for table when the second tier of leaves has developed. Sowings of this delicious table relish are not advisable after May 15. As soon as the seed onions are about six inches in height, give them a good sprinkling of dry dusty soot or wood ashes, or both mixed together. Sprinkle this on very early in the morning when the dew is still on the plants, so that it will stick well to the growth. Put on directly after a shower will answer as well. If this dusting process is done thoroughly about once a week until July you will not be troubled with the onion maggot, as the fly that produces that maggot will not go near the plants if they are thoroughly dusted. A half pound of powdered sulphur thoroughly mixed with a pailful of dry soot or ashes will also help to prevent the onion mildew that has been so prevalent and so destructive to onions the last season or two.

CABBAGE AND CAULIFLOWER.

A few plants of the early variety of cabbage should be planted now. The Jersey Wakefield and the Early Winningstadt are good. Early cauliflower should also be planted at once; these, however, are a very uncertain summer crop in most seasons. Early Erfurt or the Snowball are the two best kinds. Early cauliflower requires a deep, rich, moist soil to grow well in. They are also much benefitted by a mulch of partially rotted strawy stable manure, spread an inch or two in thickness on the ground around the plants. This mulch should be applied as soon as the hot dry weather sets in. Lawn grass cuttings make a very good

mulch to retain moisture, but has very little fertilizing property in it. Manure makes the best mulch for cauliflower.

If you wish to raise your own cabbage and cauliflower plants for late crops the seed should be sown early in May on a piece of fairly rich light garden soil. A square yard would raise several hundred plants. Sow the seed rather thinly in drills nearly an inch in depth and six or eight inches apart. The best varieties are Erfurt and Snowball cauliflower and All Season's autumn cabbage and Savoy. These latter are of a very hardy nature, and are at their best after being exposed to a sharp frost of eight or ten degrees. In favorable seasons I have cut splendid heads of these well on into December from the open ground.

The Savoy cabbage has not that rank, strong flavor that makes the common flathead cabbage so disagreeable and objectionable to vegetable lovers. In England and all parts of northern Europe the Savoy cabbage ranks close, and is often preferred to the popular Brussels sprouts, that is considered to be *par excellence* in this class of vegetables by connoisseurs. In point of quality the Dwarf Ulm and Victoria Savoy rank first. The Savoy cabbage should be more universally grown than it is, more especially when grown for one's own use. If quantity more than quality is desired, the drumhead Savoy is just as heavy yielders, and will keep as well or better than the common flathead winter cabbage.

Surface-stir and cultivate the soil well around all growing crops. It kills all weeds out almost before they start to grow, and assists plant growth in a marked degree.

PROMISING METHOD OF CO-OPERATION

ROBERT THOMPSON, PRES. ST. CATHARINES COLD STORAGE AND FORWARDING CO.

A NUMBER of the fruit growers in the vicinity of St. Catharines have been endeavoring to improve the present system of shipping fruit. A committee was appointed last winter to work out a system that all would have faith in, and which would enable us to work harmoniously together. We have agreed to adopt the following plan for the coming season:

The charter of the St. Catharines Cold Storage and Forwarding Company, to which we belong, allows us to buy and sell fruit and produce, as well as store and ship. Our plant has cost us \$8,000, on which there is a debt of about \$2,000. We had a surplus over running expenses the past season, after paying interest charges, of over \$500, so that our organization is in good shape except that there is not enough capital subscribed.

In the past, members received no more benefits than outsiders. In the future this will be changed. We propose that a member to receive the full benefit must hold five shares worth \$50. A member holding three shares, or \$30, will receive half benefit.

WILL BUY SUPPLIES WHOLESALE.

The company will purchase supplies wholesale, such as baskets, barrels, apple boxes, bluestone, sulphur, and anything that is wanted in large quantities, as well as spray pumps and fertilizers. Members will be supplied at cost, outsiders at an advance.

Fruit will be sold whenever practical. As

many growers as possible will be urged to fill orders. The company will purchase, if necessary, to fill orders. Members' fruit will always be given the preference. Outsiders will be charged a percentage for selling their fruit.

A system of inspection of members' fruit by a disinterested party, will be established. In all packages that pass as high grade an attractive company label will be placed. These will state the packages are guaranteed by the company, and requests purchasers to communicate direct with the company for further supplies of this same brand, and to write giving suggestions as to any improvements that can be made in the package or method of packing. All such packages will bear the packer's or grower's name.

POINTS THAT WILL BE WATCHED.

Shipments will be confined to as few as possible of the leading commission houses in the larger cities when fruit is sent on consignments. An effort will be made to ship as far as practical by freight. In the apple season a competent man will be engaged and placed in charge of packers to pack the fruit of members.

These are a few of the methods we believe will help the growers of the district. Already we have purchased three carloads (500,000) berry boxes and crates, and thirteen spray pumps, and we are negotiating for a ton of bluestone.

Planting Strawberries.—I prefer to set strawberry plants in rows 4 feet wide, as they are more easily cultivated. Experience has shown that with a row 18 or 20 inches wide the pickers do not have any too much room in which to work in the middles. It is not necessary to set plants 12 to 18 inches in the row, as advised by many people who

sell them. They should be set so that the crown is just above the level of the ground. If set too deep the dirt will smother the crown; if too shallow, the sunshine and wind will dry the roots, and when the hot days of July and August come the plants die or fail to grow properly.—(Charles H. Snow, Cummings Bridge, Ont.)

Marketing Vegetables

IF vegetable growers fully realized the difference in profit between marketing their vegetables in a neat and attractive manner as compared with careless methods, more attention would be paid by them to the appearance of their produce. This difference," said Mr. Dawson, the well-known commission merchant of Toronto, to the Horticulturist a few days ago, "often means the difference between profit and loss on the goods.

"When I have some nicely cleaned and neatly done up vegetables, and some that have been marketed in a dirty condition and careless manner, the former are nearly always sold before the latter are even looked at, and generally bring a better price, although they may not be any better in quality.

"Radishes should be marketed in small packages, as they are easier to sell. When we have to divide the fruit up into small packages before selling them injury often results. Rhubarb can be sold in almost any kind of package as long as it is not cumbersome.

"As regards the neatness of package, one man will often sell 20 dozen radishes for 5c. a dozen more than another man can get for his radishes, which are not in as neat a condition. Early onions, as soon as they get big enough, will be in demand this year, as old onions are well cleaned out."

Prospects for the Currant Crop

L. W.

THE currant has not been popular of late with commercial fruit growers, because of the low prices received; yet why such prices should continue is hard to understand when the many uses to which this fruit may be put are realized and its excellent influence upon the health considered. What is more agreeable in summer than the mild acid of a currant pie, or what greater

delicacy is there than the rich delicious jelly made from this fruit?

At one time no fruit was more profitable, and immense plantations were set, resulting in over-production and a rapid decline in prices. Now that so many have become discouraged with currant culture and have torn out their plantations a decided advance in price may be expected.

Opening For Our Fruit.—Mr. A. Cabaret, 3 Rue Aubrois, Paris, France, writes the Fruit Division, Ottawa, that "In years like 1903, when French fruits were very scarce, the amount of business done between France and California was very large. This might have been done as well with Canada, the sympathy being greater between the countries."

Wants to Buy Apples.—An English wholesale fruit dealer writes the Fruit Division, Ottawa, that he is desirous of importing Canadian apples next fall, and asks to be put in communication with reliable shippers who would make consignments against pre-arranged advances. He would prefer to do business only with those who export their selected fruit in layer boxes. His address and further information may be had on application to Mr. W. A. MacKinnon, chief of Fruit Division.

I do not consider the raspberry crop a paying one for the average farmer. The bushes require many hands at a time when much help is needed elsewhere on the farm.—(D. Bettschen, Violet Hill, Ont.

There is no doubt in my mind that money is to be made in fruit, provided we do four things, and do them right: Spray, prune, feed and cultivate.—(W. O. Burgess, Queenston, Ont.

The Fruit Division, Ottawa, received about the middle of April from Mr. C. L. Stephens, of Orillia, a basket of very fine Salome apples. These had been stored in a cellar all winter, but were in perfect condition, although the Salome is generally considered an early winter apple.

I think there can be no question as to the profit in growing apples if the orchard is properly looked after. On our farm there are a few Mackintosh Reds, planted 7 years ago this spring, that gave us over 2 barrels to the tree last fall. We have good local markets and are not far from Ottawa. Should this market fail, I fancy it will be some time before the British market will be glutted with the right quality of apples.—(G. H. Hutton, Easton's Corners, Ont.

I have taken the Horticulturist 15 years and would not like to be without it.—(Walter M. Turnbull, Galt, Ont.

The Canadian Horticulturist

The Leading Horticulturist Magazine in the Dominion.

1. The Canadian Horticulturist is published the first of each month.

2. Subscription Price \$1.00 per year, strictly in advance, entitling the subscriber to membership in the Fruit Growers' Association of Ontario and all its privileges, including a copy of its report and a share in its annual distribution of plants and trees. For all countries except Canada, United States and Great Britain add 50c for postage.

3. Remittances should be made by Postoffice or Money Express Order, or Registered Letter. Postage stamps accepted for amounts less than \$1.00. Receipts will be acknowledged on the address label which shows the date to which subscription is paid.

4. Discontinuances—Responsible subscribers will continue to receive the Horticulturist until the publishers are notified by letter to discontinue when all arrearages must be paid. Societies should send in their revised lists in January; otherwise it will be taken for granted all will continue members.

5. Change of Address—When a change of address is ordered, both the old and the new addresses must be given.

6. Advertising Rates quoted on application. Circulation 5,500. Copy received up to the 24th. Responsible representatives wanted in Towns and Cities.

7. Articles and Illustrations for publication will be thankfully received by the editor.

8. All Communications should be addressed:

THE CANADIAN HORTICULTURIST,
TORONTO, CANADA

THE CANADIAN HORTICULTURIST.

The general horticultural interests of the Dominion have made wonderful progress during the past few years. Desiring to keep in line with this advancement, the directors of the Ontario Fruit Growers' Association have arranged to considerably improve The Canadian Horticulturist. Starting with this issue a number of new departments have been added. The various subjects treated have been grouped under their respective headings. Sections have been reserved for articles pertaining to the orchard, small fruits, the vegetable garden, editorials and other matters of interest to our readers.

Spraying, being the most important work engaging the attention of fruit growers at this season, has been given special prominence. Several pages have been set aside for articles dealing with what may be called the business side of fruit growing. The first of a series of crop reports is published. It is hoped these reports, which are to appear monthly, will be of direct value to all fruit growers. Several pages have been devoted to the work of the horticultural societies. If these innovations meet with the approval of our readers other improvements will be made in the near future. Write and let us know what you think of them and what more you would like. Help us to make The Canadian Horticulturist the best horticultural paper on the continent.

Fruit growers generally are rapidly coming to the point where they will realize that future success depends on co-operation. No subject aroused greater interest at the recent series of institute meetings held throughout Ontario. So much were the growers at some of the meetings impressed with the advantages of co-operation, as set forth by the speakers, several co-operative associations have since been formed. With careful management growers, by co-operation, can reduce the cost of spraying their orchards, obtain supplies at lower values, have their fruit properly graded and safely stored in suitable warehouses and secure better shipping rates from the railways and express companies. Leading growers have already done this. More should. Those who do not need expect but little sympathy next fall if their apples are left to freeze in their orchards or the railways swallow up all their expected profits by excessive rates. Some excellent co-operative suggestions are contained in the article in this issue by Mr. R. Thompson, of St. Catharines. They are well worth reading and should not be missed.

It is to be regretted that more of our schools, both urban and rural, do not observe arbor day. The setting apart each year of a day or portion of a day for the planting of trees, shrubs and plants must have a very beneficial effect on the little people. Once they are interested in watching the growth of plants and trees they have had a share in setting, few of them will ever wantonly destroy such afterwards. It cannot be denied many of our schools would be the better were their barrenness relieved by a few rows of shade trees and small flower plots. Apparently but few schools observe the day. Over fifty school inspectors and principals of model schools were written to by The Horticulturist during April and asked what work of this nature their scholars have done in the past and what their plans are for this year. Three replied, only one of whom was able to report progress. Why is this thus? Does it not afford an opportunity for good work on the part of our horticultural societies?

The statement of grievances prepared last month on behalf of the fruit growers, and which has been laid before the railway commission, should have a beneficial effect. It was carefully drawn up, the charges of discrimination and unfair rates on the part of the railways were specific and uncontrovertible, the importance of the interests affected was clearly set forth, and it was signed by some of our most representative growers. It is the commission's turn to move.

Nothing is more indicative of the improvement that is taking place in the methods of the average fruit grower than the increased interest manifest this spring in spraying. Wherever a few growers gather it is generally the chief subject of discussion. Lack of spraying in the past has taught some salutary lessons. The effect is now apparent. In many districts more than

twice as many orchards will be sprayed this year as last. The great demand for information on this subject is the reason for so much space being devoted to it in this issue.

The farm places in the vicinity of Renfrew should show considerable improvement in appearance if their owners will adopt the suggestions recently made by the Renfrew Mercury. The Mercury urges the farmers of the country, and also residents of the town of Renfrew, to plant trees on the road sides and residential streets, to paint old buildings and barns, to remove unsightly fences, and to place the names of the farms in some prominent position near the house. To assist in the work, the Mercury offers to furnish trees at a greatly reduced cost, also sign plates for the farmers who desire to name their farms. This is enterprise in a good cause. Were more of our local papers to show the same public spirit much good might be done.

In several States of the Union a strong agitation has been in progress for some months back looking for the enactment of legislation that will tend toward a reduction in the number, if not the extermination, of robins. The charge against the red breasted gentleman and his mate is that they are very destructive in the cherry orchards. Their chances for life in one or two of the States do not appear bright.

To ascertain the feeling on this point of our Canadian growers The Horticulturist wrote last month to a number of representative men. Almost without exception they have replied strongly in favor of Mr. Robin. While they admit he sometimes does considerable damage they also claim he does much more good. The replies are interesting, and will be published in the June Horticulturist. Lack of space prevented their appearance this month.

It seems to me that The Horticulturist is improving all the time. I get much help from it. The Editor's answer to my inquiry regarding the planting of trees in last month's issue was most satisfactory. The illustrations such as appeared in The Horticulturist in the April issue, showing the methods of pruning raspberries, speak louder than words.—(A. C. Abbott, Hudson Heights, Que.)

In the April issue of the Horticulturist an article appears entitled Apples Frosted and Smoked. The matter for this article was sent out by Mr. W. A. MacKinnon, chief of the fruit division at Ottawa last January. It was intended for an early issue of the Horticulturist, but being crowded out was used by mistake in the April issue.

A firm in Ireland has written the Fruit Division, Ottawa, through the agent at Birmingham, Eng., stating it is prepared to engage with Canadian apple shippers for shipments during the coming season.

Of General Interest

I cultivate about half an acre of raspberries and prefer the Cuthbert variety. It is hardy, stands the winter well, is very productive, has a good flavor and sells well.—(D. Bettschen, Violet Hill, Ont.)

I consider the Northern Spy, King and Russett the best kind of apple trees to grow in the Georgian Bay section. We are too far north apparently for Baldwins. A good many of mine have died after being planted 6 or 7 years, and I replaced them with Spys.—(A. Shaw, Walkerton, Ont.)

Our raspberry plants have been badly broken down by the weight of snow, but otherwise plants seem to have come through the winter in good condition.—(A. E. Sherrington, Walkerton, Ont.)

Observing Arbor Day.—It has been the custom in the schools of this town for some years to observe Arbor Day by cleaning up the school grounds, planting trees wherever such were required for shading purposes, and filling up vacancies in the rows of trees surrounding the grounds. Flower beds, where possible, have been prepared and planted. Our exercises this year will, I expect, partake of this nature.—(J. A. Brown, Principal Model School, Whitby, Ont.)

Set strawberry plants as early in the spring as the ground will permit. Personally I prefer early May seeding. Its chief advantage lies in the fact that at this time the plant has not started to grow, and no vitality is lost in the transfer. Plants left in the ground until the end of May, have started to grow, and transplanting checks their growth for a while. They can, however, be successfully set any time before the fruit is formed on them.—(Charles H. Snow, Cummings Bridge, Ont.)

SPLENDID WORK IN TILLSONBURG.

After considerable trouble members of the Tillsonburg Horticultural Society have secured from the town council the use of the greater part of Grand Avenue Park in the centre of the town and are having it laid out in 30 plots. The land was first reclaimed and properly prepared for the use of selected male pupils from the public school. Each pupil will have 1 package of Aster seed and a proper number of Gladioli; also 4 packages of garden seeds. These plots are to be cultivated by the children under the supervision of a gardener under the control of the society.

In order to inoculate the townspeople generally, the society will distribute 300 or 400 packages of flower and garden seeds, mostly vegetables, to families of the public school children. These seeds will be grown at their own homes and the work inspected from time to time by committees of the society. An exhibition of results will be held in due season, awards made and prizes given. We had a delightful lecture this spring by Mr. T. H. Race.—(W. W. Livingstone, sec. Tillsonburg Hort'l Soc.

A GOOD WAY TO SECURE MEMBERS.

Members of the Perth Horticultural Society meet the first Monday in every month. Notice is given in the local papers and the meetings are well attended. Some member or members of the society deliver a short address at these meetings. In other cases papers are prepared and read. In all cases the address or prepared paper is the basis of discussion, and in this way many valuable hints are brought forth.

This year a soliciting committee was formed, each member was allotted a portion of the town, and in this way many new names were brought in, while all of the former year's membership was retained. The experiment proved such a success it has become a fixture. A spring and autumn distribution of bulbs and plants takes place every year. This year a lecture was given by Dr. James Fletcher, L.L.D., of the Central Experimental Farm, Ottawa. In the afternoon he addressed the school children on "The Mr. J. O. McCulloch, Hamilton. We expect to a public address on "Spring work for the gardener." Both lectures were given in the town hall, and from the attendance at both it was readily seen that the people of the town and surrounding country were taking a lively interest in horticulture.—(C. J. Foy, sec. Perth Hort'l soc.

HAMILTON BRIGHTENED UP.

Our meetings have usually been held during the winter season, with informal gatherings held at the members' grounds in summer. During the past year we have had addresses from Prof. F. T. Shutt, Dr. Jas. Fletcher, and Prof. W. T. Macoun, of the Central Experimental Farm, Ottawa; Prof. Hutt, O. A. C., Guelph, and opening of spring," and in the evening he gave have Dr. Saunders, from Ottawa, shortly.

For several years we have distributed a large number of plants and packages of seeds to the children of the public and separate schools in the spring, holding an exhibition in the fall, when prizes, not cash, were awarded to the pupils, and also for the best display from any one school. A number of prizes have been given for the best kept gardens, rockeries and window boxes. These awards have had considerable influence in brightening up the appearance of the city.—(J. M. Dickson, sec. Hamilton Hort'l Soc.

INTERESTING SUBJECTS.

The program for the year of the Owen Sound Horticultural society provides for the consideration each month of interesting subjects. It is as follows: April, Lawns, how to make and keep them; May, Bees, Suggestions how to prepare a flower bed; June, Plums and their enemies and how to get rid of them, Small fruits and their enemies and how to get rid of them; July, What to do with house plants now, Domestic Science, How to prepare for Camping; October, How best to take care of fall bulbs and how to keep others over winter; November, Timely points on winter house plants, Domestic Science; December, How to use a few flowers to best advantage for Christmas decorations. The meeting this spring, addressed by Mr. Hunt, of the Ontario Agricultural College, was greatly enjoyed.—(Lou A. Harrison, sec. Owen Sound Hort'l Soc.

PANSY AND ROSE SHOWS.

An early commencement was made by the Toronto Horticultural Society in laying out plans for the year. Mr. C. C. James, Deputy Minister of Agriculture, gave an address in February on "Fruit, and the Fruit District of Ontario," which was much appreciated.

A Pansy show is to be held this month, and the second annual show of hardy and other roses and flowers in season will take place the latter part of June. It should be extra good this year. Entries from friends outside the city will be welcomed. The society desires to see a great development in rose growing. In July or August a Sweet Pea show will be held. During 1903 the society made marked advancement both in membership and work.—(Edward Tyrrell, pres. Toronto Hort'l Soc.

MAY HOLD A FLOWER SHOW.

In the spring of each year we distribute among our members fruit trees, plants, shrubs, bulbs, etc. For the last two years we have given each fall a grant of \$10 to the agricultural society to be applied to the flower prize list. The society has allowed us to revise and make out the flower prize list to suit ourselves.

Every fall we give each member a few winter flowering bulbs. For the coming summer we have not decided whether we shall hold a flower show or join with the agricultural society.—(C. W. Schierholtz, sec. Elmira Hort'l Soc.

A BIG IMPROVEMENT IN THE TOWN.

After the organization of the Cayuga Horticultural Society for the first time in the history of the county public gardens were made in the town and Court House parks. The high and public schools were aided in their zealous efforts. This year, in co-operation with the town council, the town park is being completed. The result will be quite remarkable, in fact, a distinct transformation.

Next year we will drop into normal conditions, our public work having been performed. The ordinary member will receive as an incentive to home work the bonus we are able to give in plants. We have given nothing in prizes. Our funds have been given entirely to the public improvement of the town.—(F. G. Lishman, sec. Cayuga Hort'l Soc.

IMPROVED HIGH SCHOOL GROUNDS.

The Port Hope society has for a number of years distributed amongst its members plants, flowers, bulbs, etc. It has also materially assisted in adorning and beautifying the high school grounds. Last spring the school received 350 Gladiolus bulbs, and in the fall some 250 Tulips were planted in a large bed directly in front of the main entrance.

Money has been granted by the society which will be used to further improve the school grounds this spring. Since the government reduced our grant we have not been able to do as much civic improvement as we would wish.—(J. G. Jackson, sec. Port Huron Hort'l Soc.

CHILDREN GIVEN SEEDS.

At the spring meeting of the St. Catharines society, when Mr. T. H. Race addressed us, we held a flower competition of house plants which aroused greater interest in our society among the citizens. In June and September there will be further flower and fruit shows.

With the double object of beautifying the city and creating an interest in horticultural work, fine Aster seeds have been distributed gratis to the different schools, the blooms to be shown at the September meeting. The scholars of each school compete for prizes offered in that school only. Later prizes of Cannas will be offered for the best four large collections of Asters, for which all the schools will compete. Big beds of Cannas will thus be grown in the school grounds.—(S. Richardson, sec. St. Catharines Hort'l Soc.

NEED ORGANIZATION.

Hagersville Horticultural Society is having a hard experience, needing proper organization and more interest on the part of members. This year we will continue our usual distribution of premiums.—(S. M. Howard, sec. Hagersville Hort'l Soc.

A fruit growers' association has been formed at Goderich with Mr. D. F. Hamlink as secretary.

FRUIT GROWERS WILL CO-OPERATE.

Whitby fruit growers have held a number of meetings lately and formed a co-operative association. A constitution and by-laws were adopted April 16. The constitution announces that the organization shall be called "The Fruit Growers' Union of Whitby," and that it shall be composed of fruit growers living in the vicinity who shall pay a membership fee of 25 cents per year. The expressed object of the union is the improvement of the methods of packing and marketing fruit.

It is intended to accomplish this through co-operation in the buying, packing and marketing of the fruit in the most economical manner possible. By-law No. 3 provides that the members who sign the by-law shall be liable unless they have notified the secretary previously in a manner set forth in another clause to pay the treasurer 5 cents a barrel or 2 cents a box on No. 1 or No. 2 apples which they dispose of through the union.

MANY QUESTIONS ASKED.

The members of the Midland Horticultural society greatly enjoyed the lecture of Mr. Wm. Hunt, of the O. A. C., at a meeting held there this spring. The manner in which he illustrated from natural specimens the different methods of propagating plants was much appreciated.

The question box was a feature of the evening. Slips of paper were distributed at the lecturer's request before the meeting commenced, and a general invitation was given to those present to ask lots of questions. Some 25 written questions on almost all phases of horticulture and floriculture were handed the lecturer at the close of his address. All were answered satisfactorily and promptly.

In the afternoon Mr. Hunt visited the East and West ward schools, where about 500 of the more advanced scholars were addressed. At his suggestion our society will distribute a packet of flower seeds to the scholars to grow at home. The results will be exhibited at a flower show to be held in the summer.—(Frank Cook, Pres. Midland Hort'l Soc.

Improving Their Homes.—Our members will this year be given trees, plants, etc., to the value of 75c., in order to encourage them to beautify their homes and thus greatly add to the general appearance of the town. We were recently favored with the presence of Mr. Race, and his address was highly appreciated.—(J. Thos. Murphy, sec. Simcoe Hort'l Soc.

Allenford Fruit Growers.—At a meeting of fruit growers held at Allenford recently, a fruit growers' association was formed, with James Rushton, of Elsinore, president; Thomas Askin, Allenford, vice-president; Mr. Scarrow, secretary treasurer; directors, Wm. Evans, C. Dorman, D. MacKinnon, Peter Stuart, I. L. Broadfoot and Charles Arnott, all of Allenford.

LADY MINTO'S GARDEN COMPETITION.

For several years Lady Minto has offered prizes for the best kept gardens in the city of Ottawa. The results of the competition held last year have been recently made known. In the first class the successful competitors will be given an engraved certificate signed by Her Excellency and the judges. A silver medal will be given to each competitor scoring 180 points, or 75 per cent of the number obtainable.

The winners in the first class were: W. G. Black, Alex. Lumsden, Lady Aylmer, James Hagan, Mrs. Peter Whelan, G. A. White, James Thorn, J. E. Northwood, C. C. Cummings and S. Short. In the second class the competitors who secured 60 per cent. will also receive an engraved certificate and a cash prize. They were: J. H. Bennett, W. G. Smith, J. G. Gibson, H. A. Scott and C. A. Parker. The judges were Mayor J. A. Ellis, Prof. W. T. Macoun and Mr. R. B. Whyte. There will be no competition this year owing probably to the fact that Their Excellencies are leaving. The competitions are believed to have done great good.

FALL FRUIT AND FLOWER SHOW.

A joint meeting of representatives of the Toronto Horticultural society, Toronto Florists' and Gardeners' Association, Toronto Electoral District society, and representatives of the Ontario Fruit growers' association, was held in Toronto April 19, to make arrangements for the joint fruit, flower and honey show planned to be held in Toronto next November.

The representatives present were Messrs. J. H. Dunlop, Thos. Manton, John Chambers, for the Gardeners' and Florists' association; E. Tyrrell, E. F. Collins, of the Toronto Horticultural society; W. G. Rook, J. McP. Ross and E. F. Collins, of the Electoral District society, and H. B. Cowan, representing the Fruit Growers' association. A rough estimate of the expenses of holding the show placed it at about \$2,500, including prize lists for the floral department, but not for the fruit. The show will probably be held in the Granite street rink, as it will be impossible to obtain the armouries. A meeting will be held in a few days, when arrangements for the show will be rushed. It is intended to make it a big affair.

East Lambton Fruit Growers.—At a meeting of fruit growers held at Arkona, April 11, a fruit growers' association was formed, with Philip Austin, president; Geo. Gott, vice-president; W. J. Seymour, secretary-treasurer, all of Arkona; directors, David Johnston, Thomas Riggs, of Arkona; W. A. Hodgson, of Forest; J. W. Johnston, of Sylvan; David Simmons, Donald Johnston, of Forest. The association starts with a list of 27 members.

We find The Canadian Horticulturist a valuable advertising medium, circulating largely as it does among those who take an interest in the cultivation of flowers.—(Campbell Brothers, Nurserymen and Florists, Simcoe, Ont.)

Diplomas Will be Given.—The board of directors of the Toronto Horticultural society have, subject to the approval of the society, decided to award diplomas to those who take an interest in making the surroundings of their places of business, etc., attractive with plants and flowers or well-kept lawns. The diplomas will be determined by the report of a special committee who will make it their business to ascertain who are entitled to them. The diploma is of handsome design, lithographed in five colors, and while the aggregate expense to the society in distributing them will be considerable, it is felt that in awarding it the society will have nothing to be ashamed of.—(Charles E. Chambers, sec. Toronto Hort'l Soc.)

Ottawa Society Active.—Arrangements have been made by the Ottawa Horticultural society for an exhibition on May 10. Prizes will be offered for exhibits of Pansies, Narcissus, Hyacinths, Tulips, Herbaceous Perennial Blooms, Geraniums, rhubarb, asparagus, lettuce and radishes. There will be a prize for Tulips, given by Prof. C. E. Saunders, of the Central Experimental Farm. Exhibitions will also be held in June, July and August, and two in September.

Our society has bought 200 plants to distribute among the school children, with instructions that the plants will be exhibited in the fall, when prizes will be given for the best kept plants.—(E. Gurney, sec. Hort'l Society, Hespeler, Ont.)

Grimsby Horticultural Society has a good program for May, June and July, and it is expected that the meetings will be largely attended.—(J. W. Brennan, sec.)

We know our advertisement in The Canadian Horticulturist is read and appreciated by our many customers in Canada.—(Flansburg & Pier-son, Leslie, Mich.)

Traceless Harness.—Fruit growers report the Baker Traceless Harness, manufactured by the B. F. Baker Company, Burnt Hills, New York, is a success. It is adapted to work on the plow, harrow, cultivator, scraper, log hauling, the stone boat, and all kinds of low down farm work. It is light, strong, does not gall or chafe, and allows the utmost freedom of the horse. To the fruit grower this harness is very convenient. It eliminates the barking and skinning of trees, as it has neither traces nor singletrees. A harness which enables growers to cultivate close up to trees without interference of single tree or tug, and with absolutely no danger to the trees is a boon. Many users who have once tried it feel that they could not possibly go back to traces and singletrees again. The catalogue issued by the manufacturer illustrates and describes the harness fully. A card will bring it, with all particulars.

FRUIT PROSPECTS THROUGH THE PROVINCE

Although the winter has been the most severe on record, the damage to orchards in the commercial fruit growing districts does not appear to have been as severe as at first feared. Peaches in many sections have suffered severely, some growers having lost their entire orchards. On the other hand, the buds in many orchards are reported to be in a promising condition, with prospects for a fair crop. The damage has been sufficiently heavy to make it certain the crop will not be a large one. Should further damage occur, it is possible the yield this year will be quite small. The plum, pear and apple orchards are generally considered to be in a pretty fair condition, in spite of some injury by mice and frost.

Mice have caused more damage this season than for many years. In some districts orchards have been almost entirely destroyed by them, although the total injury will not materially affect the crop of the province in any line of fruit. The Horticulturist had hoped to give in this issue a detailed statement of the fruit prospects of all the leading crops in the principal fruit producing counties of the province. It has, however, been unable as yet to complete its list of correspondents in the various counties, with the result that the returns for this month's report have not been as complete as it was hoped they would be. For this reason no definite conclusions have been drawn concerning present conditions. The statements of the correspondents have, instead, been given in considerable detail, so that growers will be able to draw their own conclusions. During the summer months the Horticulturist hopes to be able to give its readers complete and accurate reports concerning all the principal fruit crops.

But Few Plum Trees Being Planted.

The great majority of plum orchards are apparently in very fair condition, although in some sections the severe winter caused heavy damage. Most of the correspondents of the Horticulturist made out their reports during the week ending April 23, at which time they claimed it was too early to state definitely just what the injury to trees would amount to.

One correspondent in Lambton county placed the number of trees killed by frost at 25 per cent., while several in Lincoln county, without making any definite estimate, state trees have come through the winter in very poor condition, many of them being badly frozen. In the northwest and central counties trees are said to be in fair to excellent condition. Quite a little damage occurred in Whitby township, Ontario county, where one man reports losing 200 trees.

Mice have done more damage than for many years past. In a number of sections the crop will be materially affected through their rava-

ges, although the total crop of the province will hardly be affected by this cause. In a number of cases correspondents state mice have caused no damage at all to orchards, while others state 40 per cent. of the young trees have been destroyed. It seems safe to state that the comparative number of trees in the province injured by mice will be very small.

The heavy crop and low prices last year has apparently affected the amount of planting which will be done this season. Out of the many correspondents heard from not one reports any new orchards being set out. Growers apparently were greatly discouraged by the returns from their crops last year.

On the whole, more spraying is contemplated this season than last, although the number of growers who intend to spray, compared with those who do not, is very small. While more spraying will be done than formerly in most sections, in many districts no spraying is likely to be done at all. One correspondent states that farmers will not spray unless they are made to, and suggests that the government offer a bonus to growers who will spray, instead of paying bonuses to railroads. The comparatively small number who will spray, as indicated by the reports of the correspondents, shows plainly the need for much energetic educational work along these lines.

A Liberal Apple Crop Looked For.

Prospects for the apple crop, at this early date, appear bright. Letters received from correspondents to the Horticulturist, in all parts of Ontario, show trees generally have come through the winter in good condition. While reports of injury have been received from a number of sections, a great many correspondents announce that orchards are apparently all right. Mice in some sections have done great damage, but in others they have apparently done no appreciable harm. A few growers have lost almost their entire orchards. In the majority of cases growers state that only 1 per cent. to 5 per cent. of the trees have been injured by mice. A few run the per cent. up as high as 25 per cent., and in one or two cases to 30 per cent.

In a number of counties, including Ontario and Durham, as well as in the eastern and northern sections, a large number of trees are being set out. In many other counties the acreage will be increased little, if any. Reports from four townships in York county, five in Grey county, and almost equally as many in Bruce, Victoria, Peterboro', Northumberland, Wellington, Leeds and others, show the acreage of new trees will be very small. Some correspondents in Simcoe county state growers there will not set out any more new trees this year, as they have found it difficult to give orchards now bearing proper attention. Only one grower

out of all those heard from in these different counties mentioned any new trees being set out.

More Spraying Will be Done.

There will be more spraying done by large growers than ever before, although the number of small growers who will attend to this work will show but little increase. While in most sections the number who will spray this year will show a considerable increase, other reports indicate that less spraying will be done this season than in 1903. In York county one correspondent estimates one grower in 12 in Markham township will spray, while another correspondent in Etobicoke township estimates the number who will spray at one in 20.

In Collingwood township, Grey county, the number of growers who will spray is stated to be increasing all the time, while a report from Glenelg says that no spraying will be done at all. A correspondent in Simcoe county puts the situation very tersely when he says that "not half enough spraying is being done." The general tone of the reports received indicates that growers are hopeful that the crop this year will be a liberal one if conditions during the summer are favorable.

Considerable Damage in Peach Orchards.

Although many reports of great damage to peach orchards have been received by the Horticulturist, indications are that a large proportion of the orchards have come through the winter in a very fair condition. Reports conflict to such an extent that it has been impossible to gain any very accurate information as to conditions as a whole. While a correspondent in one township reports trees have wintered in good condition, another correspondent in the same township writes nearly all the young trees have been killed. The following brief extracts from the reports of correspondents will give a general idea of conditions.

LINCOLN COUNTY.

Contrary to the opinions of a good many other growers, I do not think any appreciable number of our trees or vines have been injured by the cold. As regards fruit buds, on the more tender varieties of peaches they are pretty well killed. With favorable weather from now on we may hope for a crop of peaches in hardy varieties and on vigorous trees. Plums of the Japanese variety show the buds vigorous and swelling fast. Strawberries, like the wheat, have been badly scorched by the intense cold, and we may look forward to rather a light crop. —(Robert Thompson, St. Catharines.)

In Grantham township trees have wintered fairly and are in good condition. Mice have done considerable damage. Peach buds have been considerably injured.

It is still too early to say how the trees have wintered in Pelham township; about one-fifth have been injured by mice. Quite a number of new plantations have been set out this year. Between the damage from mice and frost, my opinion is fruit will run very short this year.

One quarter of the trees in Pelham township

have been injured by mice, while many were destroyed by the severe winter. Buds on peach trees have nearly all been killed by the frost. —(J. P. Townsend, Pelham township.)

Old trees have wintered poorly in Grantham township; young trees fairly well. About 5 per cent. of the peach trees have been injured by mice. Owing to the fear of scale, not many peach trees are being set out. Only a small crop can be expected from the old trees.

ESSEX COUNTY.

In the vicinity of Leamington the severe and long continued cold weather destroyed the peach orchards. The damage appears to be as great as it was during the winter of 1899. Very few peach trees planted over 2 years have sufficient life and vigor to be of any commercial value. Plums are much injured; cherries, pears and apples to some extent. The frost went down 4 to 5 feet, and there was not a thaw during the whole winter. The blossom buds on peach trees are probably not more than half destroyed.

In East Sandwich township trees have wintered well, only about 1 per cent. having been injured by mice or frost. Few new peach orchards have been set out. A few orchards wintered poorly, but in my section they have done fairly well.

About 5 per cent. of the peach orchards in Colchester township have been injured by mice and frost; very few if any new orchards will be set out this year. Fruit buds appear to be in good condition. The wood in the older trees is partly killed, but the young trees are apparently all right.

Some 50 per cent. of the peach trees in Gosfield township have been injured by mice and frost, and from 10 to 25 per cent. will die. The greatest damage was due to the severe winter. On light soils many orchards will be a complete loss.

Prospects for the peach crop in the vicinity of Ruthven are fair; old trees that went through the freeze of 1898 are injured, but these are a small per cent of the number of trees out. Several hundred have been destroyed by mice, but this injury will only affect a comparatively small part of the total number of trees. European plums have been badly injured, while the Japanese varieties are all right.

KENT COUNTY.

Peach growers in East Tilbury township report trees have wintered fairly well, and that buds are promising. About one-eighth of the trees have been injured by mice. Few, if any, new trees are being set out. Some orchards have been slightly damaged by water. Out of 2,000 peach trees 200 have been killed. Otherwise, orchards are in fair condition. Few trees in Harwick township have been frozen; the total damage by mice or frost amounting to about 25 per cent. Fruit buds are not in very good condition. The San Jose scale has done great damage and discouraged growers.

WENTWORTH COUNTY.

Peach buds are of a dark color and have pro-

bably been seriously injured. In a few days it will be possible to tell more definitely what the damage amounts to. Wood, particularly on the east side of the branches, has been badly injured. Where the snow was blown away or ice laid the roots have been partially destroyed. The roots of trees in sod, and of trees covered with snow during the winter, are sound.

LAMBTON COUNTY.

Peach buds are in fair condition, although danger of late frosts is not over yet. Trees wintered well.

HALTON COUNTY.

Tender varieties of peaches were frozen, although, on the whole, trees wintered well. Two to 5 per cent. have been injured by mice or frost. The buds on the hardy varieties look well, enough being alive for a fair crop. Ten-

der varieties one year planted, and those bearing heavy buds last season, suffered from the hard winter.

NORFOLK COUNTY.

Nearly all the peach trees in the vicinity of Simcoe were killed by the severe winter. I had 1,400 trees killed. Great damage was done young trees by mice. Not as many new trees have been set this year as usual.

WELLAND COUNTY.

Peach trees wintered without injury in Bertie township, none being destroyed either by mice or frost. Fruit buds are well advanced.

About half the young trees in the vicinity of Fonthill have been injured by mice or frost. Not many new plantations are being set out. It is still too early to judge the condition of fruit buds.

TALKS WITH THE FRUIT GROWERS

Apple and plum trees have an abundance of buds and are in excellent condition. Sweet cherry buds badly killed. Peach fruit bud varieties more or less damaged. Grapes not injured.—(W. M. Orr, Wentworth Co.

Plum orchards look badly. Don't think there will be much this year, as they bore so heavy last year.—(H. P. Townsend, Lincoln Co.

Plum rot was quite bad last year, therefore quite a number of trees have been destroyed.—(Samuel Brigham, York Co.

The number of growers who will spray this year will be greatly increased. Former bitter opponents to this treatment of trees are now most anxious to fall into line and thus save their orchards.—(Wm. Armstrong, Lincoln Co.

About one-fifth of the young trees have been girdled by mice. Cannot tell of damage by frost to fruit trees until after the leaves come out.—(G. C. Brown, Welland Co.

Grapes look well. Good prospects for full crop if no late frosts appear.—(S. P. Townsend, Lincoln Co.

Peach buds nearly all killed by frost. Few live buds to be found.—(S. P. T., Lincoln Co.

In my opinion, between mice and frost, fruit crop will be very small this year.—(C. Sloat, Lincoln Co.

Orchards slightly damaged by water. Out of 2,000 peach trees 200 have been killed; otherwise orchards are in fair condition.—(Geo. Chalmers, Kent Co.

Takes too many men to work our present spraying outfits. A one-man rig auto-sprayer is needed to fill the bill.—(S. Spillet, Simcoe Co.

Wood in older trees is partly killed, but the young trees are apparently all right.—(A. Ferris, Essex Co.

Fruit in this locality wintered fairly well; mice have damaged shrubs and ornamental trees badly.—(D. James, York Co.

There will be very few plums this year. A good show of apples, cherries and pears if weather is favorable.—(Wm. Adams, Ontario Co.

Old trees did not make much growth this year; no crop expected. Young vigorous trees about one-third of the buds alive. Should be enough for crop if not injured by frost.—(F. G. Stewart, Lincoln Co.

Tender peaches, one-year planted trees, and those bearing heavy loads last season, have suffered from the hard winter.—(W. V. Hopkins, Halton Co.

My escape from the ravages of mice I attribute to a good collie dog and a good cat kept at the barn, but not at the house.—(J. J. Collins, Lincoln Co.

A great deal more spraying is being done in my neighborhood than in the past, and I think the sooner growers all get in the way of spraying the better.—(J. A. Swan, Simcoe Co.

Not much spraying done here. A neighbor and I have a barrel sprayer, the only one I know of around here.—(Jas. Chandler, Simcoe Co.

Where there was a profusion of rubbish mice have girdled young trees more than usual, and the more tender fruits, such as the peach, are injured; some winter plums are safe.—(W. A. Parsons, York Co.

Some varieties of fruit are more susceptible to frost than others. Exposed places are noted as being somewhat injured.—(D. James, York Co.

About half the people spray; I think people don't spray often enough during the year. Majority only spray once.—(A. E. Clemens, Durham Co.

I had about 150 apple trees girdled by the mice, 12 plum and 15 peach trees. Nearly all the apple trees were 10 years planted and had just begun to bear.—(A. H. Jacobs, Huron Co.

I had my young trees protected with old stove pipe against mice.—(Wm. Cook, York Co.

Having land plowed in orchards, not so much damage was done as where grass has been in different parts.—(A. McDonald, Grey Co.

There has not been spraying enough done in this district for any particular benefit to be derived.—(I. Smith, Northumberland Co.

Present season likely to be a good fruit year. Buds not out yet and all vermin killed by cold. Spraying only useful 1 out of 10 times. Plenty of fruit buds.—(L. Conant, Ontario Co.

I have found no difficulty this spring spraying peach trees 10 years old, which touched in the rows, by means of my Wallace power sprayer. This sprayer has proved satisfactory in every way. Any growers who would like to see it in operation are invited to visit my orchard.—(J. W. Smith & Son, Winona, Ont.

I have saved my apple trees when girdled by mice in the following manner: I use fresh cow manure and wrap it with a cloth around the tree, tying securely. Trees 6 or 7 years old, that were completely girdled, have been saved in this way.—(A. J. Lace, Northumberland Co.

Many fruit buds have been destroyed by the severe winter. Orchards with long grass have suffered badly from mice.—(A. E. Bellman, Durham Co.

The present cool weather will delay blossoming until late and may mean a good crop of apples.—(Limer Lick, Ontario Co.

Cannot tell what injury trees have suffered from frost, but I think very little, as snow was deep and remained all winter. Expected more trees would be girdled than there are.—(W. T. Weir, Ontario Co.

Currant, gooseberry and raspberry bushes very much damaged by crust on heavy snow.—(F. D. Stubbs, Muskoka Co.

I am going to spray the first day it is fit, and with the lime, sulphur and caustic soda, as given in the April Horticulturist, for the oyster shell bark louse, which is very bad in this district.—(A. D. Harkness, Dundas Co.

There are far too many poor varieties of fruit and too little top grafting is done. Give farmers a bonus for grafting and spraying instead of railroads.—(J. G. Graham, Grey Co.

Am very busy shipping apples now; selling very good. Have kept good Baldwins, Spys, Russetts and Ben Davis.—(W. W. Cox, Grey Co.

Very little spraying done in our locality; farmers have very little faith in it from tests generally. Some trees have been girdled with mice as many as 10 to 15 per cent.—(C. Hoare, Huron Co.

My plum trees have been out five years last fall, and they have borne plums for three years. They are full of buds now, if the frost does not kill them.—(A. Swazzer, Monch Co.

Most severe season I have ever seen. Late frosts so severe that many of the spring birds were frozen to death.—(Frank Metcalf, Huron Co.

Last year, out of 200 trees, I lost 83 trees by mice. Last fall I put common screen door netting around the trees to a height of one foot.—(Samuel Cherry, Norfolk Co.

The mice have done large damage even to large apple trees, by girdling them. The frost has apparently killed many peaches and plums, as far as can be seen now.—(C. S. Coatsworth, Kent Co.

As an advertising medium for selling strawberry plants, The Canadian Horticulturist is away in the lead. From an advertisement in The Horticulturist my yearly sales have more than doubled.—(Charles H. Snow, Strawberry Plant Nurseries, Cummings Bridge, Ont.

We recommend The Canadian Horticulturist to any person requiring a purely horticultural paper for advertising purposes.—(J. A. Simmers, Wholesale Seed Merchant, Toronto, Ont.

The Canadian Horticulturist is an excellent medium in which to advertise our business, and we are glad to recommend it as such.—(John A. Bruce & Co., Seed Merchants, Hamilton, Ont.

The Orchard Monarch

is the spraying machine which should receive the attention of large sprayers. It is a mounted sprayer carrying 150 gallons of liquid. The force for operating is supplied by the mere movement of wagon by means of hind wheel gearings. It is intended for large orchard operations and is a

Perfect Automatic Sprayer.

Driving from tree to tree generates power—130 lbs to the inch—to spray five minutes with two nozzles and reach top of tallest trees. It also operates automatically the liquid agitator and brush for cleaning suction strainer, so that vines and foliage are never scalded nor burned and nozzles never clog. The Monarch, as the name suggests, is the peer of sprayers for large orchard operations. We manufacture many kinds and sizes of sprayers for all purposes. Write us for anything in the spraying line, formulas, appliances, etc., and ask for our Free book on spraying.

Field Force Pump Co., 231 Eleventh St., Elmira, N.Y.



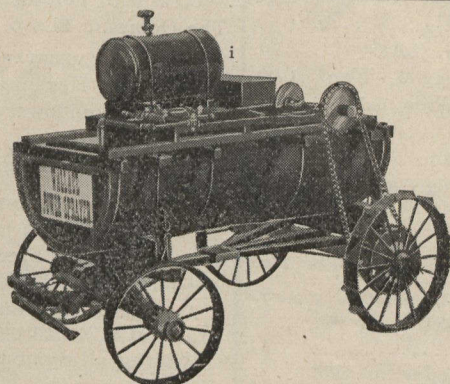
C. G. DAVIS, Agent for Ontario, FREEMAN, ONT.

TEN DOLLARS for the Reader who buys Goods to the Greatest Value from Advertisers in this Issue. See Notice in Advertising Columns.

WALLACE POWER SPRAYER

THE NEW SPRAYER FOR
LARGE OPERATIONS

The Wallace Power Sprayer is meeting with the most enthusiastic reception from fruit growers because it brings about a new and better order of things in spraying. No gasoline or other separate power required—power comes from wheel which costs nothing. Fits any wagon. Power constant and strong



WORKINGS PURELY
AUTOMATIC
COMPRESSED AIR DOES
THE WORK

without continuous driving. Driving from tree to tree in the row generates sufficient pressure to spray large trees thoroughly. Power sold separately, and any one can easily fit to his wagon, and attach to any tank; or we will sell the power, tank and wagon all ready for operation.

The Mounted Outfit shown herewith contains half-round supply tank, which holds 200 gallons spray mixture. Form of tank and position of power can be varied to suit user. Equally satisfactory work results.

READ WHAT THESE MEN SAY:

South Haven, Mich., March 10, 1904.

Gentlemen:

The Wallace Power Sprayer is not at all complicated, considering the work it has to do. We mounted ours on a wagon with a round tank in front. We ran the gauge up to 160 pounds pressure without any trouble. The pump does good work at 70 to 80 pounds pressure. As an experiment we stopped at a large apple tree when the pressure was at 110 pounds, and it took fifteen minutes before the water was thrown out of the compressing tank. By this it can be seen that any tree, however large, can be well sprayed without trouble.

G. L. GREEN & SON.

Olden, Mo., May 6, 1903.

Gentlemen:

We have the Wallace Power Sprayer mounted on a low wheel, wide tire wagon, and have no trouble in maintaining a pressure of 80 pounds

without the mud hooks, spraying 19-year-old trees thoroughly with two four-point Vermorel nozzles. It is the best thing that we have tried and would recommend it to all commercial orchardists.

P. EVANS,

Secretary and Manager the Olden Fruit Co.

Iowa State College of Agriculture and
Mechanical Arts.

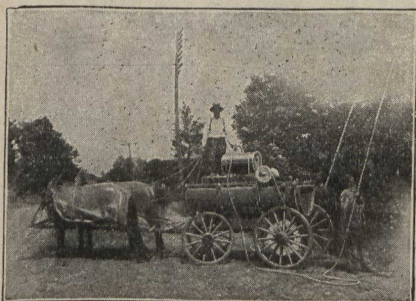
Ames, Iowa, November 2, 1903.

Gentlemen:

In using your sprayer one man drove and handled one extension rod, while the other looked after the machine and handled the other rod. In spraying on both sides of the wagon and between two rows of trees twenty-five years old, thirty-five feet apart, with ten to fifteen year old trees between, sufficient power was developed to spray perfectly every tree as it was reached.

A. T. IRVING, Acting Professor.

A Revolution in Spraying Methods is being worked by the Wallace Power Sprayer. Leading fruit growers everywhere have been quick to recognize its merits. Agricultural Colleges and Experiment Stations have adopted it for use on their farms. Its simplicity, effectiveness, adaptability to all spraying uses, and to all wagons and tanks, are making it every man's sprayer. Sold at a price every sprayer can afford to pay. You should investigate. Full information in our free booklet "F." Write us for it to-day.



**Wallace
Machinery
Co.
Champaign, Ill.**

Local Agents in Canada:

W. H. Brand,
Vinemount, Ont.
In Niagara District east
of Stony Creek.
F. Hamilton Co.,
(Limited) Hamilton

We manufacture hose,
rods, nozzles, strainers
and all other accessories.



TEN DOLLARS for the Reader who buys Goods to the Greatest Value from Advertisers in this Issue.
See Notice in Advertising Columns.

BOOKS FOR HORTICULTURISTS.

Fruits and Fruit Trees of America. Downing	5.00
Fruit, The. P. Barry	1.50
Fumigation Methods. Willis G. Johnson	1.50
Fungi and Fungicides. Clarence M. Weed	1.00
Garden Making. Prof. L. H. Bailey	1.00
Grape Culturist. A. S. Fuller	1.50
Grape Grower's Guide. Charlton	.75
Grape Growing and Wine Making, American. Prof. George Husmann	1.50
Greenhouse Construction Prof. L. R. Taft	1.50
Greenhouse Management. Prof. L. R. Taft	1.50
Horticulture, Annals of. Prof. L. H. Bailey	1.00
Horticulturist's Rule Book. Prof. L. H. Bailey	.75
House Plants and How to Succeed with Them. Lizzie Page Hillhouse	1.00
Insects Injurious to Fruits. Saunders	2.00
Irrigation Farming. L. M. Wilcox	2.00
Lessons with Plants. Bailey	1.10
Mendel's Principles of Heredity. Bateson	1.30
Nursery Book. Prof. L. H. Bailey. Cloth	1.00
Nut Culturist, The. Andrew S. Fuller	1.50
Peach Culture. Fulton. Revised edition	1.00
Pear Culture for Profit. Quinn. New and revised edition	1.00
Plant Breeding. Bailey	1.00
Plants, Handbook of. Peter Henderson. New enlarged edition	3.00
Plants, Propagation of. A. S. Fuller	1.50
Plants, Your. James Sheehan	.40
Plums and Plum Culture. F. A. Waugh	1.50
Principles of American Forestry. S. B. Green	1.50
Principles of Fruit Growing. Prof. L. H. Bailey	1.25
Pruning Book, The. Prof. L. H. Bailey	1.50
Quince Culture. W. W. Meech	1.00
Rose, The. Its Cultivation, Varieties, etc. H. B. Ellwanger	1.25
Rose, Parsons on the	1.00
Small Fruit Culturist. A. S. Fuller	1.00
Spraying of Plants, The. E. G. Lodeman	1.00
Strawberry, The A B C of the. T. B. Terry A. I. Root	.50
Strawberry Culturist. A. S. Fuller. Illus- trated	.25
Survival of the Unlike. Bailey	2.00
Systematic Pomology. F. A. Waugh	1.00
Vineyard at Lakeview. My	.50
Woman's Hardy Garden, A	1.75
LIVE STOCK.	
American Standard of Perfection	1.00
Artificial Incubating and Brooding. Cypher	.50
Cattle Breeding. Warfield	2.00
Feeds and Feeding. Henry	2.00
Horse Breeding. Sanders	1.50
Horses, Cattle, Sheep and Swine. Curtis	2.00

Pigs, Breeds and Management. Spencer	1.00
Stock Breeding. Miles	2.00
Success with Poultry	1.00
The Domestic Sheep. Stewart	1.75

VEGETABLE GARDENING.

Asparagus. Hexamer	\$0.50
Cabbage, Cauliflower and Allied Vegetables. Allen	.50
Vegetable Gardening. Green	1.25

GENERAL AGRICULTURE.

Agriculture. C. C. James	.30
Chemistry of the Farm. Warington	.90
Fertility of the Land. Roberts	1.25

Any other book on Agricultural Topics will be procured at lowest price.

Address all communications to

H. B. COWAN,
Canadian Horticulturist, Toronto.

SAVE SOME MONEY

The advertisers in The Canadian Horticulturist are all responsible parties, who can be relied on in business transactions. Readers who buy from them can depend on obtaining satisfaction.

To encourage its readers to deal with its advertisers, . . .

THE HORTICULTURIST WILL GIVE \$10

to the one who buys goods to the greatest value from the advertisers in this issue. Here is a chance to save some money. Don't fail to take it. Read further particulars as given on the inside back cover page.

FROM: _____ (Shipper)
 _____ (of Ontario)

To McWilliam & Everist
 TORONTO

The Shipper using these tags is assured of the best results possible for his fruit on Toronto Market.

McWILLIAM & EVERIST
 25 & 27 Church Street.

We consider The Canadian Horticulturist an O. K. advertising medium. It has carried our business advertisement for twenty years with excellent results to our business. Advertisements in the Horticulturist are a valued investment.—(A. G. Hull & Son, Central Nurseries, St. Catharines, Ont.)

Strawberry Plant Nurseries

CHAS. H. SNOW

P. O. Address: Box 3, Cummings Bridge, Ont.

Improvement by selection of the **Parentage Stock** for sixteen years has enabled me to grow Strawberry Plants that yield a crop of Fine Large Fruit. All the modern methods of culture used to produce large stocky plants. Not **how cheap** but **how good**. Catalogue and prices free. Address as above.

EXPRESS OFFICE, OTTAWA.

MONEY ORDER OFFICE, CUMMINGS BRIDGE.

A Gift of \$10

Will be given the reader who buys goods to the greatest value on or before

JUNE 15th, 1904

from the advertisers in this month's issue of The Horticulturist. Readers must notify advertisers when ordering goods that they saw their advertisement in this paper.

When applying for the \$10 bonus they must inform this office of the name or names of the advertisers they dealt with and the value of the goods they purchased from each. Application for this bonus must be made to this office on or before June 18, 1904.

Address

ADVERTISING MANAGER,
 The Canadian Horticulturist. Toronto, Ont.

SMALL FRUIT PLANTS

Gooseberries, red and yellow; Currants, red, white and black; Raspberries, red, black and yellow; Grape Vines; Roses; House and Bedding Plants; Strawberries; Strawberry-Raspberry; Rhubarb and Asparagus Roots, etc., all from the producer.

WM. FLEMING, Nurseryman, Etc.
 P. O. Box 54. Owen Sound, Ont.

THE
 HOME
 MONEY
 MAKER



A PAIR IN
 THIRTY
 MINUTES

Home Industry

\$12 to \$20 Weekly

Reliable People Wanted, Either Sex,
 to Make Seamless Hosiery, etc.

Work at Your Home

Greater and Faster than a Sewing Machine

Over 5000 of our machines are in actual operation throughout the British Colonies.

Under the direction of the Home Industrial Knitting Machine Co.

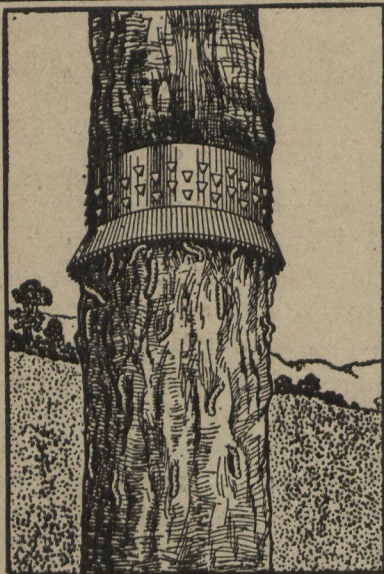
No Previous Experience Required.

Work for many more Knitting for the New York and Foreign Markets. Large Demand. Good Prices Obtained for all Work. Machines furnished to trustworthy families on trial easy payments. Simple to operate; knits pair socks or stockings in 30 minutes. Write today and start making money; our circular explains all. Distance No Hindrance.

Home Industrial Knitting Machine Co.

Canadian Branch, WINDSOR, ONT. 80-82 Congress St. E., Detroit, Mich.

TEN DOLLARS for the Reader who buys Goods to the Greatest Value from Advertisers in this Issue. See Notice in Advertising Columns.



Enlarged to show detail of band.

ARNDT TREE PROTECTOR

(BRASS BAND)

SIMPLE EFFECTIVE INEXPENSIVE

Absolutely the most positive preventive against all creeping and crawling insects

**It will save the Trees. Save Time and Labor.
Save Money.**

THIS simple brass band is patented and put upon the market as pre-eminently the very best and surest device yet invented for preventing the encroachment of all creeping and climbing insects. It is made of brass, does not corrode or rust, does not take an expert to place on a tree, and when once on overcomes all the difficulties met with by other makes of tree protectors, and lasts for years. No chemicals used.

The Arndt Tree Protector comes in coils of twenty (20) feet, neatly and securely packed in boxes, with brass fasteners and cotton wadding, and with full directions for using on each box.

ARNDT TREE PROTECTOR, LIMITED.

F. V. PARSONS, Manager.

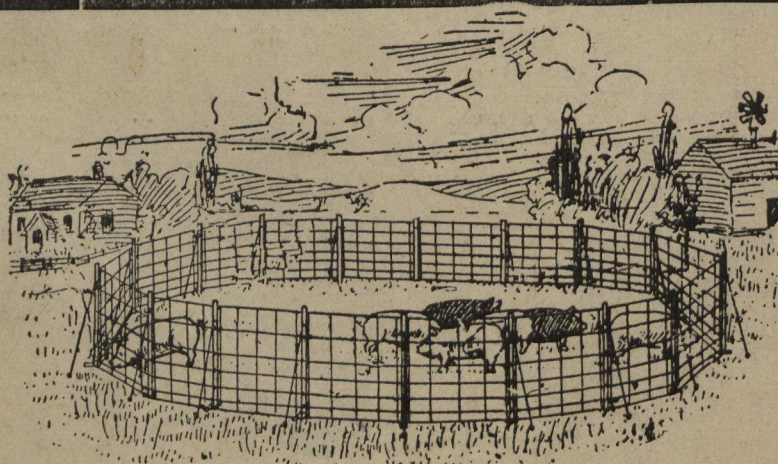
Office: Standard Stock Exchange Bldg., No. 43 Scott St., Toronto, Ont.

Write us for pamphlets giving full particulars and rates.

Live Agents Wanted.

**STEEL
POSTS
will not
HEAVE
ROT nor
BURN**

**Write for
Catalog**



**Covered by
Canadian and U. S. Patents**

ALL STEEL—PORTABLE STOCK PENS—ALL STEEL

Portable Fence and Stock Pens are rapidly set up and taken down.
No digging. Provide most economical method of pasturing stock.

THE CANADIAN PORTABLE FENCE CO., Limited

Jarvis Street and Esplanade, Toronto.

**TEN DOLLARS for the Reader who buys Goods to the Greatest Value from Advertisers in this Issue.
See Notice in Advertising Columns.**